

Milltown Park, Sandford Road, Dublin 6

Screening for Appropriate Assessment

(Final)

September 2021

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Contract

This report describes work commissioned by Sandford Living Limited, by a letter dated 26 November 2019. Patricia Byrne and Malin Lundberg of JBA Consulting carried out this work.

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Purpose

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Abbreviations

AA	Appropriate Assessment
CIEEM	Chartered Institute of Ecology and Environmental Management
DoEHLG	Department of Environment, Heritage and Local Government
EC	European Communities
EPA	Environmental Protection Agency
GSDSDS	Greater Dublin Strategic Drainage Strategy
INNS	Invasive Non-native Species
IROPI	Imperative Reasons of Over-riding Public Interest
NBDC	National Biodiversity Data Centre
NO _x	Nitrogen Oxides
NPWS	National Parks and Wildlife Service
QI	Qualifying Interest
SAC	Special Area of Conservation
SPA	Special Protection Area
SUDS	Sustainable Urban Drainage System
WFD	Water Framework Directive
WWTP	Waste Water Treatment Plant

1 Introduction

1.1 Background

Sandford Living Limited is seeking permission for a proposed strategic housing development at Milltown Park, Sandford Road, Dublin 6. The proposed development is described in Section 2 of this report.

JBA Consulting was appointed by the applicant to prepare a report to assist An Bord Pleanála in undertaking a screening exercise for Appropriate Assessment (AA). The purpose of the screening exercise is to assess, in view of best scientific knowledge, if the proposed development, individually or in combination with other plans or projects is likely to have a significant effect on European sites taking into account their conservation objectives.

This document constitutes the Appropriate Assessment Screening Report prepared for this purpose.

1.2 Legislative Context

Directive 92/43/EEC on the Conservation of Natural Habitats and of 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 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."

The requirements of Article 6(3) of the Habitats Directive have been transposed into Irish planning legislation by section 177 U and 177V of the Planning and Development Act 2000 as amended.

1.3 Appropriate Assessment Process

Guidance on the Appropriate Assessment (AA) process was produced by the European Commission in 2002¹, which was subsequently developed into guidance specifically for Ireland by the Department of Environment, Heritage and Local Government (DoEHLG)².

1 Assessment of plans and projects significantly affecting Natura 2000 sites" (European Commission, 2002).

2 "Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities" (DoEHLG, 2009)

These guidance documents identify a staged approach to conducting an AA, as shown in Figure 1-1.

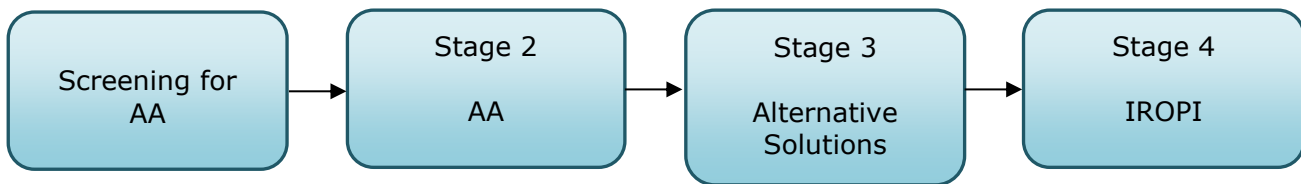


Figure 1-1: The Appropriate Assessment Process (from: Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities, DoEHLG, 2009)

1.3.1 Stage 1 - Screening for AA

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

- a. whether the proposed plan or project is directly connected with or necessary for the management of the Natura 2000 site for nature conservation
- b. if it is likely to have a significant adverse effect on the Natura 2000 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 Natura 2000 site, in view of the sites 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:

- Office of the Planning Regulator (OPR) (2021) Practice Note PN01 - Appropriate Assessment Screening for Development Management (OPR, 2021)
- EC (2018) Managing Natura 2000 sites: The Provisions of Article 6 of the Habitats Directive 92/43/EEC. Guidance issued by the European Commission (21st November 2018).
- DoEHLG (2010) Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular NPWS 1/10 & PSSP 2/10.
- 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) (2000) 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 and Office for Official Publications of the European Communities 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 (EC, 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 (EC, 2007).
- (CIEEM, 2018). Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater and Coastal, Second Ed. (Chartered Institute of Ecology and Environmental Management, 2018)
- Fossitt, J. (2000). A Guide to Habitats in Ireland. The Heritage Council, Kilkenny (Fossitt, 2000a).

Data used in this assessment has been collected in a range of formats, from a range of sources, including;

- NPWS website (<https://www.npws.ie/>)
- Information on the Status of EU Protected Habitats and Species in Ireland (Article 17 report) (NPWS, August 2019)
- National Biodiversity Data Centre (NBDC) (<https://maps.biodiversityireland.ie/Map>)
- Environmental Protection Agency (EPA) maps website (<https://gis.epa.ie/EPAMaps/>)
- River Basin Management Plans (RBMP) (www.wfdireland.ie)
- Catchments (www.catchments.ie)
- Recent and historical OSi mapping and aerial photography, including www.geohive.ie
- Information on soils, geology and hydrogeology in the area (www.gsi.ie)
- Dublin City Council website (www.dublincity.ie)

- Dublin City Development Plan 2016 – 2022, including the accompanying Appropriate Assessment documentation (Natura Impact Report)

1.4.1 Field Surveys

Field survey methods were in general accordance with those outlined in the following documents:

- Best Practice Guidance for Habitat Survey and Mapping, by the Heritage Council (Smith et al. 2011);
- Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes (NRA, 2009b);
- Bat Surveys for Professional Ecologists (Collins, 2016);
- CBS Manual - Guidelines for Countryside Bird Survey participants (BWI, 2012);
- Monitoring the Otter *Lutra lutra* (Chanin, 2003).

Aerial photographs and site maps assisted the habitat survey and photographs taken at the site during the site visits conducted in 2019, 2020 and 2021 supported the assessment. Habitats have been named and described following A Guide to Habitats in Ireland by Fossitt (2000). Nomenclature for higher plants principally follows that given in Webb's An Irish Flora (Parnell and Curtis, 2012).

The first site visit was carried out on 03/12/2019, by JBA ecologists, Niamh Burke and Malin Lundberg to inform the ecological baseline of the site by recording habitats and signs of presence of protected species. A further three site visits were undertaken during the summer months (20/05/2020, 15/06/2020 and 16/07/2020) which complemented the initial site visit and any new findings were recorded. Bird surveys were carried out 13/03/2020 and 23/03/2020 and during the winter months 2020/2021 including four visits on 30/11/2020, 17/12/2020, 07/01/2021 and 03/02/2021. Breeding bird surveys were carried out on 15/04/2021 and 18/05/2021, where the first involved walking transects around the whole site and taking notes of birds nesting in the vegetation and on the buildings and the second survey involved inspecting the exterior of the buildings for nests of Swallow *Hirundo rustica*, Swift *Apus apus* and House Martin *Delichon urbicum* and using focal points to identify if any birds were nesting on the rooftops. The survey methodology for the bird surveys followed the guidance provided by NRA (2009) and the Country Bird Survey (CBS) Manual (BWI, 2012).

1.4.2 Limitations and Constraints

At this point in time no limitations or constraints have been identified. 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.

2 Project Description

2.1 The 'Project'

The proposed development meets the criteria of a 'Project' as defined in the Habitats Directive and is not directly connected with or necessary to the management of any Natura 2000 site. Therefore, the Project is subject to the requirements of the Appropriate Assessment process.

2.2 Site Location

The proposed development is situated in an urban area at Milltown Park, Sandford Road, Dublin 6. The site is on a corner between Milltown Road (R117) and Sandford Road (R117). Part of Eglinton Road (R824) is included within the site boundary. The River Dodder is located approximately 0.5km south-east of the site.

The site is zoned Z15 'to protect and provide for institutional and community uses' by (Dublin City Council, 2016). Figure 2-1 outlines the site location and local mapping.

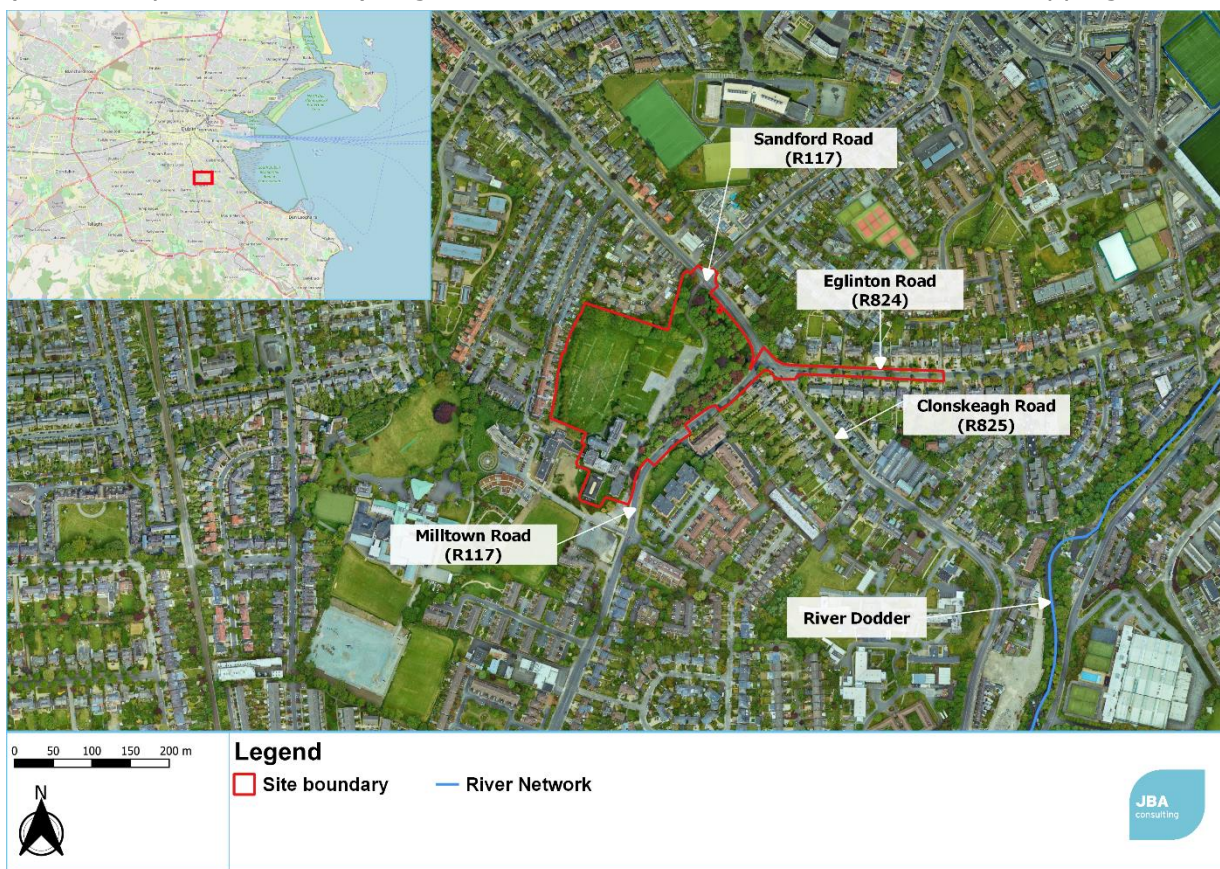


Figure 2-1: Site location

2.3 Proposed Project

Sandford Living Limited intend to apply to An Bord Pleanála for permission for a strategic housing development at this c. 4.26 hectare site at Milltown Park, Sandford Road, Dublin 6, D06 V9K7. Works are also proposed on Milltown Road and Sandford Road to facilitate access to the development including improvements to pedestrian facilities on an area of c. 0.16 hectares. The development's surface water drainage network shall discharge from the site via a proposed 300mm diameter pipe along Milltown Road through the junction of Milltown Road / Sandford Road prior to outfalling to the existing drainage network on Eglinton Road (approximately 200 metres from the Sandford Road / Eglinton Road junction), with these works incorporating an area of c. 0.32 hectares. The development site area, road works and drainage works areas will provide a total application site area of c. 4.74 hectares.

The development will principally consist of: the demolition of c. 4,883.9 sq m of existing structures on site including Milltown Park House (880 sq m); Milltown Park House Rear Extension (2,031 sq m); the Finlay Wing (622 sq m); the Archive (1,240 sq m); the link building between Tabor House and Milltown Park House rear extension to the front of the Chapel (74.5 sq m); and 36.4 sq m of the 'red brick link building' (single storey over basement) towards the south-western boundary; the refurbishment and reuse of Tabor House (1,575 sq m) and the Chapel (768 sq m), and the provision of a single storey glass entrance lobby to the front and side of the Chapel; and the provision of a 671 No. unit residential development comprising 604 No. Build-to-Rent apartment and duplex units (88 No. studios, 262 No. one bed units, 242 No. two bed units and 12 No. three bed units) and 67 No. Build-to Sell apartment and duplex units (11 No. studios, 9 No. one bed units, 32 No. two bed units and 15 No. three bed units).

Block A1 will range in height from part 5 No. storeys to part 10 No. storeys and will comprise 94 No. Build-to-Rent apartments; Block A2 will range in height from part 6 No. storeys to part 8 No. storeys (including part double height at ground floor level) and will comprise 140 No. Build to-Rent apartments and duplex units; Block B will range in height from part 3 No. to part 7 No. storeys and will comprise 91 No. Build-to-Rent apartments; Block C will range in height from part 2 No. storeys to part 8 No. storeys (including part double height at ground floor level) and will comprise 163 No. Build-to-Rent apartments; Block D will range in height from 3 No. storeys to 5 No. storeys and will comprise 39 No. Build-to-Sell apartments; Block E will be 3 No. storeys in height and will comprise 28 No. Build-to-Sell duplex units and apartments; Block F will range in height from 5 No. storeys to part 7 No. storeys and will comprise 92 No. Build-to-Rent apartments; and the refurbished Tabor House (4 No. storeys including lower ground floor level) will comprise 24 No. Build-to-Rent apartments.

The development also includes a creche within Block F (400 sq m) with outdoor play area; and the provision of communal internal amenities (c. 1,248.8 sq m) and facilities (c. 158.3 sq m) throughout the residential blocks, Tabor House and the converted Chapel building including co-working space, gym, lounges, reading rooms, games room, multi-purpose space, concierge, mail rooms and staff facilities.

The proposed works also include a new 2.4 metre high boundary wall across the site from east to west (towards the southern boundary) requiring the demolition of a portion of the red brick link building that lies within the subject site towards the south-western boundary (36.4 sq m) and the making good of the façade at the boundary. The existing Link Building is the subject of a separate application for permission (DCC Reg. Ref. No. 3866/20) that includes a request for permission to demolish that Link Building, including the part of the building on the lands the subject of this application for SHD permission. If that application is granted and first implemented, no demolition works to the Link Building will be required under this application for SHD permission. If that application is refused permission or not first implemented, permission is here sought to demolish only that part of the Link Building

now existing on the lands the subject of this application for permission and to make good the balance at the red line with a blank wall.

The development also provides a new access from Milltown Road (which will be the principal vehicular entrance to the site) in addition to utilising and upgrading the existing access from Sandford Road as a secondary access principally for deliveries, emergencies and taxis; new pedestrian access points; pedestrian/bicycle connections through the site; 344 No. car parking spaces (295 No. at basement level and 49 No. at surface level) which includes 18 No. mobility impaired spaces, 10 No. car share spaces, 4 No. collection/drop-off spaces and 2 No. taxi spaces; bicycle parking; 14 No. motorcycle spaces; bin storage; boundary treatments; private balconies and terraces facing all directions; external gantry access in sections of Blocks A1, A2 and C; hard and soft landscaping including public open space and communal open space (including upper level communal terraces in Block A1, Block B and Block C which will face all directions); sedum roofs; PV panels; substations; lighting; plant; lift cores; and all other associated site works above and below ground. The proposed development has a gross floor space of c. 54,871 sq m above ground level over a partial basement (under part of Block A1 and under Blocks A2, B and C) measuring c. 10,607 sq m, which includes parking spaces, bin storage, bike storage and plant.

The duration of the construction phase of the development is expected to be 34 months

The site plan for the development is seen in Figure 2-2 and Ground Floor General Layout Plan in Appendix A.

2.4 Description of Construction Type

The standard strip and pad foundations and basement excavation/construction shall be executed as follows:

- Excavate to foundation/basement formation level forming slope batters as necessary
- Cast the reinforced concrete pad and strip footings, rising walls and ground floor slabs
- Cast the basement to ground level reinforced concrete retaining walls, columns and lift, stair, shear walls
- Cast the reinforced concrete ground slabs
- Backfill to ground level the surrounding slope batters using granular material as appropriate.

Temporary Ground Retention Works

Temporary sheet piling on site in discreet areas where the space for slope battering is not available may be necessary. Steel sheet piles are driven into the ground using a piling hammer to facilitate vertical excavation on one side. The steel sheet piles are extracted and reused once the permanent works are complete and backfilled.

A temporary sheet pile is manufactured from interlocking lengths of profiled steel sheets which can be extracted once their temporary purpose has been served and the surrounding ground backfilled or permanent basement structure is complete. The extraction is achieved by clipping the extractor tool through punched holes in the top of the sheet piles and then using the piling rig to withdraw the sheet pile from the earth.

Other Solutions

Alternative foundation solutions under consideration for this project are noted below:

Augered Bored Piles

Bored piles are cylindrical shaped shafts formed in the ground by extracting soil and replacing it with concrete and steel reinforcement cages. Augered bored piles can transfer large loads to the very stiff clay encountered during site investigation works.

Because of the depth to a suitable bearing stratum beneath Blocks D and Block F is 2.5m below ground level, bulk excavation is required with foundations extending to the required depth. For the foundation design of these blocks, augered piles may be considered a more appropriate foundation solution than standard deep strip and pads. In the case of augered piles the building will be supported on a system of ground beams, pile caps and suspended slabs supported on the piles. The piles themselves will be augered approximately 6-10m into the very stiff clays to gain capacity through a combination of end bearing and friction along the pile shaft.

In the case of the basement under Block A, Block B and Block C piles are not required to reach the very stiff clay layer as the excavation is at sufficient deep.

Driven Piles

Driven piles as with the bored piles transfer large loads to the very stiff clay encountered during site investigation works. Driven piles can be formed in pre-cast concrete typically in square or cylindrical cross section which are percussion driven into the ground displacing the soil as it advances. As such there are no pile arisings to be dealt with but the noise and vibration are considerably more onerous compared with augered bored piles.

Ground Improvement

Ground improvement techniques may be required for the Block E duplex houses. The following options are considered:

Suitable bearing stratum can be achieved by extending standard strip footings into the upper firm clays for the low-rise houses. However, should this situation change during construction, the following ground improvement technique may also be considered:

Lime stabilization is the mixing of quicklime with soft, fine grained soils to improve the shear strength and deformation characteristics of the soil. By a process of reduce digging to a suitable bearing strata and reinstating the existing ground with lime mixed with the soil and well compacted in layers, provides a suitable bearing strata at a higher level for proposed foundations. Standard pad and strip footings can then be installed in the improved ground at shallower depth than might be necessary using bulk excavation and infilling.

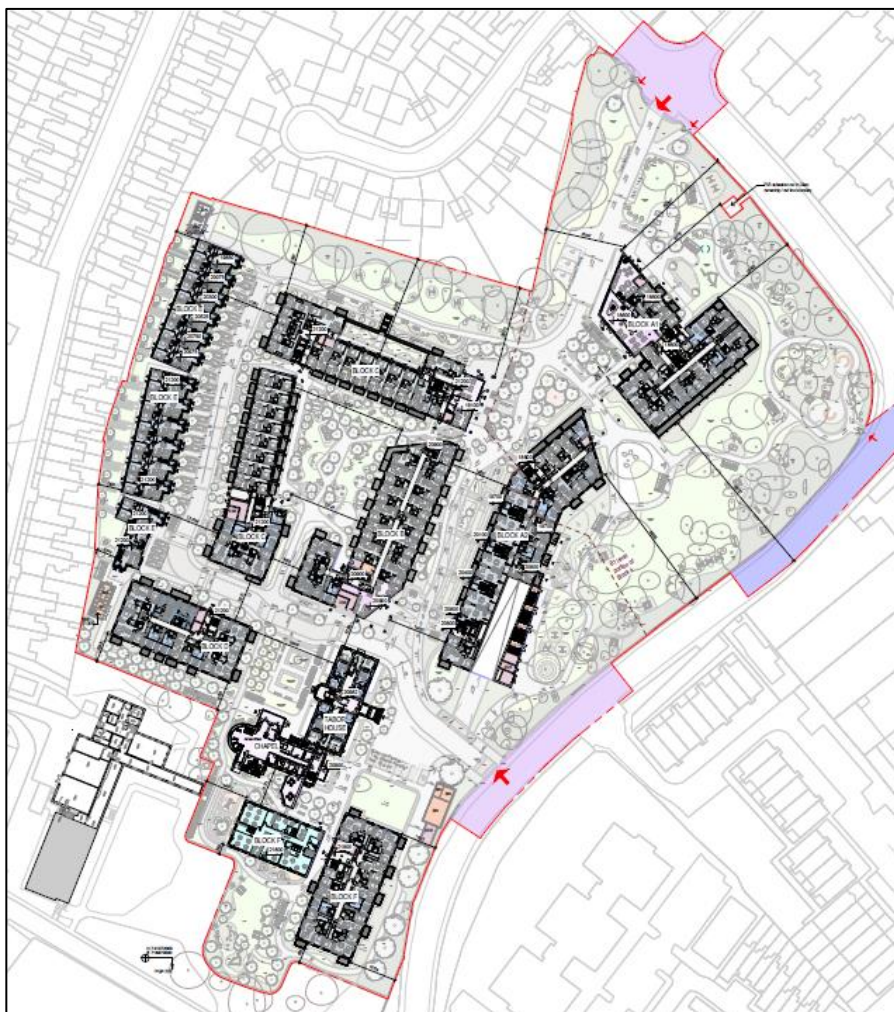


Figure 2-2: Site Layout Plan (Source: O'Mahony Pike Architects)

Water Drainage

Construction Phase

During construction, surface water will be managed as follows:

- Weather conditions and typical seasonal weather variations will be taken account of when planning stripping of topsoil and excavations with an objective of minimizing soil erosion.
- All oils, fuels, paints and other chemicals will be stored in a secure bunded hardstand area. Refuelling and servicing of construction machinery will take place in a designated hardstand area which is also remote from any surface water inlets (where not possible to carry out such activities off site).
- Concrete batching will take place off site and wash down and wash out of concrete trucks will take place off site (at authorized concrete batching plant in full compliance with relevant planning and environmental consents).
- The construction compound will include adequate staff welfare facilities including foul drainage and potable water supply. Foul drainage discharge from the construction compound will be tankered off site to a licensed facility until a connection to the public foul drainage network has been established.

These measures are best practice measures and are in line with the Greater Dublin Regional Code of Practice for Drainage Works (Dublin City Council, 2021). The first

objective of the Code of Practice is Compliance with best environmental practices and relevant environmental legislation such as the Water Framework Directive.

Operational Phase

During operation phase the foul water drainage will be connected to the existing Dublin city combined sewers. The water will be treated at Ringsend Waste Water Treatment Plant (WWTP), which has the capacity of 1.64 million PE, before being discharged at Poolbeg, 1km from the plant.

Surface water sewers from the proposed development will discharge at attenuated flows to the existing drainage network on Eglinton Road (approximately 195m from the Sandford Road / Eglinton Road junction where the public line increases to a 300mm diameter pipe). The existing surface water drain in Eglinton Road ultimately discharges to the Dodder River. In order to achieve the required drainage invert levels on site, approximately 160m of the existing drainage network along Eglinton Road will need to be replaced with a 300mm pipe running at a flatter gradient. The total length of the surface water outfall from the point it crosses the site boundary at Milltown Road to the discharge point on Eglinton Road is approximately 300m. As noted in the DBFL Infrastructure Report enclosed separately, detailed topographic and GPR surveys were carried out along to the proposed outfall route (Milltown Road, through the junction of Milltown Road / Sandford Road and Eglinton Road) to assess feasibility with regard to the location of existing services.

Surface water discharge rates from the proposed surface water drainage network will be controlled by a vortex flow control device (Hydrobrake or equivalent) and associated underground attenuation tanks (Stormtech Chambers or equivalent). Surface water discharge will also pass via a full retention fuel / oil separator (sized in accordance with permitted discharge rate from the site). The proposed surface water drainage network will collect surface water runoff from the site via a piped network prior to discharging off site via the attenuation tank, flow control device and separator arrangement as noted above.

Any incidental surface water runoff generated from the basement carpark would drain through a separate system beneath the basement slab (out falling to the proposed foul drainage network via a petrol interceptor). The Drainage Layout Plan is shown in Appendix B.

Sustainable Urban Drainage System (SUDS)

The SUDS system on site will consist of green roofs, drainage board on podium deck, permeable paving, tree pits and attenuation in accordance with Greater Dublin Strategic Drainage Strategy (GSDSDS) requirements.

The proposed SUDS system also complies with Policy SI18 of the Dublin City Development Plan 2016-2022 (Dublin City Council, 2016), to incorporate Sustainable Urban Drainage Systems (SUDS) within new developments, as set out in the Greater Dublin Regional Code of Practice for Drainage Works (Dublin City Council, 2021). The first objective of the Code of Practice for Drainage Works is Compliance with best environmental practices and relevant environmental legislation such as the Water Framework Directive.

This Appropriate Assessment Screening report is assessing the potential impact on Natura 2000 sites without taking account of SUDS measures and the assessment is on the basis of an unattenuated flow of surface water from the development into the drainage network.

Site Access Facilitating Works

The primary access point for vehicles is off Milltown Road facilitating access to the basement carpark, the forecourt area adjacent to Tabor House and the duplex units along the western boundary. This access point also serves pedestrians and cyclists. This proposed site access shall operate as a priority junction with associated signage and line marking in accordance with the Department of Transport’s Traffic Signs Manual. A Toucan Crossing is also proposed in the vicinity of the Milltown Road access to improve facilities for vulnerable road users.

A secondary access point for vehicles is located at the existing entrance from Sandford Road which facilitates access to the area adjacent to Block A (principally for deliveries, taxi pick up / drop off and disabled parking) as well as fire tender access to the northern end of the site. This access point also serves pedestrians and cyclists. As such, improvements to pedestrian facilities at the Sandford Road / Belmont Avenue junction are proposed (upgrading of the existing pedestrian crossing on Sandford Road, amendments to line marking at the junction, improved tactile paving and reduction of corner radii).

2.5 Existing Environment

The baseline surveys outlined in Section 1.4.1 have informed the descriptions of the existing environment. Habitats and species recorded are described and presented in detail in the following sections.

2.5.1 Habitats

The value of each habitat is based on the site visit and desktop study unless stated otherwise. Habitats in and around the site boundary were recorded and are displayed in Table 2-1 and shown in Appendix C and in Figure 2-3 below.

Table 2-1: Habitats recorded during site visit.

Habitat	Fossitt Code
Buildings and artificial surfaces	BL3
Amenity grassland (improved)	GA2
Mixed broadleaved/conifer woodland	WD2
Scattered trees and parkland	WD5
Treelines	WL2
Scrub	WS1
Ornamental/non-native shrub	WS3



Figure 2-3: Habitat at the proposed site including key features and non-native species found on site.

2.5.1.1 Buildings and artificial surfaces – BL3

The buildings on site include a chapel, a library and main houses. Artificial surfaces include the road leading to the main building, parking spaces and footpaths around the vicinity.

2.5.1.2 Amenity grassland (improved) – GA2

The amenity grasslands are in general low in species diversity. The grassland in the west part of the site has slightly more species than the rest of the amenity grassland. Grassland species include Common Daisy *Bellis perennis*, Cock’s-foot *Dactylis glomerata*, False Oat-grass *Arrhenatherum elatius*, Creeping Buttercup *Ranunculus repens*, Ribwort Plantain *Plantago lanceolata*, Self-heal *Prunella vulgaris*, and Hogweed *Heracleum sphondylium*.

The north east part of the amenity grassland, next to the car park, had previously been used for a temporary school building (now removed) but is now recolonised. This area is dominated by grass species but also other opportunistic species.

2.5.1.3 Mixed broadleaved/conifer woodland – WD2

There are two woodlands in the north and east within the site. These make part of the park area and has a mix of native and non-native species, indicating that it has been planted as part of the park, however the tree cover is varying in age with both mature trees and young saplings (Figure 2-4). The tree cover consists of Ash *Fraxinus excelsior*, Beech *Fagus sylvatica*, Sycamore *Acer pseudoplatanus*, Yew *Taxus baccata*, Holly *Ilex aquifolium*, Poplar *Populus* spp., Bay Laurel *Laurus nobilis*, Elder *Sambucus nigra*, Leyland cypress *Cupressus x leylandii*, Scots Pine *Pinus sylvestris*, and Elm *Ulmus* spp. The understory consists of Bramble *Rubus fruticosus* agg., Ivy *Hedera hibernica*, Japanese Laurel *Aucuba japonica*, Herb Robert *Geranium robertianum*, Bluebell *Hyacinthoides* spp., Nettles *Urtica dioica*,

Docks *Rumex* spp., Lords and Ladies *Arum maculatum*. The non-native species Winter Heliotrope *Petasites pyrenaicus* is abundant and Snowberry *Symphoricarpos albus* occurs in a few stands.



Figure 2-4: Mixed woodland with Holly in the foreground

2.5.1.4 Scattered trees and parkland – WD5

In the north, next to the gate at Sandford Road, there is an area of the lawn with scattered trees including Hazel *Corylus avellana*, Lime *Tilia* spp. and Sycamore (Figure 2-5). A beech hedge is separating the area from the amenity grassland.



Figure 2-5: Parkland with scattered trees.

2.5.1.5 Treelines – WL2

There are several treelines on the site. One treeline is bounding the entrance road with various tree species, one treeline consisting of Holly trees is located in the centre of the amenity grassland, a double treeline with Cherry *Prunus* spp. trees is located along the western border of the site, and there is a small treeline with six Silver Birches *Betula pendula* in the southern most part just beside the Archive building.

The Holly treeline consists of mature trees providing good cover for e.g. birds (Figure 2-6).



Figure 2-6: Holly hedgerow.

2.5.1.6 Scrub – WS1

Scrub is emerging along the west and north-west perimeter mainly consisting of Bramble. The non-native species Traveller's Joy is found at one location in the scrub habitat.

A small area between the buildings has recolonisation and has a diversity of species, including saplings of Sycamore and Ash, the fern Hart's-tongue *Asplenium scolopendrium*, Herb Robert, Willowherb *Epilobium* spp., Cinquefoil *Potentilla* spp., Ivy, Wood Aven *Geum urbanum*, Traveller's-joy *Clematis vitalba* and an ornamental Honeysuckle *Lonicera* spp.

2.5.1.7 Ornamental/non-native shrub – WS3

The flowerbeds around the buildings are planted with ornamental shrub, including Butterfly-bush *Buddleja davidii* and a few Silver Birch.

2.6 Fauna

2.6.1 Protected Terrestrial Mammals

There were no field signs of protected mammal species recorded on the site visit. The lack of watercourses within the site makes it unsuitable for Otter *Lutra lutra* habitation and foraging.

2.6.2 Other Mammals

A mammal path was found during the site visit. Red Fox *Vulpes vulpes* was observed on site, along with paw prints and a burrow belonging to Red Fox (Figure 2-3).

Red fox are not considered endangered in Ireland or in the rest of Europe and are only afforded the most basic legal protection under the Wildlife Act (1976 and amendments).

2.6.3 Wintering Birds

Mild and wet winters make the wetlands of Ireland an important resource for over three-quarters of a million waterbirds each year. Over 50 species of waterbird migrate to Ireland either on passage to or from more southerly resorts or to spend the entire winter here. They seek out the relatively undisturbed wetland areas for feeding and for safe roosting

opportunities. Significant populations of the following waterbirds overwinter in Ireland: Light-bellied Brent Goose, Black-tailed Godwit, Whooper Swan, Greenland White-fronted Goose and Ringed Plover (Birdwatch Ireland, 2020).

Wintering birds, in particular Brent Geese, utilise urban grasslands in parks and sport fields for grazing and as such, the grassland within the proposed site could potentially be utilised by wintering birds.

The grassland was considered unsuitable foraging habitat due to grass being uncut with a height >15cm and the restricted sight-lines at the site. The uncut grass was present even before the Applicant purchased the site and the current state is a result of maintaining this position (Figure 2-7). Brent Geese prefer large open sites where they have clear sight-lines and short, lush grass for grazing (King, 2010). The bird surveys conducted in March 2020 and between November 2020 and February 2021 recorded no wintering birds within the site. One Curlew *Numenius arquata* was recorded in flight on one occasion. The Curlew passed at 40-50m height over the site for a duration between 0-5 seconds and did not land within the site. The full results from the surveys are provided in Appendix D.



Figure 2-7: Photograph from the sales brochure of the Sandford Road site showing the grassland with tall grass, taken in 2019. (Source: Sandford Road Sales Brochure, GVA Donal O Buachalla)

2.6.4 Breeding Birds

The bird survey undertaken on the 15th April 2021 recorded Jackdaw nesting in the chimneys of Tabor House and Milltown Park House (Linking block). Some of the nests were in the process of being made, with birds seen bringing nesting material to the chimneys. Some birds appeared settled in the chimneys. Eggs are laid from mid-April on and young would tend to fledge 7-8 weeks later (mid-end June). Jackdaws may lay a second clutch.

The survey undertaken on the 18th May 2021 recorded Jackdaw still nesting and a pair of Herring Gull were recorded nesting on the south-west chimney of Tabor House. Material was brought to the chimney by a single gull on several occasions and the partner was sitting on the nest. A pair of Wood Pigeon may be using a drainage vent as nesting site on Milltown Park House (Linking Block).

A bird's nest is located in one of the trees in the woodland to the east. However, this nest was not occupied at the time of survey.

None of these birds are Qualifying Interests of any of the Natura 2000 sites within Zone of Influence of the proposed development.

2.6.5 Invasive Non-native Species

An invasive non-native species (INNS) survey was conducted by Invasive Plant Solutions in December 2020 and in April 2021. They identified the following INNS on site:

- Three-cornered *Garlic Allium triquetrum*
- Spanish Bluebell *Hyacinthoides hispanica*

Three-cornered Garlic and Spanish Bluebell are listed on the Third Schedule of the EC (Birds and Natural Habitats) Regulations 2011 S.I. No. 477/2011. These were recorded at a number of locations within the site.

A management plan and a treatment programme of these species is in place and the 2021 treatment programme was completed on 3rd June 2021 with a follow up site assessment scheduled for September 2021 (Invasive Plant Solutions, 2021). The management plan (provided in Appendix E) includes a multi-annual herbicide control programme with a targeted application of a glyphosate based herbicide (Roundup Biactive XL in solution, at a dilution rate of 1:40, or similar).

2.6.6 Waterbodies within the Vicinity of the Proposed Site

The proposed development site lies within the Water Framework Directive (WFD) Liffey and Dublin Bay Catchment, and sub-catchment Dodder_SC_010. Water bodies near the site are seen in Figure 2-8 and sub-catchments in Figure 2-9. The closest waterbody to the site is the River Dodder, located approximately 500m to the east of the site, and which flows north-eastwards into the River Liffey just to the west of Tom Clark (Toll) Bridge.

The River Liffey lies 3.3 km to the north of the site and flows in an easterly direction eventually reaching Dublin Bay at Ringsend. The Poddle River is located 2.5km to the west of the site, and flows in a northerly direction to enter the River Liffey to the east of Father Matthew Bridge. The Grand Canal lies approx. 1.6km to the north west of the site and enters the River Liffey at Grand Canal Dock, Ringsend.

Elm Park Stream and Booterstown Stream are located 2.0km and 2.8km respectively to the east of the site.

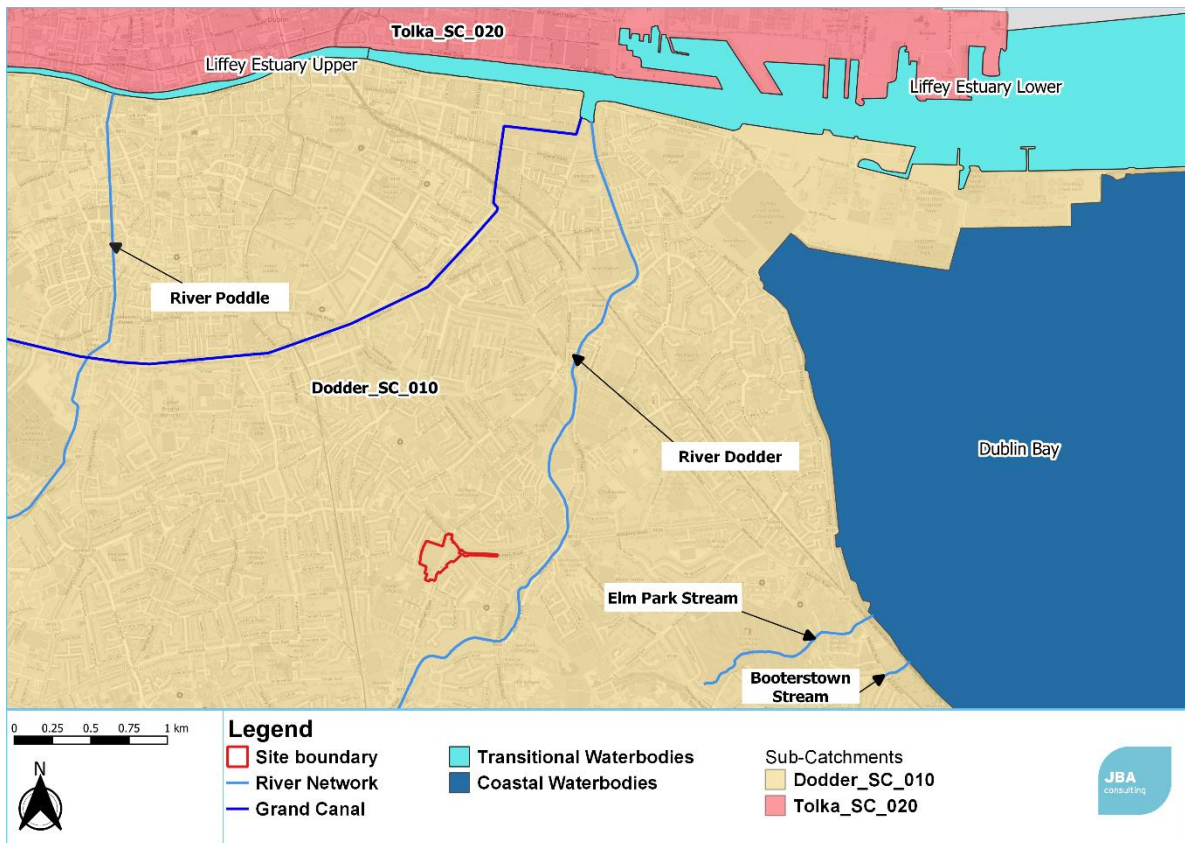


Figure 2-8: Surface waterbodies (Source: EPA, 2019)

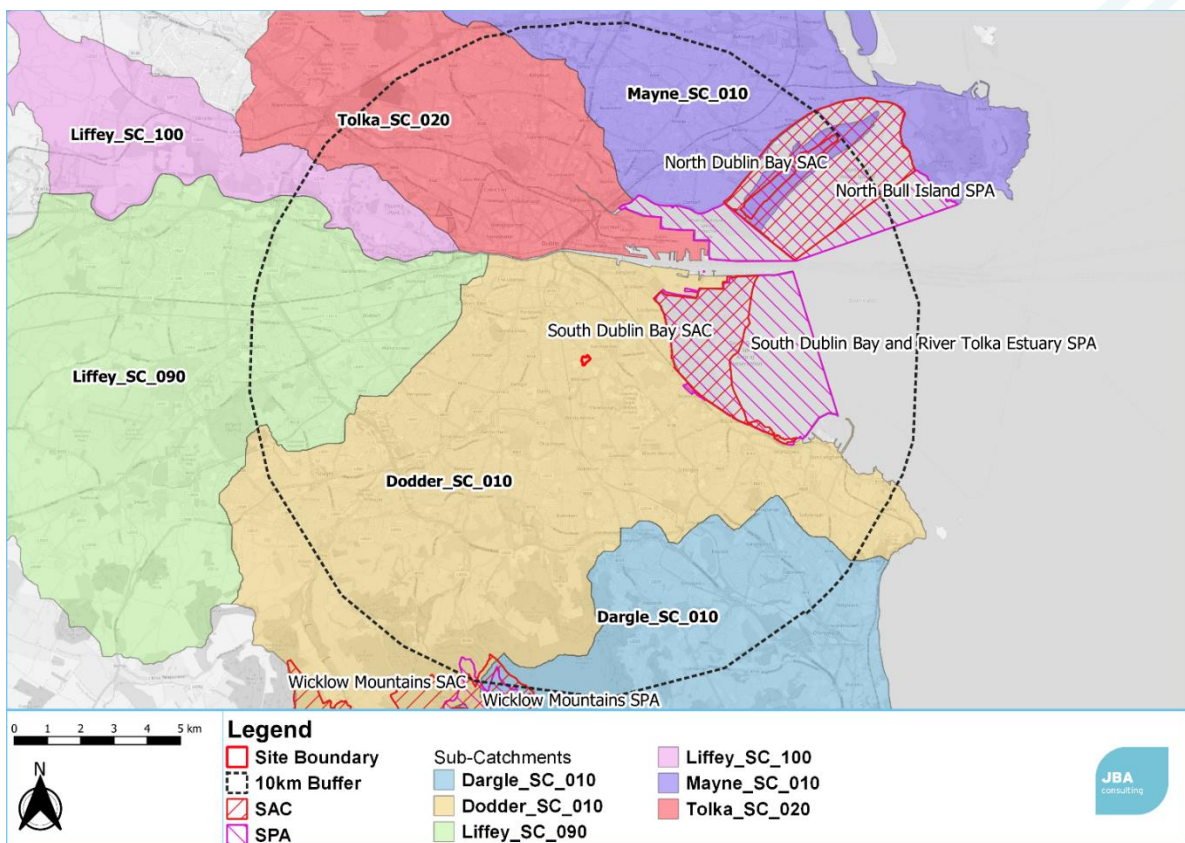


Figure 2-9: Surface water sub-catchments (Source: EPA, 2019)

3 Natura 2000 Sites

The DoEHLG (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.

Natura 2000 sites were searched both within a 15km range of the proposed development and within a 15km radius of the Ringsend WWTP discharge location, which is the ultimate discharge of foul water produced on site. The Natura 2000 sites within the range are listed in Table 3-1 and their locations are shown in Figure 3-1. Reasoning for bringing a Natura 2000 site forward or not in the assessment is given in the following section.

Table 3-1: Natura 2000 sites within 15 km of the proposed site

Natura 2000 site	Site Code	Approximate distance from site
South Dublin Bay and River Tolka Estuary SPA	004024	2.4 km
South Dublin Bay SAC	000210	2.4 km
North Bull Island SPA	004006	6.1 km
North Dublin Bay SAC	000206	6.1 km
Wicklow Mountains SAC	002122	9.1 km
Wicklow Mountains SPA	004040	9.4 km
Rockabill to Dalkey Island SAC	003000	10.2 km
Glenasmole Valley SAC	001209	10.4 km
Dalkey Islands SPA	004172	10.8 km
Howth Head SAC	000202	11.2 km
Baldoyle Bay SAC	000199	11.6 km
Baldoyle Bay SPA	004016	11.6 km
Knocksink Wood SAC	000725	11.8km
Ballyman Glen SAC	000713	13.2km
Howth Head Coast SPA	004113	13.5 km
Ireland's Eye SPA	004117	14.8km
Ireland's Eye SAC	002193	15.0km
Malahide Estuary SAC	000205	15.0km
Malahide Estuary SPA	004025	15.7km

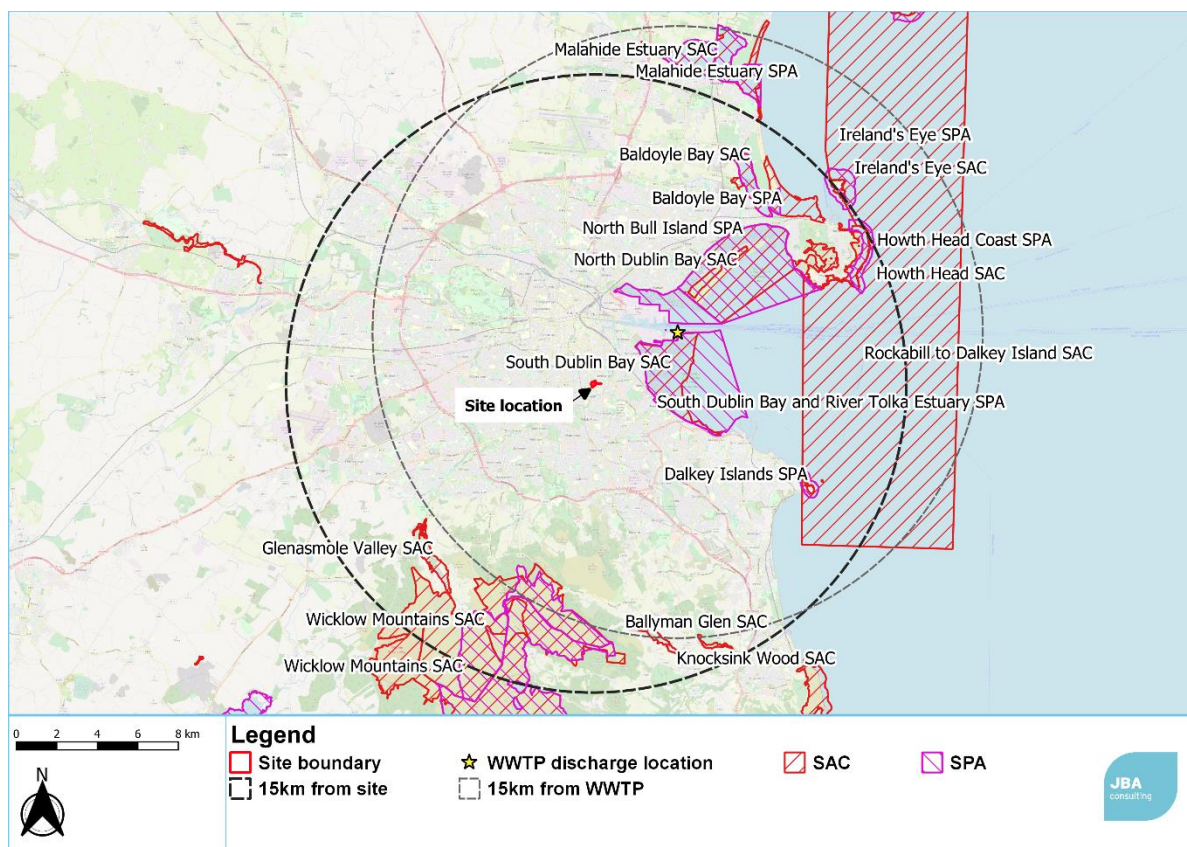


Figure 3-1: Natura 2000 sites within 15 km of the proposed site and 15km of Ringsend WWTP (Source: NPWS).

Not all these sites have the potential to be impacted due to their distance from the site, the existence of pathways to the receptors (qualifying interests), and the nature and sensitivities of these.

There is no hydrological connection to Knocksink Wood SAC, Glenasmole Valley SAC and Ballyman Glen SAC, thus there is no potential impact on the water dependent Annex 1 habitat Petrifying springs with tufa formation (Cratoneurion) [7220], a qualifying Interest of these three SACs. Likewise there is no hydrological connection with Wicklow Mountains SAC and thus no impact on the water dependent Annex 1 habitats Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) [3110] and Natural dystrophic lakes and ponds [3160] or the water dependent Annex II species Otter *Lutra lutra*. Due to the urban location and distance from Wicklow Mountains SPA it is considered that there will be no significant impact on the QIs Merlin and Peregrine. Likewise, Howth Head SAC and Ireland's Eye SAC are considered as being too great a distance for any impact and the Annex I habitats for which these SACs are designated (Vegetated sea cliffs of the Atlantic and Baltic coasts [1230], European dry heaths [4030] and Perennial vegetation of stony banks [1220]) are not surface water dependent.

While the qualifying interests of Malahide Estuary SAC, Malahide Estuary SPA, Baldoye Bay SAC, Baldoye Bay SPA and Ireland's Eye SPA are surface water dependent, they will not be impacted by the proposed project due to their location at over 15km from Ringsend WWTP. Water discharging into Dublin Bay will be diluted in the Irish Sea. The main influence of surface water on the Natura 2000 sites located north of Howth Head would be from Maine River, Sluice River and Broadmeadow River.

The following Natura 2000 sites are hydrologically connected with the site, either directly or via a link to Ringsend WWTP and could potentially be impacted by the proposed project:

- South Dublin Bay and River Tolka Estuary SPA (004024)
- South Dublin Bay SAC (000210)
- North Bull Island SPA (004006)
- North Dublin Bay SAC (000206)
- Rockabill to Dalkey Island SAC (003000)
- Dalkey Islands SPA (004172)
- Howth Head Coast SPA (004113)

The descriptions of these Natura 2000 sites are outlined in the following sections below. All other Natura 2000 sites will not be impacted due to either distance or absence of pathways between the development site and the receiving environment.

3.1 South Dublin Bay and River Tolka Estuary SPA (004024)

The South Dublin Bay and River Tolka Estuary SPA 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 important for wintering waterfowl, being an integral part of the internationally important Dublin Bay complex. An internationally important population of Light-bellied Brent Goose *Branta bernicla hrota* occurs regularly and the site is of national importance for a further nine wintering bird species. Furthermore, the site supports a nationally important colony of breeding Common Tern *Sterna hirundo* and is an internationally important passage/staging site for three tern species. It is of note that four of the species that regularly occur at this site are listed on Annex I of the E.U. Birds Directive, i.e. Bar-tailed Godwit *Limosa lapponica*, Common Tern, Arctic Tern *Sterna paradisaea* and Roseate Tern *S. dougallii*. Sandymount Strand/Tolka Estuary is also a Ramsar Convention site.

(Source: NPWS, 2015a)

3.1.1 Qualifying Interests

The conservation interests of The South Dublin Bay and River Tolka Estuary SPA are listed below. These are species and habitats listed on Annex I / II of the E.U. Habitats Directive (numbers in brackets are Natura 2000 codes) and further site-specific details are available in NPWS (2015b).

- Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]
- Oystercatcher (*Haematopus ostralegus*) [A130]
- Ringed Plover (*Charadrius hiaticula*) [A137]
- Grey Plover (*Pluvialis squatarola*) [A141]
- 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]

3.1.2 Site Vulnerability

The threats, pressures and activities that impact the site are listed in Table 3-2.

Table 3-2: Threats and pressures posed to South Dublin Bay and River Tolka Estuary SPA (NPWS, 2017)

Threat and pressure	Ranking and Location
Roads, motorways	M, o
Urbanised areas, human habitation	H, o
Industrial or commercial areas	H, o
Discharges	H, i
Leisure fishing, other than bait-fishing	M, i
Bait digging / collection	M, i
Nautical sports	M, i
Walking, horseriding and non-motorised vehicles	H, i
Reclamation of land from sea, estuary or marsh	H, o
Biocenotic evolution, succession	M, i
Ranking: L (Low), M (Medium), H (High) Location: o (outside), i (inside)	

3.2 South Dublin Bay SAC (000210)

This intertidal site extends from the South Wall at Dublin Port to the West Pier at Dun Laoghaire, a distance of c. 5 km. At their widest, the intertidal flats extend for almost 3 km. The seaward boundary is marked by the low tide mark, while the landward boundary is now almost entirely artificially embanked. 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 proximity of the site to Dublin City results in it being a very popular recreational area. It is also important for educational and research purposes. The 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 fauna exists. The bay has the largest stand of *Zostera* on the east coast and supports part of the important wintering waterfowl populations of Dublin Bay. It regularly has an internationally important population of Light-bellied Brent Goose, plus nationally important numbers of at least a further 6 species, including Bar-tailed Godwit. The bay is a regular autumn roosting ground for significant numbers of *Sterna* terns, including Roseate Tern. (NPWS, 2017d)

3.2.1 Qualifying Interests

The conservation interests of The South Dublin Bay SAC are listed below. These are species and habitats listed on Annex I / II of the E.U. Habitats Directive (numbers in brackets are Natura 2000 codes) and further site-specific details are available in (NPWS, 2013b).

- Tidal Mudflats and Sandflats [1140]
- Annual vegetation of drift lines [1210]
- *Salicornia* and other annuals colonising mud and sand [1310]

- Embryonic shifting dunes [2110]

3.2.2 Site Vulnerability

The threats, pressures and activities that impact the site are listed in Table 3-3.

Table 3-3: Threats and pressures posed to South Dublin Bay SAC (NPWS, 2017d)

Threat and pressure	Ranking and Location
Urbanised areas, human habitation	H o
Non-motorized nautical sports	M i
Reclamation of land from sea, estuary or marsh	H o
Industrial or commercial areas	H o
Paths, tracks, cycling tracks	M i
Bait digging / collection	M i
Marine water pollution	M b
Nautical sports	M i
Walking, horseriding and non-motorised vehicles	H i
roads, motorways	L o
Discharges	M b
Accumulation of organic material	H i
Ranking: L (Low), M (Medium), H (High) Location: o (outside), i (inside), b (both)	

3.3 North Bull Island SPA (004006)

The site covers all of the inner part of north Dublin Bay. 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. It is almost 5 km long and 1 km wide and runs parallel to the coast between Clontarf and Sutton. Part of the interior of the island has been converted to golf courses. The SPA is of international importance for waterfowl on the basis that it regularly supports in excess of 20,000 waterfowl. The site supports internationally important populations of three species, Light-bellied Brent Goose, Black-tailed Godwit *Limosa limosa* and Bar-tailed Godwit. The site is one of the most important in the country for Light-bellied Brent Goose. A further of 14 species have populations of national importance.

North Bull Island is a Ramsar Convention site, and part of the North Bull Island SPA is a Statutory Nature Reserve and a Wildfowl Sanctuary.

(Source: NPWS, 2014a)

3.3.1 Qualifying Interests

The conservation interests of North Bull Island SPA are listed below. These are species and habitats listed on Annex I / II of the E.U. Habitats Directive (numbers in brackets are Natura 2000 codes) and further site-specific details are available in NPWS (2015c).

- 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]
- 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]

3.3.2 Site Vulnerability

The threats, pressures and activities that impact the site are listed in Table 3-4.

Table 3-4: Threats and pressures posed to North Bull Island SPA (NPWS, 2017b)

Threat and pressure	Ranking and Location
Roads, motorways	M, o
Bridge, viaduct	H, i
Shipping lanes, includes canals	M, o
Continuous urbanisation	M, o
Other patterns of habitation	L, i
Industrial or commercial areas	M, o
Discharges	M, o, i
Bait digging / collection	M, i
Nautical sports	M, i
Walking, horse-riding and non-motorised vehicles	H, i
Golf course	M, i
Ranking: L (Low), M (Medium), H (High) Location: o (outside), i (inside)	

3.4 North Dublin Bay SAC (000206)

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. It is almost 5km long and 1km wide and runs parallel to the coast between Clontarf and Sutton. The sediment which forms the island is predominantly glacial in origin and siliceous in nature. Between

the island and the mainland there occurs two sheltered intertidal areas. The seaward side of the island has a fine sandy beach. A substantial area of shallow marine water is included in the site.

Site possesses an excellent diversity of coastal habitats. 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.

The site has five Red Data Book vascular plant species and four Red Data Book bryophyte species and is one of the most important sites for wintering waterfowl in Ireland. It is also an important site for some invertebrates of national importance.

(Source: NPWS, 2017c)

3.4.1 Qualifying Interests

The conservation interests of North Dublin Bay SAC are listed below. These are species and habitats listed on Annex I / II of the E.U. Habitats Directive (* = priority habitat; numbers in brackets are Natura 2000 codes) and further site-specific details are available in NPWS (2013).

- 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]
- *Petalophyllum ralfsii* (Petalwort) [1395]

3.4.2 Site Vulnerability

The threats, pressures and activities that impact the site are listed in Table 3-5.

Table 3-5: Threats and pressures posed to North Dublin Bay SAC (NPWS, 2017c)

Threat and pressure	Ranking and Location
Grazing	M, i
Urbanised areas, human habitation	H, o
Industrial or commercial areas	H, o
Discharges	H, i
Leisure fishing, other than bait-fishing	L, i
Bait digging / collection	M, i
Nautical sports	M, i
Walking, horse riding and non-motorised vehicles	H, i

Threat and pressure	Ranking and Location
Golf course	M, o
Intensive maintenance of public parcs /cleaning of beaches	L, i
Other point source pollution to surface water	M, i
Diffuse pollution to surface waters due to other sources not listed	M, i
Invasive non-native species, plant & animal species	M, i
Burning down, actively burning down existing vegetation	M, i
Antagonism with domestic animals	H, i
Ranking: L (Low), M (Medium), H (High) Location: o (outside), i (inside)	

3.5 Rockabill to Dalkey Island SAC (003000)

The selected site forms a strip of dynamic inshore and coastal waters in the western Irish Sea, extending approximately 40 km in length and encompassing a range of comparatively shallow marine habitats, including diverse seabed structures, reefs, islets and islands. The area represents a key habitat for the Annex II species - Harbour Porpoise *Phocoena phocoena*, within the Irish Sea. The Reefs are subject to strong tidal currents with an abundant supply of suspended matter resulting in good representation of filter feeding fauna such as sponges, anemones and echinoderms (NPWS, 2017b).

3.5.1 Qualifying Interests

The conservation interests of Rockabill to Dalkey Island SPA are listed below. These are species and habitats listed on Annex I / II of the E.U. Habitats Directive (* = priority habitat; numbers in brackets are Natura 2000 codes) and further site-specific details are available in NPWS (2013a).

- - Reefs [1170]
- - Harbour Porpoise (*Phocoena phocoena*) [1351]

3.5.2 Site Vulnerability

The threats, pressures and activities that impact the site are listed in Table 3-6.

Table 3-6: Threats and pressures posed to Rockabill to Dalkey Island SAC (NPWS, 2017b)

Threat and pressure	Ranking and Location
Removal of sediments (mud)	L, o
Shipping lanes	H, b
Discharges	H, o
Utility and service lines	M, o
Noise nuisance, noise pollution	H, b
Professional active fishing	H, b
Siltation rate changes, dumping, depositing of dredged deposits	L, o
Diffuse pollution to surface waters due to other sources not listed	M, i

3.6 Dalkey Islands SPA (004172)

The site comprises Dalkey Island, Lamb Island, Maiden Rock, the intervening rocks and reefs between Dalkey Island, Lamb Island and Clare Rock, and the sea area around Maiden Rock to a distance of 100 m. The site is of importance for both breeding and staging *Sterna* terns. There is a well-established colony of Common Tern *Sterna hirundo* and smaller numbers of Arctic Tern *Sterna paradisaea*. Roseate Tern *Sterna dougallii* bred in 2003 and 2004, one of only three known sites in the country - this came about after several years of conservation management aimed at attracting the species. The site along with other parts of south Dublin Bay is used by the three *Sterna* tern species as a major post-breeding/pre-migration autumn roost area.

(Source: NPWS, 2018)

3.6.1 Qualifying Interests

The conservation interests of Dalkey Islands SPA are listed below. These are species and habitats listed on Annex I / II of the E.U. Habitats Directive (* = priority habitat; numbers in brackets are Natura 2000 codes) and further site-specific details are available in (NPWS, 2021).

- Roseate Tern (*Sterna dougallii*) [A192]
- Common Tern (*Sterna hirundo*) [A193]
- Arctic Tern (*Sterna paradisaea*) [A194]

3.6.2 Site Vulnerability

The threats, pressures and activities that impact the site are listed in Table 3-7.

Table 3-7: Threats and pressures posed to Dalkey Islands SPA (NPWS, 2018)

Threat and pressure	Ranking and Location
Urbanised areas, human habitation	H, o
Grazing	M, i
Nautical sports	M, i
Walking, horse riding and non-motorised vehicles	M, i

3.7 Howth Head Coast SPA (004113)

Howth Head has important colonies of breeding seabirds, with nationally important populations of Kittiwake *Rissa tridactyla*, Razorbill *Alca torda* and Black Guillemot *Cepphus grylle*, and a regionally important population of Common Guillemot *Uria aalge*. The colony has been monitored at intervals since the Operation Seafarer project in 1969/70 and most populations have increased since then (NPWS, 2020).

3.7.1 Qualifying Interests

The conservation interests of Howth Head Coast SPA are listed below. These are species and habitats listed on Annex I / II of the E.U. Habitats Directive (* = priority habitat; numbers in brackets are Natura 2000 codes) and further site-specific details are available in (NPWS, 2021b).

- Kittiwake (*Rissa tridactyla*) [A188]

3.7.2 Site Vulnerability

The threats, pressures and activities that impact the site are listed in Table 3-8.

Table 3-8: Threats and pressures posed Howth Head Coast SPA (NPWS, 2020)

Threat and pressure	Ranking and Location
Fire and fire suppression	L, i
Walking, horse riding and non-motorised vehicles	H, i

4 Other Relevant Plans and Projects

4.1 Cumulative Effects

It is a requirement of Section 177U of the Planning Acts that when considering whether a plan or project will have a significant effect on a European site the assessment must take into account in-combination effects with other plans and projects. The assessment should consider plans and projects that are completed, approved but uncompleted, or proposed (but not yet approved).³ If there are identified effects arising from the plan or project even if they are perceived as minor and not likely to have a significant effect on the integrity of a European site alone, then these effects must be considered 'in-combination' with the effects arising from other plans and projects.

4.1.1 The Dublin City Development Plan (2016-2022)

Dublin City Development Plan 2016-2022 sets out aims policies and objectives for the proper planning and sustainable development in the city. The Plan seeks to develop and improve, in a sustainable manner, the social, economic, cultural and environmental assets of the city (Dublin City Council, 2016).

All Natura 2000 sites within the considered zone of influence of the Plan, must be assessed for potential to be impacted by the Plan and for there to potentially be in-combination impacts as a result of the Plan. The City Development Plan is designed to be taken in conjunction with other similar plans and programmes, to have the overall effect of strengthening the management of and enhancing the protection and conservation of Natura 2000 sites. Specific statements, policies and objectives are formulated within the Plan to allow the Council to take appropriate steps to avoid the deterioration of Natura 2000 sites.

4.1.2 Greater Dublin Strategic Drainage Strategy

The Greater Dublin Strategic Drainage Strategy (GSDSDS) 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, 2018b). 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 project was subject to a successful legal review. The additional capacity that would be provided by these works in terms of foul drainage has not been taken into account for the purposes of the AA screening assessment of the proposed development.

The Ringsend WWTP upgrade is in progress and carried out in stages, with an increased capacity of 400,000 PE by first half of 2021 and the ultimate capacity of 2.4 million PE to be in operation by 2025 (Irish Water, 2021). As each of the phases is completed, additional capacity is created in the Ringsend WWTP.

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, 2018b).

4.1.3 River Basin Management Plan for Ireland 2018-2021

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

³ Assessment of Plans and Projects Significantly Affecting European sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (European Commission Environment Directorate-General, 2001)

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.

4.1.4 Other Projects

Other permitted and proposed projects (extensions and retention not included) within the vicinity of the site which have been constructed, are in the course of construction or have not yet commenced have been considered and were searched for at Myplan.ie. These are as follows:

Planning App. Ref. 2124/20

Location Muckross Park College, Marlborough Road, Dublin 4

Description: The development will consist of construction of a single storey extension, of approx. total 120 sqm, to the rear (South) of the existing school to provide additional canteen facilities together with ancillary areas and associated site works

PERMISSION: GRANTED 20/3/2020

Planning App. Reference WEB1065/19

Location Gonzaga College

Description: For development at this site, Gonzaga College, Sandford Road, Dublin 6, D06 KF95. The construction will consist of the installation of a new 3g artificial turf pitch capable of accommodating full size rugby and football over the site on an existing natural grass pitch within the playing fields at Gonzaga College. The development will comprise of a new 3g pitch, ball stop fencing system up to 5m in height, 6/8 columns floodlighting system up to 18m in height, spectator hardstanding with 1.2m fencing and new 3m wide hardstanding access from existing car park accommodating maintenance vehicles.

PERMISSION: GRANTED 9/10/2019

Planning App. Ref. 3159/17

Location Lands at the former Paper Mills site, bounded by the River Dodder to the East, Clonskeagh Road to the West, Clonskeagh Bridge to the South West, Dublin 6

Description: Planning permission for the following revisions to the previously approved development (Reg. Ref. 2308/16). The revisions to the development consisting of an increase in apartment units from 96 to 116, the following changes are proposed: Block 1 - elevation and plan revisions to increase the building height to the southern end, adjacent to block 2 from 3 storeys with set back penthouse to 4 storeys with set back penthouse, incorporating an increase in apartment units from 24 to 27 (01 No. one bed unit, 02 No. two bed units) and alterations to the penthouse to include the omission of 01 No. two bed unit and internal alterations to change from a two bedroom to a three bedroom unit, Block

2 - elevation and plan revisions to increase the building height from 3 storeys with set back penthouse to 4 storeys with set back penthouse, incorporating an increase in apartment units from 51 to 65 (04 No. one bed units and 10 No. two bed units), Block 4 - elevation and plan revisions to increase the building height from 3 storeys with set back penthouse to 4 storeys with set back penthouse, incorporating an increase in apartment units from 11 to 14 (03 No. two bed units), internal alterations to the basement carpark layout are also proposed to provide 30 No. additional car park spaces & additional bicycle parking spaces for use by the additional units.

PERMISSION: GRANTED 27/9/2017, Final Grant by ABP 04/07/2018

Planning App. Ref. 2115/19

Location Alexandra College, Richmond Avenue South, Milltown, Dublin 6, D06 KX50

Description: Permission for development and for retention permission at this site of 6.4317 ha located at Alexandra College, Richmond Avenue South, Milltown, Dublin 6, D06 KX50. The proposed development will consist of the: construction of a 97 No. bedroom part-three, part-four storey dormitory building (4,701 sq m gross floor area) (providing a total of 203 No. bed spaces) including study halls, rehearsal rooms, recreational rooms, administration areas, storage, a plant enclosure at roof level; and ancillary floor areas over all floor levels (ancillary space includes areas such as circulation cores (lifts and stairs), toilets, plant areas throughout the building, switch rooms etc.). The development will also consist of the construction of a new internal campus road and relocation of car and coach parking; improvement works to the campus entrance on Milltown road to include a set-back gateway, associated canopied pedestrian entrance and an additional pedestrian entrance; provision of a drop-off/collection area including ancillary car parking spaces; provision of pedestrianised areas including the use of part of the existing internal roadway (to be decommissioned); provision of bicycle parking spaces; boundary treatment works; signage; lighting; all hard and soft landscaping; and all other associated site excavation; infrastructural and site development works above and below ground; including changes in level and associated retaining features; boundary treatments and associated site servicing (foul and surface water drainage and water supply). The development will also consist of the demolition of a number of structures required to facilitate the construction of the proposed internal access road and dormitory including: the existing Caretaker's storage building (110 sq m gross floor area); the existing Caretaker's house (The Bungalow, D06 CK09 (94 sq m gross floor area); and partial demolition (44 sq m) of the Principal's residence (D06 V9T7). The development will also consist of: the relocation of the permitted pre-school log cabin within the campus and an extension of its temporary permission (granted under Reg. Ref. 3124/15) for an additional period of 5 No. years from October 2020 to 2025. The development for which retention permission is sought comprises temporary changing facilities associated with the sports ground (3 No. containers measuring 29.44 sq.m each). The development will also consist of: the relocation of those changing facilities within the campus and temporary permission for same for a period of 5 No. years. No works are proposed to the Richmond South entrances. (For clarity, the proposed development does not comprise Strategic Housing Development as Alexandra College is not a Third-Level Education Institution).

PERMISSION: GRANTED 20/3/2019

Planning App. Ref. 3144/18

Location Site within the overall RDS Lands, Ballsbridge, Dublin 4

Description: The proposal will comprise: A) Demolition of the existing Anglesea Stand and Anglesea Terrace structure (approx.7,716sq.m.), 'lean-to' open fronted shed bounding Simmons Court Road (approx. 145sq.m.) and removal of modern terrace (approx. 44sq.m.) area surrounding the clock tower (a protected structure); B) Provision of a new grandstand (7,332.2sq.m.) over 3 levels, 21.3m [26.8m OD] in height (with associated floodlighting and acoustic public address within roof of new stand) with a connection (via a glazed bridge link at level 01) to the pocket building of (1,204.3sq.m. GFA) comprising a 2 level (storey) 9.91m [15.41m OD] in height building with plant (89sq.m.) at roof level (within a louvered cover - overall height 10.66m 16.12m OD)) to the east. The proposal will include the following flexible ancillary accommodation net sq.m. areas (for new grandstand and pocket building): security/control rooms (c.13.3m); media, players and officials facilities (c. 356.7sq.m. [217.8sq.m. in horseshow model]); corridor/circulation areas (c.74.7sq.m. [30.7sq.m. in horseshow model]); bar/server areas (c.994.2sq.m. [1,185.8sq.m. in horseshow model]); WC facilities [including disabled & staff facilities] (c.719.7sq.m.); stores/coldrooms (c.217.7sq.m.); season ticket/VIP hospitality areas (c.56.1sq.m.); ancillary plant/electric areas (c.109.5sq.m.); the internal arrangement of the pocket building (and ancillary areas) will be flexible to accommodate rugby and horse show requirements/events; C) A single storey substation (c.18.4sq.m.) 3.6m. in height [9.92m OD] located to the east of existing South Stand; and a single storey double height club shop (c.49.1sq.m.) 6.7m. in height [12.2m OD] located adjacent to existing RDS office building; D) Terrace areas level 00 (396sq.m.) and level 01 (92sq.m.) within pocket building on southern façade as well as views from all levels towards parade rings from grandstand and pocket building. E) Provision of signage zones (overall 135.5sq.m.) to north (16sq.m.) and south (115sq.m.) elevations of proposed Anglesea Stand and north (2sq.m.) and east (2.5sq.m.) elevations of proposed club shop; F) Revised landscaping to the north of Anglesea Stand and external areas; G) Revisions to surface water/drainage/attenuation/storage arrangements including all associated site development and landscaping works; and H) Access arrangements and parking provision as per the established layout and operation of the RDS complex.

PERMISSION: GRANTED 31/8/2018

Planning App. Ref. 2189/20

Location Lands at Sandford Lodge (a Protected Structure), Sandford Close, Sandford Road, Dublin 6

Description: Permission for development on lands at Sandford Lodge (a Protected Structure), Sandford Close, Sandford Road, Dublin 6. The development will consist of the demolition (total c. 392 sqm GFA) of Block 5 (1 storey) and Block 6 (1 storey) (total 4 no. residential units) and the construction of a new residential scheme of 36 no. residential units in the form of 2 no. contemporary three storey terraces, comprising: 12 no. 1 bed A 1 storey (GIA c. 54.65 sqm) units, 12 no. 1 bed B 1 storey (GIA c. 57.76 sqm) units; and 12 no. 2 bed A 2 storey (GIA c. 110.29 sq.m) units. Each new residential unit has associated private open space in the form of a garden courtyard or terraces. Landscaping works to existing and proposed external amenity spaces (total c. 3,851 sq m) include an upgraded fire tender route with a wildflower meadow edge, a sunken garden area around the Protected Structure, a central formal garden and an outdoor seating area. The development shall be accessed via the existing vehicular access point from Sandford Close and will provide for the reconfiguration of the existing basement car park and surface level parking areas to comprise a total of 120 car parking spaces at basement level; 36 spaces at grade; 133 residential cycle parking spaces and 18 visitor cycle parking spaces. The proposed modifications reduce the total number of vehicle parking spaces on the overall site from 169 to 156 and increase the cycle parking spaces from 85 to 151. An ESB Meter room (c. 6

sqm) and bin store (c. 21.6 sqm) are proposed at surface level. The associated site and infrastructure works include provision for water services, foul and surface water drainage and connections; attenuation proposals; permeable paving; all landscaping works; boundary treatment; electrical services and associated ancillary works. All of the above within the overall Sandford Lodge residential development. The proposal and associated ancillary elements are located within the curtilage of a Protected Structure.

PERMISSION: Granted 27/03/2021, Appealed to ABP (ref. ABP-307375-20)

Planning App. Ref. 307267

Location Nos. 1, 3, 5, 7, 9, 11 Eglinton Road, Donnybrook, Dublin 4

Description: Demolition of buildings, construction of 148 no. apartments and associated site works.

PERMISSION: Granted 31/08/2020 by ABP

Planning App. Ref. 3301/20 (ABP reg. ref. 309378-21)

Location 22-24, Donnybrook Road (former Kiely's Public House), Donnybrook, Dublin 4

Description: The application site is bound by Donnybrook Road to the south west, Mulberry Lane to the North West and Pembroke Cottages to the east.

The proposed development will consist of the demolition of all existing buildings on site (comprising the former Kiely's public house and outbuildings) and the construction of a mixed-use building of part 3 to part 7 storeys in height, above basement level. The development comprises a café/restaurant unit (GFA of 92sqm) at ground floor level and Build to Rent Shared Accommodation comprising 100 no. single occupancy shared living units (ranging from 18.2sqm to 27sqm), associated reception/concierge area and communal amenities and facilities, from basement to sixth floor level. The shared accommodation scheme includes resident support facilities including laundry, concierge/reception, management offices and bin storage area at basement and ground floor level, a multifunctional communal area at ground and first floor level and communal amenity space (kitchen/living/dining area) at each level to serve the shared living units. External open space is located within the courtyard at ground floor level and the roof terrace at fifth floor level. The developments include plant rooms, storeroom facilities and 152 no. bicycle parking spaces at basement level and a screened plant area at roof level. The development proposes relocating the existing ESB substation and switch room within the site from the Pembroke Cottages boundary to Mulberry Lane. The proposal includes foul and surface water drainage, signage, landscaping, and all associated site development and infrastructural works.

PERMISSION: Granted 13/01/2021 by DCC, currently under appeal to ABP

Planning App. Ref. 3907/18

Location Alexandra College, Richmond Avenue South, Milltown, Dublin 6

Description: Works at Alexandra College including construction on a new internal campus road, relocation of existing car and coach parking, provision of additional bicycle parking

spaces and the provision of improvement works to the campus entrance on Milltown Road to include a set-back gateway.

PERMISSION: Granted 05/03/2019

Planning App. Ref. 3513/20 (ABP reg. ref. ABP-309720-21)

Location 25-27, Donnybrook Road, 1-3 The Crescent, Donnybrook, Dublin 4

Description: Planning permission is sought for development comprising: (i) The demolition of the existing single storey buildings at 25-27 Donnybrook Road and Nos. 1-3 The Crescent, Donnybrook, Dublin 4; (ii) The construction of an 8-storey mixed-use development consisting of the following uses: (a) 49 no. build-to-rent apartments, comprising of 44 no. one-bed apartments and 5 no. two-bed apartments (access from 1-3 The Crescent) and served by Resident’s Communal amenity area comprised of external 256sqm (including roof terraces at 4th and 5th floors); Residents internal amenity area comprised of 142sqm gymnasium at Ground Floor; (b) 231sqm retail space at Ground Floor (access from 25-27 Donnybrook Road). The development features 84 no. bicycle spaces; a refuse storage, a plant room and an ESB substation (all located at Ground Floor); landscaping and all associated site development works.

PERMISSION: Granted 26/05/2021 (Appeals Withdrawn)

Planning App. Ref. No. 1: 2582/16, No. 2: 3312/20

Location 91, Belmont Avenue, Donnybrook, Dublin 4

Description: Demolition of existing sheds (c. 25 sq m) and construction of 4 No. detached houses at No. 91 Belmont Avenue. Revised ground floor rear extension to include a single storey rear return for a utility room to No. 91 Belmont Avenue

PERMISSION: Granted 16/09/2016 and 09/12/2020

Planning App. Ref. 2244/21 (ABP reg. ref ABP-310204-21)

Location Lands (c 0.11 ha) at the junction of Donnybrook Road and Brookvale Road, Donnybrook, Dublin 4, D04 K3T8

Description: Demolition of structures on site and construction of a 12 No. storey development including 84 apartments with retail and café/restaurant (570 sq m) at the junction of Donnybrook Road and Brookvale Road.

PERMISSION: Refused 14/04/2021 by DCC, appealed to ABP (decision due 13/09/2021)

Planning App. Ref. 3939/19 (ABP reg. ref. ABP-306755-20)

Location The Rectory, Purser Gardens, Rathmines, Dublin 6, D06 E0Y5

Description: The demolition of the existing Rectory and the construction of 9 No. dwellings at The Rectory, Purser Gardens, Rathmines.

PERMISSION: Granted 19/02/2020 by DCC, granted 09/09/2020 by ABP

Planning App. Ref. 4011/18 (ABP reg. ref. ABP-304085-19)

Location 1 Annesley Park, Dublin 6

Description: Permission is sought by Seabren Developments Ltd. for the development of a site of c.0.50 ha comprising a commercial premises former Deignan Bros Limited (Eircode D06 H026) and curtilage to the rear of Annesley Park bounded by existing pedestrian lanes to the rear of Killeen Road, Ormond Road and Annesley Park, with access from Dunville Close, and alterations to boundary of No. 1 Annesley Park, (Eircode D06 XW97) a Protected Structure, Ranelagh, Dublin 6. The development will consist of the demolition of all buildings on the former commercial site to the rear and the construction of a new residential development with access from the existing vehicular access road along Dunville Close, The proposed development includes widening the access road along Dunville Close, including demolition of boundary wall and shed to the rear and side of No. 1 Annesley Park (Eircode D06 XW97), Dublin 6, a Protected Structure. The development will comprise 20 no. residential houses consisting of 11 no. 3 storey 4 bed houses and 9 number 2.5 storey 3 bed houses ranging in size from circa 187 sqm to 145 sqm each with rear gardens and terraces with (opaque glazed screening). Each house will have a parking space to the front together with 2 number visitor spaces for the development and bicycle parking, bin storages areas. The proposal also includes all associated site development works, roads and paths, landscaping boundary treatment, including works and repairs of existing boundary walls, rear pedestrian access to each dwelling, public lighting and piped service provision.

PERMISSION: Granted 04/03/2019 by DCC, granted 04/11/2019 by ABP

Planning App. Ref. 2812/20

Location 23, Bushfield Terrace, Donnybrook, Dublin 4, D04 V2RO

Description: Demolition of existing single storey structures to the side and rear. - Construction of single storey rear extension to the side and rear of the existing dwelling at No. 23 Bushfield Terrace, Donnybrook

PERMISSION: Granted 09/09/2020

Planning App. Ref. 2412/19 (ABP reg. ref. ABP-305475-19)

Location The former Donnybrook Laundry at The Crescent, Donnybrook, Dublin 4, D04 R856 and No. 17 The Crescent, Donnybrook Road, Dublin 4 D04 A6Y7

Description: Permission for development on a site of approximately 0.26 hectares at the site of the former Donnybrook Laundry at the Crescent, Donnybrook, Dublin 4, D04 R856 and No. 17 The Crescent, Donnybrook Road, Dublin 4, D04 A6Y7. (A Protected Structure is located within the site: a chimney stack (RPS Ref. 8713) under the Dublin City Development Plan 2016-2022). The site is principally bounded by: the residential development 'Donnybrook Manor' and other terrace dwellings to the north; 'The Crescent' laneway (formerly known as Church Lane) a graveyard and Donnybrook Garda Station to the east; and by the lands associated with St. Mary's Convent to the south and west. The development will consist of the demolition of structures on site (1.166 sq.m gross floor area) other than: the chimney stack (Protected Structure RPS 8713; a two-storey building located at the south-eastern corner of the site identified as Building 03 on the Architects' drawings) (390 sq. m gross floor area); and No. 17 The Crescent, Donnybrook Road, Dublin 4, D04 A6Y7 (an existing two-storey terraced dwelling) (115 sq.m gross floor area). The development will also consist of the construction of a residential scheme arranged in 3 No. new three-four storey blocks with habitable attic accommodation (identified at Buildings 01, 02 and 04 on the Architects' drawings (3,966 sq.m gross floor area) over basement (1,910 sq. m) and within the refurbished and adapted existing Building 03 (659 sq.m gross floor area) (with interventions to Building 03 including: provision of openings within the eastern, southern and western elevations to provide new windows and access points; and provision of a new roof) providing 44 no. apartments (comprising 11 no. one-bedroom apartments, 27 no. two-bedroom apartments, 5 no. two-bedroom duplex apartments and 1 no. three-bedroom duplex apartment). The proposed development will also consist of the provision of: ancillary floor areas over all floor levels (ancillary space includes areas such as circulation cores (lifts and stairs) and plant areas throughout the building, etc.); a central atrium (including circulation areas at all floor levels) with a glazed roof; a roof garden on Building 02 (153 sq.m); private (including terraces and balconies), communal and public open space areas; residents' storage facilities; waste storage facilities; vehicular and pedestrian access / egress and associated circulation routes (including a ramp to basement level; 46 no. car parking spaces (including 3 no. accessible spaces) at basement level; 80 no. bicycle spaces; 2 no. motorbike spaces; electric vehicle changing points; an ESB substation and switchroom; boundary treatments (including sections of new boundary wall); the widening and improvement of the existing vehicular entrance to the property from The Crescent; revised car parking arrangement and landscape design to the front of No. 17 The Crescent; provision of artwork; lighting; all hard and soft landscaping; the provision of Sustainable Urban Drainage systems (SUDs); and all other associated site excavation, infrastructural and site development works above and below ground, including changes in level and associated retaining features, boundary treatment and associated site servicing (foul and surface water drainage and water supply).

PERMISSION: Granted 22/08/2019 by DCC, granted 29/01/2020 by ABP

Planning App. Ref. 2843/21

Location Royal Hospital Donnybrook, Morehampton Road, Donnybrook, Dublin 4, D04 HX40

Description: Construction of Donnybrook Primary Care Centre at the Royal Hospital Donnybrook comprising 4 No. storeys over basement level accommodating HSE medical diagnostics, consulting and treatment rooms plus ancillary offices.

PERMISSION: Request for additional information 16/07/2021 by DCC

Planning App. Ref. 2731/21 (alterations to DCC Reg. Ref. 3890/14 extended by DCC Reg Ref. 3890/14/X1-4 No. bedroom dwelling)

Location 1, Eglinton Square, Donnybrook, Dublin 4, D04 E2W2

Description: Development comprising provision of a pedestrian entrance gate off Eglinton Road; (ii) provision of a temporary construction access off Eglinton Road; and (iii) all ancillary works necessary at Eglinton Square, Donnybrook.

PERMISSION: Split decision (grant and refuse) 30/06/2021

Planning App. Ref. 2477/21

Location 47 Ranelagh Road, Ranelagh, Dublin 6

Description: The demolition of a single storey rear return and provision of 2 No. residential units; and the provision of a new part 2 to part 4 No. storey structure to the rear of the site accommodating 10 No. residential units at No. 47 Ranelagh Road.

PERMISSION: Request for additional information 20/05/2021 by DCC

Planning App. Ref. 2762/21 (ABP reg. ref. ABP-310988-21)

Location 47-48 Chelmsford Road, Ranelagh, Dublin 6.

Description: Permission for alterations to the previously granted development (DCC Planning reference: 2246/20).

The proposed alterations will consist of the construction of an additional storey set back from the front and side elevations, consisting of an additional 2-bedroom apartment at third floor level, with private balconies. There will be an increase in units from 6 to 7 apartments. Minor internal & external alterations are also proposed which includes changes to comply with Fire Safety and Disability Access requirements (bike and bin stores). The development will include all associated drainage, ancillary site works, bin store and services.

PERMISSION: Refused 05/07/2021 by DCC, appealed to ABP

Planning App. Ref. 2704/21

Location St. Mary's Home, Pembroke Park and 28A Clyde Lane, Dublin 4

Description: Construction of 64 No. Build-to-Rent apartment units comprising 19 no. studio apartments, 41 no. one bedroom apartments and 4 no. two bedroom apartments at St. Mary's Home, Pembroke Park and 28A Clyde Lane

PERMISSION: Request for additional information 24/06/2021 by DCC

Planning App. Ref. ABP reg. ref. ABP-310138-21 (SHD www.msmshd.ie)

Location Mount Saint Mary's and Saint Joseph's, Dundrum Road, Dundrum, Dublin 14

Description: Demolition of existing buildings on site and part of the granite wall along Dundrum Road, excluding Small Hall and the construction of 231 No. apartments and a childcare facility at Mount Saint Mary's and Saint Joseph's, Dundrum Road, Dundrum, Dublin 14.

PERMISSION: Granted 25/08/2021 by ABP

As a note; in addition to these projects, planning permission (Ref: 3913/18) for retention of a temporary school building within the site was sought and granted in 2018. This building has since been removed.

4.1.5 Summary

The plans and projects listed above are considered in combination with the Proposed Development in the Screening Assessment section below.

5 Screening Assessment

5.1 Introduction

This screening exercise will focus on assessing the likely significant effects of the project on the Natura 2000 sites identified in Section 3 above.

This section identifies the potential impacts which may arise as result of the Proposed Development. It will identify how these impacts could potentially impact on the Natura sites. The significance of potential impacts is also assessed, with any potential in-combination effects also identified.

5.2 Assessment Criteria

5.2.1 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

The proposed development at Milltown Park, Sandford, is not anticipated to impact on any of the qualifying interests of the listed Natura 2000 sites in Section 3. There is surface water connectivity between the proposed site and South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA, North Dublin Bay SAC, South Dublin Bay SAC, Rockabill to Dalkey Island SAC, Dalkey Islands SPA and Howth Head Coast SAP via foul water and surface water, however, the development is not anticipated to have a significant impact on the Natura 2000 sites. The rationale for excluding impacts via the main pathways is given in more detail in the following section.

5.2.1.1 Surface water

The only connection of the proposed site to the Natura 2000 sites listed above is via surface water network discharging to River Dodder and foul water sewers which are directed to Ringsend WWTP.

The outfall is at Poolbeg, which is within the waterbody Liffey Estuary Lower [IE_EA_090_0300]. This is a transitional water body with an Ecological Status of Moderate and a WFD Risk of 'At risk' (Transitional water body data 2010-15, EPA, 2019). The outer estuary/Dublin Bay (coastal water body IE_EA_090_0000) has a status of Good with a WFD Risk of Not at risk.

Stormwater during the **Construction phase** will be discharged to the existing surface water system which discharges to the River Dodder.

A Hydrological and Hydrogeological Qualitative Risk Assessment was carried out by AWN Consulting (see Appendix F for full report) to assess the potential for any likely significant impacts on receiving waters within protected areas, during both the construction and operational phase of the Proposed Development. It is noted that this assessment was carried out in the absence of any consideration of any measures intended to avoid or reduce harmful effects potentially caused as a result of the Proposed Development (i.e. mitigation measures). According to this assessment, "there are no pollutant linkages as a result of the construction or operation of the Proposed Development which would have an appreciable effect on water quality impact at the Natura sites within Dublin Bay".

The risk assessment states:

Should any silt-laden stormwater from construction or hydrocarbon-contaminated water from a construction vehicle leak manage to enter the public stormwater sewer, the suspended solids will naturally settle within the drainage pipes and hydrocarbons will dilute to background levels (water quality objectives as outlined in S.I. No. 272 of 2009 and S.I. No. 77 of 2019 amendment); by the time the stormwater reaches any open water based on the distance to waterways. Similarly, during operation, should any leak of hydrocarbon occur from a vehicle, the volume of contaminant release is low and combined with the

significant attenuation within in the public stormwater sewers, hydrocarbons will dilute to background levels with no likely impact above water quality objectives as outlined in S.I. No. 272 of 2009 and S.I. No. 77 of 2019. It can also be concluded that the in-combination effects of surface water arising from the proposed development taken together with that of other similar developments will not be significant given the potential loading of contaminant and the expected attenuation above mentioned.

Further, the risk assessment states that in a worst case scenario where SUDS are not considered in the design, there will be no perceptible risk on any Natura 2000 sites given the distance from source to Dublin Bay protected areas (> 2.5 km) and potential contaminant loading will be attenuated, diluted and dispersed near source area.

Foul drainage during construction from staff welfare facilities will be tankered off site to a licensed facility until a connection to the public foul drainage network has been established.

Therefore, it can be concluded that there will be no impact on water quality of any of the Natura 2000 sites during the construction phase of the project.

The non-native species Winter Heliotrope and the INNS Three-cornered Garlic and Spanish Bluebell present on site will be treated with Glyphosate based herbicide during the construction phase. Glyphosate is non-selective but has lower acute toxicity than other herbicides with no evidence of bioaccumulation (Jeff, 1998). It operates on plant enzymes, so it has no direct impact on animals and the toxicity to waterfowl and fish is very low. Glyphosate is strongly bound onto soil and it is not easily leached from soils to surface water (Rueppel et al., 1977; Borggaard and Gimsing, 2008). In water it will bind to sediment and undergo microbial degradation, degrading to natural products such as carbon dioxide and phosphate ions. Only trained personnel will apply the product and adhere to instructions provided on the product label. Given glyphosates low potential for run-off as well as its low acute toxicity, there will be no significant impact on any of the QIs of the Natura 2000 sites.

During operation

In June 2018 Irish Water applied for (and subsequently received) planning permission for upgrade works to the Ringsend WWTP facility (see Appendix O for An Board Pleanála documents in support of the planning permission). These are currently on-going and will increase the capacity of the facility from 1.6 million PE to 2.4 million PE. This plant upgrade will result in an overall reduction in the final effluent discharge of several parameters from the facility including BOD, suspended solids, ammonia, DIN and MRP. An Environmental Impact Assessment Report (EIAR) was submitted by Irish Water as part of this application. The EIAR contains sections relating to Marine Biodiversity and Terrestrial Biodiversity, and each contains a section on the 'do-nothing scenario'. These review the effects of the WWTP on biodiversity in Dublin Bay in the absence of the upgrade works and so are relevant to this report.

The EIAR report acknowledges that under the do-nothing scenario "the areas in the Tolka Estuary and North Bull Island channel will continue to be affected by the cumulative nutrient loads from the river Liffey and Tolka and the effluent from the Ringsend WWTP", which could result in a decline in biodiversity and the deterioration of the biological status of Dublin Bay (Irish Water, 2018b). Nevertheless, these negative impacts of nutrient over-enrichment are considered "unlikely" (Irish Water, 2018b). This is because historical data suggests that pollution in Dublin Bay has had little or no effect on the composition and richness of the benthic macroinvertebrate fauna. The EIAR notes that "although a localised decline could occur, it is not envisaged to be to a scale that could pose a threat to the shellfish, fish, bird or marine mammal populations that occur in the area." Furthermore, the EIAR notes that significant impacts on waterbird populations foraging on invertebrates in Dublin Bay due to nutrient over-enrichment are "unlikely" to occur (Irish Water, 2018b). What is important in the context of this AA screening report is that the do-nothing scenario predicts that nutrient and suspended solid loads from the WWTP will "continue at the same levels and the impact of these loadings should maintain the same level of effects on marine

biodiversity” and that “if the status quo is maintained there will be little or no change in the majority of the intertidal faunal assemblages found in Dublin Bay which would likely continue to be relatively diverse and rich across the bay”. There is no evidence that operations from the WWTP are affecting the conservation objectives of the European sites in Dublin Bay.

Therefore, it can be concluded that effects on marine biodiversity and the Natura 2000 sites within Dublin Bay from the current operation of Ringsend WWTP are unlikely. Importantly, this conclusion is not dependent upon any future works to be undertaken at Ringsend. Thus, in the absence of any upgrading works, significant effects to Natura 2000 sites are not likely to arise.

The proposed development will make a very small contribution to the overall capacity of the licensed WWTP at Ringsend [the calculated peak effluent discharge for the proposed development as 0.6 litres/sec, which equate to 0.005% of the licensed discharge at Ringsend WWTP]. The drainage and water attenuation design included in the proposed development and the discharge of surface water to the public surface water network, as opposed to the combined sewer network as present, will offset any impact from the foul drainage connection to the combined sewer. On examination of the above it is considered that there are no means for the Proposed Development to act in-combination with any plans or projects, that would cause any likely significant effects on any Natura 2000 sites.

5.2.1.2 Groundwater

The proposed site is located within bedrock Dark limestone & shale (‘calp’) (GSI, 2021).

The aquifer vulnerability at the site is low, with part of Eglinton Road within moderate vulnerability (EPA, 2021) (see Figure 5-1). This aquifer is surrounded by aquifers of medium vulnerability, and low vulnerability to the north, south and east, i.e. in the direction of the Natura 2000 sites.

North Dublin Bay SAC has qualifying interests (QI) which are groundwater dependent, namely Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] and Mediterranean salt meadows (*Juncetalia maritimi*) [1410]. These habitats are also associated with the QI’s of North Bull Island SPA and South Dublin Bay and River Tolka Estuary SPA, as these are important habitats for many of the birds. Given that the proposed site is located at the other side of Dublin Bay in an area of low aquifer vulnerability, negative impacts on the Natura 2000 sites are not anticipated, either from the proposed development on its own or in combination with other projects.

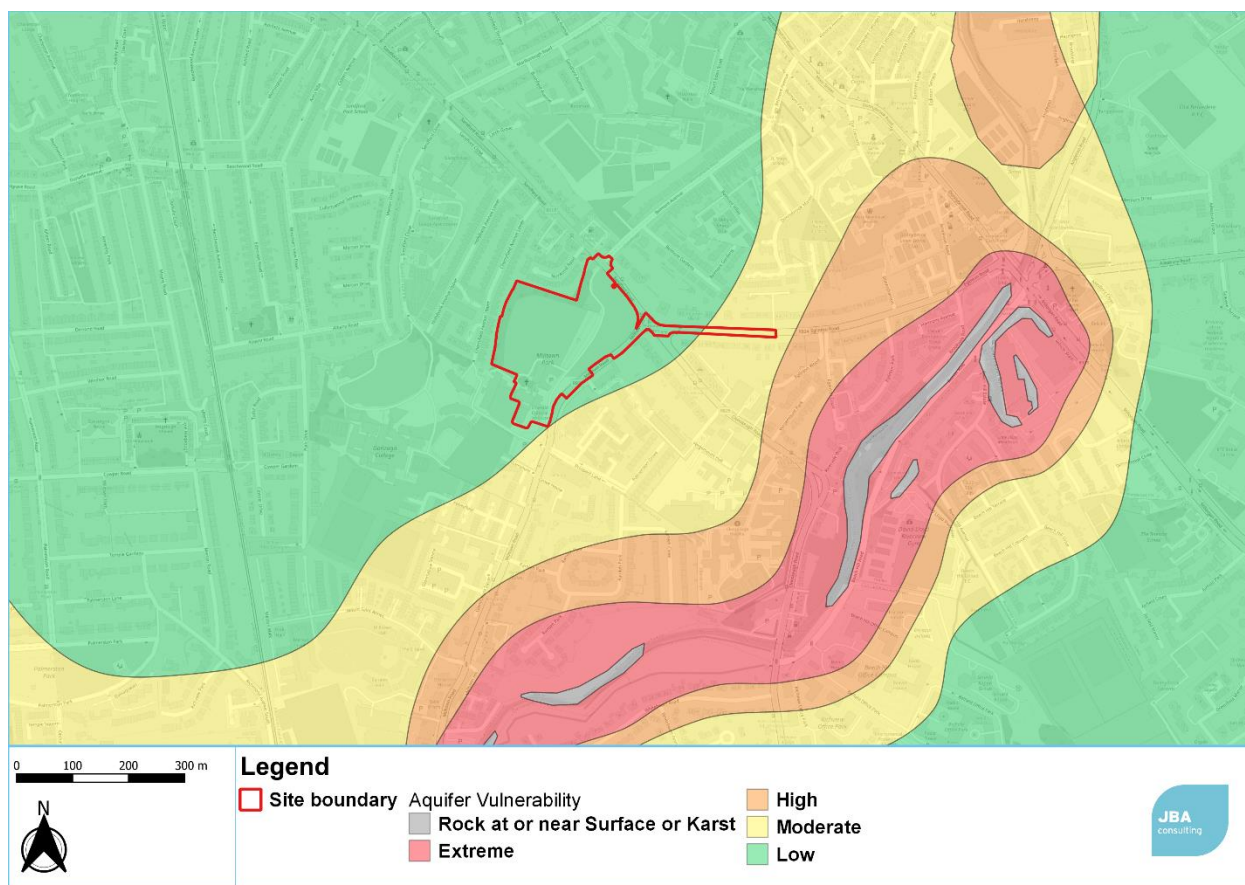


Figure 5-1: Aquifer vulnerability

5.2.1.3 Land and Air

Land

The construction of the development will involve stripping of the topsoil layer. It is expected that approximately 40% of the stripped topsoil will be reused on site with remaining topsoil being disposed of at an authorised waste facility (subject to the approval of the facility operator in accordance with their facility permit or licence). As such, there will be no potential for spread of invasive species to any of the Natura 2000 sites.

There will be no loss of supporting habitat for QIs of Rockabill to Dalkey Island SAC as these are marine features (Reefs [1170] and Harbour Porpoise [1351]). Loss of supporting habitat (i.e. Annex I habitat outside of the North Dublin Bay SAC, South Dublin Bay SAC and habitats outside of the North Dublin Bay SPA, South Dublin Bay and River Tolka Estuary SPA, Dalkey Islands SPA and Howth Head Coast SPA supporting bird populations for which the SPAs are designated) could be an impact on the QIs of the SACs/SPAs. For example, the Light-bellied Brent Goose *Branta bernicla* forage in open grass fields off the coast and have been recorded within a 2km distance of the proposed site (NBDC, 2020). However, the wintering bird surveys carried out in 2020 and 2021 did not record any Brent Geese or other wintering birds within the site. Brent Geese have a preference for short well-maintained turf typical of parks and football pitches. The grassland was considered unsuitable foraging habitat due to grass being uncut with a height >15cm and the restricted sight-lines (walls, buildings and woodland surrounding the site) at the site. Brent Geese prefer large open sites where they have clear sight-lines and short, lush grass for grazing (King, 2010).. Scott Cawley undertook a comprehensive study of the Light-bellied Brent Goose's usage of inland feeding sites in the Dublin area in 2015/16 and 2016/17 (Scott Cawley, 2017). The study included surveys of both known feeding sites and

potentially suitable feeding sites which at the time appeared to not be used by Brent Goose. 132 known feeding sites were identified, and 29 sites were identified as potential feeding sites. This suggests that there are potentially 161 inland feeding sites, which encompass the overall potential inland feeding habitat network for Brent geese in Dublin, 29 of which do not appear to be currently utilised. The two closest known feeding sites are Pembroke CC/Monkstown RC (1.9km) and Crumlin Road/Synge St. GAA Pitches (3.3km). The closest potentially suitable feeding ground is Ringsend Park (2.9km). There are several sites in the vicinity of the proposed development that were initially considered as potential feeding sites, such as Herbert Park, Old Belvedere Rugby Club and Airfield Park. However, the results of the study identified them as unsuitable feeding sites for Light-bellied Brent Goose.

The site is not located with any known flight line of any of the QI species. Given the distance to foraging sites of the Brent Geese and the fact that no Brent Geese were observed flying over the site during the winter surveys, it is not considered to be within the flight line of the species and there is no risk for collision with the new development. The only QI species observed flying over the site was Curlew, where one individual was seen at one occasion, passing the site at a height of 40-50m. The rate of total individuals per hour from the entire survey is 0.1 / hour. The height of the proposed tallest building on site is 31.6m, below the flight line of the Curlew. Therefore, the proposed development is not considered to be within the main flight line of Curlew.

The rooftops of the buildings at the proposed development site were used by nesting Jackdaw and Herring Gull. Jackdaw is not a Qualifying Interest of any of the Natura 2000 sites. Herring Gull is a Qualifying Interest of Irelands Eye SPA, however, given the distance (14.8km) from the proposed site and Irelands Eye SPA it is not considered that the individuals nesting on the roof belongs to the population on Irelands Eye.

Given that the site is not used as a feeding site by Brent Geese and no other QI bird species are foraging or nesting within the site and the site is not within a known flight line of any of the species, impacts via land pathways are not expected on any of the Natura 2000 sites. Cumulative impacts via land pathways are therefore not anticipated.

Air

Dust release and vehicle emissions can travel considerable distances and could potentially affect the waterbirds for which North Bull Island SPA, South Dublin Bay and River Tolka Estuary SPA, Dalkey Islands SPA and Howth Head Coast SPA are designated.

The distance and direction of travel is dependent upon wind speed and direction. The prevailing wind in the area is blowing in a north-east direction (based on measurements carried out between 2000-2019 at Dublin Airport (Windfinder.com, 2019)). As the Natura 2000 sites are located to the east and north-east of the proposed site, this means that on average winds will blow in the direction of these sites. The urban setting of the proposed development provides barriers towards the SPA/SAC, such as buildings and treelines, which will prevent further dispersal of particles.

The EPA air quality monitoring programme carried out at Ringsend, Dublin 4, which took place during February 2009 and March 2012, found that the level of particulate matter (PM10) exceeded the lower assessment threshold for the daily assessment criteria for the protection of human health on 209 days (EPA, 2013). However, the levels of PM10 were below the lower assessment threshold for the annual assessment criteria for the protection of human health. A recent air quality monitoring was carried out in the whole of Ireland in 2017 which found that all observed sites had concentrations below the annual limit value and there were no exceedance of the daily limit value (EPA, 2018). Any dust arising from the project will not significantly increase the daily average and the dispersal is restricted by

barriers, and therefore the project, either on its own or in combination with other plans or projects, will not have a significant effect on any of the Natura 2000 sites.

There will be an increase in local traffic attending the site during construction and operation, resulting in an increase in NOx emissions that could potentially impact on the North Dublin Bay SAC and South Dublin Bay SAC, leading to acidification and eutrophication of the habitats which can alter the vegetation composition and indirectly impact on the waterbirds for which South Dublin Bay and River Tolka Estuary SPA and North Bull Island SPA are designated. However, given that the site is located in an urban setting and the distance to the protected sites is between 2.4km and 6km, vehicular emissions will not significantly impact on the QIs of the SAC or SPAs.

5.3 Summary

In summary, due to the site location, prevailing winds, aquifer vulnerability (low) and the nature and scale of the proposed project, impacts via surface water, groundwater and land and air pathways to the four Natura 2000 sites are not anticipated, either alone or in combination with other projects.

5.3.1 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	<p>Sandford Living Limited intend to apply to An Bord Pleanála for permission for a strategic housing development at this c. 4.26 hectare site at Milltown Park, Sandford Road, Dublin 6, D06 V9K7. Works are also proposed on Milltown Road and Sandford Road to facilitate access to the development including improvements to pedestrian facilities on an area of c. 0.16 hectares. The development’s surface water drainage network shall discharge from the site via a proposed 300mm diameter pipe along Milltown Road through the junction of Milltown Road / Sandford Road prior to outfalling to the existing drainage network on Eglinton Road (approximately 200 metres from the Sandford Road / Eglinton Road junction), with these works incorporating an area of c. 0.32 hectares. The development site area, road works and drainage works areas will provide a total application site area of c. 4.74 hectares.</p> <p>The development will principally consist of: the demolition of c. 4,883.9 sq m of existing structures on site including Milltown Park House (880 sq m); Milltown Park House Rear Extension (2,031 sq m); the Finlay Wing (622 sq m); the Archive (1,240 sq m); the link building between Tabor House and Milltown Park House rear extension to the front of the Chapel (74.5 sq m); and 36.4 sq m of the ‘red brick link building’ (single storey over basement) towards the south-western boundary; the refurbishment and reuse of Tabor House (1,575 sq m) and the Chapel (768 sq m), and the provision of a single storey glass entrance lobby to the front and side of the Chapel; and the provision of a 671 No. unit residential development comprising 604 No. Build-to-Rent apartment and duplex units (88 No. studios, 262 No. one bed units, 242 No. two bed units and 12 No. three bed units) and 67 No. Build-to Sell apartment and duplex units (11 No. studios, 9 No. one bed units, 32 No. two bed units and 15 No. three bed units).</p> <p>Block A1 will range in height from part 5 No. storeys to part 10 No. storeys and will comprise 94 No. Build-to-Rent apartments; Block A2 will range in height from part 6 No. storeys to part 8 No. storeys</p>

Project Elements	Comment
	<p>(including part double height at ground floor level) and will comprise 140 No. Build to-Rent apartments and duplex units; Block B will range in height from part 3 No. to part 7 No. storeys and will comprise 91 No. Build-to-Rent apartments; Block C will range in height from part 2 No. storeys to part 8 No. storeys (including part double height at ground floor level) and will comprise 163 No. Build-to-Rent apartments; Block D will range in height from 3 No. storeys to 5 No. storeys and will comprise 39 No. Build-to-Sell apartments; Block E will be 3 No. storeys in height and will comprise 28 No. Build-to-Sell duplex units and apartments; Block F will range in height from 5 No. storeys to part 7 No. storeys and will comprise 92 No. Build-to-Rent apartments; and the refurbished Tabor House (4 No. storeys including lower ground floor level) will comprise 24 No. Build-to-Rent apartments.</p> <p>The development also includes a creche within Block F (400 sq m) with outdoor play area; and the provision of communal internal amenities (c. 1,248.8 sq m) and facilities (c. 158.3 sq m) throughout the residential blocks, Tabor House and the converted Chapel building including co-working space, gym, lounges, reading rooms, games room, multi-purpose space, concierge, mail rooms and staff facilities.</p> <p>The proposed works also include a new 2.4 metre high boundary wall across the site from east to west (towards the southern boundary) requiring the demolition of a portion of the red brick link building that lies within the subject site towards the south-western boundary (36.4 sq m) and the making good of the façade at the boundary. The existing Link Building is the subject of a separate application for permission (DCC Reg. Ref. No. 3866/20) that includes a request for permission to demolish that Link Building, including the part of the building on the lands the subject of this application for SHD permission. If that application is granted and first implemented, no demolition works to the Link Building will be required under this application for SHD permission. If that application is refused permission or not first implemented, permission is here sought to demolish only that part of the Link Building now existing on the lands the subject of this application for permission and to make good the balance at the red line with a blank wall.</p> <p>The development also provides a new access from Milltown Road (which will be the principal vehicular entrance to the site) in addition to utilising and upgrading the existing access from Sandford Road as a secondary access principally for deliveries, emergencies and taxis; new pedestrian access points; pedestrian/bicycle connections through the site; 344 No. car parking spaces (295 No. at basement level and 49 No. at surface level) which includes 18 No. mobility impaired spaces, 10 No. car share spaces, 4 No. collection/drop-off spaces and 2 No. taxi spaces; bicycle parking; 14 No. motorcycle spaces; bin storage; boundary treatments; private balconies and terraces facing all directions; external gantry access in sections of Blocks A1, A2 and C; hard and soft landscaping including public open space and communal open space (including upper level communal terraces in Block A1, Block B and Block C which will face all directions); sedum roofs; PV panels; substations; lighting; plant; lift cores; and all other associated site works above and below ground. The proposed development has a gross floor space of c. 54,871 sq m above ground</p>

Project Elements	Comment
	level over a partial basement (under part of Block A1 and under Blocks A2, B and C) measuring c. 10,607 sq m, which includes parking spaces, bin storage, bike storage and plant.
Land-take	There will be no land-take from any of the Natura 2000 sites.
Distance from Natura 2000 site or key features of the site	South Dublin Bay and River Tolka Estuary SPA (004024)- 2.4km North Bull Island SPA (004006) – 6.1km North Dublin Bay SAC (000206) – 6.1km South Dublin Bay SAC (000210) – 2.4km Rockabill to Dalkey Island SAC (003000) – 10.2km Dalkey Islands SPA (004172) – 10.8km Howth Head Coast SPA (004113) - 13.5km
Resource requirements (water abstraction etc.)	Water resources, including potable water, will be provided from existing infrastructure.
Emissions (disposal to land, water or air)	<p><i>Temporary impacts:</i></p> <p>Water</p> <p>Potential pollutants will be utilised at the site, including diesel and engine/hydraulic oils. These could potentially spill or leak into the groundwater, however given the ground conditions, where the aquifer vulnerability is low, it is not anticipated to have a significant impact on groundwater dependent QIs of the Natura 2000 sites.</p> <p>Any surface water during construction will be discharged to the existing surface water system which discharges to the River Dodder. The Hydrological and Hydrogeological Qualitative Risk Assessment carried out by AWN Consulting (Appendix F) states that “there are no pollutant linkages as a result of the construction or operation of the Proposed Development which would have an appreciable effect on water quality impact at the Natura sites within Dublin Bay”. Any suspended solids will naturally settle within the drainage pipes and hydrocarbons will dilute to background levels by the time the stormwater reaches any open water, based on the distance to waterways. Surface water discharge is not anticipated to have a significant impact on the Natura 2000 sites</p> <p>Air</p> <p>Excavations at the site will produce fill and soil material, and emissions may arise from working machinery. However, this is not anticipated to have a significant impact on habitats or species for which the Natura sites are designated due to distance and presence of urban environment between the proposed site and the Natura 2000 sites. In the absence of any mitigation, the emissions from the project would not result in a negative impact on any of the Natura 2000 sites.</p> <p><i>Permanent impacts:</i></p> <p>Surface water discharge will be collected in an attenuation system and passed through a petrol interceptor (see Appendix B). Surface water sewers from the proposed development will outfall to existing drainage network on Eglinton Road (approximately 195m from the Sandford Road / Eglinton Road junction where the public line increases to a 300mm diameter pipe).</p>

Project Elements	Comment
	Foul water will connect via the Dublin sewer system to Ringsend WWTP for treatment. There is no evidence that the Ringsend WWTP is having any impact on the conservation objectives of the Natura 2000 sites within Dublin Bay under its current operation. Further, there are planned upgrade works to improve capacity at the WWTP, as discussed above. Therefore, there will be no permanent impacts on any of the following Natura 2000 sites: South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA, North Dublin Bay SAC, South Dublin Bay SAC, Rockabill to Dalkey Island SAC, Dalkey Islands SPA and Howth Head Cost SPA.
Excavation requirements	The excavation requirements for the development is 1.5m to 3.0m for surface water drainage, foul and attenuation tanks. The basement excavation will be a depth of 4.0m.
Transportation requirements	<p><i>Temporary impacts:</i> Levels of traffic to the site during the construction phase will increase traffic to the area but will be temporary in nature. All access to the site will be on pre-existing roads and transportation requirements will not affect Natura sites. There is one newly proposed access from Milltown Road.</p> <p><i>Permanent impacts:</i> Traffic to and from the proposed project will be on pre-existing urban roads. There will be an increase in traffic, related to the size of the development. However, given location of the proposed project, transportation requirements will not affect Natura 2000 sites.</p>
Duration of construction, operation, decommissioning etc.	<p>The duration of the construction of the development is expected to be approximately 34 months</p> <p>The operation is expected to be permanent.</p>
Other	None

5.3.2 Description of likely changes to the Natura 2000 Sites

Potential Impact	Comment
Reduction of habitat area	There will be no reduction in habitat area in relation to any of the Natura 2000 sites.
Disturbance to key species	<p><i>Temporary Impacts:</i> The construction works will temporarily increase the noise level and disturbance locally. However, it is assessed that there will be no effects to key species given scale and temporary nature of the construction phase and distance from the Natura 2000 sites.</p> <p><i>Permanent Impacts:</i> No disturbance to key species will occur during operation of the project.</p>
Habitat or species fragmentation	No habitat or species fragmentation will occur as the project poses no restrictions to habitats or species of the Natura 2000 sites.
Reduction in species density	None
Changes in key	<i>Temporary impacts on water quality:</i>

indicators of conservation value (water quality etc.)	Given the scale and temporary nature of the works, there will be no impact on water quality. <i>Permanent impacts on water quality:</i> The proposed site has a site-specific drainage plan (Appendix B). Though the foul water is treated at Ringsend WWTP, which is working above its capacity, measurements indicate that overall water quality is not being impacted. Works are at present being carried out to increase the capacity of Ringsend WWTP. The operational phase of the project will not have a significant impact on water quality.
Climate change	N/A

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

Impact	Comments
Interference with the key relationships that define the structure of the site	None
Interference with key relationships that define the function of the site	None

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

Impact	Indicators
Loss (Estimated percentage of lost area of habitat)	No loss of area.
Fragmentation	None
Disruption & disturbance	None
Change to key elements of the site (e.g. water quality etc.)	None. Site-specific drainage plans will be in situ during the operation of the project (Appendix B)

5.3.5 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 knowledge available, no significant impacts are expected from the elements mentioned above and there are no elements where the scale or magnitude of impacts is unknown.

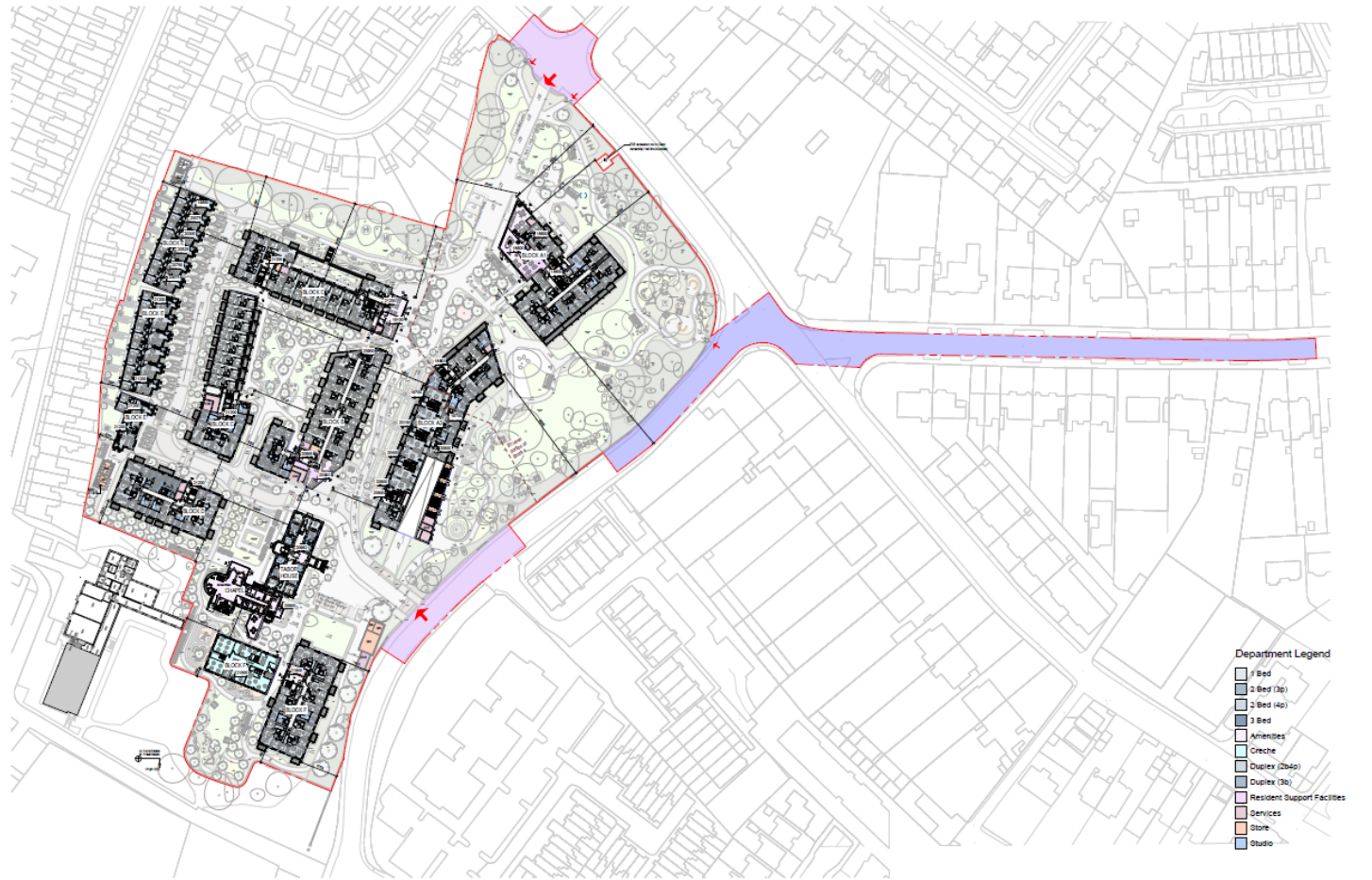
5.4 Concluding Statement

In carrying out this AA screening, mitigation measures have not been taken into account. Standard best practice construction measures which could have the effect of mitigating any effects on any European Sites have similarly not been taken into account.

On the basis of the screening exercise carried out above, it can be concluded that the possibility of any significant impacts on any European Sites, whether arising from the project itself or in combination with other plans and projects, can be excluded beyond a reasonable scientific doubt on the basis of the best scientific knowledge available.

Appendices

A Ground Floor General Layout Plan



Proposed Site Plan - Combined Entry Level B1 / 00

Combined Site Area	4.20ha
Area within Combined Site Boundary (B1 & B2)	3.22ha
Storage Volume at Combined Site	0.22ha
Total Site Area	4.72ha



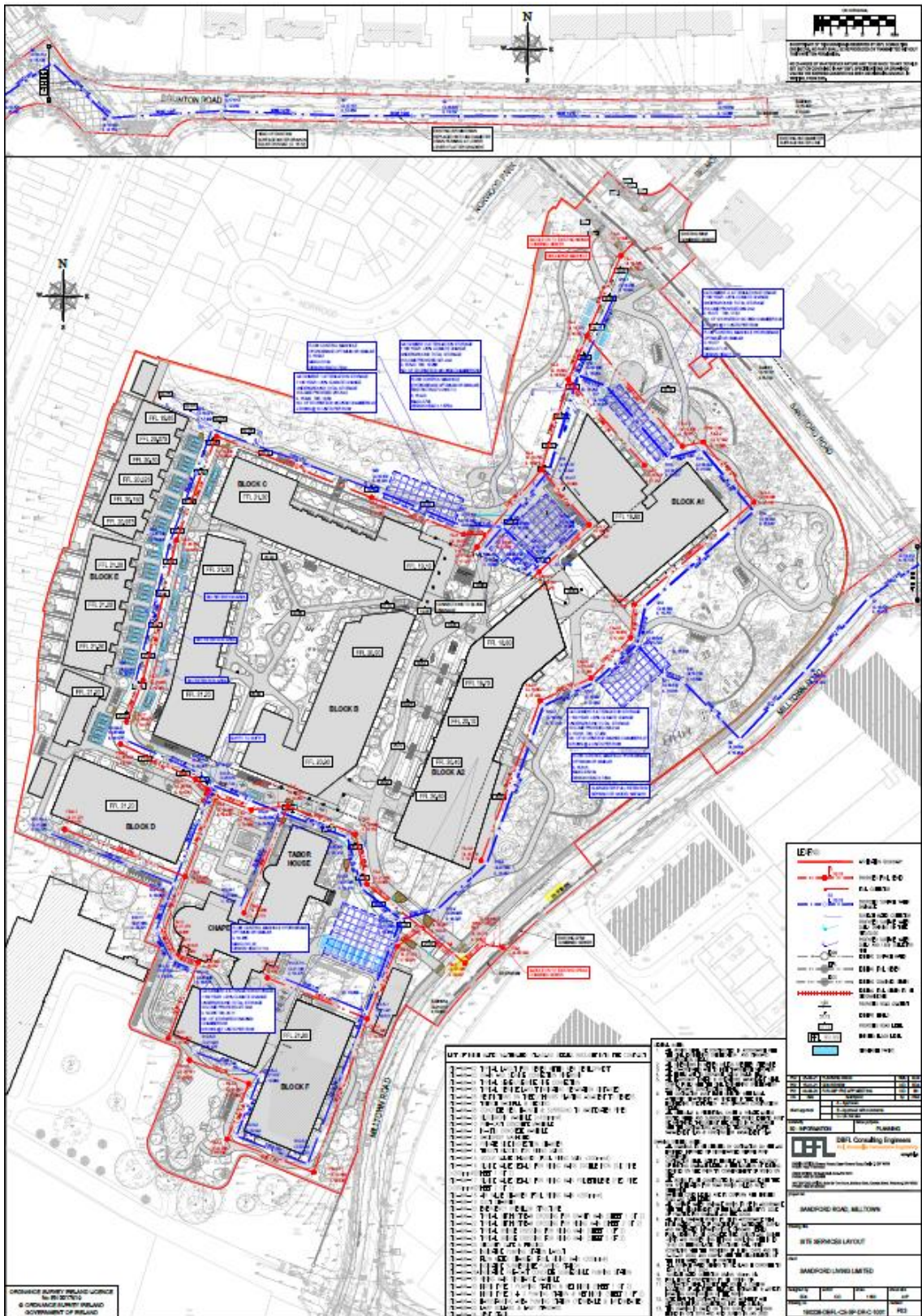
Date	Rev No.	Revised By
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mahony pike		Project Code: 10017	Scale: 1:100
Architectural Services		Project Name: 100	Date: 20/08/2015
Client: Sandford Road	Drawn By: A. Baker	Number: 1	
Location: Millbrook Park, Sandford Road, Dublin 6	Scale: 1:100	Name: 100	
Class: Sandford Living 101	Project: Planning		

Issued For: Proposed Site Plan - Combined Entry Level B1 / 00
 Drawing No: 10017-01AH-2D-01-00-A-10017



B Drainage Layout



C Habitat map



D Results Bird Surveys

D.1 Winter Surveys

Surveyor(s):	Malin Lundberg	Temp:	8°C	
Project code:	2019s1542	Survey start:	13-03-2020, 12:50	
Location:	Sandford	Survey end:	13:46	
Weather:	Cloudy	Wind:	Light breeze	
Species	Total count	Largest group	Behaviour	Location/Direction
Herring Gull (<i>Larus argentatus</i>)	13	4	Flying	Over and around the site
Chaffinch (<i>Fringilla coelebs</i>)	1		Calling	Treeline
Great Tit (<i>Parus major</i>)	4		Calling / perched / Cleaning	Treeline, woodland
Blue Tit (<i>Parus caeruleus</i>)	2		Calling / flying	Treeline, woodland
Rook (<i>Corvus frugilegus</i>)	13	7	Flying	Over and around the site
Hooded Crow (<i>Corvus cornix</i>)	3	2	Foraging / perched / flying	Grassland, woodland
Magpie (<i>Pica pica</i>)	10	2	Foraging / perched / flying	Grassland, treeline
Wren (<i>Troglodytes troglodytes</i>)	3		Calling / perched	Scrub, woodland
Wood Pigeon (<i>Columba palumbus</i>)	16	4	Foraging / perched / flying	Woodland, grassland
Blackbird (<i>Turdus merula</i>)	9	2	Foraging / calling / flying	Hedgerow, woodland
Jackdaw (<i>Corvus monedula</i>)	18	13	Foraging / flying	Grassland
Robin (<i>Erithacus rubecula</i>)	1		Perched	Woodland

Surveyor(s):	Malin Lundberg	Temp:	8°C	
Project code:	2019s1542	Survey start:	23-03-2020, 10:00	
Location:	Sandford	Survey end:	12:50	
Weather:	Cloudy	Wind:	No wind	
Species	Total count	Largest group	Behaviour	Location/Direction

Herring Gull (<i>Larus argentatus</i>)	15	4	Flying	Over and around the site, on rooftop of buildings
Great Tit (<i>Parus major</i>)	9		Flying, calling, perched	Treeline, woodland
Blue Tit (<i>Parus caeruleus</i>)	5		Calling, flying, perched	Woodland
Rook (<i>Corvus frugilegus</i>)	4	2	Flying	Over and around the site
Hooded Crow (<i>Corvus cornix</i>)	6	2	Flying, foraging	Grassland, over and around the site
Magpie (<i>Pica pica</i>)	8		Calling, flying, foraging	Grassland, woodland, treeline
Wren (<i>Troglodytes troglodytes</i>)	7		Calling, flying	Scrub, woodland
Wood Pigeon (<i>Columba palumbus</i>)	13	4	Foraging / perched / flying	Woodland, grassland
Blackbird (<i>Turdus merula</i>)	4		Calling / flying	Treeline, woodland
Jackdaw (<i>Corvus monedula</i>)	18	11	Foraging / flying / perched	Grassland, building
Robin (<i>Erithacus rubecula</i>)	2		Perched / flying	Woodland, treeline
Ferral Pigeon (<i>Columba livia f. domestica</i>)	6	6	Perched	Rooftop north of site
Long-tailed Tit (<i>Aegithalus caudatus</i>)	2		Calling, perched	Woodland
Goldfinch (<i>Carduelis carduelis</i>)	4		Flying, perched, calling	Woodland
Greenfinch (<i>Carduelis chloris</i>)	1		Calling	Treeline

Surveyor(s):	Patricia Byrne, William Mulville	Temp:	8°C
Project code:	2019s1542	Survey start:	30-11-2020, 11:00
Location:	Sandford	Survey end:	14:00
Weather:	Light rain	Wind:	Breeze

Species	Total count	Largest group	Behaviour	Location/Direction
Herring Gull (<i>Larus argentatus</i>)	11	4	Flying, perched	Over and around the site, on rooftop of buildings
Great Tit (<i>Parus major</i>)	2		Flying, perched	Treeline, woodland
Rook (<i>Corvus frugilegus</i>)	5	2	Flying, perched	Over and around the site, on buildings
Hooded Crow	3	1	Flying, foraging	Grassland, over and around the site

(<i>Corvus cornix</i>)				
Magpie (<i>Pica pica</i>)	6	2	Calling, flying, foraging	Grassland, woodland
Wood Pigeon (<i>Columba palumbus</i>)	8	3	Perched / flying	Woodland, grassland
Eurasian Curlew (<i>Numenius arquata</i>)	1		Flying	Flying over site

Surveyor(s):	Malin Lundberg	Temp:	11°C	
Project code:	2019s1542	Survey start:	17-12-2020, 11:46	
Location:	Sandford	Survey end:	13:46	
Weather:	Scattered clouds	Wind:	No wind	
Species	Total count	Largest group	Behaviour	Location/Direction
Herring Gull (<i>Larus argentatus</i>)	5	1	Flying	Over and around the site, over rooftop of buildings
Great Tit (<i>Parus major</i>)	3	2	Calling	Treeline, woodland
Blue Tit (<i>Parus caeruleus</i>)	1		Calling	Treeline
Hooded Crow (<i>Corvus cornix</i>)	2		Flying, perching	Woodland, over and around the site
Magpie (<i>Pica pica</i>)	5	2	Perching, flying, foraging	Grassland, woodland
Wren (<i>Troglodytes troglodytes</i>)	1		Perching	Scrub
Wood Pigeon (<i>Columba palumbus</i>)	7	4	Foraging / flying	Woodland, grassland
Blackbird (<i>Turdus merula</i>)	1		Foraging	Scrub
Jackdaw (<i>Corvus monedula</i>)	14	8	Flying / perched	Grassland, building

Surveyor(s):	Malin Lundberg	Temp:	1-2°C	
Project code:	2019s1542	Survey start:	07-01-2021, 11:00	
Location:	Sandford	Survey end:	12:00	
Weather:	Cloudy, some snow on ground	Wind:	No wind	
Species	Total count	Largest group	Behaviour	Location/Direction

Herring Gull (<i>Larus argentatus</i>)	3	2	Flying, perching	Over and around the site, on containers in carpark
Great Tit (<i>Parus major</i>)	2		Perching	Woodland
Blue Tit (<i>Parus caeruleus</i>)	1		Calling	Woodland
Hooded Crow (<i>Corvus cornix</i>)	1		Perching	Woodland
Magpie (<i>Pica pica</i>)	4	2	Perching	Woodland
Wood Pigeon (<i>Columba palumbus</i>)	3	3	Flying	Woodland
Jackdaw (<i>Corvus monedula</i>)	7	4	Flying / perched	Grassland, building
Robin (<i>Erithacus rubecula</i>)	1		Calling	Scrub

Surveyor(s):	Patricia Byrne	Temp:	3°C
Project code:	2019s1542	Survey start:	07-01-2021, 15:00
Location:	Sandford	Survey end:	16:00
Weather:	Cloud, sun	Wind:	Light breeze

Species	Total count	Largest group	Behaviour	Location/Direction
Herring Gull (<i>Larus argentatus</i>)	27	3	Flying, perching	Over and around the site, buildings
Blue Tit (<i>Parus caeruleus</i>)	3	2	Flying	Treeline
Magpie (<i>Pica pica</i>)	2	1	Perching, flying	Woodland, treeline
Wood Pigeon (<i>Columba palumbus</i>)	31	11	Flying, perching	Woodland, grassland
Rook (<i>Corvus frugilegus</i>)	7	5	Flying, perching	Over grassland, buildings
Blackbird (<i>Turdus merula</i>)	1		Perched	Treeline

Surveyor(s):	Patricia Byrne	Temp:	6°C
Project code:	2019s1542	Survey start:	03-02-2021, 09:00
Location:	Sandford	Survey end:	10:01
Weather:	Sun/cloud	Wind:	Breeze

Species	Total	Largest	Behaviour	Location/Direction
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	count	group		
Herring Gull (<i>Larus argentatus</i>)	10	2	Flying, perched	Over and around the site, on rooftop of buildings
Great Tit (<i>Parus major</i>)	2	2	Perched	Treeline
Rook (<i>Corvus frugilegus</i>)	6	4	Flying, perched	Grassland, treeline, buildings
Magpie (<i>Pica pica</i>)	3	2	Flying, perched	Woodland, flying east over site
Wren (<i>Troglodytes troglodytes</i>)	2	2	Calling	Woodland
Wood Pigeon (<i>Columba palumbus</i>)	4	2	Perched / flying	Woodland, grassland
Blackbird (<i>Turdus merula</i>)	2	2	Perched	Building
Robin (<i>Erithacus rubecula</i>)	1		Perched / flying	Scrub by building
Black-headed Gull (<i>Larus ridibundus</i>)	5	4	Flying	Over building

Surveyor(s):	Malin Lundberg	Temp:	8°C
Project code:	2019s1542	Survey start:	03-02-2021, 15:05
Location:	Sandford	Survey end:	16:00
Weather:	Light rain	Wind:	Breeze

Species	Total count	Largest group	Behaviour	Location/Direction
Herring Gull (<i>Larus argentatus</i>)	2		Flying	Across the site
Great Tit (<i>Parus major</i>)	3	2	Calling, perched	Treeline, woodland
Hooded Crow (<i>Corvus cornix</i>)	2	2	Perched	Woodland
Magpie (<i>Pica pica</i>)	2		Perched	Buildings
Wren (<i>Troglodytes troglodytes</i>)	1		Calling, flying	Scrub
Wood Pigeon (<i>Columba palumbus</i>)	6	2	Perched / flying	Woodland
Blackbird (<i>Turdus merula</i>)	4		Foraging	North of building
Jackdaw (<i>Corvus monedula</i>)	6	6	Perched	In tree west of Chapel
Robin (<i>Erithacus rubecula</i>)	1		Calling	Woodland
Goldfinch (<i>Carduelis carduelis</i>)	26	21	Foraging, calling	Woodland

D.2 Breeding Bird Surveys

Surveyor(s):	Malin Lundberg, Patricia Byrne, Mark Desmond	Temp:	5°C - 10°C	
Project code:	2019s1542	Survey start:	15-04-2021, 6:15	
Location:	Sandford	Survey end:	10:30	
Weather:	Clear	Wind:	Gentle breeze	
Transect eastern treeline.				
Species	Total count	Largest group	Behaviour	Location/Direction
Blackbird (<i>Turdus Merula</i>)	3	2	Singing/Flying	Around treeline and into woods
Blue Tit (<i>Cyanistes caeruleus</i>)	2	1	Singing, and flying	Treeline to woods
Great Tit (<i>Parus major</i>)	1	1	Singing/ perched	Treeline
Hooded Crow (<i>Corvus cornix</i>)	2	1	Perched	Woodland
Wren (<i>Troglodytes troglodytes</i>)	2	2	Rivals singing	Woodland
Chaffinch (<i>Fringilla coelebs</i>)	2	1	Singing	Ornamental shrub and woodland
Goldcrest (<i>Regulus regulus</i>)	2	1	signing/ perched / flying	Treeline, other flying into woods
Coal tit (<i>Periparus ater</i>)	1	1	Perched/singing	Near ornamental scrub of building
Wood Pigeon (<i>Columba palumbus</i>)	4	4	Perched	Woodland
Transect eastern section of woodland.				
Species	Total count	Largest group	Behaviour	Location/Direction
Blackbird (<i>Turdus Merula</i>)	5	2	Singing/Flying/ Male and female together	Woodland
Blue Tit (<i>Cyanistes caeruleus</i>)	2	1	Singing, and flying	Woodland

Great Tit (<i>Parus major</i>)	2	1	Singing/ perched	woodland
Hooded Crow (<i>Corvus cornix</i>)	1	1	Perched	Woodland
Wren (<i>Troglodytes troglodytes</i>)	4	2	Rivals singing/ singing	Woodland
Collared dove (<i>Streptopelia decaocto</i>)	1	1	Singing and perched	High in tree centre of woods
Wood Pigeon (<i>Columba palumbus</i>)	8	4	Perched, flying	Woodland and out to east
Robin (<i>Erithacus rubecula</i>)	1	1	Singing, moving around.	All over woodland
Unknown Nests	2	1		Two locations high in trees
Transect north eastern section of woodland.				
Species	Total count	Largest group	Behaviour	Location/Direction
Blackbird (<i>Turdus Merula</i>)	4	2	Singing/Flying/alarming/ Pair flying	Woods next to road
Blue Tit (<i>Cyanistes caeruleus</i>)	1	1	Singing, and flying	Woodland
Great Tit (<i>Parus major</i>)	2	1	Singing/ perched	Woodland
Wren (<i>Troglodytes troglodytes</i>)	1	1	Singing/perched	Woodland
Song thrush (<i>Turdus philomelos</i>)	3	3	Singing/ alarm /flying,	Woodland, flying north east
Magpie (<i>Pica pica</i>)	1	1	Perched	Woodland (west of road)
Robin (<i>Erithacus rubecula</i>)	1	1	Perched/singing/flying	Woodland and flying east
Wood Pigeon (<i>Columba palumbus</i>)	4	2	Perched/Flying	Woodland and going east
Transect north western woodland.				

Species	Total count	Largest group	Behaviour	Location/Direction
Blackbird (<i>Turdus Merula</i>)	2	2	Singing/Flying/alarming/	Treeline
Blue Tit (<i>Cyanistes caeruleus</i>)	2	1	Singing, and flying	Woodland/Treeline
Great Tit (<i>Parus major</i>)	3	1	Singing/ perched	Woodland
Wren (<i>Troglodytes troglodytes</i>)	2	1	Rivals singing	Treeline
Hooded Crow (<i>Corvus cornix</i>)	1	1	Perched	Treeline
Song thrush (<i>Turdus philomelos</i>)	2	1	Singing and perched	Woodland
Eurasian Siskin (<i>Carduelis spinus</i>)	2	1	Singing and perched (possible rivals)	Either end of transect
Magpie (<i>Pica pica</i>)	3	3	Perched	Woodland (west of road)
Goldcrest (<i>Regulus regulus</i>)	2	1	signing/ perched / flying	Treeline, other flying into woods
Goldfinch (<i>Carduelis carduelis</i>)	1	1	Singing, perched then flying	Treeline and then into section E
Robin (<i>Erithacus rubecula</i>)	1	1	Perched/singing/flying	Woodland and flying east
Wood Pigeon (<i>Columba palumbus</i>)	8	8	Perched/Flying	Woodland
Transect centre treeline.				
Species	Total count	Largest group	Behaviour	Location/Direction
Blackbird (<i>Turdus Merula</i>)	3	1	Alarming, singing and flying	Different areas of treeline and flying north, west, one stays.
Blue Tit (<i>Cyanistes caeruleus</i>)	2	1	Singing, and flying	Woodland/Treeline
Great Tit	4	3	Singing/ perched	Woodland

(<i>Parus major</i>)				
Hooded Crow (<i>Corvus cornix</i>)	1	1	Perched	Treeline
Goldcrest (<i>Regulus regulus</i>)	5	3	signing/ perched	Within trees
Goldfinch (<i>Carduelis carduelis</i>)	4	2	Singing, perched	In trees, and near ornamental shrub
Robin (<i>Erithacus rubecula</i>)	2	1	Singing and foraging	Around trees
Wood Pigeon (<i>Columba palumbus</i>)	4	2	Flying	Over site
Herring Gull (<i>Larus argentatus</i>)	8	4	Flying	Over site
Transect western treeline.				
Species	Total count	Largest group	Behaviour	Location/Direction
Blackbird (<i>Turdus Merula</i>)	2	1	Singing, flying	Centre of treeline, flying east
Blue Tit (<i>Cyanistes caeruleus</i>)	4	4	Singing, foraging in a single tree	Treeline
Great Tit (<i>Parus major</i>)	2	1	Singing/ perched	Woodland
Hooded Crow (<i>Corvus cornix</i>)	1	1	Perched	Treeline
Starling (<i>Sturnus vulgaris</i>)	7	7	Flying onto site, perched and singing in tree	Treeline
Goldfinch (<i>Carduelis carduelis</i>)	3	3	Singing, perched	Treeline
Robin (<i>Erithacus rubecula</i>)	1	1	Single male singing	Near corner with transect D
Wood Pigeon (<i>Columba palumbus</i>)	5	3	Two flying, three perched and singing in tree	Treeline

Dunnock (<i>Prunella modularis</i>)	1	1	Singing and perched	Treeline
Jackdaw (<i>Coloeus monedula</i>)	3	2	Perched	Trees near buildings
Chaffinch (<i>Fringilla coelebs</i>)	1	1	Singing	Bushes near building.
Buildings				
Species	Total count	Largest group	Behaviour	Location/Direction
Hooded Crow (<i>Corvus cornix</i>)	1	1	Perched	Perched on roof
Jackdaw (<i>Coloeus monedula</i>)	8	4	Perched, nesting	Chimney pots across the building.
Herring Gull (<i>Larus argentatus</i>)	2	2	Perched, finding nests	Chimney pots
Rock dove (<i>Columba livia</i>)	5	3	Perched on ledges	On ledges
Wood Pigeon (<i>Columba palumbus</i>)	2	2	Flying over site	Over site

Surveyor(s):	Malin Lundberg, Patricia Byrne, Mark Desmond	Temp:	10°C
Project code:	2019s1542	Survey start:	18-05-2021, 8:30
Location:	Sandford	Survey end:	11:45
Weather:	Clear and sunny	Wind:	Gentle breeze

Vantage point: Jesuit Land south of site

Species	Total count	Time	Behaviour	Location/Direction
Herring Gull (<i>Larus argentatus</i>)	1	8:35	Flying	Over Building
		8:40	Landed on roof, flew away	Headed east
		8:50	Flew around building	Over building
		8:55	Landed and perched	Redbrick chimney pot
		9:00	Flew away	South east
		9:40 – 9:55	Landed on library roof, and then flew up to	Southern building, chimney pots, red

			highest roof with red brick chimney, perched for 15 mins, flew east	brick tower and library roof.
Jackdaw (<i>Coloeus monedula</i>)	4-5	ongoing	Nesting	South west chimney pots
		9:55	Landed on chimney pots near gulls	south central building chimney pots
Rock dove (<i>Columba livia</i>)	2	8:45	Perched, nesting	Tower on east building
Wood Pigeon (<i>Columba palumbus</i>)	5	Ongoing	Flying	Flying over building
	2	9:20	Perched	East building top of drain pipe
Vantage point: East of Tabor house				
Species	Total count	Time	Behaviour	Location/Direction
Herring Gull (<i>Larus argentatus</i>)	1	10:10	Flying	Over Site
		10:25	Flying	Over Site
		10:45	Flying low	East over site
		11:10	Flying	Over Tabor house
		11:15	Flying	North East
		11:25	Flying	North over woodland
Jackdaw (<i>Coloeus monedula</i>)	1-2	10:10	Nesting and perched	South west chimney pots
	1	10:35	Entering in and out of chimney pots, nesting	Middle chimney pot, south west building.
	2	11:05	Pair nesting	Tabor house
Swift (<i>Apus apus</i>)	2	10:18	Flying	East over site
Wood Pigeon (<i>Columba palumbus</i>)	2	Ongoing	Flying	Flying over building
	2	10:10	Entering drain and stairwell over front door of tower building	Tower building
Vantage point: East of Tabor House				
Species	Total count	Time	Behaviour	Location/Direction
Herring Gull (<i>Larus argentatus</i>)	1	8:45	Flying	North Building
		9:40	Flying	North Building
		10:30	Flying, landing	North Building
	1	Ongoing	Nesting,	North Building, south eastern corner chimney pot
Jackdaw (<i>Coloeus monedula</i>)	4	Ongoing	Nesting and perched	North chimney pots
	1	9:20	Feeding	North eastern chimney pot of north building
Rock dove	2	8:40-	Perched, nesting	Low lying library roof

(<i>Columba livia</i>)		10:40		
Vantage Point: West of Tabor House				
Species	Total count	Time	Behaviour	Location/Direction
Jackdaw (<i>Coloeus monedula</i>)	3-4	ongoing	nesting, going into/leaving chimney, bringing food, perching	North eastern chimney pot of north building
	3-4	ongoing	nesting, perching, going into/leaving chimney	South eastern chimney pot of north building
	1	8:36	Interaction with Herring Gull next to chimney. Jackdaw flew off and Herring Gull followed	South eastern chimney pot of north building
Swift (<i>Apus apus</i>)	2	9:19	Flying	High above the site
Herring Gull (<i>Larus argentatus</i>)	1	8:36	Interaction with Jackdaw in chimney. Jackdaw flew off and Herring Gull followed	South eastern chimney pot of north building
	1-2	ongoing	Nesting	South eastern chimney pot of north building
Vantage point: Jesuit Land south of site				
Species	Total count	Time	Behaviour	Location/Direction
Wood Pigeon (<i>Columba palumbus</i>)	2	10:07	Entering drain and stairwell over front door of tower building	Tower building
	1	10:24 – 10:30	Left from the drain, then came back and went into the drain	Tower building
Jackdaw (<i>Coloeus monedula</i>)	4	Ongoing	Nesting	South west chimney pots
Herring Gull (<i>Larus argentatus</i>)	1	10:12	landed on central chimney pot of southern building, flew off.	South central chimney pots
	1	10:50 – 11:14	landed on central chimney pot of southern building then perched on roof.	South central chimney pots

E Invasive Alien Plant Species: Site Assessment Report



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INVASIVE ALIEN PLANT SPECIES : SITE ASSESSMENT REPORT

MILLTOWN PARK DEVELOPMENT SITE, SANDFORD ROAD, DUBLIN 6

FOR

SANDFORD LIVING LIMITED

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DOCUMENT NAME	STATUS	REV	DATE	COMMENT	AUTHOR	CKD.
DC-04-20/SARMP/00	1 st . ISSUE	00	15/01/2021	ISSUED TO CLIENT FOR COMMENT	KYRAN COLGAN	K.C.
DC-04-20/SARMP/01	2 nd . ISSUE	01	09/02/2021	REVISED SITE BOUNDARY	KYRAN COLGAN	K.C.
DC-04-20/SARMP/02	3 rd . ISSUE	02	10/03/2021	SECTION 5 & BOUNDARY UPDATE	KYRAN COLGAN	K.C.
DC-04-20/SARMP/03	4 th . ISSUE	03	27/04/2021	UPDATE FOLLOWING 2 ND . SURVEY	KYRAN COLGAN	K.C.
DC-04-20/SARMP/04	5 th . ISSUE	04	30/07/2021	FINAL SITE BOUNDARY REVISIONS	KYRAN COLGAN	K.C.
DC-04-20/SARMP/05	6 th . ISSUE	05	12/08/2021	SECTION 15 UPDATED	KYRAN COLGAN	K.C.
DC-04-20/SARMP/06	7 th . ISSUE	06	20/08/2021	SEC. 16 ILLUSTRATION UPDATED	KYRAN COLGAN	K.C.
DC-04-20/SARMP/07	8 th . ISSUE	07	23/08/2021	UPDATE AFTER LEGAL REVIEW	KYRAN COLGAN	K.C.

MILLTOWN PARK DEVELOPMENT SITE								
PROJECT NO.	DC-04-20	GPS POSITION : ITM	X	716944	Y	731255	TIME	10.00am & 4.00pm
DATE OF ASSESSMENT	27/12/2020 & 08/04/2021	WEATHER	COLD & CLEAR. OVERCAST WITH SOME SUNNY BREAKS					

EXECUTIVE SUMMARY

In December 2020 Invasive Plant Solutions were retained by their client, Sandford Living Limited, to provide IAPS (invasive alien plant species) consultancy services in connection with their proposed residential development on lands comprising part of the Jesuit run Milltown Institute of Theology and Philosophy, located on Sandford Road, Dublin 6.

Our appointment came on foot of observations made in the Biodiversity chapter of the draft Environmental Impact Assessment Report for the lands, dated August 2020, prepared by JBA Consulting at that time. Their report identified the presence of several non-native plant species on the lands but did not find particular evidence of any Invasive Alien Plant Species listed in Part 1 of the Third Schedule of the *European Communities (Birds and Natural Habitats) Regulations 2011* (SI 477 of 2011, as amended).

However, in the interest of thoroughness, and to satisfy themselves to the greatest extent possible, the clients asked Invasive Plant Solutions to carry out further survey work, specifically focusing on the Third Schedule plants referenced above. The purpose of that work was to further validate the plants absence from the lands in question, and therefore to satisfy the relevant authorities that no specific management measures will be required for invasive alien plant species covered by the relevant legislation, codes of practice and guidance documents, including Dublin City Council’s *Dublin City Invasive Alien Species Action Plan 2016 – 2020*.

A walk through survey of the site was carried out on 27 December 2020, and no evidence of Invasive Alien Plant Species was found on site at that time.

Notwithstanding this absence of IAPS on the lands, the initial issue of this report advised that ongoing monitoring of the site should be carried out, particularly to screen for early emerging IAPS, which wouldn’t have been observable during the December 2020 survey.

A further follow up site survey was carried out between the 8th. and 9th. of April 2021. This survey detected the presence of spring emerging IAPS Three Cornered Garlic and Spanish/Hybrid Spanish Bluebell, mainly concentrated within the woodland fringe running along the western end of the northern boundary, with an additional stand in the eastern sector of the site.

On foot of these observations the client approved the immediate deployment of bio-security measures and the commencement of an active herbicide treatment regime, spanning across the months of April, May and June 2021. The purpose of these initial measures is to protect the plant stands from disturbance, by the erection and fencing and signage, and to mitigate the risk of seed dispersal and plant reproduction by the spot application of approved herbicide. The first stage of this process, consisting fencing, signage and the first herbicide treatment, was completed on 26 April 2021, with photographs included in Section 11 of this document. The 2021 treatment programme was completed on 03 June, and a follow up site assessment has been scheduled for September 2021. This management and treatment programme will be continued multi-annually, until either eradication has been fully achieved or future development proposals have been approved and scheduled, whichever is the sooner.

In the event of development being approved in the short term, this management plan recommends the deployment of an IAPS infested soil remediation programme, comprising the bio-secure off-site disposal of all IAPS infested soils, under NPWS licence, to an approved and licenced waste acceptance facility. This process will be based on up to date survey information, to validate the full extent of IAPS present, carried out over the intervening period and immediately in advance of the remediation process commencing. The management plan also recommends that the remediation process should be carried out independently of, and in advance of, the primary development works commencing. It should be executed by, or carried out under the direct management of, an IAPS specialist.

In its ongoing implementation, this management plan will ensure that initial bio-security measures are deployed at all IAPS locations, that a structured, multi annual, site monitoring and herbicide control programme will be employed across the duration planning consent process, and that, if then necessary, a full IAPS infested soil remediation process will be carried out and completed in advance of the commencement of any proposed development project.

I.A.P.S. SITE ASSESSMENT REPORT

SECTION 1 : INTRODUCTION

This Site Assessment Report has been prepared for the client / agency referenced in Section 3 below, and is for their sole and exclusive use. The report reflects the particular site circumstances and conditions, as they presented on the days of inspection. Depending on the time of year of the site assessment, and particularly in advance of, the annual IAPS growing season, the evidence of invasive plant species on site may be limited. In these circumstances follow up site inspections, later in the growing season, may be recommended. This will be included in our Conclusions and Recommendations, at Section 11 of the report.

By their nature, IAPS are aggressive interlopers to our native habitat, are capable of aggressive and rapid dominance, and if left untreated generally result in extensive habitat impairment. It is therefore reasonable to conclude that, where IAPS are identified, but control measures are not applied, these plant species will spread beyond their observed extents.

In addressing invasive alien plant species the precautionary principle should always be applied to their assessment, management and control. All recommended management and control measures should be carried out strictly in accordance with a Site Specific Treatment Plan, and follow “best practice” principles, as set out in technical reference documents such as the UK Environment Agency’s *The Knotweed Code of Practice*

Control measures should be implemented using a recognised professional service with expertise in this field of work, and take into account any and all sensitivities highlighted in this report. Particular care should be taken in circumstances where the invasive plant species are located within a designated site of ecological importance, such as an SAC, SPA or NHA, or are set within the context of known ecological sensitivities. Where the use of herbicides are proposed, these should be applied strictly in accordance with the manufacturers recommendations, by a registered Professional Pesticides User, and fully in compliance with the European Communities (Sustainable Use of Pesticides) Regulations, 2012, (S.I. 155 of 2012).

Under no circumstances should any IAPS be cut or dug out without the advice, direction and supervision of an invasive species specialist. Many plant species have extensive root / rhizome systems which spread beyond the footprint of the above ground plant, and some can regenerate themselves from very small fragments of root or stem. Some plants produce very substantial quantities of seeds, which remain viable for many years, while others produce a sap which causes severe skin damage.

The off-site removal of Japanese knotweed, its variants, soil infested with knotweed material, and other IAPS, is strictly controlled by legislation and requires a licence from the National Parks and Wildlife Service in advance of its removal, in accordance with the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477).

SECTION 2 : LEGISLATIVE CONTEXT

Japanese Knotweed, *Fallopia japonica*, and other invasive plant species, are listed as Invasive Alien Plant Species in Part 1 of the Third Schedule of the *European Communities (Birds and Natural Habitats) Regulations 2011* (SI 477 of 2011, as amended). In addition, soils and other material containing Knotweeds are classified in Part 3 of the Third Schedule as vector materials and are subject to the same strict legal controls. Failure to comply with the legal requirements set down can result in either civil or criminal prosecution, with very severe penalties accruing. A person who commits an offence under Regulations 49 & 50 is liable (a) on summary conviction, to a Class A fine or imprisonment for a term not exceeding six months, or both, or (b) on conviction on indictment, to a fine not exceeding €500,000.00, or imprisonment for a term not exceeding three years, or both. A person who knowingly incites, directs, procures, permits or assists another person to carry out an action that is an offence under these Regulations shall also be guilty of an offence. The relevant sections of the regulations are reproduced below.

- 49(2) *Save in accordance with a licence granted [by the Department of Arts, Heritage and the Gaeltacht], any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow in any place [a restricted non-native plant], shall be guilty of an offence.*
- 49(3) *... it shall be a defence to a charge of committing an offence under paragraph (1) or (2) to prove that the accused took all reasonable steps and exercised all due diligence to avoid committing the offence.*
- 50(1) *Save in accordance with a licence, a person shall be guilty of an offence if he or she [...] offers or exposes for sale, transportation, distribution, introduction or release—*
- (a) [any restricted non-native animal or plant species],
 - (b) anything from which an animal or plant referred to in subparagraph (a) can be reproduced or propagated, or
 - (c) a vector material listed in the Third Schedule, [which includes] soil or spoil taken from places infested with Japanese Knotweed...and its hybrids...

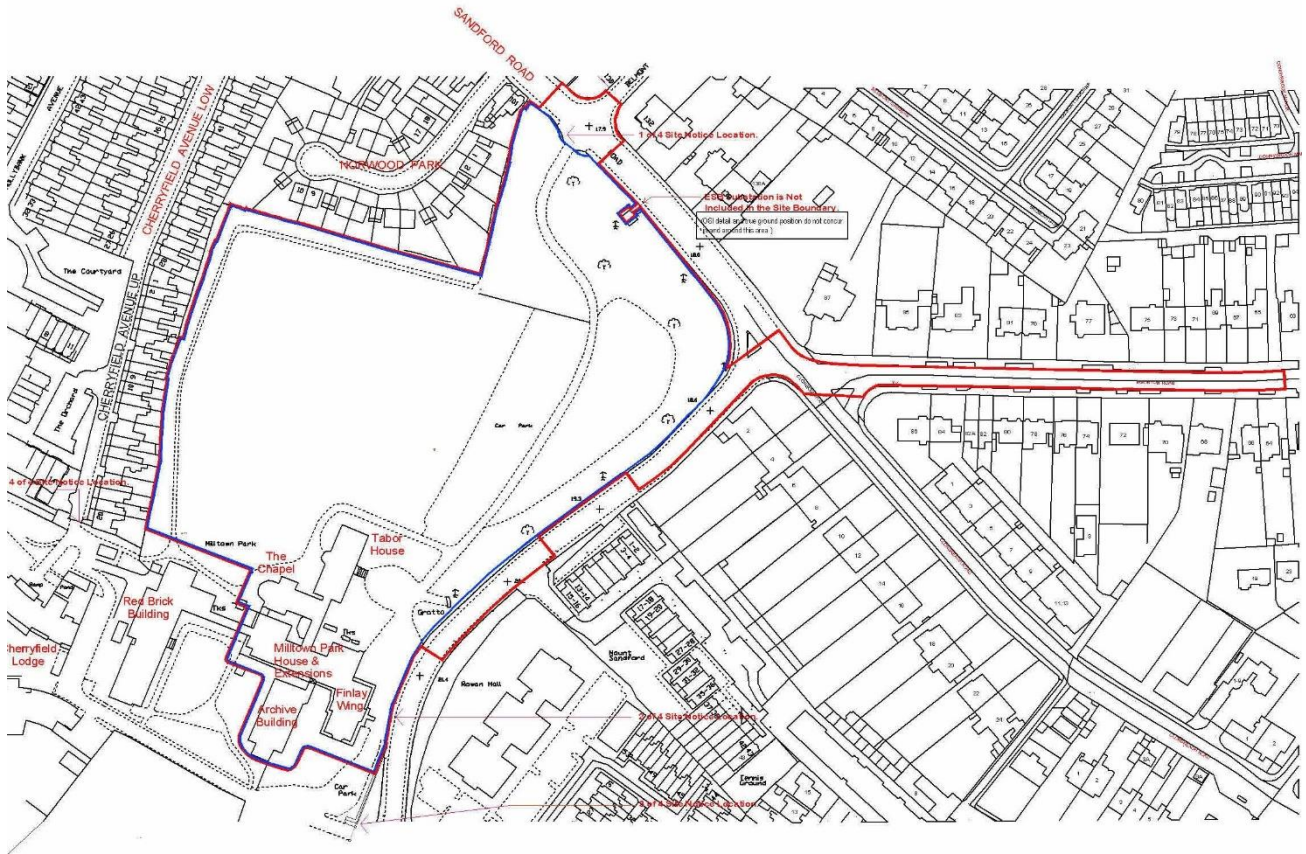
It is an offence under regulations 49(2) and 50(1) to spread, or cause to spread, Japanese Knotweed and other IAPS. An offence may only be avoided if the relevant party can prove that they took all reasonable steps to avoid causing an offence under the legislation. To comply with these regulations, therefore, this management plan relies solely on methodologies necessary to ensure strict compliance with the legislation.

SECTION 3 : CLIENT & SITE DETAILS

GENERAL DETAILS		
SITE ADDRESS	MILLTOWN PARK DEVELOPMENT SITE, SANDFORD ROAD, DUBLIN 6	
CLIENT DETAILS	SANDFORD LIVING LIMITED RIVERSIDE ONE SIR JOHN ROGERSON'S QUAY DUBLIN 2	OWNERSHIP PUBLIC <input type="checkbox"/> PRIVATE <input checked="" type="checkbox"/>
		TEL / MOB 01 2963660 / 086 1915063
		EMAIL dbrennan@lafferty.ie
CONSULTANTS / AGENTS	PROJECT MANAGERS – LAFFERTY, DUNDRUM TOWN CENTRE, SANDYFORD ROAD, DUNDRUM, DUBLIN, D16 A4W6 ARCHITECTS – O'MAHONY PIKE, THE CHAPEL, MOUNT ST. ANNE'S, MILLTOWN, DUBLIN, D06 XN52 PLANNING CONSULTANTS – THORNTON O'CONNOR, 1 KILMACUD ROAD UPPER, DUNDRUM, D14 EA89 ENVIRONMENTAL CONSULTANTS – JBA CONSULTING, GROVE ISLAND, LIMERICK, V94 312N ECOLOGICAL CONSULTANTS – JBA CONSULTING, GROVE ISLAND, LIMERICK, V94 312N	
CURRENT SITE USAGE	AGRICULTURAL <input type="checkbox"/> FORESTRY <input type="checkbox"/> RESIDENTIAL <input type="checkbox"/> COMMERCIAL <input type="checkbox"/> INDUSTRIAL <input type="checkbox"/>	
	PUBLIC SPACE <input type="checkbox"/> GREENFIELD <input type="checkbox"/> BROWNFIELD <input type="checkbox"/> OTHER <input checked="" type="checkbox"/> INSTITUTIONAL <input type="checkbox"/>	
SITE AREA	DEVELOPABLE SITE AREA = 4.26 Ha.	
STATE AGENCIES INVOLVED	CO. COUNCIL <input type="checkbox"/> NPWS <input type="checkbox"/> IFI <input type="checkbox"/> IRISH WATER <input type="checkbox"/> BORD NA MONA <input type="checkbox"/>	
	ESB <input type="checkbox"/> IRISH RAIL <input type="checkbox"/> GNI <input type="checkbox"/> OTHER <input type="checkbox"/>	
SITE DESCRIPTION	<p>THE DEVELOPMENT SITE IS A LARGE PARCEL OF LAND WHICH FORMED A SIGNIFICANT PART OF THE JESUIT RUN MILLTOWN INSTITUTE OF THEOLOGY AND PHILOSOPHY (SEE LAND HOLDING MAP REPRODUCED BELOW). IT COMPRISES EXISTING INSTITUTIONAL BUILDINGS IN ITS SOUTHERN SECTOR, WITH ASSOCIATED HARD SURFACES, MATURE OPEN GRASSLAND AND WOODLAND FRINGES FORMING THE BALANCE OF THE HOLDING. THE SITE IS BOUNDED BY SANDFORD ROAD AND THE REAR OF RESIDENTIAL GARDENS ON NORWOOD PARK TO THE NORTH, BY MILLTOWN ROAD TO THE EAST, BY RETAINED JESUIT LAND AND BUILDINGS TO THE SOUTH AND BY THE REAR OF RESIDENTIAL GARDENS ON CHERRYFIELD AVENUE TO THE WEST</p> <p>BOUNDARIES ARE GENERALLY CLEARLY DELINEATED, AND ARE TYPICALLY DEMARCATED BY FENCING, MASONRY AND STONE WALLS, INDIGENOUS OR PLANTED HEDGES, OR A COMBINATION OF THESE ELEMENTS. HOWEVER THE SOUTHERN AND SOUTH WESTERN BOUNDARIES OF THE SITE BISECT OPEN GROUND AND ARE NOT DEFINITELY MARKED OUT</p>	

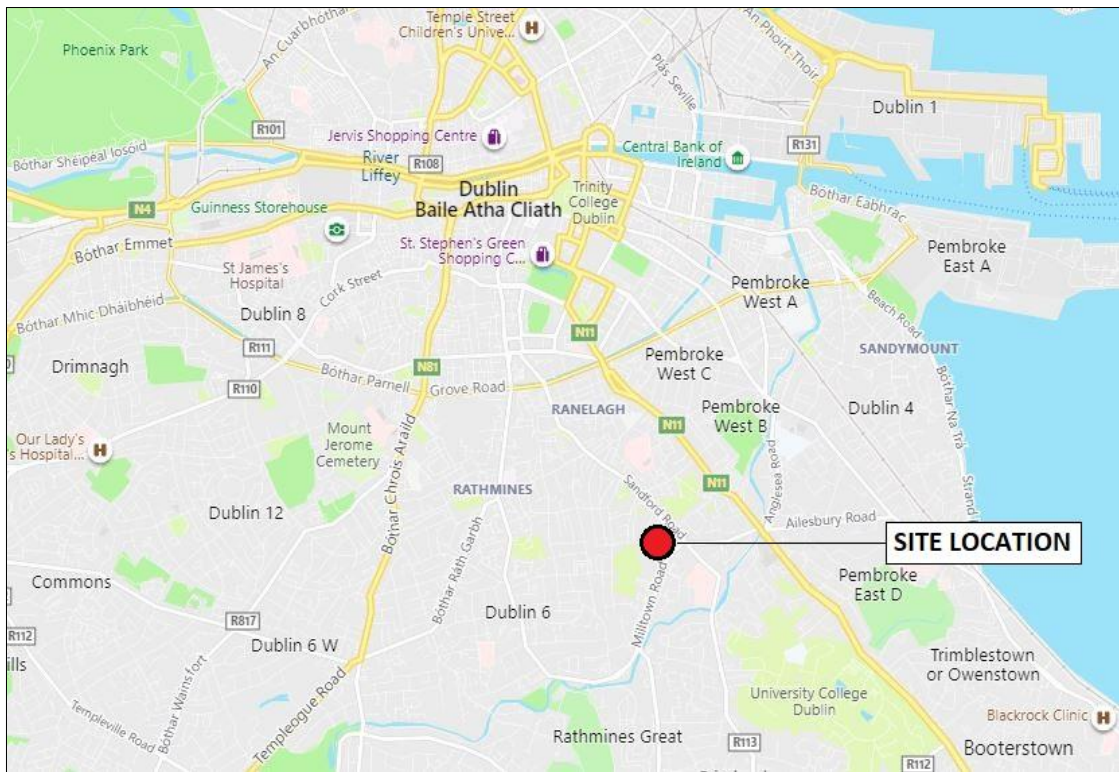
LAND HOLDING MAP

THE DEVELOPMENT BOUNDARY FOR THE PURPOSES OF A PROPOSED PLANNING APPLICATION IS OUTLINED IN RED WHILE THE LANDS WITHIN THE OWNERSHIP OF THE APPLICANT ARE OUTLINED IN BLUE



LAND HOLDING MAP REPRODUCED COURTESY OF O'MAHONY PIKE, ARCHITECTS

SECTION 4 : SITE LOCATION MAP & AERIAL SITE LAYOUT



SITE LOCATION MAP

SITE LOCATION MAP REPRODUCED COURTESY OF BING MAPS



AERIAL SITE LAYOUT

AERIAL SITE LAYOUT PLAN REPRODUCED COURTESY OF GOOGLE MAPS

SECTION 5 : I.A.P.S. OVERALL INFESTATION DETAILS

INVASIVE ALIEN SPECIES							
JAPANESE KNOTWEED	NO	GIANT KNOTWEED	NO	BOHEMIAN KNOTWEED	NO	HIMALAYAN KNOTWEED	NO
GUNNERA	NO	HIMALAYAN BALSAM	NO	GIANT HOGWEED	NO	RHODODENDRON	NO
AMERICAN SKUNK CABBAGE	NO	THREE CORNERED GARLIC	YES	SPANISH BLUEBELL	YES	HOTTENTOT FIG	NO

DESCRIPTION & EXTENT OF PRIMARY I.A.P.S. COLONISATIONS

THREE CORNERED GARLIC (TCG)

- TCG 1** - A LINEAR STAND OF THREE CORNERED GARLIC WITHIN THE WOODLAND FRINGE, WHICH RUNS ALONG THE NORTH WESTERN BOUNDARY OF THE PROPERTY. THE STAND IS LOCATED AT THE BASE OF THE FENCE ON THE BOUNDARY BETWEEN THE SUBJECT SITE AND THE REAR GARDEN OF NO. 6 NORWOOD PARK. PLANTS ARE HEALTHY AND STARTING TO COME INTO FLOWER
- TCG 2** - A CIRCULAR STAND OF THREE CORNERED GARLIC WITHIN THE WOODLAND FRINGE, WHICH RUNS ALONG THE NORTH WESTERN BOUNDARY OF THE PROPERTY. THE STAND IS LOCATED CLOSE TO THE BOUNDARY BETWEEN THE SUBJECT SITE AND THE REAR GARDENS OF NO'S. 4 & 5 NORWOOD PARK. PLANTS ARE HEALTHY AND STARTING TO COME INTO FLOWER
- TCG 3** - A SMALL SINGLE STAND OF THREE CORNERED GARLIC GROWING ON THE WESTERN FRINGE OF A STAND OF WINTER HELIOTROPE, ITSELF AROUND THE BASE OF A MATURE TREE, WEST OF THE MAIN DRIVEWAY. THE PLANT IS COMING INTO FLOWER
- TCG 4** - TWO SMALL SINGLE STANDS OF THREE CORNERED GARLIC GROWING IN THE GRASS MARGIN IMMEDIATELY BESIDE, AND TO THE NORTH OF, THE MAIN DRIVEWAY. THE PLANTS ARE COMING INTO FLOWER

SPANISH BLUEBELL (HSB)

- HSB 1** - A SCATTERED STAND OF HYBRIDISED SPANISH BLUEBELL WITHIN THE WOODLAND FRINGE, WHICH RUNS ALONG THE NORTH WESTERN BOUNDARY OF THE PROPERTY. THE STAND IS MIXED WITHIN NATIVE VEGETATION, CLOSE TO THE BOUNDARY BETWEEN THE SUBJECT SITE AND THE REAR GARDENS OF NO'S. 9 & 10 NORWOOD PARK. PLANTS ARE HEALTHY AND PARTIALLY IN FLOWER
- HSB 2** - A SMALL SINGLE STAND OF HYBRIDISED SPANISH BLUEBELL WITHIN THE WOODLAND FRINGE ALONG THE NORTH WESTERN SITE BOUNDARY
- HSB 3** - A STAND OF HYBRIDISED SPANISH BLUEBELL ON THE EDGE OF THE WOODLAND FRINGE, CLOSE TO THE EASTERN BOUNDARY OF THE PROPERTY. THE STAND IS LOCATED AT THE JUNCTION BETWEEN THE MAIN DRIVEWAY TO THE WEST, AND THE BEGINNING OF A WOODLAND PATH TO THE EAST, BELOW A MATURE TREE, AND MIXED WITHIN NATIVE VEGETATION. THERE IS A SMALL SECONDARY STAND JUST NORTH OF THE MAIN STAND, ON THE EASTERN SIDE OF THE WOODLAND PATH

CONDITION OF INFESTATIONS

GROWTH STAGE	EMERGENT		REGROWTH		JUVENILE / SEMI MATURE		MATURE	X
CONDITION	HEALTHY	X	DISTRESSED		STUNTED		BONSAI	

DISTRIBUTION MAP – APRIL 2021



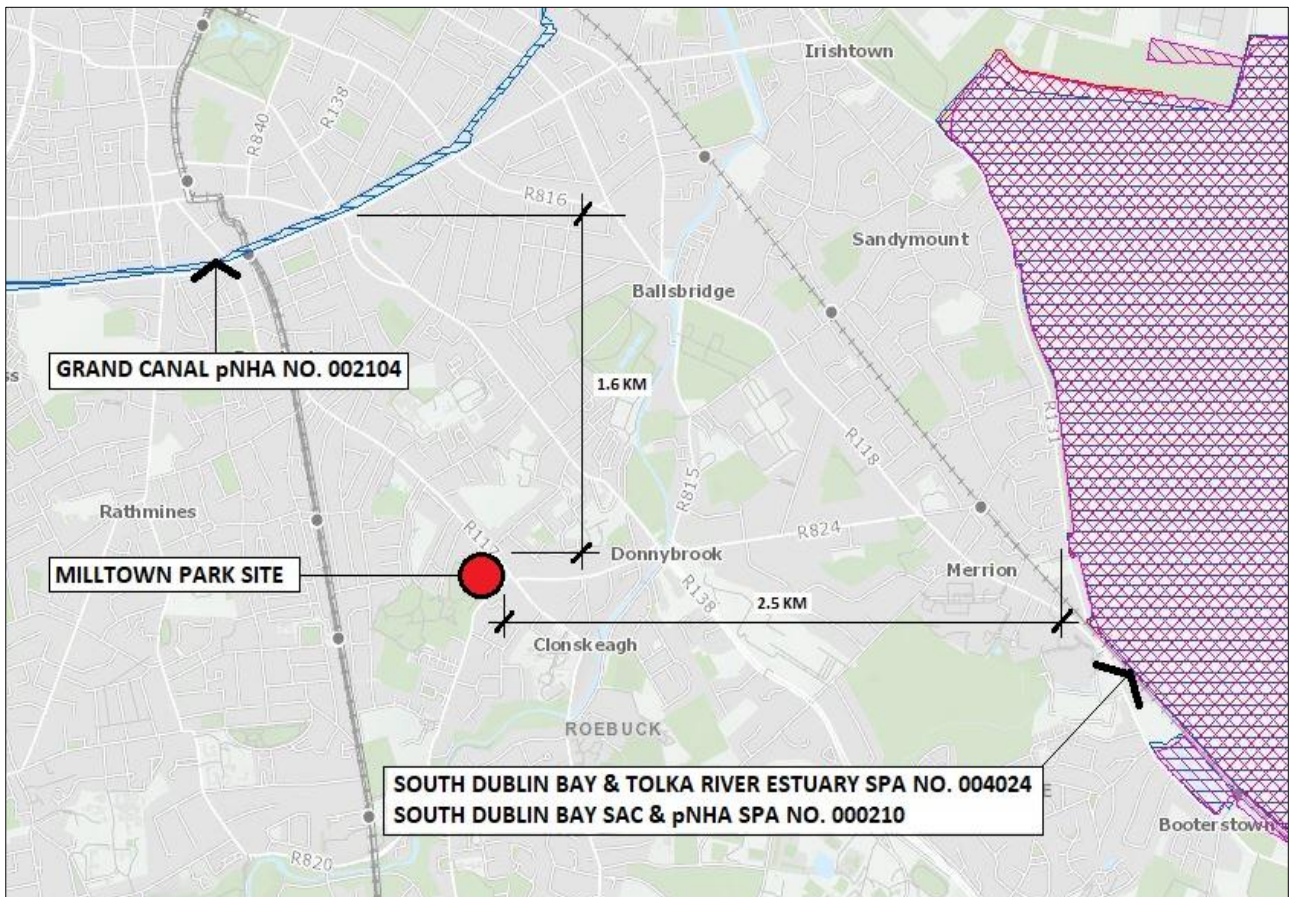
SECTION 6 : I.A.P.S. INDIVIDUAL INFESTATION DETAILS

INDIVIDUAL INFESTATIONS					
INFESTATION DETAILS	NO.	ITM - X	ITM - Y	SIZE (M X M)	COMMENTS
INFESTATION 1	TCG 1	716946	731305	10m x 1m	Linear stand located along the boundary line
INFESTATION 2	TCG 2	716981	731294	1 no. 3m x 8m	Circular stand near boundary, spreading east
INFESTATION 3	TCG 3	717000	731296	1 no. 0.5m dia.	Single stand under tree, beside winter heliotrope
INFESTATION 4	TCG 4	717020	731306	2 no. 0.5m dia.	2 small plants in driveway grass margin
INFESTATION 5	HSB 1	716902	731313	6 no. 0.75m dia.	Series of scattered stands in north western woodland
INFESTATION 6	HSB 2	716929	731300	1 no. 0.5m dia.	Single stand in woodland, south of path
INFESTATION 7	HSB 3	716984	731167	3m x 4m	Stand under tree at pedestrian path in eastern sector

SECTION 7 : I.A.P.S. - ENVIRONMENTAL IMPACT AND LOCAL SENSITIVITIES

ENVIRONMENTAL CONTEXT								
VISUAL IMPACT	MINIMAL	X	MODERATE	n/a	SIGNIFICANT	n/a	SEVERE	n/a
ENVIRONMENTAL IMPACT	LIMITED	X	MODERATE	n/a	SIGNIFICANT	n/a	SEVERE	n/a
TRANSLOCATION RISK	LOW	n/a	MEDIUM	X	HIGH	n/a	ACUTE	n/a
PROXIMITY TO WATER BODY	DISTANT	X	VICINITY	n/a	ADJOINING	n/a	WITHIN	n/a
NATURE OF WATER BODY	RIVER	X	SEA	n/a	LAKE	n/a	CANAL	n/a
DESIGNATED STATUS								
IS SITE IN A DESIGNATED AREA	SAC	NO	SPA	NO	NHA / pNHA	NO	NO.	
DESIGNATED AREA NEARBY	SAC	YES	SPA	YES	NHA / pNHA	YES	NO.	SEE BELOW

THE NEAREST DESIGNATED SITES ARE THE GRAND CANAL pNHA NO. 002104, WHICH IS APPROX. 1.6 KM TO THE NORTH OF THE MILLTOWN PARK SITE, AND THE SOUTH DUBLIN BAY & TOLKA RIVER ESTUARY SPA NO. 004024 / THE SOUTH DUBLIN BAY SAC & pNHA NO. 000210, WHICH ARE APPROX. 2.5 KM TO THE EAST OF THE SITE



RELATIONSHIP BETWEEN THE SITE & THE CLOSEST DESIGNATED SITES

SECTION 8 : SITE PHOTOGRAPHS – DECEMBER 2020 SURVEY

OVERVIEW OF SITE



OVERALL VIEW OF PROPERTY – SOUTH EASTERN SECTOR, LOOKING SOUTH



OVERALL VIEW OF PROPERTY – SOUTH WESTERN SECTOR, LOOKING SOUTH WEST

SECTION 8 : SITE PHOTOGRAPHS – DECEMBER 2020 SURVEY (CONTD.)

OVERVIEW OF SITE



OVERALL VIEW OF PROPERTY – NORTH EASTERN SECTOR, LOOKING NORTH



OVERALL VIEW OF PROPERTY – NORTH CENTRAL SECTOR, LOOKING NORTH WEST

SECTION 8 : SITE PHOTOGRAPHS – DECEMBER 2020 SURVEY (CONTD.)

OVERVIEW OF SITE



OVERALL VIEW OF PROPERTY – NORTH WESTERN SECTOR, LOOKING NORTH WEST



WESTERN SECTION OF SOUTHERN BOUNDARY – LOOKING WEST

SECTION 8 : SITE PHOTOGRAPHS – DECEMBER 2020 SURVEY (CONTD.)

OVERVIEW OF SITE



CENTRAL SECTION OF SOUTHERN BOUNDARY – LOOKING NORTH



EASTERN SECTION OF SOUTHERN BOUNDARY – LOOKING NORTH EAST

SECTION 8 : SITE PHOTOGRAPHS – DECEMBER 2020 SURVEY (CONTD.)

OVERVIEW OF SITE



SOUTHERN SECTION OF WESTERN BOUNDARY – LOOKING NORTH WEST



CENTRAL SECTION OF WESTERN BOUNDARY – LOOKING NORTH WEST

SECTION 8 : SITE PHOTOGRAPHS – DECEMBER 2020 SURVEY (CONTD.)

OVERVIEW OF SITE



WESTERN SECTION OF NORTHERN BOUNDARY – LOOKING NORTH



WESTERN SECTION OF NORTHERN BOUNDARY – LOOKING WEST

SECTION 8 : SITE PHOTOGRAPHS – DECEMBER 2020 SURVEY (CONTD.)

OVERVIEW OF SITE



CENTRAL SECTION OF NORTHERN BOUNDARY – LOOKING NORTH



EASTERN SECTION OF NORTHERN BOUNDARY – LOOKING EAST

SECTION 8 : SITE PHOTOGRAPHS – DECEMBER 2020 SURVEY (CONTD.)

OVERVIEW OF SITE



NORTHERN SECTION OF EASTERN BOUNDARY – LOOKING SOUTH EAST



SOUTHERN SECTION OF EASTERN BOUNDARY – LOOKING EAST

SECTION 9 : SITE PHOTOGRAPHS - APRIL 2021 I.A.P.S.

THREE CORNERED GARLIC – TCG 1



LINEAR STAND RUNNING ALONG BOUNDARY LINE – LOOKING NORTH EAST



LINEAR STAND RUNNING ALONG BOUNDARY LINE – LOOKING NORTH WEST

SECTION 9 : SITE PHOTOGRAPHS - APRIL 2021 I.A.P.S. (CONTD.)

THREE CORNERED GARLIC – TCG 2



MAIN BODY OF STAND NEAR NORTH WESTERN BOUNDARY LINE – LOOKING NORTH



SECONDARY GROWTH TO THE EAST OF MAIN STAND, COMING INTO FLOWER – LOOKING NORTH

SECTION 9 : SITE PHOTOGRAPHS - APRIL 2021 I.A.P.S. (CONTD.)

THREE CORNERED GARLIC – TCG 3



SINGLE STAND ON FRINGE OF WINTER HELIOTROPE – LOOKING SOUTH



CLOSE UP OF STAND ON FRINGE OF WINTER HELIOTROPE – LOOKING SOUTH

SECTION 9 : SITE PHOTOGRAPHS - APRIL 2021 I.A.P.S. (CONTD.)

THREE CORNERED GARLIC – TCG 4



TWO STANDS IN THE NORTH EASTERN DRIVEWAY GRASSED MARGIN – LOOKING SOUTH EAST



CLOSE UP OF NORTHERNMOST STAND – LOOKING NORTH EAST

SECTION 9 : SITE PHOTOGRAPHS - APRIL 2021 I.A.P.S. (CONTD.)

HYBRIDISED SPANISH BLUEBELL - HSB 1



OVERALL ZONE OF INFESTATION – LOOKING WEST



STANDS AROUND BASE OF TREE – LOOKING WEST

SECTION 9 : SITE PHOTOGRAPHS - APRIL 2021 I.A.P.S. (CONTD.)

HYBRIDISED SPANISH BLUEBELL - HSB 2



SINGLE STAND OF HYBRIDISED SPANISH BLUEBELL WITH WHITE FLOWERS – LOOKING NORTH



DETAIL OF WHITE FLOWERS OF HYBRIDISED SPANISH BLUEBELL

SECTION 9 : SITE PHOTOGRAPHS - APRIL 2021 I.A.P.S. (CONTD.)

HYBRIDISED SPANISH BLUEBELL - HSB 3



MAIN STAND, WITH SECONDARY STAND TO THE RIGHT AND BEYOND – LOOKING NORTH



CLOSER VIEW OF MAIN STAND – LOOKING NORTH

SECTION 9 : SITE PHOTOGRAPHS - APRIL 2021 I.A.P.S. (CONTD.)

HYBRIDISED SPANISH BLUEBELL – VARIATIONS IN FLOWERS



FLOWERS IN HSB 1 & 3 - BLUE



FLOWERS IN HSB 1 & 3 - PINK

SECTION 10 : SITE PHOTOGRAPHS - APRIL 2021 FENCING & SIGNAGE



HSB 1



TCG 2

SECTION 10 : SITE PHOTOGRAPHS - APRIL 2021 FENCING & SIGNAGE (CONTD.)



HSB 3



TCG 4

SECTION 10 : SITE PHOTOGRAPHS - APRIL 2021 FENCING & SIGNAGE (CONTD.)




TCG 3



TYPICAL SIGNAGE

SECTION 11 : SITE ASSESSMENT CONCLUSIONS & RECOMMENDATIONS

1. BASED ON THE OUTCOME OF THE TWO SITE SURVEYS, CARRIED OUT IN DECEMBER 2020 AND APRIL 2021, THIS REPORT CONFIRMS THE PRESENCE OF INVASIVE ALIEN PLANT SPECIES, NAMELY THREE CORNERED GARLIC AND SPANISH BLUEBELL.
2. GIVEN THE TIME OF YEAR, AND THE VARIOUS I.A.P.S. PLANT GROWTH CYCLES, IT IS POSSIBLE THAT OTHER I.A.P.S. PLANTS COULD PRESENT IN THE FUTURE. IN APPLYING THE "PRECAUTIONARY PRINCIPLE", REGULAR SITE MONITORING SHOULD BE MAINTAINED. FURTHER SITE INSPECTIONS SHOULD BE SCHEDULED DURING THE 2021 GROWING PERIOD, TO VALIDATE THE EMERGENT I.A.P.S., PARTICULARLY THREE CORNERED GARLIC AND SPANISH BLUEBELL. THIS REPORT AND MANAGEMENT PLAN SHOULD BE UPDATED TO TAKE ACCOUNT OF THE RESULTS OF THE 2021 INSPECTIONS
3. THIS REPORT AND MANAGEMENT PLAN, AND SUBSEQUENT UPDATES, SHOULD BE CIRCULATED TO ANY ADJOINING LAND OWNERS THAT MAY BE AFFECTED BY THE I.A.P.S. PRESENCE, AND TO THE RELEVANT PRESCRIBED AUTHORITIES, WHERE REQUIRED OR APPROPRIATE TO DO SO
4. ALL AREAS OF KNOWN INFESTATION SHOULD BE SECURELY FENCED OFF WITHOUT DELAY, INCLUDING A 5 – 7m BUFFER ZONE WHERE APPROPRIATE. FENCING SHOULD BE STURDY AND INCORPORATE WARNING / ADVISORY SIGNAGE. WHERE STANDS ARE SMALL, OR JUST INDIVIDUAL STEMS, OR HAVE BEEN PREVIOUSLY TREATED AND ARE DEAD STEMS, THEN ADVISORY SIGNAGE ON STURDY TIMBER POSTS MAY SUFFICE
5. NO GROUND MAINTENANCE, OPENING UP OR ANY OTHER GROUND DISTURBANCE SHOULD TAKE PLACE WITHIN THE FENCED AREAS, WITHOUT PRIOR CONSULTATION WITH, AND THE CLEAR DIRECTION OF, AN INVASIVE PLANT SPECIES SPECIALIST, AND THEN ONLY UNDER STRICT SUPERVISION AND BIO-SECURITY CONDITIONS
6. IF ACCESS TO THE INFESTED AREAS IS NECESSARY, AND PARTICULARLY IF ANY ESSENTIAL WORK HAS TO BE CARRIED OUT WITHIN THE FENCED LOCATIONS, THEN THIS MUST ONLY BE DONE FOLLOWING FORMAL APPROVAL IN ADVANCE, AND AFTER THE PREPARATION AND AGREEMENT OF A "TASK SPECIFIC" METHOD STATEMENT. NO VIABLE PLANT MATERIAL OR RHIZOME SHOULD BE DISTURBED IN, OR REMOVED FROM, THE ZONES OF INFESTATION
7. WHERE FUTURE DEVELOPMENT PROPOSALS COULD ENCROACH ONTO THE I.A.P.S. INFESTED AREAS, THEN A SITE SPECIFIC GROUND REMEDIATION PROGRAMME SHOULD BE DEVELOPED AND DEPLOYED, WHICH WOULD PROVIDE FOR THE REMOVAL OF ALL INFESTED SOILS, AND THEIR BIO-SECURE DISPOSAL. THIS PLAN SHOULD INCLUDE PROVISION FOR VERTICAL AND HORIZONTAL GROUND PROTECTION ALONG PROPERTY BOUNDARIES, WHERE APPROPRIATE, AND ANY OTHER RELEVANT MEASURES REQUIRED TO ENSURE STRICT BIO-SECURITY COMPLIANCE ACROSS THE SITE & WORKS.
8. ALL RELEVANT STAFF AND SITE VISITORS SHOULD BE BRIEFED ON THE IDENTIFICATION, RISKS AND DANGERS OF THE I.A.P.S. PRESENT, AND ON THE SPECIFIC MEASURES, RESTRICTIONS AND PROTOCOLS TO BE DEPLOYED ON THE SITE
9. THE ACCOMPANYING MANAGEMENT PLAN AND TREATMENT METHODOLOGY SHOULD BE SCREENED FOR POTENTIAL IMPACTS ON ECOLOGICAL RECEPTORS AND SENSITIVITIES, WHERE THEY EXIST, TO FULLY CONSIDER THE REQUIREMENTS OF S.I. 155 OF 2012 – THE EUROPEAN COMMUNITIES (SUSTAINABLE USE OF PESTICIDES) REGULATIONS
10. WHEN USING HERBICIDES AS PART OF THE MANAGEMENT PLAN AND REMEDIATION PROGRAMME, CONSIDERATION MUST BE GIVEN TO THE PROXIMITY OF ECOLOGICAL RECEPTORS AND DESIGNATED SITES. NON RESIDUAL, AQUATIC APPROVED, HERBICIDES SHOULD BE SPECIFIED FOR TREATMENT, WHERE HERBICIDE USE IS DEEMED SUITABLE
11. INVASIVE PLANT SPECIES, BY THEIR NATURE, ARE AGGRESSIVE AND CAN BE INTRODUCED ONTO PROPERTY INADVERTENTLY, VIA MANY DIFFERENT MEANS AND ROUTES. WE WOULD ENCOURAGE ALL PARTIES TO FAMILIARISE THEMSELVES WITH THE IDENTIFICATION OF THE PRIMARY INVASIVE ALIEN PLANT SPECIES PRESENT. SPECIALIST ADVICE SHOULD BE SOUGHT WHERE THERE IS DOUBT AS TO THE IDENTITY OF ANY PARTICULAR PLANTS ENCOUNTERED
12. IN LIGHT OF THE POTENTIAL FUTURE RE-DEVELOPMENT OF THE SITE IN THE SHORT TO MEDIUM TERM, THE MANAGEMENT PLAN SECTION OF THIS DOCUMENT ALSO INCLUDES A SHORT OVERVIEW OF ADDITIONAL MANAGEMENT MEASURES WHICH SHOULD BE DEPLOYED WHEN, AND IF, SITE DEVELOPMENT / CONSTRUCTION WORKS ARE SCHEDULED. THESE MEASURES ARE DESIGNED TO HELP MITIGATE THE RISK OF I.A.P.S. BEING INTRODUCED ONTO THE SITE FROM EXTERNAL SOURCES. AT THAT TIME OF PREPARATION FOR CONSTRUCTION COMMENCEMENT SUCH MEASURES SHOULD BE DEVELOPED AND EXPANDED UPON, AS NECESSARY, TO MEET THE PARTICULAR REQUIREMENTS OF THIS PROJECT



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I.A.P.S. MANAGEMENT PLAN

SECTION 12 : KNOTWEEDS - PROCESS OF TREATMENT SELECTION

INVASIVE ALIEN SPECIES				
JAPANESE KNOTWEED	GIANT KNOTWEED	BOHEMIAN KNOTWEED	HIMALAYAN KNOTWEED	
SELECTION OF TREATMENT				

THE MATRIX BELOW HAS BEEN DEVELOPED BY THE U.K. ENVIRONMENT AGENCY, BASED ON BEST PRACTICE AND THE APPLICATION OF "THE PRECAUTIONARY PRINCIPLE". THIS PROCESS IS INTENDED TO ARRIVE AT THE OPTIMUM JAPANESE KNOTWEED MANAGEMENT SOLUTION, WHICH POSES THE LEAST BIO-SECURITY RISK, AND WHICH MANAGES THE PLANTS REMEDIATION PROCESS AS CLOSE AS PRACTICABLE TO IT'S EXISTING POSITION

Flowchart for treating Japanese knotweed



SECTION 13 : KNOTWEEDS - MANAGEMENT PLAN

TREATMENT PLAN			
METHODOLOGY	N/A – NO KNOTWEEDS IDENTIFIED ON THE LANDS		
MANAGEMENT ELEMENTS	INITIAL / MULTI-ANNUAL HERBICIDE CONTROL		ON-SITE BELOW GROUND SOIL CONTAINMENT CELL
	DEEP BURIAL – GREATER THAN 5m		EXCAVATE AND DISPOSE OFF-SITE
HERBICIDE TREATMENT	FOLLIAR SPRAY		STEM INJECTION
	CUT AND STEM FILL		SPOT SPRAY / LEAF WIPE / SWAB
	ADDITIONAL DETAILS N/A - NO KNOTWEEDS IDENTIFIED ON THE LANDS		
HERBICIDE TYPE	APPROVED FOR USE WITH JAPANESE KNOTWEED		APPROVED FOR USE IN AQUATIC ENVIRONMENTS
BIO-SECURITY MEASURES	FENCE OFF INFESTATIONS AND FIT WARNING SIGNS		SET 5 – 7m SAFETY ZONE AROUND INFESTATIONS
ILLUSTRATIONS	N/A - NO KNOTWEEDS IDENTIFIED ON THE LANDS		

SECTION 14 : THREE CORNERED GARLIC & SPANISH BLUEBELL – MANAGEMENT & REMEDIATION PLAN

TREATMENT PLAN			
TREATMENT METHODOLOGY	<p>THE PREFERRED SOLUTION FOR MANAGING THREE CORNERED GARLIC & SPANISH BLUEBELL IS :</p> <ol style="list-style-type: none"> FENCE OFF THE IDENTIFIED THREE CORNERED GARLIC & SPANISH BLUEBELL LOCATIONS, USING SECURE FENCING AND APPROPRIATE ADVISORY/WARNING SIGNAGE – SEE APPENDIX 3 AND 4 FOR TYPICAL EXAMPLES CARRY OUT ON-GOING INSPECTIONS OF THE LANBDS ACROSS THE 2021 SPRING & SUMMER GROWING PERIODS, TO VALIDATE THE RESULTS OF THE CURRENT SITE SURVEY, AND TO SCREEN FOR THE INTRODUCTION ONTO THE SITE OF ADDITIONAL I.A.P.S. UPDATE THIS I.A.P.S. ASSESSMENT REPORT & MANAGEMENT PLAN, AS NECESSARY, FOLLOWING EACH FOLLOW UP SITE SURVEY INSTITUTE A MULTI-ANNUAL HERBICIDE TREATMENT PROGRAMME, COMMENCING IN SPRING 2021, CONSISTING OF THREE TREATMENT VISITS, ALL TO BE CARRIED OUT IN ADVANCE OF, AND DURING, THE FLOWERING PERIOD OF THE PLANTS FOR PART OR ALL OF ANY OF THE THREE CORNERED GARLIC & SPANISH BLUEBELL SITES THAT COULD BE DISTURBED BY ELEMENTS OF THE PROPOSED FUTURE DEVELOPMENT OF THE SITE, THEN WHEN THE DEVELOPMENT PROGRAMME BECOMES CLEAR, AND WHERE ERADICATION HAS NOT BEEN FULLY VALIDATED, A DETAILED CONSTRUCTION STAGE MANAGEMENT PLAN SHOULD BE PREPARED TO PHASE OUT THE HERBICIDE TREATMENT PROCESS, AND TO REPLACE IT WITH THE PHYSICAL REMEDIATION OF ANY REMAINING INFESTED SOILS. THE PRECISE DETAILS AND TIMING OF THIS PLAN SHOULD TO BE BASED ON UP TO DATE SITE SURVEY INFORMATION, AND THE DETERMINATION OF THE LEVEL AND EXTENT OF ERADICATION ACHIEVED, CONSIDERED IN CONJUNCTION WITH THE FINAL DETAILED PROJECT DESIGN AND THE DEFINITIVE CONSTRUCTION / DEVELOPMENT WORKS PROGRAMME. AT THIS MOMENT, THE BIO-SECURE OFF-SITE DISPOSAL OF ANY REMAINING INFESTED SOILS WOULD BE CONSIDERED TO BE THE MOST APPROPRIATE REMEDIATION SOLUTION 		
MANAGEMENT ELEMENTS	MULTI ANNUAL HERBICIDE CONTROL PROGRAMME	X	ON-SITE BELOW GROUND SOIL CONTAINMENT CELL
	DEEP BURIAL – GREATER THAN 5m		EXCAVATE AND DISPOSE OFF-SITE
	EXCAVATE AND TREAT IN ON-SITE TEMPORARY BUND		CERTIFIED ROOT BARRIER MEMBRANE SYSTEMS
HERBICIDE TREATMENT TECHNIQUE	FOLLIAR SPRAY		STEM INJECTION
	CUT AND STEM FILL		SPOT SPRAY / LEAF WIPE / SWAB
	SPOT SPRAY TO CONSIST OF A TARGETED APPLICATION OF ROUNDUP BIACTIVE XL IN SOLUTION, AT A DILUTION RATE OF 1:40, OR ALTERNATIVE GLYPHOSATE BASED HERBICIDE, APPLIED BI-ANNUALLY IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS. SPRAY TO BE APPLIED ONLY TO THE TARGET PLANT, PRIOR TO SETTING SEED, AND APPLIED USING A PROPRIETRY SPRAY UNIT FITTED WITH AN ANTI DRIFT SHIELD. SPRAY ONLY TO BE APPLIED UNDER SUITABLE PREVAILING WEATHER CONDITIONS AND APPLIED AT A RATE AND PRESSURE WHICH MINIMISES RUN OFF FROM THE PLANT LEAVES AND FLOWERS. THE SITE HANDLING AND MIXING OF HERBICIDE SHOULD BE AVOIDED TO THE GREATEST EXTENT POSSIBLE		
ADDITIONAL WORKS	CUT AND BAG PLANT MATERIAL		SHRED & DISPOSE OF VIABLE PLANT MATERIAL
HERBICIDE	APPROVED FOR 3 CORNERED GARLIC	X	APPROVED FOR USE IN AQUATIC ENVIRONMENTS
BIO-SECURITY MEASURES	FENCE OFF INFESTATIONS AND FIT WARNING SIGNS	X	SET SAFETY ZONE AROUND INFESTATIONS
	ADVISE AFFECTED PARTIES / NOTIFY NEIGHBOURS		BRIEF WORKERS AND VISITORS TO PROPERTY
	IF MORE THAN 1 PARTY, AGREE WORKS IN ADVANCE		MONITOR AND RECORD

SECTION 15 : PRELIMINARY MANAGEMENT PROGRAMME

PROGRAMME			
STAGE 1 SPRING/SUMMER 2021	<ul style="list-style-type: none"> DEPLOY BIOSECURITY MEASURES, COMPRISING SECURE FENCING AND ADVISORY / WARNING SIGNAGE CARRY OUT THREE SPOT SPRAYING TREATMENTS AT THREE CORNERED GARLIC & SPANISH BLUEBELL STANDS CARRY OUT FOLLOW UP SITE SURVEY, TO INSPECT FOR NEW, EMERGING AND SPREADING I.A.P.S. UPDATE ASSESSMENT REPORT AND MANAGEMENT PLAN, BASED ON THE OUTCOME OF THE SEPTEMBER SURVEY 		<p>COMPLETE 04/21</p> <p>COMPLETE 06/21</p> <p>PENDING 09/21</p>
STAGE 3 SUMMER 2021 ONWARDS	<ul style="list-style-type: none"> CONTINUE IMPLEMENTATION OF THE MULTI-ANNUAL HERBICIDE TREATMENT PROGRAMME, WITH MINIMUM BI-ANNUAL TREATMENT AND INSPECTION VISITS, SCHEDULED AS REQUIRED AND AS NECESSARY, UNTIL FULL ERADICATION HAS BEEN VALIDATED IF PLANNING PERMISSION IS GRANTED AND DEVELOPMENT OF THE SITE IS SCHEDULED, IN ADVANCE OF FULL ERADICATION BEING VALIDATED, PREPARE AND IMPLEMENT A CONSTRUCTION STAGE I.A.P.S. MANAGEMENT PLAN, TO REMEDIATE THE RESIDUAL INFESTED SOILS, IN ADVANCE OF THE COMMENCEMENT OF ENABLING WORKS AND CONSTRUCTION ACTIVITIES 		

SECTION 16 : I.A.P.S. – ADDITIONAL CONSTRUCTION STAGE I.A.P.S. MANAGEMENT MEASURES

REMEDIATION PLAN	
OVERVIEW	<p>THERE IS AN EXISTING AND ONGOING RISK TO ALL PROPERTIES FROM THE INTRODUCTION OF INVASIVE ALIEN PLANT SPECIES ONTO THEIR LANDS FROM THE OUTSIDE. THE PRIMARY PATHS OF INTRODUCTION ARE VIA :</p> <ol style="list-style-type: none"> 1. PHYSICAL SPREAD OF I.A.P.S. PLANTS FROM ADJACENT / ADJOINING LANDS 2. AIRBORNE DISPERSAL OF SEEDS OR OTHER VIABLE I.A.P.S. MATERIAL 3. IMPORTED SOILS AND OTHER FILL/LANDSCAPING MATERIALS CONTAINING VIABLE SEED OR OTHER I.A.P.S. MATERIAL 4. SOIL ON MACHINERY AND VEHICLES CONTAMINATED WITH VIABLE SEEDS OR OTHER I.A.P.S. MATERIAL 5. TOOLS AND FOOTWEAR CONTAINING VIABLE SEED OR OTHER I.A.P.S. MATERIAL <p>CONSTRUCTION WORKS, BY THEIR VERY NATURE, POSE A HEIGHTENED RISK OF THE INTRODUCTION OF I.A.P.S. ONTO DEVELOPMENT SITES, PARTICULARLY VIA ITEMS 3. – 5. ABOVE. THEREFORE STRICT SITE MONITORING / MANAGEMENT PROCEDURES SHOULD BE DEPLOYED THROUGHOUT THE CONSTRUCTION STAGE OF THE SITE DEVELOPMENT PROGRAMME.</p> <p>FOR INFORMATION PURPOSES, THE SCHEMATIC OF THE MILLTOWN PARK DEVELOPMENT PROPOSAL IS INCLUDED BELOW</p>
PRIMARY MANAGEMENT MEASURES	<p>THE CONTRACTOR SHOULD PROVIDE A PROJECT SPECIFIC I.A.P.S. STANDARD OPERATING PROCEDURE DOCUMENT, IN ADVANCE OF WORK COMMENCEMENT. THE DOCUMENT SHOULD BE PREPARED BY AN I.A.P.S. SPECIALIST, AND SHOULD COVER THE BIO-SECURITY MEASURES TO BE TAKEN, INCLUDING THE MAINTENANCE OF RECORDS, TO SCREEN FOR THE INTRODUCTION OF I.A.P.S. AND TO ENABLE THEIR TRACING, IF SUCH AN INTRODUCTION OCCURS, INCLUDING :</p> <ul style="list-style-type: none"> • CONFIRMATION THAT ALL MACHINERY / VEHICLES ARE FREE OF I.A.P.S., PRIOR TO THEIR FIRST INTRODUCTION TO SITE • CERTIFICATION FROM THE SUPPLIERS THAT ALL BATCHES OF IMPORTED SOILS AND OTHER FILL/LANDSCAPING MATERIALS ARE FREE OF I.A.P.S. • A REGULAR SCHEDULE OF SITE INSPECTIONS ACROSS THE I.A.P.S. GROWING SEASONS, FOR THE FULL DURATION OF THE CONSTRUCTION WORKS PROGRAMME
ILLUSTRATIONS	 <p style="text-align: center;">PROPOSED SITE PLAN – DRAWING REPRODUCED COURTESY OF CAMEO & PARTNERS</p>

MILLTOWN PARK DEVELOPMENT SITE
SANDFORD ROAD
DUBLIN 6

APPENDIX 1
Three Cornered Garlic (Leek) I.D. Sheet

Non-Native Garlics

Species Description

Scientific names: *Allium* species

AKA: Gerllyg (Welsh)

Native to: Mediterranean, Caucasus and Iran

Habitat: Roadsides, hedge banks, riverbanks, field margins, rough and waste ground and in woodland

Garlics are perennial herbs with bulbs and grass-like leaves, usually smelling of garlic when fresh and crushed. The most widespread invasive garlics in the UK are Three-cornered Garlic *Allium triquetrum* and Few-flowered Garlic *Allium paradoxum*. Other invasive species include Rosy Garlic *Allium roseum* and Keeled Garlic *Allium carinatum*.

The seeds of Three-cornered Garlic are spread naturally by ants. It was established initially in Guernsey in 1849 and is now naturalised and increasingly abundant and widespread in milder areas of the UK, especially in the south and west, with scattered, sometimes short-lived, populations elsewhere.

Few-flowered Garlic spreads by means of bulbils (small bulbs produced above ground). It was first recorded in the wild near Edinburgh in 1863 and can be very invasive in disturbed habitats. It is increasingly abundant throughout its range, especially in southern Scotland and is most common in the east of Britain.

Rosy Garlic was first recorded in the wild in 1837 and is spreading, especially in south-west England. Keeled Garlic has been naturalised since at least 1806, but there is little evidence of a significant increase in range over the last 50 years.



Key ID Features



Three-cornered and few-flowered garlic



Stem cross section is strongly angled

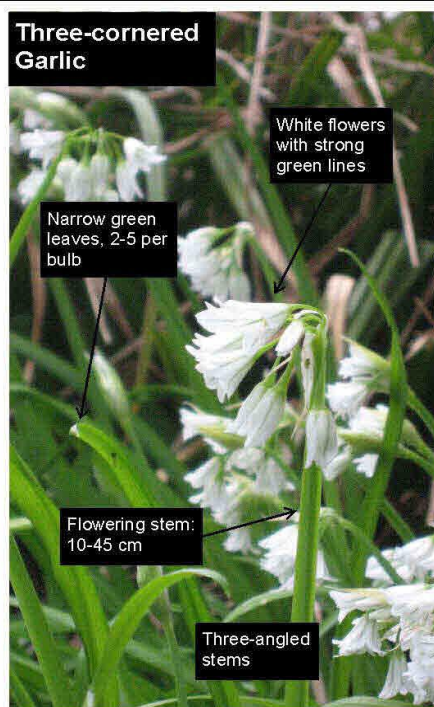
Rosy garlic



Stem cross section is round



Three-cornered Garlic



Identification throughout the year

Three-cornered garlic flowers April to June.

Few-flowered garlic flowers April to May.

Rosy garlic flowers May to June.

Keeled garlic flowers in August.

Leaves are not present over winter as these species die back in cold winters and come up from bulbs in the spring.

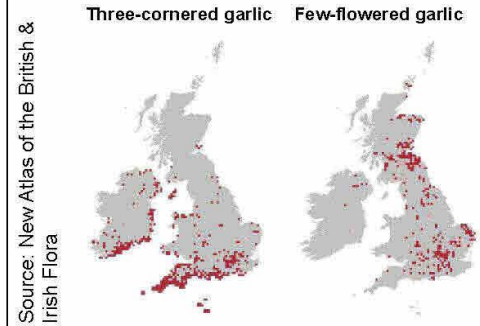
Distribution

Three-cornered garlic is widespread in milder areas, especially the south-west, and has increased in numbers and range.

Few-flowered garlic has a mainly eastern distribution and is increasing throughout its range.

Rosy garlic is scattered in the south and west and is spreading.

Keeled garlic is scattered throughout the lowlands but does not seem to be increasing.



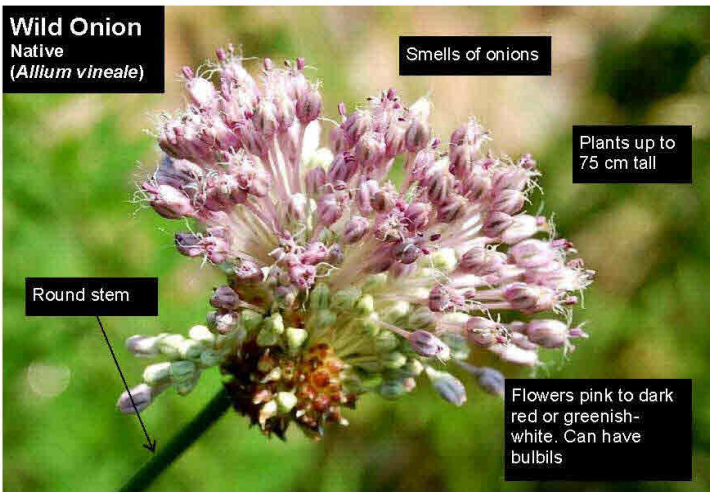
Similar Species

There are a number of native onion and garlic species in the UK with ramsons and wild onion being the most common. There are many species with leaves which are similar to the non-native garlics but the onion/garlic smell is distinctive.

Ramsons
Native
(*Allium ursinum*)



Wild Onion
Native
(*Allium vineale*)



References and further reading:

Preston *et al.* (2002) "New Atlas of the British & Irish Flora". Oxford University Press

Sell, P & Murrell, G (1996) "Flora of Great Britain and Ireland. Volume 5: *Butomaceae-Orchidaceae*". Cambridge University Press

Stace, C (1997) "New Flora of the British Isles". Cambridge University Press

Photos from: Becky Dewdney-York, Nhu Nguyen, William Vann, Max Wade

MILLTOWN PARK DEVELOPMENT SITE
SANDFORD ROAD
DUBLIN 6

APPENDIX 2
Spanish Bluebell I.D. Sheet

WIKIPEDIA

Hyacinthoides hispanica

Hyacinthoides hispanica (syn. *Endymion hispanicus* or *Scilla hispanica*), the **Spanish bluebell**, is a spring-flowering bulbous perennial native to the Iberian Peninsula. It is one of around 11 species in the genus *Hyacinthoides*, others including the common bluebell (*Hyacinthoides non-scripta*) in northwestern Europe, and the Italian bluebell (*Hyacinthoides italica*) further east in the Mediterranean region.^[1]

It is distinguished from the common bluebell by its paler and larger blue flowers, which are less pendulous and not all drooping to one side like the common bluebell; plus a more erect flower stem (raceme), broader leaves, blue anthers (where the common bluebell has creamy-white ones) and little or no scent compared to the strong fragrant scent of the northern species. Like *Hyacinthoides non-scripta*, both pink- and white-flowered forms occur.

The Spanish bluebell was introduced in the United Kingdom. Since then, it has hybridised frequently with the native common bluebell and the resulting hybrids are regarded as invasive. The resulting hybrid *Hyacinthoides* × *massartiana* and the Spanish bluebell both produce highly fertile seed but it is generally the hybrid that invades areas of the native common bluebell. This has caused the common bluebell to be viewed as a threatened species.

The Spanish bluebell is also cultivated as a garden plant, and several named cultivars exist with flowers in various shades of white, pink and blue.

References

1. *World Checklist of Selected Plant Families* (<http://apps.kew.org/wcsp/home.do>). The Board of Trustees of the Royal Botanic Gardens, Kew, retrieved 2011-07-05, search for "Hyacinthoides"

General

- The-Tree.org: Bluebell (<https://web.archive.org/web/20060427035443/http://www.the-tree.org.uk/EnchantedForest/WoodlandFlowers/bluebell.htm>) (includes key to identification of hybrids)
- Huxley, A. (1992). *New RHS Dictionary of Gardening* vol. 2: 604. Macmillan.

External links

-  Media related to *Hyacinthoides hispanica* at Wikimedia Commons

Retrieved from "https://en.wikipedia.org/w/index.php?title=Hyacinthoides_hispanica&oldid=889188975"

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Hyacinthoides hispanica



Scientific classification

Kingdom:	Plantae
Clade:	Angiosperms
Clade:	Monocots
Order:	Asparagales
Family:	Asparagaceae
Subfamily:	Scilloideae
Genus:	<i>Hyacinthoides</i>
Species:	<i>H. hispanica</i>

Binomial name

Hyacinthoides hispanica

(Mill.) Chouard ex Rothm.



Native bluebells (*Hyacinthoides non-scripta*)

- Distinctive 'droop' like the top of a shepherd's crook
- Sweet, cool perfume
- Narrow bell-shaped flowers with rolled back tips
- Creamy white pollen

If your bluebells have all of these characteristics then they're native bluebells.



Spanish bluebells (*Hyacinthoides hispanica*) and hybrids

- Upright stems
- No scent
- Conical bell-shaped flowers with open tips
- Blue pollen

If the bluebells you see have some or all of these characteristics then they're not a pure native bluebell.

MILLTOWN PARK DEVELOPMENT SITE
SANDFORD ROAD
DUBLIN 6

APPENDIX 3
Sample Site Signage – I.A.P.S.

INVASIVE PLANT SPECIES

DO NOT CUT DO NOT TOUCH



THREE CORNERED GARLIC



SPANISH BLUEBELL



GIANT RHUBARB

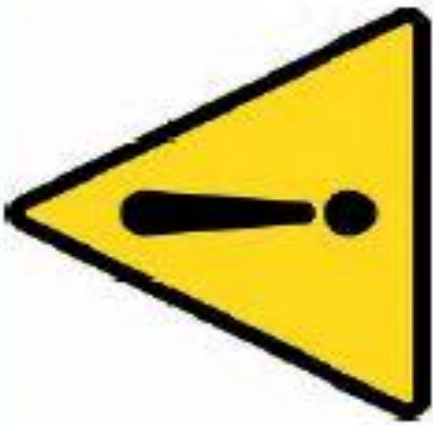


HIMALAYAN BALSAM

 **invasiveplantsolutions**
www.knotweed.ie

Sureprint

SAMPLE SIGN 1



Restricted Access

The soil in this area
contains invasive plant material
and is being treated.

Do not enter unless authorised.

Do not remove soil from this
area without authorisation.

MILLTOWN PARK DEVELOPMENT SITE
SANDFORD ROAD
DUBLIN 6

APPENDIX 4
Sample Site Fencing



SAMPLE FENCING 1 – POST AND WOVEN MESH FENCING



SAMPLE FENCING 2 – HEAVY DUTY HERRAS FENCING

F Hydrological & Hydrogeological Qualitative Risk Assessment Report



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**HYDROLOGICAL &
HYDROGEOLOGICAL
QUALITATIVE RISK
ASSESSMENT**

for

**PROPOSED RESIDENTIAL
DEVELOPMENT SITE AT
SANDFORD ROAD, DUBLIN 6**

Technical Report Prepared For

Sandford Living Limited

Technical Report Prepared By

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Our Reference

MA/21/12238SR01a

Date of Issue

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Appendix A – Inspector Report ABP-301798-18
Appendix B – Board Order ABP-301798-18

1.0 INTRODUCTION

1.1 Background

AWN have been requested by Sandford Living Limited to carry out a Hydrological and Hydrogeological Qualitative Risk Assessment for a residential scheme at Milltown Park, Sandford Road, Dublin 6.

Sandford Living Limited intend to apply to An Bord Pleanála for permission for a strategic housing development at this c. 4.26 hectare site at Milltown Park, Sandford Road, Dublin 6, D06 V9K7. Works are also proposed on Milltown Road and Sandford Road to facilitate access to the development including improvements to pedestrian facilities on an area of c. 0.16 hectares. The development's surface water drainage network shall discharge from the site via a proposed 300mm diameter pipe along Milltown Road through the junction of Milltown Road / Sandford Road prior to outfalling to the existing drainage network on Eglinton Road (approximately 200 metres from the Sandford Road / Eglinton Road junction), with these works incorporating an area of c. 0.32 hectares. The development site area, road works and drainage works areas will provide a total application site area of c. 4.74 hectares.

The development will principally consist of: the demolition of c. 4,883.9 sq m of existing structures on site including Milltown Park House (880 sq m); Milltown Park House Rear Extension (2,031 sq m); the Finlay Wing (622 sq m); the Archive (1,240 sq m); the link building between Tabor House and Milltown Park House rear extension to the front of the Chapel (74.5 sq m); and 36.4 sq m of the 'red brick link building' (single storey over basement) towards the south-western boundary; the refurbishment and reuse of Tabor House (1,575 sq m) and the Chapel (768 sq m), and the provision of a single storey glass entrance lobby to the front and side of the Chapel; and the provision of a 671 No. unit residential development comprising 604 No. Build-to-Rent apartment and duplex units (88 No. studios, 262 No. one bed units, 242 No. two bed units and 12 No. three bed units) and 67 No. Build-to-Sell apartment and duplex units (11 No. studios, 9 No. one bed units, 32 No. two bed units and 15 No. three bed units).

Block A1 will range in height from part 5 No. storeys to part 10 No. storeys and will comprise 94 No. Build-to-Rent apartments; Block A2 will range in height from part 6 No. storeys to part 8 No. storeys (including part double height at ground floor level) and will comprise 140 No. Build to-Rent apartments and duplex units; Block B will range in height from part 3 No. to part 7 No. storeys and will comprise 91 No. Build-to-Rent apartments; Block C will range in height from part 2 No. storeys to part 8 No. storeys (including part double height at ground floor level) and will comprise 163 No. Build-to-Rent apartments; Block D will range in height from 3 No. storeys to 5 No. storeys and will comprise 39 No. Build-to-Sell apartments; Block E will be 3 No. storeys in height and will comprise 28 No. Build-to-Sell duplex units and apartments; Block F will range in height from 5 No. storeys to part 7 No. storeys and will comprise 92 No. Build-to-Rent apartments; and the refurbished Tabor House (4 No. storeys including lower ground floor level) will comprise 24 No. Build-to-Rent apartments.

The development also includes a creche within Block F (400 sq m) with outdoor play area; and the provision of communal internal amenities (c. 1,248.8 sq m) and facilities (c. 158.3 sq m) throughout the residential blocks, Tabor House and the converted Chapel building including co-working space, gym, lounges, reading rooms, games room, multi-purpose space, concierge, mail rooms and staff facilities.

The proposed works also include a new 2.4 metre high boundary wall across the site from east to west (towards the southern boundary) requiring the demolition of a portion of the red brick link building that lies within the subject site towards the south-western boundary (36.4 sq m) and the making good of the façade at the boundary. The existing Link Building is the subject of a separate application for permission (DCC Reg. Ref. No. 3866/20) that includes a request for permission to demolish that Link Building, including the part of the building on the lands the subject of this application for SHD permission. If that application is granted and first implemented, no demolition works to the Link Building will be required under this application for SHD permission. If that application is refused permission or not first implemented, permission is here sought to demolish only that part of the Link Building now existing on the lands the subject of this application for permission and to make good the balance at the red line with a blank wall.

The development also provides a new access from Milltown Road (which will be the principal vehicular entrance to the site) in addition to utilising and upgrading the existing access from Sandford Road as a secondary access principally for deliveries, emergencies and taxis; new pedestrian access points; pedestrian/bicycle connections through the site; 344 No. car parking spaces (295 No. at basement level and 49 No. at surface level) which includes 18 No. mobility impaired spaces, 10 No. car share spaces, 4 No. collection/drop-off spaces and 2 No. taxi spaces; bicycle parking; 14 No. motorcycle spaces; bin storage; boundary treatments; private balconies and terraces facing all directions; external gantry access in sections of Blocks A1, A2 and C; hard and soft landscaping including public open space and communal open space (including upper level communal terraces in Block A1, Block B and Block C which will face all directions); sedum roofs; PV panels; substations; lighting; plant; lift cores; and all other associated site works above and below ground. The proposed development has a gross floor space of c. 54,871 sq m above ground level over a partial basement (under part of Block A1 and under Blocks A2, B and C) measuring c. 10,607 sq m, which includes parking spaces, bin storage, bike storage and plant.

The proposed development will also include the following associated engineering infrastructure:

- Provision of surface water drainage, foul drainage and water supply infrastructure and connections.
- Construction of a surface water outfall which exits the site along its south-eastern boundary, continues along Milltown Road, through the junction of Milltown Road / Sandford Road prior to discharging to the existing public surface water drainage network in Eglinton Road. The surface water outfall extends approximately 300m from the developable site boundary to the outfall location.
- Provision of a new vehicle access off Milltown Road (primary vehicle access to the proposed development facilitating access to the basement carpark, the forecourt area adjacent to Tabor House and the duplex units along the western boundary). This new site access shall be a priority junction and also serves pedestrians and cyclists.

The residential development will be provided with underground basement for car parking. The dig level for the basement will vary between 4.0 to 4.8 m below ground level (mbgl). The basement will occupy approximately 20% of the full footprint of the site.

1.2 Hydrological Setting

According to the EPA river network (EPA maps, <https://gis.epa.ie/EPAMaps/> accessed on 21-04-2021), the nearest surface water receptor is the Dodder River, which is located c. 500 m to the southeast of the site and flows north-eastward (Refer to figure 1.1 below).

A review of historical maps of this zone was conducted (Geohive web maps; OPW, accessed on 21-04-2021), which does not show any additional historical rivers in the vicinity of the proposed development site.



Figure 1.1 Site Location in relation to local drainage

The EPA (2021) on-line database indicates there is no NPWS protected area in the vicinity of the proposed development site. The nearest protected area is the South Dublin Bay SPA/SAC/pNHA which is c. 2.5km to the east of the site. The Dodder outfalls into the River Liffey at Ringsend c. 3.0Km to the north of the site.

The site generally falls from south to north at a gradient of approx. 1:45 with surface gradients becoming flatter on approach to the existing site access off Sandford Road.

There is limited surface water drainage infrastructure on site at present, given that is mainly undeveloped. An existing 225mm diameter surface water drain is located approximately 80m from the eastern corner of the site on Eglington Road (refer to Figure 1.2 below). However, existing surface water drains on site discharge to the existing combined sewer network along Sandford Road and Milltown Road rather than the existing surface water drain in Eglington Road.

During the operational phase, it is proposed to discharge attenuated flows from the site to the existing drainage network on Eglinton Road (approximately 200m from the Sandford Road / Eglinton Road junction where the public line increases to a 300mm diameter pipe).

The existing surface water drain in Eglinton Road ultimately discharges to the Dodder River.



Figure 1.2 Existing Surface Water Drainage Infrastructure (Source: DBFL, 2021)

1.3 Objective of Report

The scope of this desktop review is to assess the potential for any likely significant impacts on receiving waters within protected areas during construction or post development, in the absence of taking account of any measures intended to avoid or reduce harmful effects of the proposed project (i.e. mitigation measures).

In particular, this review considers the likely impact of construction and operation impacts (construction run-off and domestic sewage) from the proposed development on water quality and overall water body status within the Dodder River and ultimately Dublin Bay. The assessment relies on information regarding design provided by Lafferty Project Managers as follows:

- Infrastructure Design Report. Residential Development, Sandford Road, Dublin 6 (DBFL Consulting Engineers, 2021);
- Preliminary Construction Management Plan. Residential Development, Sandford Road, Dublin 6 (DBFL Consulting Engineers, 2021);
- Site Specific Flood Risk Assessment. Residential Development, Sandford Road, Dublin 6 (DBFL Consulting Engineers, 2021);
- Basement Impact Assessment. Residential Development, Sandford Road, Dublin 6 (DBFL Consulting Engineers, 2021);
- Environmental Impact Assessment Report, Sandford Road. Chapter 11: Water & Hydrology (DBFL Consulting Engineers, 2021).

This report was prepared by Marcelo Allende (BEng), and Teri Hayes (BSc MSc PGeol EurGeol). Marcelo is a Water Resources Engineer with over 15 years of experience in environmental consultancy and water resources studies. Marcelo is an Environmental Consultant with AWN Consulting, a member of the International Association of Hydrogeologists (Irish Group) and a member of Engineers Ireland (MIEI). Teri is a hydrogeologist with over 25 years of experience in water resource management and impact assessment. She has a Masters in Hydrogeology and is a former President of the Irish Group of the Association of Hydrogeologists (IAH) and has provided advisory services on water related environmental and planning issues to both public and private sector bodies. She is qualified as a competent person as recognised by the EPA in relation to contaminated land assessment (IGI Register of competent persons www.igi.ie). Her specialist area of expertise is water resource management eco-hydrogeology, hydrological assessment and environmental impact assessment.

1.4 Description of Drainage

The residential development consists of c. 4.26 hectares and is located at the corner of Sandford Road and Milltown Road (refer to Figure 1.1 above). The site is currently occupied by institutional buildings comprising Milltown Park House with 5 No. extensions attached to the original structure, two of which are to be retained within the proposed development (The Chapel and Tabor House). Sandford Road is located along the site's north-eastern boundary and Milltown Road is located along the site's south-eastern boundary.

The nearest surface water receptor is the Dodder River (WFD code: IE_EA_09H D010900; EPA code 09D01), which, according to the EPA maps, is located c. 500m to the southeast of the proposed development site (refer Figure 1.1 above). This river outfalls into the River Liffey at Ringsend c. 3.0Km to the north of the site.

The site generally falls from south-west to north-east becoming flatter on approach to the existing site access off Sandford Road. An existing 225mm diameter surface water drain is located approximately 80m from the eastern corner of the site on Eglinton Road.

The public surface water network on Eglinton Road will provide a suitable surface water discharge point for the proposed development. However, in order to achieve the required drainage invert levels on site, approximately 160m of the existing drainage network along Eglinton Road will need to be replaced with a 300mm pipe running at a flatter gradient. The total length of the surface water outfall from the point it crosses the developable site boundary at Milltown Road to the discharge point on Eglinton Road is approximately 300m.

The design of the surface water drainage network has taken cognisance of the objectives and guidance contained in the Greater Dublin Strategic Drainage Study (GDSDS). Surface water discharge rates from the proposed surface water drainage network will be controlled by a vortex flow control device (Hydrobrake or equivalent) and associated underground attenuation tanks (Stormtech Chambers or equivalent). Surface water discharge will also pass via a full retention fuel / oil separator (sized in accordance with permitted discharge rate from the site).

The proposed surface water drainage network will collect surface water runoff from the site via a piped network prior to discharging off site via an attenuation tank, flow control device and separator arrangement as noted above.

Surface water runoff from apartment roofs will be captured by green roof (sedum blanket or equivalent) prior to being routed to the piped surface water drainage network.

Surface water runoff from the roofs of duplex units located along the western boundary will be routed to the proposed surface water pipe network via porous aggregates beneath permeable paved driveways (providing an additional element of attenuation).

A drainage reservoir (drainage board) is to be provided on the podium slab over basement (for green areas and paved areas).

Surface water runoff from the majority of site's internal street network will be directed to the proposed pipe network via tree pits or other SuDS features (with overflows to conventional road gullies). Part of the site's internal street network drains via 3 no. bio-retention areas.

Surface water runoff from in curtilage parking spaces associated with duplex units located along the western boundary will be captured by permeable paving.

In limited instances, surface water runoff from paved areas will be directed to the proposed pipe network via conventional road gullies.

Any incidental surface water runoff generated from the basement carpark would drain through a separate system beneath the basement slab (out falling to the proposed foul drainage network via a petrol interceptor).

In summary, the following methodologies will be implemented as part of a SuDS treatment train approach:

- Green Roof – The proposed build-up will be an extensive type with 100mm minimum construction depth and sedum planting.
- Roof Areas Draining – Duplex units located along the site's western boundary drain via porous aggregates beneath permeable paved driveways (providing an additional element of attenuation).
- Green Areas Over Podium – Soft landscaped podium areas will have typical soil depths of up to 300mm to facilitate grassed areas, plants, shrubs and trees i.e. similar to a deep intensive green roof build up.
- Permeable Paving Over Podium – Free draining material within the build-up and will reduce the flow rate from these areas.
- Surface water runoff from the site's internal street network will be directed to the proposed pipe network via tree pits or other SuDS features like swales or bioretention areas with overflows to conventional road gullies.
- Surface water runoff from in curtilage parking spaces (duplex units located along the site's western boundary) captured by permeable paving.
- Soft Landscaped/Grassed Areas – Slows runoff at source.
- Attenuation of the 30 and 100 year return period storms within Stormtech Attenuation Chambers or equivalent
- Installation of a vortex flow control device (Hydrobrake or equivalent), limiting surface water discharge from the site to 2.0 l/sec/ha
- Surface water discharge will also pass via a Class 1 full retention fuel / oil separator (sized in accordance with permitted discharge from the site)

With regard to foul water, an existing 600mm diameter combined sewer is located adjacent to the site's north-eastern boundary (Sandford Road). An existing 375mm

diameter combined sewer is also located adjacent to the site's south-eastern boundary (Milltown Road) which outfalls to the 600mm diameter combined sewer on Sandford Road. An existing private foul drainage network is located within the site (typically 150mm diameter) which outfalls to the combined sewer on the Sandford Road via a combined connection with the private surface water drainage network.

Two foul drainage discharge points are proposed for the site (into the Milltown Road and Sandford Road sewers aforementioned). The proposed foul drainage network within the site comprises of a series of 225mm diameter pipes. Duplex units (located along the western boundary) will be serviced by individual 100mm diameter connections.

These foul sewers eventually discharges to the Ringsend Waste Water Treatment Plant (WWTP) where it is treated and ultimately discharges to Dublin Bay. This WWTP operates under the EPA licence D0034-01.

According to the Flood Risk Assessment carried out by DBFL (2021), the site is located within Flood Zone C (i.e., where the probability of flooding from rivers is less than 0.1% or 1 in 1000 years – probability of fluvial flooding is low risk). The abovementioned SuDS measures incorporated in the design will manage run-off rate from the site resulting in no additional impact on the surrounding area with regards to flooding.

2.0 ASSESSMENT OF BASELINE WATER QUALITY, RIVER FLOW AND WATER BODY STATUS

A reliable Conceptual Site Model (CSM) requires an understanding of the existing hydrological and hydrogeological setting. This is described below for the proposed development site and surrounding hydrological and hydrogeological environs.

2.1 Hydrological Catchment Description

The proposed development site lies within the Liffey and Dublin Bay Catchment (Hydrometric Area 09) and Dodder River sub-catchment (WFD name: Dodder_SC_010, Id 09_16) (EPA, 2021). The Dodder River is located approx. 500m southeast of the subject development site. From here the Dodder River flows for approx. 3.0km before discharging into the Liffey Estuary lower transitional waterbody which in turn discharges into Dublin Bay coastal waterbody which includes Special Area of Conservation (SAC)/ proposed Natural Heritage Area (pNHA).

The EPA (2021) on-line mapping presents the available water quality status information for water bodies in Ireland. The Dodder River has a Water Framework Directive (WFD) status (2013-2018) of 'Moderate' and a WFD risk score of 'At risk of not achieving good status'. This moderate status is related to its biological status (invertebrate and fish) and dissolved oxygen conditions (which fails in relation to its percentage saturation); all remaining chemical condition have been classified as 'good'. The most recent quality data (2019) for the Dodder River also indicate that it is 'Slightly polluted'.

The Dodder catchment discharges to the Liffey Estuary Lower which has a WFD status (2013-2018) of 'Good', and Dublin Bay has a WFD status of 'Good'. The Liffey Estuary Lower waterbody has a WFD risk score of 'At risk of not achieving good status' while the Dublin Bay waterbody has a WFD risk score of 'Not at risk'. The surface water quality data for the Liffey Estuary Lower and Dublin Bay (EPA, 2021) indicate that they are 'Unpolluted'. Under the 2015 'Trophic Status Assessment Scheme' classification of the EPA, 'Unpolluted' means there have been

no breaches of the EPA's threshold values for nutrient enrichment, accelerated plant growth, or disturbance of the level of dissolved oxygen normally present.

2.2 Aquifer Description and Superficial Deposits

Mapping from the Geological Society of Ireland (GSI maps, <http://www.gsi.ie> accessed on 21-04-2021) indicates the bedrock underlying the site is part of the Lucan Formation (code CDLUCN) and made up of dark limestone and shale (Calp). The lithological description comprises dark-grey to black, fine-grained, occasionally cherty, micritic limestones that weather paler, usually to pale grey. There are rare dark coarser grained calcarenitic limestones, sometimes graded, and interbedded dark-grey calcar. The beds are predominantly fine-grained distal turbidites in the north Dublin Basin. The formation is intermittently exposed on the coast between Rush and Drumanagh Head. The formation ranges from 300m to 800m in thickness.

The GSI also classifies the principal aquifer types in Ireland as:

- Lk - Locally Important Aquifer - Karstified
- LI - Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones
- Lm - Locally Important Aquifer - Bedrock which is Generally Moderately Productive
- PI - Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones
- Pu - Poor Aquifer - Bedrock which is Generally Unproductive
- Rkd - Regionally Important Aquifer (karstified diffuse)

Presently, from the GSI (2021) National Bedrock Aquifer Map, the GSI classifies the bedrock aquifer beneath the subject site as a 'Locally Important Aquifer – Bedrock which is Moderately Productive only in Local Zones'. The proposed development is within the 'Dublin' groundwater body and is classified as 'Poorly productive bedrock'. The most recent WFD groundwater status for this water body (2013-2018) is 'Good' with a current WFD risk score 'Under Review'.

Aquifer vulnerability is a term used to represent the intrinsic geological and hydrological characteristics that determine the ease with which groundwater may be contaminated generally by human activities. The GSI (2021) guidance presently classifies the bedrock aquifer vulnerability in the region of the subject site as 'Low' which indicates a general overburden depth potential of >10m. This shows that the aquifer is naturally protected by low permeability glacial clays. The aquifer vulnerability class in the region of the site is presented as Insert 2.1 below.



Figure 2.1 Aquifer Vulnerability

The GSI/ Teagasc (2021) mapping database of the quaternary sediments in the area of the subject site indicates the principal subsoil type in the residential area comprises Till derived from quartzites (TLs).

This information is consistent with site investigations carried out at the Milltown Park site between January and June 2020, that show the typical stratification associated with the subject site as follows:

- Topsoil: 0.2-0.4 m depth below ground level (mbgl);
- Made Ground 0.5-1.0 mbgl;
- Sandy gravelly Clay: 0.5-1.0 to 9.0-18.5 mbgl;
- Bedrock below 9.0-18.5 mbgl.

No evidence of contamination was detected during site investigations (refer to DBFL Basement Impact Assessment, 2021).

3.0 CONCEPTUAL SITE MODEL

A conceptual site model (CSM) is developed based on a good understanding of the hydrological and hydrogeological environment, plausible sources of impact and knowledge of receptor requirements. This in turn allows possible Source Pathway Receptor (S-P-R) linkages to be identified. If no S-P-R linkages are identified, then there is no risk to identified receptors. The sources pathways and receptors are presented in the following sections with the overall impact presented in section 3.4.

3.1 Assessment of Plausible Sources

Potential sources during both the construction and operational phases are considered. For the purposes of undertaking the potential of any hydrological/

hydrogeological S-P-R linkages, all potential sources of contamination are considered *without taking account of* any measures intended to avoid or reduce harmful effects of the proposed project (mitigation measures) i.e. a worst-case scenario. Construction sources (short-term) and operational sources (long-term) are considered below.

Construction Phase

The following sources are considered plausible for the proposed construction site:

- (i) Hydrocarbons or any hazardous chemicals will be stored in specific bunded areas. Refuelling of plant and machinery will also be carried out in bunded areas to minimise risk of any potential being discharged from the site. As a worst-case scenario, a rupture of a 1,000 litre tank to ground is considered. This would be a single short-term event.
- (ii) Leakage may occur from construction site equipment. As a worst-case scenario an unmitigated leak of 300 litres is considered. This would be a single short-term event.
- (iii) Use of wet cement is a requirement during construction. Run-off water from recent cemented areas will result in highly alkaline water with high pH. As this would only occur during particular phases of work this is again considered as a single short-term event rather than an ongoing event. If concrete mixing is carried out on site, the mixing plant will be sited in a designated area with an impervious surface.
- (iv) Construction requires soil excavation and removal and potentially groundwater collection. Run-off could contain a high concentration of suspended solids during earthworks. This could be considered an intermittent short-term event, i.e. on the assumption that measures incorporated in the Construction Environmental Management Plan (CEMP) do not work.
- (v) During the excavations for foundations and basement, no significant dewatering is expected given the low permeability overburden underlying the site. Bedrock will not be affected by excavations work given the projected dig level (~4.8 mbgl) and bedrock depth (>9.0 mbgl).

Operational Phase

The following sources are considered plausible post construction:

- (i) The proposed development does not require any bulk chemical storage and therefore the potential for water quality impact is negligible.
- (ii) Leakage of petrol/ diesel fuel may occur from these areas, run-off may contain a worst-case scenario of 70 litres for example.
- (iii) The stormwater drainage system follows SuDS measures, which are composed of an interception storage system (green roof areas, permeable paving, road gullies, tree pits) and an attenuation storage tank. The storage system will discharge following the characteristics of a greenfield run-off into the existing public surface water sewer located on Eglington Road. No additional treatment measures were considered due to the expected loading and provision of the mentioned interception system. It should be noted that all these SuDS measures contribute to reduce impact on water quality.

- (iv) The development will be fully serviced with separate foul and stormwater sewers which will have adequate capacity for the facility and discharge limits as required by Irish Water licencing requirements. Discharge from the site to the public foul sewer will be sewage and grey water only due to the residential nature of the proposed development. The foul discharge from the site will join the public sewer and will be treated at the Irish Water Ringsend Wastewater Treatment Plant (WWTP) prior to subsequent discharge to Dublin Bay. This WWTP is required to operate under an EPA licence and meet environmental legislative requirements as set out its licence. It is noted that an application for a new upgrade to this facility is currently in planning.

3.2 Assessment of Pathways

The following pathways have been considered within this assessment:

The potential for offsite migration due to any construction discharges is low as there is no significant pathway in the aquifer or through land ditches or streams.

- (i) Vertical migration to the underlying limestone is minimised due to the recorded 'Low' vulnerability present at the site resulting in good aquifer protection from any localised diesel/ fuel oil spills during either construction or operational phases. The site is underlain by Calp limestone which is a 'Locally Important Limestone Aquifer' characterised by discrete local fracturing with little connectivity rather than large connected fractures which are more indicative of Regional Aquifers. As such, flow paths are generally local.
- (ii) There is no direct hydrological linkage for construction or operation run-off or any small hydrocarbon leaks from the site to the Dodder River or Dublin Bay. However, an indirect pathway exists through the public stormwater sewer which ultimately discharges into the Dodder.
- (iii) There is no 'direct' pathway for foul sewage to any receiving water body (as identified above). There is however an 'indirect pathway' through the public sewer which ultimately discharges to the Irish Water WWTP at Ringsend prior to discharge to Dublin Bay post treatment.

3.3 Assessment of Receptors

The receptors considered in this assessment include the following:

- (i) Underlying limestone aquifer;
- (ii) Dodder River; and
- (iii) Liffey Estuary Lower and Dublin Bay.

3.4 Assessment of Source Pathway Receptor Linkages

Table 3.1 below summarises the plausible pollutant linkages (S-P-R) considered as part of the assessment and a review of the assessed risk is also summarised below.

The potential for impact on the aquifer is low based on the low chemical storage on site during construction phase and post development. The overburden thickness and low permeability nature of till and a lack of fracture connectivity within the limestone will minimise the rate of off-site migration for any indirect discharges to ground at the site. As such there is no potential for a change in the groundwater body status or significant source pathway linkage through the aquifer to any Natura

2000 site.

Should any silt-laden stormwater from construction or hydrocarbon-contaminated water from a construction vehicle leak manage to enter the public stormwater sewer, the suspended solids will naturally settle within the drainage pipes and hydrocarbons will dilute to background levels (water quality objectives as outlined in S.I. No. 272 of 2009, S.I. No. 386 of 2015 and S.I. No. 77 of 2019); by the time the stormwater reaches any open water based on the distance to waterways. Similarly, during operation, should any leak of hydrocarbon occur from a vehicle, the volume of contaminant release is low and combined with the significant attenuation within in the public stormwater sewers, hydrocarbons will dilute to background levels with no likely impact above water quality objectives as outlined in S.I. No. 272 of 2009, S.I. No. 386 of 2015 and S.I. No. 77 of 2019. It can also be concluded that the in-combination effects of surface water arising from the proposed development taken together with that of other possible proposed residential developments will not be significant given the potential loading of contaminant (a worst-case scenario of 70 litres of leakage of petrol during the operation phase) and the attenuation measures included in the design.

The peak wastewater discharge is calculated at an average wastewater discharge of 21.4 litres/sec. The sewage discharge will be licensed by Irish Water, collected in the public sewer and treated at Irish Water's WWTP at Ringsend prior to discharge to Dublin Bay. This WWTP is required to operate under an EPA licence (D0034-01) and to meet environmental legislative requirements. The plant has received planning permission (2019) and will be upgraded with increased treatment capacity over the next five years. The peak foul discharge calculated for the proposed development is well within the current capacity of the WWTP.

The 2019 planning permission facilitated upgrading works to meet nitrogen and phosphorus standards set out in the licence, which are temporarily exceeded currently. The design includes aerobic granular sludge which will result in treatment of sewage to a higher quality than current thereby ensuring effluent discharge to Dublin Bay will comply with the Water Framework Directive, Urban Wastewater Treatment Directive and Bathing Water Directive. It is understood at this point in time that the upgrade to use of aerobic granular sludge and other phased upgrades (excluding the proposed Clonsaugh development) will result in the WWTP achieving a population equivalent of 2.4 million and are to be completed between by 2027 to 2028. The application for the upgrade of the WWTP in 2012 and the revised upgrade in 2018 was supported by a detailed EIAR. As outlined in the EIAR, modelling of water quality in Dublin Bay has shown that the upgrades (which are now currently underway) will result in improved water quality within Dublin Bay. The 2018 EIAR predicts that the improvement in effluent quality achieved by the upgrade will compensate for the increase in flow through the plant. The ABP inspectors report summarises the positive findings of the modelling for the post WWTP upgrade scenario on Dublin Bay water quality in sections 12.3.5 and 12.3.12 of his report and the overall positive impact for human health and the environment in his conclusions in section 12.9.1. Page 12 of the grant of permission (reference: ABP-301798-18; refer to Appendix A and B) states the positive impact arising from the delivery of the project "...which would improve compliance with EU Directives and corresponding legislation and would be pivotal in supporting planning and economic growth in Dublin City and its region".

The project is being progressed in stages to ensure that the plant continues to treat the wastewater (1.98 million population equivalent) to the current treatment levels throughout the delivery of the upgrade. The project comprises three key elements and underpinning these is a substantial programme of ancillary works:

- Provision of additional secondary treatment capacity with nutrient reduction (400,000 population equivalent);
- Upgrade of the 24 existing secondary treatment tanks to provide additional capacity and nutrient reduction, which is essential to protect the nutrient-sensitive Dublin Bay area; and
- Provision of a new phosphorous recovery process.

In February 2018, the work commenced on the first element, the construction of a new 400,000 population equivalent extension at the Ringsend Wastewater Treatment Plant. These works are at an advanced stage with testing and commissioning stages expected to be completed in the second half of 2021.

Even without treatment at the Ringsend WWTP, the peak effluent discharge, calculated for the proposed development as 21.4 litres/sec (which would equate to 0.19% of the licensed discharge at Ringsend WWTP [peak hydraulic capacity]), would not impact on the overall water quality within Dublin Bay and therefore would not have an impact on the current Water Body Status (as defined within the Water Framework Directive). This assessment is supported by hydrodynamic and chemical modelling within Dublin Bay which has shown that there is significant dilution for contaminants of concern (DIN and MRP) available quite close to the outfall for the treatment plant (Ringsend WWTP 2012 EIS, Ringsend WWTP 2018 EIAR; refer to Section 12.4.22, ABP-301798-18 Inspector's report, included as Appendix A). The most recent water quality assessment of Dublin Bay WFD Waterbody undertaken by the EPA (four yearly monitoring of trends for indicator parameters) also shows that Dublin Bay on the whole, currently has an 'Unpolluted' water quality status (www.catchments.ie).

The assessment of the current proposal has also considered the effect of cumulative events, such as release of sediment laden water combined with a hydrocarbon leak on site. As there is adequate assimilation and dilution between the site and the Natura sites (Dublin Bay), it is concluded that no perceptible impact on water quality would occur at the Natura sites as a result of the construction or operation of this Proposed Development. It can also be concluded that the cumulative or in-combination effects of effluent arising from the Proposed Development with that of other permitted, proposed developments, or with development planned pursuant to statutory plans in the greater Dublin, Meath and Kildare areas, which will be discharged into Ringsend WWTP will not be significant having regard to the size of the calculated discharge from the Proposed Development and having regard to the following:

- Recent water quality assessment for Dublin Bay shows that Dublin Bay currently continues to meet the criteria for 'Unpolluted' water quality status (EPA, 2021).
- The Ringsend WWTP upgrade which is currently being constructed will result in improved water quality to ensure compliance with Water Framework Directive requirements.
- All new developments are required to comply with SuDS which ensures management of run-off rate within the catchment of Ringsend WWTP.
- The natural characteristics of Dublin Bay result in enriched water rapidly mixing and degrading such that the plume has no appreciable effect on water quality at Natura sites.

As the Proposed Development will have no additional stormwater run-off during a stormwater event over and above the current level, surface water run-off from the development in the operational phase will therefore have no impact on the water quality in any overflow situation apart from a minor contribution from foul sewage to surface water, which includes the bathing areas and its quality status. It should be noted that the bathing status has no direct relevance to the water quality status of the Natura sites due to rapid mixing and dilution resulting in no measurable change in water quality within the overall water body.

Finally, in a worst-case scenario not considering the operation of the SuDS already included in the design, no perceptible risk to any Natura Sites 2000 is anticipated given the distance from source to Dublin Bay protected areas (> 2.5 km); potential contaminant loading will be attenuated diluted and dispersed near source area. It can also be considered the fact that there may be some benefit in attenuation in relation to water quality arising where there is a combined sewer.

Source	Pathways	Receptors considered	Risk of Impact
Construction Impacts			
Unmitigated leak from an oil tank to ground/ unmitigated leak from construction vehicle.	Bedrock protected by >9m low permeability overburden. Migration within weathered/ less competent limestone is low (Calp limestone has discrete local fracturing rather than large connected fractures).	Limestone bedrock aquifer (locally Important aquifer)	Low risk of localised impact to shallow weathered limestone due to protective overburden. No likely impact on the status of the aquifer due to low potential loading, natural attenuation within overburden and discrete nature of fracturing reducing off site migration.
Discharge to ground of runoff water with high pH from cement process	Overland flow/ indirect pathway through stormwater drainage to Dodder water course.	Dodder River	No perceptible risk – Distance from source to Dublin Coastal Natura sites (>2.5 km approx.) Low contaminant loading will be attenuated diluted and dispersed to below statutory guidelines within c. 0.5 km of the site i.e.no potential impact to the Natura sites
Unmitigated run-off containing a high concentration of suspended solids	Indirect pathway to Dublin Bay through public sewer.	South Dublin Bay SAC/pNHA and South Dublin Bay and River Tolka SPA	
Operational Impacts			
Foul effluent discharge to sewer	Indirect pathway to Dublin Bay through public sewer	South Dublin Bay SAC/pNHA and South Dublin Bay and River Tolka SPA	No perceptible risk – Even without treatment at Ringsend WWTP, the average effluent discharge (0.6 litres/sec which would equate to 0.19% of the licensed discharge at Ringsend WWTP), would not impact on the overall water quality within Dublin Bay and therefore would not have an impact on the current Water Body Status (as defined within the Water Framework Directive).
Discharge to ground of hydrocarbons from car leak	Indirect pathway through stormwater drainage to Dodder water course	Dodder River and South Dublin Bay	No perceptible risk – Distance from source to Dublin Bay protected area too great (> 2.5 km), potential contaminant loading will be attenuated diluted and dispersed near source area.

Table 3.1 Pollutant Linkage Assessment (*without mitigation*)

4.0 CONCLUSIONS

A conceptual site model (CSM) has been prepared following a desk top review of the site and surrounding environs. Based on this CSM, plausible Source-Pathway-Receptor linkages have been assessed assuming an absence of any measures intended to avoid or reduce harmful effects of the proposed project (i.e. mitigation measures) in place at the proposed development site.

There is no direct source pathway linkage between the proposed development site and open water (i.e. Dodder Catchment or Dublin Bay). It is concluded that there is also no resultant indirect source pathway linkage from the proposed development through public sewers which could result in any change to the current water regime (water quality or quantity) and open water as defined. There is an indirect connection through the foul sewer which will eventually discharge to the Ringsend WWTP and ultimately discharges to Dublin Bay. The future development has a peak foul discharge that would equate to 0.19% of the licensed discharge at Ringsend WWTP (peak hydraulic capacity).

It is concluded that there are no pollutant linkages as a result of the construction or operation (without the use of mitigation) of the proposed development which could result in a water quality impact which could alter the habitat requirements of the Natura sites within Dublin Bay.

With regard to bathing waters in Dublin Bay, as mentioned above the Proposed Development will have no impact on the water quality in any overflow situation apart from a minor contribution from foul sewage.

During the excavations for foundations and basement, no significant dewatering is expected given the low permeability overburden underlying the site. Bedrock will not be affected by excavations work.

Finally, as outlined in the reports prepared by DBFL (Construction Management Plan [2021] and Infrastructure Design Report [2021]), and in line with good practice, mitigation measures have been included during construction. During operation the potential for an impact to ground or storm water is negligible and there are measures incorporated within the proposed development to manage stormwater run-off quality. These specific measures will provide further protection to the receiving soil and water environments. However, the protection of downstream European sites is in no way reliant on any of these measures and has not been taken into account in assessing the impact on water quality for the European sites in and around Dublin Bay.

5.0 REFERENCES

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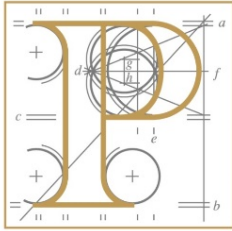
Inspector's Report – ABP-301798-18. 10-year permission for development of the Ringsend wastewater treatment plant upgrade project including a regional biosolids storage facility.

Board Order – ABP-301798-18. 10-year permission for development of the Ringsend wastewater treatment plant upgrade project including a regional biosolids storage facility.

Please refer to Appendix 8.1 of the EIR for the appendices regarding Ringsend WWTP referred to throughout the Hydrological & Hydrogeological Qualitative Risk Assessment.

G An Board Pleanála documents on case PA29S.301798 Ringsend Wastewater Treatment Plant

G.1 Board Order ABP-301798-18



An
Bord
Pleanála

Board Order ABP-301798-18

Planning and Development Acts, 2000 to 2018

Planning Authorities: Dublin City Council and Fingal County Council

Application for permission under section 37E of the Planning and Development Act 2000, as amended, in accordance with plans and particulars, including an environmental impact assessment report and Natura Impact Statement, lodged with An Bord Pleanála on the 6th day of June, 2018 by Irish Water care of Stephen Little and Associates of 26/27 Pembroke, Dublin.

Proposed Development: 10-year permission for development comprising revisions and alterations to the existing and permitted development at the Ringsend Wastewater Treatment Plant and for a new Regional Biosolids Storage Facility, being two components of an integrated wastewater treatment facility. The proposed development comprises revisions and alterations to the 2012 Approval (case reference number 29N.YA0010). The proposed revisions and alterations will continue to facilitate the expansion of the existing wastewater treatment plant (Ringsend Wastewater Treatment Plant) to its permitted capacity of 2.4 million population equivalent within the confines of its current site. However, this will now be achieved primarily through the introduction of aerobic granular sludge (AGS) technology at the Ringsend Wastewater Treatment Plant. The introduction of this technology will facilitate the omission of the nine-kilometre Long Sea Outfall Tunnel and the continued use of the existing outfall.

Component 1 – Ringsend Wastewater Treatment Plant, Pigeon House Road, Dublin 4

Permission is sought for development comprising revisions and alterations to the 2012 Approval on an overall site. The proposed development consists of:

- Reconfiguration and retrofitting of the existing Sequential Batch Reactor (SBR) Tanks, up to 24 number in total, to facilitate the use of a new AGS technology.
- Associated works, including the provision of:
 - A Sludge Pasteurisation Building (approximately circa 31.5 metres x circa 14.5 metres x circa 8.5 metres high).
 - A Phosphorous Recovery Building (approximately circa 38.5 metres x circa 15.5 metres x circa 20 metres high).
- Ancillary site development works (pipework and electrical works), plant (new and adjustments to existing) and landscape works (including boundary treatments) to accommodate the above development, including:
 - The use on a permanent basis of a vehicular entrance off Pigeon House Road and associated landscaping and internal road along the eastern boundary of the site, previously granted a temporary permission under case reference number 29N.YM0002.
 - A new underground electrical connection to an existing underground ESB cable, along the southern boundary of the site (at the south-west corner only) and at the edge of, and extending to within, the South Dublin Bay and River Tolka Estuary Special Protection Area.
 - Bypass culvert, ultraviolet (UV) lamps, internal road reconfigurations and additional car parking.
 - The continued use of two number temporary construction compounds (C1 and C2) for the 10-year duration of the permission sought. These compounds were previously permitted under case reference number 29N.YM0004 for a period of three years. Proposals for the temporary construction compound C1 include a pedestrian connection to the south-west corner of Ringsend Wastewater Treatment Plant. Temporary construction compound C1 is partially located within the Poolbeg West Strategic Development Zone as defined by Statutory

Instrument No. 279 of 2016. A Protected Structure (Pigeon House Fort) (RPS No. 6794) is partially located within temporary construction compound C2.

- The omission of the permitted nine-kilometre Long Sea Outfall (in tunnel) for the purposes of discharging into the Dublin Bay area from an onshore inlet shaft approximately 350 metres east of the existing Ringsend Wastewater Treatment Plant (including any associated construction works) which in turn provides for the continued use of the existing outfall to the River Liffey serving the Ringsend Wastewater Treatment Plant.
- The omission of two number temporary construction compounds located to the west of the Ringsend Wastewater Treatment Plant and also the omission of one temporary construction compound on Pigeon House Road to serve the Long Sea Outfall (in tunnel); all of which were previously permitted under case reference number 29N.YA0010.

The overall application site area of the development proposed at the Ringsend Wastewater Treatment Plant is approximately 17.9 hectares and includes a Protected Structure (RPS No. 6794). The overall existing Ringsend Wastewater Treatment Plant is 14.7 hectares and is divided into two sites by Pigeon House Road; 11.2 hectares to the south of the road where the Ringsend Wastewater Treatment Plant is located, with a further 3.5 hectares located to the north of the road. The two number temporary construction compounds which are the subject of this application amount to approximately 3.79 hectares, part of which is located within the 14.7 hectare site of the Ringsend Wastewater Treatment Plant. Part of the application site is within the Poolbeg West Strategic Development Zone as defined by Statutory Instrument No. 279 of 2016. The Ringsend agglomeration, including the wastewater treatment plant, has an existing discharge authorisation licence in accordance with the requirements of the Waste Water Discharge (Authorisation) Regulations 2007, as amended. A licence review will be carried out in accordance with the requirements of the licence review process.

Component 2 – Proposed Development of a Regional Biosolids Storage Facility at Newtown, North Road (R135), Dublin 11

Permission is also sought for development of a Regional Biosolids Storage Facility at a separate 11-hectare site comprising:

- Demolition of existing single storey structures on site comprising of a security kiosk (approximately 22 square metres gross floor area), the weighbridge kiosk (approximately 19 square metres gross floor area), an ESB sub-station (approximately 16 square metres gross floor area) and an administration building (approximately 85 square metres gross floor area), together with the partial removal of existing internal roads and partial removal/diversion of existing drainage infrastructure as appropriate to accommodate the development.
- Provision of two number biosolids storage buildings, each approximately 50 metres wide, 105 metres long and 15 metres in height, including solar panels on the roof of one building. These buildings have a combined capacity to store up to 48,000 cubic metres of biosolids waste at any one time.
- Provision of four number odour control units, each with 18.2 metre-high discharge flues.
- Mechanical and electrical control building (approximately 35 square metres gross floor area, four metres high).
- Provision of a single storey site administration building for office, welfare facilities and meeting rooms (approximately 130 square metres gross floor area) and associated staff car parking.
- Use of the existing vehicular access off the R135, including provision of new 2.7 metre-high entrance gates to serve the Regional Biosolids Storage Facility.
- All ancillary landscape and site development works, including:
 - Provision of two number new weighbridge facilities (one number weighbridge on entry and exit of the Regional Biosolids Storage Facility).
 - Provision of new ESB sub-station (approximately 40 square metres gross floor area).

- Landscaping and boundary treatments, including new 2.7-metre-high boundary to North Road/R135.
- Provision of fire protection holding tank (approximately 6.7 metres high).
- Provision of a Heavy Goods Vehicle (HGV) cleaning and set-down area.
- Formation of a new footpath and landscaped verge to R135 along site frontage.
- Provision of drainage, water, external lighting and other utilities.
- Diversion of 450 millimetres surface water pipe.
- One number signage structure, 5.2 metres in height erected on posts accommodating two number signage zones: 2.4 metres x 1.7 metres and 2.4 metres x 1.2 metres, located at the site entrance.

All at the Ringsend Wastewater Treatment Plant, Pigeon House Road, Dublin and Newtown, North Road (R135), Dublin.

Decision

Grant permission under section 37G of the Planning and Development Act 2000, as amended, for the above proposed development in accordance with the said plans and particulars based on the reasons and considerations under and subject to the conditions set out below.

Determine under section 37H(2)(c) the sum to be paid by the applicant in respect of costs associated with the application as set out in the Schedule of Costs below.

Matters Considered

In making its decision, the Board had regard to those matters to which, by virtue of the Planning and Development Acts and Regulations made thereunder, it was required to have regard. Such matters included any submissions and observations received by it in accordance with statutory provisions.

Reasons and Considerations

In coming to its decision, the Board had regard to a range of matters, including the following:

European legislation, including of particular relevance:

- The EIA Directive 2011/92/EU amended by Directive 2014/52/EU (EIA Directive),
- The European Union Water Framework Directive 2000/60/EC,
- The European Union Urban Waste Water Treatment Directive 91/271/EEC,
- The European Union Bathing Water Directive 2006/7/EC,
- The Groundwater Directive (2006/118/EC),
- The Sewage Sludge Directive (86/278/EEC), and
- The Nitrates Directive (91/676/EEC).

National legislation, including of particular relevance:

- The European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended,
- The European Communities (Water Policy) Regulations, 2003, as amended,

- The European Communities Environmental Objectives (Groundwater) Regulations 2010, as amended,
- The Urban Waste Water Treatment Regulations 2001, as amended,
- The Waste Water Discharge (Authorisation) Regulations 2007, as amended, and
- The Bathing Water Quality Regulations 2008, as amended.

National and regional planning and related policy, including:

- The National Planning Framework – Ireland 2040 including Strategic Outcome 9 and corresponding Investment Action contained in the National Development Plan, 2018-2027,
- The Water Services Strategic Plan where the upgrading of Ringsend Treatment Plant is recognised as a significant contribution in meeting its obligation under the Urban Wastewater Treatment Directive,
- The National Wastewater Sludge Management Plan 2016 – 2041,
- The River Basin Management Plan for Ireland 2018 – 2021,
- The Greater Dublin Strategic Drainage Study (2005) and the Greater Dublin Drainage Strategy: Overview & Future Strategy (2018),
- The Regional Planning Guidelines for the Greater Dublin Area 2010-2022,
- The Draft Regional Spatial and Economic Strategy (RSES), and
- The Eastern-Midlands Region Waste Management Plan 2015 – 2021.

Local planning context – Ringsend Wastewater Treatment Plant component:

- The provisions of the Dublin City Development Plan 2016-2022, including Policies SI1 and SI2 which support development of water and wastewater systems by Irish Water in which the upgrading of the Ringsend Wastewater Treatment Plant is specifically referenced; related Planning Objectives SIO1 and SIO2 together with stated policies and objectives in support of the proposed development in the context of proper planning and sustainable development. Regard was also had to the land use zoning objectives for the area.

Local planning context – Regional Biosolids Facility component:

- The provisions of the Fingal County Development Plan 2017-2023, including stated policies and objectives, particularly Objective WM15 which requires to work with Irish Water and other relevant stakeholders to ensure the provision of facilities for the safe and sustainable management of sludges (sewage, waterworks, agricultural, industrial and septic tank) and Local Objective 78, in support of the proposed development in the context of proper planning and sustainable development. Regard was also had to the land use zoning objectives for the area.

The following matters:

- the current performance of the existing wastewater treatment plant and the demonstrated need to improve discharge standards in order to increase capacity and meet water quality standards for bathing waters, coastal waters, transitional waters and designated sensitive waters in Dublin Bay in accordance with the requirements set out under the legislation and emissions limit values contained in the licence granted by the Environmental Protection Agency under licence number D00-34-01,

- the entirety of the documentation that accompanied the planning application and reports and submissions which were submitted by all parties, planning authorities, prescribed bodies and observers and the further submission made by the applicant during the course of the application,
- the established site context on the Poolbeg peninsula, spatially separated from residential development and the pattern of development in the area,
- the planning history of the site,
- the nature, scale and design of the proposed development, including, in particular, the proven AGS technology and the associated nitrogen and phosphorous removal in relation to the Ringsend Wastewater Treatment Plant component and the nature, scale, design and purpose of the Regional Biosolids Facility component,
- the range of proposed mitigation measures set out in the submitted Environmental Impact Assessment Report and Natura Impact Statement (incorporating Appropriate Assessment Screening), and
- the submissions made in relation to the application and the report and recommendation of the Inspector.

The Board considered that, subject to compliance with the conditions set out below, the proposed development would enable sustainable residential and economic growth through the delivery of increased wastewater treatment capacity, would improve the quality of effluent discharged to the receiving water environment, would assist Ireland in meeting obligations set down under EU Directives, national legislation and planning policy, and would be acceptable in terms of odour, noise, vibration and traffic. The proposed development would, therefore, be in accordance with the proper planning and sustainable development of the area.

Appropriate Assessment: Stage 1 Screening:

The Board agreed with and adopted the screening (Appropriate Assessment Stage one) and conclusions carried out in the Inspector's report that the South Dublin Bay and River Tolka Estuary Special Protection Area (site code: 004024), the South Dublin Bay Candidate Special Area of Conservation (site code: 000210), the North Bull Island Special Protection Area (site code: 004006), the North Dublin Bay Candidate Special Area of Conservation (site code: 000206), the Howth Head Coast Special Protection Area (site code: 004113), the Dalkey Islands Special Protection Area (site code: 004172) and the Rockabill to Dalkey Island Candidate Special Area of Conservation (site code: 003000) are the only European Sites in respect of which the proposed development has the potential to have a significant effect.

Appropriate Assessment: Stage 2:

The Board considered the Natura Impact Statement and associated documentation submitted with the application, the mitigation measures contained therein, the submissions and observations on file, and the Inspector's assessment. The Board completed an appropriate assessment of the implications of the proposed development as part of the overall proposed upgrade project for the aforementioned European Sites in view of the sites' Conservation Objectives. The Board considered that the information before it was adequate to allow the carrying out of an appropriate assessment. In completing the appropriate assessment, the Board considered, in particular, the following:

- (a) the likely direct and indirect impacts arising from the proposed development at the Ringsend Wastewater Treatment Plant and the Regional Biosolids Facility sites both individually, when taken together and in combination with other plans or projects,
- (b) the mitigation measures, which are included as part of the current proposal, and
- (c) the conservation objectives for the European Sites.

In completing the appropriate assessment, the Board accepted and adopted the appropriate assessment carried out in the Inspector's report in respect of the potential effects of the proposed development on the aforementioned European Sites, having regard to the sites' Conservation Objectives. In overall conclusion, the Board was satisfied that the proposed development, by itself or in combination with other plans or projects, would not adversely affect the integrity of the European Sites, in view of the sites' Conservation Objectives.

Environmental Impact Assessment:

The Board completed an environmental impact assessment of the proposed development and wider proposed upgrade project, taking into account:

- (a) The nature, scale, location and extent of the proposed development across the Ringsend Wastewater Treatment Plant and Regional Biosolids Facility components.
- (b) The Environmental Impact Assessment Report and associated documentation submitted with the application.
- (c) The reports and submissions received from the planning authorities, observers and prescribed bodies and the applicant's further submission in the course of the application.
- (d) The Inspector's report.

The Board agreed with the summary and examination set out in the Inspector's report, the information contained in the Environmental Impact Assessment Report and associated documentation submitted by the applicant and submissions made in the course of the application. The Board is satisfied that the Inspector's report sets out how these were addressed in the examination and recommendation and are incorporated into the Board's decision.

Reasoned Conclusions on the Significant Effects:

The Board considered that the Environmental Impact Assessment Report, supported by the documentation submitted by the applicant, provided information which is reasonable and sufficient to allow the Board to reach a reasoned conclusion on the significant effects of the proposed development on the environment, taking into account current knowledge and methods of assessment. The Board is satisfied that the information contained in the Environmental Impact Assessment Report is up to date and complies with the provisions of EU Directive 2014/52/EU amending Directive 2011/92/EU. The Board considered that the main significant direct and indirect effects of the proposed development on the environment are those arising from the impacts listed below. A Construction Environmental Management Plan (CEMP) is the overarching general mitigation embedded in the project design and delivery for the construction stage. In addition, plans relating to Waste Management, Invasive Species Management, Traffic Management, Odour Management, Monitoring Plans and Emergency Response Plans are also proposed. The remaining impacts, both positive and negative are:

- Benefits/positive impacts to **population and human health** arising as a result of the overall project upgrade due to providing increased treatment infrastructural capacity and improved level of treatment which would improve compliance with EU Directives and corresponding legislation and would be pivotal in supporting planned residential and economic growth in Dublin City and the region.
- Negative temporary impact on **population and human health** (recreational swimmers/water-based sporting activities) because of a deterioration in water quality during a nine-month period of decommissioning of aspects of the Wastewater Treatment Plant (during construction) and a corresponding temporary loss of recreational amenity which would be partially mitigated by carrying out the works in winter period when the recreational water-based activities are at seasonally low levels.

- Benefits/positive impacts on the environment (**soils, traffic, water quality, climate**) as a result of reduction in excavation and truck movements (estimated to be 70,000 HGV movements over an 18-month period) which would otherwise have been required to remove and transport rock and spoil during the construction phase of the undersea tunnel. During the operation phase, the proposal to omit the tunnel and associated diffuser point nine kilometres out to sea would also mean that there would be no deterioration of water quality at this location.
- Impacts arising on **land and soils** as a result of spread of invasive species (Japanese Knotweed) present on the Ringsend wastewater treatment site and which would be mitigated by the preparation and implementation of an Invasive Species Management Plan and method statement for the control of disturbance of soils containing Japanese Knotweed and the requirement that a suitably qualified ecologist would be engaged to oversee the implementation of the Invasive Species Management Plan and monitor the success of the mitigation measures post-construction.
- Risk of pollution of **receiving water environment** as a result of accidental spillages of chemicals, hydrocarbons or other contaminants entering the drainage system and discharging to the stream thereafter during the construction and operational phases. The impacts would be mitigated by measures within a Construction and Environmental Monitoring Plan (CEMP) and adherence to best practice construction measures and incorporation of appropriate drainage facilities. Measures set out in the CIRIA guidance document on 'control and management of water pollution from construction sites' would be implemented. The guidelines provided by Inland Fisheries Ireland (2016) on the protection of fisheries habitats during construction projects would also be adhered to.

- **Noise** impacts for the construction and operation phases which would be mitigated by the requirements to prepare and adhere to the Noise and Vibration Management Plans (NWMP) and comply with appropriate noise and vibration limits which are set out in the Environmental Impact Assessment Report in respect of the development of the Ringsend Wastewater Treatment Plant and the development of the Regional Biosolids Facility.
- **Odour impacts** for the operational phase which would be mitigated by the following:
 - Ringsend Wastewater Treatment Plant: Odour from the wastewater treatment plant (excluding storm tanks) would be required not to exceed 10 ouE/m³ as the 99.4th percentile of hourly averages at the boundary of the Ringsend Wastewater Treatment Plant site. The adopted odour annoyance criterion of 3 ouE/m³ as the 98th percentile of hourly averages would not be exceeded at any sensitive receptor location. The Odour Management Plan would be updated as necessary and implemented to ensure the above standard is achieved during construction and operation.
 - Regional Biosolids Facility: The adopted odour annoyance criterion of 3 ouE/m³ as the 98th percentile of hourly averages would not be exceeded at any sensitive receptor location.

The Board completed an environmental impact assessment in relation to the proposed development forming part of the overall proposed upgrade project and concluded that, subject to the implementation of the mitigation measures referred to above, including proposed monitoring as appropriate, and subject to compliance with the conditions set out below, the effects on the environment of the proposed development, by itself and in combination with other development in the vicinity, would be acceptable. In doing so, the Board adopted the report and conclusions set out in the Inspector's report.

Conclusion on Proper Planning and Sustainable Development:

The benefits of the proposed development are considered to be positive. Its delivery would assist Ireland in meeting obligations set down under EU Directives, national legislation and planning policy expressed through the hierarchy plans which regulate development at a national, regional and local level. The proposed development would enable sustainable residential and economic growth through the delivery of increased wastewater treatment capacity while protecting the environment through improving the quality of effluent discharged to the receiving water environment. It has been demonstrated in the application that the improvement envisaged in final effluent quality can be achieved at the existing Ringsend Wastewater Treatment Plant by the incorporation of scientifically proven aerobic granular sludge technology into the treatment process together with associated nitrogen and phosphorous removal. When compared to the previously permitted and proposed long sea outfall (in tunnel) option, the current proposal has significant advantages and would be less intrusive on the receiving environment. The Regional Biosolids Storage Facility would assist in meeting the aims of the Sewage Sludge Directive, regulating the use of sewage sludge in agriculture to prevent harmful effects. Environmental impact assessment and appropriate assessment have also been considered as set out in the sections above. It can, therefore, be concluded that the proposed development is in accordance with the proper planning and sustainable development of the area.

CONDITIONS

Ringsend Wastewater Treatment Plant and Regional Biosolids Facility:

1. The proposed development shall be carried out and completed in accordance with the plans and particulars lodged with the planning application and the information contained in the Environmental Impact Assessment Report and Natura Impact Statement, except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development or, in default of agreement, the matter shall be referred to An Bord Pleanála for determination, and the proposed development shall be carried out and completed in accordance with the agreed particulars.

Reason: In the interest of clarity and the proper planning and sustainable development of the area and to ensure the protection of the environment.

2. **Mitigation:**
 - (a) All mitigation and environmental commitments identified in the Environmental Impact Assessment Report (Table 17-1 of Volume 3 and 4) shall be implemented in full as part of the proposed development except as may otherwise be required to comply with the following conditions.

Monitoring:

- (b) All monitoring measures identified in the Environmental Impact Assessment Report (Table 17-2-of Volume 3 and 4) shall be carried out and the details of monitoring results shall be submitted to the Planning Authorities (Dublin City Council in respect of the Ringsend Wastewater Treatment Plant and Fingal County Council in respect of the Regional Biosolids Facility) except as may otherwise be required to comply with the following conditions.

Reason: In the interest of clarity and to protect the environment.

3. With the exception of the development hereby permitted, the proposed development at the Ringsend Wastewater Treatment Plant shall otherwise comply with the terms and conditions of permission granted under An Bord Pleanála case reference number 29N.YA0010, as amended by planning permission granted for alterations under An Bord Pleanála case reference numbers 29N.YM0002 and 29N.YM0004 and any further applications or alterations where permitted.

Reason: In the interest of clarity and the proper planning and sustainable development of the area.

4. The period during which the proposed development hereby permitted may be carried out shall be ten years from the date of this order.

Reason: Having regard to the nature and extent of the proposed development, the Board considered it appropriate to specify a period of validity of this permission in excess of five years.

5. A contract specific Construction and Environmental Management Plan (CEMP) and Waste Management Plan (WMP) shall be submitted to and agreed in writing with both planning authorities in respect of the proposed development at the Ringsend Wastewater Treatment Plant site and the Regional Biosolids Facility site. The CEMP and WMP shall detail and ensure Best Construction Practice and compliance with statutory obligations. As part of the CEMP, the submitted invasive species management plan shall be updated as necessary for the control or disturbance to soils containing Japanese Knotweed in accordance with Irish Water Information and Guidance Document on Japanese Knotweed. The plan shall include a method statement for the removal of invasive species identified as being present on site. The implementation of the invasive species management plan shall be overseen by a suitably qualified ecologist/botanist familiar with Japanese Knotweed.

Reason: To protect the environment during construction.

6.
 - (a) Prior to commencement of development, a Traffic Management Plan for the construction and operational phases shall be submitted to, and agreed in writing with, the planning authorities in respect of the development at the Ringsend Wastewater Treatment Plant site and the Regional Biosolids Facility site.
 - (b) The developer shall comply with the requirements of the planning authorities in respect of minimising traffic disruption on the local communities, cleaning and repair of any damage to the public road networks during the construction and operation phases.

Reason: To protect the public road network and in the interest of traffic safety.

7. The proposed development shall adhere to the Noise and Vibration Management Plans (NWMP) and comply with appropriate noise and vibration limits set out in the Environmental Impact Assessment Report in respect of the overall development at Ringsend Wastewater Treatment Plant and the development of the Regional Biosolids Facility. During the construction and demolition phases, the proposed development shall comply with British Standard 5228 Noise Control on Construction and open sites Part 1, code of practice for basic information and procedures for noise control.

Construction Noise at the nearest sensitive receptor shall comply with the following limits:

- 70 L_{Aeq} (1 hour) dB – Daytime (07:00 – 19:00) and Saturdays (07:00 – 13:00)
- 65 L_{Aeq} (1 hour) dB – Evening (19:00 – 23:00)
- 55 L_{Aeq} (1 hour) dB – Night time (23:00 – 07:00)

Mitigation for the operation phase shall include a number of items such as selection of 'low noise' equipment and plant, vibration isolation mounts and appropriate siting of fixed plant.

The developer shall require the appointed contractor to employ and implement best practice construction noise and vibration management techniques throughout the construction phase in order to further reduce the noise and vibration impact to nearby noise sensitive receptors.

During the operation phase, noise shall be minimised by the selection of 'low noise' plant and equipment and incorporation of appropriate attenuation.

Noise monitoring during construction and commissioning and/or operation shall be carried out in accordance with the requirements of the planning authorities.

Reason: In the interest of the amenities of the surrounding area.

8. **Ringsend Wastewater Treatment Plant:**

During operation, odour from the wastewater treatment plant (excluding storm tanks) shall not exceed 10 ouE/m³ as the 99.4th percentile of hourly averages at the boundary of the Ringsend Wastewater Treatment Plant site. The adopted odour annoyance criterion of 3 ouE/m³ as the 98th percentile of hourly averages shall not be exceeded at any sensitive receptor location. The Odour Management Plan shall be updated as necessary and implemented to ensure the above standard is achieved during construction and operation.

Regional Biosolids Facility:

The adopted odour annoyance criterion of 3 ouE/m³ as the 98th percentile of hourly averages shall not be exceeded at any sensitive receptor location.

Reason: In the interest of the amenities of the surrounding area.

9. The developer shall facilitate the preservation, recording and protection of archaeological materials or features that may exist within and proximate to the Ringsend Wastewater Treatment Plant site and the Regional Biosolids Facility site.

In this regard, the developer shall –

- (a) Notify the Department of Culture, Heritage and the Gaeltacht in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development.
- (b) Employ a suitably qualified archaeologist who shall monitor all site investigations and other excavation works.
- (c) Provide arrangements for the recording and for the removal of any archaeological material which the Department of Culture, Heritage and the Gaeltacht considers appropriate to remove.

In default of agreement on any of these requirements, the matter shall be referred to An Bord Pleanála for determination.

Reason: In order to conserve the archaeological heritage of the site and to secure the preservation and protection of any remains that may exist within the site.

10. (a) Prior to commencement of development, the developer shall submit a detailed landscaping plan for each of the development components at the Ringsend Wastewater Treatment Plant and the Regional Biosolids Facility sites. Details, including strengthening of boundary treatment, screening of compounds and general landscape details, including timescales, shall be submitted to, and agreed in writing with, the planning authorities and the landscaping shall be carried out in accordance with the agreed details thereafter.
- (b) Prior to commencement of development, a detailed decommissioning and site restoration plan in respect of the construction compounds, together with a timescale for its implementation, shall be submitted to and agreed in writing with the planning authorities.

Reason: In the interest of the amenities of the surrounding area.

11. (a) The proposed development shall comply with the requirements of the planning authorities with respect to surface water management.
- (b) The existing surface water pipeline traversing the Regional Biosolids Facility site shall be realigned and a wayleave provided in accordance with the requirements of the planning authority (Fingal County Council).

Reason: In the interest of providing best practice for surface water management and to provide for future maintenance of the realigned pipe at the Regional Biosolids Facility site.

12. Prior to commencement of development, the design details for the Regional Biosolids Facility shall be submitted to and agreed in writing with the planning authority (Fingal County Council) for the prevention of environmental pollution in the event of a fire occurrence. Such detail shall also include an assessment of the risk of environmental pollution due to fire water and any mitigation measures which may be necessary.

Reason: In the interest of the protection of the environment and the amenities of the area.

13. All works to be undertaken within and adjacent to designated European Sites within Dublin Bay shall be undertaken in accordance with the requirements of a suitably qualified ecologist appointed following consultation with the National Parks and Wildlife Service.

Reason: In the interest of the protection of designated European Sites and qualifying interests, having regard to the sites' Conservation Objectives.

14. The developer shall pay to the planning authority (Fingal County Council) a financial contribution as a special contribution under section 48(2)(c) of the Planning and Development Act 2000, as amended, in respect of the upgrade and signalisation of the R135 and the N2 North Bound Slip Priority Junction. The amount of the contribution shall be agreed between the planning authority and the developer or, in default of such agreement, the matter shall be referred to An Bord Pleanála for determination. The contribution shall be paid prior to commencement of development or in such phased payments as the planning authority may facilitate. The application of indexation required by this condition shall be agreed between the planning authority and the developer or, in default of such agreement, the matter shall be referred to An Bord Pleanála to determine.

Reason: It is considered reasonable that the developer should contribute towards the specific exceptional costs which are incurred by the planning authority which are not covered in the Development Contribution Scheme and which would benefit the proposed development.

Schedule of Costs

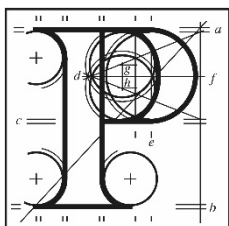
In accordance with the provisions of section 37H(2)(c) of the Planning and Development Act 2000, as amended, the amount due to be paid by the applicant to the Board is **€70,459**.

A breakdown of the Board's costs is set out in the attached Appendix 1.

Stephen Bohan
Member of An Bord Pleanála
duly authorised to authenticate
the seal of the Board.

Dated this day of 2019

G.2 Inspector's Report ABP-301798-18



An
Bord
Pleanála

Inspector's Report ABP-301798-18

Development	10-year permission for development of the Ringsend wastewater treatment plant upgrade project including a regional biosolids storage facility
Location	Ringsend Wastewater Treatment Plant, Pigeon House Road, Dublin 4 and Newtown, North Road (R135), Dublin 11
Planning Authority	Dublin City Council South and Fingal County Council
Planning Authority Reg. Ref.	n/a
Applicant(s)	Irish Water
Type of Application	Application under the Provisions of S37E of the Planning and Development Act 2000, as amended.
Planning Authority Decision	n/a
Date of Site Inspection	9 th October 2018 & 10 th October 2018
Inspector	Patricia Calleary

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1.0 Introduction

- 1.1. This report relates to the assessment of a planning application made direct to An Bord Pleanála by Irish water under the Provisions of S37E of the Planning and Development Act 2000, as amended (hereinafter referred to as the 'Act'). Permission is sought for revisions and alterations to the existing and permitted development of the Ringsend Wastewater Treatment Plant (WwTP) at Pigeon House Road in Dublin 4, referred to as **component number one** and for a new Regional Biosolids Storage facility (RBSF) at Newtown, Dublin 11 referred to as **component number two**.
- 1.2. The revisions and alterations proposed to the Ringsend WwTP would broadly comprise the omission of the previously approved 9km-long sea outfall tunnel (LSOT) and the associated relocation of the existing effluent discharge point. Instead, it is now proposed to incorporate Aerobic Granular Sludge (AGS) technology into the secondary treatment process together with associated nitrogen (N) and phosphorous (P) removal which it is stated would significantly improve the standard of effluent treatment at the existing wastewater treatment plant. Consequently, it is also proposed to continue to discharge treated effluent through the existing outfall at the Liffey Estuary.
- 1.3. The proposed RBSF would be developed and used to store biosolids arising out of the treatment of sludge generated at the Ringsend WwTP prior to their re-use on agricultural lands.

2.0 Project Background

- 2.1. On the 16th November 2012, An Bord Pleanála granted approval to Dublin City Council (ABP Reference Number: 29N.YA0010) for development at the Ringsend Wastewater Treatment known as the 2012 Approval. The 2012 Approval permitted an expansion of the existing Ringsend WwTP to an average daily capacity of 2.4 million population equivalent (PE) in terms of reduction of Biochemical Oxygen Demand (BOD) and Suspended Solids (SS) and it included the following elements:

- Additional secondary wastewater treatment capacity at the wastewater treatment works site including associated solids handling and ancillary works;
- A 9-km-long sea outfall in tunnel (LSOT), commencing at an onshore inlet shaft approximately 350m east of the wastewater treatment works and terminating in an underwater outlet riser/diffuser in Dublin Bay;
- Various process improvement works known as surgical works;
- Road network improvements during the construction phase.

2.2. Two applications were subsequently made to alter the terms of the 2012 Approval (29N.YM0002 & 29N.YM0004) and An Bord Pleanála approved the alterations sought. An application for further alterations to the 2010 Approval is currently with the Board (29N.YA0010). Details of these are set out under the heading 'Planning History'.

2.3. Certain elements of the 2012 Approval works are stated to have been advanced, primarily comprising preparatory works, mechanical plant installation and construction of access roads.

3.0 Site Location and Description

3.1. Ringsend WwTP site

3.1.1. Ringsend WwTP is located on the Poolbeg peninsula, at the mouth and south of the River Liffey in Dublin city. Treated effluent from the plant discharges to the Lower Liffey Estuary, c.1km to the east. The site with a stated 17.9 ha is located adjacent to and immediately west of ESB Poolbeg Power Station and immediately east of the Dublin Waste to Energy (WtE) facility. Irishtown Nature Reserve comprising an amenity grassland area is located immediately south. In the wider environment, Dublin city is located to the west and Dublin Bay is located to the east.

3.1.2. The Poolbeg peninsula is characterised by industrial, utility and amenity uses with dock facilities to its north. Poolbeg West is designated under Section 166 of Part IX of the Planning and Development Act 2000, as amended, as a Strategic Development Zone (SDZ) with provision for between 3000 and 3500 units as well as

commercial and other uses. In October 2017, under the provisions of the Planning and Development Act 2000, as amended, Dublin City Council decided by resolution to make the Poolbeg West Planning Scheme, which covers an area of 34ha immediately adjoining the south and west of the Ringsend WwTP site. At the date of this assessment and subsequent an appeal to the Board, the Poolbeg West Planning Scheme (ABP Ref. PL29S.ZD2013) remains under consideration by the Board. Part of the Ringsend WwTP application site incorporating a proposed temporary construction compound, C1, is located within the lands associated with the planning scheme.

3.1.3. Access to the site is along Pigeon House Road and through walkways associated with Irishtown Nature Reserve to the south. There are no residential properties in the immediate vicinity of the site. The existing outfall from the WwTP is positioned c.1km to the east of the plant, just east of the ESB Poolbeg Power Station. The wastewater discharge is mixed with water from the ESB power station which is used to cool the gas turbines at the power station before being discharged to the river.

3.1.4. The following provides a summary of the current treatment process which occurs at the Ringsend WwTP.

- **Preliminary Treatment:** includes flow management, stormwater handling and storage, screening and grit removal;
- **Primary Treatment:** comprises sedimentation and creating a primary sludge for treatment;
- **Secondary Treatment:** comprises a biological process which creates an activated sludge stream;
- **Disinfection:** comprises ultra-violet radiation to reduce the pathogenic and other organisms in the final effluent discharge;
- **Sludge Thickening:** comprises thickening, to reduce the volume, and storage of the primary and activated sludges;
- **Sludge Treatment:** comprises hydrolysis and anaerobic digestion which breakdown and stabilise the biological component in the sludge, producing energy as a by-product; and

- **Sludge Drying and Dewatering:** comprises drying or dewatering of the treated sludge, producing biosolids in the form of biofert and biocake.

3.2. Regional Biosolids Storage Facility (RBSF) site

- 3.2.1. The site of the Regional Biosolids Storage Facility (RBSF) occupies a stated 11 ha, located in Fingal at Newtown in Dublin 11, c.19km from the Ringsend WwTP site. It is bounded to the east by the R135 regional road and the N2 national primary road lies further east and curves around to the north. There is an established detached house and a scheme of eight residential units¹ and a community building under construction, located c. 25 metres from the site boundary, to the south east. The Dog's Trust is also located c. 250m to the south of the site.
- 3.2.2. To the immediate north there is an area of semi-natural dry meadow grassland. The site is bounded to the west and south by a stream which is a tributary of the Hunstown stream. The Hunstown stream connects with the River Ward approximately 4 km north of the proposed RBSF site. Hunstown quarry lies to the south and west and Hunstown power station lies to the south. 38 kV and a 110 kV electricity supply lines traverse the site. The surrounding area is primarily occupied by industrial, commercial and warehousing premises and Dublin Airport logistics park lies to the east of the site.
- 3.2.3. Fingal County Council (FCC) was granted approval by An Bord Pleanála under Ref. 06F.EL2045 (21st April 2006) for a waste recovery facility at the proposed RBSF site. Certain enabling works have since been carried out on site including the removal of vegetation and the construction of roads and other hard-standing areas. The development did not proceed further.

4.0 Proposed Development

- 4.1. Permission is sought for a ten-year period to carry out revisions to the development

¹ A scheme of six residential units was originally permitted on the adjoining site in 2015 and following an application for alterations, two additional units were permitted in 2018. The details are set out under the heading of 'Planning History'. It is assumed throughout this report that the construction underway includes eight houses.

which was approved in 2012 at the Ringsend WwTP. The primary difference in the revisions now before the Board and that previously approved is the proposal for the inclusion of AGS technology at the secondary treatment stage and the elimination of the 9-km undersea tunnel/LSOT while continuing to discharge at the existing outfall instead. The development would also comprise the construction of a RBSF at Newtown in Dublin 11. The purpose of the development of the RBSF is to store treated wastewater sludge in the form of biosolids prior to its re-use as a fertiliser / soil conditioner on agricultural lands. The biosolids would be primarily generated from treated sludge at the Ringsend WwTP and the proposed Greater Dublin Drainage (GDD) WwTP² as well as other Fingal municipal wastewater treatment plants. The facility would be used for storage of biosolids only and no treatment of sludge would take place.

4.2. The Ringsend WwTP has an existing discharge authorisation licence (D0034-01) in accordance with the requirements of the Waste Water Discharge (Authorisation) Regulations 2007, as amended. The licence was granted by the EPA in 2010 and has been amended in 2016 and 2018. It is proposed to continue to operate the plant as a live plant during construction.

4.3. Specific elements of the proposed development at each of the two sites are listed below.

4.3.1. **Ringsend WwTP**

- Proposals to reconfigure and retrofit up to 24 of the existing Sequencing Batch Reactor (SBR) tanks to facilitate the use of new Aerobic Granular Sludge (AGS) technology;
- Associated works including a sludge pasteurisation building and a phosphorous recovery building;
- Use on a permanent basis of a vehicular entrance granted a temporary permission under ABP Ref. 29N.YM0002 off Pigeon House Road;

² The GDD WwTP proposal is being progressed as a separate strategic infrastructure development planning application and is currently with the Board for its consideration.

- Underground electrical connection to an existing underground ESB cable along the south west corner of the southern boundary;
- Bypass culvert, ultraviolet lamps, internal road configurations and additional car parking;
- Continued use of two temporary construction compounds (C1 and C2), previously permitted for three years under ABP Ref. 29N.YM0004, for 10 years;
- Omission of the previously approved 9-km undersea tunnel / LSOT and the continued use of the existing outfall to the River Liffey serving the Ringsend WwTP;
- Omission of three temporary construction compounds previously permitted.

4.3.2. **RBSF**

- Demolition of a number of small structures, removal of internal roads and partial removal/diversion of existing drainage infrastructure;
- Provision of two biosolids storage buildings with a combined capacity to store up to 48,000 cubic metres of biosolids at any one time;
- Installation of odour control flues;
- Provision of mechanical and electrical control building and an administration building;
- Use of existing vehicular access off the R135.

4.4. Throughout the planning application documentation, reference is made to the **'Proposed Upgrade Project'** which is intended to mean the proposed development which is the subject matter of the current strategic infrastructure development (SID) application in combination with the elements of the 2012 Approval which are also being progressed. The relationship between the proposed development which is the subject matter of the current application and the 2012 Approval are set out in diagrammatic format in Figure 10 of the applicants planning report and Table 8 of the

report presents a list of the specific work elements proposed. The Environmental Impact Assessment Report (EIAR) accompanying the current application addresses the overall 'proposed upgrade project'. The proposed development is identified in the documentation as comprising two principal components as follows:

- **Component 1** - Ringsend WwTP: Upgrade works at the Ringsend WwTP;
- **Component 2** - RBSF: A Regional Biosolids Storage Facility at Newtown.

4.5. The planning application is accompanied by the statutory documents and drawings required for a SID application. It is also accompanied by a Planning Report, Technical Reports including Greater Dublin Drainage Study: Overview & Future Strategic Needs, Flood Risk Assessments for both sites, Engineering Design Report – RBSF and Architectural Design Statement – RBSF, an EIAR for both the Ringsend Wastewater Treatment Plant Upgrade Project and the Regional Biosolids Facility (Volumes 1 to 4 inclusive along with several supporting documents as appendices) and an Appropriate Assessment Screening Report and Natura Impact Statement. Following receipt of all reports and submissions by various consultees and observers, the applicant furnished a written response to the reports and submissions.

5.0 Planning History

5.1. The Ringsend WwTP has operated on its current site within the Poolbeg Peninsula since the early 20th century. An activated sludge system was introduced at the plant in the 1960s. Further improvement works were undertaken incrementally including the construction of a new inlet works, SBRs and new sludge handling facilities.

5.1.1. Approvals at the Ringsend WwTP site

An Bord Pleanála Ref. **29N.YA0010** – The Board granted approval (16th November 2012) for the following: Ringsend Wastewater Treatment Works Extension Project which would expand the existing wastewater treatment to its ultimate capacity of 2.4 million PE within the confines of its current site and achieve the required discharge standards. The proposed extension includes the following elements:

- Additional secondary wastewater treatment capacity at the wastewater treatment works site (c.400,000 PE) including associated solids handling and ancillary works;
- A 9-km LSOT commencing at an onshore inlet shaft approximately 350m east of the wastewater treatment works and terminating in an underwater outlet riser/diffuser in Dublin Bay;
- Road network improvements in the vicinity of the site (during the construction phase);

5.1.2. Alteration Decisions on the Ringsend WwTP site

- **PL29N.YM0002** – In June 2016, the Board altered the Approval in respect of certain temporary works and removal of temporary landscaping bunds at the Ringsend WwTP site;
- **PL29N.YM0004** – In January 2018, The Board altered the Approval to allow for the omission of three construction site compounds previously permitted and the provision of three new temporary construction site compounds at the Ringsend WwTP site;
- **ABP-301773-18** (current application) - This is a concurrent application whereby a request is sought by Irish Water to alter the terms of the 2012 Approval (29.YA0010). The nature of the request relates solely to condition no.1 attached to the Approval;

5.1.3. Planning Applications in the vicinity of the Ringsend WwTP site

- **An Bord Pleanála Reg. Ref. No. PL29S.ZD2013** – Poolbeg SDZ Planning Scheme appeal is currently under consideration by An Bord Pleanála;
- **An Bord Pleanála Reg. Ref. No. PL29S.EF2022** – Dublin Waste to Energy / Covanta granted permission on 19th Nov 2007;
- **An Bord Pleanála Reg. Ref. No. PL29N.PA0034** – Alexandra Basin Redevelopment (Dublin Port) granted permission on 8th July 2015;

- **Dublin City Council Reg. Ref. 2656/16** – National Oil Reserves Agency granted permission on 13th April 2016 for redevelopment/extensions;

5.1.4. Planning Applications on the RBSF site

- **PL06F.EL2045** – In April 2006, An Bord Pleanála granted approval to FCC for development of a construction and demolition waste recovery facility processing 75,000 tonnes per annum (tpa), a biological waste treatment facility treating 45,000 tpa of segregated domestic and commercial organic waste; a waste transfer facility processing 65,000 tpa of municipal solid waste and a sludge hub centre treating 26,511 tpa of municipal sludge;
- **FCC Reg. Ref. F08A/0624** – In August 2008, permission was granted to ESB to divert a section of the existing Finglas-Ashbourne 38kv line;

5.1.5. Planning Applications in the vicinity of the RBSF site

- **FW13A/0089/E1** – On 19th January 2018, FCC granted an extension of permission for the construction of a 3.6 MW renewable bioenergy plant;
- **F18/0146** – On 16th May 2018, FCC granted permission for a storage and distribution centre for new and imported vehicles;
- **F16A/0128** – On 30th March 2016, FCC granted permission for industrial and warehouse development;
- **FW14A/0162** On 2nd June 2015, FCC granted permission for the demolition of two houses and the construction of six new houses. Permission was subsequently granted on 11th June 2018 under **FW18A/0038** for amendments to develop an additional building to accommodate two additional residential units.

5.1.6. EPA Licence

- **Reg Ref. D0034-01** - Under the provisions of the Wastewater Discharge (Authorisation) Regulations 2007, as amended, the EPA granted a licence (July 2010) to discharge treated effluent into the Lower River Liffey. The licence was subsequently amended under Technical Amendments A and B.

5.1.7. Compulsory Purchase Order

- The lands at Newtown, North Road (R135) Dublin 11 were the subject of a separate application made under Section 37A of the Planning and Development Act, 2000, as amended, providing for the compulsory purchase of those lands. No objections were received in relation to the CPO.

6.0 Legislative and Policy Context

6.1. The following sets out the European, national, regional and local legislative and planning policy framework relevant to the assessment of the application.

6.1.1. European Directives

6.1.2. European Union Water Framework Directive 2000/60/EC (WFD) was adopted in 2000 as a single piece of legislation covering rivers, lakes, groundwater and transitional (estuarine) and coastal waters and includes heavily modified and artificial waterbodies. The overarching aim of the WFD is to prevent further deterioration of and to protect, enhance and restore the status of all bodies of water with the aim of achieving at least 'good' ecological status by 2015 (or where certain derogations have been justified to 2021 or 2027).

6.1.3. The European Union Urban Waste Water Treatment Directive 91/271/EEC amended by Directive 98/15/EC (UWWTD) sets out the legal requirements for the collection, treatment and discharge of urban wastewater and specifies the quality standards which must be met before treated wastewater is released into the environment.

6.1.4. The European Union Bathing Water Directive 2006/7/EC (BWD) establishes

procedures and standards for bathing waters. Under the Directive, all waterbodies are required to achieve a minimum of 'sufficient' quality which as a category lies above 'poor' and below 'good' based on main parameters for analysis Intestinal Enterococci and Escherichia coli (E. Coli).

6.1.5. **Other EU Directives of relevance**

- EIA Directive 2011/92/EU amended by Directive 2014/52/EU (EIA Directive);
- Birds Directive (79/409/EEC) amended by Directive (2009/147/EC);
- Habitats Directive (92/43/EEC);
- Groundwater Directive (2006/118/EC);
- Waste Framework Directive (2008/98/EC);
- Seveso III Directive (2012/18 EU);
- Sewage Sludge Directive (86/278/EEC);
- Nitrates Directive (91/676/EEC);

6.1.6. **National Legislation of relevance**

- The Waste Water Discharge (Authorisation) Regulations 2007, as amended;
- The European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended;
- European Communities (Water Policy) Regulations 2003, as amended;
- European Communities Environmental Objectives (Groundwater) Regulations 2010, as amended;
- Urban Waste Water Treatment Regulations 2001, as amended;
- Bathing Water Quality Regulations 2008, as amended;
- European Communities (Birds and Natural Habitats) Regulations 2011, as amended;
- European Communities (Waste Water Treatment) (Prevention of Odours and Noise) Regulations 2005;
- Waste Management (Registration of Sewage Sludge Facility) Regulations 2010;

- European Union (Good Agricultural Practice for Protection of Waters) Regulations 2017, as amended;

6.1.7. **National Planning and Related Policy**

6.1.8. 'National Planning Framework – Ireland 2040' (NPF) sets out 10 National Strategic Outcomes including Strategic Outcome 9:

- Water - Implement the Greater Dublin Strategic Drainage Study (GDSDS), through enlarging capacity in existing wastewater treatment plants (Ringsend) and providing a new treatment plant in North County Dublin - known as the Greater Dublin Drainage (GDD) Project;
- Effective Waste Management - Waste planning in Ireland is primarily informed by national waste management policies and regional waste management plans. Planning for waste treatment requirements to 2040 would require:
 - Additional sewage sludge treatment capacity and a standardised approach to managing wastewater sludge and including options for the extraction of energy and other resources;
 - Biological treatment and increased uptake in anaerobic digestion with safe outlets for bio-stabilised residual waste;

6.1.9. Within the related National Development Plan, 2018-2027, National Strategic Objective 9 (Investment Actions) identifies that €8.5 billion would be invested by Irish Water over the period of the National Development Plan. A number of projects are listed under Investment Actions including:

- Ringsend Wastewater Treatment Plant (WwTP) project: This €190 million project would provide further capacity to support development in the Greater Dublin Region;
- Investment in waste management infrastructure is critical to our environmental and economic wellbeing for a growing population and to achieving circular economy and climate objectives;

6.1.10. Irish Water's Water Services Strategic Plan – A Plan for the Future of Water Services 2015 – 2040 (WSSP) outlines strategic objectives and aims including in particular:

- Objective WW - Provide Effective Management of Wastewater; Aims: WW1- manage the operation of wastewater facilities in a manner that protects environmental quality, WW2- manage the availability and resilience of wastewater services now and into the future and WW3- manage the affordability and reliability of wastewater services;
- Objective EN - Protect and Enhance the Environment; Aims: EN1- ensure that Irish Water services are delivered in a sustainable manner which contributes to the protection of the environment, EN2- operate water services infrastructure to support the achievement of waterbody objectives under the Water Framework Directive and obligations under the Birds and Habitats Directives and EN3- manage all residual waste in a sustainable manner;
- Objective SG - Support Social and Economic Growth; Aims: SG1- support national, regional and local economic and spatial planning policy, SG2- facilitate growth in line with national and regional economic and spatial planning policy and SG3- ensure that water services are provided in a timely and cost-effective manner;
- Objective IF - Invest in our Future; Aims: IF1 - manage assets and investments in accordance with best practice asset management principles to deliver a high quality, secure and sustainable service at lowest cost; IF2 - invest in assets while maintaining a sustainable balance between meeting customer standards, protecting the environment and supporting the economic development and growth of the country; IF3 - establish a sustainable funding model to ensure that Irish Water can deliver the required capital investment in order to achieve the required outcomes; IF4 - promote research and proven innovative technical solutions to meet standards set by our regulators including our objectives for cost and energy efficiency;
- Compliance with the UWWTD is considered a priority for Irish Water as is the

expansion and upgrading of the Ringsend WwTP.

6.1.11. National Wastewater Sludge Management Plan 2016 – 2041 (NWSMP)

- The NWSMP aims to ensure that the management of wastewater sludge over the next 25 years is standardised nationwide. The Plan recommends the development of regional facilities for the storage of biosolids;

6.1.12. River Basin Management Plan for Ireland 2018 – 2021 (RBMPI)

- The RBMPI sets out a range of actions aimed at achieving the objectives of the EU Water Framework Directive (WFD) and leading to a standardised approach to assessments;
- Regarding the Ringsend WwTP, it is located in Dublin City area of the Liffey catchment. In terms of transitional waters, the current ecological status (2010-2015) of the lower Liffey Estuary remains 'moderate' and the coastal water of Dublin Bay has a 'good' status. The intention of the RBMPI is to achieve or maintain a 'good' status for both by 2027;
- The proposed upgrade to the Ringsend WwTP is identified as an upgrade to be undertaken in support of compliance with the requirements of the UWWTD;

6.1.13. **Regional Planning and Development Framework**

6.1.14. Regional Planning Guidelines (RPGs) for the Greater Dublin Area (GDA) 2010 – 2022. While under review, the RPGs remain the appropriate regional planning policy framework document pending the preparation and adoption of the Regional Spatial and Economic Strategies (RSES) for the more recently formed Eastern and Midland Regional Assembly (EMRA).

- Under 'Strategic Policy – Physical Infrastructure', Policy 3 (PIP 3) seeks to: 'Protect and work to improve water quality in, and impacted by, GDA and seek that investment in water and surface water treatment and management projects is prioritised to support the delivery of the economic and settlement

strategy for the GDA through the coordinated and integrated delivery of all essential services supporting national investment’.

- In achieving this policy, Table 11 (Critical Strategic Projects – Wastewater & Surface Water) sets out 10 critical projects needed to address PIP3 including ‘expansion of the Ringsend Wastewater treatment plant to ultimate capacity’;

6.1.15. Draft Regional Spatial & Economic Strategy (RSES)

- Regional policy objectives include RPO 10.5 (Support Irish Water and authorities in planning growth and increasing compliance with the UWWTD);
- RPO 10.6 (Delivery of infrastructure, including Ringsend WWTP project);

6.1.16. Eastern-Midlands Region Waste Management Plan 2015 – 2021 (EMRWMP)

- Policy H1: Work with the relevant stakeholders and take measures to ensure systems and facilities are in place for the safe and sustainable management of sludges (sewage, waterworks, agricultural, industrial and septic tank) generated in the region having due regard to environmental legislation and prevailing national guidance documents, particularly in relation to the EU Habitats and Birds Directive;

6.1.17. Greater Dublin Strategic Drainage Study - 2005 (GDSDS)

- Section 10.8 – The wastewater treatment strategy for the Dublin Region is in the first instance to maximise the capacity of existing facilities. This requires immediate expansion of Ringsend WwTP to its maximum capacity while engaging in an active programme of load management of existing and new non-domestic effluent loads to buy time to allow for the planning and construction of both the expansion of Ringsend and new regional drainage and wastewater infrastructure;

6.1.18. Greater Dublin Drainage Strategy: Overview & Future Strategy - May 2018 (GDDS)

- The review concludes that the projected loading on the Ringsend WwTP would reach the site capacity of 2.4 million PE between 2024 and 2027 depending on the actual growth realised in the catchment;

6.1.19. **Local Planning Context – Ringsend WwTP component**

6.1.20. Dublin City Development Plan 2016-2022 includes a host of policies and objectives relevant for the assessment of the Ringsend WwTP component including those which are set out under:

Policies

- SI1: Support Irish Water in the development of water and wastewater systems;
- SI2: Support and facilitate Irish Water to ensure the upgrading of wastewater infrastructure, in particular the upgrading of the Ringsend WwTP;
- GI17: Develop and protect coastal, estuarine, canal and riverine recreational amenities, GI20: seek continued improvement in water quality, GI22: Promote nature conservation of Dublin Bay, GI24: Conserve NHAs, SACs and SPAS;

Objectives

- SIO1: Support Irish Water in the implementation of the ‘Water Services Strategic Plan – A Plan for the Future of Water Services’;
- SIO2: Work closely with Irish Water to identify and facilitate the timely delivery of the water services required to realise the development objectives of this plan;
- GIO17: seek improvement of water quality and GIO19: maintain beaches to a high standard;

Land Use Zoning

- For the most part, the Ringsend WwTP site is zoned as ‘Z7’ with a stated objective ‘To provide for the protection and creation of industrial uses and to facilitate opportunities for employment creation including port related activities’;
- The proposed temporary compounds span across lands which are zoned Z7, Z9 and Z 14;

Other Local Policy Documents relevant to Ringsend WwTP

- Other local policy documents of relevance include the Dublin Port Masterplan 2040, Sandymount Village and Environs Architectural Conservation Area Report 2013, Village Design Statement - Sandymount, 2011;

6.1.21. **Local Planning Context – Regional Biosolids Storage Facility component**

6.1.22. Fingal Development Plan 2017-2023 includes numerous policies and objectives relevant to the assessment of the RBSF component including those which are set out under:

Strategic Policy

- Work with Irish Water to secure the timely provision of water supply and drainage infrastructure necessary to end polluting discharges to waterbodies, comply with existing licences and Irish and EU law and facilitate the sustainable development of the county and the region;

Objectives

- Objective WT03: Facilitate the provision of appropriately sized and located wastewater treatment plants and networks including a new regional wastewater treatment plant and the implementation of other recommendations of the GDSDS, in conjunction with relevant stakeholders and services providers, to facilitate development in the county and region and to protect the water quality of Fingal's coastal and inland waters through the provision of adequate treatment of wastewater;
- Objective WM15: Work with Irish Water and other relevant stakeholders to ensure the provision of facilities for the safe and sustainable management of sludges (sewage, waterworks, agricultural, industrial and septic tank);

Land Use Zoning

- 'HI' – Heavy Industry, the objective of which is: - 'Provide for heavy industry'. 'A waste disposal and recovery facility (High Impact)' is a permissible use within this zoning designation;

Local Objective

- Local Objective 78: Facilitate the development of infrastructure for waste management, including construction and demolition waste processing, biological treatment of organic waste, a sludge treatment facility and a waste transfer station;

Aviation Policies and Objectives

- The RBSF site falls within the Outer Airport Noise Zone and outside the Inner Airport Noise Zone. Aviation objectives of relevance include DA10 and DA16.

7.0 Reports and Submissions

- 7.1. Planning Authorities within whose functional areas the development is proposed.

Dublin City Council

- 7.1.1. Dublin City Council's Chief Executive's report focuses on the Ringsend WwTP upgrade works (component one). It is submitted that the proposal is supported by applicable European, national, regional and local planning policy. The applicant's submitted NIS is considered to be generally satisfactory. It is stated that disturbance impacts including noise on birds using Sandymount strand during summer should be given further consideration, as should the matter of potential impacts on prey species. Dublin City Council state that they recognise the need for the project to meet wastewater provisions of the region and consider the new AGS technology would ensure both capacity and compliance in the shortest timeframe, with less risk than the original LSOT option. It is considered that the proposed use of the C1 and C2 construction compounds for up to 10 years is not ideal. In conclusion, DCC state

that they do not object to the development and a number of conditions are recommended.

7.1.2. Reports from internal departments are included or referred to in the Planning report summarised as follows:

- Environment and Transportation Department – no objection;
- Roads and Streets Department, Road Planning Division – no objection subject to conditions;
- Parks & Landscape Services Division – no objection subject to conditions;
- SDZ team – no objection subject to conditions;
- Environmental Health – no objection.

7.1.3. It is set out in internal correspondence to the assistant Chief Executive that a resolution was adopted by the elected members, the details which are summarised as follows:

- Use of lands referenced C1, within the Poolbeg West SDZ boundary (currently under consideration by An Bord Pleanála) need to be reconsidered. DCC notes the temporary use of this land to service the construction phase but also notes that this should not prejudice the future development potential of these lands;
- Requests that the zoning agreed by Dublin City councillors during its consideration of the Poolbeg Planning Scheme SDZ should be maintained and no decision should be made pending the outcome of the Poolbeg West SDZ appeal.

7.1.4. In addition, elected members of the City Council made the following comments:

- The proposed WwTP is large and detrimental to the amenity of residents of large suburbs within Dublin City and should be relocated to a site in north Fingal;
- Development would result in serious construction impacts on local communities;
- Residents are concerned about odour impacts;
- Traffic impacts would arise on the local road network;

- Employment opportunities would be welcome;
- An Bord Pleanála should employ experts to analyse the environmental impacts, rather than accept environmental reports as given;
- Wastewater infrastructure should be provided in a number of locations apart from Ringsend.

Fingal County Council

7.1.5. The Chief Executive's report focuses on the proposed RBSF facility (component two). It is considered that the proposal is of strategic importance and is generally in accordance with the provisions of the Fingal Development Plan 2017-2023. The RBSF would be an integral part of Irish Water's infrastructure, used to store biosolid waste arising from the upgrade of the Ringsend WwTP. The Planning Authority states that they have no objection to the granting of permission for the RBS facility subject to conditions and their report includes recommended conditions.

7.1.6. Reports from internal departments are included. Of note are comments from:

- Archaeology – no archaeological features were identified within the site and therefore no archaeological mitigation recommended;
- Environment – no objection subject to conditions;
- Parks Division – conditions recommended;
- Transportation Planning – no objection subject to conditions;
- Water Services (foul sewer, surface water and water) – no objection subject to conditions;
- EHO – no objection subject to conditions;

7.1.7. In addition, elected members of the council expressed their welcome for the proposed development and made the following comments:

- Concerns expressed regarding the traffic route and submitted that the local road network would require alterations;
- Requested attachment of a condition requiring that no discharge of untreated effluent into Doldrum Bay would occur;
- Archaeological report noted;

7.2. Prescribed Bodies

DCHG

- Notes the findings of the archaeological assessment and recommends that the mitigation measures detailed are carried out in full;

HSE

- Refers to initial submission which it received during the non-statutory consultation period in 2016 and states that it has no further comments to add;

Inland Fisheries Ireland (IFI)

- Ringsend WwTP represents a significant ecological pressure on the regional fisheries resource. Estuaries serve as the natural linkage for migratory species such as salmon, sea trout, lamprey and eels migrating between freshwater and ocean environments;
- It is imperative that options of enhancing the treatment capability of the existing and proposed solutions are achieved so that the 2.4 million PE capacity for Nitrogen (N) and Phosphorous (P) emission limit values would be realised by 2022 (i.e. ahead of the planned 2028 year);
- Construction works for both projects should be in line with a Construction Environmental Management Plan (CEMP) and spoil material should be handled in accordance with the waste management legislation. Drainage within the RBSF buildings should be discharged directly to the foul sewer;

Transport Infrastructure Ireland (TII)

- Refers to plans for the Eastern Bypass of Dublin City and TII Corridor protection studies prepared and issued to the relevant planning and roads authorities in 2009 with revisions in 2014;
- Notes that the proposed 10-year temporary construction compound south west of the Ringsend WWTP (C1) would lie within the Eastern bypass protection corridor and submits that no permanent new development within the protection corridor would be appropriate;

Dun Laoghaire-Rathdown County Council

- Expresses support for the proposed development;

Meath County Council

- Section 7.12 of the Meath County Development Plan 2013-2019 sets out policies which support the upgrade proposal;
- Provision of a well-maintained quality wastewater treatment infrastructure with adequate available capacity is essential to facilitate sustainable development in Meath;

7.3. Public/Semi-State Bodies

ESB

- States that ESB is the owner and operator of significant energy generating assets in the Ringsend/Poolbeg area;
- Expressed support for the proposal;
- Capacity of the outfall channel needs to be assessed and any limitations identified;
- Requests a number of technical clarifications;

Dublin Airport Authority (DAA)

- The observation relates solely to the Biosolids facility;
- Essential that the construction and operation of the facility would not give rise to any increase in bird activity;
- Requests that mitigation measures outlined in the EIAR are implemented;
- Requests noise control requirements are implemented;
- Requires condition to any grant of permission requiring developer to agree crane operations;
- Requires that future growth demand of Dublin Airport would be catered for;

7.4. Observers

Chambers Ireland

- As the Ringsend WwTP is experiencing significant overload it should be upgraded to full capacity as an immediate priority to facilitate the current and future growth and needs of the region;

Dublin Chamber

- Welcomes and supports the proposal and considers it a much-improved proposal than that previously approved in 2012;

Sandymount & Merrion Residents Association

- No objection to the proposed RBSF. However, if this should fail to be installed, any increase in sludge volumes would give rise to serious problems;
- Pleased to note omission of the LSOT element previously proposed;
- Expresses serious concern with the use of lands marked C1 as a construction compound for a 10-year period. Requires that area which would be occupied by construction compound C1 would be reinstated to the condition which prevailed prior to its use by the Dublin Waste to Energy plant;
- Local Authority may have a conflict of interest if they are part of the PPP for the Waste to Energy Plant;

Meakstown Community Council

- Concerns made relate to the Regional Biosolids facility;
- Traffic concerns raised and seeks commitment that truck movements are surveyed / monitored;
- Seeks commitments regarding odour and noise control;
- Health impacts and monitoring of compliance required;
- Suggests that a community fund should be put in place;
- Seeks that community would be consulted by Irish Water regarding job creation linked to the proposal;

7.5. Applicant's response to submissions received from Planning Authorities within

whose functional areas the development is proposed.

Dublin City Council

- The construction works would not be visible to waterbirds on Sandymount Strand;
- Similar to wintering waterbirds, summering waterbird populations (which are a subset of the wintering waterbird species and which mainly present in smaller numbers) are also considered to be habituated to construction noise and no impacts on the waterbirds would result during the construction phase;
- Impacts to roosting terns would not arise as they would be well separated from the construction site and they would occupy roosts at Sandymount strand at night time;
- The WwTP upgrade works would not affect the conservation objectives for the South Dublin Bay and River Tolka Estuary SPA as no significant changes in fish populations are predicted and any changes in macroinvertebrate populations are likely to be minor and may improve tern prey resources;
- Use of construction compounds C1 and C2 would be limited to the construction phase for up to a period of 10 years. The use of C1 would not prejudice the implementation of the proposed Poolbeg West SDZ Planning Scheme and recognises future plans for the Eastern Bypass and Dublin District Heating system;
- Other matters around clarity about no use of local roads, removal of invasive species and landscape proposals are included;

Fingal County Council

- Puts forward suggestions for the achievement of FCC's suggested planning conditions concerning footpath and the payment of a special development contribution;
- Appropriate threshold for construction noise limits at nearby residential

receptors are consistent with BS 5228-1:2009+A1:2014: Code of practice for noise and vibration control on construction and open sites which sets out the rationale for the suggested noise limits at the nearest sensitive receptors;

- Proposals for monitoring dust as set out in the EIAR are sufficient to protect air quality for nearby sensitive receptors and states that it would be disproportionate to impose a requirement for continuous monitoring;

7.6. Applicant's response to submissions received from Prescribed Bodies

DCHG (DAU)

- Notes recommended mitigation proposals;

HSE

- Refers to submission made by HSE in April 2016 at the time of non-statutory consultation and states that topics raised at that point have been addressed in the EIAR. A copy of the HSE submission made at that point is enclosed;

Inland Fisheries Ireland

- The upgrade of the WwTP would result in greater capacity in terms of BOD and SS by 2021 and there is a proposed follow-on programme of retrofitting new technology until 2028 to meet nitrogen (N) and phosphorous (P) emission limit values, reaching a capacity of 2.4m PE by 2028;
- Applicant is exploring options centred around enhancing treatment capability of the existing SBRs and use of AGS solution in order to reach 2.4m PE capacity sooner;

Transport Infrastructure Ireland (TII)

- No permanent new development is proposed within the Eastern Bypass protection corridor. The use of C1 lands is required for a 10-year construction period;

Meath County Council

- Supportive statement noted;

EPA

- Waste Water Discharge Licence Register No. D0034-01 was issued in respect of the development and was since amended (December 2016 and February 2018);
- As part of its consideration of any licence review application that may be received which addresses the changes proposed, the Agency shall ensure that before the revised licence is granted, the licence application will be made subject to an Environmental Impact Assessment regarding the matters that come within the functions of the Agency;
- In the event of an application for a review of the licence, all matters relating to emissions to the environment from the activities proposed and the licence application documentation and EIAR will be considered and assessed by the Agency;

7.7. Applicant's response to Public/Semi-State Bodies Submissions

ESB

- Impact assessment of proposed discharge flow and dispersion of treated effluent from Ringsend WwTP is not dependant on the variable operation of the ESB generating station. Water quality would improve as a result of the development;

Dublin Airport Authority (DAA)

- Conditions relating to the RBSF noted and no objection raised;
- Within Irish Water's GDDS, headroom capacity of 20% provided for domestic/commercial growth and this can be utilised to meet industrial growth;

7.8. Applicant's response to observer's submissions

Chambers Ireland and Dublin Chamber

- Notes the submissions from Chambers Ireland and Dublin Chamber are supportive of the proposed development;

Sandymount and Merrion Residents Association

- Construction compounds C1 and C2 are required to facilitate the development for a construction period of up to 10 years. Compound C3 does not form part of this application *per se* as it would not be required beyond its permitted 3-year planning lifetime;
- The GDD project is a separate project being progressed by Irish Water and is currently before ABP for its consideration;

Meakstown Community Council

- Facility would require a certificate of registration from the Local Authority;
- HGVs should be required to adhere to a route via the M50 and the roads in Meakstown area would not be used in the deliveries to and from the RBSF;
- Vehicular traffic would give rise to noise increase of less than 1 dB, which can be regarded as imperceptible;
- The RBSF would be operated and managed in accordance with an Odour Management Plan (OMP) and details of same are summarised. States that noise impact would not be insignificant;
- There are currently no proposals to change the agricultural lands on which the biosolids would be landspread;
- c.98% of biosolids are currently re-used on agricultural lands as a soil conditioner and fertiliser;
- Land spreading is subject to a number of environmental controls (details provided);
- Commitments to support the community are outlined and include clauses to leverage employment opportunities for local communities and associated contract conditions;
- Improvement works are proposed (footpath and landscaped verge) to the R135 along the front (east) of the RBSF site.

8.0 Pre-Planning and Consultation

8.1. Summary of consultations

- Pre-planning consultation held with An Bord Pleanála under Section 37B(1) of the Act under File Reference No. **PL29S.PC0203**;
- Meetings with DCC (planning and internal departments);
- Meetings with FCC (planning and internal departments);
- EIAR Scoping consultation (consultation with prescribed bodies and key stakeholders);
- Public Consultation (public open days, additional meetings, online information and a direct phone-line, media campaign, E-Zine Newsletter, website);
- Seven weeks of statutory public consultation.

9.0 Assessment overview

9.1. Having regard to the requirements of the Planning and Development Act 2000, as amended, my overall assessment is considered under the headings of Planning Assessment, Environmental Impact Assessment (EIA) and Appropriate Assessment (AA). There is inevitable overlap between certain aspects of the three sections, for example, with matters raised falling within both the planning assessment and the environmental impact assessment. In this regard and to avoid repetition, assessment of matters covered in any of the three sections are not repeated. My assessment is informed by all of the documentation received with the planning application for the proposed development and all of the subsequent reports, submissions and observations and the applicant's response received as well as information gathered during my site visits of both the Ringsend WwTP and RBSF sites and their surrounding areas.

10.0 Planning & Sustainable Development Assessment

10.1. Introduction

10.1.1. I consider that the key issues arising in respect of the planning assessment comprise

the following:

- Principle and Water Quality
- Legislative and Policy Considerations
- Seveso Considerations
- Flood Risk
- Traffic
- Design and Amenity
- Community Gain
- Other Consents

10.2. Principle and Water Quality

10.2.1. Ringsend WwTP component

10.2.2. The current WFD status of the Liffey Estuary Upper, Liffey Estuary Lower and Tolka Estuary are 'moderate' and Dublin Bay has an overall status of 'good' in accordance with the criteria set out in schedule 4 of the European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended.

10.2.3. The Tolka and Lower Liffey Estuaries are classified under the UWWTD and corresponding Urban Wastewater Treatment Regulations 2001, as amended, as 'sensitive' waterbodies because they are subject to eutrophication. Consequently, if effluent is to continue to be discharged to the Liffey Estuary at the existing outfall, it is required to achieve 10 mg/l Total Nitrogen (N)³ and 1 mg/l Total Phosphorus (P).

10.2.4. Under the BWD and Bathing Water Regulations 2008, as amended, the status for designated bathing waters in 2017 are Dollymount Strand: 'Good Quality', Sandymount Strand: 'Poor Quality', Merrion Strand: 'Poor Quality' and Seapoint: 'Excellent Quality'. Under the Directive, all waterbodies are required to achieve a minimum of 'sufficient' status.

³ Total nitrogen = the sum of the inorganic **nitrogen**, organic **nitrogen**, and ammonia

10.2.5. It is well reported that the Ringsend WwTP is currently overloaded, whereby it is experiencing average daily loads of 1.8-1.9m PE. With the completion of the planned and previously permitted capacity upgrade under the 2012 Approval, it is expected that in terms of reduction of BOD and SS, capacity at the plant will increase to 2.4m PE by 2021. Nonetheless the treated effluent would continue to remain above the limits set in its discharge licence (mirroring those of the UWWTD) in terms of Total N and Total P. Table 1 below sets out the emission limit values (ELVs) required to be met under the current Discharge licence.

Table 1: Standards of Treatment (ELVs) for Upgraded Ringsend WwTP

Parameter	Emission Limit Values	Commentary
pH	6-9	-
Toxicity	5 TU	-
Faecal Coliforms	100,000 MPN/100ml	Bathing Season
BOD5	25 mg/l	Annual 95th Percentile. Peak Limit: 50mg/l
COD	125 mg/l	Annual 95th Percentile. Peak Limit: 250mg/l
Suspended Solids	35 mg/l	Annual 95th Percentile. Peak Limit: 87.5mg/l
Total Nitrogen (N)	10 mg/l	Annual Average
Total Phosphorus (as P)	1 mg/l	Annual Average

10.2.6. The proposal under the 2012 Approval involved relocating the treated effluent outfall to a point beyond the area subject to designation as 'sensitive' waterbody. As the current proposal intend to eliminate the undersea/LSOT tunnel, the key issue which arises in the assessment is whether or not that the treated effluent would reach the required standards under the Discharge Licence and UWWTD such as to be capable of continuing to discharge at its current outfall location.

10.2.7. The proposals which are the subject matter of the current SID application involve the retrofitting of new AGS technology across 24 existing Sequencing Batch Reactor (SBR) tanks over a phased basis with the intention of meeting the required nitrogen (N) and phosphorous (P) emission limit values detailed above. AGS technology involves a biological nutrient removal process as part of the wastewater treatment

cycle resulting in a higher standard of treated effluent. The overall intention is that with the application of AGS, the treatment capacity of 2.4m PE in terms of Total P and Total N would be reached by 2028. The applicant has stated that they are investigating options of providing increased capacity earlier though these options although these do not form part of the current SID application.

- 10.2.8. The principal anticipated changes in effluent discharge load from the WwTP are summarised in Table 2 below.

Table 2 - Final Effluent Discharge – Load Reduction Summary

Final Effluent Discharge – Load Reduction Summary Parameter	Current Average Load	Future Average Load	% Reduction
BOD	8,739 kg/day	7,206 kg/day	17.5%
Suspended Solids	16,205 kg/day	10,508 kg/day	35.2%
Ammonia	4,370 kg/day	600 kg/day	86.3%
(Dissolved Inorganic Nitrogen (DIN)	5,939 kg/day	4,804 kg/day	19.1%
Molybdate Reactive Phosphate (MRP)	1,056 kg/day	420 kg/day	60.2%

- 10.2.9. In addition, the incorporation of AGS would lead to a reduction in bacteriological (E.Coli) content in the final effluent.

- 10.2.10. It is set out in the EIAR (Volume 2) that the proposed development together with the permitted capacity upgrade would enable the upgraded WwTP to meet the level of treatment required to achieve ELVs set out in the EPA Discharge licence and the current national and European legislative requirements. In Volume 3 of the EIAR, under the heading of Biodiversity, it is stated that the current emission values are approximately 13.6 mg/l N and 3.9 mg/l P and when the overall project is implemented, the licence ELVs of 10 mg/l N and 1 mg/l P would be achieved. Water quality modelling was carried out to assess the dispersal, dilution, and decay of the final effluent parameters on the receiving waters. The details and output are presented in Volume 3 of the EIAR, under the heading of Water. I have discussed

the modelling and associated outputs in my assessment of water under the EIA section of this report.

- 10.2.11. Outside of this application, the current discharge licence (D0034-01) would be subject to a review process by the EPA in which, in relation to effluent discharge, environmental impact assessment and appropriate assessment would be taken into account. By reference to the 'sensitive' status attributed to the Lower Liffey under the UWWTD, it can be assumed that the ELVs of 10 mg/l N and 1 mg/l P respectively would not be changed in any licence review.
- 10.2.12. Separately, outside the scope of this application, Irish Water is progressing the Greater Dublin Drainage (GDD) wastewater treatment facility in North County Dublin together with alterations to the drainage network including diversion of flows from the Ringsend catchment. A map showing the two intended catchments (Ringsend WwTP and GDD WwTP) in context and the proposed diversion of drainage flows is presented as Fig 4 (Future Ringsend WwTP and GDD catchments) in the applicant's planning application report accompanying this application.
- 10.2.13. **AGS Technology / Omission of LSOT**
- 10.2.14. As stated above, the intention behind the proposed development at Ringsend WwTP is that by incorporating AGS technology leading to Total N and Total P reduction, a higher treatment standard of effluent would be achieved. Consequently, it is submitted that the effluent could continue to discharge at its current outfall and the proposal for the discharge to Dublin Bay through a 9-km piped outfall in an undersea tunnel or LSOT could accordingly be eliminated. AGS was not a proven technology at the time of the application for 2012 approval. It has since been scientifically proven as a means to produce higher treatment of effluent at the secondary treatment stage. As a process, the AGS also allows for recovery of phosphorous.
- 10.2.15. Reference plants which employ AGS technology have been detailed in Volume 2 of the EIAR. These include two such plants located in the Netherlands and more recently (2015-2016) three smaller scale plants in Ireland.

10.2.16. **AGS Technology Trials**

10.2.17. To assess the suitability of the AGS technology at the Ringsend WwTP, a programme of trials referred to as ‘process proving’ was undertaken on existing tanks using ‘Nereda’ AGS technology, developed in the Netherlands. Details of the trial at the Ringsend plant and resultant outcomes are presented in the applicant’s submitted AGS Process Proving summary report which is contained as an appendix within Part B of Volume 2 of the EIAR. Essentially the trial involved a small-scale Process Proving Unit (PPU), known as Process Proving Step 1 (PPS1) which ran for a year followed by a full-scale trial / Process Proving Step 2 (PPS2) which ran for a three-month period. The key elements of the trial are outlined and considered below.

PPS1

10.2.18. PPS1 included loadings comparable to the WwTP’s raw influent once the future Upgrade project would be complete including a phosphorous fixing process stage.

10.2.19. Results of effluent quality in this trial demonstrated that the AGS technology process met the performance standards required under the UWWTD and the UWWT Regulations, 2001 as amended. I have provided a summary of the results below in Table 3.

Table 3: PSS1 Trial – Effluent Parameters

Effluent Parameter	Effluent Standard required (Annual)	Effluent Standards Achieved in PPS1 Period (June 2015-June 2016)
Total Nitrogen (N) - Average	<=10	6.9
Total Phosphorous (P) - Average	<=1	1.0
BOD – 95 th percentile	<25	10.9
COD – 95 th percentile	<125	61.0
TSS – 95 th percentile	<35	22.0

10.2.20. In relation to Total Phosphorous (P), the required performance standard was met and it is stated that there were a number of factors specific to the trial of the PPU

installation that could readily be addressed with a full-scale operation. This coupled with the intention to include phosphorous fixing and the ability for occasional chemical dosing with metal salts to precipitate phosphorus in the process units is stated would further reduce P levels in the full-scale operation.

PPS2

10.2.21. PPS2 involved a full-scale trial of the technology in a retrofit of one of the existing 24 SBR cells at the Ringsend WwTP and it was operated using design flows and design loads which were representative of the full-scale operation. Recording of results excluded an 8-day period after a pump was taken out of service following failure. Results of effluent quality demonstrated that use of AGS technology met the performance standards required under the UWWTD in all but P. I have summarised these in Table 4.

Table 4: PSS2 Trial – Effluent Parameters

Effluent Parameter	Effluent Standard (Annual) required	PPS2 Period (June 2015-June 2016)
Total N – Average	<=10	6.1
Total P - Average	<=1	1.1
BOD – 95th percentile	<25	9
COD – 95th percentile	<125	56
TSS – 95th percentile	<35	26

10.2.22. The Total P value achieved during the PPS2 trial is slightly above the required standard. This is stated to have been linked to a period where a feed pump failed during the trial. No correction was applied and it is stated that the introduction of a limited use of backup chemical dosing would have been sufficient to bring Total P back to compliant levels. The chemical dosing was not applied and the reason put forward by the applicant is that the trial had not yet been completed. It is submitted that with the planned backup chemical dosing, this standard would have been achieved in the trial.

10.2.23. **Discussion**

- 10.2.24. It can readily be concluded that the need for the project to bring the plant back in compliance with both the UWWTD and the corresponding ELVs attached to the EPA licence is necessary. I am satisfied that it has been demonstrated that this is technically achievable using the proposed AGS technology with associated phosphorous and nitrogen reduction as has been demonstrated through trials, the details of which I have outlined above. While the Total P performance standard was not achieved in the PPS2 trial period, I am satisfied with the rationale put forward as to how this could be addressed in the full-scale operation such that its adoption would produce higher quality of final effluent which could continue to be discharged to the lower Liffey Estuary.
- 10.2.25. In their report, DCC have expressed their support for the development proposal which it is stated would ensure both capacity and compliance in the shortest timeframe and with less cost and less risk than the previously proposed undersea tunnel (LSOT).
- 10.2.26. If the current development is not progressed, the non-compliance with the required effluent standards would continue and the quality could potentially further deteriorate as the wastewater influent volumes increase in line with increases in economic activity and population growth in the Greater Dublin Area as proposed in the national and regional planning policy documents. This scenario would also mean continuing non-compliance with the UWWTD and the ELVs attached to the plant's licence which would not be acceptable or sustainable and failure to provide the needed infrastructure would risk substantial fines for Ireland from the Court of Justice of the European for reasons of non-compliance with the nutrient standards in the Directive. It must be acknowledged however that the option to pump the treated effluent via the 9 km LSOT beyond the 'sensitive' waters in Dublin Bay would continue to be available. However, it is clearly evident that the LSOT option is currently less preferred and would result in higher levels of environmental risk and cost.
- 10.2.27. The achievement of improved standards and bringing the plant into compliance with the requirements of the UWWTD would clearly result in a significant positive benefit on the receiving water environment such that the LSOT is no longer required. The

revision to use of AGS technology and omit the LSOT would clearly result in environmental benefits which are further detailed in the EIA section of this report.

10.2.28. Overall, the development to treat the effluent to a higher standard and to omit the LSOT is clearly a more sustainable wastewater solution. There is no doubt that the overall project delivery is crucial in serving the planned economic and population growth targets set for the Dublin region. I have considered the project in terms of the legislative and policy framework further below.

10.2.29. **RBSF Component**

10.2.30. Treatment of wastewater results in the production of two types of raw sludges which in turn require treatment and processing. These include primary sludge (PS) in the form of solids removed in the primary settlement tank and surplus activated sludge (SAS) or surplus activated granular sludge (SAGS) which is a sludge biomass arising from the sludge treatment process. Subsequent to treatment of sludge, which occurs and would continue to occur at the Ringsend WwTP site, biosolids consisting of biocake and biofert would continue to be produced. Biosolids are biologically stable and generally have a low odour and are free of harmful pathogens. Biocake is a wet cake with c.26% dry solids and biofert is drier with c.92% dry solid matter.

10.2.31. The intended purpose of the RBSF is to store the biosolids from the Ringsend WwTP and the WwTP under the GDD project (if permitted). The RBSF is included as part of the overall planning application incorporating Ringsend WwTP Upgrade Project. Separately, the Board will be aware that the RBSF is also included as part of the overall planning application for the GDD project.

10.2.32. Biosolids currently produced at the Ringsend WwTP are stored at a facility in Thornhill in County Carlow which it is stated by the applicant to have a certificate of registration from Carlow County Council for a maximum annual throughput of 25,000 tonnes. Following the upgrade at the Ringsend WwTP, it is anticipated that the volumes of sludge and biosolids would increase because of improvement in wastewater quality and there would be insufficient storage capacity in Thornhill to cater for the current Ringsend WwTP and the new GDD WwTP. Annual production and storage volume anticipated are set out in Table 2-1 'Storage volume requirement for all scenarios' of the applicants engineering design report for the RBSF. In 2040,

in 'the most likely scenario', 90,311 tonnes of biosolids would be generated in the catchment including 16,630 tonnes of biofert and 41,968 of biocake from the Ringsend WwTP, 21,115 tonnes of biocake from the GDD WwTP and 10,578 tonnes of imported sludges in the form of biocake from smaller municipal treatment plants and septic tanks. Collectively, this is shown as requiring 34,615 cubic metres of storage. In a 'high volume scenario', 90,331 tonnes would be generated in the catchment, requiring 40,464 cubic metres of storage. A breakdown and further details of biosolids volumes are presented in Table 2-1.

10.2.33. A third biosolid material, 'struvite', which is 'recovered phosphorous', would also be produced at Ringsend WwTP following the commissioning of the phosphorous recovery system planned to occur in 2021. Struvite has a moisture content of c.92%. Irish Water have set out their future intention to apply for an 'end-of-waste' approval and/or approval under regulations for Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) for the 'struvite', however, pending such approvals, it is intended to be stored in segregated bays at the RBSF. An estimated quantity of 6,000 tonnes per year of struvite is anticipated to be stored at the facility and would be handled similar to other biosolids generated at the Ringsend WwTP whereby it would be stored for certain months of the year prior to its use in agriculture. This is stated to be an interim storage solution as it is anticipated that post 2025, the product would be bagged at the Ringsend WwTP and made directly available to market as a fertiliser.

10.2.34. The rationale for the development of the RBSF to store biosolids produced at the Ringsend WwTP and the proposed WwTP under the GDD project has been clearly set out and it can be concluded that there is a requirement for such a facility to allow for storage of increased volumes of biosolids at a central location prior to land spreading during periods in Spring and Autumn. Land spreading would occur under nutrient managements plans and these would require approval by the respective local authorities as regulated under European Union (Good Agricultural Practice for Protection of Waters) Regulations 2017, and subsequently amended by SI 65 of 2018, European Union (Good Agricultural Practice for Protection of Waters) (Amendment) Regulations 2018. I am satisfied that this is a preferred method for sludge/biosolids management and in line with the policy direction outlined below.

10.3. **Legislative and Policy Considerations**

10.3.1. **European Legislation and Policy**

10.3.2. In terms of improving water quality, the outcome would be a higher standard of final effluent discharge and an overall improvement in the quality of the receiving waters. This would be consistent with the aims of the WFD which seek to protect, enhance and restore the status of all bodies of water with the aim of achieving at least 'good status'. In the case of the receiving waters in Dublin Bay, the target date was extended from 2015 originally to 2027 due to Dublin Bay's location at the bottom of the catchments for the Rivers Liffey, Dodder and Tolka. The development proposed would assist in ensuring that Ireland improves its compliance with the WFD.

10.3.3. This positive outcome would also be consistent with the Bathing Water Directive which requires a minimum target of 'sufficient' required to be achieved for all bathing waters. The ratings are based on the amount of colony forming units of microbiological parameters E.coli and Intestinal Enterococci within a sample.

10.3.4. As is evident in consideration of the principle of the development outlined above, improvement would significantly assist Ireland in complying with its obligations under the UWWTD through the higher standard of effluent treatment proposed and subsequent improved quality of water to be discharged to the receiving water environment.

10.3.5. The provision of the RBSF would assist in delivering the aims of the Sewage Sludge Directive which seeks to encourage the use of sewage sludge in agriculture while regulating its use to prevent harmful effects on soil, vegetation and man. It would also assist in achieving compliance with the EU Nitrates Directive by allowing biosolids to be stored when application of fertilisers of land is prohibited and hence preventing nitrates from agricultural sources polluting ground and surface waters.

10.3.6. **National Policy Framework**

10.3.7. Strategic Outcome 9 of the NPF (Water) envisages the implementation of the GDSDS, through enlarging capacity in existing wastewater treatment plants including Ringsend and providing a new treatment plant in North County Dublin (GDD Project).

In terms of effective waste management, this Strategic Outcome also requires a standardised approach to managing wastewater sludge. The proposed development is clearly consistent with this strategic outcome.

- 10.3.8. Under Strategic Investment Priorities, The National Development Plan 2018-2027 makes specific reference to the Ringsend WwTP as a project proposed to provide further capacity to support development in the Greater Dublin region. It also includes provision for waste management and resource efficiency to achieve a circular economy and meet climate change objectives. The implementation of the proposed development is clearly in line with the strategic outcome and if permitted would support the growth of Dublin as the capital city of Ireland and its surrounding region.
- 10.3.9. Under the River Basin Management Plan for Ireland 2018-2021 (RBMPI), Ringsend WwTP is identified as the single largest wastewater treatment plant in the country, accounting for some 41% of the total wastewater load. The proposed upgrade to the Ringsend WwTP is identified in this plan.
- 10.3.10. In 2017, Irish Water carried out an internal review of the GDSDS and the findings are set out in a document – Greater Dublin Drainage Strategy Overview & Future Strategic Needs Asset Planning (May 2018). This review sets out the need for the Ringsend WwTP project. The plant capacity is designed to cater for 1.65m PE and is currently experiencing 1.9m PE, resulting in breaches of both the EPA discharge licence and the UWWTD.
- 10.3.11. Irish Water’s WSSP sets out its priority for compliance with the UWWTD and highlights the need for upgrading of wastewater infrastructure. It is noted that the Ringsend WwTP upgrade forms a crucial part of this compliance and would facilitate the delivery of objectives set out in the WSSP.
- 10.3.12. The NWSMP, published by Irish Water in 2016, identifies the reuse of treated wastewater sludges (biosolids) on agricultural land under nutrient management plans as the current preferred option in the short to medium term. The NMSMP contains a recommendation for the development of regional facilities for the storage of biosolids. The RBSF would be strategically located to serve the Ringsend WwTP and also the GDD project (if permitted).

- 10.3.13. Overall, having regard to the above, I am satisfied that the proposed development including the Ringsend WwTP and the RBSF components align with applicable national policy. The development would assist Ireland in meeting its obligations under the aforementioned EU Directives and related national legislation. It would undoubtedly be pivotal in enabling sustainable urban growth by providing such crucial wastewater treatment and would address the current environmental risk posed by non-compliances at the existing WwTP. The proposed RBSF would support the overall development for the reasons outlined above.
- 10.3.14. **Regional Planning Policy**
- 10.3.15. While under review, the RPGs for the GDA 2010-2020 remain the appropriate regional policy framework document until such time the RSES for the EMRA are finalised and adopted. In terms of the RPGs, strategic investment priorities in relation to wastewater infrastructure are identified in Table 11 of the Guidelines. The expansion of the Ringsend WwTP to its ultimate capacity is listed as a critical strategic project.
- 10.3.16. The Draft RSES for the EMRA identifies both the Ringsend WwTP and the GDD projects as wastewater infrastructure projects which are ongoing to deliver capacity at a large scale to the metropolitan area. Regional Policy Objectives include RPO 10.5 (Support Irish Water and Authorities in planning growth and increasing compliance with the UWWTD) and RPO 10.6 (Delivery of infrastructure including Ringsend WwTP project).
- 10.3.17. The Eastern-Midlands Region Waste Management Plan 2015 – 2021 sets out policies for the management and re-use of what would otherwise be waste. Of relevance to the proposed RBSF development, Section 7.4.7 sets out that the management of sludge would be co-ordinated between Local Authorities and Irish Water. Policy H1 seeks to ‘work with relevant stakeholders and take measures to ensure systems and facilities are in place for the safe and sustainable management of sludges (sewage, waterworks, agricultural, industrial and septic tank) generated in the region having due regard to environmental legislation and prevailing national guidance documents, particularly in relation to the EU Habitats and Birds Directive’.
- 10.3.18. It is evident that the proposed development is supported by and would comply with

applicable regional policies and would provide improved infrastructural benefits for the existing and future GDA growth while improving the receiving water environment.

10.3.19. Local Planning Policy - Ringsend WWTP

10.3.20. At a local level, the development is supported by a host of policies and objectives set out in the Dublin City Development Plan 2016-2022. The Development Plan identifies the efficient and timely delivery of necessary infrastructure capacity as necessary for successful urban development. Ensuring the delivery of infrastructure in a sustainable manner is recognised as being crucial to support the sustainable growth of the city. The Development plan references the expansion and upgrading of the Ringsend WwTP as an urgent priority for Irish Water.

10.3.21. Policies of specific relevance include: SI1 (support provision of water, conservation and wastewater systems), SI2 (support and facilitate Irish Water to ensure upgrading of wastewater infrastructure, including Ringsend WwTP) and GI17 (develop and protect coastal, estuarine, canal and riverine recreational amenities).

10.3.22. Objectives include: SIO1 (support Irish Water in the implementation of the 'Water Services Strategic Plan'), SIO2 (work closely with Irish Water for delivery of water services), GIO17 (seek improvement of water quality, bathing facilities and recreational opportunities) and GIO19 (maintain beaches to a high standard).

10.3.23. In terms of zoning, the Ringsend WwTP facility spans across the two areas divided by Pigeon House Road. The majority of the site is zoned 'Z7' with a corresponding objective 'To provide for the protection and creation of industrial uses and facilitate opportunities for employment creation'. Public service installations are permissible uses in this zoning category (Appendix 21 of Volume 2 of the Dublin City Development Plan). I am satisfied that the upgrade of the wastewater treatment plant at Ringsend readily fits this category of development.

10.3.24. The area proposed to be used as construction compound C1 is primarily zoned 'Z14' with an objective 'To seek the social, economic and physical development and/or rejuvenation of an area with mixed use of which residential and 'Z6' would be the predominant use'. Public service installations are a permissible use within this zoning category. The remainder of C1 is zoned 'Z9' with an objective 'to preserve, provide

and improve recreational amenity and open space and green networks'. Permissible uses include 'public service installations which would not be detrimental to the amenity of Z9 zoned lands'. It is acknowledged that a note accompanying the Z9 zoning states: - 'Generally, the only new development allowed in these areas, other than the amenity/recreational uses, are those associated with the open space use'. C1 lands recently received permission for use as a temporary compound (ABP Ref: 29N.YM0004, January 2018). In the current development proposal, it is stated that the compound would be maintained in its existing use as a car park facility, storage area and site offices. For clarity, based on an examination of the drawings and aerial photography and site visit, it is evident that the lands which form part of the C1 compound and which are governed by the 'Z9' zoning do not extend into the Irishtown Nature Reserve.

- 10.3.25. The site area proposed to be occupied by construction compound C2 is primarily zoned 'Z7' with a small portion to the east zoned 'Z9'. The temporary use of the portion of the construction compound sites C1 and C2 in this instance would in my view not be detrimental to the planned use of the lands in the longer term.
- 10.3.26. Compound C3 is zoned 'Z14' where public service installations are permissible uses. A small set down area associated with the storm tanks to the north is also zoned 'Z9'. No development is proposed at this location and as stated above, the use of C3 does not form part of the current application.
- 10.3.27. In October 2017, Dublin City Council adopted the Poolbeg West SDZ planning scheme over an area of 34ha immediately adjoining the Ringsend WwTP site to the south and west. At the date of my assessment, following an appeal to the Board, the Planning Scheme (PL29S.ZD2013) is under consideration. The location of the Ringsend WwTP site lies largely outside of this SDZ area. However, the greater part of the C1 construction compound is located within the area of the SDZ on lands which are denoted 'Mixed Use' which includes uses such as commercial, creative industries, industrial (including port related activities). Concerns were raised by elected members of the city council that the use of this section of land as a temporary construction compound for 10 years may effectively sterilise the lands and request that no decision would be taken on the current application until such time as the outcome of the Poolbeg West SDZ application is decided on. Through written

correspondence set out in the Chief Executive's report, Dublin City Council have stated their view that the use of this land as a temporary construction compound would be compatible with the zoning.

- 10.3.28. While I note that 10 years is not a short timeframe, nonetheless, I am satisfied that the use of C1 lands as a construction compound would not conflict with or prevent the eventual delivery of the Poolbeg West SDZ. The DCC SDZ team noted this area shown to be occupied by construction compound C1 is likely to be used for cargo storage in the long term and the use of the lands as temporary storage would be consistent with the zoning. I revisit this point below under consideration of the Dublin Port Masterplan. The Dublin City Council SDZ team also stated that the overall SDZ lands would, to some extent, be dependent on the WWTP upgrade. In addition, they stated their requirement that Irish Water would liaise with Dublin City Council with regard to the delivery of Dublin District Heating requirements, where a backup boiler may be required in the vicinity of C1, to ensure minimal impacts on this project.
- 10.3.29. The planned Eastern Bypass protected corridor runs through the C1 lands. DCC require that the proposals for the use of this land would not interfere with the timely delivery of the Bypass. TII require that no permanent development would occur within the corridor. In response, the applicant stated that no permanent development is in fact proposed in the reserved corridor and that it is the intention to liaise with DCC and the landowner, Dublin Port company, regarding the use of the lands. I have had regard to the study entitled Dublin Eastern Bypass Corridor Protection Study prepared on behalf of NRA/TII in 2014. C1 area is shown within a protected corridor in this study and the delivery of the Eastern Bypass is stated to be a medium to long term objective of the NRA/TII.
- 10.3.30. The duration for the use of the construction compound C1 would be for a temporary period, albeit for up to 10 years and I am satisfied that its location for the construction stage would not jeopardise the eventual delivery of the future Eastern Bypass or form a reason to withhold permission. For similar reasons, I am satisfied that the Dublin District heating system can also be delivered.
- 10.3.31. The Ringsend WwTP site is located c.1km north-east of the Sandymount Village and Environs Architectural Conservation Area (ACA) and given the existing brownfield

nature of the site and the separation distance of the site from the ACA, it would not negatively impact on the architectural conservation status or characteristics of the ACA or of associated policies and objectives. Neither would it be prejudicial to the delivery of the aims set out in the Sandymount Village Architectural Conservation Area report, 2013 or the principles set out in the Village Design Statement, Sandymount, 2011.

10.3.32. Outside of the current Dublin City Development Plan, I have examined the Dublin Port Masterplan 2040 (as reviewed in 2018) prepared by Dublin Port. This is a non-statutory framework document which sets out the intended activities and development options for the Dublin Port area up to 2040. C1 lands lie within the ownership of Dublin Port and are shown planned to provide land capacity for the throughput of a new 600m long container terminal quay further east along the River Liffey in front of the ESB's Poolbeg Power Station. As no permanent development is planned in this area, the expansion of Dublin Port or related port activity development would not be prejudiced.

10.3.33. The proposed development is strongly supported in local planning policy terms and would be generally compatible with the land use zoning objectives assigned to the site. As stated above, the development is pivotal to the realisation of multiple policies and objectives relating to the development and sustainable growth of the city and surrounding region in addition to the protection of the environment.

10.3.34. **Local Planning Policy - RBSF**

10.3.35. At a local level, FCC, through its development plan sets out its strategic policy to 'work with Irish Water to secure timely provision of water supply and drainage infrastructure necessary to end polluting discharges to waterbodies, comply with existing licences and Irish and EU law, and facilitate the sustainable development of the County and the Region'. Objective WT03 of the Plan seeks to facilitate the provision of appropriately sized and located wastewater treatment plants and networks including a new regional wastewater treatment plant and the implementation of other recommendations of the GDSDS.

10.3.36. The proposed RBSF would lie on lands zoned 'HI' – Heavy Industry, the objective of which is: - 'Provide for heavy industry'. 'A Waste Disposal and Recovery facility (High

Impact)' is a permissible use within this zoning designation. The RBSF can readily be considered as aligning with the land use zoning objective. Objective WM15 supports the provision of facilities for the safe and sustainable management of sludges. Local Objective 78 (development of infrastructure for waste management), attributed to the site, also supports the development proposal.

10.3.37. The RBSF site falls within the Outer Airport Noise Zone and outside the Inner Airport Noise Zone. It falls outside the Outer Public Safety Zone and is therefore also outside the Inner Public Safety Zone. It also falls outside the flight path to the existing east-west runway. Given the modest nature of the development, I am satisfied that it can proceed without conflicting with aviation objectives including Objective DA10 (restrict inappropriate development which would give rise to conflicts with aircraft movements).

10.3.38. Overall, I am satisfied that the RBSF would form a key element of the overall proposal for which development is sought and is strongly supported by local planning policy.

10.4. **Seveso Considerations**

10.4.1. **Ringsend WwTP**

10.4.2. The existing Ringsend WwTP is not an establishment within the meaning of the Directive 2012/18 EU ("Seveso III") which was transposed into Irish law under the European Communities (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2015 (COMAH Regulations). However, there are seven 'Upper Tier' Seveso establishments within the general vicinity of the plant, including Dublin Waste to Energy Ltd. facility and the National Oil Reserves Agency facilities. There are also eight 'Lower Tier' Seveso Establishments within the vicinity including two proximate to Ringsend WwTP including Synergen Power Plant and ESB Poolbeg Power Station both which are sited along Pigeon House Road. The existing relationships between the Ringsend WwTP and the Seveso establishments would not change as a result of the development.

10.4.3. As the competent Authority, the HSA were consulted in relation to the Seveso establishments within the consultation distance which is set at 300m from Seveso

sites most proximate to the Ringsend WwTP. Specifically, the HSA was a consultee during the EIA scoping stage and as part of the statutory public consultation in which they were provided a copy of the planning application documentation. No response was received from the HSA and accordingly it can be concluded that the authority does not object to the Ringsend WwTP component in the context of the Seveso Directive. I am satisfied that the Seveso / COMAH context is well understood and would not constitute a reason to withhold permission.

10.4.4. **RBSF**

10.4.5. There are four 'Upper Tier' establishments and four 'Lower Tier' establishments in Fingal. The proposed site for the RBSF is within the Seveso consultation distance (300m) for the Huntstown Power Station, a 'Lower Tier' establishment for the purposes of the Seveso Directive. Specifically, the northern perimeter of the Huntstown Power Station is located approximately 100m from the southern boundary of the proposed RBSF site. The structures themselves would lie just outside of the 300m consultation distance.

10.4.6. As stated above, the HSA were consulted during the scoping stage of the EIA process and during the SID planning application process and as no response was received, it can be concluded that the HSA do not object to the RBSF component of the proposed development.

10.4.7. For similar reasons outlined under my consideration of the Ringsend WwTP, I am satisfied that the Seveso context is well understood and should not form a reason to withhold permission for the RBSF component.

10.5. **Flood Risk**

10.5.1. **Ringsend WwTP**

10.5.2. The application was accompanied by a Flood Risk Assessment (FRA) which followed the methodology laid down in 'The Planning System and Flood Risk Management' (FRA) Guidelines for Planning Authorities 2009 (DoEHLG and OPW). The FRA Guidelines refers to Draft Flood Risk Management Plans (FRMPs). More recently, the OPW has developed a new website (www.floodinfo.ie) which provides

access to plans and maps focussing on areas of significant risk throughout the county.

- 10.5.3. Based on the mapping information on the above website, the proposed development site including the site compounds lie outside of the 0.1% fluvial Annual Exceedance Probability (AEP)⁴ event and is therefore located within Fluvial Flood Zone C where risk of flooding is considered to be low.
- 10.5.4. The portion of the site where the primary development is proposed lies outside of the 0.1% Tidal AEP event and is therefore located within Coastal Flood Zone C, with a corresponding low risk of flooding. By reference to the matrix of vulnerability versus Flood Zone (Table 3.2 of the FRA Guidelines), the proposed WwTP development, considered to be a highly vulnerable development, is deemed appropriate in an area categorised as 'Flood Zone C'. The northern portion of the site which contains the storm water tanks lies partially within the 0.1% and 0.5% Tidal AEP flood event, however, I note that there is no development proposed as part of this current application at this location. Site Compound C2 lies within the 0.1% AEP tidal event and is therefore within Coastal Flood Zone B. Referring to the vulnerability matrix, and noting that the construction compound development is classified as less vulnerable, this type of development is appropriate in Flood Zone B.
- 10.5.5. As shown on a map entitled Dublin City – Pluvial Flood Extent Map, dated August 2016, (www.floodinfo.ie), Pluvial Flooding is associated with the site. The Dublin City Strategic Flood Risk Assessment (SFRA) Pluvial Flood Hazard Map indicates the site has for the most part a low flood hazard. Pluvial flood risk is therefore not considered to be significant. I note that the site is by its nature, a brownfield site and it is not intended to have add any significant additional impermeable area and surface water is proposed to be managed by appropriate SuDS measures. Therefore, no significant additional surface water runoff is likely. Any build-up of groundwater would discharge to the drainage system or to Dublin Bay, therefore

⁴ The term 'Annual Exceedance Probability' or 'AEP' is used to describe the probability of a flood event of this severity, or greater, occurring in any given year. A 0.1% AEP flood event has a 0.1% or 1 in a 1000 chance of occurring in any given year. A 0.5% AEP flood event has a 0.5% or (1 in 200) chance of occurring in any given year.

groundwater risk is not considered to be significant.

- 10.5.6. The design finished floor levels (FFLs) of +4.46m OD would cater for future flood risk including an allowance for climate change and freeboard. Some existing buildings would have FFLs below the +4.46 OD design level, however, I am satisfied that it is not a requirement to retrospectively apply this level to existing buildings, particularly as the site is in Flood Zone C where a low risk of flood occurrence is expected.
- 10.5.7. I note the applicant's point that development proposed for the construction stage (i.e. compound areas) should be set above the 0.5% AEP current scenario of +3.11m OD given the duration of the construction stage would be deemed short term in the context of climate change. This is reasonable.
- 10.5.8. Overall, I am satisfied that following assessment, it has been demonstrated that subject to commitments around FFLs and SuDS measures, the Ringsend WwTP component would not have any noticeable impact on the existing flood regime.
- 10.5.9. **RBSF**
- 10.5.10. The RBSF site is not covered in the flood maps produced under the CFRAM study to date. The PFRA flood extent map and Fingal County Council Strategic Flood Risk Assessment flood zone map both indicate that the existing site lies outside of the 1% and 0.1% AEP fluvial flood extents and as such it can be considered as within Flood Zone C where the probability of flooding is lowest. Based on the Matrix of Vulnerability versus Flood Zone set out in the aforementioned guidelines, 'highly vulnerable development including essential infrastructure' is considered appropriate in a site categorised as 'Flood Zone C' and while the RBSF is categorised as a highly vulnerable development, no justification test is required to be applied.
- 10.5.11. Groundwater risk is not considered to be significant as there is no historical evidence of groundwater flooding at the site and the available PFRA map indicates that no groundwater flood risk exists near the proposed development site.
- 10.5.12. OPW do not have historical records of any previous flood related occurrences at the site (www.floodmaps.ie). One such occurrence has been recorded just north of the site at Kilshane cross in November 2002 stated to be as a result of surface water

runoff. A report from FCC in 2005 identified that drainage works were undertaken to alleviate any flooding issues.

10.5.13. The available Preliminary Flood Risk Assessment (PFRA) maps indicate pluvial flood risk associated with an area of the site, predominately along the south east /east boundary. The drainage design is stated to include attenuation and SuDS measures sufficient to ensure there would be no increase in the risk of pluvial flooding as a result of the development at this site.

10.5.14. Overall, I am satisfied that the risk of flooding has been adequately addressed in respect of the RBSF site and it can be concluded that no increased risk of flooding is likely to result because of the development.

10.6. **Traffic**

10.6.1. **Ringsend WwTP**

10.6.2. The applicant's EIAR (Volume 3) sets out its consideration of traffic under Section 13. I deal with this issue of traffic below as part of my planning assessment. Separately I have considered the road network as a material asset within the EIA section of this report. In terms of assessing traffic, the methodology used by the applicant is based on published guidance as referenced in Section 13.10 of the EIAR, primarily TII 'Traffic and Transport Assessment Guidelines' May 2014. Criteria used in the assessment of traffic include Ratio of Flow to Capacity (RFC), queue delay and maximum queue length.

10.6.3. The extent of the study area determined by the applicant was agreed in consultation with Dublin City Council's Road and Traffic Department and includes nine sections of roads which are illustrated in Figure 13-1 of Section 13 of the EIAR – Volume 3.

10.6.4. Overall the site is well served in terms of road infrastructure and the surrounding road network currently accommodates large volumes of traffic. It is served by local roads including Pigeon House road, Whitebank road and South Bank road. South Bank road connects with the R131 regional road at a roundabout intersection with the Seán Moore road. The R131 then continues northwards across the East Link toll bridge and connects with the North Quays port tunnel and M50.

- 10.6.5. There are five existing access points serving the WwTP site, including three located off Pigeon House road. These are intended to continue in use as part of the current proposals. An entrance c.250m east of the main site entrance which it is stated was used in 2005 during construction at the site is proposed to be re-opened and used as an entrance for both construction and operational phases. A new temporary pedestrian access is also proposed from construction compound C1.
- 10.6.6. It is anticipated that there would be 240 HGV trips daily and 396 cars/light vehicles during 2020 peak construction year with approximately one third of the HGV trips occurring during night-time. During the operation of the proposed WwTP component, an increase in HGV trips from the current average of 22 to 100 trips per day, comprising 50 deliveries and 50 departures are anticipated to result.
- 10.6.7. Traffic count surveys were carried out at seven locations along the surrounding road network and information gathered from these surveys was used to ascertain the 2017 AM and PM peak baseline situation which in turn fed into traffic modelling. Baseline Annual Average Daily Traffic (AADT) flows for the surrounding roads are presented in Table 13-9 within Section 13 (Traffic) of the EIAR (Volume 3).
- 10.6.8. The Point Depot junction, Seán Moore junction and Whitebank junctions were examined for 2020 (peak construction) and 2027 (final year of construction) in both the 'with' and 'without' development scenarios. Dublin City Council intend to upgrade The Point Depot junction to a signalised junction by 2020, however it was examined in its current configuration in the 2020 scenario which it is suggested gives a more conservative assessment. In the analysis, it was assumed that the planned Point Depot Improvement scheme would be complete by 2028. It was also assumed that the Poolbeg SDZ would be in place in 2028. Traffic analysis also considered the impacts on the road network in the 2028 (Year of opening) and 2035 (Design year).
- 10.6.9. Overall it is submitted that the proposed WwTP component would result in a slight negative short-term impact during 2020 peak construction year and 2028 final year of construction. It is also predicted that the slight negative long-term impacts would arise during the 2028 year of opening and 2025 design years.
- 10.6.10. It is submitted that as the Ringsend WwTP itself is located off the public road network, it would have an imperceptible impact on road safety during the

construction or operational phases. Noting the increase in traffic which would result, in particular the increase in number of HGV trips to and from the site, in the absence of mitigation, I consider the impact on road safety would result in a 'slight' impact.

- 10.6.11. Mitigation measures proposed include the preparation of a traffic management plan, adherence to good traffic management and adopting best practice during the construction phase. The HGV cordon which operates in the city centre would prohibit HGV traffic associated with the development entering the city centre and therefore all traffic from the site would be required to access the M50 via the Port Tunnel. An application for an Abnormal Load permit would be a requirement and abnormal load movements are stated to be limited to evening and night periods in order to minimise traffic disruption and delays during business hours. No mitigation is considered necessary or proposed during the operational phase.
- 10.6.12. Notwithstanding the mitigation measures proposed, residual impacts are anticipated to the traffic flows on the adjoining road network resulting in a slight negative long-term residual impact during the 2020 peak construction year and 2028 final year of construction in AM and PM periods. Residual traffic impacts have also been assessed as resulting in a slight negative long-term impact in the AM and PM periods during operation including 2028 year of opening and 2035 design year.
- 10.6.13. Post mitigation, no negative residual impacts are predicted on the safety of the road network as a result of construction or operation of the WwTP component.
- 10.6.14. The Roads and Transport Division of DCC have examined the proposals and stated their satisfaction with the substance and level of detail submitted as part of the EIAR. No objection was raised regarding the access arrangements including proposals to use a previously permitted temporary access off Pigeon House road on a permanent basis. DCC require that no local roads would be used as part of the haul route. Overall, the Roads and Traffic Division have expressed their support for the proposal.
- 10.6.15. Traffic flow and vehicle queue lengths at the Seán Moore Junction and the Point Depot junction are proposed to be monitored as part of the Traffic Management Plan and restrictions are proposed to be put in place on the movement of construction related traffic if deemed necessary by DCC and/or An Garda Síochána.

10.6.16. Based on the information contained in the EIAR, which I consider represents a realistic analysis of the traffic likely to be generated, I am satisfied that the proposed development would give rise to slight negative short term (construction) impacts and long term (operation) traffic impacts. These relate to traffic flow, capacity and vehicle queues. Given the benefits for the delivery of improved wastewater treatment, slight negative impacts are not unacceptable and would not constitute reasonable grounds for refusal. While road safety is always a priority, it is reasonable to conclude that once the traffic management plan is implemented and noting that all road users including those travelling to and from the site would be required to adhere to road safety legislation, no unacceptable impact on road safety is likely to arise during construction or operation as a result of the proposed development. It is important to note that because the proposal no longer requires the construction of the tunnel element, the volume of HGVs would significantly reduce during construction. An estimated 70,000 HGV movements carrying spoil and rock from the tunnel site over an 18-month period are no longer required. The elimination of these tunnel related trips would be significantly positive on traffic and the surrounding road network.

10.6.17. **RBSF**

10.6.18. The R135 regional road lies to the east of the RBSF site and provides access to the site. The regional road connects with Kilshane cross north of the site and the N2 is located to the east of the R135. The site is located c. 1.6km north of the M50 Junction 5 and lies c.1.5 km west of Dublin airport.

10.6.19. Access to the site is currently provided via an existing entrance off the R135. Visibility available is above 90m in each direction which is the desirable minimum sight distance for a road with a 60 kph speed limit. The access would be upgraded and the details would be agreed with the Transportation Department of FCC.

10.6.20. It is anticipated that the proposed RBSF component would be constructed over two phases in 2020-2021 and 2024-2025. The assessment assumes that all the surrounding lands comprising 182 ha zoned for warehousing and distribution and general employment would be developed by 2040 with associated increase in traffic volumes. Results of traffic surveys undertaken at five locations are presented in Section 13 (Traffic) of the EIAR – Volume 4. AADT flows were derived based on

traffic count data obtained from these surveys.

- 10.6.21. Traffic analysis focused on 2020 (Phase 1 construction year) and 2024 (Phase 2 construction year). Kilshane Cross, R135 Signalised junction, Elm Road Roundabout junction and N2 Northbound Slip Road were examined in 2020 and 2024 in both the 'with' and 'without' project scenarios.
- 10.6.22. It is anticipated that there would be 25 HGVs arrivals and departures and 70 cars/light vehicles arrival and departures daily during each of 2020 and 2024 construction years. In 2024 there are also 30 HGVs and 10 cars/light vehicles predicted to arrive and depart the site associated with the operation of the facility. In 2040, 70 HGV arrivals and departures and 10 car/light vehicle arrivals and departures daily are predicted to arise during operation.
- 10.6.23. Based on the assessment of RFC and associated queue delay and queuing length, it has been assessed that the proposed RBSF component would likely result in a slight-negative short-term impact during the 2020 and 2024 construction years at AM and PM peak periods. Post construction, the proposed RBSF would result in an imperceptible negative long-term impact in both the AM and PM peak hours.
- 10.6.24. In the 2020 and 2024 construction years and in the 2025 (year of opening) and 2040 (design year) scenarios, Kilshane Cross is anticipated to operate above the design threshold and theoretical capacity in both the AM and PM scenarios. The N2 northbound slip road junction would be approaching usual design thresholds in AM and PM scenario 'without' project and marginally above the usual design threshold 'with' project scenario. However, in comparing the 'with' and 'without' project scenario, only marginal reductions in capacity and increase in queue lengths at these junctions are anticipated as a result of the project.
- 10.6.25. It is assessed that the proposed development would cause an imperceptible impact on road safety during the construction or operational phases. Noting the increase in traffic which would result in increased vehicular and HGV movements in and out of the site, I am of the opinion that, in the absence of mitigation, the impact on road safety during construction would be rated as 'slight' reducing to 'imperceptible' during operation.

- 10.6.26. Mitigation measures proposed include the preparation of a traffic management plan and adherence to good traffic management and best practice during the construction phase. An application is proposed to be made for Abnormal Load permit and abnormal load movements would be restricted to evening and night to minimise disruption to traffic during business hours. No mitigation is considered necessary or proposed during the operational phase.
- 10.6.27. Post mitigation and based on the assessment of RFC, queue delay and queue length it has been determined that the proposed RBSF component would likely result in a slight negative long-term residual impact during the construction phase and an imperceptible negative long-term residual impact during the operational phase.
- 10.6.28. No residual impacts to the safety of the road network are anticipated as a result of the construction or operational phases of the Proposed RBSF Component. Similar to my considerations of the Ringsend WwTP, while road safety is always a priority, it is reasonable to conclude that once the traffic management plan is in place and noting that all road users including those travelling to and from the site would be required to adhere to workplace safety and road safety legislation, no residual impact on road safety is likely to arise during construction or operation phases as a result of the proposed development.
- 10.6.29. Traffic flow and vehicle queue lengths at the N2 Northbound slip road Junction are proposed to be monitored as part of the detailed traffic management process and restrictions would be placed on the movement of construction related traffic if deemed necessary by FCC and/or An Garda Síochána.
- 10.6.30. FCC's Transport Department was generally satisfied with the proposal subject to conditions including the attachment of a special contribution to improve the upgrade of the R135 and N2 north bound slip priority junction to a signalised junction.
- 10.6.31. **Concluding Comments on Traffic**
- 10.6.32. Having regard to the information contained in the EIAR and the wider application documents, in respect of the Ringsend WwTP or RBSF components, I am satisfied that the proposed development would not give rise to levels of traffic which would result in unacceptable congestion on the strategic road network or compromise road

safety for road users.

10.7. Design and Amenity

10.7.1. Ringsend WwTP

10.7.2. In relation to the Ringsend WwTP component, it is stated to have been designed to reflect the function of the WwTP within an established industrial / utility area. Some elements would undoubtedly be prominent when viewed outside of the site, however, given their location in an established industrial site and the adjoining area which is characterised by industrial development, views of additional structures can be readily assimilated into an industrial/utility context. Landscape and visual impacts are considered in further detail in assessing significant effects on the environment in which it is concluded that post mitigation, the landscape and visual impact resulting from the proposed development would be imperceptible and acceptable.

10.7.3. DCC have expressed some concern with the proposal to use C1 and C2 construction compounds for up to 10 years and considers that this might give rise to impacts to heritage and visual amenity. To that end, DCC considers their use should directly relate to the construction phase and decommissioning should follow in a short timeframe thereafter. In response, the applicant states that the duration of the use of the compounds would be limited to the construction phase and the decommissioning would occur at that point. DCC Parks and Landscape Services Division were generally satisfied with landscape proposals including site perimeter planting to assist in screening the development and recommends further planting along the southern boundary. The Division also seek the removal of temporary works and full restoration of these areas. I am satisfied that this matter can be dealt with by attachment of an appropriate planning condition.

10.7.4. Given that the closest residential dwelling is c.950m away from the Ringsend WwTP and houses proposed on the Poolbeg West SDZ would be separated c.975m, no direct impacts on residential amenity arise. In the longer term, the proposed development would result in enhanced water quality which would be of significant benefit to the amenities of the area including bathers and those who are actively involved in water sports in the Bay.

- 10.7.5. Overall, having regard to the above and subject to appropriate conditions around noise, odour and landscaping, it is clear that the benefits associated with the development over the long-term would far outweigh any temporary adverse impact on the amenities of the area and as such any impact on the amenities would not constitute reasonable grounds for refusal in my opinion. Impacts on other related environmental factors are dealt with in the EIA section of this report and traffic impacts are dealt with above under the heading of traffic.
- 10.7.6. **RBSF**
- 10.7.7. The rationale for the architectural design of the RBSF is set out in an 'Architectural Concept Statement' which was included with the application. Each of the two storage buildings are proposed to be 105m long and 50m wide internally and would be laid out in bays to facilitate segregation of material. As presented, the buildings would read as typical industrial steel framed structures finished with insulated metal cladding panels, grey and silver in colour. The design incorporates a curved roof which gives a lighter ridge line and a more sympathetic visual presence. The RBSF building design is stated to also have been informed by fire safety requirements. A PV solar array of 1,545 square metres is proposed to be placed on one of the buildings which is stated would contribute upwards of 40% of the sites annual energy load by means of renewable solar energy.
- 10.7.8. The administration and welfare building is presented as a single storey building 10m wide and 13m long with a 4.1m ridge height. Similar to the main buildings proposed, it would also incorporate a curved roof. Its design is complimentary to the main storage buildings. A new substation would be constructed to ESB Networks requirements. A number of smaller structures on site are proposed to be demolished.
- 10.7.9. An odour control system has been incorporated to ensure that odour would not give rise to any nuisance beyond the boundary of the RBSF site. The system would involve extracting air from within the storage buildings on a continuous basis as well as sub-dividing each building into two zones so that they could be independently operated fast-action doors would be fitted to control and minimise the time that these doors would be open. Assessment of odour is given further consideration under the assessment of likely significant effects of the environment below. The preparation of

an Operation Environmental Management Plan (OEMP) is proposed and operations staff would be required to ensure that the conditions attached to the required certificate of registration including those which may relate to odour would be adhered to. DAA require that no organic matter such that would attract bird activity on site would be allowed to be present in the open on the site. It is planned that the biosolids would be stored indoors only and therefore no bird hazard on air safety should arise.

10.7.10. A 'Glint and Glare' assessment concludes that the photovoltaic solar array proposed would not result in any nuisance or hazard effect upon local residences or on routes running through the study area including the N2 and airport approach routes. In this regard, I note that the solar arrays which are proposed to be mounted on the roof of the northern building would be partially screened by the adjacent second storage building. Any glare experienced by road users along the northbound carriageway would be limited, occurring through a gap in the vegetation and which I am satisfied would not result in any safety hazard or similar nuisance to motorists. It is also concluded that any glare predicted for the southbound carriageway of the N2 would fall outside of the field of view of motorists and would not present any nuisance effect. Any glare likely to be experienced on approach paths into Dublin Airport is predicted to be of an intensity within acceptable Federal Aviation Administration (FAA) Irish Aviation Authorities (IAA) standards. Having examined the Glint and Glare assessment, the conclusions which I have highlighted above, I am satisfied that Glint and Glare would not present any adverse impacts overall.

10.7.11. Having regard to the above and subject to appropriate conditions, the development of the RBSF should not be withheld on the grounds of design and amenity.

10.8. **Community Gain**

10.8.1. The issue of community gain has arisen in the consideration of the RBSF component. Meakstown Community Council requested that the applicant would be required to consult with the community council regarding job vacancies and seeks that a community fund would be set up to support facilities or services in the area that would benefit the community.

- 10.8.2. Under section 37G(7)(d) of the Act, the Board can attach a condition requiring the construction or financing (in whole or part) of the construction of a facility or the financing or provision of a service in the area of the development, if they were of the view that it would constitute a substantial gain to the community. In this instance, the overall development comprises alterations and improvements to the existing Ringsend WwTP component and the development of a new RBSF at Newtown. It is the latter component that is of interest to the Meakstown Community Council.
- 10.8.3. Key issues of public concern raised through the applicant's public consultation and open days have been considered in the EIAR and I have considered these environmental topics in my assessment. Post adoption of appropriate mitigation measures, no adverse significant effects are likely to arise on the communities surrounding the RBSF.
- 10.8.4. The applicant has stated their intention to include social clauses as a performance condition of contracts to leverage employment opportunities for the local communities and to work closely with local employment services to fill employment positions. They also set out their intention to provide improvements to the R135 along the road frontage to the RBSF site. Beyond this, no community fund is proposed.
- 10.8.5. Given the nature of the development and measures proposed by the applicant and that no adverse impacts are likely to result on the local communities, I do not recommend the attachment of a community gain condition.

10.9. **Other consents**

- 10.9.1. It is of relevance to note that outside of the assessment of the planning application, both components would require separate consents as appropriate, including but not limited to those listed under.
- In accordance with the requirements of the Waste Water Discharge (Authorisation) Regulations 2007, as amended, (S.I. No 684 of 2007) Ringsend WwTP would be subject to a review of the existing Wastewater Discharge Licence from the EPA. Under this authorisation process the EPA can regulate wastewater discharge to ensure the potential effects on the

receiving water are controlled. In deciding on an application and in the event of a grant of permission, the Board can attach conditions relating to emissions other than those associated with the actual wastewater discharge as beyond controlling wastewater discharge, other emissions do not come within the scope of the Wastewater Discharge Authorisation regulations or the associated licencing regime.

- The RBSF would be subject to regulation by the local authority under the Waste Management (Registration of Sewage Sludge Facility) Regulations 2010. The local authority can issue a certificate of registration (COR) and in doing so can attach conditions on matters concerning types and quantities of sludge to be stored, reception and entry/exist areas, control of odours, integrity of all storage tanks and bays, maintenance and records and requirements concerning environmental pollution. The Waste Permit and the Certificate of Registration database register for waste facility permits and certificates of registration issued by local authorities are held by the National Waste Collection Permit Office (NWCPO).
- Both the Ringsend WwTP and the RBSF components would be required to comply with the requirements set out under the Building Control Acts 1990 - 2007 and the associated Building Control Regulations 1997-2018, including seeking such consents (e.g. Fire Safety certificate and Disability Access certificate) for buildings as may be appropriate.

10.9.2. The information presented with the application states that all of the biosolids generated and stored would be used in agriculture and it is also stated that a certificate of registration is required for the facility. To this end, I note that under Section 51(2) of the Waste Management Act 1996, as amended, a waste licence is not required for the recovery of sludge for use in agriculture. Notwithstanding this, in the event that the facility would require any other consent or waste licence, either now or in the future, this would be a matter for the applicant to ensure such consent is obtained.

10.10. **Conclusion on Planning Assessment**

10.10.1. The benefits of the proposed development are considered to be overwhelmingly positive. It's delivery would assist Ireland in meeting obligations set down under EU Directives, national legislation and planning policy expressed through the hierarchy plans which regulate development at a national, regional and local level. The development would enable sustainable residential and economic growth through the delivery of increased wastewater treatment capacity while protecting the environment through improving the quality of effluent discharged to the receiving water environment. It has been demonstrated in the application that the improvement envisaged in final effluent quality can be achieved at the existing Ringsend Wastewater treatment plant by the incorporation of scientifically proven aerobic granular sludge technology into the treatment process together with associated nitrogen and phosphorous removal. When compared to the previously permitted and proposed long sea outfall (in tunnel) option, the current proposal has significant advantages and would be less intrusive on the receiving environment. The regional biosolids storage facility would assist in meeting the aims of the Sewage Sludge Directive, regulating the use of sewage sludge in agriculture to prevent harmful effects. Outside of matters considered above, environmental impact assessment and appropriate assessment are considered in the following sections of my assessment set out below. Subject to consideration of these matters, it can be concluded that the proposed development is in accordance with the proper planning and sustainable development of the area.

11.0 **Environmental Impact Assessment**

11.1. **Introduction**

11.1.1. This section of the report comprises an assessment of the likely significant effects of the overall project, referred to by the applicant as the 'proposed upgrade project' which includes the proposed development which is the subject matter of the current SID application in combination with the elements of the 2012 Approval which are also being progressed. A number of the matters to be considered have already been addressed in the Planning Assessment above. This section of the report should therefore be read, where necessary, in conjunction with the relevant sections of the

Planning Assessment. As the application is being made under Section 37E of the Act, it is required to be accompanied by an environmental impact assessment report. With a design capacity for 2.4 million PE, it also falls within and exceeds the thresholds (150,000 PE) of Class 13 of Part 1 of the fifth schedule of the regulations.

11.1.2. The application was submitted after 16th May 2017, the date for transposition of Directive 2014/52/EU amending the 2011 EIA Directive. The application is therefore supported by an EIAR. The Directive was transposed into Irish legislation on September 1st of 2018 under the European Union (Planning and Development) (Environmental Impact Assessment) Regulations, 2018, after the application was received.

11.1.3. The Department of Housing, Planning and Local Government (DHPLG) issued Guidelines entitled – Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (August 2018). These provide guidance in relation to various sections of the Act arising from the transposition of the Directive. I have noted the above and I have also had regard to other guidance documents including: Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports, EPA and European Commission guidance documents on the implementation of the EIA Directive (Directive 2011/92/EU as amended by 2014/52/EU) and also the Board's internal guidance on EIA.

11.2. **Compliance with Legislation**

11.2.1. The EIAR addresses the overall 'proposed upgrade project', which as I have outlined above is meant to include elements of the previous 2012 Approval being progressed together with the development for which permission is currently sought and which includes both the WwTP component at Ringsend and the RBSF at Newtown.

11.2.2. It comprises five volumes, grouped as follows:

- Volume 1: EIAR Non-Technical Summary,
- Volume 2: Introduction (Part A – Report and Part B – Appendices),

- Volume 3: Ringsend Wastewater Treatment Plant (Part A: Report and Part B: Appendices),
- Volume 4: Regional Biosolids Storage Facility (Part A: Report and Part B: Appendices),
- Drawings (Part A: Ringsend Wastewater Treatment Plant Upgrade and Part B: Regional Biosolids Storage Facility).

11.2.3. In total, each of Volumes 3 and 4 of the EIAR contains 19 chapters which are entitled 'Sections'.

11.2.4. As is required under Article 3(1) of the EIA Directive, the EIAR identifies, describes and assesses in an appropriate manner, the direct and indirect significant effects of the project on the following environmental factors: (a) population and human health; (b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC; (c) land, soil, water, air and climate; (d) material assets, cultural heritage and the landscape and it equally considers the interaction between the factors referred to in points (a) to (d).

11.2.5. In accordance with Article 5 and Annex IV, the EIAR provides a description of the project comprising information on the site, design, size, characteristics and other relevant features of the project. It also provides a description of the likely significant effects of the project on the environment and a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment.

11.2.6. The EIAR includes a non-technical summary of the information referred to in Article 5 (a) to (d) and additional information specified in Annex IV relevant to the specific characteristics of the overall project and project type and to the environmental features likely to be affected. In this regard, the EIAR provides a description of the evidence used to identify and assess the significant effects on the environment. The EIAR provides an adequate description of forecasting methods/ evidence used to identify and assess the significant effects on the environment. Any difficulties which were encountered in compiling the required information are set out under the respective environmental topics which were individually assessed.

- 11.2.7. The features of the project and/or mitigation measures envisaged to avoid or prevent what might otherwise be significant adverse effects on the environment are set out under each environmental topic considered. The potential impacts and mitigation measures are summarised under Section 17 and a summary of residual impacts is set out within Section 18 of Volumes 3 (Ringsend WwTP) and 4 (RBSF) of the EIAR. Where proposed, monitoring arrangements are also outlined. Environmental interactions and cumulative impacts are also addressed. Consultation undertaken by the applicant meets with the statutory requirements listed under Article 6 of the EIA Directive.
- 11.2.8. I am satisfied that the information provided in the EIAR is sufficiently complete and up to date. It is of a high level of quality, containing comprehensive studies and scientific analyses which are evidently prepared by qualified and competent experts. In this regard, I note that the qualifications and expertise listed and demonstrated by the experts involved in the preparation of the EIAR. I am also satisfied that the participation of the public has been effective and the application has been made accessible to the public by electronic and hard copy means with adequate timelines afforded for submissions.
- 11.2.9. My assessment is based on the information provided by the applicant, including the EIAR, the reports and submissions made in the course of the application by Planning Authorities, prescribed bodies and observers and the applicant's response to reports and submissions.

11.3. **Alternatives**

- 11.3.1. Alternatives which were studied are addressed within Volume 2 of the EIAR in respect to both project components. In respect of the Ringsend WwTP proposals, it is outlined that the GDSDS recommended the Ringsend WwTP should be maximised within the confines of its current location and that a new wastewater treatment facility would be sited in north County Dublin (the Greater Dublin Drainage Project). It also references that the GDSDS was the subject of a Strategic Environmental Assessment (SEA) and that the process considered a comprehensive assessment of alternative locations for the additional wastewater treatment required for the region and concluded that the Ringsend WwTP was the optimum location. In

addition, the current EIA considered alternative technologies which could potentially be employed. These include the following:

1. Sequencing Batch Reactors (SBR) and Capacity Upgrade (SBR + CU) continuing to use the Long Sea Outfall Tunnel (LSOT);
2. Deep Shaft Aeration (DSA) with SBR discharging to the Lower Liffey Estuary;
3. Integrated Fixed-Film Activated Sludge (IFAS) discharging to the Lower Liffey Estuary;
4. Membrane Bioreactor (MBR) discharging to the Lower Liffey Estuary and;
5. Aerated Granular Sludge (AGS) discharging to the Lower Liffey Estuary.

11.3.2. The options were scored against 15 parameters following which a conclusion was reached that the preferred option based on technical, environmental and cost grounds would be the use of AGS treatment on site to improve effluent quality discharging into the Lower Liffey Estuary at its existing outfall. A comparison was then presented between the AGS and LSOT (permitted under the 2012 Approval) options and the AGS option was considered as being more favourable at the end of the process.

11.3.3. In relation to the RBSF, five alternative locations were shortlisted and assessed against four criteria (Environmental, Economic & Engineering, Planning and Social & Community). At the end of this process, the current site at Newtown emerged as the preferred site.

11.3.4. For both the Ringsend WwTP and the RBSF components, the 'do-nothing' option was also considered and ruled out as not being a suitable option in each case.

11.3.5. Overall, a description of the reasonable alternatives studied by the developer, which are relevant to the proposed project and its specific characteristics have been clearly presented, together with an indication of the main reasons for selecting the chosen option for each of the Ringsend WwTP and RBSF components, taking into account the effects on the environment.

11.4. **Conclusion on EIAR Compliance with Legislation**

- 11.4.1. I am satisfied that the information provided in the EIAR is reasonable and sufficient to allow the Board to reach a reasoned conclusion on the significant effects of the development on the environment, taking into account current knowledge and methods of assessment to be incorporated into its decision on the planning application. I am also satisfied that the information contained in the EIAR complies with the provisions of Article 3, 5 and Annex (IV) of EU Directive 2014/52/EU amending Directive 2011/92/EU.

12.0 **Likely Significant Effects on the Environment**

12.1. **Introduction**

- 12.1.1. In this section of my assessment, I consider the direct and indirect significant effects of the development against the factors set out under Article 3(1) of the EIA Directive 2014/52/EU, which include:

- a) population and human health;
- b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;
- c) land, soil, water, air and climate;
- d) material assets, cultural heritage and the landscape;
- e) the interaction between the factors referred to in points (a) to (d).

- 12.1.2. My assessment is structured to follow items (a) to (e) directly above in respect of each of the two project components. I have dealt with noise and odour under the heading of c) land, soil, water, air and climate. I have considered all of the documentation lodged with the EIAR and all of the documents and drawings on the planning application file, including written submissions.

12.2. **Population and Human Health**

12.2.1. **Population and Human Health – Ringsend WwTP component**

Introduction and Existing Environment

- 12.2.2. In terms of population, the EIAR provides details of the resident population, working

population and the visiting community, including recreational amenities. The local area comprising electoral divisions Pembroke East A, Pembroke East B and Pembroke East C is identified as the area which would be most likely to experience local impacts arising from the Proposed WwTP component.

- 12.2.3. The closest residential dwellings are located c. 950m to the south-west of the proposed WwTP, along Beach road/Strand road. Dwellings are also located c.975m west of this site along Pigeon House road. Poolbeg West, located to the south west of the Ringsend WwTP site, has been designated as a Strategic Development Zone (SDZ), which is earmarked to deliver approximately 3,500 homes and other commercial and mixed uses.
- 12.2.4. In terms of the working population, employment is concentrated in Dublin city centre, which forms a large proportion of the c.750,000 working population in the GDA as a whole. According to the 16th Issue of Dublin Economic Monitor published in February 2019, the latest unemployment figures for Dublin is 5.3% (Q4 2018). The unemployment rate for the State is 5.3% (CSO Jan 2019). The Ringsend WwTP facility currently provides employment for c. 40 full time employees.
- 12.2.5. Regarding the visiting population, there are multiple visitor attractions and leisure and recreational amenities, sporting facilities and clubs, recreational walks, parks and hotels, bars and restaurants in the local and regional area. The local coastal walkway extends from the Merrion Gates to the Great South Wall. The Aviva stadium, hosting sporting and other events is located c. 2km to the south west of the site. Under the Quality of Bathing Waters Regulations 2008, as amended, four stretches of Beach (Dollymount Strand, Sandymount Strand, Merrion Strand and Seapoint) have been designated as bathing waters and are used as a recreational amenity by the local and visiting population.
- 12.2.6. The EIAR provides information on the general Health Status of persons from the CSO 2016 census across local EDs (Pembroke East A, Pembroke East B and Pembroke C). Sensitive receptors within the local area are identified as including: Irishtown Health Centre, St. Patrick's Boys National School, Cambridge Road, St. Patrick's Girls National School, Ringsend College / Coláiste na Rinne and Ringsend Community Centre, all of which are located in the Dublin 4 area.

Potential Impacts

- 12.2.7. The assessment concludes that the proposed Ringsend WwTP component would not give rise to significant adverse effects on the local or wider population. If permitted and implemented, the development would give rise to employment for c.150 construction workers (at peak) and 15 new employment positions during operation, resulting in positive impacts through economic benefits. Once complete and operational, the Ringsend WwTP would have increased capacity for wastewater treatment and would be pivotal in supporting planned residential growth aligned with the growth of the economy in Dublin city and region which it serves.
- 12.2.8. In considering human health impacts, the DPHLG guidance states that the 'notion of human health should be considered in the context of other factors in Article 3(1) of the EIA Directive'. The delivery of the Ringsend WwTP upgrade would result in a higher standard of wastewater treatment. Effluent discharged to Dublin bay would comply with the Water Framework Directive (WFD), the Urban Waste Water Treatment Directive (UWWTD) and the Bathing Water Directive (BWD).
- 12.2.9. Slight adverse impacts are predicted to arise because of an increase in traffic on the road network during the construction and operation phases. Further details on traffic impacts including road safety are considered under the heading of Traffic, as set out under the Planning Assessment section of this report.
- 12.2.10. Concerns were raised regarding human health during the applicant's initial consultation with the public prior to lodging the application. Potential impacts identified include concerns that pollution might cause a deterioration in water quality. It is of relevance to note that Dublin Bay waters are not used as a resource for drinking water, but parts of the bay are used as a recreation area for swimming and other activities and it is stated that the bay is a resource for fish and shellfish intended for human consumption. It is stated under Section 5.5.3.1 of Volume 3 of the EIAR that no shellfish are collected within the inner part of Dublin Bay. It has been determined in the assessment of the water environment that, for the most part, the construction phase would not result in impacts on designated bathing waters and as such would not give rise to effects on human health. It is acknowledged however that there would be a deterioration of bathing water quality in 2019/2020, due to

decommissioning of aspects of the WwTP in advance of new phases being added. As is stated in the EIAR, this would lead to a 'slight' negative indirect impact for the bathing population and others undertaking water-based activities, removing their enjoyment and use of this amenity for the stated period. While accepting this impact would be short term in duration, I would be more inclined to conclude that this impact would be 'moderate' rather than 'slight' in terms of significance for the community that use the bay for recreation. This is particularly so as it is stated in the EIAR under the heading of Population and Human Health that the impact would be largely dependent on overall water quality in the area at the time and whether the current bathing restrictions in place would continue to remain in place over that time.

- 12.2.11. Concerns have also been raised during the course of the application concerning impacts on air quality and dust, noise, odour, traffic and impacts as a result of rodents (as potential vectors of disease), management of sludge and safe disposal of hazardous material. These impacts have been considered in detail in the EIAR by the appropriate specialists, which I deal with under the assessment of the respective environmental factors. However, insofar as they relate to human health, I have considered the mitigation measures proposed and residual impacts likely to arise post implementation of mitigation, as set out below.

Mitigation Measures

- 12.2.12. There are no specific mitigation measures proposed in relation to population or human health during construction or operational phases beyond those proposed to address other environmental impacts. The overarching design measures proposed for the construction stage centre around the preparation and adherence to the CEMP and a traffic management plan.
- 12.2.13. Regarding deterioration in water quality during the period of decommissioning of aspects of the WwTP, these works are proposed to be carried out during the winter of 2019/2020 when recreational swimmers and water based sports activities are at seasonally low levels and as set out in Section 4 of the EIAR, this impact is not anticipated to result in an overall deterioration in bathing water quality at the designated bathing areas.
- 12.2.14. Dust would be controlled by applying the German air pollution control limit, known as

the TA Luft limit of 350 mg/m²/day (averaged over a one-year period) for receptors outside the site boundary. At this level, no unacceptable dust that would give rise to adverse impact on population or human health or on the enjoyment of amenities in the vicinity of the proposed WwTP component are anticipated.

- 12.2.15. Air quality dispersion modelling found that during the construction phase, there would be no impact greater than imperceptible for receptors as a result of traffic emissions and, as such, there is no likelihood of adverse effects on human health in this regard.
- 12.2.16. The noise and vibration assessment concludes that once best practice measures are employed during construction and operation, noise and vibration generated would fall within acceptable limits.
- 12.2.17. Regarding odour, it is intended that the predicted odour concentrations at all areas of long-term public exposure and potential areas of future residential use, including the Poolbeg West SDZ, would be below the adopted odour criterion of 3 ou_E/m³ as the 98th percentile (hourly average) limit and hence no negative impacts are predicted on population or human health from odour as a result of the proposed development at Ringsend WwTP component. During construction, this criteria of 3 ou_E/m³ would be met apart from where there is the temporary shut-down of existing odour control units to facilitate new connections, though during this time, no perceptible change in odour concentrations outside of the site is predicted.
- 12.2.18. With the implementation of good traffic management, apart from slight impacts due to traffic delays, no adverse effects on population or human health are likely to arise as a result of traffic during the construction or operational phases. It is proposed that the local community would be kept informed of developments, including any traffic diversions, through a dedicated point of contact.
- 12.2.19. A rodent and pest control plan is proposed to be prepared and implemented to prevent impacts that could occur from the spread of pathogens from rodents that might be disturbed during construction.
- 12.2.20. Hazardous materials that may be encountered would be required to be handled and appropriately governed by comprehensive waste management legislation. This is

dealt with in greater detail under the heading of Land and Soils in this assessment.

- 12.2.21. Sludge generated would be treated at the existing facility to form biosolids and the biosolids would be transported to the RBSF for storage prior to its use as a fertiliser on land. I revisit this matter in greater detail as part of my assessment of the RBSF component.

Residual Impacts

- 12.2.22. It is clear that residual impacts on population and human health would be broadly positive as a result of providing improved wastewater treatment quality and an increase in capacity to cater for sustainable residential and economic growth, as well as safeguarding health and the environment.
- 12.2.23. During construction, there would inevitably be some nuisance associated with construction activity, detracting from the amenity value of public walkways close to the Ringsend WwTP site and resulting in a slight negative impact for the visiting population. Alterations to the boundary treatment along the southern and eastern boundaries of the WwTP are predicted to also result in impacts, which are slight/neutral significant in the longer-term operational phase along this section.
- 12.2.24. There is potential for short-term residual moderate impact on bathers and participants in other water sporting or recreational activities during the expected deterioration of water quality during 2019/2020, as tanks are taken off-line on a phased basis while being upgraded, as dealt with above. I am satisfied that the duration of this impact would be short-term in duration and given the overall long-term benefits that would result, this is acceptable.
- 12.2.25. Overall, I am satisfied that mitigation measures identified throughout the EIAR are sufficient to ensure that no unacceptable residual impacts or effects on population or human health are likely to arise during construction or operation.

Monitoring

- 12.2.26. No monitoring specific to population or human health is proposed. Monitoring is proposed in relation to other environmental factors which I have considered and referenced as relevant under specific sections of my assessment.

12.2.27. **Population and Human Health - RBSF Component**

Introduction and Existing Environment

- 12.2.28. The population of the EDs Ward and Dubber are identified as those which would be most likely to be aware of or be impacted by the development of the proposed RBSF component. The larger residential areas are concentrated within two and three kilometres from the RBSF site, separated by employment and industrial uses. There is a detached house at the eastern boundary of the site. A development of up to eight residential units is under construction on a site of two former houses, located c.25m from the eastern site boundary. In line with Dublin and the State there is a downward trend in unemployment.
- 12.2.29. In terms of the visiting population, recreational facilities and amenities within the immediate area include the Ward River, golf clubs and St. Margaret's GAA club. The Tolka Valley Regional Park is located 4.1 km to the south and west.
- 12.2.30. The EIAR provides information on the health status of the population from CSO 2016 census across local EDs (Dubber and The Ward). Sensitive receptors are identified as including: Charlestown medical and dental centre, St. Margaret's Primary and St. Luke's Primary school, Le Chéile secondary school and Tyrellstown community centre.

Potential Impacts

- 12.2.31. The construction and/or operation phases could potentially give rise to impacts on population / human health, including air quality and dust, noise, sludge storage and management, odour, traffic and pest control.
- 12.2.32. These impacts have been considered in detail in the EIAR by the appropriate specialists and I have dealt with these also under the assessment of the respective environmental factors. However, insofar as they overlap with human health, I have considered the mitigation measures proposed, as set out below, together with the residual impacts likely to arise post implementation of mitigation.
- 12.2.33. If permitted and implemented, the development would give rise to employment for c.70 construction workers and 10 new employment positions during operation,

resulting in positive impacts through economic benefits.

- 12.2.34. At a wider scale, positive indirect benefits would result for population and human health in supporting improved water treatment and providing a regional facility for the sustainable management of biosolids generated at the Ringsend WwTP and GDD Plant (if permitted).

Mitigation Measures

- 12.2.35. There are no specific mitigation measures proposed in relation to the resident, working or visiting population during construction or operational phases beyond those proposed under other specific environmental headings. The overarching design measure proposed for the construction stage centres around the preparation and adherence to the CEMP and a traffic management plan.
- 12.2.36. Air quality dispersion modelling found that in relation to traffic emissions during the construction phase, there would be no impact greater than imperceptible for receptors as a result of traffic emissions and, as such, there is no likelihood of adverse effects on human health arising out of air quality.
- 12.2.37. With employment of best practice, construction and operation noise is expected to fall within acceptable noise limits and, as such, would not give rise to negative impacts on human health.
- 12.2.38. With the implementation of good traffic management, no adverse effects on population or human health are likely to arise as a result of traffic during either the operational or construction phases. It is proposed that the local community would be kept informed of developments through a dedicated point of contact, including any traffic diversions.
- 12.2.39. In relation to odour, given that the treated biosolids would generate low odours and they are proposed to be stored indoors in a specially-designed building where odour control features are proposed to be employed, I am satisfied that significant effects on human health as a result of odour would not likely arise.
- 12.2.40. A rodent and pest control plan is proposed to be prepared and if implemented, this would prevent impacts to human health which could arise from the spread of

pathogens from rodents potentially disturbed during construction.

Residual Impacts

- 12.2.41. I would agree with the conclusion that the proposed RBSF component would result in slight negative short-term impacts on the local population during construction and no impacts would remain during the operation phase. Positive short-term impacts would also occur as a result of employment for 70 construction workers during this construction phase and opportunities for an additional 10 employees would arise in the operational phase.

Monitoring

- 12.2.42. No specific monitoring in relation to Population or Human Health is proposed. Specific monitoring relating to other environmental factors, as relevant are outlined under each specific Section of the EIAR.

12.2.43. **Conclusion on Population and Human Health**

- 12.2.43.1. Having regard to the above, I am satisfied that the impacts identified would be avoided, managed or mitigated by measures forming part of the proposed development, proposed mitigation measures and measures within suitable conditions. I am therefore satisfied that the proposed development would not have any unacceptable significant direct, indirect or cumulative impacts on **Population and Human Health**.

12.3. **Biodiversity**

12.3.1. **Marine Biodiversity - Ringsend WwTP component**

Introduction and Existing Environment

- 12.3.2. The site associated with the Ringsend WwTP, including the existing outfall is located outside but adjacent to the boundaries of eight European sites. These are listed under the heading of Terrestrial Biodiversity – Ringsend WwTP and are considered also under the heading of Appropriate Assessment.
- 12.3.3. The current status of the Liffey Estuary Lower (2015) remains ‘moderate’ and the coastal waters of Dublin Bay have a ‘good’ ecological status (Ref: Coastal Water

Quality Status 2010-2015 available on www.catchments.ie). The most recent Trophic Status Assessment (EPA, 2015) indicated that waters in the Lower Liffey Estuary and Dublin Bay can be regarded as 'Unpolluted', while the Upper Liffey Estuary is regarded as 'Eutrophic' and Tolka Estuary as 'Potentially Eutrophic'.

12.3.4. It is submitted in Section 5 of Volume 3 (Biodiversity - Marine) of the applicant's EIAR, that in the existing baseline scenario, the River Liffey and, to a lesser extent, the Tolka River, account for most of the total oxidised nitrogen (TON) input to Dublin Bay, while the WwTP is responsible for most of the phosphates and ammonia that are released into the bay. In this section, information is also provided about details of the intertidal marine benthic collection, marine mammals and fisheries together with results obtained from intertidal benthic surveys carried out in September 2015 and analyses of those results. Waterbirds are dealt with in my assessment under the heading of Biodiversity – Terrestrial.

12.3.5. In considering the marine environment, the area of the zone of influence of the effluent from the Proposed Ringsend WwTP component is presented in Figure 5-16 of Volume 3 of the EIAR and is stated to be based on the predicted modelled output for the winter depth averaged 50 percentile for Dissolved Inorganic Nitrogen (DIN). The zone broadly comprises the sea water inside the retaining walls, an area of the bay west of Bull Island and a small section to the south east of Bull Island.

12.3.6. Intertidal habitats of Dublin Bay include sandflats of fine to very fine sand and areas of soft muddy sand. The marine species recorded in Dublin Bay included anemone, worm types, crabs, shrimps, prawns, mussels, cockles, snails and fish. Marine mammals recorded in proximity to Dublin Bay included Minke Whale, Humpback Whale, Killer Whales, Harbour Porpoise, Bottlenose Dolphin, Common Seal and Grey Seal. Fish species recorded in the mouth of the River Liffey included: Trout, Bass, Sand Smelt, Common Goby, Mullet, Plaice, Nilsson's Pipefish, Sea Scorpion, Lemon Sole, Pollock, Spratt, Lesser Sand Eel, Eel, Flounder and Shore Rockling. Other species stated to be known to occur in the area include Salmon, Lamprey and Mackerel.

Potential Impacts

12.3.7. The Ringsend WwTP is currently not capable of achieving the necessary nutrient

reduction to meet the standards set out under the EPA Wastewater Discharge Licence and the UWWTD. It is expected that, in the absence of the proposed WwTP component, i.e. in the 'do-nothing/baseline' scenario, water quality in the receiving environment in the inner bay would likely deteriorate even further as wastewater volume / loading increase, leading to an increase in organic enrichment, oversupply of DIN to the area impacted by the existing outfall and a consequential decline in biodiversity in the Tolka Estuary and North Bull Island in particular. In this 'do nothing/baseline' scenario, the outer and south bays have been assessed as being unaffected by nutrient inputs from the WwTP at Ringsend. Notwithstanding this finding, it has been assessed that while localised impacts could occur, these would not be to a scale that could pose a threat to shellfish, fish or marine mammal populations in the Dublin Bay area.

- 12.3.8. During construction, the undersea tunnel / LSOT would not form part of the development and, as such, no direct physical disturbance of the seabed would occur. Therefore, Dublin Bay would not experience any negative impact including habitat destruction and/or changes in the nature or quantity of species. During the construction phase, there would be some reduction in effluent quality for a nine-month period in the winter of 2019/2020 during construction of the AGS structures and the SBR retrofit. There would also be an increase in the number of stormwater overflows from c.1.2% to between 2.5% and 3.3% of influent. It is submitted that the impact on marine aquatic and benthic ecology would not be discernible for this temporary period.
- 12.3.9. During the operation phase, the main impact on the marine biodiversity environment is predicted to be positive, due to improved water quality and decrease in nutrient loading in the treated effluent, leading to an increase in oxygen availability in Dublin Bay and, consequently, a substitution of algae and other microorganisms for a more biologically-diverse species. Such positive impacts are assessed as being limited to the species in the Tolka Estuary and the lagoons in the intertidal mudflats of North Bull Island. The changes/improvements are predicted as slow, as the areas of the bay would continue to be influenced by nutrient loads from the Liffey and Tolka rivers.
- 12.3.10. No significant adverse impacts on marine mammals or fisheries are predicted and

any changes to a richer fauna community is expected to be slow for the same reasons outlined. It has been assessed that seals may benefit from an increase in fish life in the inner part of Dublin Bay, as a result of improved water quality.

Mitigation Measures

- 12.3.11. Given that the proposed Ringsend WwTP component would lead to an improvement of water quality in Dublin Bay and a predicted corresponding improvement to the marine biodiversity environment, no mitigation measures are deemed to be required. Works throughout the construction phase would be required to comply with statutory requirements and adhere to the CEMP and best practice measures embedded into the design.

Residual Impacts

- 12.3.12. The assessment concludes that the proposed Ringsend WwTP component would give rise to an improvement in water quality status and positive impacts in the parts of inner Dublin Bay (the mouth of the Liffey, the Tolka estuary and the lagoons off North Bull island) resulting in increased diversity of benthic macroinvertebrates. Areas and habitats beyond these areas are considered to experience negligible changes as a result of the proposed WwTP component. It is also assessed that birds and marine mammals that forage within Dublin Bay would likely experience positive impacts because of the substitution of algae and other microorganisms for a more biologically-diverse species, though this impact is anticipated to be slow to occur. Residual impacts for the outer bay, sandflats off Bull Island and areas south of the South Great Wall have been assessed as negligible with habitats remaining unaffected by the proposed WwTP. I am satisfied with the conclusion that construction impacts would be no greater than indiscernible.

Monitoring

- 12.3.13. Monitoring of macroinvertebrate communities is proposed to detect any changes in the nature and abundance of the constituent taxa and post-construction water quality surveys are proposed to validate the mathematical results from modelling.

12.3.14. **Marine Biodiversity - RBSF component**

Residual Impacts

12.3.15. The assessment concludes that the proposed RBSF Component would not have any negative impacts on **Marine Biodiversity**, due to its large separation distance from the sea. I am satisfied that this is the case and that no further assessment is required.

12.3.16. **Terrestrial Biodiversity - Ringsend WwTP component**

Introduction and Existing Environment

12.3.17. It is submitted that the effluent from Ringsend WwTP cannot be detected outside of Dublin Bay, and therefore the assessment is confined to those European sites within the area of the bay along the seaward limit, which extends from Baily Lighthouse to Dalkey Island, as presented on Figures 6-1 (SAC European sites in Dublin Bay) and 6-2 (SPA European sites in Dublin Bay) of Section 6 in Volume 3 to the EIAR.

12.3.18. Accordingly, there are eight European sites identified as having potential to be adversely affected by the proposed Ringsend WwTP component. These are presented in Figures 6.1 and 6.2 of Section 6 of the EIAR (Volume 3) and are listed under as follows:

- South Dublin Bay and River Tolka Estuary SPA (site code 004024);
- South Dublin Bay cSAC (site code 000210);
- North Bull Island SPA (site code 004006);
- North Dublin Bay cSAC (site code 000206);
- Howth Head Coast SPA (site code 004113);
- Howth Head cSAC (site code 000202);
- Dalkey Islands SPA (site code 004172) and
- Rockabill to Dalkey Island cSAC (site code 003000).

12.3.19. As the Proposed WwTP Component could potentially result in significant effects on the designated European Sites within Dublin Bay and the immediate vicinity, having regard to the sites conservation objectives, a Natura Impact Statement is included

with the application and I consider this aspect under the heading of Appropriate Assessment below. These European sites are described in the Natura Impact Statement that accompanies this Planning Application.

12.3.20. The following proposed NHAs lie within Dublin Bay and the surrounding environment:

- South Dublin Bay pNHA (site code 000201);
- North Bull Island pNHA (site code 000206);
- Howth Head pNHA (site code 000202);
- Grand Canal pNHA (site code 002104);
- Royal Canal pNHA (site code 002103) and
- Dalkey Coastal Zone & Killiney Hill pNHA (site code 002106).

12.3.21. Intertidal areas support large waterbird populations. Terrestrial habitats include coarse grassland outside of the WwTP and a bund to the east which contains an area of immature woodland and ornamental shrub which I am satisfied is of low conservation value. The eastern bund also contains invasive plant species (Japanese Knotweed). Irishtown Nature reserve to the south and this is used by wintering waterbirds. It is stated in the EIAR that it was originally provided as a winter feeding area for light-bellied Brent Geese. Waterbird numbers were drawn from monitoring surveys carried out as a condition attached to the adjoining Waste to Energy plant and surveys carried out by Birdwatch Ireland. Brent Geese were evidently recorded on this grassland from November to April each year varying between 34 and 411 over the eight winters 2007/08 to 2014/15. The grassland is stated to be also used by waders, with peak counts in winter 2014/2015 of 44 Oystercatcher, 3 Black-tailed Godwit, 1 Curlew, 2 Redshank and 3 Black-headed Gull (Mayes, 2015). Occasionally large flocks of Black-headed Gulls and Herring Gulls are stated to have also been recorded on the grassland.

12.3.22. At a wider level, Dublin Bay hosts internationally important bird species including: Light-bellied Brent Goose, Knot, Black-tailed Godwit and Bar-tailed Godwit, as well as 19 other species in nationally important numbers. Both Common Tern and Arctic Tern breed in Dublin Port. In late summer and autumn, large numbers of post-

breeding terns congregate in South Dublin Bay, originating from a wide area throughout Ireland. The terns forage in Dublin Bay, including the area potentially affected by the effluent arising from the Ringsend WwTP.

- 12.3.23. A colony of Black Guillemots is also known to breed in the quayside areas of Dublin Port and in the tidal stretches of the River Liffey. These birds forage in Dublin Bay, including the area potentially affected by the effluent arising from the Ringsend WwTP.

Potential Impacts

- 12.3.24. In the 'baseline/without project' scenario, invasive species (Japanese Knotweed) would spread further on the eastern boundary of the site. In addition, the nutrient outputs from the WwTP due to operational overload and stormwater discharges could result in a decline in the biodiversity of invertebrate communities in the Tolka Estuary and the North Bull Island channel, though it is stated to be unlikely that this scenario would have any significant impact on the waterbird populations that forage in Dublin Bay.
- 12.3.25. The removal of the bund at the eastern end of the WwTP site would involve the removal of recently planted trees and shrubs which would lead to a loss of habitats of low biodiversity value. Connection of a high-voltage ESB cable is a requirement and during construction of this element, this could lead to temporary impacts on the terrestrial biodiversity environment, as the work would occur in an area within South Dublin Bay and River Tolka SPA.
- 12.3.26. It is submitted in the EIAR that there is potential for indirect visual disturbance to Brent Geese and other waterbirds using this amenity grassland immediately south of the WwTP, arising from construction activity and movement of construction workers. I note however that the waterbirds would be accustomed to visual interaction with similar type of activities during the current operation of the plant and adjoining industrial maintenance and operation activities, which leads me to conclude that this impact would not likely be significant.
- 12.3.27. It is submitted that construction noise would not result in significant impacts on both wintering and summering waterbirds in Dublin Bay, as these waterbirds are

habituated to noise from similar construction and industrial activities in the surrounding environment and, therefore, construction is not considered to be threatening to waterbirds and terns which are qualifying interests of the European sites in Dublin Bay. It is also submitted that the noise levels which the tern colony would generate, stated to be up to 70 to 80 dB(A) would far exceed the level of construction noise. While that may be so, noise associated with construction activities would be of a different type than noise type generated by the waterbirds or tern colonies themselves. However, given the nature of the area which is predominately characterised by heavy industry and similar activity whereby construction and maintenance are not new features, I accept that the waterbird populations would be accustomed to such noise and that there would be no significant impacts likely on waterbirds or terns in the absence of mitigation. By way of comparison, it is stated that during the construction of the sewage treatment plant at Mutton Island in Inner Galway Bay, numbers and diversity of wader species roosting close to the construction site remained stable or slightly increased (Nairn, 2005).

- 12.3.28. It is stated that effects of dust deposition on flora or fauna would be imperceptible as the levels would not be high enough such as to cause any adverse impacts on flora or fauna. In addition, waterbird species are not sensitive to NO_x concentrations contained in air emissions which could occur during construction and operation phases.
- 12.3.29. During operational phases, the potential indirect impacts on intertidal habitats in Dublin Bay would be neutral or somewhat positive in the vicinity of the existing discharge location or in the wider coastal and marine area.
- 12.3.30. The EIAR addresses concerns that an improvement in water quality and biological status of estuaries through the project delivery and a reduction in nutrient loads could have a knock-on effect on the trophic food chain and consequently waterbird populations. While some changes are expected to occur, particularly to algal blooms which are a source of organic matter to the benthic ecosystems, it is submitted that this would be limited to the northern sections of Dublin Bay. It is submitted that the proposed WwTP component would not have any detrimental impacts on the aquatic food chain in the bay and that as a result of the proposed WwTP component, benthic

macroinvertebrates are assessed as likely to become more diverse and phytoplankton is unlikely to become less abundant, but rather more diverse and such changes would likely be slow to occur. It is stated that the Tolka Estuary would continue to be affected by some level of organic enrichment from the Liffey and Tolka rivers. The conclusion reached, based on previous scientific studies and results from surveys is that the bird populations, whether dependent on aquatic plants or infaunal macroinvertebrates are not being likely to be impacted by the proposed WwTP component. I am satisfied based on the scientific information submitted that the proposed WwTP component would not lead to any detrimental impacts in the bay and the bird populations would not be negatively impacted on.

Mitigation Measures

- 12.3.31. Solid screening is proposed to be erected prior to construction to reduce or eliminate any visual disturbance from construction activities to Brent Geese and other waterbirds using the amenity grassland to the south. I note that this is already in place, stated to be part of a works contract and I assume would also serve to secure the construction site.
- 12.3.32. No mitigation is considered to be required in relation to noise impacts on waterbirds or nesting terns, as these species are accustomed to traffic and machinery noise in the area.
- 12.3.33. An Invasive Species management plan is proposed to be prepared and implemented as a control measure to prevent the spread of Japanese Knotweed. A dust management plan is proposed to be implemented during construction. No dust mitigation measures are stated to be required or proposed during operation.
- 12.3.34. The required connection to the ESB high voltage cable would be carried out in the period between 1st May and 31st August (when the Brent Geese are absent from the SPA) and the construction area would be fully reinstated by backfilling with the original soil and laying of grass turves in their original position. The grassland is proposed to be fully reinstated in time for the return of the geese in September/October.

Residual Impacts

- 12.3.35. The assessment concludes that with mitigation in place, no negative impacts are predicted on terrestrial biodiversity (including flora and fauna) during either the construction or operation phases, as a result of the Ringsend WwTP component. Based on scientific information presented in the EIAR, there is no evidence to suggest that the anticipated reduction in nutrient loading would give rise to adverse impacts on the trophic food chain and consequently waterbird populations.
- 12.3.36. The Parks and Landscape Services Division of Dublin City Council state their requirement that all invasive species are removed entirely from the Ringsend WwTP site and they request that a condition be attached seeking proposals to be submitted in this regard. No submission was received from the Department of Culture, Heritage and the Gaeltacht / National Parks and Wildlife Service (NPWS) addressing biodiversity.

Monitoring

- 12.3.37. It is stated that monitoring of waterbirds on the grassland would take place during construction and for a year after to establish the efficacy of the mitigation measures on potential disturbance. A comprehensive monitoring programme currently being undertaken by Birdwatch Ireland for all of Dublin Bay, is also proposed to be used to inform the assessment of the efficacy of potential changes in waterbird populations related to effluent discharge.
- 12.3.38. Annual monitoring to determine the efficacy of measures used to control the spread of invasive species is also proposed.

12.3.39. **RBSF component**

Introduction and existing environment

- 12.3.40. The site comprises mainly open areas of grassland, with dry meadow and grassy verges and areas are being grazed by horses. It is not covered by any nature conservation designations.
- 12.3.41. There are three European designated sites within 10 km radius of the site: Malahide Estuary cSAC (site code 000205), Malahide Estuary SPA (site code 004025) and

South Dublin Bay and River Tolka Estuary SPA (site code 004024).

- 12.3.42. Two pNHAs are also located within a 5km radius: Royal Canal pNHA (site code 002103) and Santry Demesne pNHA (site code 000178). There are no ecological pathways between these pNHAs and the RBSF component and I am therefore satisfied that no impacts would arise on these pNHAs.
- 12.3.43. A drainage ditch runs along the western perimeter of the site. It is submitted to be of negligible biological value due to it having a silty substrate and very slow flow. It flows into the Huntstown stream which is a tributary of the Ward River, c.5km from the site. As informed by IFI, the Ward River is an important salmonid system, having resident salmon and sea trout populations. The river enters the Broadmeadow River north of Swords and ultimately discharges into the Malahide Estuary cSAC.
- 12.3.44. Bird species recorded on the site are common in farmlands with one species, Robin, amber-listed (medium conservation concern) in the 'Birds of Conservation Concern in Ireland' (Colhoun and Cummins, 2013). No larger mammals were observed on site. Badger foraging and commuting signs were found on the site. Five bat species were recorded on the site, largely associated with Leisler's bat, with some activity of Common pipistrelle, and low numbers recorded for other species (Soprano pipistrelle, unidentified Myotis species and unidentified Pipistrellus species). Trees and structures on site are not considered suitable for roosting of bats.
- 12.3.45. Overall, I would accept the applicant's conclusion that the site is of local importance in terms of terrestrial biodiversity.

Potential Impacts

- 12.3.46. In terms of terrestrial biodiversity, dry meadow and grass habitats would invariably be lost as a result of the development. No hedgerows or treelines are proposed to be removed as part of the proposed RBSF component and breeding birds would not be adversely impacted during construction.
- 12.3.47. Bats would be able to continue to feed in remaining grassland areas and along field boundaries. As approximately half of the grassland would remain undeveloped, adequate area would remain for foraging by badgers.

- 12.3.48. Impacts would be no greater than imperceptible and negative in the long-term / operational phase.

Mitigation Measures

- 12.3.49. During construction, no vegetation would be cleared from the site during the bird breeding season (between 1st March to 21st August) to avoid disturbance to nests, subject to results of a breeding bird survey, prior to construction. If no breeding birds are observed during the survey, it is stated that this mitigation measure would not be required. I consider this approach to be reasonable. Noting observations of badger usage of the site for foraging, confirmatory surveys for badgers are proposed prior to construction and, if required, appropriate mitigation measures would be put in place. Stormwater would be attenuated and discharged at greenfield runoff rate. Petrol and oil interceptors would be used to remove any potential contaminants from run-off from the site. Any run-off with potential for containing biosolids would be collected and discharged to a public wastewater sewer.

- 12.3.50. During the operation phase the northern site area would be planted with deciduous trees to mitigate loss of foraging areas for bats. Floodlighting would be directed downwards to avoid light spread to cover this proposed planting. As part of the design, during operation, wastewater and run-off within the buildings and any run-off with potential for containing biosolids would be collected and pumped to a public sewer.

Residual Impacts

- 12.3.51. I would agree with the conclusion arrived at, that with mitigation in place, no negative impacts are predicted on the terrestrial biodiversity environment beyond neutral and imperceptible, as a result of the RBSF component.

Monitoring

- 12.3.52. No monitoring is proposed, which is acceptable.

12.3.53. Conclusion on Biodiversity

- 12.3.54. Having regard to the above, I am satisfied that the impacts identified would be avoided, managed or mitigated by measures forming part of the proposed

development, proposed mitigation measures and measures within suitable conditions. I am therefore satisfied that the proposed development would not have any unacceptable significant direct, indirect or cumulative impacts on **Biodiversity**.

12.4. **Land, Soil, Water, Air and Climate**

12.4.1. **Land and Soil - Ringsend WwTP Component**

Introduction and Existing Environment

12.4.2. Subsurface information from geotechnical investigation and published data indicates that the site comprises a minimum of 6.3m of made ground on marine sediments to depths of up to 14.5m below ground level (bgl). During investigations, glacio-marine deposits were encountered below this layer to depths of up to 22.8m bgl. Bedrock comprising weathered limestone with interbedded siltstone and mudstone was encountered at levels between 41.3m and 47.1m bgl.

12.4.3. The made ground encountered on site comprises predominately sand, clay and gravel. It is stated that large proportions of manmade waste material were observed in the geotechnical investigations, containing building waste, tyres, metal, cinders and some hazardous material including asbestos.

12.4.4. No geological heritage sites are located within the proposed WwTP site. Two such areas, North Bull Island and Bottle Quay, are located relatively close.

12.4.5. In terms of hydrogeology, the aquifer classification for the Calp Limestone formation by the Geological Survey of Ireland (GSI) is locally important (Li). There is no detailed vulnerability classification on the GSI database from the site, however, by applying GSI guidance, the vulnerability of the shallow groundwater is assessed as 'high' and the deeper aquifer is assessed as 'low'. Groundwater underlying the site is hydraulically connected to Dublin Bay and responds to tidal changes. It is saline in nature and not considered a suitable groundwater resource. Results for permeability coefficient (k) within the made ground were quite variable, ranging from 1.5×10^{-9} m/s to 2.4×10^{-2} m/s (Causeway, 2012 and 2016).

Potential Impacts

12.4.6. Spoil from excavation works within made ground would comprise an estimated 2,030

cubic metres of hazardous waste material, as well as other made ground with marine sediments, which could lead to negative impacts if not appropriately handled.

- 12.4.7. Piling works proposed have the potential to create vertical pathways in which potentially contaminated soils, sediment and groundwater could migrate downwards. However, as stated above, the underlying aquifer is not a potable groundwater resource.
- 12.4.8. Dewatering abstractions would require sheet piling to prevent groundwater inflows during excavations. However, no significant volumes of water are intended to be abstracted and the dewatering is not therefore considered to result in significant effects on the hydrogeological environment.
- 12.4.9. A 'do-nothing' approach to the Japanese Knotweed would result in a significant permanent negative impact. It is submitted that the control of the Japanese Knotweed would need to be addressed regardless or not of whether the Proposed WwTP Component proceeds.
- 12.4.10. Proposals for the removal of Japanese Knotweed is planned and it would be appropriate to condition same.
- 12.4.11. Potential impacts could occur from accidental spillages of pollutants or hydrocarbons during construction.
- 12.4.12. During the operation phase no direct discharges to the soil or hydrological environment are proposed and as such no significant impacts are anticipated.
- 12.4.13. When compared to the LSOT option, the AGS option would result in significantly less excavations. It is stated that the LSOT would have generated 850,000 tonnes of spoil during construction (and associated c. 70,000 truck movements) over an 18-month period. In addition, the current AGS option allows for the recovery of most of the phosphorous from the wastewater as distinct from the LSOT option in which c. four times as much phosphorous would have been discharged 9km out to sea. Therefore, in terms of waste recovery, the AGS option can be deemed to bring significantly greater benefits.

Mitigation Measures

- 12.4.14. The proposed CEMP is the overarching mitigation embedded in the project design and delivery and, if implemented appropriately, would ensure good construction management and best practice and accordingly minimise the potential for harmful impacts on the land and soils environment.
- 12.4.15. A site-specific waste management plan is also proposed to be prepared by the contractor and agreed in advance of the works. Disposal of unusable soils and waste materials encountered would be the responsibility of the contractor, who would be required to comply with statutory obligations. Three waste facilities with operational licences for acceptance of non-hazardous waste have been identified. Hazardous waste would be required to be exported overseas. Contaminated soils would be removed from the site for safe treatment and therefore no impact is predicted regarding waste disposal. It is stated that a project waste manager would be appointed by the contractor to oversee the implementation and adherence to the plan during the construction phase of the Proposed WwTP Component.
- 12.4.16. The appointed contractor would be required to provide a method statement for the dewatering of excavation below the water table.
- 12.4.17. Management of construction induced settlement would form part of the contract documents and these would include condition surveys and physical monitoring of settlements.
- 12.4.18. In order to mitigate potential impacts associated with the spread of invasive species, contract documents for the proposed WwTP are proposed to include a requirement that a suitably qualified ecologist would be engaged to oversee the implementation of the Invasive Species management plan and monitor the success of the mitigation measures post-construction.
- 12.4.19. No specific mitigation is proposed for the operational phase apart from adherence to best practice.

Residual Impacts

- 12.4.20. I am satisfied that with mitigation in place, no significant negative impacts are likely

to arise on land and soils as a result of the Ringsend WwTP component. As contaminated soils would be removed from site, the predicted impact on the land and soils environment would result in a slight positive permanent impact. The removal of Japanese Knotweed currently on site would also result in a slight positive permanent impact.

Monitoring

12.4.21. No monitoring is proposed for land and soils outside of monitoring for the success of invasive species removal and monitoring for construction induced settlement. I consider this to be acceptable.

12.4.22. **Water - Ringsend WwTP**

Introduction and Existing Environment

12.4.23. This section of my report should be read in conjunction with the section – Principle and water quality set out under the planning assessment above. Section 4 of the EIAR in Volume 3 addresses the water environment at the Ringsend WwTP. The assessment of water focuses on the discharge from the treatment plant and considers the impact that would arise from the increase in flow and the improvement in the effluent quality. Groundwater/hydrogeology is considered separately under Section 7 (Land and Soils) of the EIAR (Volume 3) and I have dealt with this under the heading of Land and Soils above. The principal wastewater discharge point is located in the Poolbeg power station cooling water discharge channel in the Liffey Estuary and a stormwater overflow discharge point is located at Pigeon House harbour.

12.4.24. The required standards for the final effluent discharge are set out in the EIAR and are presented in Table 1 within the planning assessment section above. While the required ELVs relate to total Nitrogen (N) and total Phosphorous (P), water quality legislation and the assessment carried out in the computer modelling considered the parameters DIN and MRP. DIN is related to total Nitrogen as it represents the soluble organic fraction in water, available for biological uptake. Similarly, MRP is related to total Phosphorous representing the soluble organic fraction available for biological uptake. Total N and Total P include insoluble inorganic and soluble organic fractions which are not measured as part of DIN and MRP. The future DIN is

estimated to be between 80% and 90% of Total N and the future MRP is estimated to be between 70% and 80% of Total P.

- 12.4.25. The computer models used in the assessment included DHI MIKE 3 FM model and CEFAS CDPM model. The DHI MIKE 3 FM model is a hydrodynamic model and was used to analyse how the final effluent discharge disperses within the receiving water, while the CEFAS DCPM model was used to analyse the biological response (chlorophyll and macroalgae) to the final nutrients (nitrogen and phosphorous) inputs in the effluent being discharged into the receiving water. The CEFAS DCPM model focused on the Tolka Estuary, as the DHI MIKE3 model identified the Tolka Estuary as experiencing the highest impact from the Ringsend WwTP final effluent discharge. Both models drew on available scientific data and data collected from marine surveys. Water quality in the receiving water is monitored on an ongoing basis by the EPA and Dublin City Council and is therefore well understood. The MIKE 3 model was constructed from available data and refined and calibrated using additional marine survey results. It was then validated by comparing ongoing field sampling of the receiving waters (BOD, DIN and MRP). The DCPM model was calibrated from the boundary conditions identified in the MIKE 3 model at the entrance to the Tolka estuary.

Potential Impacts

- 12.4.26. The main changes in water quality arising from the upgraded Ringsend WwTP would be positive in that there would be a higher quality of treated effluent achieved and a reduction in pollutants released to the water environment.
- 12.4.27. The proposal to omit the LSOT and associated diffuser point 9 km out to sea would mean that there would be no deterioration of water quality at this location.
- 12.4.28. It was assessed through the modelling that as a result of the Ringsend WwTP upgrade, once complete and operational, there is a predicted positive imperceptible impact on the receiving water environment in respect of BOD and SS. In respect of ammonia, there is a predicted positive moderate impact. A reduction in the total DIN load discharged from the Ringsend WwTP is predicted and would be experienced primarily in the Tolka Estuary. The overall impact from the change in DIN discharge is considered positive and imperceptible. The impact of the Proposed WwTP

component in respect of the MRP parameter is also predicted as being positive and moderate.

- 12.4.29. It is also predicted that there would be a positive and not significant impact from the Proposed WwTP Component, in respect of the E.Coli parameter, both during normal operation and during storm events. A neutral impact is predicted on designated bathing areas as a result of E.coli.
- 12.4.30. During the construction phase, in the winter of 2019/2020, as stated above some processes would be removed on a phased basis resulting in reduced treatment capacity and hence a reduction in the final effluent quality is predicted. It is submitted that the nutrient (DIN and MRP) levels are not as critical during the winter months. It is also predicted that there would be a negative imperceptible and temporary impact with regard to the BOD and SS during this period. In terms of BOD, the quality standard is predicted as remaining below the 4 mg/l which is the parameter for 'good status' in transitional waters. This has been rated in the EIAR as having minor or slight significance on water. Similar to my consideration of the impact on recreational water based activities (and as assessed under the heading of population and human health), I would be more inclined to conclude that this impact would be 'moderate' rather than 'slight' in terms of significance on the water environment as it is stated in the EIAR, under the heading of Population and Human Health, that the impact would be largely dependent on overall water quality in the area at the time of the works which is stated to be largely carried out over a winter period but with an overlap of nine months.

Mitigation Measures

- 12.4.31. As the impacts on water quality of the receiving waters are identified as positive, no mitigation is proposed or necessary which, noting the intention of the development is to approve quality of effluent to the required standards is acceptable. I am mindful that there is an expected temporary moderate negative impact during the construction phase arising from the removal of some processes as outlined above over winter 2019/2020. While this could be mitigated by extending the specific works over a longer timescale, I accept the point made regarding the benefit of completing the construction over the intended shorter timeframe would bring positive benefits

earlier in the timeline that would outweigh any negative impacts were the timeline to be extended.

Residual Impacts

- 12.4.32. The residual impact of the Proposed WwTP component with respect to water quality would clearly be significantly positive in the long-term, arising from the improved final effluent and the proposed development would ensure the upgraded plant would be consistent with the UWWTD. In addition, the development would serve to protect the status of the receiving waters as required under the WFD and the BWD. As stated above, during the winter of 2019/2020 there would be a moderate impact on water quality for a short period during the period of decommissioning tanks. No long-term impacts beyond positive impacts are anticipated to arise because of these works. Accordingly, a short term moderate impact is acceptable.

Monitoring

- 12.4.33. The final effluent would be monitored in accordance with the terms of the Wastewater Discharge Authorisation (EPA Licence D0034-01) for the plant and this licence would likely be reviewed. Beyond this, no additional monitoring is proposed, which I consider is acceptable.

12.4.34. **Air and Climate - Ringsend WwTP component**

Introduction and Existing Environment

- 12.4.35. Baseline data and data available from similar environments indicates background concentrations in the vicinity of the Ringsend WwTP (2017) as follows:

- Nitrogen dioxide (NO₂) = 32 µg/m³
- Particulates (PM₁₀) = 15 µg/m³
- Particulates (PM_{2.5}) = 10.05 µg/m³
- Benzene = 1 µg/m³
- Carbon Monoxide (CO) = 0.44 mg/m³

- 12.4.36. These all lie below the National and EU ambient air quality standard limits. Records

on prevailing winds were examined from the nearest representative weather station at Dublin airport, located 10 km north of the site.

Potential Impacts

- 12.4.37. Dust deposition arising from the construction phase has the potential to cause temporary slight local impacts at nearby residential properties within a separation distance of up to 200m. The closest residence to the main construction works is c.950m and I am satisfied that the residential receptors are unlikely to be affected by dust emissions from the WwTP site.
- 12.4.38. Vehicles transporting material also have potential to lead to dust generation along haul routes to and from the site. Four residential receptors were identified and modelled to establish the air quality and predicted impacts. Their locations are shown on Figure 8.2 within Section 8 of Volume 3 of the EIAR. I am satisfied that as submitted by the applicant, receptor R03 at Seán Moore Road would be representative of residential development that may be delivered at the Poolbeg SDZ.
- 12.4.39. The maximum impact identified is a predicted increase of 4.6% of NO₂ at receptor R2, deemed to be a slight adverse impact during construction. The potential impact is considered to be insignificant at all other receptor locations. The predicted impact of the proposed WwTP component during the construction phase with regard to PM₁₀ and PM_{2.5}, CO and Benzene is predicted to be imperceptible, short-term and reversible at all four of the receptors assessed and the impact would inevitably decrease post completion of construction works.
- 12.4.40. During the operation phase, there is potential for a number of emissions to be released to the atmosphere. Emissions of NO_x (NO + N₂O) from the nitrifying and denitrifying cycles within the plant could cause an impact to local air quality. However, it is stated that these emissions currently occur on site without issue and with the improved AGS process and improved process control, this would limit the volume of NO_x released.
- 12.4.41. In the operation phase, impacts on air quality would potentially arise as a result of increased traffic volumes which could lead to increased quantities of air pollutants. This impact has been assessed by modelling emissions from the traffic generated. In

this regard impacts of the proposed WwTP component during operation from release of air pollutants (NO₂, PM₁₀ and PM_{2.5}, CO and Benzene) are predicted to be imperceptible.

- 12.4.42. Greenhouse gas emissions produced during construction phase of the proposed WwTP are expected to account for 0.03% of Ireland's EU 2020 target. The AGS option is predicted to give rise to a lower emissions during construction particularly because of lower level of excavations and HGV movements and associated energy consumption.
- 12.4.43. During operation, an overall comparison of power consumptions for both the LSOT and AGS options found that the energy consumption during operation is expected to be comparable for both options. In terms of energy management, it is stated that the WwTP currently operates Ringsend WwTP to energy management standard ISO 50001 and would continue with improvements to achieve economic and energy efficiency including the recovery of renewable energy.

Mitigation Measures

- 12.4.44. During construction, no mitigation is proposed apart from adherence to good practice and the overarching CEMP, including dust minimisation measures. No site-specific mitigation measures are required during the operational phase of the proposed Ringsend WwTP component.

Residual Impacts

- 12.4.45. The assessment concludes that once dust minimisation measures are employed during construction, no negative residual impacts are predicted on the Air and Climate environment as a result of the Ringsend WwTP component. Neither are any residual impacts anticipated during the operational phase of the Proposed WwTP Component. I am satisfied that with the Ringsend WwTP component in place, air pollutants in the local area would be below the National and EU ambient air quality standard maximum limits.

Monitoring

- 12.4.46. During the construction phase, dust deposition monitoring using the Bergerhoff Gauge is proposed such as to ensure dust mitigation measures are adequately

controlling emissions. The TA Luft limit value of 350 mg/m²/day would be applied during the monitoring period of between 28 - 32 days. No monitoring of dust is proposed during the operational phase, which, given that all biosolids would be stored indoors, is acceptable.

12.4.47. **Noise and Vibration - Ringsend WwTP component**

Introduction and Existing Environment

12.4.48. Noise and Vibration are considered together under Section 9 of Volume 3 of the EIAR. The residential receptors most sensitive to noise are identified as including houses along Strand Road (R131), which are located approximately 950m to 1,250m from the nearest boundary of the WwTP. The assessment considered the impacts on these receptors and also Poolbeg West SDZ lands, which have been identified for residential development, where the nearest receptor (R03) would be located 600m from the construction compound (C1). BS 5228-1:2009+A1:2014 sets out guidance on permissible noise levels relative to the existing noise environment and based on this, the proposed threshold for the Ringsend WwTP proposal would be 70 L_{Aeq(1 hour)} dB (daytime), 65_{Aeq(1 hour)} dB (evening) and 55_{Aeq(1 hour)} dB (night-time) at the nearest noise sensitive receptor.

12.4.49. By reference to BS8233:2014, during the operational phase, the following noise limits would apply at the façades of residential properties closest to the Ringsend WwTP project:

- Daytime (07:00 to 23:00 hours) 55 dB_{L_{Aeq,16hour}};
- Night-time (23:00 to 07:00 hours) 45 dB_{L_{Aeq,8hour}}.

12.4.50. Vibration was considered across the category of human comfort and cosmetic damage. The allowable vibration limits were applied to nine residential receptors, marked R01 to R08 and R11 on Figure 9-2 Vibration Sensitive Receptors within Section 9 of Volume 3 of the submitted EIAR. Vibration impacts on Pigeon House Fort (a protected structure immediately partially within the site) and Old Pigeon House Hotel (a protected structure located further north) were also considered.

Potential Impacts

12.4.51. Typical construction noise is predicted to arise during the construction phase, which

due to the size of the site and the scale of the works, could be significant during daytime. Construction hours proposed are 08:00 to 18:00 for week days and from 08:00 to 13:00 on Saturdays. These are standard and acceptable. The predicted external construction noise levels are predicted to fall within the relevant noise criteria over the construction phase during both the capacity upgrade and the proposed retrofit works to incorporate AGS technology.

- 12.4.52. The level of construction traffic noise would be significantly below the prevailing existing daytime noise levels and just slightly above evening time noise levels. Overall, the impact of construction-related traffic on public roads is regarded as insignificant.
- 12.4.53. Noting the distance of the piling works from the closest sensitive structure (the wall of Pigeon House Fort), the expected vibration levels are estimated to be significantly below the limits recommended to prevent cosmetic damage to sensitive buildings or structures. Vibration impacts arising out of construction traffic are deemed to be insignificant.
- 12.4.54. For the operational phase, noise models predict noise levels would be in the region of 15dB to 35dB at nearby residential receptors. Such levels are at or below existing background noise levels and well below the 45dB night time threshold set out in the British Standard BS8223:2014.
- 12.4.55. During the operation phase, the proposed AGS reactor block is stated would provide additional acoustic screening to the existing plant items on the site. It is envisaged that a reduction in operational noise level of between 3 and 5dB could result once the reactor block is in place and the impact of the proposed WwTP component during operation can therefore be considered slight positive. Noise associated with traffic during operation is assessed as insignificant.
- 12.4.56. No impacts are expected to occur as a result of vibration during operation.
- 12.4.57. Discussion on the potential noise impacts of the development on local fauna is dealt with above under the heading Biodiversity – Terrestrial.

Mitigation Measures

- 12.4.58. During construction, the appointed contractor would be required to prepare and adhere to a Noise and Vibration Management Plan (NVMP) which would include measures to manage and remove or reduce any significant noise and vibration impacts arising at construction stage.
- 12.4.59. Mitigation for the operation phase would include a number of items, such as selection of 'low noise' equipment and plant, vibration isolation mounts and appropriate siting of fixed plant.

Residual Impacts

- 12.4.60. The assessment concludes that once best practice measures are employed during construction and operation phases, noise and vibration generated would fall within acceptable limits which is acceptable. For further assurances in this regard, these should be regulated by condition.

Monitoring

- 12.4.61. The assessment concludes with a recommendation that the appointed contractor monitor levels of noise and vibration at nearby sensitive locations and/or development site boundaries.

- 12.4.62. **Odour - Ringsend WwTP component**

Introduction and Existing Environment

- 12.4.63. It is well reported that the Ringsend WwTP caused an odour nuisance to the local community in the early years. More recently, a number of measures were put in place to control odour and this coupled with odour management are stated to have been successful in significantly reducing odour nuisance at the plant.
- 12.4.64. It is stated that further works are ongoing including the recent provision of the three new Bord na Móna Odour Control Units (OCUs).

Potential Impacts

- 12.4.65. The potential odour impact is assessed by reference to two standards which are:

1. **Ringsend Project Odour Goal** – This standard is specific to the Ringsend WwTP and requires that odour emanating from the site shall not exceed $10 \text{ ou}_E/\text{m}^3$ as the 99.4th percentile of hourly averages at the boundary of the Ringsend WwTP site. The plant storm tanks are not included in the assessment of this odour goal.
2. **Ringsend Odour Target** - This is a general standard and relates to EPA Guidance in which an odour limit of $3 \text{ ou}_E/\text{m}^3$ is set at sensitive receptor locations on a 98th percentile of hourly averages. Once odour concentrations lie below this level, odour annoyance is unlikely to occur. The plant storm tanks are included in the assessment of this odour goal.

- 12.4.66. The likely odour to occur was assessed using the United States Environmental Protection Agency (US EPA) approved AERMOD model, which is a dispersion model based on the Gaussian theory of plume dispersion. I am satisfied that this method is widely used in Ireland and internationally for assessment of odour and is appropriate for the current proposals.
- 12.4.67. It is reasonable to accept the applicant's assertion that there is no likely significant odour impact anticipated as a result of construction activity. Post construction, the assessment concludes that the maximum predicted concentrations at the site boundary would fall between 6.20 and 7.30 ou_E/m^3 , as the 99.4th percentile of hourly averages, which is less than 75% of the assessment criterion 'Project Odour Goal' of $10 \text{ ou}_E/\text{m}^3$. The improvements in odour due to the expected reduced odour emission from the open sources is predicted to reduce the odour concentration by between 5% and 13% compared to the future 'baseline/without project' scenario.
- 12.4.68. The results of the odour assessment found that the predicted odour concentrations at all areas of long-term public exposure and potential areas of future residential use, including the Poolbeg West SDZ, would lie below the adopted limit of $3 \text{ ou}_E/\text{m}^3$ as the 98th percentile of hourly averages. The area occupied by the construction compound C1, included in the Poolbeg West SDZ is designated for mixed uses, predicted to have an odour concentration of between 1 and 8.5 ou_E/m^3 as the 98th percentile of hourly averages. These lands are stated to be in the ownership of Dublin Port and based on examination of the Dublin Port Masterplan, the lands shown are currently proposed to be redeveloped to support cargo handling activities.

The primary planned use of these lands is set out in the masterplan as one which would provide sufficient land capacity for the throughput of the new 600-metre-long container terminal quay wall. In its report to the Board on the current application, Dublin City Council SDZ team state that the lands are proposed to be utilised for cargo storage. I am satisfied that such a use would not be sensitive to odour and is well understood in advance of its development.

- 12.4.69. It is also of particular relevance to note that in comparing the implementation of the proposed WwTP component scenario to the future 'without project' scenario, the proposed WwTP component would result in an imperceptible positive impact as a result of a slight reduction in odour concentration at existing receptor locations.

Mitigation Measures

- 12.4.70. It is submitted that the principles of the site Odour Management Procedures (OMP) would be followed to include odour management for the construction phase of the new processes.
- 12.4.71. During operation, the site OMP would be updated to reflect odour management of new processes and identification of new odour emission sources for operational, management and maintenance procedures. Certain new sources associated with the upgrade would be covered and treated.

Residual Impacts

- 12.4.72. It has been demonstrated through the assessment that once mitigation and best practice measures are employed during construction and operation, negative impacts are not predicted on the environment as a result of odour emanating from the Ringsend WwTP upgrade.
- 12.4.73. Dublin City Council's Parks and Landscape Service considered the issue of odour impact to the adjacent nature reserve and coastal recreational area and concluded that as the facility is designed to achieve appropriate odour standards and that odour nuisance is not expected to occur. I am satisfied that this has been determined through assessment.

Monitoring

12.4.74. It is proposed to monitor odour sources at the Ringsend WwTP to ensure the effective management of the facility including olfactometry survey of elements, of the converted AGS reactors.

12.4.75. **Land and Soils - RBSF component**

Introduction and Existing Environment

12.4.76. Site investigations carried out in 2001 and 2017 revealed that the RBSF site comprises cohesive glacial tills underlain by sand/gravel on silt (with organics) on a layer of made ground. Bedrock comprising weathered limestone was encountered at depths between 13m and 22.3m bgl. No contaminated soil was encountered at the site. Huntstown Quarry to the south west of the site is a county geological site, designated because the limestone quarry face exposes the base of Tober Colleen, an important geological formation.

12.4.77. According to the GSI mapping, the aquifer classification is Li (locally important). The water quality status in the area is rated as 'good' and it is not considered at risk of deterioration. Groundwater varies from 2.6m to 10.1m in depth below ground across the site with groundwater flows towards the south west and stated to be influenced by the dewatering activities in the Huntstown quarry.

12.4.78. The GIS groundwater mapping classifies the groundwater vulnerability as 'Extreme' (<3m of overburden), though it is stated that the bedrock aquifer is in fact greater than 10m of low permeability glacial till and, accordingly, can be reclassified as 'low', which indicates that infiltration is low and runoff is high. There are no groundwater supply wells within a 10km radius of the site. It is submitted that the site has been determined as not suitable for quarry reserves.

Potential Impacts

12.4.79. There would be no alteration to the existing groundwater flow regime or impact on the available groundwater resource as a result of the development and I am satisfied that no such impacts would therefore arise.

12.4.80. Unsuitable material excavated for foundations and site levelling would be reused on

site for bunding and landscaping. Accordingly, no significant impacts are likely as a result of earthworks.

- 12.4.81. During construction and as a result of excavations, there is potential for an increase in aquifer vulnerability due to a reduction in depth of overburden in those construction and excavation areas and this may lead to potential for migration of contaminants (from accidental spills) to the underlying bedrock aquifer. However, due to the thickness of overburden, stated to be 19.3 m - 22.3 m, in the vicinity of the areas where excavations would occur and the low groundwater vulnerability classification based on site specific information, I am satisfied with the conclusion put forward by the applicant that the impact arising out of a reduction in overburden depth on the groundwater quality would be imperceptible.
- 12.4.82. During the operational phase, the development is not predicted to impact on the geological heritage site within Huntstown quarry. The impact on the groundwater resource due to loss in recharge area would be imperceptible. The impact of accidental spillages on soils is also assessed as imperceptible.
- 12.4.83. The development would also lead to indirect positive effects regarding land spreading by providing storage for periods when land spreading is not permitted (due to seasonal restrictions) and therefore ensuring avoidance of adverse environmental impacts on receiving waters in accordance with Nutrient Management Plans.

Mitigation Measures

- 12.4.84. For the construction phase, the overarching mitigation measure is the implementation of a CEMP, which would ensure good construction management and protection of the environment. A site-specific waste management plan would be required to be prepared and adhered to by the contractor. Measures set out in the CIRIA guidance document on 'control and management of water pollution from construction sites' are stated to be adhered to. Suitable excavated materials would be utilised for landscaping and screening bunds. No operational impacts are anticipated on the land, soils and hydrogeological environments and, as such, no specific mitigation is proposed with regard to the RBSF component.

Residual Impacts

- 12.4.85. I am satisfied with the conclusion drawn on the applicant's assessment that with mitigation in place, no negative impacts beyond imperceptible are predicted on land and soils for either the construction or operation phases of the RBSF component.

Monitoring

- 12.4.86. No monitoring is proposed, which I am satisfied is acceptable.

12.4.87. Water - RBSF component

Introduction and Existing Environment

- 12.4.88. A tributary of the Huntstown Stream, which itself is a tributary of the River Ward, borders the site to the west and south. The drainage from the Huntstown Quarry, located to the south west of the site, also feeds into this network. These are shown in Figure 4-1 (Proposed RBSF Site Location) within Section 4 of Volume 4 of the EIAR. There is a surface water pipe traversing the site in an east-west direction which drains an adjoining site. It is planned to relocate this pipe to allow for the development of the RBSF facility.
- 12.4.89. Water samples were taken from the stream adjoining the western boundary of the site to provide baseline data on the water quality upstream and downstream of the proposed discharge point for the surface water runoff from the proposed RBSF Component. The analysis revealed elevated calcium and sulphate concentrations, which it states is reflective of activities at Huntstown quarry, including cement leaching. It is concluded that the stream is already quite polluted at the upper perimeter of the proposed RBSF component site due to upstream pressures. This is at variance to the 'good' status assigned under the WFD, which it is stated is based on samples collected in the Ward River at Owens Bridge, located c. 1.7km downstream to the north east.

Potential Impacts

- 12.4.90. In the absence of control measures, potential impacts could arise during construction from an increase in suspended solids and pollutants reaching watercourses. During construction, no hydromorphological impacts are predicted on streams or rivers as

there are no proposals for excavations within or altering the receiving stream. During operation, it is submitted that no impacts would arise from fluvial flooding as the site is located in Flood Zone C (based on the Flood Risk Guidelines) and also no risk would arise from pluvial flooding as the drainage design would include attenuation measures resulting in no increase in the risk of pluvial flooding from the site. I have dealt with the issue of flood risk in greater detail within the Planning Assessment section of this report.

12.4.91. The main impact that could potentially arise on the receiving stream would be as a result of accidental spillages of chemicals, hydrocarbons or other contaminants entering the drainage system and discharging to the stream thereafter. Given the inherent control measures including hydrocarbon interceptors, silt traps/sedimentation and attenuation prior to discharge to the watercourse, impacts would be no greater than imperceptible in significance.

12.4.92. During operation, in the event of a fire, the firefighting water could become contaminated and enter the receiving water through the drainage system. The significance of this potential impact is predicted as slight negative and temporary in duration.

Mitigation

12.4.93. In the construction stage, the overarching measure proposed is the adherence to the site-specific CEMP and standard best practice such that would protect water quality. It is submitted that measures set out in the CIRIA on the 'control and management of water pollution from construction sites' would be implemented and that construction works in the vicinity of the stream on the western boundary of the site would be undertaken in accordance with the requirements of the IFI 'Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters' (2016).

12.4.94. During operation, the drainage has been designed to follow best practice and includes mitigation measures embedded in the design in the form of attenuation, adoption of SuDS and incorporation of hydrocarbon interceptors to capture hydrocarbons / chemicals that might otherwise enter the adjoining receiving water. A shut-off valve is proposed to be installed on the outlet to the stream, which would be used to contain any contaminated runoff in the event of a major environmental

accident on site. In the event of a fire, water used for fire-fighting would be contained in the attenuation storage system.

Residual Impacts

- 12.4.95. I am satisfied that the residual impact on the hydrology and the receiving water environment following the implementation of this mitigation measure would be neutral and imperceptible.

Monitoring

- 12.4.96. No monitoring is proposed, which I am satisfied is acceptable.

- 12.4.97. **Air and Climate - RBSF component**

Introduction and Existing Environment

- 12.4.98. Baseline data and data available from similar environments indicates background concentrations in the vicinity of the RBSF as:

- Nitrogen dioxide (NO₂) = 29 µg/m³
- Particulates (PM₁₀) = 18 µg/m³
- Particulates (PM_{2.5}) = 11.9 µg/m³
- Benzene = 1 µg/m³
- Carbon Monoxide (CO) = 0.5 mg/m³

- 12.4.99. These all lie below the National and EU ambient air quality standards limits. Records of prevailing winds were examined from the nearest representative weather station at Dublin Airport, located 4.5 km east of the site.

Potential Impacts

- 12.4.100. Dust deposition arising from the construction phase has the potential to cause temporary slight local impacts at nearby residential properties within a 200m radius from the site. At the time of the applicant's assessment there were three residential properties located less than 50m from the proposed site along with two commercial premises located within 300m of the site. The risk of dust impacts arising from the

proposed RBSF component was assessed as being no greater than low. It is noted in the EIAR that subsequent to the assessment of Air and Climate, two of the three residential receptors (houses) were demolished and a residential development comprising eight houses and community building had since commenced. I accept, that as submitted by the applicant, this change would not alter the outcome of the assessment carried out.

- 12.4.101. Greenhouse gas emissions produced during the construction phase for the RBSF are expected to account for 0.00075% of Ireland's EU 2020 target and, therefore, impacts are stated would be imperceptible.
- 12.4.102. In the operational phase, I would agree that the transport of biosolids material would give rise to the greatest source of dust emissions with potential to impact on the nearby sensitive receptors including the existing houses and the residential development that is under construction. As the internal access roads are proposed to be paved, the overall risk of dust soiling is predicted to be low.
- 12.4.103. It is predicted that any potential impacts to climate as a result of the proposed operation phase of the RBSF component would be imperceptible. I note that solar panels are proposed to be incorporated on the roof of one of the buildings and would generate substantial portion (c.40%) of the energy requirements for the proposed RBSF component.

Mitigation Measures

- 12.4.104. During construction, a schedule of dust control measures has been incorporated into the CEMP and the adherence to the measures of the CEMP would be a requirement. Vehicles delivering biosolids material would be enclosed and the vehicles would have restricted speeds. Roads outside of the site are stated would be cleaned on an ongoing basis, as necessary.
- 12.4.105. During the operation phase, there is potential for dust emissions as a result of the storage of biosolids material. Measures taken to reduce the risk of dust impacts off-site would include loading and unloading of biosolids within sealed buildings and, if necessary, the establishment of a wheel-wash facility.
- 12.4.106. The impact of the proposed RBSF component on climate would be imperceptible,

therefore, no site-specific mitigation is proposed, which based on my assessment, is acceptable.

Residual Impacts

12.4.107. The assessment concludes that once dust minimisation measures are employed during construction and operation, impacts on the Air and Climate environment have been assessed to be insignificant as a result of the RBSF component. In addition, there are no residual impacts to air quality or climate envisaged as a result of the operation of the proposed RBSF Component.

Monitoring

12.4.108. During the construction phase of the Proposed RBSF Component monitoring of construction dust deposition would be put in place to ensure emissions are controlled.

12.4.109. **Noise and Vibration - RBSF component**

Introduction and Existing Environment

12.4.110. Baseline data for noise relating to the RBSF site was found to be typical of a suburban setting and close to a busy regional road network and aircraft flightpaths. The nearest noise sensitive receptors include the house and the residential units under construction to the south east of the site.

Potential Impacts

12.4.111. With employment of best practice, construction noise is expected to fall within acceptable noise limits set out in BS 5228-1:2009+A1:2014. Noise impact is therefore considered to be insignificant to slight negative and short term. It is submitted that construction related traffic noise would lie below the prevailing road traffic noise levels.

12.4.112. Vibration during the construction phase is not expected to result in any perceptible changes at the nearest receptors.

12.4.113. Increase in noise levels during the operation phase is predicted to be less than one dBA, which can be rated as insignificant.

12.4.114. Vibration during the operational phases is not expected to result in any perceptible changes at the nearest receptors and has been assessed as insignificant.

Mitigation Measures

12.4.115. All construction works would be required to be completed in accordance with best practice standards.

12.4.116. The contractor would be required to prepare and adhere to a Noise and Vibration Management Plan (NVMP), which would deal with measures concerning noise and vibration arising from the construction phase.

12.4.117. Noise would be required to meet the following limits at the nearest sensitive receptor during construction:

- 70 L_{Aeq} (1 hour) dB – Daytime (07:00 – 19:00) and Saturdays (07:00 – 13:00)
- 65 L_{Aeq} (1 hour) dB – Evening (19:00 – 23:00)
- 55 L_{Aeq} (1 hour) dB – Night time (23:00 – 07:00)

12.4.118. Mitigation for the operation phase would include a number of items such as selection of 'low noise' equipment and plant, vibration isolation mounts and appropriate siting of fixed plant. During the operational phase, noise arising from the facility would be required to achieve the following limits, when measured at the nearest noise sensitive receptor:

- 55 dB $L_{A,T}$ Daytime (07:00 to 19:00 hrs);
- 50 dB $L_{A,T}$ Evening (19:00 to 23:00 hrs);
- 45 dB $L_{A,T}$ Night-time (23:00 to 07:00 hrs).

Residual Impacts

12.4.119. The assessment concludes that once mitigation and best practice measures are employed during construction and operation, no negative impacts beyond imperceptible are predicted on the environment from noise and vibration emanating from the RBSF component as it is predicted that levels would all fall within appropriate limits.

Monitoring

12.4.120. A recommendation is put forward that the appointed contractor would monitor levels of noise and vibration at nearby sensitive locations and/or the proposed RBSF component site boundaries during the construction phase and at commissioning stage.

12.4.121. **Odour - RBSF component**

Introduction and Existing Environment

12.4.122. The area immediately surrounding the proposed RBSF site including the residential properties would be the most sensitive receptors to odour impacts. The wider area is largely considered to be free from odour-generating sources.

Potential Impacts

12.4.123. I am satisfied that there would not be any noticeable odour emissions during the construction phase of the development. All potential odour impacts are limited to the operational phase.

12.4.124. The material to be stored is that of treated, de-watered and stable biosolids in a manner that is highly regulated. It would be stored indoors under a controlled environment.

12.4.125. The applicant's odour assessment concluded that the odour effects would not be significant as odour concentrations at all receptor locations were identified as falling below $3 \text{ ou}_E/\text{m}^3$ as the 98th percentile of hourly averages.

Mitigation Measures

12.4.126. I am satisfied that no mitigation is required for the construction phase. During operation, the facility would employ an odour management regime that would ensure that physical systems and operational practices minimise the potential for odour emissions.

Residual Impacts

12.4.127. No residual impacts are predicted for the construction stage. During operation, the adopted odour annoyance criterion of $3 \text{ ou}_E/\text{m}^3$ as the 98th percentile of hourly

averages is not predicted to be exceeded at any receptor location, which is acceptable.

Monitoring

12.4.128. It is proposed to monitor odour sources at the RBSF during the operational phase to ensure that actual emissions do not exceed those predicted within the assessment. The monitoring would include Olfactometry testing.

12.4.129. **Conclusion on Land, Soils, Water, Air and Climate**

12.4.130. Having regard to the above, I am satisfied that the impacts identified would be avoided, managed or mitigated by measures forming part of the proposed development, proposed mitigation measures and measures within suitable conditions. I am therefore satisfied that the proposed development would not have any unacceptable significant direct, indirect or cumulative impacts on **Land, soils, water, air and climate**.

12.5. **Materials Assets, Cultural Heritage and Landscape**

12.5.1. **Material Assets - Ringsend WwTP**

Introduction and Existing Environment

12.5.2. The land around the Ringsend WwTP site comprises industrial and storage facilities. The Dublin Waste to Energy Plant lies immediately west of the site. The ESB power generation plant and Synergen Dublin Bay Power Plant are located proximate to the Ringsend WwTP. Dublin Port is located across the Liffey and existing passenger ship facilities at Alexandra Basin are currently being upgraded as part of a redevelopment programme.

12.5.3. The Poolbeg Peninsula is an important amenity used by members of the public for walking, cycling and water-based leisure activities. The Great South wall is a particular focus of leisure activity in the area. Clanna Gael Fontenoy GAA club, situated at Seán Moore Park lies c.1km from Ringsend WwTP. Irishtown athletics track and stadium are also close by, c.1.4km to the west. North of the bay there are recreational facilities and clubs in the Clontarf/Sutton/Howth area. Dublin Bay has become popular for water-based activities.

- 12.5.4. As stated earlier, the neighbouring site has been designated as the Poolbeg West 'Strategic Development Zone' (SDZ). Irishtown, Ringsend and Sandymount villages are the main residential and commercial areas within a two kilometre radius of the site. There are no residential areas or retail properties within 500 metres of the site.
- 12.5.5. The site is serviced by water, electricity, telecoms and gas utilities. The National Oil Reserves Agency manages Ireland's emergency oil stocks, through holding tanks at Pigeon House road, c.300 metres from the perimeter of Ringsend WwTP site.
- 12.5.6. The existing road network includes: Pigeon House road, Shellybanks Road, Whitebank road, South Bank road, R131 Seán Moore road, York Road, R131 East Link Bridge, North Wall Quay and East Link road. Traffic is described and impacts relating to traffic are assessed under the heading of Traffic, as set out in my Planning Assessment above.

Potential Impacts

- 12.5.7. During construction, the road network surface is predicted as experiencing a moderate short-term negative impact due to wear of road surfaces and periods of roadworks as a result of additional construction traffic anticipated. Impacts on the road network during operation has been assessed as having no greater than imperceptible impact.
- 12.5.8. Potential negative impacts on existing public utilities could arise due to the severing of existing utility networks (including electricity or gas) during the construction phase of the Proposed WwTP component, thus disrupting supply to the WwTP and to the surrounding facilities.
- 12.5.9. During operation, I am satisfied that potential for impacts on material assets would be no greater than imperceptible.
- 12.5.10. When completed the upgrade of the Ringsend WwTP would result in a significant long term positive impact, because of the provision of increased wastewater treatment capacity and the improved quality of treated effluent, thus facilitating future sustainable growth of the Greater Dublin Region.

Mitigation Measures

- 12.5.11. Mitigation measures would include the preparation and adherence to a Traffic Management Plan for the construction phase. Any damage arising to the road network is stated would be addressed in conjunction with Dublin City Council roads department. The appointed contractor would be required to engage with public utility providers in advance of any excavation in the vicinity of such services.
- 12.5.12. Apart from preparation of method statements to ensure public utilities are protected and communication with public utility providers ahead of construction, I would agree that no specific mitigation is required during the operation phase. Method statements would be developed during the construction phase to ensure underground services are well understood in advance of onsite excavations.

Residual Impacts

- 12.5.13. Following the implementation of mitigation measures, the residual impacts of the material assets arising out of the construction and operation phases of the proposed Ringsend WwTP component are stated to be no greater than imperceptible.
- 12.5.14. Significant positive remaining impacts on wastewater treatment would result.

Monitoring

- 12.5.15. No monitoring is proposed and I am satisfied that there is no such monitoring requirement in terms of material assets.
- 12.5.16. **Cultural Heritage - Ringsend WwTP component**

Introduction and Existing Environment

- 12.5.17. One protected structure, RPS Ref. 6794 (remnants of Pigeon House Fort) lies partially within the Ringsend WwTP site. There are three others in the vicinity of the site (the former Pigeon House Hotel RPS Ref. 6795, Pigeon House power station RPS Ref. 6796 and Great South Wall RPS Ref. 6798).
- 12.5.18. The area around Pigeon House Harbour to the east of the site is designated as a Conservation Area under the Dublin City Development Plan. A small area located between the principal WwTP and the storm tanks to the north is a designated Zone

of Archaeological interest.

- 12.5.19. There are two Recorded Monuments located partly within the Ringsend WwTP site which include DU019-027 (Dublin South City Blockhouse) and DU019-029002 (Dublin South City Sea wall).

Potential Impacts

- 12.5.20. Construction activities including excavations and vibrations from driving piled foundations could impact on Pigeon House Fort and Pigeon House Harbour. There is also potential to cause accidental vehicular damage to the structure of the Fort Wall. The access works within the interior of the Pigeon House Fort would require topsoil stripping for the access road and have the potential to uncover material associated with the fort. In addition, cranes would be located within the footprint of Pigeon House Fort and would require the placement of hardstanding materials which could impact on subsurface archaeological material. During construction, works in the area of construction compound C3 has the potential to cause accidental vehicular damage to a paved area east of Pigeon House power station.
- 12.5.21. The development is proposed to omit the construction of the undersea tunnel / LSOT and therefore, I am satisfied that no underwater survey is required for the current proposal. No potential impacts on cultural heritage during the operational phase of the proposed WwTP component have been identified.

Mitigation Measures

- 12.5.22. During construction, vibration from piling would not exceed allowable vibration limits for sensitive buildings. The walls of Pigeon House Fort would be protected with concrete barriers during construction. The site preparation within the interior of the Pigeon House Fort, including topsoil stripping for the access road and hardstanding areas, would be subject to archaeological monitoring which I propose should be strengthened by way of a planning condition.
- 12.5.23. As no impacts on cultural heritage are predicted during the operational phase, no mitigation measures are required or proposed, which is acceptable.

Residual Impacts

- 12.5.24. The assessment concludes that once mitigation measures are employed during the construction phase, no negative impacts are predicted on the cultural heritage as a result of the Ringsend WwTP component.

Monitoring

- 12.5.25. Certain aspects of construction work that could impact on Pigeon House Fort would be monitored by a suitably qualified archaeologist, as outlined under the mitigation measures above. Beyond this, no further monitoring is proposed.

12.5.26. **Landscape – Ringsend WwTP**

Introduction and Existing Environment

- 12.5.27. The proposed Ringsend WwTP component is located on the site of the existing Ringsend WwTP, which is on the Poolbeg peninsula. The site is of a low landscape and visual sensitivity and does not have any specific landscape or visual-related designations, however and as set out above, the peninsula is important as an amenity and recreational resource. The proposal would result in an extension to the existing wastewater utility. The existing facility is more readily visible from local views, including those from the nature park south of the plant and those from Shellybanks Road and Shellybanks beach to the east. A planted belt on a mound of c.3m high provides for a landscape and visual buffer along the majority of the eastern and northern boundaries of the Ringsend WwTP site.

- 12.5.28. Dublin Bay has been awarded Biosphere Designation by UNESCO and the site is located in an area known as a Transition Zone. No national landscape or visual designations pertain to the site. There are multiple policies and objectives contained in the Dublin City Development Plan 2016-2022 concerning landscape and visual amenities, including policies to maintain the character of the coastline and Dublin Bay.

Potential Impacts

- 12.5.29. Construction activity would be most visible from local areas adjoining the site. There would be views of construction activity and cranes during the construction phase,

which is planned for up to a 10-year period. Construction activities are normal in this area and I am satisfied that in terms of landscape and visual impacts, these can be rated for the most part as slight short-term impacts at a local level along the adjoining public roads. The use of the southern construction compound area, C1, could give rise to temporary slight to moderate landscape and visual impacts to Irishtown Nature park to its south. The formation of a new entrance off Pigeon House Road would require the removal of a small area of semi-mature planting, which I consider would give rise to slight visual impact at a local level. Moving away from the site, the proposed development would result in imperceptible landscape and visual impacts.

- 12.5.30. During the operation stage, new structures would be consistent with the character of the existing development. Some new structures including the proposed phosphorous facility measuring c. 40m x 20m x 20m in height would be visible from Irishtown Nature Park and from Shellybanks Road/Beach. I have examined the photomontages presented from nine viewpoints. I am satisfied that where views of the development would be discernible, these would continue to be consistent with the current WwTP facility. The site is for the most part characterised by heavy industrial and port uses and the proposed WwTP component would not have any other direct impacts on landscape or visual character of the area.

Mitigation

- 12.5.31. During construction, screening is proposed to be erected/maintained in place on the southern and eastern site boundaries and around temporary compounds, which I am satisfied would also serve as a security barrier. Existing trees and shrub planting located along Pigeon House Road is proposed to be retained and protected. Additional shrubs and trees would be added in accordance with a landscape plan and I propose that such a requirement would be attached by way of a planning condition in the event of a grant of planning.
- 12.5.32. Following construction, all construction compound areas are stated would be required to be fully reinstated.
- 12.5.33. For the operational phases, proposed landscape works would be maintained and replaced as necessary.

Residual Impacts

- 12.5.34. It is concluded in the assessment that once planting is reinstated and matures, the residual landscape and visual effects would be imperceptible in the wider area post construction. Locally, some degree of visual change would be discernible, however, this would continue to be consistent with the existing visual environment.
- 12.5.35. I would therefore conclude that the landscape and visual impact resulting from the proposed development would be imperceptible and acceptable.

Monitoring

- 12.5.36. No monitoring is proposed.

12.5.37. **Material Assets - RBSF**

Introduction and Existing Environment

- 12.5.38. The area in the vicinity of the proposed RBSF is within a mix of agricultural and industrialised areas, interspersed with commercial and residential properties, including those under construction.
- 12.5.39. Public utilities such as water, telecoms and partially developed foul and surface water drainage networks exist on the site and both a 38 kV and a 110 kV electricity supply lines traverse the site. A gas transmission line has been completed to serve the adjacent Huntstown Power station, but this line lies outside of the RBSF site. The site is 1.5 km west of Dublin Airport. Recreational facilities and amenities within the immediate area are limited and include the Ward River, three golf clubs and St. Margaret's GAA club. Swords lies c.10 km from the site and Ashbourne is c.12 km from the site.

Potential Impacts

- 12.5.40. There is a temporary negative impact predicted on the road network surface quality and minor roadworks during construction due to HGV traffic. Traffic is further considered under my planning assessment above. Negative impacts are not predicted on land utilisation, utilities, water and drainage infrastructure during the construction phase.

12.5.41. During operation, potential for impacts on material assets would be no greater than imperceptible.

Mitigation Measures

12.5.42. During the construction phase, mitigation measures proposed include the preparation and adherence to a Traffic Management Plan for the construction phase. Specific wheel-washing facilities are proposed to be installed on site, to allow all HGVs exiting the site to be cleaned prior to leaving site. The appointed contractor would be required to prepare and adhere to a contract-specific Construction Environmental Management Plan (CEMP). Method statements on the detection of underground services and drainage infrastructure and the protection of such services would also be a requirement.

12.5.43. During operation, wheel-wash facilities are proposed to be installed and all HGVs would be cleaned prior to leaving the site.

Residual Impacts

12.5.44. Once mitigation measures have been implemented, no negative residual impacts are predicted on material assets during the construction or operation phases for the RBSF component.

Monitoring

12.5.45. No monitoring is proposed and I am satisfied that none is required.

12.5.46. **Cultural Heritage - RBSF Component**

Introduction and Existing Environment

12.5.47. There are no protected structures within the site. There is one such structure within the study area, the remains of Kilshane Motte (Ref: 0662), which was demolished in 1952. The site has been assessed for archaeology by the carrying out of test excavations and no archaeological material was identified.

12.5.48. The closest recorded monument to the application site is Newtown Castle, a Motte and Bailey (RMP DU014-013), located 30m north of the site. It is stated to have been demolished in 1952 and now survives as a cropmark and central raised oval area.

Other recorded monuments are located beyond 200m of the site and these are considered to be too far from the site to be impacted on.

- 12.5.49. There are two undesignated monuments, i.e. Sites and Monuments recorded (SMR) sites, outside of the site, but within the study area, the closest of which is a Ring-ditch in Newtown townland (SMR DU014-0100---). This monument is situated 560m north-east of the Site and I am satisfied that it is too far distant to be impacted by the proposed RBSF Component.

Potential Impacts

- 12.5.50. The construction or operational phases would not have direct impacts on any items of cultural heritage, archaeology or heritage interest on site or in the vicinity of the Proposed RBSF Component. The main storage buildings within the overall development site would be situated greater than 100m south of the neighbouring Motte and Bailey, which would be protected by a landscape buffer zone and no impact is therefore likely.

Mitigation measures

- 12.5.51. As no impacts (direct or indirect) have been identified following assessment, no mitigation measures during construction or operational phases are proposed, which I am satisfied is acceptable.

Residual Impacts

- 12.5.52. No negative residual impacts are predicted for the RBSF component.

Monitoring

- 12.5.53. No monitoring is deemed to be required.

- 12.5.54. **Landscape and Visual - RBSF Component**

Introduction and Existing Environment

- 12.5.55. The landscape at the RBSF Component site is relatively flat and open and surrounding land uses include industrial and business developments with houses to the south east adjoining the site. The site is zoned 'HI' in the Fingal Development Plan with a corresponding objective to provide for heavy industry uses. The

proposed site has no specific landscape or visual designations in the Fingal Development Plan 2017-2023. The site was previously partly developed and the proposed construction works would not be out of the ordinary in this utility/industrial landscape setting.

Potential Impacts

- 12.5.56. During construction, visual impacts have been assessed as significant and temporary from the adjacent houses on the R135. Visual impacts on passing views from elevated sections of the N2 are assessed as slight negative for the construction phase. It is submitted, and I would agree, that the works would be consistent with the nature and scale of works that would be expected to arise in any event as a result of the landuse zoning for the proposed site and its environs.
- 12.5.57. Construction works would not have any impact on landscape character, landscape setting, or on views away from the immediate site boundaries or from nearby elevated sections of the N2.
- 12.5.58. In the longer term, while the buildings would be prominent initially, once planting matures and given that buildings of such a nature would not be out of character, I am satisfied that the development would read as part of the emerging and developing landscape.

Mitigation

- 12.5.59. During construction, hoarding (2.4m in height) is proposed to be erected adjoining the sensitive houses, including housing under construction, and construction compounds would be kept away from the south-eastern corner. Landscape measures including a low-level landscaped berm and extensive planting would be completed as part of the construction works. Landscaping would be augmented and managed during the operation phase. Lighting standards are stated to be fitted with horizontal cut-off fittings to avoid light spill.

Residual Impacts

- 12.5.60. No negative residual landscape or visual impacts are predicted for the RBSF component either during construction or operation. The RBSF component would be consistent with the existing land use zoning for the site.

Monitoring

12.5.61. During construction, landscape works are proposed to be monitored by a qualified landscape architect.

12.5.62. **Conclusion on Material Assets, Cultural Heritage and Landscape**

12.5.63. Having regard to the above, I am satisfied that the impacts identified would be avoided, managed or mitigated by measures forming part of the proposed development, proposed mitigation measures and measures within suitable conditions. I am therefore satisfied that the proposed development would not have any unacceptable significant direct, indirect or cumulative impacts on **Material Assets, Cultural Heritage and Landscape**.

12.6. **Vulnerability of projects to Major Accidents and/or Natural Disasters**

12.6.1. The EIA Directive requires consideration on the vulnerability of projects to major accidents and/or natural disasters. This is considered in Section 15 of Volumes 3 (Ringsend WwTP component) and 4 (RBSF component) in the EIAR under the heading of Risk Management. Drawing from the information available and the requirements of the EIA Directive, this matter is considered under.

12.6.2. **Ringsend WwTP component**

12.6.3. At the Ringsend WwTP site, risks of major accident and / or natural disasters could include:

- Damage or breakdown leading to a plant shutdown during construction or operation leading to direct untreated effluent discharge to sensitive waters
- Fire or explosion resulting in significant or widespread damage, including environmental damage on site;
- Incident at adjacent Seveso sites or caused by activities in the harbour and port area leading to shutdown of the WwTP during construction stage;
- Highly-concentrated toxic influent discharged into Ringsend WwTP Network resulting in WwTP shutdown due to breakdown of biological treatment process.

- 12.6.4. While risk of traffic collisions has also been included by the applicant, I am satisfied that such risks are governed by both construction safety and road safety legislation and noting construction safety requirements and traffic management, they would not fall within the specific category envisaged for the consideration on the vulnerability of this element of the project to major accidents and/or natural disasters. I have therefore excluded these from this aspect of this section of my assessment. Traffic impacts including impacts on road safety have been considered in the planning assessment section of this overall report. It is of relevance to also note that when compared to the LSOT option approved and which is now proposed to be omitted.
- 12.6.5. It is put forward in the Risk Assessment that the vulnerability of the Ringsend WwTP to major accident or natural disasters would be medium due to its location proximate to Seveso establishments. I have excluded risk from coastal flooding having regard to the conclusions reached in my assessment of Flood Risk in the planning assessment above that the Ringsend WwTP component would not have any noticeable impact on the existing flood regime.
- 12.6.6. Mitigation measures include those inherent in the project design, fire safety and emergency response plans and safety management systems and environmental incident response plan are outlined. Storm tanks would provide short term storage of effluent discharge. Mitigation considered relevant also includes the Dublin City Council Major Emergency Plan 2010 and the Dublin Port Emergency Management Plan 2013.
- 12.6.7. Post mitigation, the likelihood of risks from each of the above fall into the categories of 'unlikely' and 'very unlikely'. Having reviewed the information on file, I am satisfied that risks from major accident and/or natural disaster and their consequences have been adequately considered. It is the applicant's conclusion that post mitigation, the vulnerability of the Ringsend WwTP component to major and / or natural disasters accidents would remain as medium due to the site location adjacent to a Seveso establishment. I would be inclined to conclude that the adjoining Seveso establishment and others in the area would be operated in accordance with the Seveso / COMAH regulations and I have dealt with this in more detail under the heading of 'Seveso Considerations' in my Planning Assessment above. Given that the proposed site is not itself a Seveso establishment I would therefore rate the

vulnerability as low. I also note and agree with the findings of the assessment that the proposed works would not alter the risk profile of the site or the adjacent Seveso sites, which are regulated under Seveso/COMAH regulations.

- 12.6.8. It is submitted that activities on site would be monitored to ensure risk does not increase over time at the site. In conclusion, I am satisfied that the risk of a major accident or natural disaster have both been adequately considered and given the nature of the development, the low probability of such an occurrence and the mitigation measures proposed, it is not likely that significant effects on the environment would arise in this regard.
- 12.6.9. **RBSF component**
- 12.6.10. Risks of major accident and / or natural disasters identified which would result in a medium risk score (pre-mitigation) have been identified to include:
- Fire resulting in significant or widespread damage on site;
 - Damage to high voltage overhead powerlines crossing the site.
- 12.6.11. Similar to my considerations of the Ringsend WwTP development, I have excluded traffic collisions for the consideration of accidents and/or natural disasters, noting that these risks are governed by separate legislation in terms of construction safety and road safety and are considered in the traffic section of the planning assessment section above.
- 12.6.12. Mitigation measures include those inherent in the design of the RBSF component design, including fire safety and emergency response plans, safety management systems, adequate water supply for fire-fighting and preparation and adherence to an environmental incident response plan.
- 12.6.13. Post mitigation, the likelihood of risks of each of the above fall into the categories of 'unlikely' and 'very unlikely'. Having reviewed the information on file, I am satisfied that risks of major accident and their consequences have been adequately considered and post mitigation, the vulnerability of the RBSF Component to major and / or natural disasters would be low.
- 12.6.14. It is submitted that activities on site would be monitored to ensure risk does not

increase over time at the site.

12.7. **Environmental Interactions**

- 12.7.1. Environmental interactions are addressed within each of the individual sections of both EIAR Volumes 3 and 4 and mitigation and environmental standards are recommended.
- 12.7.2. Table 16-1 (Summary of Interactions) tabulates the interactions, providing a useful tool in understanding the interactions likely to arise with a summary of same provided in Section 16.2 of both Volume 3 (Ringsend WwTP component) and Volume 4 (RBSF component) of the EIAR. For example, water has potential to interact with other environmental factors such as biodiversity, material assets and population and human health. The potential arises for population and human health to interact with all of the other factors (biodiversity, land, soil, water, air and climate, material assets, cultural heritage and the landscape). I have examined the interactions throughout each section of the EIAR for the development proposed at each of the Ringsend WwTP (set out in Volume 3) and RBSF components (set out in Volume 4). I am satisfied that the EIAR documents has satisfactorily addressed interactions. I am also satisfied that the proposed development, including both components, is not, in my view, likely to result in significant adverse impacts in terms of the interaction of individual environmental factors.

12.8. **Cumulative Impacts**

- 12.8.1. Cumulative impacts have been undertaken by each specialist and addressed in each section of the EIAR across Volumes 3 and 4. The assessment focussed on where the impacts of the proposed development have been assessed to be of slight significance or worse, but when combined with the impact of other concurrent or future developments the overall impact may worsen. Where such impacts are identified, additional mitigation measures may be required.
- 12.8.2. Cumulative impacts considered in respect of the Ringsend WwTP in combination with other projects in the area include: discharges to the Liffey Estuary and Dublin Bay, as well as noise, odour, traffic and air quality. Projects that were considered

include: Dublin Waste to Energy, Alexandra Basis Redevelopment, ESB Site Poolbeg Power station, National Oil Reserves Agency, Greater Dublin Drainage and the Poolbeg West SDZ. The EIAR considered cumulative impacts arising from both the construction and operational phases of the Ringsend WwTP component in accordance with the EIA Directive.

- 12.8.3. When all impacts are examined in combination with other projects in the local area and beyond, it is submitted that the proposed upgrade project is not likely to give rise to any significant environmental effects in combination with existing and/or permitted projects in the area.
- 12.8.4. The RBSF was considered in combination with other projects in the area and cumulative impacts are stated to include noise, odour, traffic and air quality.
- 12.8.5. Projects that were considered with respect of the RBSF include: Huntstown Quarry, Huntstown Power Station, Dublin Airport Authority development, Huntstown BioEnergy Limited and the Greater Dublin Drainage project.
- 12.8.6. The cumulative assessment for the RBSF also considered cumulative elements from the GDD project and the proposed Ringsend WwTP Upgrade projects and the existing and/or approved projects associated with the NWSMP.
- 12.8.7. It is also of note that the assessment itself considered the entire project referred to as the 'proposed upgrade project' meaning the totality of the proposed development and the elements of the 2012 approval being progressed.
- 12.8.8. When all impacts are examined in combination with other projects in the local area and beyond, it is submitted that the proposed RBSF is not likely to give rise to any significant cumulative effects when taken in combination with existing and/or permitted projects in the area, including those outlined above. It is also submitted that the proposed RBSF component has been designed to accommodate the biosolids volumes from both the GDD WwTP and the proposed Ringsend WwTP upgrade project components, in a manner that would not give rise to significant environmental effects on the environment.
- 12.8.9. Having reviewed the information on file and considered all of the impacts identified

above, I am satisfied that the proposed upgrade project incorporating the proposed development would not give rise to any unacceptable significant cumulative effects on the environment.

12.9. Conclusion on EIA

12.9.1. I have carried out an examination of environmental information contained above in which I have had regard to the EIAR and supplementary information provided by the applicant and the reports and submissions from Planning Authorities, prescribed bodies and observers in the course of the application. Following on from this assessment, it is considered that the main significant direct and indirect effects (positive and negative) of the proposed development on the environment are those arising from the impacts listed below. A Construction Environmental Management Plan (CEMP) is the overarching general mitigation embedded in the project design and delivery for the construction stage. In addition, plans relating to Waste Management, Invasive Species Management, Traffic Management, Monitoring Plans and Emergency Response Plans are also proposed. The remaining impacts, both positive and negative likely to arise on such as would potentially give rise to significant effects on the environment are:

- Benefits/positive impacts to **population and human health** arising as a result of the overall project upgrade due to providing increased treatment infrastructural capacity and improved level of treatment which would improve compliance with EU Directives and corresponding legislation and would be pivotal in supporting planned residential and economic growth in Dublin city and the region.
- Negative temporary impact on **population and human health** (recreational swimmers/water based sporting activities) because of a deterioration in water quality during a nine-month period of decommissioning of aspects of the WwTP (during construction) and a corresponding temporary loss of recreational amenity which would be partially mitigated by carrying out the works in winter period when the recreational water based activities are at seasonally low levels;

- Benefits/positive impacts on the environment (**soils, traffic, water quality, climate**) as a result of reduction in excavation and truck movements (estimated to be 70,000 HGV movements over an 18-month period) which would otherwise have been required to remove and transport rock and spoil during the construction phase of the undersea tunnel. During the operation phase, the proposal to omit the tunnel and associated diffuser point 9 km out to sea would also mean that there would be no deterioration of water quality at this location.
- Impacts arising on **land and soils** as a result of spread of invasive species (Japanese Knotweed) present on the Ringsend wastewater treatment site and which would be mitigated by the preparation and implementation of an Invasive Species Management Plan and method statement for the control of disturbance of soils containing Japanese Knotweed and the requirement that a suitably qualified ecologist would be engaged to oversee the implementation of the Invasive Species Management Plan and monitor the success of the mitigation measures post-construction;
- Risk of pollution of **receiving water environment** as a result of accidental spillages of chemicals, hydrocarbons or other contaminants entering the drainage system and discharging to the stream thereafter during the construction and operational phases. The impacts would be mitigated by measures within a Construction and Environmental Monitoring Plan (CEMP) and adherence to best practice construction measures and incorporation of appropriate drainage facilities. Measures set out in the CIRIA guidance document on 'control and management of water pollution from construction sites' would be implemented. The guidelines provided by the Inland Fisheries Ireland (2016) on the protection of fisheries habitats during construction projects would also be adhered to.
- **Noise** impacts for the construction and operation phases which would be mitigated by the requirements to prepare and adhere to the Noise and Vibration Management Plans (NWMP) and comply with appropriate noise and vibration limits which are set out in the EIAR in respect of the development at Ringsend wastewater treatment plant and the development of the regional

biosolids facility.

- **Odour impacts** for the operational phase which would be mitigated by the following:
 - Ringsend WwTP: odour from the wastewater treatment plant (excluding storm tanks) would be required not to exceed 10 ouE/m³ as the 99.4th percentile of hourly averages at the boundary of the Ringsend WwTP site. The adopted odour annoyance criterion of 3 ouE/m³ as the 98th percentile of hourly averages would not be exceeded at any sensitive receptor location. The Odour Management Plan would be updated as necessary and implemented to ensure the above standard is achieved during construction and operation.
 - RBSF: The adopted odour annoyance criterion of 3 ouE/m³ as the 98th percentile of hourly averages would not be exceeded at any sensitive receptor location.

13.0 **Appropriate Assessment**

13.1. **Introduction**

- 13.1.1. Special Areas of Conservation (SACs) / candidate Special Areas of Conservation (cSACs) and Special Protection Areas (SPAs) are part of the Natura 2000 network considered to be of international importance. In the Irish context, they are referred to as European sites. SACs/cSACs are designated under the EU Habitats Directive (92/43/EEC). SPAs are designated under the EU Birds Directive (79/409/EEC) amended by EU Directive 2009/147/EC. Article 6(3) of the Habitats Directive requires that any plan or project not directly connected with or necessary to the management of a European 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(s) in view of the site(s) conservation objectives. The Habitats Directive has been transposed into Irish law by the European Union (Birds and Natural Habitats) Regulations 2011, as amended, the later which consolidates earlier Regulations.

13.1.2. In accordance with these requirements and noting the Board's role as the competent authority who must be satisfied that the proposal would not adversely affect the integrity of the European sites, this section of my report assesses in view of best scientific knowledge, if the project, individually or in combination with other plans or projects, is likely to have a significant effect on any European Site, in view of the sites' conservation objectives.

13.1.3. The applicant submitted an Appropriate Assessment (AA) Screening Report and a Natura Impact Statement and I refer to both of these documents in my assessment below, as well as drawing from information on relevant European sites available from the NPWS website and other documentation, including the EIAR, submitted with the planning application. I am satisfied that the information submitted is sufficient to allow the Board to carry out an AA. The NPWS were evidently consulted by the applicant at scoping stage in which issues of relevance were discussed. During the course of the application, the wider DCHG were consulted and I note that no response was received in respect of the European sites.

13.1.3.1. Count data from the Irish Wetland Bird Survey (I-WeBS) 2013/14 and information from the Waterbird Survey Programme of 2011/12 (NPWS, 2014) were used by the applicant as was data from the Dublin Bay Birds Project carried out by BirdWatch Ireland with support from Dublin Port Company (2013-2016).

13.1.3.2. Field surveys of the habitats on the construction site and immediate surrounds were undertaken in 2015 and 2016 (Ringsend WwTP) and 2017 (RBSF). A biological survey of the stream that borders the RBSF site was undertaken in December 2017 and a breeding bird survey of the RBSF site was undertaken in May 2018.

13.2. **Appropriate Assessment - Stage 1 (Screening)**

13.2.1. In relation to Stage 1 screening, the issue to be addressed is whether the project is likely to have a significant effect, either individually or in combination with other plans and projects on European sites in view of the sites' conservation objectives.

13.2.2. A description of the proposed development is set out in Section 4 of this report. In essence, it would comprise revised upgrade works at Ringsend WwTP and the construction of the RBSF at Newtown in North Dublin.

13.2.3. In deciding on the zone of influence of the proposal, guidance contained in 'Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities, DoEHLG 2009' recommends that 'the distance should be evaluated on a case-by-case basis with reference to the nature, size and location of the project, and the sensitivities of the ecological receptors, and the potential for in combination effects'. The applicant refers to its use of the Source-Pathway-Receptor model in order to determine the geographic extent to which the proposed development may result in the rise of significant effects. The 'source' of impact was identified as comprising activities or emissions that may be associated with the construction and operation of the proposed development. Receptors are European sites or their qualifying interests for which conservation objectives have been set and the pathway is that which exists between the source and receptor, for instance waterbodies connecting the proposed development to a European site. I would agree with the applicant's assertion that the likelihood for significant effects depends upon the characteristics and relationship between all three elements (Source, Receptor and Pathway) and that the presence of a pathway does not automatically mean that significant effects would arise.

13.2.4. **European Sites: Component 1 - Ringsend WwTP**

13.2.5. With regard to the Ringsend WwTP component, a zone of influence of 10 km was chosen. It is stated that this has been determined following examination of the EIAR that accompanied the planning application together with the NPWS maps and datasets. It is also stated that the zone of influence was considered appropriate having regard to objective information such as output from water quality models and construction noise estimates. In this regard, I have examined the water quality models presented in the EIAR which are also provided in Appendix 2 of the Appropriate Assessment Screening and NIS Report. Regarding construction noise, it has been estimated that construction may be audible for a distance of 2.5km from the site. A 10km buffer was applied to cater for all other identified potential significant effects. Having regard to the output from the water quality models and to audible noise distances referred to above, I am satisfied that the 10km distance around the WwTP and its associated existing effluent outfall which was selected as the zone of interest to be reasonable in this instance. A map showing the zone of influence of the

WwTP component and the European sit boundaries is presented in Fig 1 in the applicant's Appropriate Assessment Screening report and NIS.

13.2.6. The applicant listed eight European sites within this 10-km zone of influence around the Ringsend WwTP and its associated outfall, comprising four cSACs and four SPAs All of the sites are located either wholly or partly within Dublin Bay and include the following:

- South Dublin Bay and River Tolka Estuary SPA (site code 004024)
- South Dublin Bay cSAC (site code 000210)
- North Bull Island SPA (site code 004006)
- North Dublin Bay cSAC (site code 000206)
- Howth Head Coast SPA (site code 004113)
- Howth Head cSAC (site code 000202)
- Dalkey Islands SPA (site code 004172)
- Rockabill to Dalkey Island cSAC (site code 003000)

13.2.7. In addition, and noting that both Baldoyle SPA (site code 004016) and Baldoyle cSAC (site code 000199) are located 7.6km NE from the Ringsend WwTP component and therefore within the selected 10km zone of influence selected, I also propose to include these two sites in my assessment.

13.2.8. Table 5 below sets out details of each of the 10 sites including conservation objectives set out on the NPWS website at the time of carrying out this assessment together with listed qualification interests, the distance and location of the site relative to the Ringsend WwTP and the connectivity using the source-pathway-receptor model. The consequent potential for significant adverse effects on each of the sites having regard to the sites' conservation objectives is also included. Where marked with an astrix (*) this indicates that those qualification interests are a priority habitat under the Habitats Directive.

Table 5 – Relevant European sites for the purposes of Appropriate Assessment Screening (Component 1 – Ringsend WwTP).

European site (SAC/SPA)	Conservation Objectives and Qualifying Interests (Habitats and Species)	Distance of European Site to WwTP	Connectivity (Source-Pathway-Receptor) with potential to result in significant adverse effects.
<p>South Dublin Bay and River Tolka Estuary SPA (004024)</p>	<p>Conservation Objectives Version 1.0 (09/03/2015)</p> <p>To maintain the favourable conservation condition of (qualifying interests individually listed) in South Dublin Bay and River Tolka Estuary SPA, which is defined by a list of attributes and targets.</p> <p>Qualifying Interests: A046 Light-bellied Brent Goose <i>Branta bernicla hrota</i> A130 Oystercatcher <i>Haematopus ostralegus</i> A137 Ringed Plover <i>Charadrius hiaticula</i> A141 Grey Plover <i>Pluvialis squatarola</i> A143 Knot <i>Calidris canutus</i> A144 Sanderling <i>Calidris alba</i> A149 Dunlin <i>Calidris alpina</i> A157 Bar-tailed Godwit <i>Limosa lapponica</i> A162 Redshank <i>Tringa totanus</i> A179 Black-headed Gull <i>Chroicocephalus ridibundus</i> A192 Roseate Tern <i>Sterna dougallii</i> A193 Common Tern <i>Sterna hirundo</i> A194 Arctic Tern <i>Sterna paradisaea</i> A999 Wetlands</p>	<p>Directly adjacent to the proposed works (south and east)</p>	<p>Potential for Direct Effects – Yes</p> <p>Potential for Indirect Effects – Yes</p>
<p>South Dublin Bay cSAC (000210)</p>	<p>Conservation Objectives Version 1.0 (22/08/13)</p> <p>To maintain the favourable conservation condition of mudflats and sandflats not covered by seawater at low tide in South Dublin Bay SAC which is defined by a list of</p>	<p>Adjacent (south and east)</p>	<p>Potential for Direct Effects – No</p> <p>Potential for Indirect Effects – Yes</p>

	<p>attributes and targets.</p> <p>Qualifying Interests: 1140 Mudflats and sandflats not covered by seawater at low tide</p>		
North Bull Island SPA (004006)	<p>Conservation Objectives Version 1.0 (09/03/2015)</p> <p>To maintain the favourable conservation condition of (qualifying interests individually listed) in North Bull Island SPA, which is defined by a list of attributes and targets.</p> <p>Qualifying Interests: A046 Brent Goose <i>Branta bernicla hrota</i> A048 Shelduck <i>Tadorna tadorna</i> A052 Teal <i>Anas crecca</i> A054 Pintail <i>Anas acuta</i> A056 Shoveler <i>Anas clypeata</i> A130 Oystercatcher <i>Haematopus ostralegus</i> A140 Golden Plover <i>Pluvialis apricaria</i> A141 Grey Plover <i>Pluvialis squatarola</i> A143 Knot <i>Calidris canutus</i> A144 Sanderling <i>Calidris alba</i> A149 Dunlin <i>Calidris alpina alpina</i> A156 Black-tailed Godwit <i>Limosa limosa</i> A157 Bar-tailed Godwit <i>Limosa lapponica</i> A160 Curlew <i>Numenius arquata</i> A162 Redshank <i>Tringa totanus</i> A169 Turnstone <i>Arenaria interpres</i> A179 Black-headed Gull <i>Chroicocephalus ridibundus</i> A999 Wetlands</p>	1.7 km north west	<p>Potential for Direct Effects – No</p> <p>Potential for Indirect Effects – Yes</p>
North Dublin Bay cSAC (000206)	<p>Conservation Objectives Version 1.0 (06/11/13)</p> <p>To maintain the favourable conservation condition of (qualifying interests individually listed) in North Bull Bay cSAC,</p>	1.7km from the WwTP outfall	<p>Potential for Direct Effects – No</p> <p>Potential for Indirect Effects – Yes</p>

	<p>which is defined by a list of attributes and targets.</p> <p>Qualifying Interests: 1140 Mudflats and sandflats not covered by seawater at low tide 1210 Annual vegetation of drift lines 1310 <i>Salicornia</i> and other annuals colonising mud and sand 1330 Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) 1395 Petalwort <i>Petalophyllum ralfsii</i> 1410 Mediterranean salt meadows (<i>Juncetalia maritimi</i>) 2110 Embryonic shifting dunes 2120 Shifting dunes along the shoreline with <i>Ammophila</i> (white dunes) 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)* 2190 Humid dune slacks</p>		
Howth Head Coast SPA (004113)	<p>Conservation Objectives Generic Version 6.0 (21/02/2018)</p> <p>To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA</p> <p>Qualifying Interests: A188 Kittiwake (<i>Rissa tridactyla</i>)</p>	c. 9 km north west	<p>Potential for Direct Effects – No</p> <p>Potential for Indirect Effects – Yes</p>
Howth Head cSAC (000202)	<p>Conservation Objectives Version 6.0 (06/12/2016)</p> <p>To maintain the favourable conservation condition of (qualifying interests individually listed) in Howth Head SAC, which is defined by a list of attributes and targets:</p> <p>Qualifying Interests: 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts 4030 European dry heaths</p>	c.7.0 km north west.	<p>Potential for Direct Effects – No</p> <p>Potential for Indirect Effects – No</p>

<p>Dalkey Islands SPA (004172)</p>	<p>Conservation Objectives Generic Version 5.0 (21/02/18)</p> <p>To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.</p> <p>Qualifying Interests: A192 Roseate Tern <i>Sterna dougallii</i> A193 Common Tern <i>Sterna hirundo</i> A194 Arctic Tern <i>Sterna paradisaea</i></p>	<p>c. 9.0 km south west</p>	<p>Potential for Direct Effects – None</p> <p>Potential for Indirect Effects – Yes</p>
<p>Rockabill to Dalkey Island SAC (003000)</p>	<p>Conservation Objectives Version 1.0 (07/05/13)</p> <p>To maintain the favourable conservation condition of (qualifying interests individually listed) in Rockabill to Dalkey Island SAC, which is defined by a list of attributes and targets:</p> <p>Qualifying Interests: Annex I Habitats 1170 Reefs</p> <p>Annex I Species 1351 Harbour porpoise <i>Phocoena phocoena</i></p>	<p>c. 6.2 km from the outfall</p>	<p>Potential for Direct Effects – None</p> <p>Indirect Effects – Yes</p>
<p>Baldoyle Bay SPA (004016)</p>	<p>Conservation Objectives Version 1.0 (27/02/13)</p> <p>To maintain the favourable conservation condition of the waterbird population and wetland habitat in Baldoyle Bay SPA, which is defined by a list of attributes and targets:</p> <p>Qualifying Interests: A046 Brent Goose <i>Branta bernicla hrota</i> A048 Shelduck <i>Tadorna tadorna</i> A137 Ringed Plover <i>Charadrius hiaticula</i></p>	<p>7.0 km NE</p>	<p>Potential for Direct Effects – No</p> <p>Potential for Indirect Effects – No</p>

	A140 Golden Plover <i>Pluvialis apricaria</i> A141 Grey Plover <i>Pluvialis squatarola</i> A157 Bar-tailed Godwit <i>Limosa lapponica</i> A999 Wetlands		
Baldoyle Bay cSAC (000199)	<p>Conservation Objectives Version 1.0 (19/11/12)</p> <p>To maintain the favourable conservation condition of (qualifying interests individually listed) in Baldoyle Bay SAC, which is defined by a list of attributes and targets:</p> <p>Qualifying Interests: 1140 Mudflats and sandflats not covered by seawater at low tide 1310 Salicornia and other annuals colonizing mud and sand 1330 Atlantic salt meadows <i>Glauco-Puccinellietalia maritimae</i> 1410 Mediterranean salt meadows <i>Juncetalia maritimi</i></p>	7.0 km NE	<p>Potential for Direct Effects – No</p> <p>Potential for Indirect Effects – No</p>

13.2.9. European Sites: Component 2 - RBSF

13.2.10. In respect of the RBSF component, the applicant identified three European sites comprising one cSAC and two SPAs within the 10km zone of influence of the RBSF. The sites are presented in Figure 2 of the Appropriate Assessment Screening and NIS and listed as follows:

- South Dublin Bay and River Tolka Estuary SPA (site code 004024)
- Malahide Estuary cSAC (site code 000205)
- Malahide Estuary SPA (site code 004025)

13.2.11. Table 6 below sets out details of each of the three sites including conservation objectives as contained on the NPWS website at the time of carrying out this assessment, together with listed qualification interests, the distance and location of the site relative to the RBSF site and the connectivity using the source-pathway-receptor model. The consequent potential for significant adverse effects on each of

the sites is also included.

13.2.12. Table 6 – Relevant European sites for the purposes of Appropriate Assessment Screening (Component 2 – RBSF).

European site (SAC/SPA)	Conservation Objectives and Qualifying Interests (Habitats and Species)	Distance of European Site to WwTP	Connectivity (Source-Pathway-Receptor) with potential to result in significant adverse effects.
<p>South Dublin Bay and River Tolka Estuary SPA (004024)</p>	<p>Conservation Objectives Version 1.0 (09/03/2015)</p> <p>To maintain the favourable conservation condition of (qualifying interests individually listed) in South Dublin Bay and River Tolka Estuary SPA, which is defined by a list of attributes and targets.</p> <p>Qualifying Interests: A046 Light-bellied Brent Goose <i>Branta bernicla hrota</i> A130 Oystercatcher <i>Haematopus ostralegus</i> A137 Ringed Plover <i>Charadrius hiaticula</i> A141 Grey Plover <i>Pluvialis squatarola</i> A143 Knot <i>Calidris canutus</i> A144 Sanderling <i>Calidris alba</i> A149 Dunlin <i>Calidris alpina</i> A157 Bar-tailed Godwit <i>Limosa lapponica</i> A162 Redshank <i>Tringa totanus</i> A179 Black-headed Gull <i>Chroicocephalus ridibundus</i> A192 Roseate Tern <i>Sterna dougallii</i> A193 Common Tern <i>Sterna hirundo</i> A194 Arctic Tern <i>Sterna paradisaea</i> A999 Wetlands</p>	<p>9km directly from RBSF site. No hydrological pathway</p>	<p>Potential for Direct Effects – No</p> <p>Potential for Indirect Effects – No</p>
<p>Malahide Estuary cSAC (000205)</p>	<p>Conservation Objectives Version 1.0 (27/05/2013)</p> <p>To maintain the favourable conservation condition of</p>	<p>9.5 km direct, 13.3km via hydrological pathways.</p>	<p>Potential for Direct Effects – No</p> <p>Potential for Indirect Effects – No</p>

	<p>(qualifying interests individually listed) in Malahide Estuary cSAC, which is defined by a list of attributes and targets.</p> <p>Qualifying Interests 1140 Mudflats and sandflats not covered by seawater at low tide 1310 Salicornia and other annuals colonising mud and sand 1320 Spartina swards <i>Spartinion maritimae</i> 1330 Atlantic salt meadows <i>Glauco-Puccinellietalia maritimae</i> 1410 Mediterranean salt meadows <i>Juncetalia maritimi</i> 2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) 2130 Fixed coastal dunes with herbaceous</p>		
<p>Malahide Estuary SPA (004025)</p>	<p>Conservation Objectives Version 1.0 (16/08/2013)</p> <p>To maintain the favourable conservation condition of (qualifying interests individually listed) in Malahide Estuary SPA, which is defined by a list of attributes and targets.</p> <p>Qualifying Interests A005 Great Crested Grebe <i>Podiceps cristatus</i> A046 Brent Goose <i>Branta bernicla hrota</i> A048 Shelduck <i>Tadorna tadorna</i> A054 Pintail <i>Anas acuta</i> A067 Goldeneye <i>Bucephala clangula</i> A069 Red-breasted Merganser <i>Mergus serrator</i> A130 Oystercatcher <i>Haematopus ostralegus</i> A140 Golden Plover <i>Pluvialis apricaria</i> A141 Grey Plover <i>Pluvialis</i></p>	<p>9.5 km direct, 13.3km via hydrological pathways.</p>	<p>Potential for Direct Effects – No</p> <p>Potential for Indirect Effects – No</p>

	<i>squatarola</i> A143 Knot <i>Calidris canutus</i> A149 Dunlin <i>Calidris alpina</i> <i>alpina</i> A156 Black-tailed Godwit <i>Limosa limosa</i> A157 Bar-tailed Godwit <i>Limosa lapponica</i> A162 Redshank <i>Tringa</i> <i>totanus</i> A999 Wetlands		
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13.2.13. **Likely Significant Effects**

13.2.14. The possibility of whether or not significant effects are likely to arise is assessed by the applicant using the established source-pathway-receptor model. The project is not necessary for the management of any European site. The likely significant effects (direct and indirect) which could arise as a result of the Ringsend WwTP component are listed under Table 1 of the applicants AA Screening /Statement / NIS. I am satisfied that using the Source-Pathway-Receptor model and having regard to the qualifying interests and conservation objectives that the information contained in this table is representative of the significant effects likely to arise. I have summarised these likely significant effects under.

13.2.15. **Likely significant effects (Direct and Indirect) which could potentially arise are:**

Direct Effects as a result of the Ringsend WwTP component

- Temporary disturbance to habitat and species as a result of laying of a new underground electrical connection to an existing underground ESB cable in an area c.30m x 10m, which is within the South Dublin Bay and River Tolka Estuary SPA (site code 004024).

Indirect /Secondary Effects as a result of the Ringsend WwTP component

- Discharge of treated effluent from the WwTP both during the construction and operational phases of the proposed Ringsend WwTP Component. As the proposed discharge point would remain at the same location in the Liffey Estuary, there is potential that these changes could affect habitats or species that occur in the tidal part of Dublin Bay.

- Deterioration of receiving water quality during construction and operation phases arising from accidental discharge or pollution and resulting in deterioration of receiving watercourses and associated habitats and species.
- Construction activities on site at the Ringsend WwTP component have the potential to cause visual disturbance to waterbird populations that use the replacement grassland area that forms part of the South Dublin Bay and River Tolka Estuary SPA, immediately south of the WwTP.
- The construction phase of the Ringsend WwTP component has potential to give rise to temporary disturbance from dust and changes in air quality during construction.
- Construction noise may affect Brent geese and breeding terns within the South Dublin Bay and River Tolka Estuary SPA.
- Potential spread of Invasive species could lead to loss/deterioration of habits on the South Dublin Bay and River Tolka Estuary SPA.
- (Given the change to odour has been assessed as not resulting in any residual impacts as a result of the proposed development, I do not consider that based on odour, impacts would arise on qualifying interests of cSACs / SPAs in view of their conservation objectives).

Direct Effects as a result of the RBSF component

- None

Indirect /Secondary Effects as a result of the RBSF component

- There is a potential pathway between the RBSF component and the Malahide Estuary cSAC (site code 000205) via the surface water network. Deterioration of receiving water quality during construction and operation phases arising from accidental discharge or pollution and resulting in deterioration of receiving watercourses and associated habitats and species could potentially occur.

13.2.16. I am satisfied that Howth Head cSAC can be screened out as there are no hydrological pathways from either the Ringsend WwTP or RBSF components to this European site. Both project components are also sufficiently separated to conclude

that there would not be any potential for significant effects in relation to airborne noise or visual disturbance impacts. Equally, I am satisfied that the project as a whole, including both components collectively, is not likely to give rise to significant effects on this site, having regard to its conservations objectives.

13.2.17. In relation to Malahide Estuary cSAC and also Malahide SPA, I note that while there is a potential pathway between the RBSF component and the Malahide Estuary cSAC, no discharge or emissions are proposed to leave the RBSF site, except for rainfall and clean surface water, once best practice is employed in construction and the CEMP is implemented. Both components are also sufficiently remote from these European sites such as to conclude that there would be no potential for significant effects in relation to airborne noise or visual disturbance. Equally, I am satisfied that the project as a whole is not likely to give rise to significant effects on this site, having regard to their conservations objectives.

13.2.18. In relation to Baldoyle Bay SAC and Baldoyle Bay SPA, these European sites are sufficiently remote from the proposed RBSF site to objectively conclude a finding of no significant effect in relation to noise. The water quality modelling output shows that there is no impact from the construction of works on Baldoyle Bay or from the operation of the project. These two European sites can thus objectively be screened out from further assessment.

13.2.19. I am satisfied that the conclusion that no such in-combination effects are likely to arise is correct. By applying the precautionary principle, the requirement to proceed to Stage 2 in relation to the remaining seven sites where the evaluation determined the likelihood of significant effects (including in-combination effects) could not be discounted without further examination is, I consider, reasonable.

13.2.20. **Stage 1 - Screening Conclusion**

13.2.21. It is reasonable to conclude that on the basis of the information on the file, which I consider adequate in order to issue a screening determination, that the proposed development including the proposed development, individually or in combination with other plans or projects would not be likely to have a significant effect on the European Sites:

- Howth Head cSAC (site code 000202)
- Malahide Estuary cSAC (site code 000205)
- Malahide Estuary SPA (site code 004025)
- Baldoyle cSAC (site code 004016)
- Baldoyle SPA (site code 000199)

in view of the sites' conservation objectives, a Stage 2 Appropriate Assessment is not therefore required in respect of these sites. Potential for significant indirect effects on the features of interest of the following European sites, having regard to their conservation objectives, cannot be ruled out in respect of the remaining seven European sites:

- South Dublin Bay and River Tolka Estuary SPA (site code 004024)
- South Dublin Bay cSAC (site code 000210)
- North Bull Island SPA (site code 004006)
- North Dublin Bay cSAC (site code 000206)
- Howth Head Coast SPA (site code 004113)
- Dalkey Islands SPA (site code 004172)
- Rockabill to Dalkey Island cSAC (site code 003000)

13.2.22. Accordingly, a Stage 2 Appropriate Assessment is required to determine the potential of the proposed development to adversely affect the integrity of the said European Sites.

13.3. **Appropriate Assessment – Stage 2**

13.3.1. **Introduction**

13.3.2. The sites brought forward to stage two, seven in total, are listed in the Stage 1 Screening conclusion above. The project description is set out in detail in Section 4 of my overall assessment and summarised above in consideration of Appropriate Assessment – Stage 1 Screening.

13.3.3. **European Sites**

13.3.4. Below I provide a brief description of each of the European sites with specific regard to their qualifying interests and their conservations objectives. I have examined the sites potential for significant effects on the integrity of the European sites arising from the proposed development. I have drawn on information provided by the applicant including information in their submitted Natura Impact Statement and throughout relevant sections of the EIAR, particularly those which deal with Biodiversity and Water. I have also extensively referred to the NPWS website. The qualifying interests for each of the seven sites are identified and are as set out in Tables 5 and 6 above.

South Dublin Bay and River Tolka Estuary SPA (Site Code 004024)

13.3.5. As noted in the NPWS site synopsis, the South Dublin Bay and River Tolka Estuary SPA is of ornithological importance as it supports an internationally important population of light-bellied Brent Goose and nationally important populations of a further nine wintering species. Furthermore, the site supports a nationally important colony of breeding Common Tern and is an internationally important passage/staging site for three tern species. Four of the species that regularly occur at this site are listed on Annex I of the E.U. Birds Directive, i.e. Bar-tailed Godwit, Common Tern, Arctic Tern and Roseate Tern.

13.3.6. **Conservation Objectives** for South Dublin Bay and River Tolka Estuary SPA (March 2015) are to ensure that waterbird populations and their wetland habitats are maintained at, or restored to, favourable conservation condition. Grey Plover is proposed for removal from the list of Special Conservation Interests for the SPA. As a result, a site-specific conservation objective has not been set for this species.

South Dublin Bay cSAC (Site Code 000210)

13.3.7. The NPWS lists the South Dublin Bay cSAC as a fine example of extensive intertidal flats, of predominantly sand with muddy sands in more sheltered areas. It provides a supporting role to important populations of wintering bird populations of Dublin Bay.

13.3.8. **Conservation Objectives** for the South Dublin Bay cSAC (NPWS, 2013) are to maintain the favourable conservation condition of mudflats and sandflats not covered by seawater at low tide in South Dublin Bay SAC which is defined by a list of

attributes and targets.

North Bull Island SPA (Site Code 004006)

- 13.3.9. The North Bull Island SPA is considered an excellent example of an estuarine complex and is one of the top sites in Ireland for wintering waterfowl. It is stated to be of international importance because of both the total number of waterfowl and the individual populations of Light-bellied Brent Goose, Black-tailed Godwit and Bar-tailed Godwit that use it. There is a regular presence of several species that are listed on Annex I of the E.U. Birds Directive, notably Golden Plover and Bar-tailed Godwit.
- 13.3.10. **Conservation Objectives** for the North Bull Island SPA (NPWS 2014) are to ensure that waterbird populations and their wetland habitats are maintained at, or restored to favourable conservation condition.

North Dublin cSAC (Site Code 000206)

- 13.3.11. The NPWS lists the North Dublin cSAC (Site Code 000206) as a fine example of extensive intertidal flats. 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. This European site is of international importance because of both the total number of waterfowl and the individual populations of light-bellied Brent Goose, black-tailed godwit and bar-tailed godwit that use it. Also of note is the regular presence of several species that are listed on Annex I of the EU Birds Directive.
- 13.3.12. **Conservation Objectives** for the North Dublin cSAC (NPWS, 2013) are to maintain the favourable conservation condition of qualifying interests, which are defined by a list of attributes and targets.

Howth Head Coast SPA (Site Code 004113)

- 13.3.13. The NPWS lists the Howth Head Coast SPA as being of high ornithological importance as it supports a nationally-important population of Kittiwake. It is also a traditional nesting site for Peregrine Falcon, a species that is listed in Annex I of the E.U. Birds Directive. The site is easily accessible and has important amenity and

educational value due to its proximity to Dublin City.

- 13.3.14. **Conservation Objective** for Howth Head Coast SPA (Feb 2018) are to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.

Dalkey Island SPA (Site Code 004172)

- 13.3.15. The NPWS lists this SPA of particular importance as a post-breeding/pre-migration autumn roost area for Roseate Tern, Common Tern and Arctic Tern. The NPWS also notes that the recent nesting by Roseate Tern is highly significant. All three of the tern species using the site are listed on Annex I of the E.U. Birds Directive.

- 13.3.16. **Conservation Objective** for Dalkey Island SPA are to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.

Rockabill to Dalkey Island cSAC (Site Code 003000)

- 13.3.17. This Rockabill to Dalkey Island cSAC site is of conservation importance for reefs, listed on Annex I, and Harbour Porpoise, listed on Annex II of the E.U. Habitats Directive. A number of marine species have also been identified in the cSAC. The NPWS site synopsis notes that a large number of terns (Arctic, Common and Roseate) are known to use Dalkey Island as a staging area (c. 2,000) after breeding. Other seabirds commonly seen include Kittiwake, Razorbill, Guillemot, Puffin, Fulmar, Shag, Cormorant, Manx Shearwater, Gannet and gulls.

- 13.3.18. **Conservation Objective** for the Rockabill to Dalkey Island cSAC (May 2013) are to maintain or restore the favourable conservation condition of the habitats/ species for which the cSAC has been selected.

13.4. **Significant Effects on European Sites**

- 13.4.1. The direct and indirect impacts from the proposed project components that have the potential (in the absence of mitigation) to result in a likelihood of significant adverse effects on qualifying interests having regard to the conservation objectives of the European sites brought forward to Stage 2 Appropriate Assessment are listed and

assessed below.

13.4.2. **Direct Effects as a result of the Ringsend WwTP component**

Impact	Temporary disturbance to habitat and species as a result of laying of a new underground electrical connection to an existing underground ESB cable in an area c.30m x 10m, which is within the South Dublin Bay and River Tolka Estuary SPA (site code 004024).
Assessment of Likely Significant Effects	<p>The grassland area is used by bird species including light-bellied Brent Goose, Oystercatcher, black-tailed Godwit, Redshank and Curlew, all of which are qualifying interests of the SPAs in Dublin Bay.</p> <p>Works are proposed to take place in summer months (May to August) outside of the nesting season and when the Brent Geese are absent from the SPA. The construction area would be fully reinstated by backfilling with the original soil and laying of grass turves in their original position. The grassland is proposed to be fully reinstated in time for the return of the geese in September/October.</p> <p>No remaining significant effects are anticipated.</p> <p>Monitoring of waterbirds on the grassland south of the project is proposed each winter between October and April during construction and for a year after to allow the efficacy of the mitigation measures to be verified.</p>
Assessment Conclusion	In conclusion, the proposed development would not adversely affect the integrity of the designated site and no reasonable scientific doubt remains as to the absence of such effects.

13.4.3. **Indirect /Secondary Effects as a result of the Ringsend WwTP component**

<p>Impact</p>	<p>Discharge of treated effluent from the WwTP both during the construction and operational phases of the proposed Ringsend WwTP Component. As the proposed discharge point would remain at the same location in the Liffey Estuary, there is potential that these changes could affect habitats or species that occur in the tidal part of Dublin Bay.</p>
<p>Assessment of Likely Significant Effects</p>	<p>During construction, there would be some reduction in treatment capacity during a nine-month period between the construction of AGS and SBR retrofit. In addition, there would be an increase in stormwater overflows. Temporary impacts on marine ecology could arise but the duration of the project and the magnitude of impact would not be of a sufficient scale as to result in adverse significant effects on European sites, having regard to the sites' conservation objectives.</p> <p>During the operation phase, water quality in the inner part of Dublin Bay would be improved primarily as a result of reduction of P and N leading towards a more diverse community of species and positive effects are predicted on the significant effects on the favourable conservation status of the qualifying interests or on the conservation objectives of the European sites within Dublin Bay. Given the relatively high background nutrients in Dublin Bay, no significant effects on waterbirds including Brent Geese and Wigeon that forage on macroalgae, Harbour Porpoise (a qualifying interest of the Rockabill to Dalkey cSAC), Kittiwake (a qualifying interest for Howth Head SPA) and Artic Tern, Common Tern and Roseate Tern (a qualifying interest for Dalkey Island SPA) that forages on shoaling fish, are anticipated.</p> <p>Overall it is submitted that the resulting impacts would not give rise to any significant effects on the favourable conservation status of the qualifying interests or on the conservation objectives of the</p>

	<p>European sites within Dublin Bay. It is assessed that it would be unlikely that the food resource of waterbirds in the Tolka Estuary would be negatively affected given the increase in diversity of species that would occur. Such changes are expected to be slow and would result in long-term positive impacts.</p> <p>Apart from the adherence to the project CEMP and related Environmental Incident response procedures as standard best practice, no other specific mitigation measures are required.</p> <p>No significant adverse effects are anticipated.</p> <p>Outside of monitoring of waterbirds on the grassland for construction and a year after construction, no other specific monitoring of waterbirds is proposed. Instead, it is proposed to make use of a monitoring programme by Birdwatch Ireland for all of Dublin Bay which can be conditioned to extend to a three year period post construction.</p>
<p>Assessment Conclusion</p>	<p>In conclusion, the proposed development would not adversely affect the integrity of the designated sites and no reasonable scientific doubt remains as to the absence of such effects.</p>

<p>Impact</p>	<p>Deterioration of receiving water quality during construction and operation phases arising from accidental discharge or pollution and resulting in deterioration of receiving watercourses and associated habitats and species.</p>
<p>Assessment of Likely Significant Effects</p>	<p>Accidental release of contaminants / pollution in the form of oils, hydrocarbons, concrete/cement could potentially discharge into the Liffey Estuary and thereafter travel to Dublin Bay. If this were to occur at significant magnitude and duration, it could result in significant effects on intertidal and subtidal habitats in South Dublin Bay cSAC and North Dublin Bay cSAC and qualifying</p>

	<p>interests of SPAs within Dublin Bay.</p> <p>Apart from the adherence to the project CEMP and related Environmental Incident response procedures as standard best practice, no other specific mitigation measures are required.</p> <p>Remaining significant effects are unlikely.</p> <p>No specific monitoring is proposed or required.</p>
Assessment Conclusion	<p>In conclusion, the proposed development would not adversely affect the integrity of the designated sites and no reasonable scientific doubt remains as to the absence of such effects.</p>

Impact	<p>Construction activities on site at Ringsend WwTP Component have the potential to cause visual disturbance to waterbird populations that use the replacement grassland area that forms part of the South Dublin Bay and River Tolka Estuary SPA, immediately south of the WwTP.</p>
Assessment of Likely Significant Effects	<p>Any visual disturbance has potential to result in significant effects on the qualifying interests of the Tolka Estuary SPA (important population of Light-bellied Brent Goose and nationally-important populations of a further nine wintering species), having regard to the site's conservation objectives.</p> <p>Solid screening would be erected between the construction site and the grassland area prior to construction in order to reduce or eliminate any visual disturbance.</p> <p>No remaining significant effects are likely.</p> <p>Monitoring of waterbirds on the grassland south of the project is proposed each winter between October and April during construction and for a year after to allow the efficacy of the mitigation measures to be verified.</p>
Assessment	<p>In conclusion, the proposed development would not adversely affect the integrity of the designated site and no reasonable</p>

Conclusion	scientific doubt remains as to the absence of such effects.
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Impact	The construction phase of the Ringsend WwTP components has potential to give rise to temporary disturbance from dust and changes in air quality during construction.
Assessment of Likely Significant Effects	<p>The movement of excavated soils and other material has the potential to generate fugitive dust which could travel through wind exposure to adjacent European sites. As part of the CEMP, a dust management plan would be put in place such that dust emissions on site would remain at or below 350 mg/m²/day to ensure it does not impact on air quality.</p> <p>No significant effects are therefore anticipated as a result of dust. Dust monitoring would be undertaken in accordance with commitments outlined in the CEMP and the EIAR.</p> <p>Potential arises for NO_x emissions to impact on grasslands and intertidal habitats. The maximum increase in the NO₂ dry deposition rate is 0.22 kg(N)/ha/yr is well below the critical load for inland water habitats on the improved grassland or on the bird species that use the South Dublin Bay and River Tolka Estuary SPA. No significant effects are therefore likely to arise as a result of air quality.</p>
Assessment Conclusion	In conclusion, the proposed development would not adversely affect the integrity of the designated site and no reasonable scientific doubt remains as to the absence of such effects.

Impact	Construction noise may affect Brent geese and breeding terns within the South Dublin Bay and River Tolka Estuary SPA.
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<p>Assessment of Likely Significant Effects</p>	<p>Construction noise has the potential to cause disturbance to wintering waterbirds and nesting terns within South Dublin Bay and River Tolka Estuary SPA.</p> <p>The common tern (<i>Sterna hirundo</i>) colony at Poolbeg, which forms part of South Dublin Bay and River Tolka Estuary SPA is located c.380m from the nearest part of the proposed development. Construction noise has been assessed as typically ranging between 40 to 45 dB LA_{eq} at the tern colony area.</p> <p>It is submitted that the tern colony itself generates a noise level of up to 70 to 80 dB(A), well in excess of any construction noise, through calling of terns during the breeding season.</p> <p>While the noise made by terns themselves cannot in my view be considered as comparable to construction noise, I note that as stated in the EIAR, the tern colony and other waterbirds in the area are habituated to noise from the plant itself and from the surrounding industrial operations and the city itself.</p> <p>A construction noise and vibration management plan and CEMP are proposed.</p> <p>Therefore, I accept the conclusion overall that noise from the proposed upgrade site would not be threatening to birds and construction noise would have imperceptible impacts on conservation objectives for any of the European sites brought forward to Stage two of the AA.</p> <p>Monitoring of waterbirds on the grassland south of the project is proposed each winter between October and April during construction and for a year after to allow the efficacy of the mitigation measures to be verified. Birdwatch Ireland monitoring programme would also be used.</p>
<p>Assessment</p>	<p>In conclusion, the proposed development would not adversely</p>

Conclusion	affect the integrity of the designated site and no reasonable scientific doubt remains as to the absence of such effects.
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Impact	Potential spread of Invasive species could lead to loss/deterioration of habits on the South Dublin Bay and River Tolka Estuary SPA.
Assessment of Likely Significant Effects	<p>Japanese Knotweed (<i>Fallopia japonica</i>) is known to exist at four locations along the east boundary. Where it would be disturbed during construction, it has the potential to spread to surrounding sites and/or the receiving water. If left uncontrolled, this could be considered a permanent, significant impact on European sites due to habitat loss. The invasive species management plan, which is prepared to outline stage would be required to be further developed and adhered to and I am satisfied that subject to implementation and adherence to the plan, no significant effects are likely.</p> <p>Annual monitoring of invasive species is proposed and if the results indicate any failures or shortcomings, in consultation with NPWS and other statutory undertakers, the applicant would commit to develop and implement additional control measures.</p>
Assessment Conclusion	In conclusion, the proposed development would not adversely affect the integrity of the designated site and no reasonable scientific doubt remains as to the absence of such effects.

13.4.4. **Direct Effects as a result of the RBSF component**

- None

13.4.5. **Indirect /Secondary Effects as a result of the RBSF component**

13.4.6. The assessment as presented in the NIS has determined that there would be no

potential for adverse effects on habitats or species.

13.4.7. Within the 10km zone of influence of the RBSF, the only European site brought forward to Stage two is the South Dublin Bay and River Tolka Estuary SPA. This site is remote from the proposed RBSF and given that no hydrological or hydrogeological pathways are present, the possibility of significant numbers of birds from this SPA being impacted by the RBSF is unlikely. Consequently, it can be concluded that the proposed development would not adversely affect the integrity of this SPA having regard to the conservation objectives of the site.

13.4.8. Nonetheless, the site is required to be assessed as part of the applicant's overall assessment for in-combination effects and I have dealt with such effects directly below.

13.4.9. **In-combination Effects**

13.4.10. The NIS considers the potential in-combination/cumulative impacts which could possibly arise when other plans and projects are taken into account. The assessment carried out included the wider overall project, referred to as the 'proposed upgrade project'. The assessment and the EIAR (Water and Biodiversity section) concludes that the proposed WwTP would not give rise to impacts on waterbird population and long-term changes to the waterbird population might be difficult to discern in the context of wider cumulative changes arising beyond those caused by the proposed development.

13.4.11. Beyond impacts assessed in relation to water and terrestrial biodiversity, I am satisfied that the construction and operation of the proposed development (taking into account proposed mitigation) is unlikely to result in any other in-combination impacts that would lead to significant effects.

13.4.12. **Monitoring**

13.4.13. Monthly surveys of waterbirds (between October and April) would be undertaken by the applicant on the grassland area to the south for the duration of the project and for one year after. In addition, it is stated that monitoring carried out by BirdWatch Ireland would be utilised. Given that the construction period would extend for a

period of approximately 10 years and that the plant would operate as a live plant during this time, I am satisfied with this proposed monitoring period.

13.4.14. Monitoring of invasive species is proposed to be carried out on an annual basis.

13.4.15. Together the monitoring outcomes would allow an assessment of the efficacy of mitigation measures proposed and where any shortcomings are discovered, the applicant proposed to develop and implement additional control measures.

13.5. **Conclusion on Appropriate Assessment**

13.5.1. On the basis of the information provided with the application, including the Natura Impact Statement, which I consider adequate in order to carry out a Stage 2 Appropriate Assessment, I am satisfied that the proposed development, individually or in combination with other plans or projects, would not adversely affect the integrity of the following European sites:

- South Dublin Bay and River Tolka Estuary SPA (site code 004024)
- South Dublin Bay cSAC (site code 000210)
- North Bull Island SPA (site code 004006)
- North Dublin Bay cSAC (site code 000206)
- Howth Head Coast SPA (site code 004113)
- Dalkey Islands SPA (site code 004172)
- Rockabill to Dalkey Island cSAC (site code 003000)

or any other European site, in view of the sites' conservation objectives.

14.0 Recommendation

- 14.1. On the basis of the above assessment, I recommend that the Board grant permission for the proposed development for the reasons and considerations and subject to the conditions set out below.

15.0 Reasons and Considerations

- 15.1. In coming to its decision, the Board had regard to a range of matters including the following:

European legislation, including of particular relevance:

- EIA Directive 2011/92/EU amended by Directive 2014/52/EU (EIA Directive);
- European Union Water Framework Directive 2000/60/EC;
- The European Union Urban Waste Water Treatment Directive 91/271/EEC;
- The European Union Bathing Water Directive 2006/7/EC;
- Groundwater Directive (2006/118/EC);
- Sewage Sludge Directive (86/278/EEC);
- Nitrates Directive (91/676/EEC);

National legislation including of particular relevance:

- The European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended;
- European Communities (Water Policy) Regulations, 2003, as amended;
- European Communities Environmental Objectives (Groundwater) Regulations 2010, as amended;
- Urban Waste Water Treatment Regulations 2001, as amended;
- The Waste Water Discharge (Authorisation) Regulations 2007, as amended;

- Bathing Water Quality Regulations 2008, as amended;

National and regional planning and related policy including:

- 'National Planning Framework – Ireland 2040' including Strategic Outcome 9 and corresponding Investment Action contained in the National Development Plan, 2018-2027;
- Water Services Strategic Plan where the upgrading of Ringsend Treatment Plant is recognised as a significant contribution in meeting its obligation under the Urban Wastewater Treatment Directive;
- National Wastewater Sludge Management Plan (2016 – 2041);
- River Basin Management Plan for Ireland 2018 – 2021;
- Greater Dublin Strategic Drainage Study (2005) and Greater Dublin Drainage Strategy: Overview & Future Strategy (2018);
- Regional Planning Guidelines for the Greater Dublin Area 2010-2022;
- Draft Regional Spatial and Economic Strategy (RSES);
- Eastern-Midlands Region Waste Management Plan 2015 – 2021;

Local planning context – Ringsend WwTP component

- The provisions of the Dublin City Development Plan 2016-2022, including Policies SI1 and SI2 which support development of water and wastewater systems by Irish Water in which the upgrading of the Ringsend Wastewater Treatment Plant is specifically referenced; related Planning Objectives SIO1 and SIO2 together with stated policies and objectives in support of the proposed development in the context of proper planning and sustainable development. Regard was also had to the land use zoning objectives for the area.

Local planning context – RBSF component

- The provisions of the Fingal Development Plan 2017-2023 including stated policies and objectives, particularly Objective WM15 which requires to work with Irish Water and other relevant stakeholders to ensure the provision of facilities for the safe and sustainable management of sludges (sewage, waterworks, agricultural, industrial and septic tank) and Local Objective 78, in support the proposed development in the context of proper planning and sustainable development. Regard was also had to the land use zoning objectives for the area.

and to the following matters

- the current performance of the existing wastewater treatment plant and the demonstrated need to improve discharge standards in order to increase capacity and meet water quality standards for bathing waters, coastal waters, transitional waters and designated sensitive waters in Dublin Bay in accordance with the requirements set out under the legislation and emissions limit values contained in the licence granted by the EPA under licence number D00-34-01;
- the entirety of the documentation that accompanied the planning application and reports and submissions, which were submitted by all parties, planning authorities, prescribed bodies and observers and the further submission made by the applicant during the course of the application;
- the established site context on the Poolbeg peninsula, spatially separated from residential development and the pattern of development in the area;
- the planning history of the site;
- the nature, scale and design of the proposed development including in particular the proven AGS technology and the associated nitrogen and phosphorous removal in relation to the Ringsend WwTP component and the nature, scale, design and purpose of the RBSF component,

- the range of proposed mitigation measures set out in the submitted Environmental Impact Assessment Report and Natura Impact Statement (incorporating Appropriate Assessment Screening);
- the submissions made in relation to the application and the report and recommendation of the inspector;

15.2. **Proper Planning and Sustainable Development**

15.2.1. The benefits of the proposed development are considered to be overwhelmingly positive. It's delivery would assist Ireland in meeting obligations set down under EU Directives, national legislation and planning policy expressed through the hierarchy plans which regulate development at a national, regional and local level. The development would enable sustainable residential and economic growth through the delivery of increased wastewater treatment capacity while protecting the environment through improving the quality of effluent discharged to the receiving water environment. It has been demonstrated in the application that the improvement envisaged in final effluent quality can be achieved at the existing Ringsend Wastewater treatment plant by the incorporation of scientifically proven aerobic granular sludge technology into the treatment process together with associated nitrogen and phosphorous removal. When compared to the previously permitted and proposed long sea outfall (in tunnel) option, the current proposal has significant advantages and would be less intrusive on the receiving environment. The regional biosolids storage facility would assist in meeting the aims of the Sewage Sludge Directive, regulating the use of sewage sludge in agriculture to prevent harmful effects. Outside of matters considered above, environmental impact assessment and appropriate assessment are considered in the following sections of my assessment set out below. Subject to consideration of these matters, it can be concluded that the proposed development is in accordance with the proper planning and sustainable development of the area.

15.3. **Environmental Impact Assessment**

The Board completed an environmental impact assessment of the proposed development and wider proposed upgrade project, taking into account:

- (a) The nature, scale, location and extent of the proposed development across the Ringsend WwTP and RBSF components;
- (b) The environmental impact assessment report and associated documentation submitted with the application;
- (c) The reports and submissions received from the planning authority, observers and prescribed bodies and the applicant's further submission in the course of the application;
- (d) The planning inspector's report;

The Board agreed with the summary and examination set out in the inspector's report, of the information contained in the environmental impact assessment report and associated documentation submitted by the applicant and submissions made in the course of the application. The Board is satisfied that the inspector's report sets out how these were addressed in the examination and recommendation and are incorporated into the Board's decision.

The Board considered that the environmental impact assessment report, supported by the documentation submitted by the applicant, provided information which is reasonable and sufficient to allow the Board to reach a reasoned conclusion on the significant effects of the project on the environment, taking into account current knowledge and methods of assessment. The Board is satisfied that the information contained in the EIAR is up to date and complies with the provisions of EU Directive 2014/52/EU amending Directive 2011/92/EU. The Board considered that the main significant direct and indirect effects of the proposed development on the environment are those arising from the impacts listed below. A Construction Environmental Management Plan (CEMP) is the overarching general mitigation embedded in the project design and delivery for the construction stage. In addition, plans relating to Waste Management, Invasive Species Management, Traffic Management, Monitoring Plans and Emergency Response Plans are also proposed. The remaining impacts, both positive and negative are:

- Benefits/positive impacts to **population and human health** arising as a result of the overall project upgrade due to providing increased treatment

infrastructural capacity and improved level of treatment which would improve compliance with EU Directives and corresponding legislation and would be pivotal in supporting planned residential and economic growth in Dublin city and the region.

- Negative temporary impact on **population and human health** (recreational swimmers/water based sporting activities) because of a deterioration in water quality during a nine-month period of decommissioning of aspects of the WwTP (during construction) and a corresponding temporary loss of recreational amenity which would be partially mitigated by carrying out the works in winter period when the recreational water based activities are at seasonally low levels;
- Benefits/positive impacts on the environment (**soils, traffic, water quality, climate**) as a result of reduction in excavation and truck movements (estimated to be 70,000 HGV movements over an 18-month period) which would otherwise have been required to remove and transport rock and spoil during the construction phase of the undersea tunnel. During the operation phase, the proposal to omit the tunnel and associated diffuser point 9 km out to sea would also mean that there would be no deterioration of water quality at this location.
- Impacts arising on **land and soils** as a result of spread of invasive species (Japanese Knotweed) present on the Ringsend wastewater treatment site and which would be mitigated by the preparation and implementation of an Invasive Species Management Plan and method statement for the control of disturbance of soils containing Japanese Knotweed and the requirement that a suitably qualified ecologist would be engaged to oversee the implementation of the Invasive Species Management Plan and monitor the success of the mitigation measures post-construction;
- Risk of pollution of **receiving water environment** as a result of accidental spillages of chemicals, hydrocarbons or other contaminants entering the drainage system and discharging to the stream thereafter during the construction and operational phases. The impacts would be mitigated by

measures within a Construction and Environmental Monitoring Plan (CEMP) and adherence to best practice construction measures and incorporation of appropriate drainage facilities. Measures set out in the CIRIA guidance document on 'control and management of water pollution from construction sites' would be implemented. The guidelines provided by the Inland Fisheries Ireland (2016) on the protection of fisheries habitats during construction projects would also be adhered to.

- **Noise** impacts for the construction and operation phases which would be mitigated by the requirements to prepare and adhere to the Noise and Vibration Management Plans (NWMP) and comply with appropriate noise and vibration limits which are set out in the EIAR in respect of the development at Ringsend wastewater treatment plant and the development of the regional biosolids facility.
- **Odour impacts** for the operational phase which would be mitigated by the following:
 - Ringsend WwTP: odour from the wastewater treatment plant (excluding storm tanks) would be required not to exceed 10 ouE/m³ as the 99.4th percentile of hourly averages at the boundary of the Ringsend WwTP site. The adopted odour annoyance criterion of 3 ouE/m³ as the 98th percentile of hourly averages would not be exceeded at any sensitive receptor location. The Odour Management Plan would be updated as necessary and implemented to ensure the above standard is achieved during construction and operation.
 - RBSF: The adopted odour annoyance criterion of 3 ouE/m³ as the 98th percentile of hourly averages would not be exceeded at any sensitive receptor location.

The Board completed an environmental impact assessment in relation to the proposed development forming part of the overall proposed upgrade project and concluded that, subject to the implementation of the mitigation measures referred to above including proposed monitoring as appropriate, subject to compliance with the

conditions set out below, the effects on the environment of the proposed development, by itself and in combination with other development in the vicinity, would be acceptable. In doing so, the Board adopted the report and conclusions set out in the inspector's report.

15.4. **Appropriate Assessment**

15.4.1. The Board agreed with and adopted the screening (Appropriate Assessment Stage one) and conclusions carried out in the inspector's report that South Dublin Bay and River Tolka Estuary SPA (site code 004024), South Dublin Bay cSAC (site code 000210), North Bull Island SPA (site code 004006), North Dublin Bay cSAC (site code 000206), Howth Head Coast SPA (site code 004113), Dalkey Islands SPA (site code 004172) and Rockabill to Dalkey Island cSAC (site code 003000) are the only European Sites in respect of which the proposed development has the potential to have a significant effect.

15.4.2. The Board considered the Natura Impact Statement and associated documentation submitted with the application, the mitigation measures contained therein, the submissions and observations on file, and the inspector's assessment. The Board completed an appropriate assessment of the implications of the proposed development as part of the overall proposed upgrade project for the aforementioned European Sites in view of the sites' conservation objectives. The Board considered that the information before it was adequate to allow the carrying out of an appropriate assessment. In completing the appropriate assessment, the Board considered, in particular, the following:

- a. the likely direct and indirect impacts arising from the proposed development at Ringsend WwTP and the RBSF sites both individually, when taken together and in combination with other plans or projects,
- b. the mitigation measures, which are included as part of the current proposal, and
- c. the conservation objectives for the European Sites.

In completing the appropriate assessment, the Board accepted and adopted the appropriate assessment carried out in the Inspector's report in respect of the potential effects of the proposed development on the aforementioned European

Sites, having regard to the sites' conservation objectives. In overall conclusion, the Board was satisfied that the proposed development, by itself or in combination with other plans or projects, would not adversely affect the integrity of the European Sites, in view of the sites' conservation objectives.

16.0 Conditions

16.1. Ringsend WwTP and the RBSF components

1. The proposed development shall be carried out and completed in accordance with the plans and particulars lodged with the planning application and the information contained in the Environmental Impact Assessment Report and Natura Impact Statement, except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development, or in default of agreement, shall be referred to An Bord Pleanála for determination, and the proposed development shall be carried out and completed in accordance with the agreed particulars.

Reason: In the interest of clarity and the proper planning and sustainable development of the area and to ensure the protection of the environment.

2. With the exception of the development hereby permitted, the proposed development at the Ringsend Wastewater Treatment Plant shall otherwise comply with the terms and conditions of permission granted under ABP Ref: 29N.YA0010, as amended by planning permission granted for alterations under ABP Ref. 29N.YM0002 and 29N.YM0004 and any further applications or alterations where permitted.

Reason: In the interest of clarity and the proper planning and sustainable

development of the area.

3. The period during which the development hereby permitted may be carried out shall be ten years from the date of this order.

Reason: Having regard to the nature and extent of the proposed development, the Board considered it appropriate to specify a period of validity of this permission in excess of five years.

4. Mitigation

- a) All mitigation and environmental commitments identified in the EIAR (Table 17-1 of Volume 3 and 4) shall be implemented in full as part of the proposed development except as may otherwise be required to comply with the following conditions.

Monitoring

- b) All monitoring measures identified in the EIAR (Table 17-2-of Volume 3 and 4) shall be carried out and the details of monitoring results shall be submitted to the Planning Authorities (Dublin City Council in respect of the Ringsend wastewater treatment plant and Fingal County Council in respect of the Regional Biosolids facility) except as may otherwise be required to comply with the following conditions.

Reason: In the interest of clarity and to protect the environment.

5. A contract specific Construction and Environmental Management Plan (CEMP) and Waste Management Plan (WMP) shall be submitted to and agreed in writing with both Planning Authorities in respect of the development at the Ringsend WwTP site and the RBSF site. The CEMPs and WMPs shall detail and ensure Best Construction Practice and compliance with statutory obligations.

As part of the CEMP, the submitted invasive species management plan

shall be updated as necessary for the control or disturbance to soils containing Japanese Knotweed in accordance with 'Irish Water Information and Guidance Document on Japanese Knotweed. The plan shall include a method statement for the removal of invasive species identified as being present on site.

The implementation of the invasive species management plan shall be overseen by a suitably qualified ecologist/botanist familiar with Japanese Knotweed.

Reason: To protect the environment during construction.

6. a) Prior to commencement of the development, a Traffic Management Plan for the construction and operational phases shall be submitted to, and agreed in writing with the Planning Authorities in respect of the development at the Ringsend WwTP site and the RBSF site.
- b) The developer shall comply with the requirements of the Planning Authorities in respect of minimising traffic disruption on the local communities, cleaning and repair of any damage to the public road networks during the construction and operation phases.

Reason: To protect the public road network and in the interest of traffic safety.

7. The development shall adhere to the Noise and Vibration Management Plans (NWMP) and comply with appropriate noise and vibration limits set out in the EIAR in respect of the overall development at Ringsend wastewater treatment plant and the development of the regional biosolids facility.

During the construction and demolition phases, the proposal development shall comply with British Standard 5228 Noise Control on Construction and open sites Part 1. Code of practice for basic information

and procedures for noise control.

Construction Noise at the nearest sensitive receptor shall comply with the following limits:

- 70 L_{Aeq} (1 hour) dB – Daytime (07:00 – 19:00) and Saturdays (07:00 – 13:00)
- 65 L_{Aeq} (1 hour) dB – Evening (19:00 – 23:00)
- 55 L_{Aeq} (1 hour) dB – Night time (23:00 – 07:00)

Mitigation for the operation phase would include a number of items such as selection of 'low noise' equipment and plant, vibration isolation mounts and appropriate siting of fixed plant.

The developer(s) shall require the appointed contractor to employ and implement best practice construction noise and vibration management techniques throughout the construction phase in order to further reduce the noise and vibration impact to nearby noise sensitive receptors.

During the operation phase, noise shall be minimised by the selection of 'low noise' plant and equipment and incorporation of appropriate attenuation.

Noise monitoring during construction and commissioning and/or operation shall be carried out in accordance with the requirements of the Planning Authorities.

Reason: In the interest of the amenities of the surrounding area.

8. a) Ringsend WwTP

During operation, odour from the wastewater treatment plant (excluding storm tanks) shall not exceed 10 ou_E/m^3 as the 99.4th percentile of hourly averages at the boundary of the Ringsend WwTP site.

The adopted odour annoyance criterion of 3 ou_E/m^3 as the 98th percentile of hourly averages shall not be exceeded at any sensitive

receptor location. The Odour Management Plan shall be updated as necessary and implemented to ensure the above standard is achieved during construction and operation.

b) RBSF

The adopted odour annoyance criterion of 3 ouE/m³ as the 98th percentile of hourly averages shall not be exceeded at any sensitive receptor location.

Reason: In the interest of the amenities of the surrounding area.

9. The developer shall facilitate the preservation, recording and protection of archaeological materials or features that that may exist within and proximate to the Ringsend wastewater treatment site.

In this regard the developer shall –

- a) Notify the Department of the Culture, Heritage and the Gaeltacht in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development.
- b) Employ a suitably qualified archaeologist who shall monitor all site investigations and other excavation works and,
- c) Provide arrangements for the recording and for the removal of any archaeological material which the Department of Culture, Heritage and the Gaeltacht considers appropriate to remove.

In default of an agreement on any of these requirements, the matter shall be referred to An Bord Pleanála for determination.

Reason: In order to conserve the archaeological heritage of the site and to secure the preservation and protection of any remains that may exist within the site.

10. a) Prior to the commencement of the development, the developer shall submit a detailed landscaping plan for each of the development components at Ringsend WwTP and the RBSF sites. Details, including strengthening of boundary treatment, screening of compounds and general landscape details including timescales shall be submitted to and agreed in writing with the planning authorities and the landscaping shall be carried out in accordance with the agreed details thereafter.
- b) Prior to the commencement of the development, a detailed decommissioning and site restoration plan in respect of the construction compounds, together with a timescale for its implementation, shall be submitted to and agreed in writing with the planning authorities.

Reason: In the interest of the amenities of the surrounding area.

11. a) The development shall comply with the requirements of the Planning Authorities with respect to surface water management.
- b) The existing surface water pipeline traversing the RBSF site shall be realigned and a wayleave provided in accordance with the requirements of the Planning Authority (Fingal County Council).

Reason: In the interest of providing best practice for surface water management and to provide for future maintenance of the realigned pipe at the RBSF site.

12. Prior to commencement of the development, the design details for the regional biosolids facility shall be submitted to and agreed in writing with the planning authority for the prevention of environmental pollution in the event of a fire occurrence. Such detail shall also include an assessment of the risk of environmental pollution due to fire water and any mitigation measures which may be necessary

Reason: In the interest of protection of the environment and amenities of

the area.

13. All works to be undertaken within and adjacent to designated European sites within Dublin Bay shall be undertaken in accordance with the requirements of a suitably qualified ecologist appointed following consultation with the National Parks and Wildlife Service.

Reason: In the interest of protection of designated European sites and qualifying interests, having regard to the sites conservation objectives.

14. The developer shall pay to the planning authority (Fingal County Council) a financial contribution as a special contribution under section 48(2) (c) of the Planning and Development Act 2000, as amended, in respect of the upgrade and signalisation of the R135 and the N2 North Bound Slip priority junction. The amount of the contribution shall be agreed between the planning authority and the developer or, in default of such agreement, the matter shall be referred to An Bord Pleanála for determination. The contribution shall be paid prior to commencement of development or in such phased payments as the planning authority may facilitate. The application of indexation required by this condition shall be agreed between the planning authority and the developer or, in default of such agreement, the matter shall be referred to An Bord Pleanála to determine.

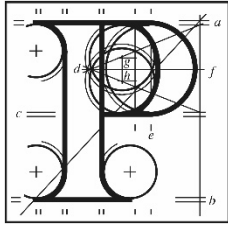
Reason: It is considered reasonable that the developer should contribute towards the specific exceptional costs which are incurred by the planning authority which are not covered in the Development Contribution Scheme and which would benefit the proposed development.

Patricia Calleary

Senior Planning Inspector

12th February 2019

G.3 Board Direction BD-002804-19, ABP-301798-18



An
Bord
Pleanála

Board Direction
BD-002804-19
ABP-301798-18

The submissions on this file and the Inspector's report were considered at a Board meeting held on 11/04/2019.

The Board decided to grant permission generally in accordance with the Inspector's recommendation, for the following reasons and considerations, and subject to the following conditions.

Reasons and Considerations

In coming to its decision, the Board had regard to a range of matters including the following:

European legislation, including of particular relevance:

- EIA Directive 2011/92/EU amended by Directive 2014/52/EU (EIA Directive);
- European Union Water Framework Directive 2000/60/EC;
- The European Union Urban Waste Water Treatment Directive 91/271/EEC;
- The European Union Bathing Water Directive 2006/7/EC;
- Groundwater Directive (2006/118/EC);
- Sewage Sludge Directive (86/278/EEC);
- Nitrates Directive (91/676/EEC);

National legislation including of particular relevance:

- The European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended;
- European Communities (Water Policy) Regulations, 2003, as amended;
- European Communities Environmental Objectives (Groundwater) Regulations 2010, as amended;
- Urban Waste Water Treatment Regulations 2001, as amended;
- The Waste Water Discharge (Authorisation) Regulations 2007, as amended;
- Bathing Water Quality Regulations 2008, as amended;

National and regional planning and related policy including:

- 'National Planning Framework – Ireland 2040' including Strategic Outcome 9 and corresponding Investment Action contained in the National Development Plan, 2018-2027;
- Water Services Strategic Plan where the upgrading of Ringsend Treatment Plant is recognised as a significant contribution in meeting its obligation under the Urban Wastewater Treatment Directive;
- National Wastewater Sludge Management Plan (2016 – 2041);
- River Basin Management Plan for Ireland 2018 – 2021;
- Greater Dublin Strategic Drainage Study (2005) and Greater Dublin Drainage Strategy: Overview & Future Strategy (2018);
- Regional Planning Guidelines for the Greater Dublin Area 2010-2022;
- Draft Regional Spatial and Economic Strategy (RSES);
- Eastern-Midlands Region Waste Management Plan 2015 – 2021;

Local planning context – Ringsend Waste Water Treatment Plant (WwTP) component

- The provisions of the Dublin City Development Plan 2016-2022, including Policies SI1 and SI2 which support development of water and wastewater systems by Irish Water in which the upgrading of the Ringsend Wastewater Treatment Plant is specifically referenced; related Planning Objectives SIO1 and SIO2 together with stated policies and objectives in support of the proposed development in the context of proper planning and sustainable development. Regard was also had to the land use zoning objectives for the area.

Local planning context – Regional Biosolids Storage Facility (RBSF) component

- The provisions of the Fingal Development Plan 2017-2023 including stated policies and objectives, particularly Objective WM15 which requires to work with Irish Water and other relevant stakeholders to ensure the provision of facilities for the safe and sustainable management of sludges (sewage, waterworks, agricultural, industrial and septic tank) and Local Objective 78, in support the proposed development in the context of proper planning and sustainable development. Regard was also had to the land use zoning objectives for the area.

and to the following matters

- the current performance of the existing wastewater treatment plant and the demonstrated need to improve discharge standards in order to increase capacity and meet water quality standards for bathing waters, coastal waters, transitional waters and designated sensitive waters in Dublin Bay in accordance with the requirements set out under the legislation and emissions limit values contained in the licence granted by the EPA under licence number D00-34-01;

- the entirety of the documentation that accompanied the planning application and reports and submissions, which were submitted by all parties, planning authorities, prescribed bodies and observers and the further submission made by the applicant during the course of the application;
- the established site context on the Poolbeg peninsula, spatially separated from residential development and the pattern of development in the area;
- the planning history of the site;
- the nature, scale and design of the proposed development including in particular the proven AGS technology and the associated nitrogen and phosphorous removal in relation to the Ringsend WwTP component and the nature, scale, design and purpose of the RBSF component,
- the range of proposed mitigation measures set out in the submitted Environmental Impact Assessment Report and Natura Impact Statement (incorporating Appropriate Assessment Screening);
- the submissions made in relation to the application and the report and recommendation of the inspector;

The Board considered that, subject to compliance with the conditions set out below that the proposed development would enable sustainable residential and economic growth through the delivery of increased wastewater treatment capacity, would improve the quality of effluent discharged to the receiving water environment, would assist Ireland in meeting obligations set down under EU Directives, national legislation and planning policy, and would be acceptable in terms of odour, noise, vibration and traffic. The proposed development would, therefore, be in accordance with the proper planning and sustainable development of the area.

Appropriate Assessment: Stage 1 Screening

The Board agreed with and adopted the screening (Appropriate Assessment Stage one) and conclusions carried out in the inspector's report that South Dublin Bay and River Tolka Estuary SPA (site code 004024), South Dublin Bay cSAC (site code 000210), North Bull Island SPA (site code 004006), North Dublin Bay cSAC (site code 000206), Howth Head Coast SPA (site code 004113), Dalkey Islands SPA (site code 004172) and Rockabill to Dalkey Island cSAC (site code 003000) are the only European Sites in respect of which the proposed development has the potential to have a significant effect.

Appropriate Assessment: Stage 2

The Board considered the Natura Impact Statement and associated documentation submitted with the application, the mitigation measures contained therein, the submissions and observations on file, and the inspector's assessment. The Board completed an appropriate assessment of the implications of the proposed development as part of the overall proposed upgrade project for the aforementioned European Sites in view of the sites' conservation objectives. The Board considered that the information before it was adequate to allow the carrying out of an appropriate assessment. In completing the appropriate assessment, the Board considered, in particular, the following:

- a. the likely direct and indirect impacts arising from the proposed development at Ringsend WwTP and the RBSF sites both individually, when taken together and in combination with other plans or projects,
- b. the mitigation measures, which are included as part of the current proposal, and
- c. the conservation objectives for the European Sites.

In completing the appropriate assessment, the Board accepted and adopted the appropriate assessment carried out in the Inspector's report in respect of the

potential effects of the proposed development on the aforementioned European Sites, having regard to the sites' conservation objectives. In overall conclusion, the Board was satisfied that the proposed development, by itself or in combination with other plans or projects, would not adversely affect the integrity of the European Sites, in view of the sites' conservation objectives.

Environmental Impact Assessment

The Board completed an environmental impact assessment of the proposed development and wider proposed upgrade project, taking into account:

- (a) The nature, scale, location and extent of the proposed development across the Ringsend WwTP and RBSF components;
- (b) The environmental impact assessment report and associated documentation submitted with the application;
- (c) The reports and submissions received from the planning authority, observers and prescribed bodies and the applicant's further submission in the course of the application;
- (d) The Inspector's report;

The Board agreed with the summary and examination set out in the inspector's report, of the information contained in the environmental impact assessment report and associated documentation submitted by the applicant and submissions made in the course of the application. The Board is satisfied that the inspector's report sets out how these were addressed in the examination and recommendation and are incorporated into the Board's decision.

Reasoned Conclusions on the Significant Effects

The Board considered that the environmental impact assessment report, supported by the documentation submitted by the applicant, provided information which is reasonable and sufficient to allow the Board to reach a reasoned conclusion on the significant effects of the project on the environment, taking into account current

knowledge and methods of assessment. The Board is satisfied that the information contained in the EIAR is up to date and complies with the provisions of EU Directive 2014/52/EU amending Directive 2011/92/EU. The Board considered that the main significant direct and indirect effects of the proposed development on the environment are those arising from the impacts listed below. A Construction Environmental Management Plan (CEMP) is the overarching general mitigation embedded in the project design and delivery for the construction stage. In addition, plans relating to Waste Management, Invasive Species Management, Traffic Management, Odour Management, Monitoring Plans and Emergency Response Plans are also proposed. The remaining impacts, both positive and negative are:

- Benefits/positive impacts to **population and human health** arising as a result of the overall project upgrade due to providing increased treatment infrastructural capacity and improved level of treatment which would improve compliance with EU Directives and corresponding legislation and would be pivotal in supporting planned residential and economic growth in Dublin city and the region.
- Negative temporary impact on **population and human health** (recreational swimmers/water based sporting activities) because of a deterioration in water quality during a nine-month period of decommissioning of aspects of the WwTP (during construction) and a corresponding temporary loss of recreational amenity which would be partially mitigated by carrying out the works in winter period when the recreational water based activities are at seasonally low levels;
- Benefits/positive impacts on the environment (**soils, traffic, water quality, climate**) as a result of reduction in excavation and truck movements (estimated to be 70,000 HGV movements over an 18-month period) which would otherwise have been required to remove and transport rock and spoil during the construction phase of the undersea tunnel. During the operation phase, the proposal to omit the tunnel and associated diffuser point 9 km out

to sea would also mean that there would be no deterioration of water quality at this location.

- Impacts arising on **land and soils** as a result of spread of invasive species (Japanese Knotweed) present on the Ringsend wastewater treatment site and which would be mitigated by the preparation and implementation of an Invasive Species Management Plan and method statement for the control of disturbance of soils containing Japanese Knotweed and the requirement that a suitably qualified ecologist would be engaged to oversee the implementation of the Invasive Species Management Plan and monitor the success of the mitigation measures post-construction;
- Risk of pollution of **receiving water environment** as a result of accidental spillages of chemicals, hydrocarbons or other contaminants entering the drainage system and discharging to the stream thereafter during the construction and operational phases. The impacts would be mitigated by measures within a Construction and Environmental Monitoring Plan (CEMP) and adherence to best practice construction measures and incorporation of appropriate drainage facilities. Measures set out in the CIRIA guidance document on 'control and management of water pollution from construction sites' would be implemented. The guidelines provided by the Inland Fisheries Ireland (2016) on the protection of fisheries habitats during construction projects would also be adhered to.
- **Noise** impacts for the construction and operation phases which would be mitigated by the requirements to prepare and adhere to the Noise and Vibration Management Plans (NWMP) and comply with appropriate noise and vibration limits which are set out in the EIAR in respect of the development at Ringsend wastewater treatment plant and the development of the RBSF.
- **Odour impacts** for the operational phase which would be mitigated by the following:

- Ringsend WwTP: odour from the wastewater treatment plant (excluding storm tanks) would be required not to exceed 10 ouE/m³ as the 99.4th percentile of hourly averages at the boundary of the Ringsend WwTP site. The adopted odour annoyance criterion of 3 ouE/m³ as the 98th percentile of hourly averages would not be exceeded at any sensitive receptor location. The Odour Management Plan would be updated as necessary and implemented to ensure the above standard is achieved during construction and operation.
- RBSF: The adopted odour annoyance criterion of 3 ouE/m³ as the 98th percentile of hourly averages would not be exceeded at any sensitive receptor location.

The Board completed an environmental impact assessment in relation to the proposed development forming part of the overall proposed upgrade project and concluded that, subject to the implementation of the mitigation measures referred to above including proposed monitoring as appropriate, subject to compliance with the conditions set out below, the effects on the environment of the proposed development, by itself and in combination with other development in the vicinity, would be acceptable. In doing so, the Board adopted the report and conclusions set out in the inspector's report.

Conclusion on Proper Planning and Sustainable Development

The benefits of the proposed development are considered to be positive. Its delivery would assist Ireland in meeting obligations set down under EU Directives, national legislation and planning policy expressed through the hierarchy plans which regulate development at a national, regional and local level. The development would enable sustainable residential and economic growth through the delivery of increased wastewater treatment capacity while protecting the environment through improving the quality of effluent discharged to the receiving water environment. It has been demonstrated in the application that the improvement envisaged in final effluent quality can be achieved at the existing Ringsend Wastewater treatment plant by the

incorporation of scientifically proven aerobic granular sludge technology into the treatment process together with associated nitrogen and phosphorous removal. When compared to the previously permitted and proposed long sea outfall (in tunnel) option, the current proposal has significant advantages and would be less intrusive on the receiving environment. The regional biosolids storage facility would assist in meeting the aims of the Sewage Sludge Directive, regulating the use of sewage sludge in agriculture to prevent harmful effects. Environmental impact assessment and appropriate assessment have also been considered as set out in the sections above. It can, therefore, be concluded that the proposed development is in accordance with the proper planning and sustainable development of the area.

Conditions

Ringsend WwTP and the RBSF components

1. The proposed development shall be carried out and completed in accordance with the plans and particulars lodged with the planning application and the information contained in the Environmental Impact Assessment Report and Natura Impact Statement, except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development, or in default of agreement, shall be referred to An Bord Pleanála for determination, and the proposed development shall be carried out and completed in accordance with the agreed particulars.

Reason: In the interest of clarity and the proper planning and sustainable development of the area and to ensure the protection of the environment.

2. Mitigation

- a) All mitigation and environmental commitments identified in the EIAR (Table 17-1 of Volume 3 and 4) shall be implemented in full as part of the proposed development except as may otherwise be required to comply with the following conditions.

Monitoring

- b) All monitoring measures identified in the EIAR (Table 17-2-of Volume 3 and 4) shall be carried out and the details of monitoring results shall be submitted to the Planning Authorities (Dublin City Council in respect of the Ringsend wastewater treatment plant and Fingal County Council in respect of the RBSF) except as may otherwise be required to comply with the following conditions.

Reason: In the interest of clarity and to protect the environment.

3. With the exception of the development hereby permitted, the proposed development at the Ringsend Wastewater Treatment Plant shall otherwise comply with the terms and conditions of permission granted under ABP Ref: 29N.YA0010, as amended by planning permission granted for alterations under ABP Ref. 29N.YM0002 and 29N.YM0004 and any further applications or alterations where permitted.

Reason: In the interest of clarity and the proper planning and sustainable development of the area.

4. The period during which the development hereby permitted may be carried out shall be ten years from the date of this order.

Reason: Having regard to the nature and extent of the proposed development, the Board considered it appropriate to specify a period of validity of this permission in excess of five years.

5. A contract specific Construction and Environmental Management Plan (CEMP) and Waste Management Plan (WMP) shall be submitted to and agreed in writing with both Planning Authorities in respect of the development at the Ringsend WwTP site and the RBSF site. The CEMPs and WMPs shall detail and ensure Best Construction Practice and compliance with statutory obligations.

As part of the CEMP, the submitted invasive species management plan shall be updated as necessary for the control or disturbance to soils containing Japanese Knotweed in accordance with 'Irish Water Information and Guidance Document on Japanese Knotweed'. The plan shall include a method statement for the removal of invasive species identified as being present on site.

The implementation of the invasive species management plan shall be overseen by a suitably qualified ecologist/botanist familiar with Japanese Knotweed.

Reason: To protect the environment during construction.

6.
 - a) Prior to commencement of the development, a Traffic Management Plan for the construction and operational phases shall be submitted to, and agreed in writing with, the Planning Authorities in respect of the development at the Ringsend WwTP site and the RBSF site.
 - b) The developer shall comply with the requirements of the Planning Authorities in respect of minimising traffic disruption on the local communities, cleaning and repair of any damage to the public road networks during the construction and operation phases.

Reason: To protect the public road network and in the interest of traffic safety.

7. The development shall adhere to the Noise and Vibration Management Plans (NWMP) and comply with appropriate noise and vibration limits set out in the EIAR in respect of the overall development at Ringsend wastewater treatment plant and the development of the RBSF.

During the construction and demolition phases, the proposal development shall comply with British Standard 5228 Noise Control on Construction and open sites Part 1. Code of practice for basic information and procedures for noise control.

Construction Noise at the nearest sensitive receptor shall comply with the following limits:

- 70 L_{Aeq} (1 hour) dB – Daytime (07:00 – 19:00) and Saturdays (07:00 – 13:00)
- 65 L_{Aeq} (1 hour) dB – Evening (19:00 – 23:00)
- 55 L_{Aeq} (1 hour) dB – Night time (23:00 – 07:00)

Mitigation for the operation phase would include a number of items such as selection of 'low noise' equipment and plant, vibration isolation mounts and appropriate siting of fixed plant.

The developer(s) shall require the appointed contractor to employ and implement best practice construction noise and vibration management techniques throughout the construction phase in order to further reduce the noise and vibration impact to nearby noise sensitive receptors.

During the operation phase, noise shall be minimised by the selection of 'low noise' plant and equipment and incorporation of appropriate attenuation.

Noise monitoring during construction and commissioning and/or operation shall be carried out in accordance with the requirements of the Planning Authorities.

Reason: In the interest of the amenities of the surrounding area.

8.

a) Ringsend WwTP

During operation, odour from the wastewater treatment plant (excluding storm tanks) shall not exceed 10 ouE/m^3 as the 99.4th percentile of hourly averages at the boundary of the Ringsend WwTP site.

The adopted odour annoyance criterion of 3 ouE/m^3 as the 98th percentile of hourly averages shall not be exceeded at any sensitive receptor location. The Odour Management Plan shall be updated as necessary and implemented to ensure the above standard is achieved during construction and operation.

b) RBSF

The adopted odour annoyance criterion of 3 ouE/m^3 as the 98th percentile of hourly averages shall not be exceeded at any sensitive receptor location.

Reason: In the interest of the amenities of the surrounding area.

9. The developer shall facilitate the preservation, recording and protection of archaeological materials or features that that may exist within and proximate to the Ringsend WwTP and the RBSF site.

In this regard the developer shall –

a) Notify the Department of the Culture, Heritage and the Gaeltacht in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development.

b) Employ a suitably qualified archaeologist who shall monitor all site investigations and other excavation works and,

- c) Provide arrangements for the recording and for the removal of any archaeological material which the Department of Culture, Heritage and the Gaeltacht considers appropriate to remove.

In default of an agreement on any of these requirements, the matter shall be referred to An Bord Pleanála for determination.

Reason: In order to conserve the archaeological heritage of the site and to secure the preservation and protection of any remains that may exist within the site.

10.

- a) Prior to the commencement of the development, the developer shall submit a detailed landscaping plan for each of the development components at Ringsend WwTP and the RBSF sites. Details, including strengthening of boundary treatment, screening of compounds and general landscape details including timescales shall be submitted to and agreed in writing with the planning authorities and the landscaping shall be carried out in accordance with the agreed details thereafter.
- b) Prior to the commencement of the development, a detailed decommissioning and site restoration plan in respect of the construction compounds, together with a timescale for its implementation, shall be submitted to and agreed in writing with the planning authorities.

Reason: In the interest of the amenities of the surrounding area.

11.

- a) The development shall comply with the requirements of the Planning Authorities with respect to surface water management.

- b) The existing surface water pipeline traversing the RBSF site shall be realigned and a wayleave provided in accordance with the requirements of the Planning Authority (Fingal County Council).

Reason: In the interest of providing best practice for surface water management and to provide for future maintenance of the realigned pipe at the RBSF site.

12. Prior to commencement of the development, the design details for the RBSF shall be submitted to and agreed in writing with the planning authority for the prevention of environmental pollution in the event of a fire occurrence. Such detail shall also include an assessment of the risk of environmental pollution due to fire water and any mitigation measures which may be necessary.

Reason: In the interest of protection of the environment and amenities of the area.

13. All works to be undertaken within and adjacent to designated European sites within Dublin Bay shall be undertaken in accordance with the requirements of a suitably qualified ecologist appointed following consultation with the National Parks and Wildlife Service.

Reason: In the interest of protection of designated European sites and qualifying interests, having regard to the sites conservation objectives.

14. The developer shall pay to the planning authority (Fingal County Council) a financial contribution as a special contribution under section 48(2) (c) of the Planning and Development Act 2000, as amended, in respect of the upgrade and signalisation of the R135 and the N2 North Bound Slip priority junction. The amount of the contribution shall be agreed between the planning authority and the developer or, in default of such agreement, the matter shall be referred to An Bord Pleanála for determination. The contribution shall be paid prior to commencement of development or in

such phased payments as the planning authority may facilitate. The application of indexation required by this condition shall be agreed between the planning authority and the developer or, in default of such agreement, the matter shall be referred to An Bord Pleanála to determine.

Reason: It is considered reasonable that the developer should contribute towards the specific exceptional costs which are incurred by the planning authority which are not covered in the Development Contribution Scheme and which would benefit the proposed development.

Board Member

Date: 12/04/2019

Stephen Bohan

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