Middle Wad Flood Alleviation Scheme - Contract E: Clontarf Outfalls Project

Appropriate Assessment Screening Report

FINAL REPORT

19th November 2021

Faith Wilson Ecological Consultant BSc (Hons) MCIEEM CEnv
Kestrel Ridge, Tigroney West, Vale of Avoca, Co. Wicklow
Middle Wad Flood Alleviation Scheme - Contract E: Clontarf Outfalls Project

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Middle Wad Flood Alleviation Scheme - Contract E: Clontarf Outfalls Project

Appropriate Assessment Screening Report

1. INTRODUCTION

1.1 Background

Faith Wilson Ecological Consultant was commissioned by Nicholas O’Dwyer Ltd. (NOD), on behalf of Dublin City Council (DCC), to prepare a Report for Screening for Appropriate Assessment for the Middle Wad Flood Alleviation Scheme - Contract E: Clontarf Outfalls Project (referred also as the “Project” in this screening report), as summarised in the bullet points below:

• Sealing of manholes in properties immediately north of Clontarf Road to prevent flooding of those properties,
• Construction of a new splitter chamber and parallel culvert in the green space between Clontarf Road and the shoreline to improve conveyance,
• Construction of a new outfall headwall with suitable flap valves at the foreshore. In order to minimise the intrusion into the mudflats/silts this headwall can be recessed into the existing rock armour,
• Remedial works to the existing partly collapsed headwall which will effectively result in its replacement / modification so that it matches the configuration of the proposed new adjoining headwall,
• All ancillary works including Operation and Maintenance.

The Wad outfall is a surface water outfall. The proposed works will not alter the operation of the current outfall. The aim of the works is to improve conveyance in the culverts to prevent upstream flooding. The provision of non-return valves on the outfalls will prevent tidal ingress back into the stormwater system during high tides.

This report contains the information required by the competent authority (in this case DCC), to undertake an Appropriate Assessment Screening for the Project.

1.2 Legislative Background

The aim of the European Habitats Directive (Council Directive 92/43/EEC on the conservation of wild habitats and of wild fauna and flora) is to create a network of protected wildlife sites across Europe, which are to be maintained at a favourable conservation status.

Each member state must designate their most important natural areas as Special Areas of Conservation (SAC). The Directive specifies the scientific criteria on the basis of which SAC sites must be selected and very strictly curtails the grounds that can be used as justification for damaging a site. The network of sites is referred to as NATURA 2000 (defined in the Planning Act
as European sites) and includes SACs (Special Areas of Conservation) for protected habitats and species and SPAs (Special Protection Areas) for birds, which are designated under the European Birds Directive (Council Directive 79/409/EEC as amended by Directive 2009/147/EC).

It is a requirement of the Habitats Directive ((92/43/EEC) that the competent consenting authority must ensure that a proposal, which is likely to have a significant effect on an SAC or SPA, is authorised only to the extent that the authority is satisfied it will not adversely affect the integrity of the Natura 2000 site and that an appropriate assessment of the implications of the development for the conservation status of the site is undertaken.

The European Parliament, in a communication to the European Council in September 2000, states:

“The implementation of the European Habitats Directive and Birds Directive, both with respect to species conservation and with respect to the establishment of the Natura 2000 network, is one of the most important tools for achieving the objectives of the Convention on Biological Diversity in the European Union and member states (European Parliament 2000)”.

Article 6 of the Habitats Directive provides a strict assessment procedure for any plan or project not directly connected with or necessary to the management of a designated European site but which has the potential to have implications for the site in view of the site’s conservation objectives.

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect Natura 2000/European sites (Annex 1.1).

Article 6(3) establishes the requirement for Appropriate Assessment (AA):

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

Article 6(4) states:

“If, in spite of a negative assessment of the implications for the [European] site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which
may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.”

The European Communities (Birds and Natural Habitats) Regulations 2011 were implemented to transpose the Habitats Directive and the Birds Directive into Irish law as well as addressing transposition failures identified in the Court of Justice of the European Union (CJEU) judgements.

This report has taken into consideration the relevant requirements of the Planning and Development Act, 2000 (as amended by the Planning and Development Act 2010).

1.3 Methodology

This report is based on a desk study, a walkover of the proposed works area, a review of previous bird data for the area and ornithological field surveys of the study area, which began in November 2020 and concluded in September 2021.

This information was used to determine the potential for likely significant effects arising from the proposed Project on the European Sites of Conservation Interest.

If the outcome of the screening exercise is that there is no likelihood for significant effects, then any further stages in the Appropriate Assessment process are not required.

If, based upon the currently available information, there are aspects of the proposed Project that could have a significant effect on any European sites, then further analysis in the form of a Natura Impact Statement (NIS) to inform the Appropriate Assessment is required.

The information presented in this report is therefore as follows:

- Description of the proposed development.
- Identification of relevant European sites within 15km of the proposed development.
- Description of the existing ecological environment/sensitive receptors at the site.
- Assessment of likely significant effects on the integrity of European sites.
- Appropriate Assessment Screening conclusions.

1.4 Guidance and Data Sources

This report has been prepared with regard to the following guidance documents, where relevant:

- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the

- Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities Circular NPW 1/10 & PSSP 2/10
- Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters (January 2014). Department of Arts, Heritage and the Gaeltacht.
1.5 Stages of Appropriate Assessment

The competent authority is required to carry out appropriate assessment, as required by Article 6(3) and 6(4) of the Habitats Directive, as follows:

- **Stage 1: Screening for Appropriate Assessment**
The first step to establishing if an appropriate assessment is required is referred to as 'screening' and its purpose is to determine, in view of best scientific knowledge, on the basis of a preliminary assessment and objective criteria if the plan or project, alone or in combination with other plans or projects, could have a significant effect on a European site in view of the sites conservation objectives. The process identifies any likely impacts upon a European site, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant.

- **Stage 2: Appropriate Assessment**
This is required if it cannot be excluded, on the basis of objective information, that the development, individually or in combination with other plans or projects, will have a significant effect on a European site.

The appropriate assessment must include a final determination by the competent authority as to whether or not a proposed development would adversely affect the integrity of a European site. In order to reach a final determination, the consenting authority must undertake examination, analysis and evaluation, followed by findings, conclusions and a final determination. The appropriate assessment must contain complete, precise and definitive findings and conclusions, and may not have lacunae or gaps.

Additionally, where there are deemed to be adverse impacts, an assessment of the potential mitigation of those impacts is considered.

- **Stage 3: Assessment of Alternative Solutions**
This stage examines alternative means of achieving the objectives of the project or plan that aim to avoid adverse impacts on the integrity of the European site.

- **Stage 4: Assessment where no alternative solutions exist and where adverse impacts remain**
This stage is the main derogation process outlined in Article 6(4) which examines whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project, which will have adverse effects on the integrity of a European site, to proceed.
2. SCREENING FOR APPROPRIATE ASSESSMENT

2.1 Project Description

The subject matter of this Appropriate Assessment Screening is the proposed Middle Wad Flood Alleviation Scheme - Contract E: Clontarf Outfalls Project. This project consists of works at Clontarf Road as summarised below.

- Sealing of manholes in properties immediately north of Clontarf Road to prevent flooding of those properties,
- Construction of a new splitter chamber and parallel culvert in the green space between Clontarf Road and the shoreline to improve conveyance,
- Construction of a new outfall headwall with suitable flap valves at the foreshore. In order to minimise the intrusion into the mudflats/silts this headwall can be recessed into the existing rock armour,
- Remedial works to the existing partly collapsed headwall which will effectively result in its replacement / modification so that it matches the configuration of the proposed new adjoining headwall,
- All ancillary works, including Operation and Maintenance

Further details of the proposed works at Clontarf Road are provided in the sub-section below.

2.1.1 Sealing Manholes – Several Individual Locations

- Remove the existing manhole cover, wet cut the surrounding pavement, and break out the pavement to remove the access frame,
- Where required, remove any brick/block work chimney and install an in-situ RC chimney connected to the manhole roof slab,
- Install a lockable pressure rated manhole cover and frame in accordance with the manufacturer’s instructions, but casting it or bolting it to the RC chimney, ensuring the joints are watertight /pressure sealed,
- Reinstall the pavement to match the existing,
- Demobilise all plant, reinstate the works area.

2.1.2 New Culvert & Chamber Works

- Set out the position of the existing culverts and new culverts,
- Strip and remove topsoil to storage area for reuse,
- Carefully progress bulk excavation with hand digging at existing utility locations,
- Expose existing live River Wad culverts and section of culvert previously laid under Irish Water works,
- Construct the new in-situ reinforced concrete chamber, to top of wall level, where the new culvert links into the existing River Wad Culverts without breaking into the existing culverts, thereby maintaining the flows within the existing culverts.
• Carefully install the new culvert sections between the new splitter chamber and the southern edge of the existing cycle track,

At this point the new chamber at the Clontarf Road will be 75% completed up to the underside of the roof slab. The river flows will remain unaffected within the existing culverts.

Refer to **Figure 2.1** for the plan of the existing twin culverts and chamber and proposed new culvert.

![Figure 2.1: Plan of existing twin culverts and chamber (orange) and new culvert (blue) at Clontarf.](image)

2.1.3 New Culvert Outfall Works

• Trim the lower branches of the existing trees growing in the rock armour to facilitate the works. If the remaining trees prevent safe workable access to the outfall area, then further remove the trees as required to facilitate the outfall construction. Replacement planting will be undertaken of semi-mature trees nearby as agreed with DCC Parks,

• Working from the cycle track above, during the low tides in low water levels, temporarily remove the existing rock armour and store it nearby for reuse,

• Subject to ground conditions at formation level, provide additional layers of stone with geogrid reinforcement as required as outfall headwall base,

• Carefully install the base precast concrete outfall apron slab,

• Carefully install the remaining new culvert sections out to the headwall position,

• Install the precast concrete outfall headwall and wing walls to the new culvert,
• Install the non-return valve, and all required safety handrails, etc., to the headwall,
• Reinstate the rock armour where possible to the north, south and west of the headwall.

2.1.4 Temporary Flow Diversion

• With the new outfall headwall completed, return to the new in-situ reinforced concrete chamber and break into the existing twin river culverts,
• Divert the river flows into the new culvert and new outfall, and temporarily plug the existing culverts to facilitate works on the existing damaged River Wad Outfall.

2.1.5 Existing Culvert Outfall Remedial Works

• Working from the cycle track above, during the low tides in low water levels, temporarily remove the existing rock armour and store it nearby for reuse,
• Carefully remove the existing elements of the existing damaged culvert & outfall (see Figure 2.2) from the foreshore back towards the cycle track until structurally sounds elements are encountered,
• Carefully install the new precast culvert sections, to complement the existing profile, out to the headwall position,
• Subject to ground conditions at formation level, provide additional layers of stone with geogrid reinforcement as required as outfall headwall base,
• Carefully install the base precast concrete outfall apron slab,
• Carefully install the remaining new culvert sections out to the headwall position,
• Install the precast concrete outfall headwall and wing walls to the new culvert,
• Install the non-return valve, and all required safety handrails, etc., to the headwall,
• Reinstate the rock armour where possible to the north, south and west of the headwall.
2.1.6 Permanent Flow Arrangements

- With both the outfall headwalls completed, return to the new in-situ reinforced concrete chamber and remove the temporarily plug(s) from the existing culverts,
- Complete any benching and internal works within the chamber and lift the roof slab into position.
- Install the covers and frames and backfill the area,
- Demobilise all plant, reinstate the works area.

2.1.7 Operation and Maintenance

- Visually inspect the outfalls on a weekly basis and in advance of any forecast adverse weather conditions, high-tides, etc., to ensure the non-return valves are free from debris and seat correctly.
- Carry out a comprehensive inspection of the structures, handrails and non-return valves after any severe or particularly adverse weather conditions and at least twice yearly. Undertake any remedial works or repairs identified as part of those inspections.
2.2 Desk Study

A desk study was carried out to collate the available information on the ecological environment potentially impacted by the proposed Project adjoining at Clontarf Road and to determine the proximity of these works to designated areas for conservation.

The National Parks and Wildlife Service (NPWS) of the Department of Housing, Local Government and Heritage database of designated conservation areas were checked with regard to the location of the works.

A review of the ecological surveys previously prepared for the Clanmoyle Flood Alleviation Scheme, the Stage 1 Screening Report for Appropriate Assessment for the Clanmoyle Flood Alleviation Scheme, (which included Sub Scheme 1 (the Clanmoyle Flood Alleviation Scheme) and Sub Scheme 2 (the Middle Wad Flood Alleviation Scheme (now Study))), was conducted.

A review of existing information on European sites, their Qualifying Interests and Conservation Objectives, and other available information on the terrestrial and marine ecology in the vicinity of the proposed development was conducted.

Data sources relevant to each European site include the Site Synopsis, Conservation Objectives, the Conservation Objectives backing documents, and the Natura 2000 Standard Data Form, all of which are publicly available online at www.npws.ie were also reviewed.

Any available wintering bird data collated by the Irish Wetland Bird Survey (IWeBS) conducted by BirdWatch Ireland was reviewed.

A review of winterbird data previously complied as part of ornithological studies conducted by Eleanor Mayes Ecological Consultant in 2014 and 2018 for the Clontarf Flood Protection Scheme was also completed.

Further ecological information was gathered in relation to the study area by examining GIS datasets, maps and aerial photographs, and by drawing on other existing information.

2.3 Identification of European Sites

In line with the European Commission Methodological Guidance (EC (2001)) and the DoEHLG Guidance (DoEHLG (2010)) a review of all European sites that could be potentially affected by the proposed Project at Clontarf Road

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was made using the NPWS online map viewer. These included any European sites within or adjacent to the lands at Clontarf Road and any European sites within the likely zone of impact of the proposed development (a 15km radius). These are summarised in **Table 2.1** below.

The Project works are proposed on the margins of the Tolka Estuary, which is located close to Dublin City and adjacent to the Lower Liffey Estuary. It is a relatively shallow water body with most of its banks, shoreline and channel modified and manipulated over time to allow for urban development. The Tolka Estuary is included within the South Dublin Bay and River Tolka Estuary Special Protection Area (SPA), (Site Code: 004024) designated under the EU Birds Directive, and is located immediately adjacent to a second SPA, namely North Bull Island SPA (Site Code: 004006). Together, these SPAs function as important wintering grounds for more than 20,000 waterbirds every year.

There is also a thriving breeding tern colony located in the Tolka Estuary itself, with Common and Arctic Terns choosing to nest on a number of manmade and other artificial platforms.

A number of Natura 2000 designated sites occur within a 15km radius of the proposed works at Clontarf Road as shown on **Figure 2.3** below. These include the following ten Special Areas of Conservation (SACs) and nine Special Protection Areas (SPAs):

- Baldoyle Bay SAC (Site Code: 000199)
- Glenasmole Valley SAC (Site Code: 001209)
- Howth Head SAC (Site Code: 000202)
- Ireland’s Eye SAC (Site Code: 002193)
- Malahide Estuary SAC (Site Code: 000205)
- North Dublin Bay SAC (Site Code: 000206)
- Rockabill to Dalkey Islands SAC (Site Code: 003000)
- Rotherstwon Estuary SAC (Site Code: 000208)
- South Dublin Bay SAC (Site Code: 000210)
- Wicklow Mountains SAC (Site Code: 002122)
- Baldoyle Bay SPA (Site Code: 004016)
- Dalkey Islands SPA (Site Code: 004172)
- Howth Head Coast SPA (Site Code: 004113)
- Ireland’s Eye SPA (Site Code: 004117)
- Malahide Estuary SPA (Site Code: 004025)
- North Bull Island SPA (Site Code: 004006)
- Rotherstown Estuary SPA (Site Code: 004015)
- South Dublin Bay/Tolka Estuary SPA (Site Code: 004024)
- Wicklow Mountains SPA (Site Code: 004040)

The proposed works at Clontarf Road adjoin the boundary of the South Dublin Bay/Tolka Estuary SPA (Site Code: 004024) as shown on **Figure 2.4** below.

In addition to the identified European sites consideration was also given to relevant species listed under Annexes I and II and IV of the Birds and Habitats Directives respectively.
Conservation Objectives:
Detailed site management plans and site conservation objectives are available for many of the European sites identified as outlined in the reference list, and generic conservation objectives are identified for those remaining.

The conservation objectives for each of the European sites outlined above were examined on the 15th October 2021 and are summarised below in Table 2.1.

Hydrological Links to European sites:
The Middle Wad Alleviation Study works at Clontarf Road drain directly into the South Dublin Bay/Tolka Estuary SPA (Site Code: 004024) and indirectly to the adjoining Dublin Bay sites (North Dublin Bay SAC 000206, South Dublin Bay SAC 000210 and North Bull Island SPA 000206).
Figure 2.3. European sites within a 15km radius of the proposed Project at Clontarf Road.
Figure 2.4. The South Dublin Bay/Tolka Estuary SPA (Site Code: 004024) adjoins the proposed works at Clontarf Road. The location of the existing tidal flap valve is indicated by the red arrow.
Table 2.1. Designated European sites within a 15km radius of the proposed Project at Clontarf Road and preliminary screening for likely significant effects.

<table>
<thead>
<tr>
<th>Site Code</th>
<th>Site Name and Designation</th>
<th>Approximate distance from the proposed works location at Clontarf</th>
<th>Qualifying Interest</th>
<th>General Conservation Objectives</th>
<th>Potential for Likely Significant Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Sandwich Tern (<em>Sterna sandvicensis</em>),</td>
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<td></td>
<td></td>
<td></td>
<td>• Roseate Tern (<em>Sterna dougallii</em>),</td>
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<td></td>
<td></td>
<td></td>
<td>• Common Tern (<em>Sterna hirundo</em>),</td>
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<td></td>
<td></td>
<td></td>
<td>• Arctic Tern (<em>Sterna paradisaea</em>),</td>
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<td></td>
<td></td>
<td></td>
<td>• Oystercatcher (<em>Haematopus ostralegus</em>),</td>
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<td></td>
<td></td>
<td></td>
<td>• Ringed Plover (<em>Charadrius hiaticula</em>),</td>
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<td></td>
<td></td>
<td></td>
<td>• Knot (<em>Calidris canuta</em>),</td>
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<td></td>
<td></td>
<td></td>
<td>• Sanderling (<em>Calidris alba</em>),</td>
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<td></td>
<td></td>
<td></td>
<td>• Dunlin (<em>Calidris alpina</em>),</td>
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<td></td>
<td></td>
<td></td>
<td>• Bar-tailed Godwit (<em>Limosa lapponica</em>)</td>
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</tbody>
</table>

To maintain the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:

- *Branta bernicla hrota* [wintering]
- *Sterna sandvicensis* [breeding]
- *Sterna dougallii* [passage]
- *Sterna hirundo* [passage]
- *Sterna paradisaea* [passage]
- *Haematopus ostralegus* [wintering]
- *Charadrius hiaticula* [wintering]
- *Calidris canuta* [wintering]
- *Calidris alba* [wintering]
- *Calidris alpina* [wintering]
- *Limosa lapponica* [wintering]

To maintain the favourable conservation condition of wetland habitat in South Dublin and the River Tolka Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it.
<table>
<thead>
<tr>
<th>Site Code</th>
<th>Site Name and Designation</th>
<th>Approximate distance from the proposed works location at Clontarf</th>
<th>Qualifying Interest</th>
<th>General Conservation Objectives</th>
<th>Potential for Likely Significant Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>004006</td>
<td>North Bull Island SPA</td>
<td>2.5km E</td>
<td>•Light-bellied Brent Goose (<em>Branta bernicla hrota</em>)&lt;br&gt;•Shelduck (<em>Tadorna tadorna</em>)&lt;br&gt;•Teal (<em>Anas crecca</em>)&lt;br&gt;•Pintail (<em>Anas acuta</em>)&lt;br&gt;•Shoveler (<em>Anas clypeata</em>)&lt;br&gt;•Oystercatcher (<em>Haematopus ostralegus</em>)&lt;br&gt;•Golden Plover (<em>Pluvialis apricaria</em>)&lt;br&gt;•Grey Plover (<em>Pluvialis squatarola</em>)&lt;br&gt;•Knot (<em>Calidris canutus</em>)&lt;br&gt;•Sanderling (<em>Calidris alba</em>)&lt;br&gt;•Dunlin (<em>Calidris alpina</em>)&lt;br&gt;•Black-tailed Godwit (<em>Limosa limosa</em>)&lt;br&gt;•Bar-tailed Godwit (<em>Limosa lapponica</em>)&lt;br&gt;•Curlew (<em>Numenius arquata</em>)&lt;br&gt;•Redshank (<em>Tringa totanus</em>)&lt;br&gt;•Turnstone (<em>Arenaria interpres</em>)&lt;br&gt;•Black-headed Gull (<em>Larus ridibundus</em>)&lt;br&gt;•Wetlands &amp; Waterbirds</td>
<td>Source: NPWS (2015) Conservation Objectives: North Bull Island SPA 004006. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. Accessed 15th October 2021. To maintain the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:&lt;br&gt;• <em>Branta bernicla hrota</em> [wintering]&lt;br&gt;• <em>Tadorna tadorna</em> [wintering]&lt;br&gt;• <em>Anas crecca</em> [wintering]&lt;br&gt;• <em>Anas acuta</em> [wintering]&lt;br&gt;• <em>Anas clypeata</em> [wintering]&lt;br&gt;• <em>Haematopus ostralegus</em> [wintering]&lt;br&gt;• <em>Pluvialis apricaria</em> [wintering]&lt;br&gt;• <em>Pluvialis squatarola</em> [wintering]&lt;br&gt;• <em>Calidris canutus</em> [wintering]&lt;br&gt;• <em>Calidris alba</em> [wintering]&lt;br&gt;• <em>Calidris alpina</em> [wintering]&lt;br&gt;• <em>Limosa limosa</em> [wintering]&lt;br&gt;• <em>Limosa lapponica</em> [wintering]&lt;br&gt;• <em>Numenius arquata</em> [wintering]&lt;br&gt;• <em>Tringa totanus</em> [wintering]&lt;br&gt;• <em>Arenaria interpres</em> [wintering]&lt;br&gt;• <em>Chroicocephalus ridibundus</em> [wintering]&lt;br&gt;• Wetlands</td>
<td>Yes. Pathway identified for likely significant effects.</td>
</tr>
<tr>
<td>Site Code</td>
<td>Site Name and Designation</td>
<td>Approximate distance from the proposed works location at Clontarf</td>
<td>Qualifying Interest</td>
<td>General Conservation Objectives</td>
<td>Potential for Likely Significant Effects</td>
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<td>(1210) Annual vegetation of drift lines</td>
<td>Gaelacht.</td>
<td>significant effects.</td>
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<td></td>
<td>(1310) <em>Salicornia</em> and other annuals colonizing mud and sand</td>
<td>Accessed 15th October 2021.</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>(1320) <em>Spartina</em> swards (Spartinion maritimae)</td>
<td>To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected:</td>
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<td></td>
<td>(1330) Atlantic salt meadows (Glauco-Puccinellietalia maritimae)</td>
<td>(1140) Mudflats and sandflats not covered by seawater at low tide</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(1395) Petalwort (<em>Petalophyllum ralfsii</em>)</td>
<td>(1210) Annual vegetation of drift lines</td>
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<td></td>
<td></td>
<td></td>
<td>(1410) Mediterranean salt meadows (Juncetalia maritimae)</td>
<td>(1310) <em>Salicornia</em> and other annuals colonizing mud and sand</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(2110) Embryonic shifting dunes</td>
<td>(1320) <em>Spartina</em> swards (Spartinion maritimae)</td>
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<td></td>
<td></td>
<td></td>
<td>(2120) Shifting dunes along the shoreline with <em>Ammophila arenaria</em> (white dunes)</td>
<td>(1330) Atlantic salt meadows (Glauco-Puccinellietalia maritimae)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(2130) Fixed coastal dunes with herbaceous vegetation (grey dunes)</td>
<td>(1395) Petalwort (<em>Petalophyllum ralfsii</em>)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(2190) Humid dune slacks</td>
<td>(1410) Mediterranean salt meadows (Juncetalia maritimae)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(2110) Embryonic shifting dunes</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>(2120) Shifting dunes along the shoreline with <em>Ammophila arenaria</em> (white dunes)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(2130) Fixed coastal dunes with herbaceous vegetation (grey dunes)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(2190) Humid dune slacks</td>
<td></td>
</tr>
<tr>
<td>Site Code</td>
<td>Site Name and Designation</td>
<td>Approximate distance from the proposed works location at Clontarf</td>
<td>Qualifying Interest</td>
<td>General Conservation Objectives</td>
<td>Potential for Likely Significant Effects</td>
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</tbody>
</table>
| 000210    | South Dublin Bay SAC                  | 3.1km S                                                        | • 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]  
To maintain or restore the favourable conservation condition of the Annex I habitats for which the SAC has been selected:  
• 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]  
• Embryonic shifting dunes [2110] | Yes. Pathway identified for likely significant effects. |
<table>
<thead>
<tr>
<th>Site Code</th>
<th>Site Name and Designation</th>
<th>Approximate distance from the proposed works location at Clontarf</th>
<th>Qualifying Interest</th>
<th>General Conservation Objectives</th>
<th>Potential for Likely Significant Effects</th>
</tr>
</thead>
</table>
| 000199    | Baldoyle Bay SAC          | 6.5km NE                                                      | • (1140) Mudflats and sandflats not covered by seawater at low tide  
• (1310) Salicornia and other annuals colonizing mud and sand  
• (1330) Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)  
To maintain the favourable conservation condition of the Annex I habitats for which the SAC has been selected:  
• (1140) Mudflats and sandflats not covered by seawater at low tide  
• (1310) Salicornia and other annuals colonizing mud and sand  
• (1330) Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)  
• (1410) Mediterranean salt meadows (*Juncetalia maritimi*) | No, as no pathway for likely significant effects. |
<table>
<thead>
<tr>
<th>Site Code</th>
<th>Site Name and Designation</th>
<th>Approximate distance from the proposed works location at Clontarf</th>
<th>Qualifying Interest</th>
<th>General Conservation Objectives</th>
<th>Potential for Likely Significant Effects</th>
</tr>
</thead>
</table>
| 004016    | Baldoyle Bay SPA          | 6.5km NE                                                      | • Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]  
• Shelduck (*Tadorna tadorna*) [A048]  
• Ringed Plover (*Charadrius hiaticula*) [A137]  
• Golden Plover (*Pluvialis apricaria*) [A140]  
• Grey Plover (*Pluvialis squatarola*) [A141]  
• Bar-tailed Godwit (*Limosa lapponica*) [A157]  
• Wetlands & Waterbirds [A999]  
To maintain the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:  
• [wintering] *Branta bernicla hrota*  
• [wintering] *Tadorna tadorna*  
• [wintering] *Charadrius hiaticula*  
• [wintering] *Pluvialis squatarola*  
• [wintering] *Limosa lapponica*  
To maintain the favourable conservation condition of the wetland habitat in Baldoyle Bay SPA  
| No, as no pathway for likely significant effects. |
| 000202    | Howth Head SAC            | 8.3km E                                                       | • Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]  
• European dry heaths [4030]  
To maintain or restore the favourable conservation condition of the Annex I habitats for which the SAC has been selected:  
• Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]  
• European dry heaths [4030]  
<p>| No, as no pathway for likely significant effects. |</p>
<table>
<thead>
<tr>
<th>Site Code</th>
<th>Site Name and Designation</th>
<th>Approximate distance from the proposed works location at Clontarf</th>
<th>Qualifying Interest</th>
<th>General Conservation Objectives</th>
<th>Potential for Likely Significant Effects</th>
</tr>
</thead>
</table>
| 003000    | Rockabill to Dalkey Islands SAC | 8.8km E                                                       | • (1170) Reefs  
To maintain the favourable conservation condition of the Annex I habitat and the Annex II species for which the SAC has been selected:  
• (1170) Reefs  
• (1351) Harbour Porpoise (*Phocoena phocoena*) | No, as no pathway for likely significant effects. |
<table>
<thead>
<tr>
<th>Site Code</th>
<th>Site Name and Designation</th>
<th>Approximate distance from the proposed works location at Clontarf</th>
<th>Qualifying Interest</th>
<th>General Conservation Objectives</th>
<th>Potential for Likely Significant Effects</th>
</tr>
</thead>
</table>
| 004025    | Broadmeadow/ Swords Estuary SPA (also known as Malahide Estuary SPA) | 9.8km NE                                                      | • Great Crested Grebe (*Podiceps cristatus*) [A005]  
• Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]  
• Shelduck (*Tadorna tadorna*) [A048]  
• Pintail (*Anas acuta*) [A054]  
• Goldeneye (*Bucephala clangula*) [A067]  
• Red-breasted Merganser (*Mergus serrator*) [A069]  
• Oystercatcher (*Haematopus ostralegus*) [A130]  
• Golden Plover (*Pluvialis apricaria*) [A140]  
• Grey Plover (*Pluvialis squatarola*) [A141]  
• Knot (*Calidris canutus*) [A143]  
• Dunlin (*Calidris alpina*) [A149]  
• Black-tailed Godwit (*Limosa limosa*) [A156]  
• Bar-tailed Godwit (*Limosa lapponica*) [A157]  
• Redshank (*Tringa totanus*) [A162]  
To maintain the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:  
• *Podiceps cristatus* [wintering]  
• *Branta bernicla hrota* [wintering]  
• *Tadorna tadorna* [wintering]  
• *Anas acuta* [wintering]  
• *Bucephala clangula* [wintering]  
• *Mergus serrator* [wintering]  
• *Haematopus ostralegus* [wintering]  
• *Pluvialis squatarola* [wintering]  
• *Calidris canutus* [wintering]  
• *Limosa limosa* [wintering]  
• *Limosa lapponica* [wintering]  
• *Tringa totanus* [wintering]  
To maintain the favourable conservation condition of the wetland habitat in Malahide Estuary SPA as a resource for the regularly-occurring migratory waterbirds that utilise it. | No, as no pathway for likely significant effects. |
<table>
<thead>
<tr>
<th>Site Code</th>
<th>Site Name and Designation</th>
<th>Approximate distance from the proposed works location at Clontarf</th>
<th>Qualifying Interest</th>
<th>General Conservation Objectives</th>
<th>Potential for Likely Significant Effects</th>
</tr>
</thead>
</table>
| 000205    | Malahide Estuary SAC     | 9.8km NE                                                      | (1140) Mudflats and sandflats not covered by seawater at low tide  
(1310) *Salicornia* and other annuals colonizing mud and sand  
(1320) Spartina swards (*Spartinio maritimae*)  
(1330) Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)  
(1410) Mediterranean salt meadows (*Juncetalia maritimi*)  
(2130) Fixed coastal dunes with herbaceous vegetation (grey dunes)  
To maintain the favourable conservation condition of the Annex I habitats for which the SAC has been selected:  
(1140) Mudflats and sandflats not covered by seawater at low tide  
(1310) *Salicornia* and other annuals colonizing mud and sand  
(1320) Spartina swards (*Spartinio maritimae*)  
(1330) Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)  
(1410) Mediterranean salt meadows (*Juncetalia maritimi*)  
(2130) Fixed coastal dunes with herbaceous vegetation (grey dunes)  
(2120) Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) | No, as no pathway for likely significant effects. |
<table>
<thead>
<tr>
<th>Site Code</th>
<th>Site Name and Designation</th>
<th>Approximate distance from the proposed works location at Clontarf</th>
<th>Qualifying Interest</th>
<th>General Conservation Objectives</th>
<th>Potential for Likely Significant Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>004113</td>
<td>Howth Head Coast SPA</td>
<td>10.9 km E</td>
<td>• Kittiwake (<em>Rissa tridactyla</em>) [A188]</td>
<td>Source: NPWS (2021). Conservation objectives for Howth Head Coast SPA [004113]. Generic Version 8.0. Department of Housing, Local Government and Heritage. Accessed 15th October 2021. To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA: • <em>Rissa tridactyla</em> [breeding]</td>
<td>No, as no pathway for likely significant effects.</td>
</tr>
<tr>
<td>Site Code</td>
<td>Site Name and Designation</td>
<td>Approximate distance from the proposed works location at Clontarf</td>
<td>Qualifying Interest</td>
<td>General Conservation Objectives</td>
<td>Potential for Likely Significant Effects</td>
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</tbody>
</table>
| 002193    | Ireland’s Eye SAC         | 11.3km SE                                                     | • Perennial vegetation of stony banks [1220]  
To maintain the favourable conservation condition of the Annex I habitats for which the SAC has been selected:  
• Perennial vegetation of stony banks [1220]  
• Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] | No, as no pathway for likely significant effects. |
| 004172    | Dalkey Islands SPA        | 12.6km SE                                                     | • Roseate Tern (*Sterna dougallii*)  
• Common Tern (*Sterna hirundo*)  
To maintain the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:  
• *Sterna dougallii* [breeding]  
• *Sterna hirundo* [breeding]  
• *Sterna paradisaea* [breeding] | No, as no pathway for likely significant effects. |
| 002122    | Wicklow Mountains SAC     | 14.4km SW                                                     | • (3130) Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea  
Accessed 15th October 2021. | No, as no pathway for likely significant effects. |
<table>
<thead>
<tr>
<th>Site Code</th>
<th>Site Name and Designation</th>
<th>Approximate distance from the proposed works location at Clontarf</th>
<th>Qualifying Interest</th>
<th>General Conservation Objectives</th>
<th>Potential for Likely Significant Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>(4010) Northern Atlantic wet heaths with <em>Erica tetralix</em>,</td>
<td>To maintain the favourable conservation condition of the Annex I habitats and Annex II species for which the SAC has been selected:</td>
<td></td>
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<tr>
<td></td>
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<td></td>
<td>(4030) European dry heaths,</td>
<td>• (3130) Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(4060) Alpine and Boreal heaths,</td>
<td>• (3160) Natural dystrophic lakes and ponds,</td>
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<td></td>
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<td></td>
<td>(6230) Species-rich <em>Nardus</em> grasslands, on siliceous substrates in mountain areas,</td>
<td>• (4010) Northern Atlantic wet heaths with <em>Erica tetralix</em>,</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>(7130) Blanket bog (*active only),</td>
<td>• (4030) European dry heaths,</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>(8110) Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani),</td>
<td>• (4060) Alpine and Boreal heaths,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(8210) Calcareous rocky slopes with chasmophytic vegetation,</td>
<td>• (6230) Species-rich <em>Nardus</em> grasslands, on siliceous substrates in mountain areas,</td>
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<td></td>
<td></td>
<td></td>
<td>(8220) Siliceous rocky slopes with chasmophytic vegetation,</td>
<td>• (7130) Blanket bog (*active only),</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>(9990) Blanket bog (not active),</td>
<td>• (8110) Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani),</td>
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<td></td>
<td></td>
<td></td>
<td>(1355) Otter (<em>Lutra lutra</em>).</td>
<td>• (8210) Calcareous rocky slopes with chasmophytic vegetation,</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>• (8220) Siliceous rocky slopes with chasmophytic vegetation,</td>
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<td></td>
<td></td>
<td>• (9990) Blanket bog (not active),</td>
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<td></td>
<td></td>
<td>• (1355) Otter (<em>Lutra lutra</em>).</td>
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<td>Site Code</td>
<td>Site Name and Designation</td>
<td>Approximate distance from the proposed works location at Clontarf</td>
<td>Qualifying Interest</td>
<td>General Conservation Objectives</td>
<td>Potential for Likely Significant Effects</td>
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</tbody>
</table>

- (1130) Estuaries
- (1140) Mudflats and sandflats not covered by seawater at low tide
- (1310) *Salicornia* and other annuals colonizing mud and sand
- (1330) Atlantic salt meadows (*Glaucopuccinellietalia maritimae*)
- (1410) Mediterranean salt meadows (*Juncetalia maritimi*)
- (2120) Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)
- (2130) Fixed coastal dunes with herbaceous vegetation (grey dunes)*


To maintain the favourable conservation condition of the Annex I habitats for which the SAC has been selected:
- (1130) Estuaries
- (1140) Mudflats and sandflats not covered by seawater at low tide
- (1310) *Salicornia* and other annuals colonizing mud and sand
- (1330) Atlantic salt meadows (*Glaucopuccinellietalia maritimae*)
- (1410) Mediterranean salt meadows (*Juncetalia maritimi*)
- (2120) Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)
- (2130) Fixed coastal dunes with herbaceous vegetation (grey dunes)*
<table>
<thead>
<tr>
<th>Site Code</th>
<th>Site Name and Designation</th>
<th>Approximate distance from the proposed works location at Clontarf</th>
<th>Qualifying Interest</th>
<th>General Conservation Objectives</th>
<th>Potential for Likely Significant Effects</th>
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<tr>
<td>Site Code</td>
<td>Site Name and Designation</td>
<td>Approximate distance from the proposed works location at Clontarf</td>
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<td>General Conservation Objectives</td>
<td>Potential for Likely Significant Effects</td>
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<td>To maintain the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:</td>
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<td></td>
<td></td>
<td></td>
<td>• Anser anser [wintering]</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>• Branta bernicla hrota [wintering]</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>• Tadorna tadorna [wintering]</td>
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<td></td>
<td></td>
<td></td>
<td>• Anas clypeata [wintering]</td>
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<td></td>
<td></td>
<td></td>
<td>• Haematopus ostralegus [wintering]</td>
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<td></td>
<td></td>
<td>• Charadrius hiaticula [wintering]</td>
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<td></td>
<td></td>
<td></td>
<td>• Calidris canutus [wintering]</td>
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<td></td>
<td></td>
<td></td>
<td>• Limosa limosa [wintering]</td>
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<td></td>
<td></td>
<td></td>
<td>• Tringa totanus [wintering]</td>
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<td>To maintain the favourable conservation condition of wetland habitat in Rogerstown Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it.</td>
<td></td>
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<tr>
<td>Site Code</td>
<td>Site Name and Designation</td>
<td>Approximate distance from the proposed works location at Clontarf</td>
<td>Qualifying Interest</td>
<td>General Conservation Objectives</td>
<td>Potential for Likely Significant Effects</td>
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<tr>
<td>001209</td>
<td>Glenasmole Valley SAC</td>
<td>15km SW</td>
<td>(6210) Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco Brometalia) (*important orchid sites) • (6410) Molinia meadows on calcareous, peaty or clavey-silt-laden soils (Molinion caeruleae) • (7220) Petrifying springs with tufa formation (Cratoneurion)</td>
<td>NPWS (2021) Conservation objectives for Glenasmole Valley SAC [001209]. Generic Version 8.0. Department of Housing, Local Government and Heritage. Accessed 15th October 2021. To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected: • (6210) Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco Brometalia) (*important orchid sites) • (6410) Molinia meadows on calcareous, peaty or clavey-silt-laden soils (Molinion caeruleae) • (7220) Petrifying springs with tufa formation (Cratoneurion)</td>
<td>No, as no pathway for likely significant effects.</td>
</tr>
</tbody>
</table>

Based on the above preliminary screening in Table 2.1 all sites, apart from South Dublin Bay and River Tolka Estuary SPA (Site Code: 004024), North Bull Island SPA (Site Code: 004006), South Dublin Bay SAC (Site Code: 000210) and North Dublin Bay SAC (000206), can be excluded from further assessment at this preliminary stage based on the lack of direct or indirect pathways for likely significant effects.

The remainder of this assessment considers the South Dublin Bay and River Tolka Estuary SPA (Site Code: 004024), North Bull Island SPA (Site Code: 004006), South Dublin Bay SAC (Site Code: 000210) and North Dublin Bay SAC (000206) as possible pathways for likely significant effects on these sites were identified.
2.4 Assessment of Likely Significant Effects

This section considers the list of European sites detailed in Table 2.1 with pathways identified for likely significant effects and their qualifying habitats and species under the EU Habitats and Birds Directives, namely:

- South Dublin Bay and River Tolka Estuary SPA (Site Code: 004024),
- North Bull Island SPA (Site Code: 004006)
- South Dublin Bay SAC (Site Code: 000210)
- North Dublin Bay SAC (Site Code: 000206)

The likely significant effects of the proposed Project at Clontarf Road on the identified European sites were assessed using the following factors:

- size and scale
- land-take
- distance from the Natura 2000 site or key features of the site
- resource requirements (water abstraction etc.)
- emissions (disposal to land, water or air)
- excavation requirements
- transportation requirements
- duration of construction, operation, decommissioning, etc.
- reduction of habitat area
- disturbance to key species
- habitat or species fragmentation
- reduction in species density
- changes in key indicators of conservation value (water quality etc.)
- climate change
- key relationships that define the structure of the sites
- key relationships that define the function of the site

These likely significant effects on the European sites identified with pathways for likely significant effects are summarised below in Table 2.2.

Table 2.2. Likely direct, indirect or secondary effects of the proposed Project (either alone or in combination with other plans or projects) on European sites by virtue of:

<table>
<thead>
<tr>
<th>Size and scale</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Middle Wad Flood Alleviation Scheme - Contract E: Clontarf Outfalls Project requires the construction of a new outfall headwall with suitable flap valves at the foreshore at Clontarf Road. In order to minimise the intrusion into the mudflats/silts this headwall can be recessed into the existing rock armour.</td>
<td></td>
</tr>
<tr>
<td>Remedial works to the existing partly collapsed headwall are also required, which will effectively result in its replacement / modification so that it matches the configuration of the proposed new adjoining headwall.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Land-take</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The working area adjoins the boundary of the South Dublin Bay and River Tolka Estuary Special Protection Area (Site Code: 004024) with minor removal of rock armoury material from within the boundary of the SPA.</td>
<td></td>
</tr>
</tbody>
</table>
### Distance from Natura 2000 sites
- South Dublin Bay and River Tolka Estuary Special Protection Area (Site Code: 004024) – adjacent to works.
- South Dublin Bay SAC (Site Code: 000210) – 3.1km S from proposed works.
- North Dublin Bay SPA (Site Code: 004006) – 2.5km E from proposed works.
- North Dublin Bay SAC (000206) – 2.5km E from proposed works.

### Resource requirements (water abstraction, etc.)
- There will be no extraction from natural surface or ground water sources to supply the development.
- Water requirements for the development will therefore not impact on the water levels or the hydrology of any European site.

### Emissions (disposal to land, water or air)
- Sediment mobilisation and surface run-off as a result of excavations for the new chambers and culverts and the construction of the new tidal flap valve.
- Potential negative impacts could arise should untreated surface water, concrete leachate, fuel, etc. enter the adjoining sites of European interest within Dublin Bay, during the construction phase of the development.
- Certain marine communities are vulnerable to impacts from changes in sediment structure. There is the potential for damage to marine communities from sediment deposition in the immediate vicinity of the outflow valve should increased levels of sediments reach this area during either the construction phase of the works or during the operational phase of the project.

### Excavation requirements
- None within any European site beyond the removal of the existing rock armour, which will take place within the South Dublin Bay and River Tolka Estuary Special Protection Area (Site Code: 004024).
- There will be significant excavation and earth movements within the red line boundary of the construction site on the green areas at Clontarf. Given that the ground in this part of Clontarf is known to be ‘made ground’ there is potential for the excavation of potentially toxic materials and for pollutants or other compounds to be mobilised during works with subsequent impacts on the adjoining sites of European Interest within Dublin Bay.

### Transportation requirements
- Unknown at present

### Duration of construction, operation, decommissioning, etc.
- 8 weeks / 2 months
Reduction of habitat area  
There is potential for the reduction of the Annex I habitat Mudflats and sandflats not covered by seawater at low tide [1140] within the boundary of the South Dublin Bay and River Tolka Estuary Special Protection Area (Site Code: 004024) should works need to be conducted within this European site.

Changes to any identified European sites arising as a result of disturbance, fragmentation, etc. are summarised below in Table 2.3.

Table 2.3. Description of likely changes to the site arising as a result of:

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disturbance to key species</td>
<td>Potential for significant disturbance to wintering birds within the adjoining South Dublin Bay and River Tolka Estuary Special Protection Area (Site Code: 004024) or utilising the adjoining grassland areas if works are conducted when the birds are present.</td>
</tr>
<tr>
<td></td>
<td>Potential for underwater noise and vibration impacts with subsequent potential impacts on marine mammals resident or using Dublin Bay during the construction phase of the project should pile driving be required.</td>
</tr>
<tr>
<td>Habitat or species fragmentation</td>
<td>Potential for direct loss of areas of the Annex I habitat 1140 Mudflats and sandflats not covered by seawater at low tide and damage or subsequent fragmentation of habitat for species within the Fine sand to sandy mud with Pygospio elegans and Crangon crangon community complex should works in the estuary be required.</td>
</tr>
<tr>
<td>Reduction in species density</td>
<td>Potential for a reduction in species density within the Fine sand to sandy mud with Pygospio elegans and Crangon crangon community complex within the South Dublin Bay and River Tolka Estuary Special Protection Area (Site Code: 004024) should works in the estuary be required that could trample or compact these habitats.</td>
</tr>
<tr>
<td></td>
<td>Potential for a reduction in foraging habitat for wintering birds which rely on the species within the Fine sand to sandy mud with Pygospio elegans and Crangon crangon community complex for their food source as these species live within the Annex I habitat 1140 Mudflats and sandflats not covered by seawater at low tide.</td>
</tr>
<tr>
<td></td>
<td>Potential for loss of grassland habitat utilised by feeding birds should works area not be minimised and grassland habitat not reinstated on completion of works with subsequent impacts on wintering birds.</td>
</tr>
<tr>
<td>Changes in key indicators of conservation value (water quality etc.)</td>
<td>Potential risk to water quality arising from construction activities with subsequent impacts on species within the Fine sand to sandy mud with Pygospio elegans and Crangon crangon community complex and the Annex I habitat 1140 Mudflats and sandflats not covered by seawater at low tide and impacts on other qualifying interests of the European sites within Dublin Bay should concrete leachate, pollutants or other toxins reach the estuary and adjoining marine habitats during construction works.</td>
</tr>
</tbody>
</table>
Likely significant effects on the identified European sites with a pathway for likely significant effects (as a whole in terms of structure and functions) are described below in Table 2.4.

### Table 2.4. Describe any likely significant effects on the European site as a whole in terms of:

<table>
<thead>
<tr>
<th>Key relationships that define the structure and function of the sites</th>
<th>The estuarine habitats in the adjoining Tolka Estuary underpin the wintering waterbirds interest of the adjoining European Sites. The quality of the marine environment in Dublin Bay underpins the qualifying interests of all the European Sites in Dublin Bay.</th>
</tr>
</thead>
<tbody>
<tr>
<td>As set out above these relationships could be potentially impacted as follows:</td>
<td></td>
</tr>
<tr>
<td>Potential for a reduction in species density within the Fine sand to sandy mud with <em>Pygospio elegans</em> and <em>Crangon crangon</em> community complex within the South Dublin Bay and River Tolka Estuary Special Protection Area (Site Code: 004024) should works in the estuary be required that could trample or compact these habitats.</td>
<td></td>
</tr>
<tr>
<td>Potential for a reduction in foraging habitat for wintering birds which rely on the species within the Fine sand to sandy mud with <em>Pygospio elegans</em> and <em>Crangon crangon</em> community complex for their food source as these species live within the Annex I habitat 1140 Mudflats and sandflats not covered by seawater at low tide within the South Dublin Bay and River Tolka Estuary Special Protection Area (Site Code: 004024).</td>
<td></td>
</tr>
<tr>
<td>Potential for loss of grassland habitat utilised by feeding birds which form part of the qualifying interests of the South Dublin Bay and River Tolka Estuary Special Protection Area (Site Code: 004024) should works area not be minimised and grassland habitat not reinstated on completion of works with subsequent impacts on wintering birds.</td>
<td></td>
</tr>
<tr>
<td>Potential risk to water quality arising from construction activities with subsequent impacts on species within the Fine sand to sandy mud with <em>Pygospio elegans</em> and <em>Crangon crangon</em> community complex and the Annex I habitat 1140 Mudflats and sandflats not covered by seawater at low tide should concrete leachate, pollutants or other toxins reach the South Dublin Bay and River Tolka Estuary Special Protection Area (Site Code: 004024) during construction works.</td>
<td></td>
</tr>
<tr>
<td>Sediment mobilisation and surface run-off as a result of excavations for the new chambers and culverts and the construction of the new tidal flap valve have the potential to impact on the adjoining sites of European</td>
<td></td>
</tr>
</tbody>
</table>
Potential negative impacts on the adjoining sites of European interest within Dublin Bay could arise during the construction phase of the development should untreated surface water, concrete leachate, fuel, etc. enter the marine environment.

Certain marine communities are vulnerable to impacts from changes in sediment structure. There is the potential for damage to marine communities from sediment deposition in the immediate vicinity of the outflow valve should increased levels of sediments reach this area during either the construction phase of the works or during the operational phase of the project.

Summary of Likely Significant Effects:

The construction of the proposed Project at Clontarf Road has the potential to impact directly on the qualifying habitats and species listed under the EU Habitats and Birds Directives within the South Dublin Bay and River Tolka Estuary Special Protection Area (Site Code: 004024) which adjoins the site.

The works also have potential indirect impacts on the qualifying habitats and species listed under the EU Habitats and Birds Directives within the South Dublin Bay SAC (Site Code: 000210), North Bull Island SPA (Site Code: 004006) and North Dublin Bay SAC (000206).

There are also potential acoustic impacts on marine mammals utilising these coastal waters should pile driving be required.

These potential impacts include:

- Disturbance to wintering waterbirds utilising the mudflats from construction works
- Disturbance to wintering waterbirds utilising the grassland areas from construction works
- Damage to fauna within the Fine sand to sandy mud with Pygospio elegans and Crangon crangon community complex
- Loss of feeding habitat for wintering waterbirds arising from the loss of grassland habitat within the proposed works area
- Loss of feeding habitat for wintering waterbirds arising from damage to fauna within the Fine sand to sandy mud with Pygospio elegans and Crangon crangon community complex
- Risk of pollution from oil spill, other pollutants/leachate during construction works to the marine environment
- Damage to marine communities from sediment deposition
- Acoustic impacts on marine mammals using the marine environmental of Dublin Bay and coastal areas should pile driving be proposed to prevent tidal ingress.
2.5 Potential In-combination Effects
Cumulative impacts or effects are changes in the environment that result from numerous human-induced, small-scale alterations. Cumulative impacts can be thought of as occurring through two main pathways: first, through persistent additions or losses of the same materials or resource, and second, through the compounding effects as a result of the coming together of two or more effects.

As part of the Screening for an Appropriate Assessment, in addition to the proposed Project, other relevant plans and projects in the area must also be considered at this stage. This step aims to identify at this early stage any possible significant in-combination effects of the proposed development with other such plans and projects on European sites.

After a review of relevant plans (e.g. Dublin City Development Plan (2016-2022)) and a review of the planning section of the Dublin County Council website for planning permissions granted over the past 5 years, it is considered that there is no pathway of additive effect for significant cumulative or in-combination effects which can be considered to significantly affect the qualifying interests or conservation objectives of the European sites being assessed.

2.6 Screening Assessment Conclusion
In order to determine the likely significant effects, if any, of the proposed Middle Wad Flood Alleviation Scheme - Contract E: Clontarf Outfalls Project at Clontarf Road on European sites, a screening for appropriate assessment was completed.

Based on a preliminary screening exercise (see Table 2.1) all sites, apart from South Dublin Bay and River Tolka Estuary SPA (Site Code: 004024), North Bull Island SPA (Site Code: 004006), South Dublin Bay SAC (Site Code: 000210) and North Dublin Bay SAC (000206), were excluded from further assessment based on the lack of direct or indirect pathways to the works sites.

Based on the above and in accordance with Article 6(3) of the Habitats Directive, this AA Screening Report examined the likelihood of significant effects from the proposed Project on the South Dublin Bay and River Tolka Estuary SPA (Site Code: 004024), North Bull Island SPA (Site Code: 004006) South Dublin Bay SAC (Site Code: 000210) and North Dublin Bay SAC (000206) only.

This assessment has concluded, on the basis of objective scientific information, following screening and in light of the Conservation Objectives of South Dublin Bay and River Tolka Estuary Special Protection Area (Site Code: 004024), South Dublin Bay SAC (Site Code: 000210) and North Dublin Bay SAC (000206), that likely significant effects cannot be ruled out due to the potential for likely significant effects on all, or some, of their qualifying interests arising from the proposed Project.
Based on the above, it is concluded that an Appropriate Assessment and the production of a Natura Impact Statement is required for the proposed Middle Wad Flood Alleviation Scheme - Contract E: Clontarf Outfalls Project at Clontarf Road.
3. REFERENCES


Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) 1982.


Department of Arts, Heritage and the Gaeltacht (January 2014). Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters.

European Commission (2001). Assessment of plans and projects significantly affecting Natura 2000 sites- methodological guidance on the provisions of Article 6(3) and 6 (4) of the Habitats Directive 92/43/EEC.


National Parks and Wildlife Service Online Database. Available online at [www.npws.ie](http://www.npws.ie)

Natura 2000 Sites - Site Synopsis. Available online at [www.npws.ie](http://www.npws.ie)


Parks & Wildlife Service of the Department of Arts, Heritage & the Gaeltacht.


