

An Bord Pleanála Oral Hearing

Irish Water

Greater Dublin Drainage

Brief of Evidence

Biodiversity (Terrestrial and Freshwater Aquatic)

James McCrory

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Biodiversity (Terrestrial and Freshwater Aquatic)

1. QUALIFICATIONS AND ROLE IN THE PROPOSED PROJECT

- 1 My name is James McCrory. I am a Senior Associate in RPS. I hold a Bachelor of Arts degree in Plant Science from the University of Dublin, Trinity College and a Master of Science degree with Distinction in Habitat Creation and Management from Staffordshire University. I am a Chartered Ecologist and Chartered Environmentalist with the Chartered Institute of Ecology and Environmental Management; and a Chartered Biologist with the Royal Society of Biology.
- 2 I have over seventeen years' experience managing ecological survey and assessment contracts as part of Environmental Impact Assessment Directive and Habitats Directive assessment processes. I have undertaken ecological surveys and assessment and prepared biodiversity chapters of Environmental Impact Assessment Reports (EIARs) and Appropriate Assessment Screening Reports and Natura Impact Statements (NISs) for a range of projects involving dredging and discharges to the marine environment including a number of significant coastal development projects in Dublin Port and Dublin Bay, Cork Harbour, Belfast Lough, Carlingford Lough and in the Shannon Estuary.
- 3 I have been involved in the Project since 2011 and have advised Fingal County Council initially and subsequently Irish Water on ecological constraints since Phase One of the Project which considered alternative sites for the proposed Wastewater Treatment Plant (WwTP) throughout North County Dublin. My involvement culminated in the preparation of the terrestrial ecology component of biodiversity in Chapter 11 (Terrestrial and Freshwater Aquatic) in Volume 3 Part A of the EIAR, and the NIS submitted to An Bord Pleanála in June 2018, and input on terrestrial ecology issues in Irish Water's Response to Submissions January 2019 document.
- 4 Chapter 11 in Volume 3 Part A of the EIAR and the NIS were prepared with the benefit of inputs from a number of ecology specialists, including Ian Wilson, marine biodiversity expert and Dr Simon Zisman, ornithology expert.
- 5 For the avoidance of doubt, I confirm that this statement of evidence addresses the potential impacts on Terrestrial and Freshwater Aquatic ecology in the context of the Environmental Impact Assessment [EIA] to be carried out by An Bord Pleanála in respect of the Project. A separate statement addresses issues arising on the Habitats Directive assessment to be carried out by the Board.

2. SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

- 6 In order to properly focus on, and address, the issues raised in submissions and observations made to the Board on the application for development consent in relation to biodiversity (terrestrial and freshwater aquatic), it is necessary to understand the context in which those issues have been raised. Accordingly, prior to outlining the specific issues raised and Irish Water's response to those issues, and pursuant to the Board's Oral Hearing Agenda, it is useful to summarise the significant impacts and mitigation measures proposed as part of the biodiversity appraisal comprised in the application documentation.
- 7 Chapter 11 in Volume 3 Part A of the EIAR is the Biodiversity (Terrestrial and Freshwater Aquatic) Chapter, and comprises a biodiversity appraisal made up of a number of assessments undertaken by a variety of ecologists with expertise in particular fields.
- 8 Sections 11.1, 11.2 and 11.16 of Chapter 11 are common to both the terrestrial and freshwater aquatic appraisal, and respectively comprise an introduction to the Chapter; the methodologies used for undertaking baseline biodiversity surveys, evaluation of biodiversity features and subsequent

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assessments; and a list of reports and publications referenced. Sections 11.3 to 11.8 of Chapter 11 relate only to the terrestrial biodiversity appraisal. Sections 11.9 to 11.15 of Chapter 11 relate only to the freshwater aquatic biodiversity appraisal.

- 9 The biodiversity appraisal contained within Chapter 11 is supported by three technical appendices and a number of associated figures:

Volume 3, Part B of the EIAR

- Appendix A11.1 Bat Survey and Assessment;
- Appendix A11.2 Botanical Survey at Portmarnock; and
- Appendix A11.3 Ecological Survey for Smooth Newt.

Volume 5, Part A of the EIAR

- Figure 11.1 Special Areas of Conservation;
- Figure 11.2 Special Protection Areas and Ramsar Sites;
- Figure 11.3 Natural Heritage Areas;
- Figure 11.4 Dublin Bay UNESCO Biosphere Reserve;
- Figure 11.5 Habitat Survey Results (6 maps);
- Figures showing Mammal Survey Results (provided to An Bord Pleanála and the Development Applications Unit of the Department of Culture, Heritage and the Gaeltacht as a separate confidential report); and
- Figure 11.7 Freshwater Sampling Locations

- 10 The terrestrial biodiversity assessment contained within Chapter 11 of the EIAR is further supported by Section 12 Biodiversity (Terrestrial and Freshwater Aquatic) in Irish Water's Response to Submissions January 2019 document submitted to An Bord Pleanála in January 2019.

Potential Impacts (in the absence of mitigation)

- 11 Chapter 11 of the EIAR identifies, describes and assesses the likely significant effects of the Proposed Project on terrestrial and freshwater aquatic biodiversity resources.
- 12 A section of the proposed outfall pipeline route (marine section) is proposed to be:
- Located within Rockabill to Dalkey Island candidate Special Area of Conservation (cSAC);
 - Located in proximity to Ireland's Eye Special Protection Area (SPA); and
 - Tunnelled below Baldoyle Bay cSAC, SPA, Ramsar site and proposed Natural Heritage Area (NHA).
- 13 Approximately 60% of the length of the proposed outfall pipeline route (marine section), from its commencement at the R106 Coast Road to its termination point 1km north-east of Ireland's Eye, is located within transitional or buffer zones of Dublin Bay UNESCO Biosphere Reserve, and it is to be tunnelled under a core area of the Biosphere Reserve.
- 14 Qualifying features of European sites are located within the Zone of Influence of the Proposed Project. As these features relate to marine biodiversity and marine ornithology they are assessed in Chapter 9 Biodiversity (Marine Ecology) and Chapter 10 Biodiversity (Marine Ornithology) in Volume 3 Part A of

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the EIAR, and also in the NIS. These topics are addressed by Ian Wilson and Simon Zisman, and further referred to in a statement of evidence in relation to the Habitats Directive assessments to be undertaken by the Board.

- 15 The Zone of Influence of the project is 1km for the terrestrial biodiversity appraisal, and that portion of the River Tolka and Mayne catchments downstream of the project for the freshwater aquatic biodiversity appraisal. This is described in Section 11.1.2 of Chapter 11 of EIAR.
- 16 Significant environmental effects are predicted in the biodiversity appraisal as being effects resulting in moderate or major impacts which require avoidance, reduction or counterbalancing measures to mitigate or offset their adverse effect (as stated at the outset of section 11.4 of Chapter 11).
- 17 There are a number of potential effects upon terrestrial biodiversity resources that could occur during construction phase as summarised in Table 11.14 of the EIAR, and at operational phase as summarised in Table 11.15 of the EIAR.
- 18 The following significant environmental effects have been predicted in the terrestrial biodiversity appraisal in the absence of mitigation measures:
 - Loss of hedgerows and broadleaf woodland along the route of the orbital sewer;
 - Loss of hedgerows and scrub along the route of the outfall pipeline;
 - Loss of wet grassland at Kildonan; and
 - Disturbance to, displacement of or reduction in habitat availability for the following protected species –
 - farmland birds;
 - bats;
 - smooth newt; and
 - badger.
- 19 There are a number of potential effects upon freshwater aquatic biodiversity resources that could occur during construction phase and operational phase as summarised in Table 11.21 of the EIAR.
- 20 The following significant environmental effects have been predicted in the freshwater aquatic biodiversity appraisal in the absence of mitigation measures:
 - Pollution of the Tolka, Mayne and Santry rivers and Cuckoo Stream as a result of suspended solids and other substances from run-off on hardstanding areas at construction stage;
 - Pollution of the Tolka, Mayne and Santry rivers and Cuckoo Stream as a result of suspended solids and other substances from accidental spillage of fuels/oil/chemicals at construction stage;
 - Introduction of invasive species to the Tolka, Mayne and Santry rivers and Cuckoo Stream corridors at construction stage; and
 - Pollution of the Tolka, Mayne and Santry rivers systems from the leakage or spillage of untreated wastewater during a short term failure of wastewater infrastructure at operational stage.

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Mitigation Measures

- 21 A range of mitigation measures, including trenchless crossing techniques at watercourses, have been incorporated into the design of the project in order to offset potentially significant effects on terrestrial biodiversity resources: these mitigation measures are set out at section 11.7 of the EIAR. In addition, mitigation measures in respect of freshwater aquatic biodiversity resources are enumerated at section 11.14 of the EIAR.
- 22 An Ecological Clerk of Works will supervise or implement a number of mitigation measures specified in Section 4.2 of the Construction stage Environmental Management Plan (the CEMP), including:
- Pollution prevention and spill control measures prescribed in a Surface Water Management Plan at Appendix 3 of the CEMP, e.g:
 - Stockpiles of earth will be stockpiles will be located greater than 100m from a watercourse;
 - Run-off from stockpiles will be collected via a shallow toe drain which will discharge to a settlement pond;
 - Silt traps will be located immediately downstream of the works within and adjacent to watercourses and shall be inspected daily and maintained regularly during the works;
 - Total suspended solids (TSS), turbidity, pH, temperature, dissolved oxygen (DO) and hydrocarbons levels will be measured and monitored in surface waters upstream and downstream of the works during construction.
 - All plant and equipment used on the construction site will be thoroughly cleaned down using a power washer unit prior to arrival on site, and prior to leaving site, to prevent the spread of invasive aquatic /riparian species;
 - Establishing ecological buffer zones around the badger setts to be closed to protect the integrity of those setts to be re-opened upon completion of construction phase;
 - Seasonal restrictions on vegetation clearance to occur outside of the breeding bird season;
 - existing mature trees which will not be removed shall be protected from root damage in accordance with BS 5837:2012 *Trees in relation to design, demolition and construction*
 - Replanting of native species hedgerows removed during construction phase along the route of the orbital sewer and outfall pipeline;
 - Planting of native hedgerow and perimeter screening with native species of trees at the WwTP in accordance with the Landscape Strategy;
 - Obtaining wildlife disturbance licences as and when required from National Parks and Wildlife Service to close badger setts and translocate smooth newts; and
 - Erection of bat boxes.
- 23 When these effective mitigation measures are implemented, there are no predicted significant residual effects upon terrestrial and freshwater aquatic biodiversity resources.

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3. SUBMISSIONS/OBJECTIONS RECEIVED AND RESPONSES

(A) Response to Specific Issues Raised by Prescribed Bodies

Department of Culture, Heritage and the Gaeltacht (DCHG)

24 The submission from the DCHG raised a number of issues including:

- (1) Habitat restoration for proposed temporary construction compound no. 10;
- (2) Badger;
- (3) Newt; and
- (4) Timing of tree felling.

(1) *Issue – Habitat Restoration*

Submission:

25 DCHG Development Applications Unit requested that consideration be given to attempting to restore some of the habitat at proposed temporary construction compound no.10 as fixed dune habitat.

Response:

26 Irish Water confirmed in its Response to Submissions January 2019 document that it will discuss its intention to provide biodiversity gain in this area through restoration of fixed dune habitat upon completion of construction phase at construction compound no. 10.

27 Appendix 1 to this evidence sets out the proposed structure of a Habitat Management Plan for Biodiversity Gain which will be discussed and agreed with Fingal County Council prior to the commencement of construction at compound no. 10.

(2) *Issue – Wildlife Licensing*

Submission:

28 DCHG recommends that a wildlife licence application be made in advance of planning for the closure of badger setts and for the proposed relocation of newts.

Response:

29 Section 11.7.5 in Chapter 11 in Volume 3 Part A of the EIAR states in relation to mitigation for badgers:

- *In order to ensure there are no significant changes to the badger territories identified in the EIAR and the mitigation measures specified, a pre-construction badger survey should be undertaken prior to the commencement of any works;*
- *A wildlife disturbance licence will be obtained from NPWS for the exclusion and closure (two temporarily and three permanently) of five badger setts identified within the Proposed Project boundary;*
- *The licence application will be made by the appointed ECoW, who will conduct or otherwise supervise all licensed activities;*

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- *All works under licence will be monitored as necessary by the appointed ECoW throughout the Construction Phase; and*
 - *Setts closed for the duration of the Construction Phase shall be re-opened at the earliest opportunity in consultation with the licencing authority.*
- 30 A Badger survey was conducted in accordance with the 2009 National Roads Authority *Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes* and the badger survey conducted was more than adequate to assess the significant effects of the project on the local population of badger.
- 31 Eight badger setts were identified along the route of the project. None of these setts are a main breeding sett or an annex sett to a main breeding sett, which are the most important setts within a badger territory. There were no main setts identified within 100m of the project.
- 32 Five setts need to be closed for the duration of construction, and of these two will be protected during construction and subsequently re-opened upon completion of construction phase. The remaining three setts will be permanently closed. Only one of the five setts is active. The remaining four are disused.
- 33 The specification of the temporary fence for the proposed construction corridor will have a gap at the bottom to allow unimpeded movement of badger at the bottom of the fence so they can continue to move within their territorial boundaries.
- 34 Measures must be taken at construction stage under licence, to avoid disturbance to badger. No significant impact is predicted upon the local population of this protected species as a result.
- 35 Construction of the project is not scheduled to commence for at least two years (in the event that permission is granted). Furthermore, any licence granted would be likely to expire within the intervening period, requiring a further licence application to be made and would need to be supported by an up to date badger survey. For these reasons, in the event that permission is granted, the most effective approach is for a licence application to be made prior to commencement of construction, when a further survey will confirm the Badger survey which has already been undertaken and reported upon in the EIAR.
- 36 Newt survey found newts to be present in two waterbodies (out of sixteen) at one location within the wayleave. The core breeding pools/ponds (including the largest pond seen to retain water year-round) has been avoided by routeing re-design.
- 37 Measures must be taken at construction stage under licence, to avoid mortality of newts in the two ponds where they were recorded. No significant impact is predicted upon the local population of this protected species as a result.
- 38 Similar to badger licensing as noted above, construction is not scheduled to commence for at least two years, a licence application would need to be supported by an up to date smooth newt survey.
- 39 For the avoidance of doubt, a newt survey was conducted in accordance with the 2009 National Roads Authority *Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes* and the newt survey conducted was more than adequate to assess the significant effects of the project on the local population of smooth newt.
- 40 The most effective approach is for a licence application to be made prior to construction and informed by an up-to date survey.

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(3) Issue – Pond Creation

Submission:

- 41 DCHG requests that consideration be given to reconstructing ponds lost during construction where smooth newt was found.

Response:

- 42 DCHG's request to consider pond creation is noted, however, in this instance, there are sixteen ponds at the site where newts occur, as shown in Appendix A11.3 in Volume 3 Part B of the EIAR. The project has been redesigned to minimise the amount of pond habitat that will be affected. Two of the sixteen ponds present at newt survey site 1 will be drained down. Fourteen ponds occur outside of the lands required to construct the project. They will remain and provide ample pond habitat to relocate newts under licence.
- 43 In circumstances where newts were only recorded in some ponds, new pond creation is unnecessary as there are sufficient ponds to accommodate the relocation of the extant newt population.

(4) Issue – Timing of Tree Felling

Submission:

- 44 DCHG recommends that tree felling take place during August/September period instead of the August-October period to avoid impact on bat roosts.

Response:

- 45 Irish Water will ensure that tree felling takes place at the site of the proposed WwTP during August/September only and this modified commitment is reflected in a Schedule of Environmental Commitments. In all other respects, felling of mature trees will be undertaken in compliance with the 2005 National Roads Authority *Guidelines for the Treatment of Bats Prior to the Construction of National Road Schemes*.

Fingal County Council

- 46 The submission from Fingal County Council (which includes the Chief Executive's Report and elected member comments) raised a number of issues including:
- (1) A biodiversity plan for proposed temporary construction compound no. 10;
 - (2) Mitigation for hedgerow removal, retention and replacement and the associated impacts on bats;
 - (3) The impact of lighting at the proposed Wastewater Treatment Plant on bats; and
 - (4) The effects of mitigation on freshwater aquatic resources.

(1) Issue – Biodiversity Plan

Submission:

- 47 Fingal County Council has requested that a Biodiversity Plan is prepared.

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Response:

- 48 The Local Authority request for a Biodiversity Plan overlaps with the Department's request for habitat creation measures at proposed temporary construction compound no.10. Irish Water confirmed in its Response to Submissions January 2019 document that it will discuss the restoration of fixed dune habitat at proposed temporary construction compound no. 10 with Fingal County Council prior to works commencing. Appendix 1 to this evidence sets out the proposed structure of a Habitat Management Plan for Biodiversity Gain which will be discussed and agreed with Fingal County Council prior to the commencement of construction at compound no. 10.
- 49 The restoration will be described in a biodiversity plan which will seek to establish a diversity of fixed dune species during reinstatement of the site.

(2) Issue – Mitigation for Hedgerow Removal, Retention and Replacement and Associated Impact on Bats

Submission:

- 50 The Local Authority has observed that more effective mitigation should be provided for the protection of bats regarding hedgerow removal, retention and replacement.

Response:

- 51 Section 11.4.2 in Chapter 11 in Volume 3 Part A of the EIAR states that: normal practice is not to strip hedgerow sections from the full proposed construction corridor width, but instead to remove only what is required to facilitate the pipeline trench, haul route and any topsoil strip storage area beside the trench (approximately 20m). This ensures that the minimal feasible amount of hedgerow will be removed, and the maximum feasible amount will be retained. Works will be supervised by the Ecological Clerk of Works.
- 52 Mitigation prescribed in Chapter 11 of EIAR also specifies that hedgerows along the wayleave will be re-planted or replaced so as to achieve no net loss of hedgerows. Substantial landscape planting will also be implemented at the site of the WwTP.
- 53 Section 11.7.4 of Chapter 11 states that "*Depending on the season in which construction work takes place, it may be possible to store and replace sections of dormant hedgerows once work in a particular section is complete. Where this is not practicable, new planting will take place utilising advanced nursery stock*".
- 54 This Section of Chapter 11 also states that "*any existing mature trees adjacent to the Proposed Project or construction areas which will not be removed shall be protected from root damage in accordance with BS 5837:2012 Trees in relation to design, demolition and construction*" as part of the construction contract.
- 55 These measures provide adequate mitigation for temporary loss of foraging by bats at construction phase in light of the low levels of bat activity recorded that were using the hedgerow habitat across the Project.

(3) Issue – Impact of Lighting at the Proposed Wastewater Treatment Plant on Bats

Submission:

- 56 The Local Authority has raised an issue regarding the lighting at the proposed WwTP and its potential to impact on bats.

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Response:

- 57 Section 11.5.3 in Chapter 11 in Volume 3 Part A of the EIAR states that for the proposed WwTP, *“landscaping treatment for the proposed WwTP includes planting of hedgerow, specimen trees and wildflower meadow to the north, east and west of the proposed WwTP site. Lighting will be minimised in these areas, and the times during which the lighting is on will be limited to provide some dark periods. Should security lighting be necessary, directional lighting will be used to prevent overspill.”* [Emphasis added]
- 58 It is considered that these measures provide appropriate and effective mitigation for bats at the proposed WwTP because directing light inwards at the construction site of the WwTP will allow darkened corridors to be maintained during the active season beyond the construction site. As a result, bats will be able to continue to forage here.

(B) Response to General Issues in Submissions

- 59 Seventy-two submissions raised general concerns about the potential for effects upon terrestrial and freshwater aquatic biodiversity features as a result of the Project.¹ The general issues raised relate to:
- impacts of the project on local wildlife and its habitats;
 - pollution of the surface waters crossed by the project; and
 - designated sites (European sites and their qualifying interests).
- 60 A comprehensive assessment on all aspects of biodiversity is presented within Chapter 9 Biodiversity (Marine), Chapter 10 Biodiversity (Marine Ornithology) and Chapter 11 Biodiversity (Terrestrial and Freshwater Aquatic) in Volume 3 Part A of the EIAR and, in relation to European sites, in the NIS.
- 61 In relation to effects on local wildlife and its habitats, potential effects upon local wildlife and its habitats are summarised in Tables 11.14 and Table 11.15 of the EIAR in relation to the terrestrial biodiversity appraisal, and Table 11.21 in relation to the freshwater aquatic biodiversity appraisal. These tables are reproduced at the end of this evidence at Appendix 2.
- 62 Mitigation measures prescribed to offset significant effects on biodiversity resources are listed in sections 11.7 and 11.14 of the EIAR. The significant environmental effects of the project have been addressed, and no significant residual effects remain.
- 63 In relation to pollution of the surface waters crossed by the project, potential effects upon local wildlife and its habitats are summarised in Table 11.21 of the EIAR, reproduced at the end of this evidence at Appendix 2, and mitigation measures prescribed to prevent pollution and manage spills are listed in section 11.14 of the EIAR. The significant environmental effects of the project have been addressed, and no significant residual effects remain.
- 64 Issues in relation to potential effects on European sites and their qualifying interests are addressed in a separate statement of evidence in relation to the Habitats Directive assessments to be undertaken by the Board.

¹ The relevant submissions are listed at Paragraph 552 in Section 12.2 of Irish Water’s Response to Submissions January 2019 document.

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(C) Response to Specific Issues in Submissions

(1) Issue – Potential Impact on Aquatic Communities

Submission:

- 65 Seven submissions raised concerns that environmental impacts of the Project may be widespread as it is proposed to pump treated wastewater into the sea 1km north-east of Ireland's Eye and that no impact assessment was undertaken of the wildlife in the area surrounding Ireland's Eye or at Portmarnock Beach.²

Response:

- 66 The biodiversity appraisal contained within three complementary biodiversity chapters of the EIAR identifies and addresses the environmental impacts of the project on biodiversity resources. Chapter 9 (Marine), Chapter 10 (Marine Ornithology) and Chapter 11 (Terrestrial and Freshwater Aquatic) in Volume 3 Part A of the EIAR present in detail the surveys and assessments that were undertaken along the entire length of the Proposed Project. Sections 9.2, 10.2 and 11.2 in Volume 3 Part A of the EIAR list the biodiversity surveys that were undertaken and Figure 10.1 in Volume 5 Part A of the EIAR shows the study area covered by surveys in this part of the study area, which includes the area north of Ireland's Eye and Portmarnock Beach. This figure is reproduced at the end of this evidence at Appendix 2
- 67 Chapter 9 Biodiversity (Marine) in Volume 3 Part A of the EIAR provides details on the marine ecology impact assessment that was completed which addresses the potential impacts on the benthos (animals living on or within the seafloor), marine mammals, fish, plankton and water quality along the length of the proposed outfall pipeline route. Section 11.3.2 in Chapter 11 of the EIAR describes the habitats recorded within the footprint of the Project and Figures 11.5-11.10 in Volume 5 Part A of the EIAR provide the results of the terrestrial habitat surveys completed in respect of the Project. Figure 11.5 (Sheet 6) is reproduced at the end of this evidence at Appendix 2 to illustrate the results of habitat survey in this area.
- 68 As such, the environmental effects of the project in these areas have been identified and described, are localised and will be mitigated where necessary. A comprehensive impact assessment was undertaken of the wildlife in the area surrounding Ireland's Eye and Portmarnock Beach, and it is discussed in more detail in the evidence of my colleagues in relation to ornithology and marine biodiversity.

(2) Issue – Extent of Bat Surveys

Submission:

- 69 One submission from Philip Swan raised an issue as to adequacy of the extent of bat surveys.

Response:

- 70 Figure 2.2 of Appendix A11.1, reproduced at the end of this evidence at Appendix 2, shows the extent of the bat surveys undertaken along the Golf Links Road, which extends up to Strandmill Road. No bat activity was recorded in this area. The bat survey did not extend to the entrance to the Portmarnock Golf Club or onto Strandmill Road, because these areas are outside the study area for the assessment

² Barbara Delaney, Celia Herbert, Kayleigh Hone, Linda Brady, Residents of Newtown Court, Stacey Kelly and Stephanie Moore

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of bats on the basis that there is no possibility of activities associated with the Project adversely affecting bats in these areas.

- 71 Finally in this context, it should be noted that Bat surveys were undertaken in accordance with the 2016 Bat Conservation Trust *Bat Surveys for Professional Ecologists: Good Practice Guidelines* and the bat surveys conducted were more than adequate to assess whether there are likely significant effects of the project on the local populations of bats – which there are not. Construction effects are temporary and can be mitigated. There are no operational phase (long term) effects on bats.

(3) Issue – Annex I Habitat and Proposed Temporary Construction Compound No. 10

Submission:

- 72 The submission from the Velvet Strand Sea Swimmers and Beach Users raised an issue regarding the results of the habitat survey completed at the area where proposed temporary construction compound no. 10 is located and referred to in Fingal Development Plan, Sheet 15 Green Infrastructure 2, which shows Annex I habitat in the area of the compound.

Response:

- 73 A habitat survey was completed along the entire length of the project. Figure 11.5 in Volume 5 Part A of the EIAR (and which is reproduced at Appendix 2) presents the results of the habitat survey in the area of proposed temporary construction compound no.10 and shows that Annex I habitat does not occur within the project footprint, occurring only outside the area of this compound. Proposed temporary construction compound no.10 is located in an area that is classified as 'recolonizing bare ground'. A more in-depth botanical survey was completed for this compound and is contained in Appendix A11.2 in Volume 3 Part A of the EIAR.
- 74 That report concludes that, despite the proximity of habitats with compound no.10 to Annex I fixed dune habitat and the presence of sand within the soil matrix in places, the habitat within compound no.10 shares no similarities with fixed dune vegetation. The composition of the vegetation within compound no.10 has long since lost any resemblance to fixed dune habitat owing to the management of the area, which is not associated with the proposed development.
- 75 Accordingly, as a matter of certainty, I confirm that there is no Annex I habitat in the area of proposed temporary construction compound no.10.

4. CONCLUSION

- 76 In relation to the issues raised in submissions and observations, 72 submissions raised general concerns about the potential effects upon terrestrial and freshwater aquatic biodiversity features as a result of the project. The concerns raised are general in nature and relate to issues such as:
- impacts that the project will have on local wildlife and its habitats;
 - Pollution of the surface waters crossed by the project; and
 - Designated sites (European sites and their qualifying interests).
- 77 Irish Water's response to these general issues may be summarised as follows:
- Sections 11.4 and 11.10 of the EIAR identify and evaluate the likely significant construction phase effects of the project on local wildlife, habitats and surface waters.

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- Sections 11.5 and 11.11 of the EIAR identify and evaluate the likely significant operational phase effects of the project on local wildlife, habitats and surface waters.
- 78 A number of submissions are more specific. In each case, for the reasons set out above, it is submitted that the material presented in the EIAR adequately addresses the issues raised.
- In relation to Bat surveys at Portmarnock, the survey effort was in accordance with published guidance and proportionate with respect to the likely effects on bats at this location.
 - In relation to Annex I habitat at proposed temporary construction compound no.10, no such habitat presently occurs there, and steps will be taken to increase the biodiversity value of this site post-construction as part of reinstatement of the land. Irish Water confirmed in its Response to Submissions January 2019 document that it will discuss its intention to provide biodiversity gain in this area through restoration of fixed dune habitat upon completion of construction phase at construction compound no. 10.
 - Appendix 1 to this statement of evidence sets out the proposed structure of a Habitat Management Plan for Biodiversity Gain which will be discussed and agreed with Fingal County Council and DCHG prior to the commencement of construction at compound no. 10.
 - In relation to ecological assessment of biodiversity features in the area surrounding Ireland's Eye and at Portmarnock Beach, a significant portion of the evaluation and analysis presented in the ecological impact assessment in Chapter 9, 10 and 11 in Volume 3 Part A of the EIAR, is directed precisely at these locations.
- 79 Prescribed Body submissions and observations have focused on specific issues, and all issues raised have been responded to:
- In relation to wildlife licensing, licence applications should be made by the appointed Ecological Clerk of Works prior to construction and informed by an up-to date survey is the most appropriate solution. In that context, the existing badger and newt surveys are robust and more than adequate to permit the Board to carry out an EIA.
 - In relation to pond habitat creation, such measures are unnecessary as there are sufficient ponds to accommodate the relocation of the extant newt population.
 - In relation to hedgerow mitigation and lighting at the proposed WwTP in relation to bats, adequate and appropriate mitigation measures are identified in the EIAR which, when implemented, will ensure that no significant environmental effects arise.
- 80 Section 11.8 of the EIAR concludes in relation to the terrestrial biodiversity appraisal that *"with the successful implementation of mitigation measures outlined within Section 11.7, no significant residual impacts on terrestrial biodiversity features are predicted"*.
- 81 Section 11.15 of the EIAR concludes in relation to the freshwater aquatic biodiversity appraisal that *"with the successful implementation of mitigation measures outlined within Section 11.4, no significant residual impacts on freshwater biodiversity or downstream marine protected areas are predicted"*.

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APPENDIX 1: Habitat Management Plan for Biodiversity Gain at Proposed Temporary Construction Compound No.10

(Outline Structure)

**GREATER DUBLIN DRAINAGE
CONSTRUCTION COMPOUND NO.10**

**HABITAT MANAGEMENT PLAN
FOR BIODIVERSITY GAIN**

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1 INTRODUCTION

In response to observations made to An Bord Pleanála by both the Development Applications Unit of the Department of Culture, Heritage and the Gaeltacht (DCHG) and Fingal County Council (FCC) relating to a Strategic Infrastructure Development application (Ref: ABP-301908-18) by Irish Water to construct and operate the Greater Dublin Drainage project, RPS was requested to prepare an outline of a Habitat Management Plan for Biodiversity Gain

- FCC requested that a biodiversity plan be prepared for proposed temporary construction compound no. 10; and
- DCHG requested that consideration be given to attempting to restore some of the habitat at proposed temporary construction compound no.10 as fixed dune habitat.

Irish Water confirmed to An Bord Pleanála in its January 2019 Response to Submissions document that it will discuss its intention to provide biodiversity gain in this area through restoration of fixed dune habitat upon completion of construction phase at construction compound no. 10.

It is noted that the Local Authority (FCC) is the owner of the site, and will continue to be the owner of the site during the operational phase of the GDD Project. Irish Water will deliver the short term measures prescribed in the Plan and hand the site back to FCC upon completion of construction phase. The Local Authority will maintain the site thereafter and implement any longer term measures to be contained in the Plan.

The remainder of this report sets out the proposed structure of a Habitat Management Plan for Biodiversity Gain at proposed temporary construction compound no.10 of the GDD Project ('the Plan').

On the basis that FCC has requested the Plan be prepared, the measures proposed in the remainder of this report and general structure and content of the Plan must be considered by FCC. As future site manager tasked with implementing any longer term measures to be contained in the Plan, it is entirely reasonable that FCC must have adequate time to consider their long term objective(s) for the site, how it will function and what role it will perform in light of the policies and objectives contained in their Biodiversity Action Plan and County Development Plan for the Fingal administrative area and any relevant Local Area Plan relating to it.

2 SITE DESCRIPTION

2.1 LOCATION

2.2 TOPOGRAPHY AND CLIMATE

2.3 PLANNING HISTORY

2.4 ECOLOGICAL CHARACTERISTICS

2.4.1 Flora and Habitats

2.4.2 Species

2.4.3 Hydrology

2.5 LAND USE

2.5.1 Past Management

2.5.2 Current Management

3 FIXED DUNE ('GREY DUNE') HABITAT

3.1 GREY DUNES AT PORTMARNOCK

3.2.1 Habitats Directive Status

3.2.2 Range and Distribution

3.2.3 Sand Dune Ecology

3.2.4 Pressures and Threats

3.2 MANAGING GREY DUNES FOR CONSERVATION

3.2.1 Literature Review

3.2.2 Soil Management

3.2.3 Scrub Management

3.2.4 Grazing Management

3.2.5 Visitor and Amenity Management

4 HABITAT MANAGEMENT MEASURES

4.1 PRE-CONSTRUCTION PHASE

4.1.1 Soil Sampling

4.1.2 Sward Management

4.1.3 Seed Collection and Storage

4.2 CONSTRUCTION PHASE

4.2.1 Topsoil stripping

4.2.2 Turf Storage and Management

4.3 POST-CONSTRUCTION STAGE

4.3.1 Soil Preparation

4.3.2 Turf Reinstatement

4.3.3 Reseeding

4.3.4 Fencing and Signage

4.3.5 Access and Sward Management

4.4 MONITORING

4.4.1 Vegetation Condition Assessment

- *Year 1*
- *Year 3*
- *Year 5*
- *Year 10*

REFERENCES

APPENDIX I: COMPOUND LAYOUT PLAN

APPENDIX II: SOIL TEST RESULTS

**GDD Oral Hearing
Brief of Evidence of James McCrory
Biodiversity (Terrestrial and Freshwater Aquatic)**

APPENDIX 2: Table and Figure Extracts from the EIAR

Table 11.14: Potentially Significant Construction Stage Impacts of the Proposed Project on Terrestrial Biodiversity

Table 11.15: Potentially Significant Operational Stage Impacts of the Proposed Project on Terrestrial Biodiversity

Table 11.21: Impacts of the Proposed Project on Freshwater Aquatic Biodiversity in the Absence of Mitigation

Figure 10.1 - Location and Extent of Marine, Coastal and Estuarine Ornithological Surveys

Figure 11.5 - Habitat Survey Results (Sheet 6 of 6)

Figure 2.2 (of Bat Survey Report): Manual Transect Routes from Dublin Airport to Portmarnock, 2017

Table 11.14: Potentially Significant Construction Stage Impacts of the Proposed Project on Terrestrial Biodiversity

Feature	Value	Potential Impacts During Construction Phase	
		Habitat Loss, Deterioration and Fragmentation	Disturbance to or Displacement of Protected Species or Reduction in Habitat Availability
European Sites, their buffer zones and the UNESCO Biosphere Reserve	International	No impact. There will be no direct or indirect loss, deterioration or fragmentation of terrestrial habitats for which these sites have been designated.	No impact. There will be no direct or indirect disturbance to or displacement of terrestrial protected species, or reduction in terrestrial habitat availability to protected species for which these sites have been designated.
Inland NHAs	National	No impact. There will be no direct or indirect loss, deterioration or fragmentation of terrestrial habitats for which terrestrial pNHAs have been designated.	No impact. There will be no direct or indirect disturbance to or displacement of terrestrial protected species, or reduction in terrestrial habitat availability to protected species for which any terrestrial pNHA sites have been designated.
NDA	County	No likely significant impact. The Proposed Project will pass 10m below the NDA at Abbotstown and will partially tunnel through the golf course at Silloge. NDAs have been identified to provide opportunities for habitat improvement. A temporary construction site corridor running through the NDA does not prevent those opportunities arising.	No impact. Not applicable as NDAs are not designated in the Development Plan for the occurrence of protected species
GS2 grassland	Local importance (higher value)	No likely significant impact. Direct impact will occur, as areas of dry meadows and grassy verges will be removed during construction.	Not applicable
GS4 grassland	Local importance (higher value)	No likely significant impact. Direct impact will occur, as areas of wet grassland will be removed during construction.	Not applicable
(Mixed) broadleaved woodland, scrub, hedgerows and treelines	Local importance (higher value)	No likely significant impact. Direct impact will occur, as areas of (mixed) broadleaved woodland, scrub, hedgerows and treelines will be removed during construction.	Potentially significant impact. Indirect impact on species will occur, as these habitats are used by protected species to move throughout the wider area and their removal may impede the ability of species to do that throughout construction.
Fixed dune habitat at Portmarnock	Local importance (higher value)	No impact. Construction of the project will avoid this habitat.	Not applicable
GA1 and GA2 grasslands, spoil and recolonising bare ground, arable crops, horticultural land and tilled land	Local importance (lower value)	No likely significant impact. Direct impact will occur, as areas of grasslands, spoil and recolonising bare ground, arable crops, horticultural land and tilled land will be removed during construction.	Not applicable
Bats	Local importance (higher value)	Not applicable	Potentially significant impact. No direct impacts on roosts. Indirect impact on bats may occur as their foraging and commuting

Feature	Value	Potential Impacts During Construction Phase	
		Habitat Loss, Deterioration and Fragmentation	Disturbance to or Displacement of Protected Species or Reduction in Habitat Availability
			routes may be severed by loss of broadleaved woodland, scrub, hedgerows and treelines.
Farmland birds	Local importance (higher value)	Not applicable	<p>Potentially significant impact.</p> <p>No direct impacts on nests in use, but nesting habitat will be removed during construction. Breeding species will be displaced to adjacent woodland, scrub, hedgerows and treeline habitat.</p>
Smooth newt	Local importance (higher value)	Not applicable	<p>Potentially significant impact.</p> <p>Direct impacts on ponds used by newts may occur during construction. Species will be displaced to adjacent ponds.</p> <p>Newts may be accidentally harmed in the absence of any special measures.</p> <p>Wildlife offence may occur.</p>
Otters	Local importance (higher value)	Not applicable	<p>No impact.</p> <p>No direct or indirect impacts on any features identified as being used by otters shall be affected during the Construction Phase.</p>
Badgers	Local importance (higher value)	Not applicable	<p>Potentially significant impact.</p> <p>Direct impacts on badger setts within the proposed construction corridor will occur during construction. Species will be displaced to adjacent habitat.</p> <p>Badgers may be accidentally harmed in the absence of any special measures.</p> <p>Wildlife offence may occur.</p>

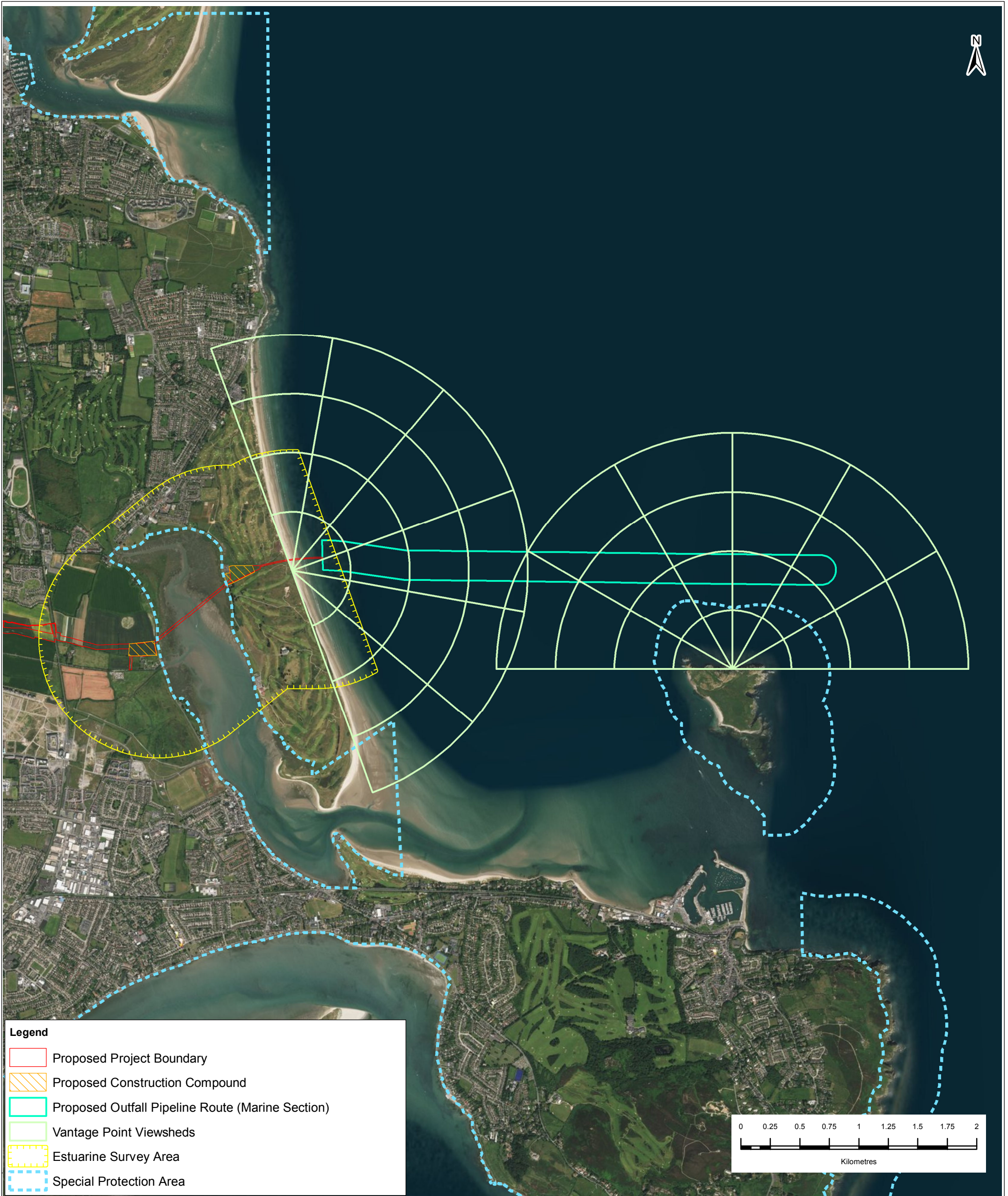
Table 11.15: Potentially Significant Operational Stage Impacts of the Proposed Project on Terrestrial Biodiversity

Feature	Value	Potential Impacts During Operational Phase	
		Habitat Loss, Deterioration and Fragmentation	Disturbance to or Displacement of Protected Species or Reduction in Habitat Availability
European Sites, their buffer zones and the UNESCO Biosphere Reserve	International	<p>No impact.</p> <p>There will be no direct or indirect loss, deterioration or fragmentation of terrestrial habitats for which these sites have been designated. Marine habitats are assessed in EIAR Chapter 9 Biodiversity (Marine) and the NIS.</p>	<p>No impact.</p> <p>There will be no direct or indirect disturbance to or displacement of terrestrial protected species, or reduction in terrestrial habitat availability to protected species for which these sites have been designated. Impacts on marine species are assessed in EIAR Chapter 10 and the NIS.</p>
Inland NHAs	National	<p>No impact.</p> <p>There will be no direct or indirect loss, deterioration or fragmentation of terrestrial habitats for which terrestrial pNHAs have been designated. pNHAs with marine habitats are assessed in EIAR Chapter 9.</p>	<p>No impact.</p> <p>There will be no direct or indirect disturbance to or displacement of terrestrial protected species, or reduction in terrestrial habitat availability to protected species for which any terrestrial pNHA sites have been designated. Impacts on marine species are assessed in EIAR Chapter 9 Biodiversity (Marine) and Chapter 10 Biodiversity (Marine Ornithology) and the NIS.</p>
NDA	County	<p>No likely significant impact.</p> <p>NDA has been identified to provide opportunities for habitat improvement. A proposed 20m wayleave through the NDA does not prevent those opportunities arising.</p>	<p>No impact.</p> <p>Not applicable as NDAs are not designated in the Development Plan for the occurrence of protected species</p>
GS2 grassland	Local importance (higher value)	<p>No impact.</p> <p>The operation of the project will not result in any ongoing impacts to areas of dry meadows and grassy verges.</p>	Not applicable
GS4 grassland	Local importance (higher value)	<p>No impact.</p> <p>The operation of the project will not result in any ongoing impacts to areas of wet grassland.</p>	Not applicable
(Mixed) broadleaved woodland, scrub, hedgerows and treelines	Local importance (higher value)	<p>No impact.</p> <p>The operation of the project will not result in any ongoing impacts to areas of (mixed) broadleaved woodland, scrub, hedgerows and treelines.</p>	Not applicable
Fixed dune habitat at Portmarnock	Local importance (higher value)	<p>No impact.</p> <p>The operation of the project will not result in any ongoing impacts to areas of fixed dune habitat.</p>	Not applicable
GA1 and GA2 grasslands, spoil and recolonising bare ground, arable crops, horticultural land and tilled land	Local importance (lower value)	<p>No impact.</p> <p>The operation of the project will not result in any ongoing impacts to areas of grasslands, spoil and recolonising bare ground, arable crops, horticultural land and tilled land.</p>	Not applicable
Bats	Local importance (higher value)	Not applicable	<p>No likely significant impact.</p> <p>No direct impacts on roosting, commuting or foraging bats.</p>

Feature	Value	Potential Impacts During Operational Phase	
		Habitat Loss, Deterioration and Fragmentation	Disturbance to or Displacement of Protected Species or Reduction in Habitat Availability
			No further nesting habitat will be removed during operation and no further displacement will occur.
Farmland birds	Local importance (higher value)	Not applicable	No likely significant impact. No direct impacts on farmland birds. No further roosting, commuting or foraging habitat will be removed during operation and no further displacement will occur.
Smooth newt	Local importance (higher value)	Not applicable	No likely significant impact. No direct impacts on newts are likely to occur at operational stage. No further pond habitat will be removed during operation and no further displacement will occur.
Otters	Local importance (higher value)	Not applicable	No impact. No direct or indirect impacts on any features identified as being used by otters shall be affected at operational stage.
Badgers	Local importance (higher value)	Not applicable	No likely significant impact. No direct impacts on badgers are likely to occur at operational stage. No further sett disturbance will occur during operation and no further displacement will occur.

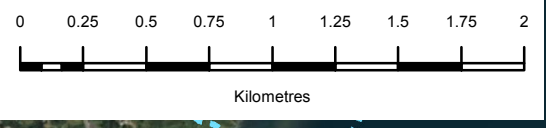
Table 11.21: Impacts of the Proposed Project in the Absence of Mitigation

Aquatic Ecological Receptor	Location and Rating	Potential Impacts During the Construction Phase									Potential Impacts during the Operational Phase		
		Suspended Solids Pollution	Pollution with Other Substances	Introduction of Invasive Species	Trenchless Crossing	Culvert and Bridge Construction	Construction of Access Roads	Compound Areas	Hydrological Changes	Environmental Incidents and Accidents	Pollution from Pipe Leakage/Spillage of Untreated Wastewater	Pollution from Runoff from Hardstanding Areas	Accidental Spillage of Fuels/Oil/Chemicals
ER1	Tolka River (Location 1) of county importance	Moderately negative on a local scale, short-term	Moderately negative on a local scale, medium-term	Significantly negative on a local scale, long-term	No impact	No impact	Slightly negative on a local scale, short-term	Slightly negative on a local scale, short-term	Moderate, negative on a local scale, permanent	Significantly negative on a local scale, long-term	Slightly negative on a local scale, temporary	Slightly negative on a local scale, temporary	Slightly negative on a local scale, temporary
ER2	Santry River (Location 2) of local importance (lower value)	Moderately negative on a local scale, short-term	Moderately negative on a local scale, medium-term	Significantly negative on a local scale, long-term	Moderately negative on a local scale, short-term	No impact	Slightly negative on a local scale, short-term	Slightly negative on a local scale, short-term	No impact	Significantly negative on a local scale, long-term	Slightly negative on a local scale, temporary	No impact	Slightly negative on a local scale, temporary
ER3	Mayne River (Location 3) of local importance (lower value)	Moderately negative on a local scale, short-term	Moderately negative on a local scale, medium-term	Significantly negative on a local scale, long-term	Moderately negative on a local scale, short-term	No impact	Slightly negative on a local scale, short-term	Slightly negative on a local scale, short-term	No impact	Significantly negative on a local scale, long-term	Slightly negative on a local scale, temporary	Slightly negative on a local scale, temporary	Slightly negative on a local scale, temporary
	Mayne River (Location 5) of local importance (lower value)	Moderately negative on a local scale, short-term	Moderately negative on a local scale, medium-term	Significantly negative on a local scale, long-term	No impact.	Moderately negative on a local scale, permanent	Slightly negative on a local scale, short-term	No impact	Slight negative on a local scale, permanent	Significantly negative on a local scale, long-term	No impact	Slightly negative on a local scale, temporary	No impact
ER4	Cuckoo Stream (Location 4) of local importance (lower value)	Moderately negative on a local scale, short-term	Moderately negative on a local scale, medium-term	Significantly negative impact on a local scale, long-term	Moderately negative on a local scale, short-term	No impact	Slightly negative on a local scale, short-term	Slightly negative on a local scale, short-term	Moderate, negative on a local scale, permanent	Significantly negative on a local scale, long-term	Slightly negative on a local scale, temporary	Slightly negative on a local scale, temporary	Slightly negative on a local scale, temporary



Legend

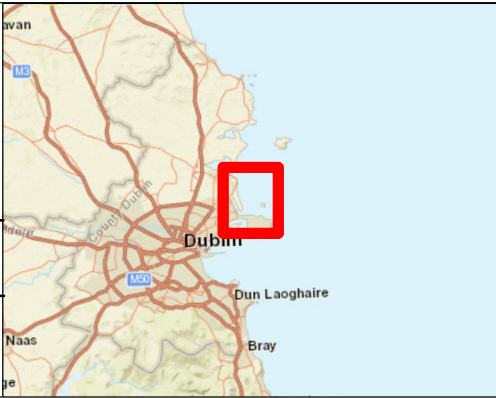
- Proposed Project Boundary
- Proposed Construction Compound
- Proposed Outfall Pipeline Route (Marine Section)
- Vantage Point Viewsheds
- Estuarine Survey Area
- Special Protection Area



Greater Dublin Drainage Project

Project: Greater Dublin Drainage Project

Drawing Title: Figure 10.1 - Location and Extent of Marine, Coastal and Estuarine Ornithological Surveys



Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
e	19/03/18	Revision 1; infrastructure updated	CH	RI	KAG	RI
d	05/03/18	Final	CH	RI	KAG	RI
c	17/01/18	Infrastructure updated	CH	RI	KAG	RI
b	13/09/17	Infrastructure updated	CH	RI	KAG	RI
a	21/10/16	For Issue	CH	RI	KAG	RI

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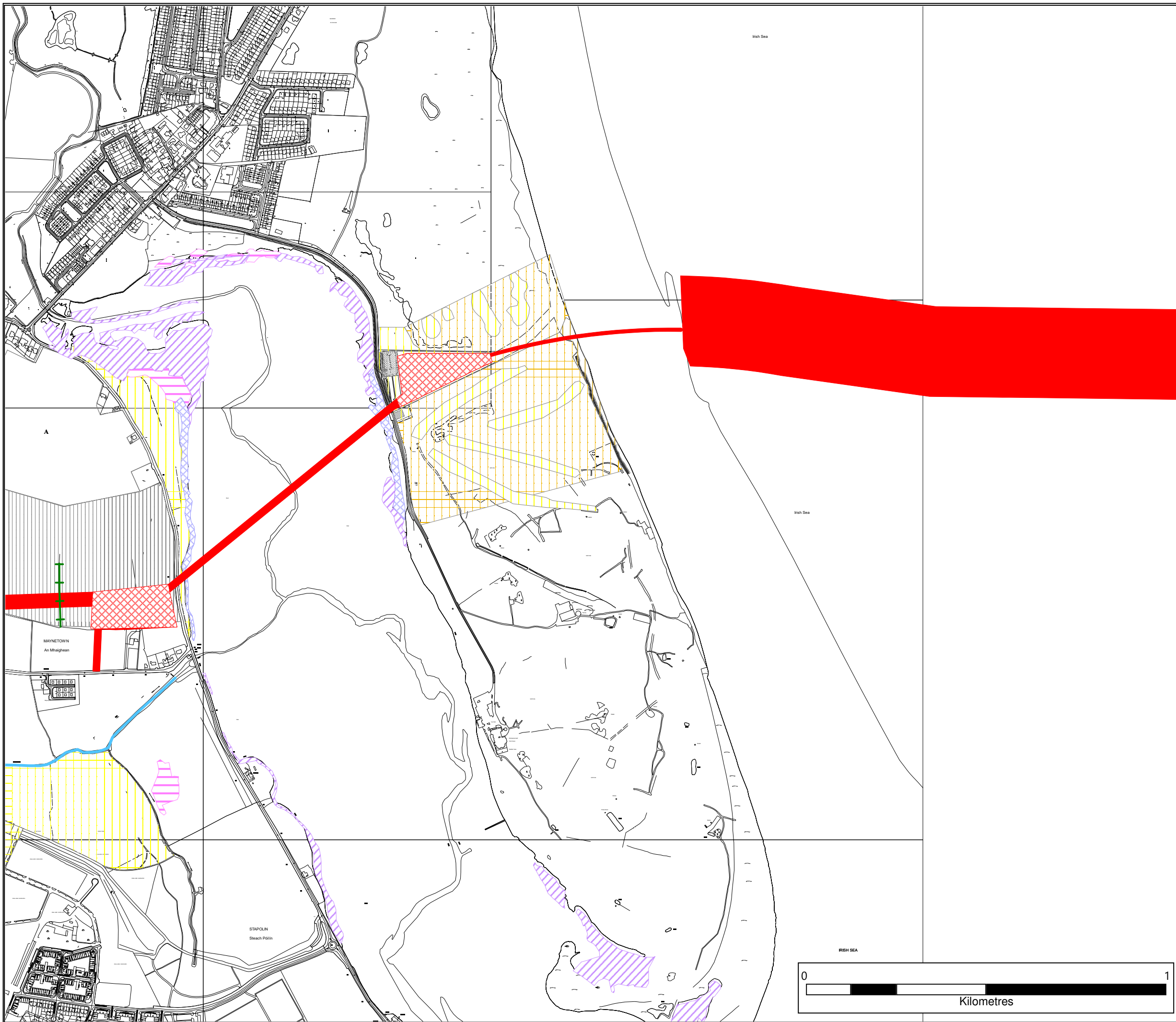
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Partners: J. Tobin & Co. Ltd.

Drawing Status: **Final**




























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Legend:

-  Proposed Project Boundary
-  Proposed Compounds
-  Access Routes
-  (Mixed) Broadleaved Woodland (WD1)
-  Immature Woodland (WS2)
-  Scrub (WS1)
-  Arable crops (BC1)
-  Horticultural land (BC2)
-  Tilled land (BC3)
-  Buildings /artificial surfaces (BL3)
-  Marram dunes (CD2)
-  Fixed dunes (CD3)
-  Atlantic Salt Meadow (CM2)
-  Mediterranean Salt Meadow (CM2)
-  Mixed Atlantic/Mediterranean Salt Meadow (CM2)
-  Amenity grassland (Improved) (GA2)
-  Dry calcareous & Neutral grassland (GS1)
-  Dry Meadows & Grassy verges (GS2)
-  Wet grassland (GS4)
-  Improved Agricultural Grassland (GA1)
-  Spoil & bare ground (ED2)
-  Recolonising bare ground (ED3)
-  Artificial lakes & ponds (FL8)
-  Drainage ditches (FW4)
-  Depositing lowland river (FW2)
-  Hedgerow (WL1)
-  Treeline (WL2)



F01	05/06/2018	For Issue	JIB	JMC	JMC	CC
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Apprd



Client
Greater Dublin Drainage Project

Drawing Title
Figure 11.5 - Habitat Survey Results (6 of 6)

Drawing Status
FINAL

Scale @ A3	1:10,000
Jacobs No.	32102902
File path	Full file path
Drawing No.	32102902-EIAR-1105 (6/6)

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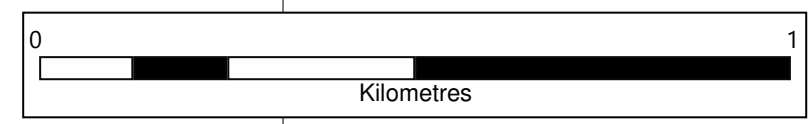


Figure 2-2: Manual Transect Routes from Dublin Airport to Portmarnock, 2017

