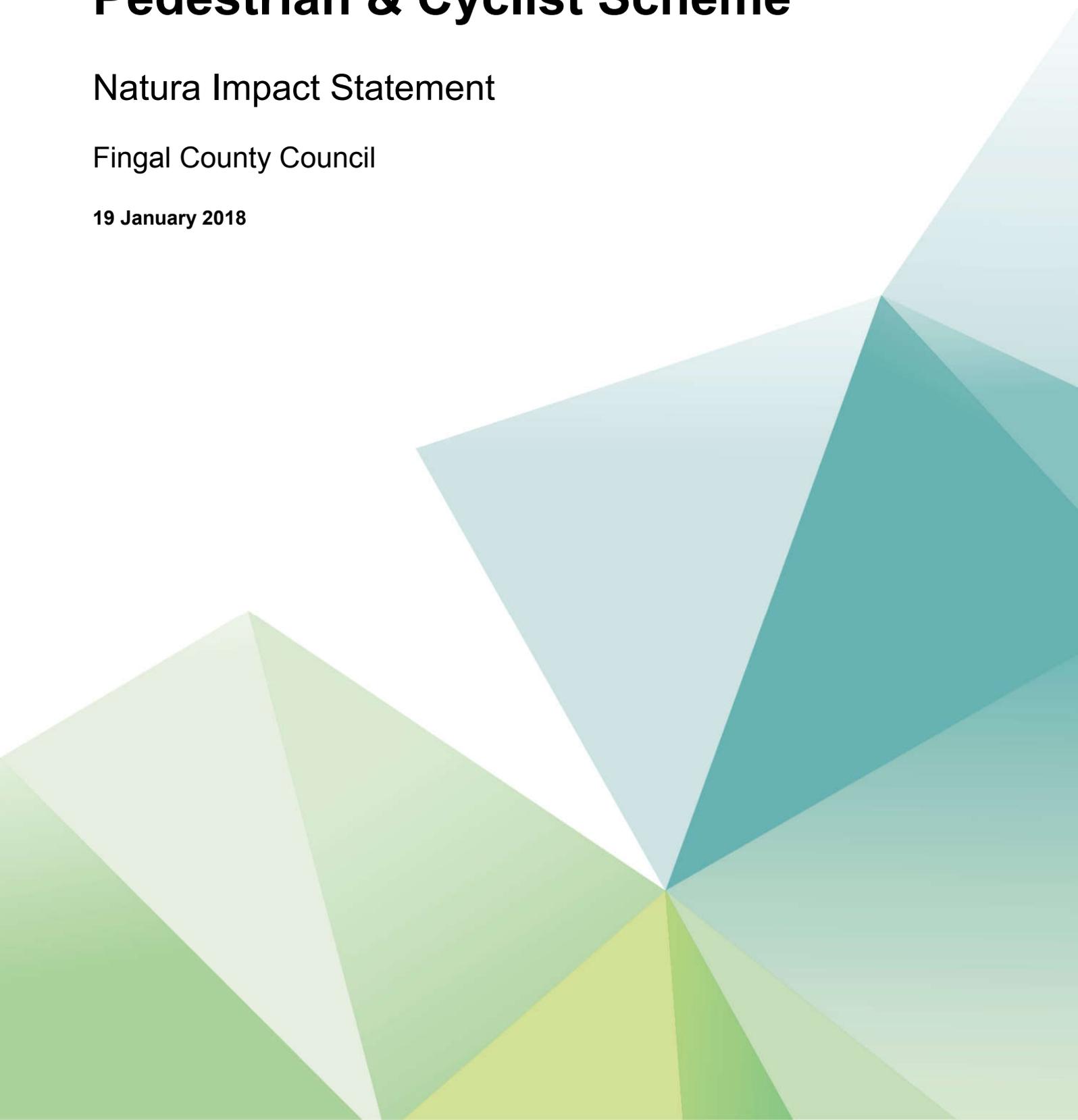


# **Baldoyle to Portmarnock Pedestrian & Cyclist Scheme**

Natura Impact Statement

Fingal County Council

19 January 2018



## Notice

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## Document history

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# 1. Introduction

## Background

- 1.1. Fingal County Council (FCC) proposes to develop a pedestrian and cyclist route with a view to providing connecting facilities between the towns of Baldoyle and Portmarnock. This scheme will form part of the mitigation measures for the development of the Baldoyle-Stapolin and Portmarnock South Local Area Plans (LAPs).
- 1.2. To achieve this objective, Fingal has engaged Atkins to develop the scheme route options and develop the preliminary design.
- 1.3. The aim of the application to An Bord Pleanála will be to seek approval for the implementation of the scheme. The site location and general site setting is presented in Figure 1.1 below.

## Need for the Scheme

- 1.4. The scheme forms part of the mitigation measures for the development of the Baldoyle – Stapolin<sup>1</sup> and Portmarnock South Local Area Plans<sup>2</sup> (LAPs). In order to avoid pedestrian and cycle traffic generated by the new developments impacting on the nearby Baldoyle Bay Special Area of Conservation (SAC) and Special Protection Area (SPA), a new walking and cycling route is required, located away from the shoreline and of sufficient quality to attract users away from the sensitive habitat areas. For example, in Section 5.1 *Green Infrastructure and Landscape Strategy* of the Portmarnock South LAP it is noted that one of the spatial concepts of the LAP is “A 3 metre wide footpath / cycle way, which forms part of the Fingal Coastal Way (walking and cycling) on the eastern edge of the plan linking to Portmarnock and Baldoyle”.
- 1.5. Development has begun within the LAP lands and the first houses are being occupied meaning the population of the area will soon begin to increase significantly. As a result, this walking and cycling route is required as soon as possible to avoid damaging Baldoyle Bay.
- 1.6. The proposed Baldoyle to Portmarnock Pedestrian and Cycle Route will comprehensively address a significant shortfall in the existing local network for cyclists and pedestrians.
- 1.7. The proposed scheme will deliver a cycle route providing high quality and consistent linkage between the key urban centres of Baldoyle and Portmarnock. The route proposal is for improved infrastructure which will serve to encourage a modal shift among the local population for commuter and recreational walking and cycling trips. The pedestrian experience will also be greatly enhanced through substantially improved safety.

The proposed scheme is consistent with the development, sustainable transport and cycling infrastructure objectives of the Fingal Development Plan 2017 – 2023.

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<sup>1</sup> Fingal County Council (May 2013). Baldoyle – Stapolin Local Area Plan.  
<http://www.fingal.ie/planning-and-buildings/development-plans-and-consultations/adopted-local-area-plans/baldoyle-stapolin-local-area-plan/>

<sup>2</sup> Fingal County Council (July 2013). Portmarnock South Local Area Plan.  
<http://www.fingalcoco.ie/planning-and-buildings/development-plans-and-consultations/adopted-local-area-plans/portmarnock-local-area-plan/>

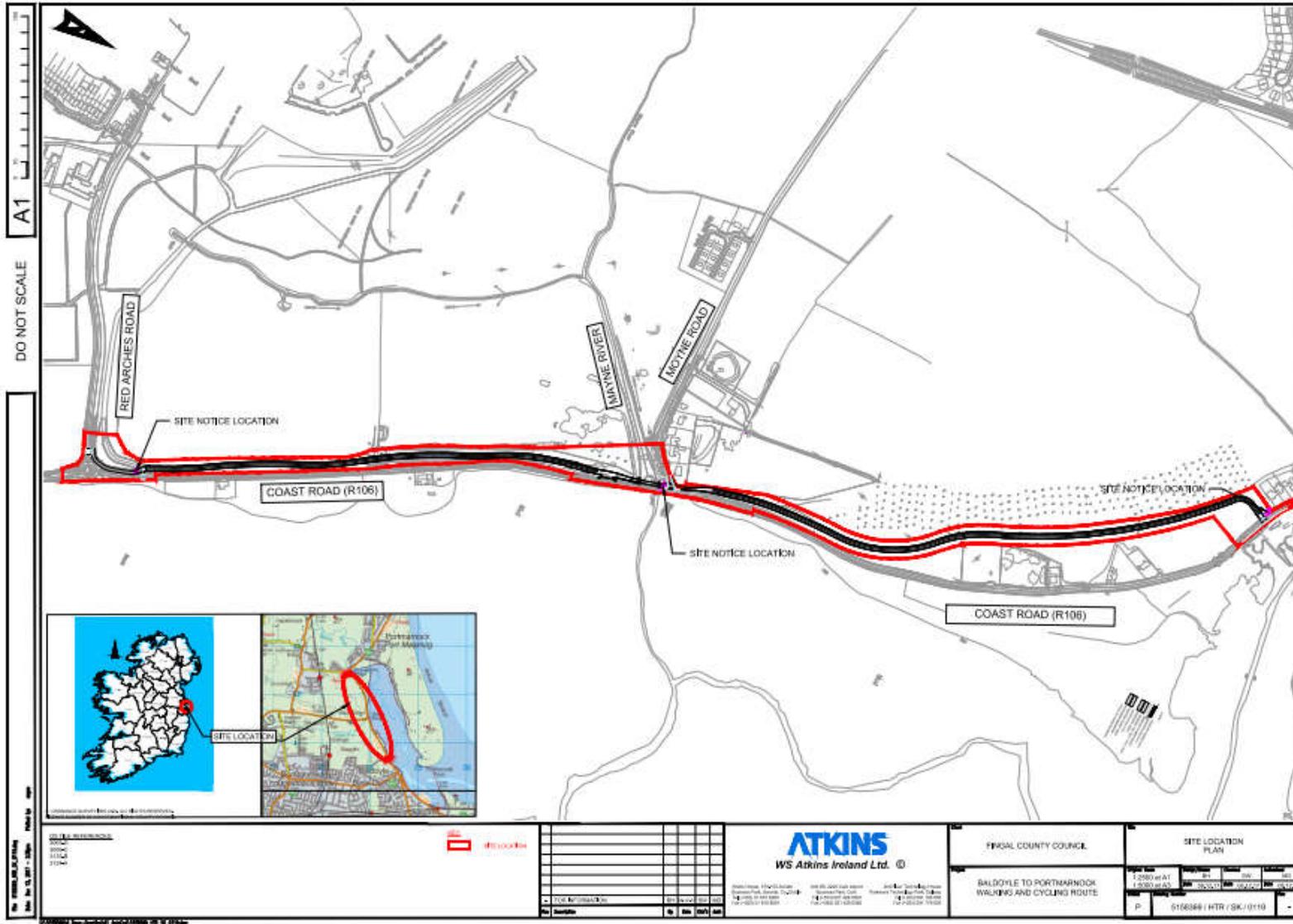


Figure 1.1 – Site Location and General Site Setting.

## 2. Scheme Description

### Route Selection Process

- 2.1. An Options Assessment was completed by Atkins in May 2017 to consider the context of the scheme in terms of key planning policies, to identify significant engineering / environmental constraints, to determine and evaluate route options, and ultimately to identify a preferred route. Various constraints / considerations were identified along the route as part of the assessment process. These were divided into two main categories: engineering and environmental considerations. Details are summarised below: -

### Engineering Considerations

1. The route corridor is required to cross existing heavily trafficked roads at Red Arches Road, Moyne Road and the R106 Coast Road. There are currently no facilities for vulnerable road users at any of these locations.
2. There are several existing boundaries that the proposed scheme must take account of including a number of residential properties and the existing DAA Non-Directional Beacon station.
3. There are several proposed boundaries that the proposed route must avoid including the Portmarnock South LAP lands, the proposed new pumping station being developed by Irish Water and a new wetlands area to be constructed as part of the developments in Portmarnock South.
4. There is an existing pumping station located at the junction of R106 Coast Road and R123 Moyne Road, resulting in a pinch point.
5. The route must cross the Mayne River, with the location of this crossing representing a significant constraint.

### Environmental Considerations

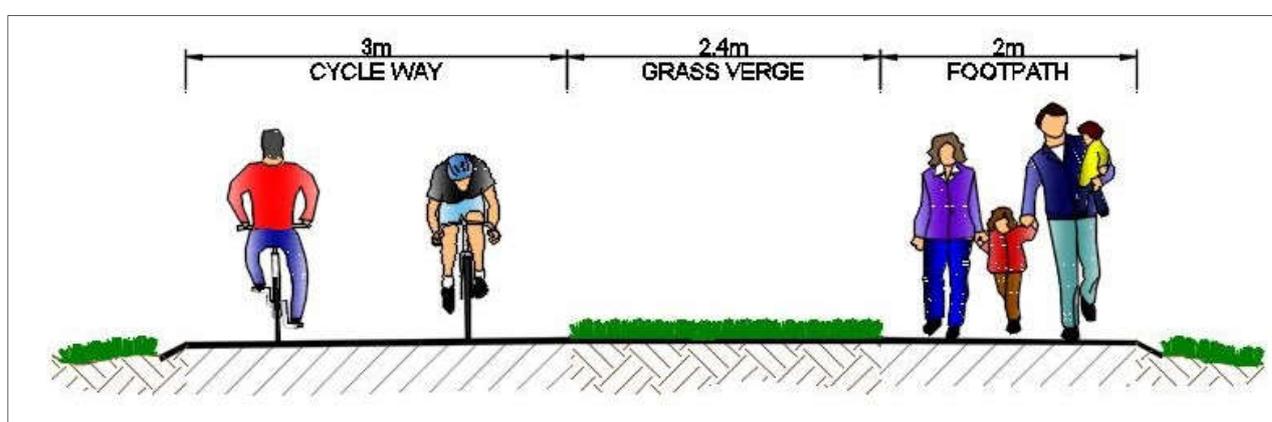
1. **Human Beings:** The proposed route will not add to operational sources of noise or air pollution but could assist in promoting more sustainable transport with associated reductions in emissions from vehicular traffic as outlined in Chapter 1.
2. **Ecology:** The principal ecological constraints along the route are associated with the proximity of the Baldoyle Bay Special Protection Area (SPA) and Special Area of Conservation (SAC), which are Natura 2000 sites. Conservation interests of the site include coastal habitats and international and nationally important populations of birds. Key constraints to these sites include habitat loss and disturbance, both direct and indirect. It will be necessary for the route to cross the SAC for a short section south of the Moyne River. However, in line with the Local Area Plans the construction of the scheme will remove non-vehicular traffic from the boundaries of the SAC/SPA areas for the majority of its length.
3. **Landscape and Visual Amenity:** The entirety of the proposed route passes through areas which are designated within the Fingal County Development Plan as Highly Sensitive Landscape. The route design will, therefore require the maintenance of the existing character of the landscape types through which it passes.
4. **Archaeology, Architectural and Cultural Heritage** There are 11no. Record of Monuments and Places (RMP) sites within approximately 500m of the proposed route and 4no. National Inventory of Architectural Heritage (NIAH) sites.

5. **Soils and Geology:** The main constraints identified along the route are areas of Made Ground and Alluvial or Marine/Estuarine deposits.
6. **Water Quality:** pollution control measures will be required at the new crossing of the River Mayne.

2.2. Four route options were then developed for the scheme, and were assessed in line with current project appraisal guidelines using a multi-criterion analysis as follows; economy, safety, environment, accessibility & social inclusion and integration. Each route was assessed in a comparative manner, and ranked in order to identify the preferred route.

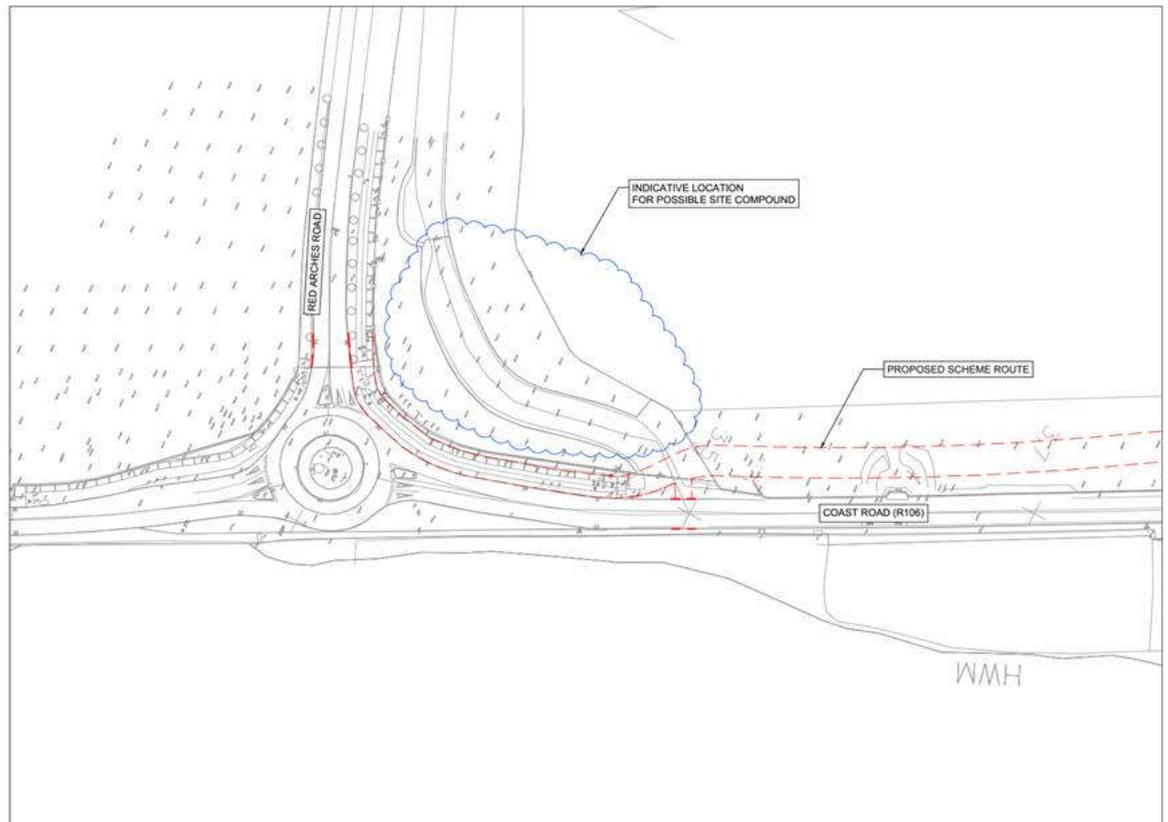
### Details of the Proposed Scheme

2.3. Drawings showing the preferred route are presented in Appendix E. A typical cross section of the preferred route is presented in Figure 2.1.



**Figure 2.1 - Preferred Route Typical Cross Section.**

- 2.4. Several localised areas of shared surface at the northern and southern ends of the scheme will be required to facilitate access on existing roads. Crossing points are proposed at Red Arches Road, Mayne Road and Coast Road.
- 2.5. An additional area of shared surface required across Mayne River due to the pinch point at the existing pumping station. A new, 4m wide bridge with anti-slip surfacing will be constructed over the Mayne River to accommodate pedestrian and cycle traffic only. The concrete bridge deck will be supported by steel piles on either side of the Mayne River; the depth of the piles will depend on encountered ground conditions but are expected to be greater than 3m. The bridge handrails will comprise bespoke stainless steel pedestrian parapet posts with longitudinal tensioned wires and leaning rail.
- 2.6. Lighting will be installed along the length of the proposed scheme, based on the preliminary design following consultation between the design team, landscape and ecology specialists, and FCC. The preliminary lighting design comprises 6m lighting columns at 25m intervals along the proposed route. The poles will be located at the rear of the footpath (i.e. land side). The lights will dim by 50% between 11pm and 6am. The proposed crossing points and the junction at Mayne Road are already lit by streetlights; however, these lights may be upgraded during the proposed scheme. This preliminary design is subject to further evaluation during the detailed design stage.
- 2.7. During the construction phase a site compound will be located at the north-eastern portion of the Red Arches / Coast Road junction, within the lands of the proposed route (see Figure 2.2); access to the site will also be from this end with haul routes running along the line of the proposed path.



**Figure 2.2 – Location of proposed site compound.**

- 2.8. A brief summary of the scheme context, route options appraisal and the description of preferred route are presented within this Natura Impact Statement. For full engineering and planning details of the proposed scheme refer to Atkins Report entitled '*Baldoyle to Portmarnock Pedestrian & Cyclist Scheme - Preliminary Design Report*' (Document Ref: 5158369DG006)<sup>3</sup> submitted in support of the planning application.
- 2.9. An Environmental Report accompanies the planning application for this scheme. This report has been prepared to support the Planning Application to An Bord Pleanála by describing the existing situation, the proposed scheme and its potential impact on the surrounding environment. For the Environmental report of the proposed scheme refer to Atkins Report entitled '*Environmental Report Baldoyle to Portmarnock Pedestrian & Cyclist Scheme*' (Document Ref: 5158369DG010) submitted in support of the planning application.

### Stakeholder Consultation

- 2.10. As part of the feasibility and design stage of the proposed scheme consultation has been undertaken with key stakeholders in order discuss any concerns they may have and to take account of any potential limitations on feasible development options.
- 2.11. The main potential concerns raised throughout consultation were: -
- Path width & integration into and protection of the existing landscape;
  - Archaeological heritage along the route;

<sup>3</sup> Atkins (2017). '*Baldoyle to Portmarnock Pedestrian & Cyclist Scheme - Preliminary Design Report*'. Unpublished Report prepared for Fingal County Council (Our ref. 5158369DG0006).

- Other plans, including ongoing projects will need to be considered when assessing cumulative impacts;
- The potential for negative impact on designated sites and associated protected habitats and species;
- The potential for disturbance of bird species in coastal Special Protection Areas for birds; and
- Areas of habitat creation (i.e. orchid rich grassland) along the route.

## Ecological Protection & Enhancement

- 2.12. The pedestrian and cyclist route is located in the Racecourse Park. The development of the Racecourse Park is informed by detailed recommendations for ecological protection and enhancement as set out in the Baldoyle – Stapolin Local Area Plan (Fingal County Council, May 2013) and the Portmarnock South Local Area Plan (Fingal County Council, July 2013). The division between these LAP lands lies along the Mayne Road, with lands to the south in the Baldoyle – Stapolin LAP lands; and lands to the north in the Portmarnock South LAP lands.
- 2.13. See for example Section 4A.3 *Natural Heritage and Biodiversity – Conservation and Extension of the Biodiversity Network* and in particular Section 4A.3.2 *Racecourse Park – Mitigation within the Ecological Buffer Zone* in the Baldoyle – Stapolin LAP (Fingal County Council, May 2013) for more detailed discussion. The proposals for habitat enhancement and creation “will help to protect the ecological integrity of the neighbouring nationally and internationally designated sites by providing suitable habitat for key species, such as birds while minimising the impacts of adjacent residential areas”. Note in particular Figure 4A.1 *Landscape Masterplan* which summarises the proposed measures within the Baldoyle – Stapolin Local Area Plan (Fingal County Council, May 2013). See also Section 4A3.3, which discusses *Green Infrastructure*, with emphasis on the creation of green corridors, green links and stepping stones through the landscape. The relevant sections of the Portmarnock South LAP lands include Section 5.2 *Biodiversity Conservation and the Extension of the Biodiversity Network*; notably Section 5.2.1 *Bird Species and Habitat Protection Measures* (refer in particular to Table 5.0 *Habitat Protection Measures*; p21 of the Plan).
- 2.14. Measures proposed include, but are not limited to (see e.g. Section 5.5.2 of the Portmarnock South LAP and Figure 5.2 *Green Infrastructure and Landscape Strategy*): -
- Creation of wildflower meadows.
  - Creation of areas of amenity grassland, semi-natural meadow, natural grassland and scrub and arable land use to include wintering crops such as linnet mix.
  - A ‘quiet zone’ to include foraging areas for Light-bellied brent geese (*Branta bernicla hrota*); this area has been fenced to prevent access, especially by dogs. Lands are also to be managed for waders, especially breeding Lapwing (*Vanellus vanellus*).
  - Retain Murragh Spit, east of the Coast Road, as a managed conservation area to protect estuarine bird life. Breeding meadow pipit (*Anthus pratensis*) have also been noted in this area.
- 2.15. Protection of existing trees, hedgerows, townland boundaries and watercourses which are of amenity, historic or biodiversity value.

- 2.16. These measures are illustrated in full on Figure 2.3 and Figure 2.4. Figure 2.3 is a copy of Figure 4A.1 *Landscape Masterplan* from Baldoyle – Stapolin LAP; while Figure 2.4 is a copy of Figure 5.2 *Green Infrastructure and Landscape Strategy* of the Portmarnock South LAP<sup>4</sup>.
- 2.17. Furthermore, a range of ecological studies have been commissioned by Fingal in recent years in order that all measures are informed by a strong ecological evidence base. These studies have also informed the Appropriate Assessment of the proposed coastal walk and are discussed further below.

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<sup>4</sup> <http://www.fingalcoco.ie/planning-and-buildings/development-plans-and-consultations/adopted-local-area-plans/portmarnock-local-area-plan/>



**LEGEND**

-  Recorded Monument and buffer zone
-  Proposed open space - predominantly amenity grassland
-  Proposed open space - predominantly meadow
-  Proposed Quiet Zone for migratory birds
-  Proposed Arable crops for migratory and native birds
-  Proposed small holding urban farming
-  Proposed paddocks, food cultivation / parkland
-  Proposed Mayne Marsh and Murrough Conservation Management areas
-  Existing ponds
-  Proposed open space - predominantly hard landscape
-  Existing hedgerows, woodland and tree groups
-  Proposed new hedgerow boundaries
-  Proposed new planting of predominantly broadleaf parkland species
-  Proposed coastal copses - Pine and Hawthorn
-  Proposed screen planting to pumping station
-  Proposed Greenroute - pedestrian and cycle
-  Proposed path through open space
-  Proposed mown grass path through Quiet Zone (Summer Only)
-  Moyne House - proposed Ecotourism and Recreation Hub
-  Primary view lines from within urban development
-  Proposed local playground
-  Proposed SuDS features
-  Proposed viewing point
-  Proposed Pocket Park

scale 1:5000  
0 100 200m



Figure 2.3 - Green Infrastructure & Landscape Strategy Map - north of Moyne Road



Figure 2.4. Green Infrastructure & Landscape Strategy Map – south of Moyne Road.

## 3. Methods

### Need for Appropriate Assessment

- 3.1. Special Areas of Conservation (SAC's) and Special Protection Areas for birds (SPA's) form part of a network, known as Natura 2000 sites, to be designated across Europe in order to protect biodiversity within the European Union. SAC's are designated under the EU Habitats Directive (92/43/EEC; and as amended), as transcribed into Irish law by the European Communities (Birds and Natural Habitats) Regulations, 2011, while SPA's are designated under the EU Birds Directive (79/409/EEC, as amended and codified in 2009/147/EC) and further protected under the EU Habitats Directive and the 2011 Regulations.
- 3.2. Article 6(3) of the EU Habitats Directive (92/43/EEC and as amended) states that: "*Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives.*" Such an assessment is known as an Appropriate Assessment (AA). Further guidance on AA is provided by the European Commission (2000) and the Department of the Environment, Heritage and Local Government (DEHLG) (2009).
- 3.3. The proposed pedestrian and cyclist route adjoins and crosses part of Baldoyle Bay Special Area of Conservation (SAC) (site code 000199) and Baldoyle Bay Special Protection Area (SPA) for birds (site code 004016). The proposed route is located to the north of North Bull Island SPA (004006) and North Dublin Bay SAC (000206) and south of Malahide Estuary SAC & SPA (site codes 00204 & 004025).
- 3.4. The scheme has the potential for significant impact due to land take from the SAC and disturbance to migratory birds. The scheme is therefore subject to Appropriate Assessment as described below.

### Appropriate Assessment Process

- 3.5. Article 6(3) of the EU Habitats Directive states that: "*Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives.*" Such an assessment is known as an Appropriate Assessment (AA). Further guidance on AA is provided in the following documents: -
  - European Commission (2000) Managing Natura 2000 sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC;
  - European Commission (2001) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC;
  - European Commission (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC: Clarification of the concepts of: Alternative solutions, Imperative reasons of overriding public interest, Compensatory Measures, Overall Coherence, Opinion of the Commission;
  - Department of the Environmental Heritage and Local Government (2009). Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities.

- 3.6. The Appropriate Assessment process begins with **Stage 1 - Screening** to determine if a plan or project is likely to have a negative impact on a Natura 2000 site; see Text Figure 3.1 for a summary of the steps involved in completing an Appropriate Assessment.
- 3.7. The Natura 2000 network is comprised of both Special Areas of Conservation and Special Protection Areas for birds; these sites are designated for the protection of biodiversity across the European Union. SACs are designated under the EU Habitats Directive<sup>5</sup> (92/43/EEC), as transcribed into Irish law by the European Communities (Birds and Natural Habitats) Regulations, 2011, while SPAs are designated under the EU Birds Directive<sup>6</sup> (79/4089/EEC; and as amended 2009/147/EC).

### Stage 1: Screening

- 3.8. The first stage is to determine if the plan is directly connected with or necessary for the site's management for nature conservation. If the answer is no, it must be determined if the plan is likely to have significant effects on a Natura 2000 and/or Ramsar site(s)<sup>7</sup>. If the answer to the latter is yes, then the assessment advances to Stage 2 (see Figure 3.1). Stage 1 screening involves the identification of the plan or project objectives, and a review of alternative methods to achieving the objectives where appropriate.
- 3.9. The AA screening begins with identification of Natura 2000 sites that could potentially be affected by the project; in this instance all Natura 2000 sites within environs to a distance of 15km from the site have been identified. This is followed by collation of information relating to these sites. Such information is principally obtained from the National Parks and Wildlife Service (NPWS) of the Department of Arts, Heritage and the Gaeltacht (DAHG). The primary source of information on Natura 2000 sites are the: -
- a) Conservation Objectives report for the site;
  - b) Standard Natura 2000 data forms;
  - c) Site synopses; and
  - d) Site boundaries.
- 3.10. All of the above can be obtained from the NPWS, while site boundaries can be viewed on the NPWS webpage (<http://npws.ie/mapsanddata/>); site boundaries can also be downloaded as shapefiles<sup>8</sup>.
- 3.11. A habitat survey of the site, which is located within the old Baldoyle Racecourse, was carried out was resurveyed on behalf of Fingal in 2017 by Fitzgerald (2017<sup>9</sup>). This report is included in full in Appendix B.
- 3.12. The above information was supplemented by desktop research and ongoing consultation in order to fully understand the works and determine how they might impact on Natura 2000 sites. As part of a wider consultation for ecological issues, in undertaking this screening exercise consultation was undertaken – this will be described further below.

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<sup>5</sup> For further information on the Habitats Directive refer to: -  
[http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index\\_en.htm](http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm)

<sup>6</sup> For further information on the Birds Directive refer to: -  
[http://ec.europa.eu/environment/nature/legislation/birdsdirective/index\\_en.htm](http://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm)

<sup>7</sup> A Ramsar site is a site designated under the Ramsar Convention (The Convention on Wetlands of International Importance) an international treaty for the conservation and sustainable utilisation of wetlands (adopted in Tehran, 1971).

<sup>8</sup> All site information and associated shapefiles were downloaded from [www.npws.ie](http://www.npws.ie) on 2<sup>nd</sup> May 2013.

<sup>9</sup> Fitzgerald, A. (2017). *Vegetation Assessment of the Racecourse Park Area and an Evaluation of the Potential Impacts from a Public Coastal Route*. Report prepared for Fingal County Council.

- 3.13. This, together with information on the Natura 2000 sites described above, permitted evaluation of the following: -
- Individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 sites;
  - Likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Natura 2000 site by virtue of: -
    - Reduction of habitat area;
    - Disturbance of key species;
    - Habitat or species fragmentation;
    - Reduction in species density; and
    - Changes in key indicators of conservation value.
  - Likely changes to the Natura 2000 site arising as a result of interference with the key relationships that define the structure and function of the site;
  - Indicators of significance as a result of the identification of effects set out above in terms of: -
    - Loss;
    - Fragmentation;
    - Disruption;
    - Disturbance; and
    - Change to key elements of the site.
  - Elements of the Plan, or combination of elements, where the above impacts are likely to be significant or where the scale of magnitude of impacts is not known;
  - Consideration of both construction and operational impacts of a proposed scheme.
- 3.14. Where negative impacts on a Natura 2000 site cannot be discounted the assessment must proceed to Stage 2. The entire assessment procedure is shown in Figure 3.1.

### Data Sources

- 3.15. Fingal County Council have commissioned a significant number of biodiversity studies in recent years and these helped to inform the present ecological assessment. The most directly relevant and current studies are as follows: -
- Fitzgerald, A. (2017). *Vegetation Assessment for a Proposed Walking and Cycling Route* [see [Appendix B to this report](#)].
  - Natura Environmental Consultants (2017). *Baldoyle to Portmarnock Coastal Path and Cycleway Assessment of Potential Impacts on Birds*. Report prepared for Fingal County Council [see [Appendix C to this report](#)].

- Keeley, B. (2016). *A Bat Assessment of the Racecourse Park Area and an Evaluation of the Potential for Impacts from a Public Coastal Route*. Report prepared for Fingal County Council [see accompanying [Environmental Report, Appendix C2](#)].
  - Pierce, S. (2017). *The Breeding Birds of Racecourse Park, Baldoyle, Co. Dublin. April - June 2017*. Report prepared for Fingal County Council [see accompanying [Environmental Report, Appendix C3](#)].
- 3.16. Furthermore, Fingal County Council commissioned JBA Consulting (2017<sup>10</sup>) to undertake a technical review of whether locating the proposed pedestrian and cyclist scheme partially within the SAC would negatively affect this Natura 2000 site; this report is included in full in Appendix D).
- 3.17. These studies included a complete habitat and vegetation survey of the racecourse lands; i.e. the lands running north from Red Arches Road to Moyne Road (see Figure 9 of Appendix B). In each study the methods used are presented.
- 3.18. Other sources of material include: -
- Fingal County Council (2004a). *Ecological Study of the Coastal Habitats in Co. Fingal. Phase I. Habitats and Flora*.
  - Fingal County Council (2004b). *Ecological Study of the Coastal Habitats in Co. Fingal. Phase II. Birds*.
  - Fingal County Council (2009). *Proposed Coastal Pathway. Portmarnock – Baldoyle at Baldoyle Bay cSAC and SPA. Appropriate Assessment under the EU Habitats Directive, Article 6(3)*.
  - Fingal County Council (2010). *Fingal Biodiversity Action Plan, 2010-2015*.
  - Fingal County Council (2010). *Fingal Development Plan, 2011-2017*.
  - Fingal County Council (2010). *Fingal Heritage Plan, 2017-2023*.
  - Fingal County Council (2013a). *Strategic Environmental Assessment. Baldoyle – Stapolin. Draft Local Area Plan. Draft Environmental Report (February 2013)*.
  - Fingal County Council (2013b). *Natura Impact Report. Baldoyle – Stapolin. Draft Local Area Plan. Appropriate Assessment (February 2013)*.
  - Fingal County Council (2013c). *Natura Impact Report. Portmarnock South. Draft Local Area Plan. Appropriate Assessment (February 2013)*.
  - Pierce, S. and Dillon, D. (2012). *Wintering bird survey of the lands surrounding the Baldoyle Estuary*. Report prepared by Fingal Branch, BirdWatch Ireland for Fingal County Council.
  - Reynolds, B. (1997). *Notes on vegetation at Mayne Bridge* (kindly provided by G. Clabby).
  - Minutes of meeting between the National Parks and Wildlife Service (NPWS) and Fingal County Council in 2016 to discuss the proposed scheme.

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<sup>10</sup> JBA Consulting (2017). *Advisory note on the impact on Baldoyle Bay SAC of Walking and Cycling Path at Racecourse Park*. Unpublished report prepared by Fingal County Council.

- 3.19. The recently published *Natura Impact Statement in Support of Appropriate Assessment of Proposed Broadmeadow Way Cycle/Walkway, Fingal* was also reviewed<sup>11</sup>.

### **Site Visit**

- 3.20. As noted above, a habitat survey of the site, including a targeted orchid survey, was carried out in the summer of 2013; this was supplemented by site visits in 2014 and more recently in 2017. The key area within the old Baldoyle Racecourse was visited by an Atkins ecologist with Mr. Hans Visser (Biodiversity Officer, FCC) on 27<sup>th</sup> July 2017 as part of a general ecological assessment of the site.

### **Statement of Authority**

- 3.21. The appropriate assessment screening report was prepared by Paul O'Donoghue. Paul O'Donoghue has a BSc (Zoology), MSc (Behavioural Ecology) and a PhD in avian ecology and genetics. He is a chartered member of the Society for the Environment (CEnv) and a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM). Paul has over 18 years' experience in ecology; including extensive experience in the preparation of Habitat Directive Assessments / Natura Impact Statements (i.e. Appropriate Assessment under Article 6(3) of the EU Habitats Directive). Paul carried out the site visit and prepared this report.

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<sup>11</sup> Creagh House Environmental (Oct. 2017). *Natura Impact Statement in Support of Appropriate Assessment of Proposed Broadmeadow Way Cycle/Walkway, Fingal*. Prepared on behalf of Fingal County Council.

# ANNEX III

## CONSIDERATION OF PLANS AND PROJECTS AFFECTING NATURA 2000 SITES

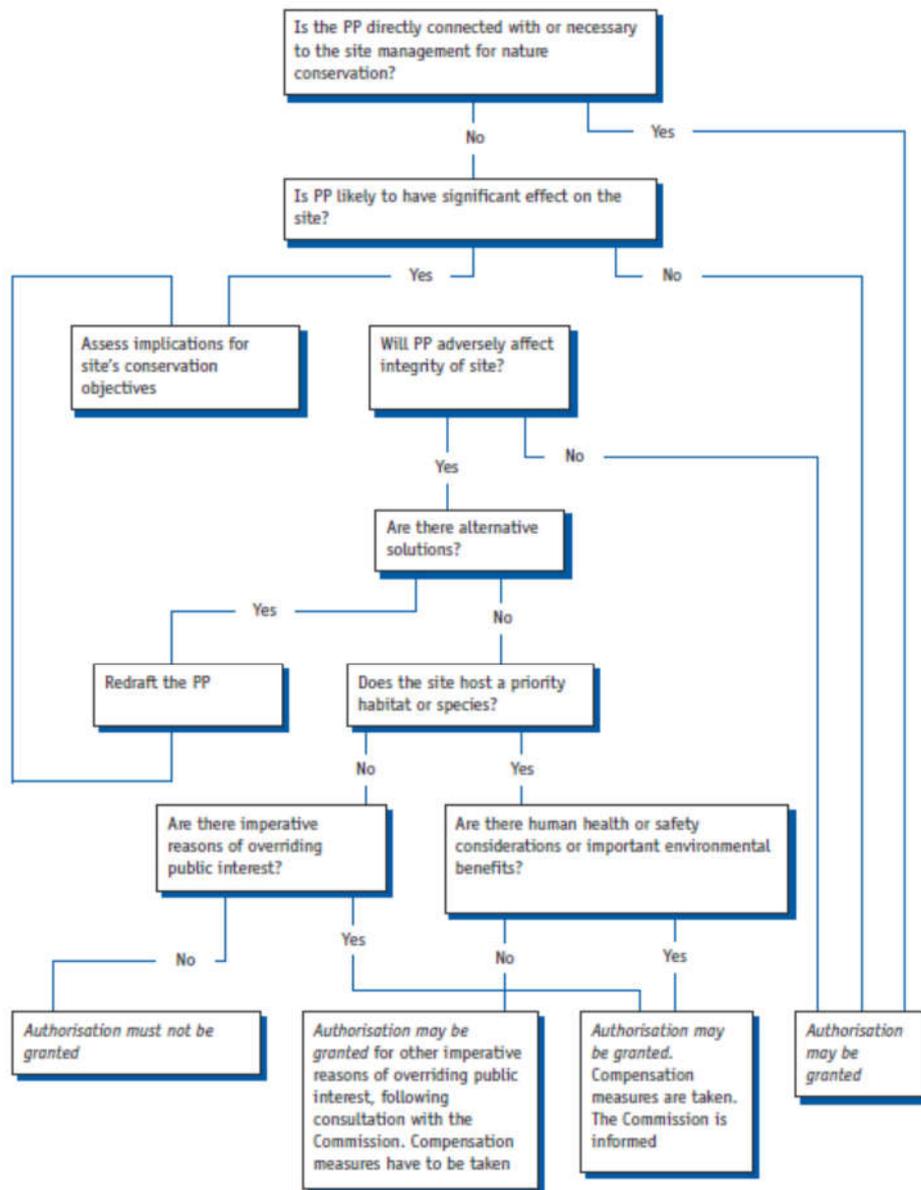


Figure 3.1 - Consideration of Plans and projects Affecting Natura 2000 sites from Annex III from Guidance issued by EC (2001).

## **Stage 2: Appropriate Assessment**

- 3.22. If the Screening process identifies that negative impacts cannot be ruled out the study progresses to Stage 2 at which point a detailed, targeted assessment of the nature and potential significance of direct and indirect impacts arising from the proposed variation must be completed. Stage 2 is the Appropriate Assessment proper to determine if the plan is likely to affect the integrity of the Natura 2000 and/or Ramsar site(s). An assessment of cumulative impacts (both from the project objectives, and other policies, plans and programmes) must be carried out. Mitigation measures must be proposed to eliminate potential impacts, if possible. These mitigation measures must be consulted upon with the relevant agencies and the public and, following receipt of comments, if it can be concluded that no adverse impacts on the integrity of the site are likely, the project can proceed for approval. If not, then the assessment advances to Stage 3.

## **Stage 3: Appropriate Assessment**

- 3.23. This Stage involves the identification of alternative solutions following a review of the outcomes of Stage 2. If there are no alternative solutions identified, then the assessment advances to Stage 4.

## **Stage 4: Assessment where no Alternative Solutions exist and where Adverse Impacts remain**

- 3.24. Stage 4 examines whether there are imperative reasons of overriding public interest for the plan or project to go ahead. If the answer is yes, then compensatory measures need to be agreed with the European Commission, before the plan or project can proceed. If not, then the plan or project is rejected.

## 4. Appropriate Assessment Screening

### Identification of Relevant Natura 2000 Sites

- 4.1. In order to screen for the necessity to carry out an AA, locations and boundaries of all Natura 2000 sites within 15km of scheme were identified and reviewed using the National Parks and Wildlife Service (NPWS) online map viewer<sup>12</sup>. This analysis confirmed that there are 18 Natura 2000 designations located within 15km of scheme which must be considered (refer to Table 4.1 and Figure 4.1 & 4.2). While 15km is the recommended distance in Department of the Environmental Heritage and Local Government's (2009) *Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities* consideration was also given in Stage 1 Screening to the potential for indirect links to sites further afield. The final list of sites considered is listed in Table 4.1 below.
- 4.2. Also presented in Table 4.1 are the qualifying interests relevant to each site; these are extracted from the Conservation Objective documents hosted on the NPWS webpage ([www.npws.ie](http://www.npws.ie)). In each case the version used is quoted. Other sources of information included site synopses, Natura data forms, NPWS site boundary maps (<http://webgis.npws.ie/npwsviewer/>), and conservation objectives supporting documents (where available). These can all be downloaded from the NPWS webpage. Consultation was also undertaken with NPWS as appropriate.
- 4.3. As the proposed pedestrian and cycle scheme adjoins and is partially located within sections of Baldoyle Bay SPA / SAC official printed maps of Natura 2000 site boundaries were also sourced from the Sites & Designations Office, NPWS in order to more fully evaluate potential incursions / overlaps.
- 4.4. Other sites such as Rockabill to Dalkey SAC (003000) were deemed too remote from / or to have no direct or indirect connection to the proposed scheme. They are not therefore included in the Stage 1 Screening below.
- 4.5. As noted each Natura 2000 site is designated for a unique combination of qualifying interests (as set out in Table 4.1). In each case site-specific conservation objectives are to be set for each qualifying interest. Where these have not been published for a given site there are instead generic conservation objectives. In either case the ultimate aim is to maintain habitats and species for which Natura 2000 sites are designated in favourable conservation status.
- 4.6. Following on from Tables 4.1 (SACs) and 4.2 (SPAs) the proposed pedestrian and cyclist scheme is considered for the potential to negatively impact on these Natura 2000 sites. Where sites are clearly outside of zone of influence of the proposed project these can be screened out and discounted from further consideration.

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<sup>12</sup> [www.npws.ie](http://www.npws.ie)

**Table 4.1 - Qualifying Interests of relevant SACs within 15km of the proposed scheme.**

Natura 2000 Site	Site Code	Qualifying Interests
Baldoyle Bay SAC <sup>13</sup>	000199	<ul style="list-style-type: none"> <li>➤ Mudflats and sandflats not covered by seawater at low tide [1140]</li> <li>➤ <i>Salicornia</i> and other annuals colonizing mud and sand [1310]</li> <li>➤ <i>Spartina</i> swards (<i>Spartinion maritimae</i>) [1320]</li> <li>➤ Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330]</li> <li>➤ Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]</li> </ul>
Malahide Estuary SAC <sup>14</sup>	000205	<ul style="list-style-type: none"> <li>➤ Mudflats and sandflats not covered by seawater at low tide [1140]</li> <li>➤ <i>Salicornia</i> and other annuals colonizing mud and sand [1310]</li> <li>➤ <i>Spartina</i> swards (<i>Spartinion maritimae</i>) [1320]</li> <li>➤ Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330]</li> <li>➤ Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]</li> <li>➤ Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]</li> <li>➤ Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]</li> </ul>
Howth Head SAC <sup>15</sup>	000202	<ul style="list-style-type: none"> <li>➤ Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]</li> <li>➤ European dry heaths [4030]</li> </ul>
Ireland's Eye SAC <sup>16</sup>	002193	<ul style="list-style-type: none"> <li>➤ Perennial vegetation of stony banks [1220]</li> <li>➤ Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]</li> </ul>
Rogerstown Estuary SAC <sup>17</sup>	000208	<ul style="list-style-type: none"> <li>➤ Estuaries [1130]</li> <li>➤ Mudflats and sandflats not covered by seawater at low tide [1140]</li> <li>➤ <i>Salicornia</i> and other annuals colonizing mud and sand [1310]</li> <li>➤ <i>Spartina</i> swards (<i>Spartinion maritimae</i>) [1320]</li> <li>➤ Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330]</li> <li>➤ Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]</li> <li>➤ Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]</li> <li>➤ Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]</li> </ul>
North Dublin Bay SAC <sup>18</sup>	000206	<ul style="list-style-type: none"> <li>➤ Mudflats and sandflats not covered by seawater at low tide [1140]</li> <li>➤ Annual vegetation of drift lines [1210]</li> <li>➤ <i>Salicornia</i> and other annuals colonizing mud and sand [1310]</li> <li>➤ <i>Spartina</i> swards (<i>Spartinion maritimae</i>) [1320]</li> <li>➤ Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330]</li> <li>➤ Petalwort (<i>Petalophyllum ralfsii</i>) [1395]</li> <li>➤ Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]</li> <li>➤ Embryonic shifting dunes [2110]</li> <li>➤ Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]</li> <li>➤ Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]</li> <li>➤ Humid dune slacks [2190]</li> </ul>

<sup>13</sup> NPWS (2012). *Conservation Objectives: Baldoyle Bay SAC 000199*. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

<sup>14</sup> NPWS (2013). *Conservation Objectives: Malahide Estuary SAC 000205*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

<sup>15</sup> NPWS (2016). *Conservation Objectives: Howth Head SAC 000202*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

<sup>16</sup> NPWS (2017). *Conservation Objectives: Ireland's Eye SAC 002193*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

<sup>17</sup> NPWS (2013). *Conservation Objectives: Rogerstown Estuary SAC 000208*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

<sup>18</sup> NPWS (2013). *Conservation Objectives: North Dublin Bay SAC 000206*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Natura 2000 Site	Site Code	Qualifying Interests
South Dublin Bay SAC <sup>19</sup>	000210	<ul style="list-style-type: none"> <li>➤ Mudflats and sandflats not covered by seawater at low tide [1140]</li> <li>➤ Annual vegetation of drift lines [1210]</li> <li>➤ <i>Salicornia</i> and other annuals colonising mud and sand [1310]</li> <li>➤ Embryonic shifting dunes [2110]</li> </ul>
Lambay Island SAC <sup>20</sup>	000204	<ul style="list-style-type: none"> <li>➤ Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]</li> <li>➤ Grey seal (<i>Halichoerus grypus</i>) [1364]</li> </ul>
Rockabill to Dalkey Island SAC <sup>21</sup>	003000	<ul style="list-style-type: none"> <li>➤ Reefs [1170]</li> <li>➤ <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]</li> </ul>

**Table 4.2 - Qualifying Interests of relevant SPAs within 15km of the proposed scheme.**

Natura 2000 Site	Site Code	Qualifying Interests
Baldoyle Bay SPA <sup>22</sup>	004016	<ul style="list-style-type: none"> <li>➤ Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]</li> <li>➤ Shelduck (<i>Tadorna tadorna</i>) [A048]</li> <li>➤ Ringed Plover (<i>Charadrius hiaticula</i>) [A137]</li> <li>➤ Golden Plover (<i>Pluvialis apricaria</i>) [A140]</li> <li>➤ Grey Plover (<i>Pluvialis squatarola</i>) [A141]</li> <li>➤ Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]</li> <li>➤ Wetlands &amp; Waterbirds [A999]</li> </ul>
Malahide Estuary SPA <sup>23</sup>	004025	<ul style="list-style-type: none"> <li>➤ Great Crested Grebe (<i>Podiceps cristatus</i>) [A005]</li> <li>➤ Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]</li> <li>➤ Shelduck (<i>Tadorna tadorna</i>) [A048]</li> <li>➤ Pintail (<i>Anas acuta</i>) [A054]</li> <li>➤ Goldeneye (<i>Bucephala clangula</i>) [A067]</li> <li>➤ Red-breasted Merganser (<i>Mergus serrator</i>) [A069]</li> <li>➤ Oystercatcher (<i>Haematopus ostralegus</i>) [A130]</li> <li>➤ Golden Plover (<i>Pluvialis apricaria</i>) [A140]</li> <li>➤ Grey Plover (<i>Pluvialis squatarola</i>) [A141]</li> <li>➤ Knot (<i>Calidris canutus</i>) [A143]</li> <li>➤ Dunlin (<i>Calidris alpina</i>) [A149]</li> <li>➤ Black-tailed Godwit (<i>Limosa limosa</i>) [A156]</li> <li>➤ Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]</li> <li>➤ Redshank (<i>Tringa totanus</i>) [A162]</li> <li>➤ Wetlands &amp; Waterbirds [A999]</li> </ul>
Howth Head Coast SPA <sup>24</sup>	004113	<ul style="list-style-type: none"> <li>➤ Kittiwake (<i>Rissa tridactyla</i>) [A188]</li> </ul>

<sup>19</sup> NPWS (2013). *Conservation Objectives: South Dublin Bay SAC 000210*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

<sup>20</sup> NPWS (2013). *Conservation Objectives: Lambay Island SAC 000204*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

<sup>21</sup> NPWS (2013). *Conservation Objectives: Rockabill to Dalkey Island SAC 003000*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

<sup>22</sup> NPWS (2013). *Conservation Objectives: Baldoyle Bay SPA 004016*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

<sup>23</sup> NPWS (2013). *Conservation Objectives: Malahide Estuary SPA 004025*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

<sup>24</sup> NPWS (2016). *Conservation objectives for Howth Head Coast SPA [004113]*. Generic Version 5.0. Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

Natura 2000 Site	Site Code	Qualifying Interests
Ireland's Eye SPA <sup>25</sup>	004117	<ul style="list-style-type: none"> <li>➤ Cormorant (<i>Phalacrocorax carbo</i>) [A017]</li> <li>➤ Herring Gull (<i>Larus argentatus</i>) [A184]</li> <li>➤ Kittiwake (<i>Rissa tridactyla</i>) [A188]</li> <li>➤ Guillemot (<i>Uria aalge</i>) [A199]</li> <li>➤ Razorbill (<i>Alca torda</i>) [A200]</li> </ul>
Rogerstown Estuary SPA <sup>26</sup>	004015	<ul style="list-style-type: none"> <li>➤ Greylag Goose (<i>Anser anser</i>) [A043]</li> <li>➤ Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]</li> <li>➤ Shelduck (<i>Tadorna tadorna</i>) [A048]</li> <li>➤ Shoveler (<i>Anas clypeata</i>) [A056]</li> <li>➤ Oystercatcher (<i>Haematopus ostralegus</i>) [A130]</li> <li>➤ Ringed Plover (<i>Charadrius hiaticula</i>) [A137]</li> <li>➤ Grey Plover (<i>Pluvialis squatarola</i>) [A141]</li> <li>➤ Knot (<i>Calidris canutus</i>) [A143]</li> <li>➤ Dunlin (<i>Calidris alpina</i>) [A149]</li> <li>➤ Black-tailed Godwit (<i>Limosa limosa</i>) [A156]</li> <li>➤ Redshank (<i>Tringa totanus</i>) [A162]</li> <li>➤ Wetlands &amp; Waterbirds [A999]</li> </ul>
North Bull Island SPA <sup>27</sup> (004006)	004006	<ul style="list-style-type: none"> <li>➤ Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]</li> <li>➤ Shelduck (<i>Tadorna tadorna</i>) [A048]</li> <li>➤ Teal (<i>Anas crecca</i>) [A052]</li> <li>➤ Pintail (<i>Anas acuta</i>) [A054]</li> <li>➤ Shoveler (<i>Anas clypeata</i>) [A056]</li> <li>➤ Oystercatcher (<i>Haematopus ostralegus</i>) [A130]</li> <li>➤ Golden Plover (<i>Pluvialis apricaria</i>) [A140]</li> <li>➤ Grey Plover (<i>Pluvialis squatarola</i>) [A141]</li> <li>➤ Knot (<i>Calidris canutus</i>) [A143]</li> <li>➤ Sanderling (<i>Calidris alba</i>) [A144]</li> <li>➤ Dunlin (<i>Calidris alpina</i>) [A149]</li> <li>➤ Black-tailed Godwit (<i>Limosa limosa</i>) [A156]</li> <li>➤ Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]</li> <li>➤ Curlew (<i>Numenius arquata</i>) [A160]</li> <li>➤ Redshank (<i>Tringa totanus</i>) [A162]</li> <li>➤ Turnstone (<i>Arenaria interpres</i>) [A169]</li> <li>➤ Black-headed Gull (<i>Chroicocephalus ridibundus</i><sup>28</sup>) [A179]</li> <li>➤ Wetlands &amp; Waterbirds [A999]</li> </ul>
South Dublin Bay & River Tolka SPA <sup>29</sup>	004024	<ul style="list-style-type: none"> <li>➤ Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]</li> <li>➤ Oystercatcher (<i>Haematopus ostralegus</i>) [A130]</li> <li>➤ Ringed Plover (<i>Charadrius hiaticula</i>) [A137]</li> <li>➤ Grey Plover (<i>Pluvialis squatarola</i>) [A140]</li> <li>➤ Knot (<i>Calidris canutus</i>) [A143]</li> </ul>

<sup>25</sup> NPWS (2016). *Conservation objectives for Ireland's Eye SPA [004117]*. Generic Version 5.0. Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

<sup>26</sup> NPWS (2013). *Conservation Objectives: Rogerstown Estuary SPA 004015*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

<sup>27</sup> NPWS (2015). *Conservation Objectives: North Bull Island SPA 004006*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

<sup>28</sup> The scientific name of Black-headed Gull has recently been changed from *Larus ridibundus* to *Croicocephalus ridibundus*. However, in Table 1 the name used is as presented on the relevant NPWS webpage.

<sup>29</sup> NPWS (2015). *Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Natura 2000 Site	Site Code	Qualifying Interests
		<ul style="list-style-type: none"> <li>➤ Sanderling (<i>Calidris alba</i>) [A144]</li> <li>➤ Dunlin (<i>Calidris alpina</i>) [A149]</li> <li>➤ Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]</li> <li>➤ Redshank (<i>Tringa totanus</i>) [A162]</li> <li>➤ Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179]</li> <li>➤ Roseate Tern (<i>Sterna dougallii</i>) [A192]</li> <li>➤ Common Tern (<i>Sterna hirundo</i>) [A193]</li> <li>➤ Arctic Tern (<i>Sterna paradisaea</i>) [A194]</li> <li>➤ Wetlands &amp; Waterbirds [A999]</li> </ul>
Lambay Island SPA <sup>30</sup>	004069	<ul style="list-style-type: none"> <li>➤ Fulmar (<i>Fulmarus glacialis</i>) [A009]</li> <li>➤ Cormorant (<i>Phalacrocorax carbo</i>) [A017]</li> <li>➤ Shag (<i>Phalacrocorax aristotelis</i>) [A018]</li> <li>➤ Greylag Goose (<i>Anser anser</i>) [A043]</li> <li>➤ Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183]</li> <li>➤ Herring Gull (<i>Larus argentatus</i>) [A184]</li> <li>➤ Kittiwake (<i>Rissa tridactyla</i>) [A188]</li> <li>➤ Guillemot (<i>Uria aalge</i>) [A199]</li> <li>➤ Razorbill (<i>Alca torda</i>) [A200]</li> <li>➤ Puffin (<i>Fratercula arctica</i>) [A204]</li> </ul>
Dalkey Island SPA <sup>31</sup>	004172	<ul style="list-style-type: none"> <li>➤ Roseate Tern (<i>Sterna dougallii</i>) [A192]</li> <li>➤ Common Tern (<i>Sterna hirundo</i>) [A193]</li> <li>➤ Arctic Tern (<i>Sterna paradisaea</i>) [A194]</li> </ul>

<sup>30</sup> NPWS (2016). *Conservation objectives for Lambay Island SPA [004069]*. Generic Version 5.0. Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

<sup>31</sup> NPWS (2016). *Conservation objectives for Dalkey Islands SPA [004172]*. Generic Version 5.0. Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

## Screening

- 4.7. A Stage 1 Screening was carried out in which each Natura 2000 site was reviewed; location, distance to the proposed scheme, risk of direct / indirect impacts and the ecology of the relevant qualifying interest were considered. In the case of bird species this includes consideration of season of occurrence; habitat preference; trophic group; diet and sensitivity to disturbance. In the case of e.g. intertidal waders consideration is also given to the full tidal cycle; including high tide roosting and low tide foraging.
- 4.8. Note that both construction and operational impacts are considered when undertaking this exercise; however, for clarity potential impacts are discussed together in the context of the project's full life cycle, with those directly relevant to a specific Natura 2000 site highlighted. However, broadly speaking in this instance construction impacts are more directly relevant to Baldoyle Bay SAC, while operational impacts (e.g. disturbance) are more relevant to Baldoyle Bay SPA.
- 4.9. The proposed pedestrian and cyclist scheme is located within or close to two Natura 2000 sites, namely: -
- Baldoyle Bay SPA (004016)
  - Baldoyle Bay SAC (000199)
- 4.10. The proposed pedestrian and cyclist scheme runs through a section of Baldoyle Bay SAC which is located to the west of the Coast Road. As a result the potential for negative effects on Baldoyle Bay SAC cannot be entirely ruled out at this time. While there is no physical overlap with Baldoyle Bay SPA the potential for disturbance of bird species for which Baldoyle Bay SPA has been designated cannot be discounted at this time. As a result these two sites are considered in more detail below in the context of their qualifying interests.
- 4.11. There are a further 8 no. Special Areas of Conservation located within 15km of the proposed scheme. However, there is no physical overlap between the scheme and any of these sites. Nor is it predicted that there would be any indirect impact through e.g. deterioration in water quality, air quality etc. due e.g. to the absence of hydrological linkage, distance etc. These sites are as follows: -
- Malahide Estuary SAC (000205)
  - Howth Head SAC (000202)
  - Ireland's Eye SAC (002193)
  - Rogerstown Estuary SAC (000208)
  - North Dublin Bay SAC (000200)
  - South Dublin Bay SAC (000210)
  - Lambay Island SAC (000204)
  - Rockabill to Dalkey Island SAC (003000)
- 4.12. The above eight sites are therefore Screened Out at Stage 1 and will not be considered further.
- 4.13. The sites remaining in consideration are all Special Protection Areas for birds. Of these remaining sites, four sites are marine / coastal in character, namely: -

- Howth Head SPA (004113) – Kittiwake (breeding)
  - Ireland's Eye SPA (004117) – Cormorant, Herring Gull, Kittiwake, Guillemot and Razorbill (all breeding)
  - Lambay Island SPA (004069) – Fulmar, Cormorant, Shag, Greylag Goose (wintering), Lesser Black-backed Gull, Herring Gull (breeding + wintering), Kittiwake, Guillemot, Razorbill and Puffin (breeding, unless otherwise stated.)
  - Dalkey Islands SPA (004172) – Roseate Tern, Common Tern and Arctic Tern (passage)
- 4.14. While species such as Fulmar, Shag, Kittiwake, Guillemot, Razorbill and Puffin generally move offshore to feed; they certainly would also on occasion make use of inshore waters along the coast from Howth northwards to Malahide. The environs within which the cycleway is proposed is already served by existing walks, public beaches / parkland, busy roads and residential / commercial development. Much of the walk is also screened from Baldoyle Bay. It is considered unlikely that the proposed scheme would disturb these species should they choose to enter Baldoyle Bay to forage.
- 4.15. Both Herring Gull and Lesser Black-backed Gull are recorded in large numbers along the coast; both species avail of a mix of terrestrial, intertidal and coastal marine food resources; in addition both make extensive use of human rubbish / wastes. As noted the proposed scheme is largely based around an existing road corridors in an area heavily used by people and by gulls. While Herring Gull is included on the red list of birds of conservation concern (Colhoun and Cummins, 2013<sup>32</sup>), the proposed scheme will not affect their offshore nesting sites. No significant impact is predicted.
- 4.16. While sample size is admittedly small, a study assessing the movements and usage of a number of seabird species breeding on offshore islands (Rockabill, Lambay, Ireland's Eye and Dalkey Island) found no evidence of breeding Great black-backed gull; Herring gull, Lesser black-backed gull, Shag or Kittiwake being dependant on Baldoyle Bay for foraging during the breeding season (Moss *et al.*, 2016)<sup>33</sup>.
- 4.17. Greylag Geese (of Icelandic, not feral origin) occur in North Dublin in Rogerstown Estuary, Skerries and on Lambay Island (Boland and Crowe, 2008<sup>34,35</sup>). Birds from Rogerstown are believed to use Lambay as a secure roost site. The proposed scheme will not impact on these populations; indeed targeted habitat restoration proposed for Light-bellied brent geese (see below) may in fact also benefit this species.
- 4.18. Cormorant nest both on Ireland's Eye and Lambay Island. Lambay Island historically supported up to 98% of the east coast breeding Cormorant (in the period 1985-1988); by 2011 this was down to 21% of birds known to breed on the east coast. However, at the same time numbers have been increasing along the east coast as a whole (e.g. on Ireland's Eye and St. Patrick's Island<sup>36</sup>) and new colonies have formed (e.g. at Bray Head). The number of '*apparently occupied nests*' at Ireland's Eye rose from 19 to 306 in the period 1985/88 to Seabird 2000; this had risen to 478 '*apparently occupied nests*' in 2010 (NPWS

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<sup>32</sup> Colhoun, K and Cummins, S. (2013). Birds of Conservation Concern in Ireland 2014-2019. *Irish Birds* 9 (4): 523-544.

<sup>33</sup> Moss, E., Tierney, N. and Crowe, O. (2016). *Assessing the Movements and Usage of Irish Sea Birds using Innovative Technology: A report on phase 1, Seabirds*. Report prepared by BirdWatch Ireland to the Sustainable Energy Authority Ireland.

<sup>34</sup> It is our understanding that Icelandic Greylag Geese are to be resurveyed in 2015 by BirdWatch Ireland.

<sup>35</sup> Boland, H. and Crowe, O. (2012). *Irish Wetland Bird Survey: waterbird status and distribution 2001/02 - 2008/09*. BirdWatch Ireland, Kilcoole, Co. Wicklow.

<sup>36</sup> St. Patrick's Island is one of three that makes up Skerries Island SPA (004122). Cormorant commenced breeding in the 1990's and numbers at this site are now of national importance. Taken with Lambay and Ireland's Eye they represent 35% of the Irish breeding population and as a group are of international importance (Source; Skerries Island SPA Site Synopsis; NPWS, 2003).

survey) and 417 in 2011 (all from Tierney *et al.*, 2011<sup>37</sup>). Thus while there would appear to be issues specific to nesting birds on Lambay Island the conservation status of Cormorant along the Dublin coast as a whole appears positive.

- 4.19. The mean foraging range of Cormorant from their breeding colonies is 8.5 km, with a mean maximum of 32 km and a maximum of 50 km (Seabird Wikispace<sup>38</sup>). Therefore, the inshore waters at Baldoyle Bay are within the potential foraging range of the SPA population. In winter, Cormorants regularly occur within Baldoyle Bay, but it is not known to what extent, if any, Cormorants use these areas in the summer. In a study of Cormorant diet at several Irish coastal breeding colonies, West *et al.* (1975<sup>39</sup>) found that birds at the Lambay Island, Mattle and Little Saltee colonies were taking fish species associated with estuarine habitats. At Mattle and Little Saltee, wrasse predominated (77% and 85% of the diet by weight, respectively) indicating that the birds were mainly feeding in marine habitats. However, West *et al.* (1975) considered that, due to the absence of wrasse from their diet, the Lambay Island birds were mainly feeding in the estuaries at Rush and Malahide rather than in the marine waters around Lambay Island. However, birds from the Keeragh Island colony appeared to be feeding exclusively on marine fish, despite Keeragh Island being closer to estuarine habitat compared to the Little Saltee. The diet of Cormorants from two other breeding colonies (Great Saltee and Roaninish) was studied by Tierney *et al.* (2011). Again, wrasse predominated forming 65-70% of the diet by item, but some flatfish were taken indicating some foraging in estuarine habitats.
- 4.20. Overall, therefore, the available evidence from both the typical foraging range and diets of breeding Cormorants indicates that inshore waters at Baldoyle as well as waters along the coast provide potential foraging habitat for the SPA Cormorant populations. That said, as noted above these areas are already heavily developed and prone to substantial human disturbance. Cormorant, appear to be very tolerant of human presence; feeding actively even in ports, along urban rivers etc. There will be no direct impact on nesting sites from the proposed scheme; it would also seem highly unlikely that the proposed scheme would impact more generally upon this population, which as noted continues to grow in these heavily developed / used coastal waters.
- 4.21. Dublin Bay and offshore areas support notable breeding and passage populations of terns; the qualifying interests of Dalkey Island SPA are three species of tern which occur on site during passage (i.e. Roseate Tern, Common Tern and Arctic Tern), though the islands also support small numbers of breeding terns. Dalkey Island SPA is just under 15km from the southern terminus of the route. Terns such as Common Tern will forage and often nest in sites exposed to significant nearby activity as long as the nest site and foraging areas are secure. The proposed scheme will not directly impact on this site; nor is it likely that birds feeding offshore would be impacted by use of the proposed scheme.
- 4.22. These marine/coastal sites (Howth Head SPA, Ireland's Eye SPA and Lambay Island SPA) therefore Screen Out at Stage 1 and are not considered further.
- 4.23. The Natura 2000 Sites remaining under consideration are all estuarine in character and are dominated by intertidal mudflats.
- Malahide Estuary SPA (004025) – Great Crested Grebe, Light-bellied Brent Goose, Shelduck, Pintail, Goldeneye, Red-breasted Merganser, Oystercatcher, Golden

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<sup>37</sup> Tierney, N., Lusby, J. & Lauder, A. (2011). *A Preliminary Assessment of the Potential Impacts of Cormorant *Phalacrocorax carbo* Predation on Salmonids in Four Selected River Systems*. Report Commissioned by Inland Fisheries Ireland and funded by the Salmon Conservation Fund.

<sup>38</sup> <http://seabird.wikispaces.com/>

<sup>39</sup> West, B., Cabot, D. & Greer-Walker, M. (1975). The food of the Cormorant *Phalacrocorax carbo* at some breeding colonies in Ireland. *Proceedings of the Royal Irish Academy. Section B: Biological, Geological, and Chemical Science*, 75, 285–304.

Plover, Grey Plover, Knot, Dunlin, Black-tailed Godwit, Bar-tailed Godwit and Redshank.

- Rogerstown Estuary SPA (004015) - Greylag Goose, Light-bellied Brent Goose, Shelduck, Shoveler, Oystercatcher, Ringed Plover, Grey Plover, Knot, Dunlin, Black-tailed Godwit, Redshank (wintering)
- North Bull Island SPA (004006) - Light-bellied Brent Goose, Shelduck, Teal, Pintail, Shoveler, Oystercatcher, Golden Plover, Grey Plover, Knot, Sanderling, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Turnstone and Black-headed Gull (wintering)
- South Dublin Bay SPA (004024) - Light-bellied Brent Goose, Oystercatcher, Ringed Plover, Grey Plover, Knot, Sanderling, Dunlin, Bar-tailed Godwit, Redshank, Black-headed Gull (all wintering), Roseate Tern (passage), Common Tern (breeding & passage) and Arctic Tern (passage).

- 4.24. In all four cases there is no physical overlap or loss of habitat. There is therefore no impact on the qualifying interest – Wetland and Waterbirds [A999] – and this is not considered further.
- 4.25. Malahide Estuary is located immediately north of Baldoyle Bay. It runs from east to west and is crossed by the Dublin – Belfast railway line and the M1 motorway; these effectively divide it into an outer estuary protected by the dunes; a large inner lagoonal site and an inner estuary, also known as Swords / Broadmeadows Marsh. The site is dominated by intertidal waders and wildfowl (including diving ducks), though Light-bellied Brent Goose, Golden Plover, Black-tailed Godwit and Oystercatcher are known to feed in fields surrounding the estuary to varying degrees.
- 4.26. Rogerstown Estuary is located to the north just over 3km north of Malahide Estuary and just over 8.5km north of Baldoyle Bay. Like Malahide it runs west to east and is partially enclosed by the dune complex known as the Burrow, north of Portrane. Like Malahide it is also crossed by the Dublin – Belfast railway line. As noted Greylag Geese using the site roost at Lambay (Boland and Crowe, 2008). Otherwise the site is dominated by intertidal waders and wildfowl, though Light-bellied Brent Goose, Black-tailed Godwit and Oystercatcher are known to feed in fields surrounding the estuary to varying degrees.
- 4.27. North Bull Island SPA runs southwards from Sutton / Howth Head to Dollymount; it includes a large area of intertidal habitats and the North Bull Island. It is designated for a diverse array of intertidal waders and wildfowl. The northeastern corner of the site is separated from Baldoyle Bay SPA by a narrow finger of land at the base of Howth Head (near Sutton). North Bull Island SPA is some 7.5 km from Malahide Estuary.
- 4.28. South Dublin Bay SPA extends southwards from Dollymount (and the boundary of North Bull Island SPA). As with the other sites it includes a mix of intertidal waders and wildfowl. It also supports breeding Common Tern and large autumn (passage) numbers of Roseate Tern (which breed offshore on Rockabill Island SPA; 004014), Common Tern (which breed within the South Dublin Bay SPA) and Arctic Tern.
- 4.29. The possibility of movement of waders and wildfowl between sites such as Malahide Estuary SPA, North Bull Island SPA and Baldoyle Bay SPA cannot be discounted. Linkages between North Bull Island SPA, Baldoyle Bay SPA, Malahide Bay SPA and Rogerstown Estuary SPA are currently poorly understood; although they do share many of the same species (see Table 4.2, which presents a summary of the qualifying interests of all coastal SPAs close to the proposed scheme).
- 4.30. A preliminary tagging study on Brent Geese in 2017 showed that the Brent Geese move between North Bull Island, Baldoyle Bay and Malahide Estuary. This study is to be further

expanded over the next four years to explore these links in more detail (H. Visser *pers comm*).

- 4.31. A three-year monitoring programme to identify key feeding and roosting areas, is currently being undertaken by BirdWatch Ireland in partnership with Dublin Port and studies of the movements of colour-ringed birds will allow a better understanding of the ecological requirements of the birds using Dublin Bay<sup>40</sup>. The colour ringing element of this project is focusing on Oystercatcher, Redshank and Bar-tailed Godwit; in time this will add to the understanding of how birds use the coastal estuaries such as Dublin Bay, Baldoyle Bay, Malahide Estuary and Rogerstown Estuary.
- 4.32. In addition, BirdWatch Ireland have been undertaking a project on the use of innovative technology to track movements of wintering waterbirds in Dublin Bay; this has focused on tracking individual Curlew (n=3), Redshank (n=5) and Oystercatcher (n=6)<sup>41</sup>. There was no evidence amongst these birds ringed in north Dublin Bay of movement to Baldoyle Bay.

## Concluding Screening Statement

- 4.33. The proposed coastal pathway runs in part through Baldoyle Bay SAC (000199) west of the Coast Road. The potential for impacts on this Natura 2000 site cannot therefore be discounted; it is therefore considered further in the Stage 2 Appropriate Assessment presented below.
- 4.34. The proposed coastal pathway is not located within Baldoyle Bay SPA (004016); no wetland habitats within the SPA will therefore be impacted by the proposed development. However, as the risk of indirect impacts cannot be discounted; it is therefore considered further in the Stage 2 Appropriate Assessment presented below.

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<sup>40</sup> see e.g. <http://dublinbaybirds.blogspot.ie/p/test.html>

<sup>41</sup> Cummins, S. and Crowe, O. (2016). Assessing the movements and usage of Dublin Bay using Innovative Technology: A report on phase 1, Wading Birds. Report prepared by BirdWatch Ireland to the Sustainable Energy Authority Ireland and to the Dublin Port Company.



Figure 4.1 - SACs within the vicinity of the Proposed Pedestrian & Cyclist Scheme.

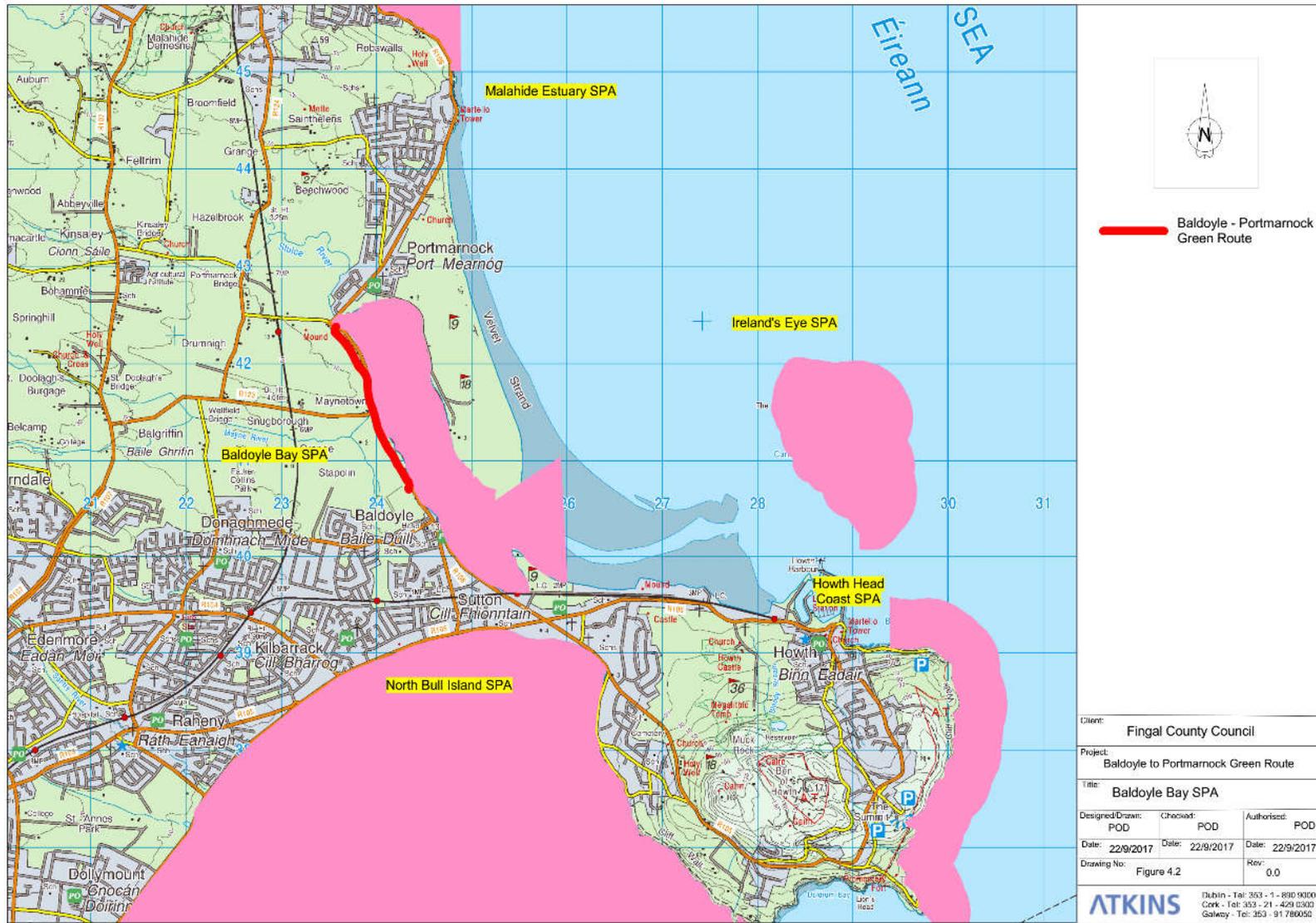


Figure 4.2 - SPAs within the vicinity of the Proposed Pedestrian & Cyclist Scheme.

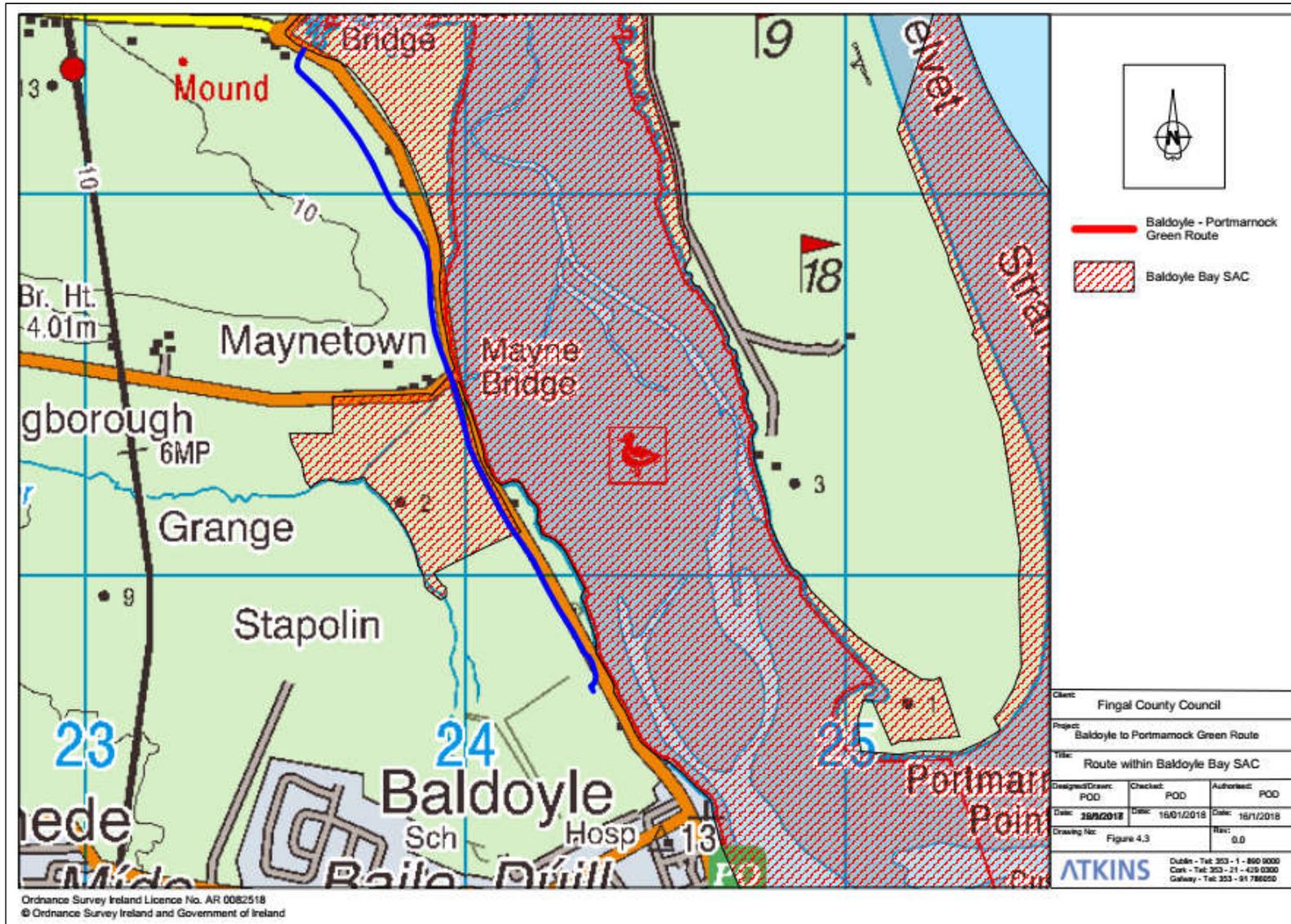


Figure 4.3 – Proposed route within Baldoyle Bay SAC (refer to Figure 5.2).

**Table 4.3 - Review of the qualifying interests of Dublin coastal SPAs close to the proposed scheme.**

Qualifying Interests	Season	Baldoyle Bay SPA	Malahide Estuary SPA	Rogerstown Estuary SPA	North Bull Island SPA	South Dublin Bay SPA	Lambay Island SPA	Ireland's Eye SPA
Cormorant	Br						√	√
Great Crested Grebe	W		√					
Greylag Goose	W			√			√	
Light-bellied Brent Goose	W	√	√	√	√	√		
Shelduck	W	√	√	√	√			
Teal	W				√			
Pintail	W		√		√			
Shoveler	W			√	√			
Goldeneye	W		√					
Red-breasted Merganser	W		√					
Oystercatcher	W		√	√	√	√		
Ringed Plover	W	√		√		√		
Golden Plover	W	√	√		√			
Grey Plover	W	√	√	√	√	√		
Knot	W		√	√	√	√		
Sanderling	W				√	√		
Dunlin	W		√	√		√		
Black-tailed Godwit	W		√	√	√			
Bar-tailed Godwit	W	√	√		√	√		
Curlew	W							
Redshank	W		√	√	√	√		
Turnstone	W				√			
Black-headed Gull	W				√	√		
Roseate Tern	P					√		
Common Tern	Br + W					√		
Arctic Tern	P					√		

**Note:** Br – breeding; W – winter; P – passage.

## 5. Appropriate Assessment

- 5.1. As noted in Chapter 3.0 of the NIS there is a single Special Areas of Conservation located along the proposed scheme, namely Baldoyle Bay SAC (site code 0199), while Baldoyle Bay SPA (004016) is located within Baldoyle Bay to the east of the site. The full site synopsis for both sites are presented in Appendix A of this document. These sites are discussed in turn below.

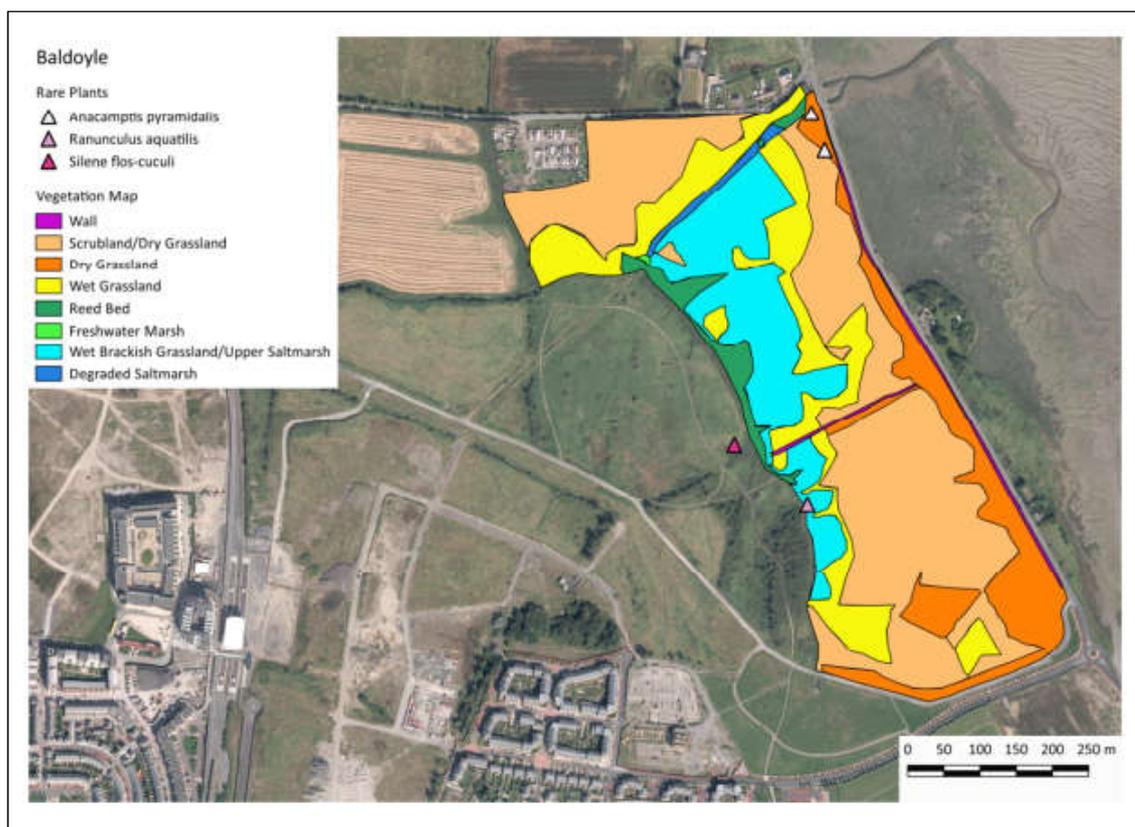
### Baldoyle Bay SAC

- 5.2. The qualifying interests for Baldoyle Bay SAC are listed below. They include the following Annex I coastal and intertidal habitats (see Figure 5.1): -
- Mudflats and sandflats not covered by seawater at low tide (1140)
  - Salicornia and other annual colonising mud and sand (1310)
  - Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) (1330)
  - Mediterranean salt meadows (*Juncetalia maritimi*) (1410)
- 5.3. The conservation objectives for Baldoyle Bay SAC are to maintain the integrity of the site in such a way as to promote the positive conservation status of the four Annex I habitats for which the site is designated (as listed above); i.e. mudflats and three types of saltmarsh habitat.
- 5.4. Extensive mudflats occupy 79% of the site; these can support diverse invertebrate and algal communities and are important feeding grounds for wintering wildfowl and waders for which the bay is also designated as an SPA. According to the Natura 2000 data form the overall conservation status of the mudflat habitat in Baldoyle Bay is good. The relative area of mudflats in Baldoyle Bay is categorised as *2-15% of the national reserve of mudflat habitat* (i.e. class B in the Natura 2000 data form).
- 5.5. The saltmarsh habitats are representative of different native plant communities that are known to develop naturally under varying conditions of substrate, shelter and degree of inundation by the sea. Saltmarsh habitat Saltmarshes mainly occur in the northern part of the estuary, on both sides of the River Sluice estuarine-river channel; other small areas occur along the western side, at the end of Portmarnock Point and along the southern side of the estuary adjacent to Sutton Dart Station. A small saltmarsh/brackish marsh area occurs along the Mayne River, which flows into the western side of the estuary (from McCorry and Ryle, 2009<sup>42</sup>). Swards of the non-native *Spartina* are also locally extensive. The saltmarsh habitats present are evaluated as being of average conservation status, according to the Natura 2000 Data Form.
- 5.6. McCorry and Ryle (2009; see pp. 476-493; including habitat map on p.493) present a comprehensive discussion of the type and location of different saltmarsh habitats within Baldoyle Bay (also included in the NPWS Conservation Objectives Supporting document – Coastal habitats; NPWS, 2012 – see Figure 5.1). With respect to the distribution of saltmarsh habitat west of the Coast Road only two small areas of saltmarsh are noted; one area of Atlantic saltmarsh (1330) along the River Mayne and one area Mediterranean saltmarsh (1410) to the west of the study area (see Figure 5.1 and Figure 5.3).
- 5.7. Potential for impacts on qualifying interests of Baldoyle Bay SAC are summarised in Table 5.1.

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<sup>42</sup> The Saltmarsh Monitoring project report can be downloaded from NPWS webpage at the following address: - [http://www.npws.ie/publications/archive/McCorry & Ryle 2009 Saltmarsh survey V2.pdf](http://www.npws.ie/publications/archive/McCorry_%20Ryle_2009_Saltmarsh_survey_V2.pdf)





**Figure 5.2 Habitat Map (copy of Figure 9 from Fitzgerald, 2017).**

5.11. The parkland between the Moyne road and the Portmarnock roundabout was sown with a commercial hay meadow mix in 2016. These lands are not included in the SAC and are currently of limited nature conservation interest.

5.12. The following text is abstracted from this report.

*“An informal trackway is currently located along the western boundary of the study area, from the southern end right up to the northern end. The vegetation along this trackway is trampled by walkers and species such as Lotus corniculatus, Holcus lanatus (Yorkshire Fog), Trifolium pratense (Red Clover) and Trifolium repens (White Clover) are dominant here. East of this trackway, the vegetation is less disturbed and a better developed dry grassland community occurs here.”*

5.13. It is largely within this area that the proposed route would be located. Fitzgerald (2017) notes that the majority of grassland in the study corridor corresponds to Fossitt’s (2000) *dry calcareous and neutral grassland* (GS1). Furthermore, while the vegetation that characterised it has an affinity with the Annex I habitat *6210 semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia)*, the dry grassland on site does not correspond to the EU Annex I habitat. That said, due to neglect the grassland has developed into a more species rich / semi-natural state over recent decades and is of local conservation value. As per the recommendation of Fitzgerald (2017) the project will attempt to retain as much of this habitat as practical; and further enhance where possible.

5.14. Fitzgerald (2017) notes the following with respect to species of Conservation Concern: -

*“Few species of conservation importance occur in the grassland vegetation under study. The Trisetum flavescens<sup>43</sup> and Avenula pubescens<sup>44</sup>, are the most important grass species to conserve*

<sup>43</sup> Yellow oat-grass or golden oat grass.

<sup>44</sup> Downy oat-grass.

*in this area of vegetation. These two species are occasional/locally rare in County Fingal and occasional in Co. Dublin as a whole (Doogue et al. 1998) and are therefore of local and regional conservation value. They occur throughout the vegetation from the edge of the informal trackway to the wall along the Coast road, particularly in the southern end of the study area.*

*Furthermore, as can be seen in Figures 7 and 8 below, three plants of Anacamptis pyramidalis (Pyramidal Orchid) were found in two locations on dumped subsoil (from the late 1980's/early 1990's) at the northern section of the study area on 27<sup>th</sup> June 2016. This species is scarce/rare in the Fingal County Council area (Doogue et al. 1998)".*

- 5.15. Neither Meadow barley nor Borrer's salt-marsh grass were recorded in the brackish grassland to the west of the proposed route by Fitzgerald (2017). As there may, however, still be a seed bank for these species, ongoing habitat restoration plans being developed by Fingal will attempt to create suitable habitat for these species. The design of the final bridge solution at Mayne River will be cognisant of any such plans.
- 5.16. Ongoing works within the Racecourse Park and proposals to manage grassland immediately adjoining the route to create species rich semi-natural grassland will enhance local biodiversity and associated conservation value.
- 5.17. As noted, during the construction phase a site compound will be located at the north-eastern portion of the Red Arches / Coast Road junction, within the lands of the proposed route (i.e. outside the SAC; see Figure 2.2). Access to the site will also be from this end with haul routes running along the line of the proposed path. Disturbance during works will be short-term and will not impact upon the SAC east of the Coast Road. The appointed contractor will be required to put in place a construction management plan which will included consideration of surface water management to avoid loss of silty waters from the works area.

**Table 5.1 - Potential Risk of negative impacts on qualifying interests of Baldoyle Bay SAC.**

Qualifying Interests	Potential Impact
Mudflats and sandflats not covered by seawater at low tide (1140)	This habitat is restricted to areas of the SAC east of the coast road in Baldoyle Bay. The proposed coastal pathway, however, is a linear corridor from Baldoyle to Portmarnock Bridge west of the Coast Road. This habitat does not therefore occur along the proposed scheme.  There will be no direct loss of this habitat type or indirect effects which could have a negative effect on this habitat or its integrity or functioning within Baldoyle Bay SAC.
<i>Salicornia</i> and other annuals colonizing mud and sand (1310)	This habitat is restricted to areas of the SAC east of the coast road in Baldoyle Bay. The proposed coastal pathway, however, is a linear corridor from Baldoyle to Portmarnock Bridge west of the Coast Road. This habitat does not therefore occur along the proposed scheme.  There will be no direct loss of this habitat type or indirect effects which could have a negative effect on this habitat or its integrity or functioning within Baldoyle Bay SAC.
Atlantic salt meadows ( <i>Glauco Puccinellietalia-maritimae</i> ) (1330)	Refer to Figure 1.1, 5.2 and 5.3 for distribution of these habitats with respect to the proposed coastal path.
Mediterranean salt meadows ( <i>Juncetalia maritimi</i> ) (1410)	McCorry and Ryle (2009; see pp. 476-493; including habitat map on p.493) present a comprehensive discussion of the type and location of different saltmarsh habitats within Baldoyle Bay. With respect to the distribution of saltmarsh habitat west of the Coast Road they map only two small areas of saltmarsh are noted; one area of Atlantic saltmarsh (1330) along the River Mayne and one area Mediterranean saltmarsh (1410) to the west of the study area (see Figure 5.2). Saltmarsh on the River Mayne is upstream of the proposed bridge crossing and will not be impacted. Mediterranean saltmarsh (1410) is separated from the coastal pathway by ground – it also will not be impacted by the proposed works.

## Summary of JBA Advisory Note on Site Integrity of Baldoyle Bay SAC

- 5.18. JBA Consulting prepared an *Advisory note on the impact on Baldoyle Bay SAC of Walking and Cycling Path at Racecourse Park* in February 2017 (JBA, 2017). The aim of the report was to determine if, the loss of land due to the Walking and Cycling Route at Baldoyle Estuary, can be considered an adverse effect on the integrity of Baldoyle Bay SAC in view of its conservation objectives. The Advisory Note considered specifically the potential loss of habitat and the implications under the Habitats Directive and EU Case Law of this habitat loss. Racecourse Park is the area shown on Figure 5.2 north of the Mayne Road and overlaps with those areas habitat mapped by Fitzgerald (2017).
- 5.19. This report notes that in assessing the conservation objectives of habitats, one must consider potential impacts on range, area, structure and function. It concludes that *“The potential for the loss of grassland is not likely to affect the conservation status of the designated features of Baldoyle Bay SAC. In terms of the structure of the saltmarsh habitats located in the field, and the zonation as discussed above it is unlikely that the grassland forms part of a natural transitional area given the historic land use of this part of the site and the presence of the coast road which has altered the natural succession of habitats.”* This is in agreement with the findings of Table 5.1.
- 5.20. Furthermore, it notes that *“It is unlikely that the loss of the grassland area will interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site”*. In the case of Mudflats and sandflats not covered by seawater at low tide (1140) and *Salicornia* and other annuals colonizing mud and sand (1310) it concludes that both are located beyond the field and grassland area (through which the coastal path would run) and occurs within the main estuary. It notes that the loss of grassland will not affect this habitat, nor the species that they support, as it does not have any role in the maintenance of this habitat or species either directly or indirectly.
- 5.21. With respect to saltmarsh it concludes: - *“The loss of the grassland within the field will not affect these saltmarsh habitats or species that they support as it does not have any role in the maintenance of this habitat or species either directly or indirectly. The main influences on these saltmarsh habitats vegetation composition relate to the connections to the estuary under the coast road, the flooding of the field during floods and high tides, the supply of seeds and sediments, via flood and tides and the land drainage of the field”*.
- 5.22. The patterns of tidal inundation and movement of animals along the River Mayne are influenced by a flap valve on the outlet of the River Mayne to the estuary; the operation of this valve, patterns of tidal inundation and impacts on e.g. otter movement are the subject to a separate study to be undertaken by Fingal County Council with the aim of maximising biodiversity, including recreation of saltmarsh habitats and thereby also promoting conditions favoured by a number of rare plants previously recorded on site.
- 5.23. The proposed bridge crossing is to be designed such that its soffit level will not impact on flood patterns or the hydrology of the Mayne River.



**Plate 5.1** River Mayne road bridge (left); proposed pedestrian bridge (right).

- 5.24. The JBA Advisory Note also considered in some detail relevant Case Law; notably the Galway Bypass court case (Case C258/11 Sweetman v. An Bord Pleanála, Judgement of the Court, 11 April 2013) in order to consider whether loss of grassland with Baldoyle Bay SAC, whilst not a qualifying interest, may still affect the integrity of the SAC. They quote the Client Earth 2013 briefing which states that <sup>45</sup> *“Whilst the case of Sweetman itself concerns damage directly to an area of Annex I habitat, it nevertheless provides clear confirmation that consideration of the ecological functioning of a site with regard to the designated features is necessary.”*
- 5.25. Furthermore, the JBA Advisory Note states that *“In relation to ‘habitat types or species other than those listed in Annex I or Annex II’ referred to in the above extract, the EU guidance also refers to the definition of ‘integrity of the site’ used in the UK’s PPG 9, UK Department of the Environment of October 1994 (now superseded), namely: ‘the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitats, complex of habitats and/or the levels of populations of the species for which it was classified’.* This definition, which has been applied in the UK, also confirms that adverse effects to part of a site, even if not a part which is a designated feature, are relevant to a consideration of site integrity to ensure a coherent approach to a site’s ecological function across its whole area.” JBA (2017) note that there are no published EU Habitat Directive Cases available that have relevance to this project in terms of loss of a non qualifying interest habitat and non Annex I priority habitat. They also note that there appears to be no guidance as to determination of what should be regarded as significant.
- 5.26. The length of the proposed coastal path is ca. 455m within Baldoyle Bay SAC. Based on Figure 2.1 the width of the proposed structure would be 7.4m; in order to be precautionary we have assumed a construction impact of 10m. This amounts to habitat loss during construction would therefore be 4,550m<sup>2</sup> or 0.455ha. The SAC covers 538.93ha of which 90.63% is marine (i.e. 50.49ha is terrestrial). This loss of grassland during construction would therefore amount to 0.084% of the area of the SAC (or 0.9% of terrestrial habitat). The Site Compound would be located outside the SAC.

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<sup>45</sup> [www.clientearth.org/reports/natura-2000-site-integrity-briefing](http://www.clientearth.org/reports/natura-2000-site-integrity-briefing)

- 5.27. The loss of this area of grassland (before mitigation), which is not a qualifying interest of the SAC or functionally an integral element of the habitats for which the SAC has been designated, is not predicted to negatively impact on Baldoyle Bay SAC or the habitats for which it has been designated.
- 5.28. Furthermore, the central median and path edges are to be maintained as species rich grassland by means of a cut and collect regime in Autumn each year. The median will be 2.4m in width along the length of the scheme – thereby reducing the loss of grassland in time to from 3,367 m<sup>2</sup> (0.34ha) to 2,275m<sup>2</sup> (or 0.228ha). Further habitat creation and enhancement works are ongoing within the Racecourse lands west of the coastal path both inside and outside the SAC. This is being managed by Fingal County Council. The Council are also implementing a programme of ongoing ecological monitoring in order to judge the success of ecological measures implemented and modify these as required. However, the attempt by 5 pairs of Lapwing, a rare (Red listed) breeding wader, to breed in the wetland complex in 2017, demonstrates the ongoing success of these works.
- 5.29. While outside the SAC, there will also be significant biodiversity gain within the Racecourse Park west of the coastal pathway. This will in time increase the area, range and diversity of wetland habitat within Baldoyle Bay and in turn enhance Baldoyle Bay as a whole.

## Conclusion

- 5.30. It is concluded that the proposed pathway will not impact negatively on any of the qualifying interests of Baldoyle Bay SAC (see Table 5.1). None of the habitats for which the site has been designated are located along the proposed coastal pathway. As such it is concluded that the area, integrity or functioning of these habitats will not be negatively impacted either directly or indirectly by the proposed scheme.



**Plate 5.2** Land corridor along which the proposed Coastal Path will run (Before).



Plate 5.3. Land corridor along which the proposed Coastal Path (After).

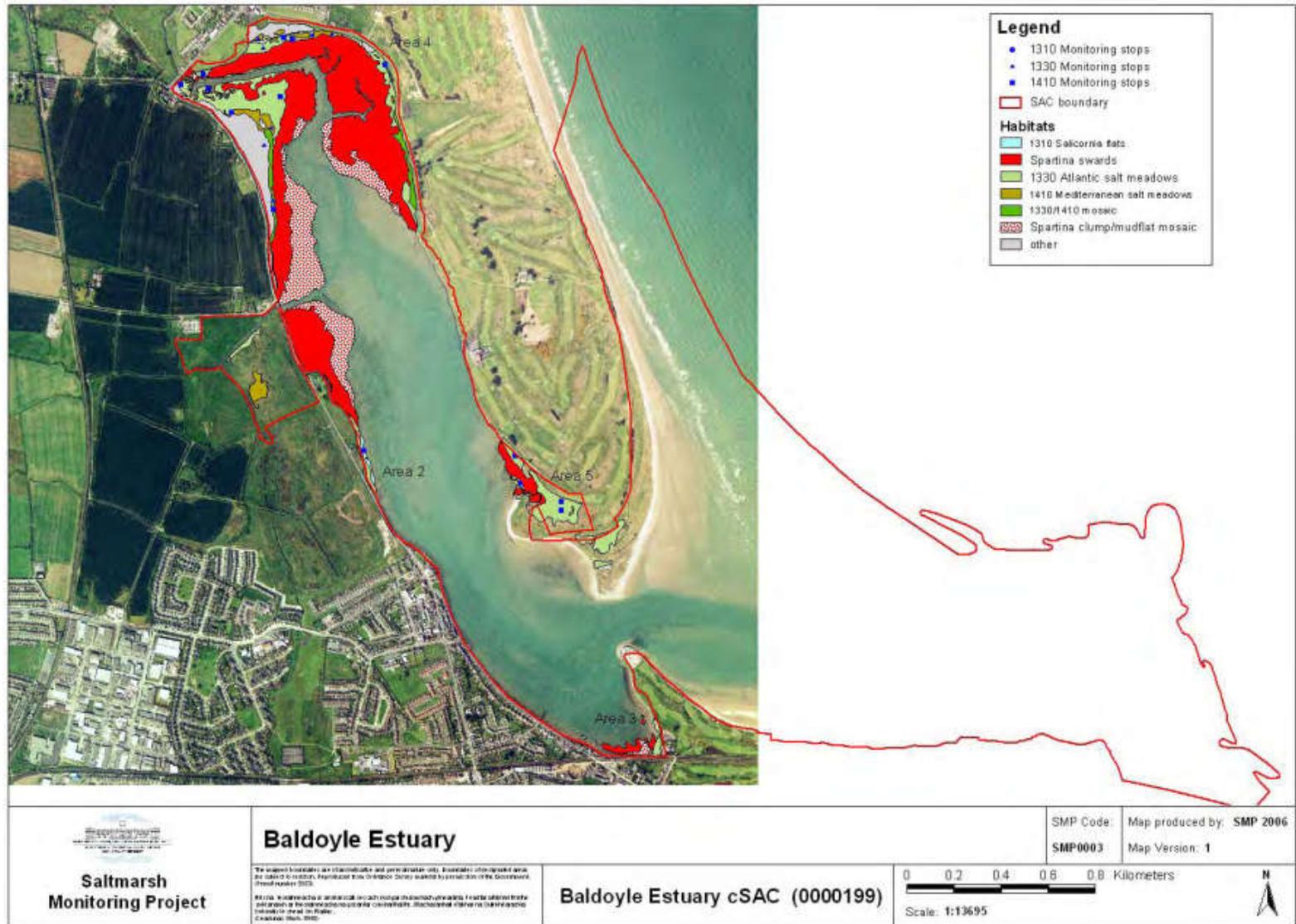


Figure 5.3 Areas of saltmarsh as mapped by McCorry and Ryle, 2009.

## Baldoyle Bay SPA

- 5.31. Baldoyle Bay SPA is located to the east of the proposed scheme. The qualifying interests for Baldoyle Bay SPA (site code 0416) include the following bird species and the wetland habitat that supports them: -
- Brent Goose (*Branta bernicla hrota*) (A046)
  - Common 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 and Waterbirds (A999)
- 5.32. The conservation objectives for Baldoyle Bay SPA are to maintain the integrity of the site in such a way as to promote the positive conservation status of the bird species for which the site is designated.
- 5.33. As noted Baldoyle Bay is located close to a number of other coastal SPAs. The species for which these site are designated are summarised in Table 4.3.

## Review of Historical Data

- 5.34. Count data for Baldoyle Bay, from the Irish Wetland Bird Survey co-ordinated by BirdWatch Ireland, is presented in Table 5.2 and 5.3. Table 5.4 summarises the low tide bird survey undertaken by BirdWatch Ireland on behalf of National Parks and Wildlife Service in 2011/2012<sup>46</sup>.

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<sup>46</sup> Cummins, S. and Crowe, O. (2012). *Collection of baseline waterbird data for Irish coastal Special Protection Areas 2011/ 2012*. A report commissioned by the National Parks and Wildlife Service, and prepared by BirdWatch Ireland.

**Table 5.2 – IWeBS data for Baldoyle Bay.**

Conservation Objectives	Crowe, 2005 <sup>47</sup>			Boland & Crowe, 2012 <sup>48</sup>									
	94-98	95-99	96-00	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	Mean	Peak
Light-bellied Brent Goose	653	726	675	1252	668	871	808	908	678	710	1120	1056	1120
Shelduck	n.a.	n.a.	n.a.	123	328	148	245	315	175	365	357	364	365
Ringed Plover	212	223	227	432	390	118	34	120	45	128	150	119	150
Golden Plover	1760	2120	1890	3500	2420	520	450	250	1800	1100	750	1088	1800
Grey Plover	169	200	172	259	83	41	44	45	113	45	112	90	113
Bar-tailed Godwit	292	353	475	555	520	402	351	152	150	131	131	229	351

**Table 5.3 – IWeBS data for Baldoyle Bay from NPWS Conservation Objective Supporting Document<sup>1</sup>.**

SCIs	Baseline Period	Recent IWeBS Data	Site Trend		Conservation Status <sup>3</sup>	National Trend (1995/969-2010/11)
	1995/96-1999/00	2005/06-2009/10	12 year	5 year		
Light-bellied Brent Goose	726 (i) <sup>2</sup>	874 (i)	+43.7	+30.0	Favourable	+58
Ringed Plover	223 (n)	122	-7.3	-4.3	Intermediate (Unfavourable)	+21.8
Bar-tailed Godwit	353 (n)	134	-52.3	-70.4	Highly Unfavourable	+1.5
Shelduck	147 (n)	290 (n)	+141.5	+118.1	Favourable	+4.46
Golden Plover	2120 (n)	914	-37.7	-1.6	Unfavourable	-2.2
Grey Plover	200 (n)	96 (n)	-49.3	-53.6	Unfavourable	-33.1

**Note:**

<sup>1</sup> Extracted from Tables 4.1, 4.2 & 4.3 of NPWS (2013i). *Baldoyle Bay Special Protection Area (Site Code 4016). Conservation Objective Supporting Document. Version 1.0. August 2013.*

<sup>47</sup> Crowe, O. (2005). *Ireland's Wetlands and their Waterbirds: Status and Distribution*. BirdWatch Ireland, Rockingham, Co. Wicklow.

<sup>48</sup> Boland, H. and Crowe, O. (2012). *Irish Wetland Bird Survey: waterbird status and distribution 2001/02 - 2008/09*. BirdWatch Ireland, Kilcoole, Co. Wicklow.

**Table 5.4 – Baldoyle Bay waterbird counts – summary data (from NPWS, 2013i)<sup>1</sup>.**

SCIs	Peak low-tide count <sup>1</sup>	Peak high-tide count <sup>2</sup>
Light-bellied Brent Goose	1071 (i) <sup>3</sup>	1277 (i)
Ringed Plover	87	0
Bar-tailed Godwit	238	173
Shelduck	151	246 (n)
Golden Plover	3500 (n)	0
Grey Plover	85 (n)	359 (n)

**Note:**

<sup>1</sup> 4 low tide counts; 05/10/11; 04/11/11; 05/12/11 & 02/02/12.

<sup>2</sup> 1 high-tide count; 10/01/12.

<sup>3</sup> (i) denotes international importance; (n) denotes national importance. (1% thresholds; 1999/00 – 2003/04, Crowe *et al.*, 2008).

### Spatial Distribution

- 5.35. As noted when counting IWeBS or for the low-tide baseline survey the site is divided up in discrete and repeatable count areas. In order to examine patterns of low-tide spatial distribution of birds the following discussion is based on the low-tide count sectors presented in NPWS, 2013i; which are in turn based on the IWeBS count sectors (see p53 of NPWS, 2013i for location of count sectors<sup>49</sup> and Text Figure 5.4 below).
- 5.36. Of these zones, count area 0UL35 to 0UL39 run eastwards from Sutton towards Howth Head. 0UL39 is located on the seaward (eastern) side of Portmarnock covering Velvet Strand. 0UL 55 is a series of playing fields west of Sutton used by Light-bellied Brent Geese; these are all outside the footprint of the proposed scheme and none will be impacted either directly or indirectly by the scheme. 0UL51 in the southeastern corner of Stapolin (bordering Baldoyle); it has in the past been used by Light-bellied brent geese.
- 5.37. The sites of relevance to the proposed scheme are all located in Baldoyle Bay proper; running from 0UL 29 (Portmarnock Bridge) southwards through 0UL 30 (Murragh), 0UL 31 (Maynetown), 0UL32 (Mayne Bridge), 0UL33 (Stapolin) and 0UL34 (Baldoyle). Throughout, the inner estuary is fringed by saltmarsh, which provides a buffer to existing patterns of disturbance along the busy coast road; there is also an area of amenity grassland east of Portmarnock Bridge (0UL29). Low-tide usage of these sites can be summarised as follows for qualifying interests (extracted from NPWS, 2013i): -

<sup>49</sup> This can be viewed at: - [http://www.npws.ie/publications/archive/004016\\_Baldoyle%20Bay%20SPA%20Supporting%20Doc\\_V1.pdf](http://www.npws.ie/publications/archive/004016_Baldoyle%20Bay%20SPA%20Supporting%20Doc_V1.pdf)

**Table 5.6 – Use of subsites in Baldoyle Bay (from Table 5.6a of NPWS, 2013i).**

Subsite	Species	Brent Geese	Ringed Plover	Bar-tailed Godwit	Shelduck	Golden Plover	Grey Plover
0UL29	Portmarnock Bridge	V (1) <sup>1</sup>					
0UL30	Murragh	L		M	H	H	L
0UL31	Maynetown			M	H	V (1)	M
0UL32	Mayne Bridge	H	M	H	H	V (1)	V (2)
0UL33	Stapolin	H	V (1)	V (2)	V (4)	V (1)	V (1)
0UL34	Baldoyle	H	V (1)	V (1)	H	L	V (1)
0UL51	Red Arches						

**Note:**

<sup>1</sup> L – Low; M – Moderate; H – High and V – Very High; i.e. ranking of subsite importance for a given species; where the number in brackets refers to how many times a ‘V’ occurred for that site.

V – Very High; any subsite ranked as number ‘1’.

H- High; in top-third of ranking placings

M – Moderate; in mid-third of ranking placings

L – Low; in lower-third of ranking placings

5.38. The spatial distribution of key bird species within the SPA is as follows (extracted from NPWS, 2013i) (see Figure 5.4 for location of count sectors): -

- Bar-tailed Godwit favour 0UL31 (Maynetown), 0UL32 (Mayne Bridge), 0UL33 (Stapolin) and 0UL34 (Baldoyle); with peak foraging numbers recorded in 0UL 33 and 34. While small numbers do also forage in 0UL32 (Mayne Bridge) they do not generally occur further north in areas close to proposed works at Portmarnock Bridge. Roosting was also recorded in 0UL34.
- Ringed Plover favour 0UL33 (Stapolin) and 0UL34 (Baldoyle) and 0UL35 (Cush Point); while the latter is within the SPA it lies east of and outside the proposed route corridor. Ringed Plover largely avoid 0UL30 and 31 in the upper inner estuary; thus also avoiding areas close to proposed works at Portmarnock Bridge. Birds are known to roost in 0UL38 (also highlighted by BWI in their response to consultation).
- Shelduck favour 0UL30 – 34 (for both roosting and foraging), with peak numbers occurring in 0UL33 (Stapolin).
- Golden Plover feed in agricultural lands around the SPA, but use the open flats for roosting. While NPWS recorded Golden Plover in a range of sites; peak numbers occurred in 0UL31 (Maynetown), 0UL32 (Mayne Bridge) and 0UL33 (Stapolin); 3,500, 2,145 and 1,720, respectively on the 2/02/2012.
- Grey Plover also favour sites in the inner estuary from 0UL30 to 0UL34; peak numbers were recorded from 0UL32 (Mayne Bridge), 0UL33 (Stapolin) and 0UL34 (Baldoyle), with foraging birds favouring 0UL31, 32 and 33. Roosting was noted in 0UL34 (Baldoyle) and 0UL35 (Cush Point).
- Light-bellied Brent Geese occur widely throughout Baldoyle Bay SPA and surrounding terrestrial areas, such as Red Arches (0UL51), Seagrang Park (0UL55) and Donaghmeade Park (0U601). Along the proposed route an area of amenity grassland at Portmarnock Bridge (referenced as Portmarnock Green by Pierce and Dillon, 2012) supports notable numbers of Light-bellied Brent Geese. As the NPWS survey focuses on use of the estuary proper and fields immediately adjoining it, not surprisingly Portmarnock

Bridge emerges as a key site within Baldoyle Bay. However, as noted nearby sites such as Red Arches, Seagrange Park and Donaghmeade Park are also of importance for Light-bellied Brent Geese. Birds feeding intertidally were recorded from OUL32, 34 and 35. Subtidal roosting also occurs within the bay in sites such as OUL32, 33 and 34. However, the main roost for Light-bellied Brent Geese is believed to be on the North Bull Island.

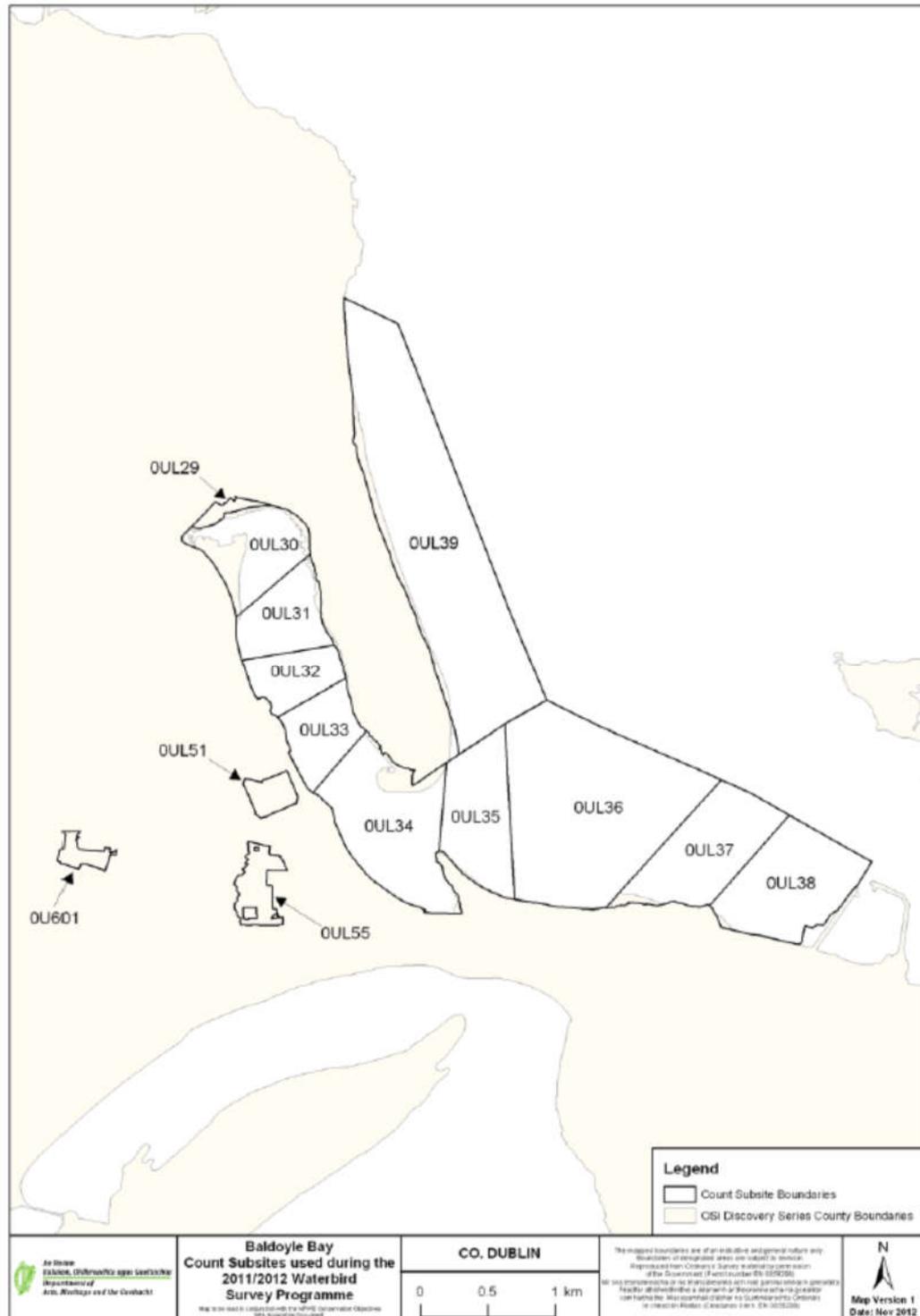


Figure 5.4 – Count subsites used in Baldoyle Bay SPA during the 2012/2012 Waterbird Survey Programme (extracted from NPWS, 2013i).

- 5.39. Pierce and Dillon (2012<sup>50</sup>) undertook winter bird surveys in Baldoyle Bay and surrounding fields in 2011-2012. The amenity grassland east of Portmarnock bridge was found to support 300+ Light-bellied Brent geese; 200+ Black-tailed Godwit and notable numbers of other waders such as Curlew (50), Redshank (80) and Oystercatcher (100) as well as large numbers of Mallard. Both Kingfisher and Little Egret were recorded on the Sluice Estuary.



**Plate 5.4. Light-bellied Brent geese, Mallard and Black-headed Gull using amenity grassland east of Portmarnock Bridge (18<sup>th</sup> December 2013).**

## 2016 / 2017 Study

- 5.40. An assessment of the potential impacts of the development of the coastal path and cycleway on wintering and migratory birds associated with Baldoyle Bay SPA and on the qualifying interests for the designated Special Protection Area has been completed by Natura Environmental Consultants (2017). This assessment considered both construction and operational impacts, though as can be seen the most relevant impacts to the SPA are operational impacts as well as disturbance during construction (these works will not, however, be undertaken between November and March). This report is included in full in Appendix C.
- 5.41. A total of 12 visits were made to the proposed route between December 2016 and mid-April 2017. On each occasion, the route was walked within 2 hours of low tide and within 2 hours of high tide and all birds within 200m, on either side of the proposed route, were recorded and mapped on large scale maps. A digital rangefinder was used to estimate distances between the birds and the route. Any disturbance resulting from presence of people (including the observer) or dogs was recorded with the type of response by all waterbird species (fly, walk, swim or other interruption to foraging). There are sections of the route where the intertidal part of the estuary is not visible from the proposed route due either to differential ground levels or to intervening buildings or trees. In practice, there are only three sites where the route is close enough to the shoreline to have any potential for disturbance to waterbirds (see Figure 1 of Natura, 2017 – see Appendix C to this report). This study was integrated with a wider wintering bird survey of the lands around Baldoyle Bay and of the estuary itself (Figure 3 of Natura, 2017) which provided a useful context for this study (extract from Natura, 2017 - see Appendix C to this report).
- 5.42. The report identified three areas where the proposed route comes close to the intertidal part of the estuary, namely Portmarnock Bridge, Mayne River Bridge and Red Arches Roundabout (see

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<sup>50</sup> Pierce, S. and Dillon, D. (2012). *Wintering bird survey of the lands surrounding the Baldoyle Estuary*. Report prepared by Fingal Branch, BirdWatch Ireland for Fingal County Council.

Figure 3 of Natura, 2017; see Appendix C). Table 2 of this report presents the average and peak waterbird populations at low tide on Baldoyle Bay recorded over 10 surveys between November 2016 and April 2017; while Table 3 presents counts for waterbirds within 200m of each of these three areas over 10 dates in the winter of 2016/2017 (refer to Appendix C).

- 5.43. With respect to potential disturbance, Natura (2017) noted that *“In public amenity areas such as Portmarnock Park, Red Arches and Seagrange Park, Brent Geese are relatively undisturbed by pedestrians at distances as low as 20m (Figure 12), However, dogs off the lead can cause them to walk to fly away from a perceived threat”*; note paragraph 5.51 below.
- 5.44. The Natura (2017) report concluded that *“the proposed route is very suitable for a coastal path and cycleway with expansive views of the estuarine habitats and coastal landscapes. The majority of the route is sufficiently far from the tidal area and is separated from it by a busy road so that it will not cause significant disturbance to non-breeding waterbirds”*. Furthermore, Natura (2017) noted:
1. *It is recommended that signage is erected at the three locations where the route is closest to the shoreline of Baldoyle Bay. The signs should provide information on the birds of the area and explain that dogs should be kept on the lead while on the pathway (Figures 14 and 15).*
  2. *No screening from an ecological perspective is required on any part of the proposed route as there is no risk of significant disturbance to waterbirds either on the estuary or on the lands to the west of the route. Most of the western side of the route is already fenced so this should prevent uncontrolled dogs causing disturbance should certain areas to the west of the route be used in future by foraging or roosting waterbirds.*
  3. *The proposed route will not cause any significant impact on the Baldoyle Bay SPA (004016) or the Baldoyle Bay SAC. The path and cycleway will not interfere with the distribution or density of the species or habitats that are qualifying interests of these Natura 2000 sites. There is no likelihood that there will be any adverse effects on the favourable conservation condition of these sites.*

## Impact Assessment

- 5.45. The proposed pedestrian and cyclist scheme is not located within Baldoyle Bay SPA. There will be no direct impact in the form of habitat loss.
- 5.46. As noted Baldoyle Bay SPA is designated for Bar-tailed Godwit, Ringed Plover, Shelduck, Golden Plover, Grey Plover and Light-bellied Brent Geese. Of these species, Bar-tailed Godwit, Ringed Plover, Shelduck, Golden Plover and Grey Plover all use inner Baldoyle Bay in notable numbers. However, they largely favour central and southern parts of the estuary; areas such as OUL30 where works close Portmarnock Bridge would be located are not generally favoured by these species. Those preferred areas to the south are therefore remote from proposed works or are screened from the route by the R106 and / or extensive areas of saltmarsh / *Spartina*.
- 5.47. While Light-bellied Brent Geese occur through Baldoyle Bay and adjoining Dublin Bay, the field at Portmarnock Green is clearly of notable value for this species. That said this area of grass is adjoined by the R106 and a footpath; local residents also feed Mallards at this site. The current proposal ends at the R106 – see Figure 1.1.
- 5.48. However, as part of the proposed Sutton to Malahide Scheme (currently being developed) it is proposed that the pedestrian and cyclist scheme would run along inside the existing wall, cross the Sluice River and continue inside the existing wall (see Plate 5.4) before rejoining the public footpath; this will bring users of the proposed pedestrian and cycle facilities ca. 3-4m closer to birds using Portmarnock Green. The outward face of the walk is to be screened - both to replicate the screening providing by the existing roadside wall and in order to prevent direct access to the area used by feeding Light-bellied Brent Geese (notably by dogs).

- 5.49. Given the observable tolerance shown by Light-bellied Brent Geese for predictable and repeated patterns of disturbance (where the disturbance remains remote and does not enter the feeding area), it is not anticipated that the increased level of pedestrian and cyclist use of the path should negatively impact on use of the site by Light-bellied Brent Geese.
- 5.50. The grassland (hay meadows) along the proposed pedestrian and cyclist scheme is not suitable for use by field feeding species such as Black-tailed Godwit and Golden Plover; the path is, however, screened from potentially suitable areas elsewhere within the Racecourse lands.
- 5.51. The proposed pathway is to be provided with public lighting. The path is screened by lands to the west by an area of higher ground and separated from the estuary by a busy public road; there is significant development to the north / east of Portmarnock Bridge as well light from cars using the Coast Road. It will be a requirement of any Contract that lighting is to be designed to be directional, with no overspill behind the light stands or onto semi-natural habitats outside the pathway; this is especially relevant at Portmarnock Bridge, where lighting should be erected to prevent overspill onto the estuary. The use of lights which are activated by pedestrians and turn-off thereafter has been considered. This is discussed further with respect to bats in the Environmental Report. However, public lighting is generally not thought to negatively impact on wintering waterbirds, such as those for which Baldoyle Bay SPA has been designated; many of these species will feed by night, taking advantage in particular of bright moonlit nights. Recent published evidence suggest that Redshank (*Tringa totanus*) avail of anthropogenic light to lengthen feeding opportunities (Dwyer *et al.*, 2013<sup>51</sup>). They argue that light emitted from an industrial complex improved nocturnal visibility and that this allowed sight-based foraging in place of tactile foraging, implying both a preference for sight-feeding and enhanced night-time foraging opportunities under these conditions.
- 5.52. It is not proposed to plant trees along the edge of the route as these would provide perches for predatory species, such as Hooded crow (*Corvus cornix*) or Buzzard (*Buteo buteo*), which might target ground nesting birds. Lamp poles can, however, also provide perches for predatory birds; it will therefore be necessary to incorporate a deterrent onto the lighting cowl in order to prevent birds from perching on them.
- 5.53. Construction works will not be undertaken during the winter months, thereby avoiding any disturbance impacts on migratory birds using Baldoyle Bay SPA during the winter months.
- 5.54. It is not envisaged that appropriate development of the pedestrian and cycle facilities would result in significant negative impacts on the bird species for which Baldoyle Bay SPA has been designated.
- 5.55. Furthermore, the project will have no detrimental impact on the wintering birds of other neighbouring coastal SPA's. The path and cycleway will not interfere with the distribution or density of the species or habitats that are qualifying interests of these Natura 2000 sites. There is no likelihood that there will be any adverse effects on the favourable conservation condition of these sites.

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<sup>51</sup> Dwyer, R.G., Bearhop, S., Campbell, H. A. and Bryant, D.M. (2013). Shedding light on light: benefits of antropogenic illumination to a nocturnally foraging shorebird. *J. of Appl. Ecol.* 82, 478-485.

## 6. Other Plans or Projects

### Development in Baldoyle – Stapolin LAP and Portmarnock South LAP

- 6.1. Both Baldoyle – Stapolin LAP and Portmarnock South LAP have been subject to Appropriate Assessment. These included detailed consideration of other plans and programmes within the LAP lands as well as the proposal to develop a coastal walk.
- 6.2. To deal with the influx of new residents in the area, Fingal County Council is currently preparing plans for the Racecourse Park which is located between Portmarnock and Baldoyle. The aim of the Masterplan will be to combine nature conservation with recreational development. A recreational hub with a playground, skate park, pitches etc. will be developed near the Coast housing development away from the estuary, while also providing for a looped walking route through the park to allow people to experience the natural surroundings. The walking and cycling route will be located in this park. None of the park development proposals shall impact on the designated sites.

### Portmarnock Phase 1

- 6.3. St Marnock's DAC11 and Clear Real Estate Investments Plc applied to An Bord Pleanála for planning permission for the development of a residential scheme at Portmarnock South (known as Portmarnock Phase 1B). The proposed development, which is located within the area covered by the Portmarnock South Local Area Plan, comprises the construction of 150 residential units and related infrastructure, landscaping and a detention pond, as well as the delivery of a regional wetland with a storm water outfall to Baldoyle Bay. The application was accompanied by a Natura Impact Statement (Brady Shipman Martin, 2017<sup>52</sup>).
- 6.4. As part of Phase 1A of development on these lands, and again in accordance with the provisions of the Portmarnock South LAP, significant mitigation measures were put in place, both within the Phase 1A lands itself, and within the wider lands covered by Portmarnock South LAP. This includes provision of a large area of Ecological buffer/parkland, located between residential zoned lands within the LAP to the west and the boundary with Coast Road to the east and with Mayne Road to the south. A 'Quiet Zone' for birds is also to be provided in the southern part of the Portmarnock South Local Area Plan lands.
- 6.5. Furthermore, in compliance with planning conditions for the Phase 1A development, an agreement is in place between the landowner and Fingal County Council to hand over the above lands covered by the ecological buffer lands. It is expected that this transfer will be completed in the near future and this will enable Fingal County Council to take full charge of the long-term management of the ecological buffer area and bird quiet zone.
- 6.6. The NIS concluded that on the best scientific evidence that it can be clearly demonstrated that no elements of the project will result in any impact on the integrity or Qualifying Interests/Special Conservation Interests of any relevant European site, either on their own or in-combination with other plans or projects, in light of their conservation objectives.

### Clongriffin - Belmayne LAP

- 6.7. A local area plan covering the period 2012-2018 was published in 2012 for the Clongriff – Belmayne area of the City by Dublin City Council. In November 2017, notice was given that the Elected Members of Dublin City Council resolved to extend the Clongriffin – Belmayne Local Area Plan 2012, for a further period of five years (i.e. until December 2022). A Natura Impact Report was prepared in 2012. It is not clear as to whether a new Appropriate Assessment is to be prepared.

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<sup>52</sup> Brady Shipman Martin (2017). Portmarnock Phase 1B. Natura Impact Statement.

- 6.8. This LAP includes provision for housing for several thousand new people living in the vicinity of the Baldoyle Bay SAC/SPA. By attracting more people to the area a significant increase in residential housing is also likely to result in an increase in numbers of people that will avail of the scenic coast as an amenity resource increasing the potential of direct and indirect damage and disturbance to habitats and species in the estuary. However, any such developments will be required to consider the potential for impacts on Baldoyle Bay SAC/SPA.

## Waste water provision

- 6.9. The new housing development in the area will require further extensions and upgrades of existing sewer infrastructure. The key waste water infrastructure projects are: -
- Clonsaugh Waste Water Treatment
  - Portmarnock Pumping Station
- 6.10. The details of these schemes are not yet confirmed yet in terms of impact on the adjacent Natura 2000 sites. Works on Clonsaugh Waste Water Treatment plant and Portmarnock Pumping Station are unlikely to start next year so in terms of cumulative construction impacts there should be none.

## Broadmeadow Way

- 6.11. A shared pedestrian and cycling route is planned to bridge the Malahide estuary and link Malahide and Donabate in north Dublin. The 6km route, known as the Broadmeadow Way, starts at Malahide Castle south of Malahide Village and ends at Newbridge House and Farm just outside Donabate Village. The route is set to cross the Malahide estuary beside viaduct which carries the Dublin to Belfast railway line, and which collapsed as a commuter train passed over it five years ago.
- 6.12. The section of the route over the estuary forms part of the Irish National Cycle Route 1 and, under the Greater Dublin Area Cycle Network, it also makes up part of the “East Coast Trail” strategic greenway route from Arklow to Drogheda. Along Dublin Bay, the East Coast Trail would include the long-planned the Sutton to Sandycove (S2S) route, and between Sutton to Balbriggan the trail would take in the planned Fingal Coast & Castle Way. This route is subject to ongoing assessment, including a programme of bird monitoring in Malahide Estuary.
- 6.13. The Appropriate Assessment includes the following summary: -

*“This document is a Natura Impact Statement in support of the Appropriate Assessment process of the potential impacts on Natura 2000 sites from the proposed Broadmeadow Way, a greenway (cycle/walkway) linking Malahide and Newbridge Demesnes. The site is located in Fingal, north County Dublin. It is proposed to develop a combined cycle/walkway along the western edge of the existing rail embankment from Malahide Castle across the estuary, through lands at Kilcrea and onwards using local roads to Newbridge Demesne.*

*The railway embankment is immediately adjacent to the candidate Special Area of Conservation (Malahide Estuary cSAC; Site Code 000205) and the Special Protection Area (Malahide Estuary SPA; Site Code 004025). The proposed walkway has the potential to cause disturbance to birds in the SPA, during construction and by the disturbance caused by users of the combined cycle/walkway. This development requires mitigation to negate the potential for any adverse impacts upon birds in the Malahide Estuary SPA. Following Stage 2 (Appropriate Assessment) of the assessment it is concluded that, with the application of the suggested measures, the impact on the local avifauna will be negligible.”*

## Sutton to Malahide Green Route

- 6.14. A separate scheme is currently being developed by Fingal County Council, which will connect Sutton with the current scheme; and continue northwards from Portmarnock Bridge to Malahide. This in turn will provide connection with the Broadmeadows Way.

- 6.15. The details of this scheme are not confirmed yet in terms of impact on the adjacent NATURA 2000 sites, but once these projects are developed it will bring more people to the coast. Careful design should ensure that the route has no impact on the SAC or the SPA designations.

## **S2S – Sutton to Sandycove Promenade & Cycleway**

- 6.16. In May 2017 a 2km stretch from Wooden Bridge to the causeway to North Bull Island was opened. There is now an off-road walk from Sutton to the East Wall. A key consideration of this section was potential for impacts on birds within the North Bull Island SPA. This followed the earlier completion of an 8.5km stretch from Clontarf to Sutton; apart from the stretch between Wooden Bridge and the Causeway. As any coastal schemes are progressed, these will need to consider in-combination impacts and the potential for attraction of greater numbers of people to the coast. As noted above, the location of the proposed Baldoyle – Portmarnock coastal path west of the Coast Road / Baldoyle Estuary and screened from wetland habitat within the Racecourse is such that disturbance of wintering birds for which Baldoyle Bay SPA has been designated are not predicted. Note, also the ongoing habitat creation for Light-bellied brent geese (i.e. creation of feeding habitat; which will also be used by field feeding waders such as Curlew, Black-tailed godwit, Oystercatcher, Lapwing and Golden Plover) as well as nesting habitat for waders such as Lapwing.

## **Other Projects**

- 6.17. Other miscellaneous works; include development of a hotel at Red Arches; flood protection works at Portmarnock Bridge / Sluice River; etc.
- 6.18. The details of many of these schemes are not yet confirmed yet in terms of impact on the adjacent Natura 2000 sites, but in all cases careful design must ensure that they have no impact on the SAC or the SPA designations; in each case Appropriate Assessment must also be undertaken on any proposed plans or projects. These will need to consider in-combination impacts with the proposed coastal pathway.

## 7. Concluding Statement

- 7.1. The proposed pedestrian and cyclist scheme is located within or close to two Natura 2000 sites, namely: - Baldoyle Bay SAC (000199) and Baldoyle Bay SPA (004016).
- 7.2. The proposed pedestrian and cyclist scheme runs through a section of Baldoyle Bay SAC which is located to the west of the Coast Road. The qualifying interests of Baldoyle Bay SAC are Mudflats and sandflats not covered by seawater at low tide [1140]; *Salicornia* and other annuals colonising mud and sand [1310]; Atlantic salt meadows (*Glauco-Puccinellietalia maritima*) [1330] and Mediterranean salt meadows (*Juncetalia maritimi*) [1410].
- 7.3. The assessment presented above concluded that the proposed pathway will not impact negatively on any of the qualifying interests of Baldoyle Bay SAC. None of the habitats for which the site has been designated are located along the proposed coastal pathway. As such it is concluded that the area, integrity or functioning of these habitats will not be negatively impacted.
- 7.4. The loss of this area of grassland (before mitigation), which is not a qualifying interest of the SAC or functionally an integral element of the habitats for which the SAC has been designated, is not predicted to negatively impact on Baldoyle Bay SAC or the habitats for which it has been designated.
- 7.5. Furthermore, the central median and path edges are to be maintained as species rich grassland by means of a cut and collect regime in autumn each year. The median will be 2.4m in width along the length of the scheme – thereby reducing the loss of grassland in time to from 3,367 m<sup>2</sup> (0.34ha) to 2,275m<sup>2</sup> (or 0.228ha). Further habitat creation and enhancement works are ongoing within the Racecourse lands west of the coastal path both inside and outside the SAC. This is being managed by Fingal County Council. The Council are also implementing a programme of ongoing ecological monitoring in order to judge the success of ecological measures implemented and modify these as required.
- 7.6. The qualifying interests of Baldoyle Bay SPA are Brent Goose (*Branta bernicla hrota*) (A046); Common 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) and Wetlands and Waterbirds (A999).
- 7.7. There is no physical overlap with Baldoyle Bay SPA and no loss of habitat within the SPA.
- 7.8. Species numbers and spatial distribution of birds using Baldoyle Bay was considered, as is the potential for disturbance of bird species for which Baldoyle Bay SPA has been designated. Use of grassland outside the SPA by species such as Light-bellied brent geese was also considered. It is not envisaged that appropriate development of the pedestrian / cycle facilities would result in significant negative impacts on the bird species for which Baldoyle Bay SPA has been designated.

## **Appendix A. Site Synopsis**



**Site Name: Baldoye Bay SAC**

**Site Code: 000199**

Baldoye Bay SAC extends from just below Portmarnock village to the west pier at Howth in Co. Dublin. It is a tidal estuarine bay protected from the open sea by a large sand-dune system. Two small rivers, the Mayne and the Sluice, flow into the bay.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (\* = priority; numbers in brackets are Natura 2000 codes):

[1140] Tidal Mudflats and Sandflats
[1310] <i>Salicornia</i> Mud
[1330] Atlantic Salt Meadows
[1410] Mediterranean Salt Meadows

Large areas of intertidal flats are exposed at low tide at this site. These are mostly sands but grade to muds in the inner sheltered parts of the estuary. Extensive areas of Common Cord-grass (*Spartina anglica*) occur in the inner estuary. Both the Narrow-leaved Eelgrass (*Zostera angustifolia*) and the Dwarf Eelgrass (*Z. noltii*) are also found here. During summer, the sandflats of the sheltered areas are covered by mats of green algae (*Enteromorpha* spp. and *Ulva lactuca*).

The sediments have a typical macrofauna, with Lugworm (*Arenicola marina*) dominating the sandy flats. The tubeworm *Lanice conchilega* is present in high densities at the low tide mark and the small gastropod *Hydrobia ulvae* occurs in the muddy areas, along with the crustacean *Corophium volutator*.

Areas of saltmarsh occur near Portmarnock Bridge and at Portmarnock Point, with narrow strips along other parts of the estuary. Species such as glassworts (*Salicornia* spp.), Sea-purslane (*Halimione portulacoides*), Sea Plantain (*Plantago maritima*) and Sea Rush (*Juncus maritimus*) are found here. Portmarnock Spit formerly had a well-developed sand dune system but this has been largely replaced by golf courses and is mostly excluded from the site. A few dune hills are still intact at Portmarnock Point, and there are small dune hills east of Cush Point and below the Claremont Hotel. These are mostly dominated by Marram (*Ammophila arenaria*), though Lyme-grass (*Leymus arenarius*) is also found.

The site includes a brackish marsh along the Mayne River. Soils here have a high organic content and are poorly drained, and some pools occur. Rushes (*Juncus* spp.) and salt tolerant species such as Common Scurvygrass (*Cochleria officinalis*) and

Greater Sea-spurrey (*Spergularia media*) are typical of this area. Knotted Hedge-parsley (*Torilis nodosa*), a scarce plant in eastern Ireland, has been recorded here, along with Brackish Water-crowfoot (*Ranunculus baudotti*), a species of brackish pools and ditches which has declined in most places due to habitat loss. Two plant species, legally protected under the Flora (Protection) Order, 1999, occur in the Mayne marsh, Borrer's Saltmarsh-grass (*Puccinellia fasciculata*) and Meadow Barley (*Hordeum secalinum*).

Baldoyle Bay is an important bird site for wintering waterfowl and the inner part of the estuary is a Special Protection Area under the E.U. Birds Directive as well as being a Statutory Nature Reserve. Internationally important numbers of Pale-bellied Brent Goose (418) and nationally important numbers of two Annex I Birds Directive species - Golden Plover (1,900) and Bar-tailed Godwit (283) - have been recorded. Four other species also reached nationally important numbers: Shelduck (147), Pintail (26), Grey Plover (148) and Ringed Plover (218) - all figures are average peaks for four winters 1994/95 to 1997/1998. Breeding wetland birds at the site include Shelduck, Mallard and Ringed Plover. Small numbers of Little Tern, a species listed on Annex I of the E.U. Birds Directive, have bred on a few occasions at Portmarnock Point but not since 1991.

The area surrounding Baldoyle Bay is densely populated and so the main threats to the site include visitor pressure, disturbance to wildfowl and dumping. In particular, the dumping of spoil onto the foreshore presents a threat to the value of the site.

Baldoyle Bay is a fine example of an estuarine system. It contains four habitats listed on Annex I of the E.U. Habitats Directive, and supports two legally protected plant species. The site is also an important bird area and part of it is a Special Protection Area under the E.U. Birds Directive, as well as being a Statutory Nature Reserve. It supports internationally important numbers of Brent Goose and nationally important numbers of six other bird species, including two Annex I Birds Directive species.

## SITE SYNOPSIS

**SITE NAME: BALDOYLE BAY SPA**

**SITE CODE: 004016**

Baldoyle Bay, located to the north and east of Baldoyle and to the south of Portmarnock, Co. Dublin, is a relatively small, narrow estuary separated from the open sea by a large sand dune system. Two small rivers, the Mayne River and the Sluice River, flow into the inner part of the estuary.

Large areas of intertidal flats are exposed at low tide. These are mostly sands but grade to muds in the inner sheltered parts of the estuary. Extensive areas of Common Cord-grass (*Spartina anglica*) occur in the inner estuary. Both the Narrow-leaved Eelgrass (*Zostera angustifolia*) and the Dwarf Eelgrass (*Z. noltii*) are also found here. During summer, the sandflats of the sheltered areas are covered by mats of green algae (*Ulva* spp.). The sediments have a typical macrofauna, with Lugworm (*Arenicola marina*) dominating the sandy flats. Areas of saltmarsh occur near Portmarnock Bridge and at Portmarnock Point, with narrow strips found along other parts of the estuary. Species such as Glasswort (*Salicornia* spp.), Sea-purslane (*Halimione portulacoides*), Sea Plantain (*Plantago maritima*) and Sea Rush (*Juncus maritimus*) are found here.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Light-bellied Brent Goose, Shelduck, Ringed Plover, Golden Plover, Grey Plover and Bar-tailed Godwit. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

Baldoyle Bay is an important site for wintering waterfowl, providing good quality feeding areas and roost sites for an excellent diversity of waterfowl species. It supports an internationally important population of Light-bellied Brent Goose (726), and has a further five species with nationally important populations (all figures are mean peaks for the five winters 1995/96 to 1999/2000): Shelduck (147), Ringed Plover (223), Golden Plover (2,120), Grey Plover (200) and Bar-tailed Godwit (353). Other species which occur include Great Crested Grebe (42), Pintail (35), Teal (138), Mallard (46), Common Scoter (61), Oystercatcher (531), Lapwing (524), Knot (189), Dunlin (879), Black-tailed Godwit (113), Curlew (98), Redshank (224), Greenshank (11) and Turnstone (43).

Regular breeding birds include Shelduck, Mallard and Ringed Plover. In autumn, passage migrants such as Curlew Sandpiper, Spotted Redshank and Green Sandpiper are regular in small numbers. Little Egret, a species which has recently colonised Ireland, also occurs at this site.

Baldoyle Bay SPA is of high conservation importance, for supporting internationally important numbers of Light-bellied Brent Goose as well as nationally important populations of a further five species, including Golden Plover and Bar-tailed Godwit, both species that are listed on Annex I of the E.U. Birds Directive. The inner part of the site is a Statutory Nature Reserve and also designated as a wetland of international importance under the Ramsar Convention.

25.3.2014

## **Appendix B. Habitat Survey (Fitzgerald, 2017)**

# **Vegetation Assessment for a Proposed Walking and Cycling Route at the Baldoyle Racecourse Park, Co. Dublin**



**Report for Fingal County Council**

**By Alexis FitzGerald**

**June 2017**

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## 1. Introduction

Fingal County Council is proposing to develop a walking and cycling route parallel to the Coast Road in the Racecourse Park near Baldoyle. The proposed pathway will allow cyclists and pedestrians to pass safely along this stretch of the coast linking Baldoyle with Portmarnock. The pathway shall be located in the grassland between the Coast Road and the cattle enclosure and will traverse across part of the Baldoyle Bay SAC (see blue SAC boundary in Figure 1).



**Figure 1. Study area in green and Baldoyle Bay SAC boundary in blue.**

The purpose of this assessment is to determine the conservation value of the grassland along the proposed route and to establish the impact of the proposed walking and cycling route on the flora of the site. The site was visited in spring, summer and autumn 2016 as part of a wider flora study of the Racecourse Park.

## 2. Site History and Flora Description.

The grounds along the proposed path were part of the Baldoyle Racecourse track from the 1850's right up until 1972. The surface was a turf track that would have been sown with grass seed for decades. These grasses would have predominantly included *Lolium perenne* (Perennial Ryegrass), *Festuca rubra* agg. (Red Fescue) and *Poa* spp. (Meadow-grass). Since the racecourse park closed in 1972, the turf track was no longer actively managed (Hurley 2006).



Figure 2. Historic aerial image of the racecourse track.

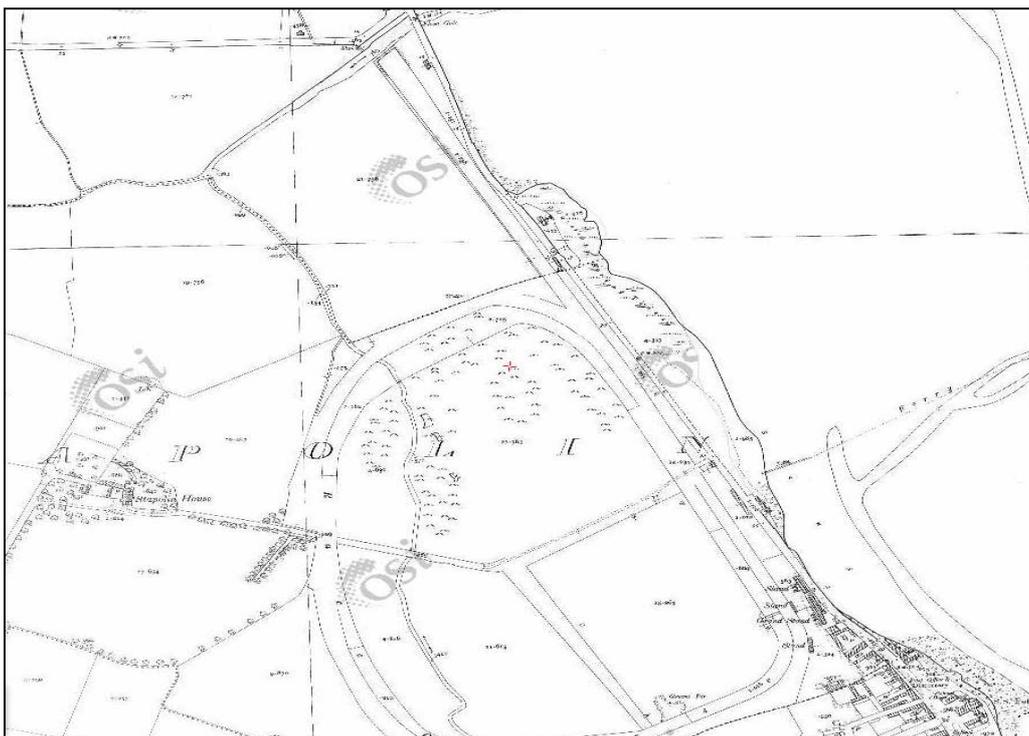


Figure 3. Historic map of the racecourse track.

Today, several of these originally sown turf grass species still persist here with a number of other grass species now occurring in the vegetation having survived here or migrated here in recent decades. These include *Arrhenatherum elatius* (False Oat-grass), *Dactylis glomerata* (Cock's-foot), *Agrostis capillaris* (Common Bent), *Festuca pratensis* (Meadow Fescue), *Alopecurus pratensis* (Meadow Foxtail), *Anthoxanthum odoratum* (Sweet Vernal-grass) and *Anisantha sterilis* (Barren Brome). Also occurring here are *Carex flacca* (Glaucous Sedge), *Luzula campestris* (Field Woodrush), *Plantago lanceolata* (Ribwort Plantain), *Potentilla reptans* (Creeping Cinquefoil), *Vicia sativa* ssp. *segetalis* (Common Vetch), *Vicia sepium* (Bush Vetch), *Artemisia vulgaris* (Mugwort), *Heracleum sphondylium* (Common Hogweed), etc.

*Tragopogon pratensis* (Goat's-beard) was also found in this sandy grassland at the southern end of the study area. This species is occasional in Co. Dublin (Doogue *et al.* 1998). This species was found with *Anthyllis vulneraria* (Kidney Vetch), *Ononis repens* (Common Restharrow), *Lotus corniculatus* (Common Bird's-foot-trefoil) and *Geranium molle* (Dove's-foot Crane's-bill). A number of these species were also recorded in this area (and just west of the present enclosure fence) by Atkins McCarthy (2000) and Goodwillie (2002).

Some typical woodland/hedgerow species such as *Primula vulgaris* (Primrose) were found in the grassland in the southern/central part of the study area evidently availing of the shelter provided by the tall, ungrazed grassland vegetation. Some maritime species also occur at the southern edge of the grassland strip on rubbly ground, including *Raphanus raphanistrum* ssp. *maritimus* (Sea Radish).

Two grass species which are occasional in Dublin also occur here, particularly in the southern/central part of the study area. These are *Trisetum flavescens* (Yellow Oat-grass) and *Avenula pubescens* (Downy Oat-grass) (Doogue *et al.* 1998). These two species are not found in such large numbers in any other areas of the park.

An informal trackway is currently located along the western boundary of the study area, from the southern end right up to the northern end. The vegetation along this trackway is trampled by walkers and species such as *Lotus corniculatus*, *Holcus lanatus* (Yorkshire Fog), *Trifolium pratense* (Red Clover) and *Trifolium repens* (White Clover) are dominant here. East of this trackway, the vegetation is less disturbed and a better developed dry grassland community occurs here.



Figure 4. Informal trackway just east of the grazing enclosure (left side of the image) – 12/06/2016.

At the northern end of the study area, *Rubus fruticosus* agg. (Brambles) scrub becomes more prominent in the vegetation (as can be seen in **Figure 10**) and is spreading into the grassland vegetation in some places. *Urtica dioica* (Common Nettle), *Galium aparine* (Cleavers) and *Heracleum sphondylium* occur profusely at the edges of the bramble scrub.

The introduced *Erigeron karvinskianus* (Mexican Fleabane) was found spreading on rocky ground near the Mayne River Bridge at the northern edge of the study area. Nearby, the introduced species *Calystegia silvatica* (Large Bindweed), *Crocasmia paniculata* (Aunt-Eliza) and *Callistemon* species (Bottlebrush) were also found. The introduced *Lepidium draba* (Hoary Cress) was also found growing on rubble near the wall by the Coast Road at the northern end. This is in fact a re-find of a record made by the Dublin Naturalists' Field Club during a field outing in 1984. Thus, the species does not appear to be spreading at all here and is not potentially invasive within the vegetation (Doogue *et al.* 1998). These species need not be removed from the site, unless they begin to threaten the natural grassland vegetation significantly.

### 3. Plant Species of Conservation Importance.

Few species of conservation importance occur in the grassland vegetation under study. The *Trisetum flavescens* and *Avenula pubescens*, are the most important grass species to conserve in this area of vegetation. These two species are occasional/locally rare in County Fingal and occasional in Co. Dublin as a whole (Doogue *et al.* 1998) and are therefore of local and regional conservation value. They occur throughout the vegetation from the edge of the informal trackway to the wall along the Coast road, particularly in the southern end of the study area.

Furthermore, as can be seen in **Figures 7** and **8** below, three plants of *Anacamptis pyramidalis* (Pyramidal Orchid) were found in two locations on dumped subsoil (from the late 1980's/early 1990's) at the northern section of the study area on 27<sup>th</sup> June 2016. This species is scarce/rare in the Fingal County Council area (Doogue *et al.* 1998).



**Figure 5. *Avenula pubescens* © Jan Willem Jongepier.**



**Figure 6. *Trisetum flavescens* © Peter Meininger.**



Figure 7. *Anacamptis pyramidalis* habitat – 2<sup>nd</sup> July 2016.



Figure 8. *Anacamptis pyramidalis* July 2016.

*Puccinellia fasciculata* (Borrer's Saltmarsh-grass) was recorded by an unknown recorder in 1991 in the ditch along the Coast Road (Goodwillie 2002). However, Doogue (1991) surveyed this area in the same year but didn't find any sign of the species in this ditch. Therefore there is some doubt as to the validity of the anonymous 1991 record. It is perhaps possible that the species colonised the ditch for a time between 1991 and 2002, before dying off. *Puccinellia fasciculata* is a very rare species of muddy, usually associated with grazed/poached ground in saltmarshes on the east and south coasts of Ireland (Parnell & Curtis 2012). This species does not necessarily require brackish conditions. Its main requirement is open, exposed soil, and tolerates higher soil salt concentrations in order to avail of the increased openness of the vegetation in brackish areas (Goodwillie 2002).

The plant is listed in the *Irish Red Data Book 1: Vascular Plants* (Curtis & McGough 1988) and is legally protected under the Flora (Protection) Order, 2015. In Co. Dublin it is a very rare species with historical records for this species at the Racecourse Park and a further single site within the Dún Laoghaire-Rathdown County Council area (Doogue *et al.* 1998). The last time this plant was found at the Racecourse Park was in 2000, in the saltmarsh further west of the study area. A reduced input of brackish water as a result of fitting new flapvalves on the outlet of the Mayne River are thought to have contributed to the loss of the *Puccinellia maritima* at this site (Hans Visser, pers comm. 2016).

If indeed the species was present here in the ditch for 10 years (or more), there may still be a seed bank of the species present in the ditch. It may be worth exposing the base of the ditch at a number of locations to see if any new plants re-emerge.

#### 4. Vegetation Classification and Conservation.

The majority of the grassland vegetation in the study area corresponds to Fossitt's (2000) dry calcareous and neutral grassland (GS1) vegetation type (see figure 9). Indicative species of this vegetation type occurring in the grassland include *Trisetum flavescens*, *Avenula pubescens* and *Anthyllis vulneraria*.

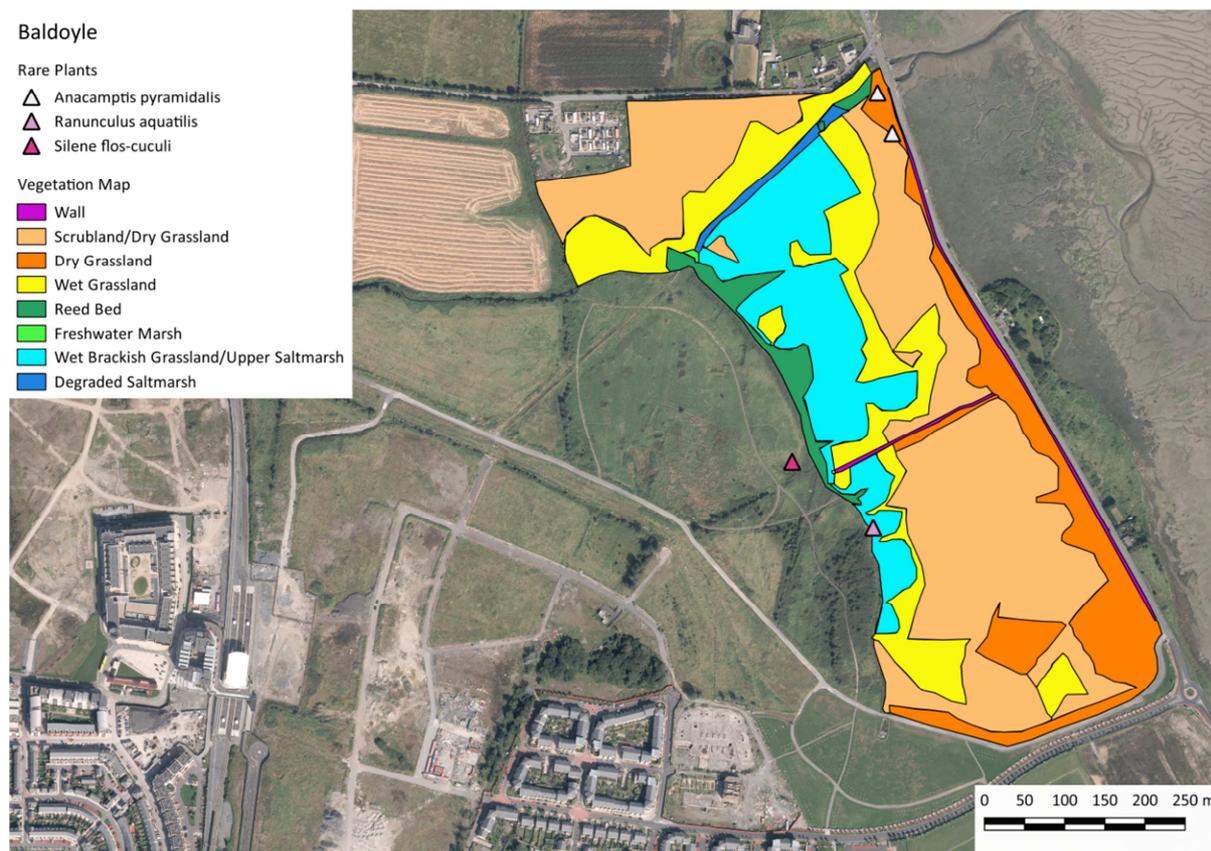


Figure 9. Vegetation Map of Baldoyle Racecourse Park (area of interest along eastern edge of map).

Although the vegetation has an affinity with the Annex I habitat 6210 *semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia)*, this grassland vegetation does not classify as a European Union Habitats Directive Annex I habitat (Calaciura *et al.* 2008).

Only one indicator species of Annex I habitat 6210 and subtype *Mesobromion* occur in the study area (according to the species listed by Calaciura *et al.* 2008), namely, *Anthyllis vulneraria*. However, O'Neill *et al.* (2010) list a further suite of species in an Irish context which are indicative of this habitat, and a few of these species are found in the grassland here, including *Trisetum flavescens*, *Avenula pubescens*, *Carex flacca*, *Galium verum* and

*Lotus corniculatus*. The latter three species are frequent in semi-natural grasslands in Co. Dublin (Doogue *et al.* 1998).

A range of species which would be expected in good quality semi-natural calcareous grassland in Ireland are absent at this site. These include *Knautia arvensis* (Field Scabious), *Origanum vulgare* (Wild Marjoram), *Carlina vulgaris* (Carlina Thistle), *Sanguisorba minor* (Salad Burnet), *Antennaria dioica* (Mountain Everlasting), *Thymus polytrichus* (Wild Thyme), *Blackstonia perfoliata* (Yellow-wort), *Carex caryophyllea* (Spring Sedge), *Campanula rotundifolia* (Harebell), *Leontodon hispidus* (Rough Hawkbit), *Primula veris* (Cowslip), *Gentianella amarella* (Autumn Gentian), *Koeleria macrantha* (Crested Hair-grass), *Pilosella officinarum* (Mouse-ear-hawkweed) and *Ranunculus bulbosus* (Bulbous Buttercup) (Calaciura *et al.* 2008, Dwyer *et al.* 2007, O'Neill *et al.* 2010).

Furthermore, Annex I habitat 6210 *semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia)* is particularly associated with orchid-rich grassland (Calaciura *et al.* 2008). However, the only orchid species recorded in this grassland were three *Anacamptis pyramidalis*. No other orchid species were found occurring in the grassland. Species such as *Gymnadenia conopsea* s.l. (Fragrant Orchid) and *Dactylorhiza fuchsii* (Common Spotted-orchid) might be expected in good quality semi-natural calcareous grassland in Ireland (Doogue & Krieger 2010).

This grassland has been so severely modified by the sowing of grasses over decades for the former racecourse track that it is difficult to say with certainty that any of it is even in a semi-natural state. It is more likely that some natural species and/or populations which have survived in the area have moved into the modified and sown grassland after it was abandoned, quite likely including a number of the indicator species.

Due to the lack of indicator species and the lack of orchids on the site the grassland vegetation ought not to be classified as an Annex I habitat.

However, the vegetation has developed into a more 'semi-natural' state over recent decades and it is of local conservation value. The project should try to retain as much of the grassland as possible, particularly the better developed vegetation near the coast road. During the construction period, compaction by machinery movement and dumping of construction materials should be avoided. After the project is completed the grassland should be managed to maximise the conservation value of the site by means of a late hay cut every year or every second year depending on the levels of growth.

In the northern part of the study area bramble scrub has developed, albeit patchy in distribution. This can be a major threat to dry calcareous and neutral grasslands (Calaciura *et al.* 2008) and should be cut back to keep the grassland open.

## Chapter 5. References.

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## Appendix

Full species list for grassland vegetation study area:

*[Puccinellia fasciculata]*

*Agrostis capillaris*

*Agrostis stolonifera*

*Alopecurus pratensis*

*Anacamptis pyramidalis*

*Anisantha sterilis*

*Anthoxanthum odoratum*

*Anthyllis vulneraria*

*Arrhenatherum elatius*

*Artemisia vulgaris*

*Asplenium ruta-muraria*

*Avenula pubescens*

*Bellis perennis*

*Briza media*

*Bromus hordeaceus*

*Callistemon sp.*

*Calystegia sepium*

*Calystegia silvatica*

*Carex flacca*

*Centaurea nigra*

*Cerastium fontanum*

*Cirsium arvense*

*Convolvulus arvensis*

*Crepis capillaris*

*Crocoshia paniculata*

*Cynosurus cristatus*

*Dactylis glomerata*

*Elytrigia repens*

*Equisetum arvense*

*Erigeron karvinskianus*

*Festuca rubra agg.*

*Galium aparine*

*Galium verum*  
*Geranium molle*  
*Heracleum sphondylium*  
*Holcus lanatus*  
*Lactuca serriola*  
*Lathyrus pratensis*  
*Lepidium draba*  
*Lotus corniculatus*  
*Luzula campestris*  
*Medicago lupulina*  
*Odontites vernus*  
*Ononis repens*  
*Parietaria judaica*  
*Plantago lanceolata*  
*Poa annua*  
*Poa pratensis*  
*Poa trivialis*  
*Potentilla reptans*  
*Primula vulgaris*  
*Prunella vulgaris*  
*Ranunculus repens*  
*Raphanus raphanistrum ssp. maritimus*  
*Rubus fruticosus agg.*  
*Scorzoneroides autumnalis*  
*Senecio jacobaea*  
*Silene latifolia*

*Sonchus asper*

*Sonchus oleraceus*

*Taraxacum agg.*

*Tragopogon pratensis*

*Trifolium dubium*

*Trifolium pratense*

*Trifolium repens*

*Trisetum flavescens*

*Urtica dioica*

*Veronica chamaedrys*

*Vicia sativa ssp. segetalis*

*Vicia sepium*

## **Appendix C. Bird Assessment (Natura, 2017)**



**Comhairle Contae Fhine Gall**  
Fingal County Council

# **BALDOYLE TO PORTMARNOCK COASTAL PATH AND CYCLEWAY ASSESSMENT OF POTENTIAL IMPACTS ON BIRDS**

**June 2017**



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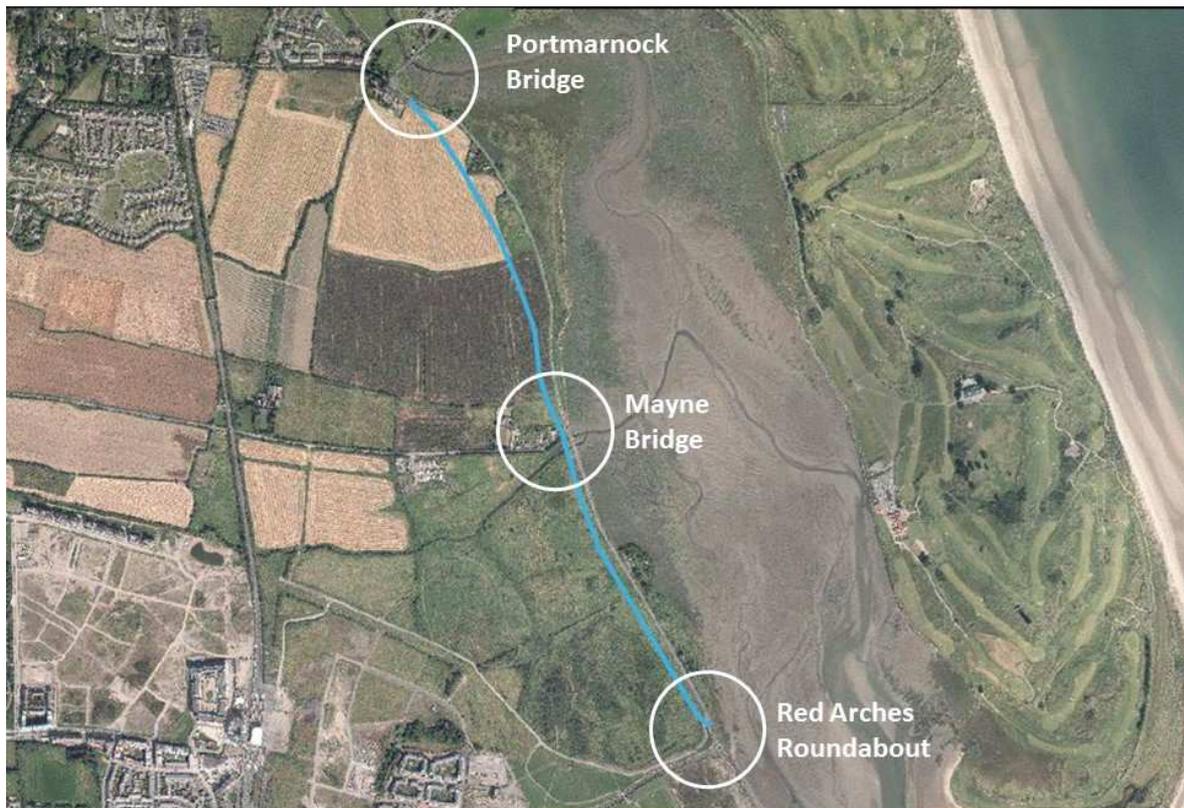
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## **1. INTRODUCTION**

Fingal County Council prepared Local Area Plans (LAPs) for the Stapolin lands in Baldoyle and for Portmarnock South. These lands are located adjacent to the Baldoyle Bay. The Bay is designated as a Special Area of Conservation (SAC) and Special Protection Area (SPA). The LAPs include a requirement for mitigation measures dealing with the impact of housing development in close proximity to Baldoyle Bay. A masterplan was drawn up for Racecourse Park, which encompasses the lands between the two residential landbanks zoned Open Space and High Amenity. This masterplan identified the areas set aside for nature conservation and the areas for recreational use and includes a provision for a cycle and pedestrian path along the eastern boundary of the park near the Coast road (Figure 1). This pathway will guide the new and existing residents in the LAP lands away from the more sensitive estuarine lands, thereby avoiding potential impacts on the habitats and species of Baldoyle Bay.

It is envisaged that the route will comprise of a 3m wide cycle lane, a 2.4m wide grass verge and a 2m wide pedestrian path. The route will include two signalised road crossings to allow for safe crossing points for both pedestrians and cyclists. One crossing point is located on the Coast Road near the Portmarnock Roundabout and one over the Moyne Road at the Moyne Road–Coast Road junction. The route also crosses the Mayne river near the Moyne Road-Coast Road junction and two bridging structures will be developed on the landward side of the bridge.

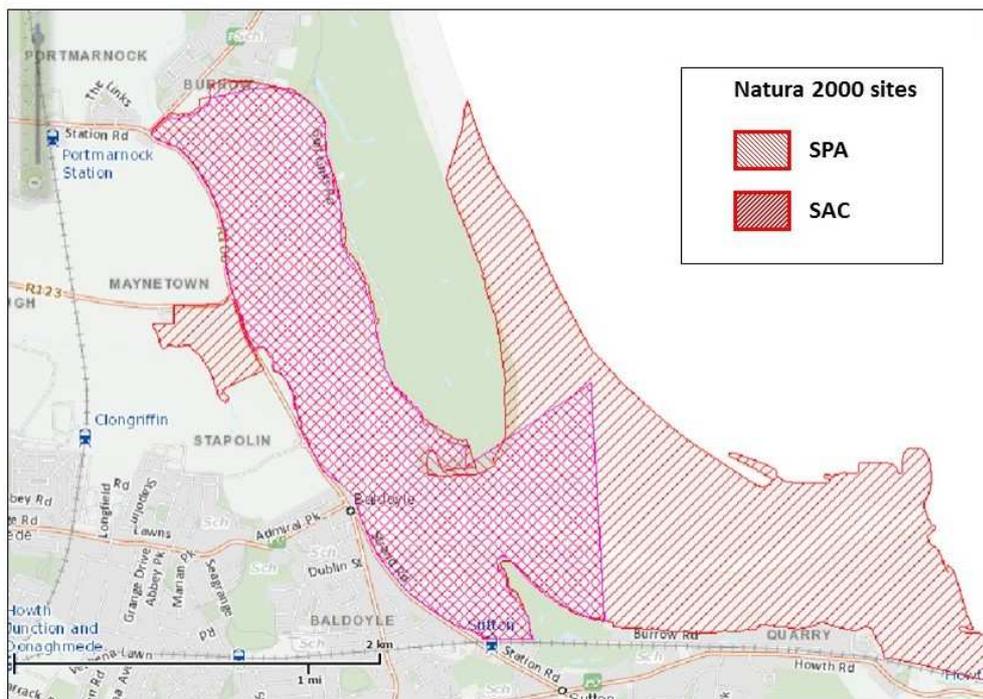


**Figure 1. Proposed route of Baldoyle to Portmarnock Greenway (blue line). Circles indicate areas where the route is closest to the intertidal part of Baldoyle Bay.**

This report considers the potential impacts of the development of this coastal path and cycleway on wintering and migratory birds associated with Baldoyle Bay and in particular, on the qualifying interests for the designated Special Protection Area.

**2. DESIGNATED SITES**

There are two designated Natura 2000 sites in the immediate vicinity of the route. These are Baldoyle Bay SPA and Baldoyle Bay SAC. The boundaries of these sites are shown in Figure 2.



**Figure 2. Designated Natura 2000 sites at Baldoyle Bay (Source: npws.ie)**

**Qualifying interests**

The qualifying interests are the species and habitats of international importance that are the basis for the selection of Baldoyle Bay SPA and Baldoyle Bay SAC (Table 1).

**Table 1: Qualifying interests for Baldoyle Bay SPA and Baldoyle Bay SAC**

Code	Baldoyle Bay SPA (site code 004016)	Code	Baldoyle Bay SAC (site code 000199)
A046	Brent Goose <i>Branta bernicla hrota</i>	1140	Mudflats and sandflats not covered by seawater at low tide
A048	Shelduck <i>Tadorna tadorna</i>	1310	Salicornia and other annuals colonizing mud and sand
A137	Ringed Plover <i>Charadrius hiaticula</i>	1330	Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritima</i> )
A140	Golden Plover <i>Pluvialis apricaria</i>	1410	Mediterranean salt meadows ( <i>Juncetalia maritimi</i> )
A141	Grey Plover <i>Pluvialis squatarola</i>		
A157	Bar-tailed Godwit <i>Limosa lapponica</i>		
A999	Wetlands		

### **Conservation objectives**

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives. Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network. The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

The conservation objectives for Baldoyle Bay SPA and Baldoyle Bay SAC aim to define favourable conservation condition for the qualifying interests.

Favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and
- the habitat is likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

### **3. METHODOLOGY**

A total of 12 visits were made to the proposed route between December 2016 and mid-April 2017. On each occasion, the route was walked within 2 hours of low tide and within 2 hours of high tide and all birds within 200m, on either side of the proposed route, were recorded and mapped on large scale maps. A digital rangefinder was used to estimate distances between the birds and the route.

Any disturbance resulting from presence of people (including the observer) or dogs was recorded with the type of response by all waterbird species (fly, walk, swim or other interruption to foraging). There are sections of the route where the intertidal part of the estuary is not visible from the proposed route due either to differential ground levels or to intervening buildings or trees. In practice, there are only three sites where the route is close enough to the shoreline to have any potential for disturbance to waterbirds (see Figure 1).

This study was integrated with a wider wintering bird survey of the lands around Baldoyle Bay and of the estuary itself (Figure 3) which provided a useful context for this study.



**Figure 3. Main foraging and high tide roost areas for waterbirds**

disturbed from nearby Kingfisher Green.

**Key locations**

There are three locations where the proposed route comes close to the intertidal part of the estuary (Figure 1). These are described below.

**Portmarnock Roundabout**

The roundabout at the western end of Portmarnock Village marks the northern end of the proposed route. This is adjacent to the bridge crossing over the Sluice River at the head of the estuary. There is an existing footpath on either side of the road where it crosses the bridge. The area of saltmarsh and mudflats immediately south-east of the bridge is a regularly used high tide roost site (Figures 4 and 5). At low tide is also used by a small number of birds and it serves as a refuge for Mallard and Brent Geese when they are



**Figure 4. Estuarine habitat below Portmarnock Bridge (Photo: Richard Nairn)**



**Figure 5. Saltmarsh habitat between Portmarnock Bridge and roundabout (Photo: Richard Nairn)**

*Richard Nairn*

**Mayne River Bridge**

The road bridge which spans the mouth of the Mayne River has a footpath on the estuary (eastern) side of the road carriageway. This is separated from the tidal area by a low wall. Below the wall a channel meanders across the mudflats and there are banks of cordgrass *Spartina anglica* on both sides (Figure 6). On the inland (western) side of the road the river is channelled between small marginal reedbeds and an artificial southern bank formed of rock gabions (Figure 7).



**Figure 6. Mudflats to the east of Mayne River bridge (Photo: Richard Nairn)**



**Figure 7. Mayne River to the west of the bridge (Photo: Richard Nairn)**

**Red Arches Roundabout**

The eastern end of Red Arches Road is connected to the Coast Road at a roundabout which is immediately adjacent to Baldoyle Bay. This roundabout marks the southern limit of the proposed route. The roundabout has footpaths on all sides and the eastern path is separated from the estuary by a wire fence. At this point there is a high-tide roost that is regularly used by flocks of waterbirds including geese, ducks, waders and gulls (Figure 8).



**Figure 8: High tide roost of waders close to the Red Arches roundabout (Photo: Richard Nairn)**

#### 4. BIRD POPULATIONS

##### Waterbirds in the intertidal area

The peak numbers of waterbirds with Baldoyle Bay SPA at low tide over the winter 2016/17 are given in Table 2. This provides the context for assessment of the impacts of the proposed route. At low tide the birds are dispersed across the intertidal area and at high tide they generally gather in flocks near the highwater mark. Several species (notably Brent Goose, Mallard, Oystercatcher, Black-tailed Godwit, Black-headed Gull and Common Gull) also feed inland close to the estuary at various stages of the tide.

**Table 2. Average and peak waterbird populations at low tide on Baldoyle Bay recorded over 10 surveys between November 2016 and April 2017 Peak populations reaching the threshold of national importance are shown in bold, those of international importance are underlined.**

Species	Scientific name	Average	Peak
<b>Brent Goose</b>	<b><u>Branta bernicla</u></b>	<b><u>341</u></b>	<b><u>784</u></b>
<b>Shelduck</b>	<b>Tadorna tadorna</b>	<b>100</b>	<b>146</b>
Wigeon	<i>Anas penelope</i>	111	347
Teal	<i>Anas crecca</i>	114	220
Mallard	<i>Anas platyrhynchos</i>	63	152
Red-breasted Merganser	<i>Mergus serrator</i>	3	6
Cormorant	<i>Phalacrocorax carbo</i>	1	2
Shag	<i>Phalacrocorax aristotelis</i>	1	3
Little Egret	<i>Egretta garzetta</i>	3	8
Grey Heron	<i>Ardea cinerea</i>	1	8
Oystercatcher	<i>Haematopus ostralegus</i>	53	91
Ringed Plover	<i>Charadrius hiaticula</i>	3	17
Grey Plover	<i>Pluvialis apricaria</i>	20	113
Lapwing	<i>Vanellus vanellus</i>	129	287
Knot	<i>Calidris canutus</i>	8	59
Dunlin	<i>Calidris alpina</i>	151	640
<b>Black-tailed Godwit</b>	<b><u>Limosa limosa</u></b>	<b><u>124</u></b>	<b><u>404</u></b>
Bar-tailed Godwit	<i>Limosa lapponica</i>	23	72
Curlew	<i>Numenius arquata</i>	40	63
Redshank	<i>Tringa totanus</i>	100	154
Greenshank	<i>Tringa nebularia</i>	3	5
Turnstone	<i>Arenaria interpres</i>	2	6
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	38	110

**Baldoye to Portmarnock Coastal Path and Cycleway: Bird Impact Study**

Species	Scientific name	Average	Peak
Common Gull	<i>Larus canus</i>	5	15
Lesser Black-backed Gull	<i>Larus fuscus</i>	1	5
Herring Gull	<i>Larus argentatus</i>	74	140
Great Black-backed Gull	<i>Larus marinus</i>	5	10
Total		1515	2654

Only a small proportion of the overall bird populations on the estuary feed or roost within 200m of the proposed route. Table 3 gives the peak numbers of each species recorded within this zone at the three key sites where the route approaches the shoreline (Figure 1). Full counts are given in the Appendix. The intertidal area near Portmarnock Roundabout is regularly used by flocks of Mallard and Lapwing with occasional large numbers of Brent Goose and Redshank. The estuary to the east of Mayne River Bridge is used at all states of tide by flocks of Shelduck, Mallard, Wigeon and Teal. At times Lapwing and Dunlin are also present here in significant numbers. The high-tide roost near the Red Arches roundabout is important for Brent Goose, Lapwing, Dunlin and Black-tailed Godwit. Shelduck roost on the water within 200m of this location.

**Table 3. Peak waterbird occurrence within 200m of three key sites along the proposed route over 10 dates winter 2016/2017 (full counts in Appendix). Qualifying interests for Balydoyle Bay SPA are given in bold**

Species	Site 1: Portmarnock Roundabout	Site 2: Mayne River Bridge	Site 3: Red Arches Roundabout
<b>Brent Goose</b>	<b>96</b>	<b>8</b>	<b>75</b>
<b>Shelduck</b>	<b>0</b>	<b>23</b>	<b>17</b>
Mallard	134	17	0
Shoveler	0	1	0
Wigeon	16	62	0
Teal	0	94	5
Red-breasted Merganser	0	0	1
Cormorant	0	1	0
Shag	0	0	1
Little Egret	1	1	1
Grey Heron	1	1	0
Oystercatcher	0	1	8
<b>Grey Plover</b>	<b>0</b>	<b>1</b>	<b>1</b>
Lapwing	43	100	225
Knot	0	5	0
Turnstone	0	0	2
Dunlin	25	210	230
Redshank	160	14	10
Greenshank	1	0	1
Black-tailed Godwit	6	12	127
<b>Bar-tailed Godwit</b>	<b>0</b>	<b>2</b>	<b>7</b>
Curlew	4	3	3
Black-headed Gull	27	1	10

Species	Site 1: Portmarnock Roundabout	Site 2: Mayne River Bridge	Site 3: Red Arches Roundabout
Common Gull	1	0	3
Herring Gull	0	0	4
Great Black-backed Gull	0	0	1

**Other birds inland of the proposed route**

Very few birds occur on the lands immediately to the west of the proposed route. Within a 200m zone of the route the habitats include rough grassland, arable crops, scrub and disturbed ground. Such areas are not attractive to waterbirds and none were recorded roosting or foraging in these areas. The areas of open grassland, especially towards the northern end of the route, held some flocks of passerine birds in winter and several of these are of conservation concern. These are summarised in Table 4. Of special interest are the Tree Sparrow and Skylark which are localised species in the east of Ireland.



**Figure 9. Tree Sparrow (Photo: John Fox)**



**Figure 10. Skylark (Photo: John Fox)**

**Table 4. Non-waterbird species (with greater than 10 individuals) recorded on the lands to the west of the proposed route in winter 2016/2017**

Species	Scientific name	Conservation concern in Ireland <sup>1</sup>	Average (10 surveys)	Peak (10 surveys)
Skylark	<i>Alauda arvensis</i>	Amber list (breeding)	37	81
Starling	<i>Sturnus vulgaris</i>	Amber list (breeding)	43	200
Jackdaw	<i>Corvus monedula</i>	Green list (breeding)	8	40
Wood Pigeon	<i>Columba palumbus</i>	Green list (breeding)	49	310
Chaffinch	<i>Fringilla coelebs</i>	Green list (breeding)	2	15
Tree Sparrow	<i>Passer montanus</i>	Amber list (breeding)	10	40
Linnet	<i>Carduelis cannabina</i>	Amber list (breeding)	25	79
Meadow Pipit	<i>Anthus pratensis</i>	Red list (breeding)	6	27
Rook	<i>Corvus frugilegus</i>	Green list (breeding)	1	10
Reed Bunting	<i>Emberiza citrinella</i>	Green list (breeding)	4	14
Dunnoek	<i>Prunella modularis</i>	Green list (breeding)	2	20

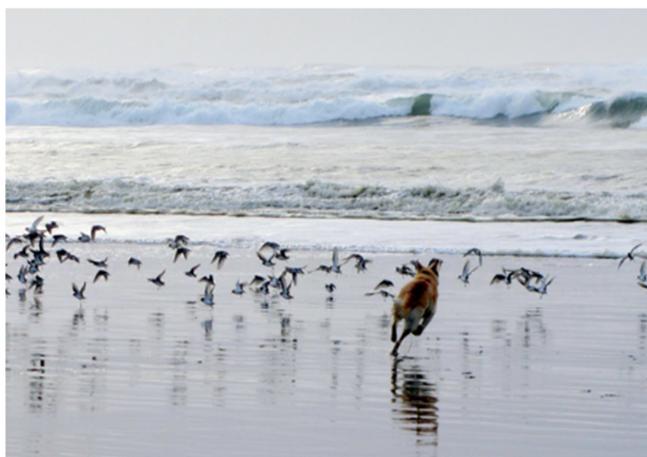
1. Birds of Conservation Concern in Ireland (Colhoun and Cummins 2013)

## 5. POTENTIAL FOR FUTURE DISTURBANCE DURING USE OF COASTAL PATH

### Vulnerability of waterbirds to human disturbance from coastal pathways

People walking or cycling on paths above the high tide mark can have significantly different effects on waterbirds using adjacent tidal areas when compared with the effects of people entering the beach. People on coastal paths are normally moving parallel to the tideline and hence are approaching the birds obliquely. People walking on the intertidal areas are frequently more threatening as they walk directly towards the birds (Blumstein 2003).

A study of disturbance of waterbirds in South Dublin Bay found that birds on the beaches (and coastal grassland) were largely habituated to people and their dogs moving predictably along paths and these activities caused very little disturbance (Phalan and Nairn 2007). Most of the 138 disturbance events recorded in 28 hours of observation were caused by dogs and people leaving the paths to go onto the beach or fields used by the birds. Dogs were implicated in 69% of all disturbance events observed and in 76% of events causing ten or more birds to take flight.



**Figure 11. Uncontrolled dogs cause direct disturbance to coastal birds (photo: Queensland Outdoor Recreation Federation)**

A new coastal cycleway along the edge of the Exe Estuary in southern England was established in late 2007. Monitoring of responses by birds was undertaken here immediately before and after the opening of the cycleway (Goss-Custard 2008). Despite very large aggregate numbers of birds of many species being exposed to potential disturbance by people on the cycleway, significant numbers of only one species, Redshank, were disturbed immediately after the opening of the cycleway and then only when the birds were within about 20m of the sea wall at the very beginning and the very end of the tidal exposure period. For most of the tidal exposure period, no birds were disturbed at all. A few Turnstone and Brent Geese were also disturbed when they were very close to the sea wall. Most of the Redshank that were disturbed at Exmouth Rise were responding to the presence of birdwatchers and, to a lesser extent, walkers. They did not react to the faster-moving cyclists and runners. However, the birds had largely habituated to the presence of all users of the pathway within 10 days of their first exposure to them and had completely habituated within 20 days.

### Habituation

A number of studies have shown that birds can habituate to (or become tolerant of) the presence of human disturbance close to their habitats without causing significant displacement (Cooke 1980, Burger & Gochfield 1983, 1991, Devereux *et al.* 2008, Ikuta & Blumstein 2003, Lord *et al.* 2001, Madsen & Boertmann 2008, Gutzwiller *et al.* 1983). Under some circumstances, the impact of disturbance may be reduced over time as individual birds become increasingly habituated to the presence of humans, especially when the activities concerned are not perceived as a threat. Most birds using Baldoyle Bay are already habituated to the nearby presence of walkers, cyclists and traffic and this is especially the case on the western side of the estuary where there are existing coastal pathways and roads.

This response threshold probably varies between species with some habituating more rapidly than others. For example, Brent Geese have learnt to forage during winter in close proximity to human activity in urban areas of Dublin (Benson 2009). In public amenity areas such as Portmarnock Park, Red Arches and Seagrang Park, Brent Geese are relatively undisturbed by pedestrians at distances as low as 20m (Figure 12). However, dogs off the lead can cause them to walk or fly away from a perceived threat. Turnstone and Redshank frequently forage close to sea-walls and piers used by people and this can be observed on the Bull Wall which is heavily used by people at all times of year. Some other wader species, such as Golden Plover, Bar-tailed Godwit and Knot, are more wary and naturally remain at greater distances from human activity. They also select foraging habitats that are on the lower shore and hence more distant from disturbance on the upper shore.



**Figure 12. Habituation by Brent Geese in Seagrang Park (photo: Richard Nairn)**

Most Gulls are relatively tolerant of human presence and tend to return more quickly after a disturbance event.

### **Sub-dispersive effects of disturbance on birds**

Human disturbance may not always result in obvious responses from the birds (such as flight) and effects could include the possibility that human disturbance may cause the birds to be more vigilant and thereby affect their foraging rate and efficiency. Such effects on waders in response to human disturbance in intertidal habitats has been demonstrated by Coleman *et al.* (2003) who found that the quantity of food consumed by Oystercatchers was relatively sensitive to the distance at which birds detect humans, the frequency of disturbance by humans and the interaction of these factors, but less sensitive to other characteristics. A study on a rocky shoreline in a public park on Belfast



**Figure 13. People walking on sandflats at South Dublin Bay with flock of Oystercatcher (Photo: Richard Nairn)**

Lough found that some birds arrived later and departed earlier from the feeding areas near to public paths. As the levels of human activity increased the birds were more vigilant even though they did not decrease their rates of food searching. When they were approached at short range, Curlew and Redshank typically stopped feeding and flew away while Oystercatcher typically walked away from the source of disturbance. The flight initiation distances for these three species were low (averaging between 29m and 38m) when compared with those recorded in

mud or sand flat areas (Fitzpatrick & Bouchez 1998).

**6. DISTURBANCE EVENTS**

The entire route of the coastal path was walked by one observer on 12 separate dates in winter 2016/17. Only two disturbance events involving waterbirds at high tide were recorded in this study. In the first case, at Mayne River Bridge, waterbirds such as Mallard and Teal, that were within 30m of the high water mark, simply responded to the observer by walking or swimming away to a greater distance and continuing with their normal activities. Waders such as Redshank flew off. In the second case, at Red Arches Roundabout, the waders flew off while the Brent Geese reacted by swimming away. In both cases the birds returned to their roost sites within several minutes. These disturbance events were caused by people walking along the estuary side of the coast road and not along the proposed route. There was no response by the birds to vehicles or cyclists on the Coast Road beside the estuary. The presence of the observer on the proposed coastal path route produced no observed response from the birds. The response to human disturbance generally varies between waterbird species (Davidson & Rothwell 1993) and this level of sensitivity, for the species occurring in Baldoyle Bay, is summarised in Table 5.

**Table 5. Relative sensitivity of waterbird species to human disturbance in Baldoyle Bay.**

<b>Highly sensitive (fly when person within 30m)</b>	<b>Moderately sensitive (walk or swim to a safe distance)</b>	<b>Relatively tolerant (continue normal activity)</b>
Lapwing	Brent Goose	Mallard
Redshank	Shelduck	
Dunlin	Wigeon	
Black-tailed Godwit	Teal	
Bar-tailed Godwit	Oystercatcher	
Curlew	Turnstone	
Grey Heron	Little Egret	

The majority of the route is sufficiently far from the tidal area and is separated from it by a busy road so that it will not cause significant disturbance to non-breeding waterbirds.

Passerine species recorded to the west of the proposed route during winter were all relatively tolerant of disturbance. If they were present within 20m of the route flocks would fly a short distance and continue to forage. Passerines are relatively tolerant of human disturbance in the non-breeding season (Cooke 1980). The route is unlikely to hold any sensitive breeding species (such as birds of prey) due to the absence of suitable nesting habitats.

**Limitations to this study**

There are limitations to any study that seeks to investigate the impacts of a human activity on a group of wild birds. Firstly, a range of potential impacts interact to affect bird numbers, distribution and behaviour. These include human disturbance (e.g. Davison and Rothwell 1993, Phalan and Nairn 2007), food abundance (Goss-Custard *et al.* 1977), interference between individuals (Ens and Goss-Custard 1984, Folmer *et al.* 2010), predation pressure (Cresswell and Whitfield 1994; Quinn 1997), loss of habitat in migration stop-over sites and long-term climate change (Donnelly *et al.* 2012). Such pressures on the behaviour of birds and, consequently on their survival, may have impacts that far outweigh those of temporary human disturbance, in a non-breeding habitat. Finally, the process of habituation is poorly understood. This study was limited to the non-breeding season. It was not possible to exclude the confounding effects of other pressures which may also cause disturbance to the birds present.

## **7. CONCLUSIONS AND RECOMMENDATIONS**

It is concluded that the proposed route is very suitable for a coastal path and cycleway with expansive views of the estuarine habitats and coastal landscapes. The majority of the route is sufficiently far from the tidal area and is separated from it by a busy road so that it will not cause significant disturbance to non-breeding waterbirds.

The most common type of disturbance to coastal waterbirds is caused by people (and especially uncontrolled dogs) walking on the shoreline. This can be a particular problem at high tide roosts where the birds are gathered in closely-packed flocks for several hours each day. There are small high tide roosts at three locations along this route but these are separated from the route by a busy public road and so are not vulnerable to disturbance by cyclists, walkers or dogs on the lead.

1. It is recommended that signage is erected at the three locations where the route is closest to the shoreline of Baldoyle Bay. The signs should provide information on the birds of the area and explain that dogs should be kept on the lead while on the pathway (Figures 14 and 15).
2. No screening is required on any part of the proposed route as there is no risk of significant disturbance to waterbirds either on the estuary or on the lands to the west of the route. Most of the western side of the route is already fenced so this should prevent uncontrolled dogs causing disturbance should certain areas to the west of the route be used in future by foraging or roosting waterbirds.
3. The proposed route will not cause any significant impact on the Baldoyle Bay SPA or the Baldoyle Bay SAC. The path and cycleway will not interfere with the distribution or density of the species or habitats that are qualifying interests of these Natura 2000 sites. There is no likelihood that there will be any adverse effects on the favourable conservation condition of these sites.



**Figure 14. Information signage at Baldoyle (photo: Richard Nairn)**



**Figure 15. Suggested sign for coastal path**

## **8. ACKNOWLEDGEMENTS**

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**10. APPENDIX: COUNTS OF WATERBIRDS AT THE THREE KEY AREAS OF BALDOYLE BAY ALONG THE PROPOSED COASTAL PATH**

**Site 1. Portmarnock Bridge**

<i>Date</i>	<i>05/12/2016</i>	<i>20/12/2016</i>	<i>05/01/2017</i>	<i>05/01/2017</i>	<i>25/01/2017</i>	<i>25/01/2017</i>	<i>10/02/2017</i>	<i>10/02/2017</i>	<i>16/02/2017</i>	<i>06/03/2017</i>	<i>20/03/2017</i>	<i>04/04/2017</i>	<i>Peak</i>
Brent Goose	1					5	2			96			96
Mallard	53	47				115	16		1	117	134		134
Wigeon							16						16
Little Egret		1					1						1
Grey Heron							1						1
Lapwing	1	4					23		43				43
Dunlin	4								25				25
Redshank	9	5	1				1		160				160
Greenshank							1						1
Black-tailed Godwit		1								6			6
Curlew	1	4							4		1		4
Black-headed Gull			1			10			27				27
Common Gull									1				1

**Baldoyle to Portmarnock Coastal Path and Cycleway: Bird Impact Study**

**Site 2. Mayne River Bridge**

<i>Date</i>	<i>05/12/2016</i>	<i>20/12/2016</i>	<i>05/01/2017</i>	<i>05/01/2017</i>	<i>25/01/2017</i>	<i>25/01/2017</i>	<i>10/02/2017</i>	<i>10/02/2017</i>	<i>16/02/2017</i>	<i>06/03/2017</i>	<i>20/03/2017</i>	<i>04/04/2017</i>	<i>Peak</i>
Brent Goose	8												8
Shelduck	7		1			1	23	2		11	3		23
Mallard	2		1					17		6	17		17
Wigeon	47	62	28			9	30	14		12			62
Teal	44	94	31			24	10	76		51	40		94
Cormorant	1												1
Little Egret	1	1											1
Grey Heron		1											1
Oystercatcher	1												1
Grey Plover		1								1			1
Lapwing	33	100	6			5		60		18			100
Knot										5			5
Dunlin	32							210		4			210
Redshank	2	14	6			1		5		11	4		14
Black-tailed Godwit										12	8		12
Bar-tailed Godwit	2	2				1							2
Curlew	1	1	2			1		2		1	3		3
Black-headed Gull	1												1
Shoveler			1										1

**Baldoyle to Portmarnock Coastal Path and Cycleway: Bird Impact Study**

**Site 3. Red Arches Roundabout**

<b>Date</b>	<b>05/12/2016</b>	<b>20/12/2016</b>	<b>05/01/2017</b>	<b>05/01/2017</b>	<b>25/01/2017</b>	<b>25/01/2017</b>	<b>10/02/2017</b>	<b>10/02/2017</b>	<b>16/02/2017</b>	<b>06/03/2017</b>	<b>20/03/2017</b>	<b>04/04/2017</b>	<b>Peak</b>
Brent Goose	36	6	32			2	10			75			75
Shelduck	17	13				6				4			17
Teal	5									3			5
Red-breasted Merganser						1							1
Little Egret	1										1		1
Oystercatcher	8	5				4						1	8
Grey Plover	1												1
Lapwing			95	150	225		165						225
Turnstone			2				2					1	2
Dunlin			230			58							230
Redshank	5	3				10				4	5	7	10
Greenshank	1					1					1		1
Black-tailed Godwit	2	6	25			32					36	127	127
Bar-tailed Godwit	7	3				3						1	7
Curlew	3	2				2				1		1	3
Black-headed Gull	3	1				10							10
Common Gull	3										1		3
Herring Gull	1									4	1	2	4
Great Black-backed Gull	1												1
Shag		1											1

## **Appendix D. Advisory note on the Impact on Baldoyle Bay SAC of Walking and Cycling Path at Racecourse Park (JBA, 2017)**



## **Advisory note on the Impact on Baldoye Bay SAC of Walking and Cycling Path at Racecourse Park**

**Final Report**

**Feb 2017**

**Fingal County Council  
County Hall,  
Main Street,  
Swords,  
Co. Dublin**



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## Revision History

Revision Ref / Date Issued	Amendments	Issued to
24/02/17 Final		Hans Visser (Biodiversity Officer)

## Contract

This report describes work commissioned by Biodiversity Officer - Hans Visser, on behalf of Fingal County Council. Anne Murray of JBA Consulting carried out this work.

Prepared by ..... Anne Murray BSc Hons MCIEEM  
 Senior Ecologist

Reviewed by ..... Tom Sampson BSc MSc FRGS CWEM MCIWEM  
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## Purpose

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# 1 Introduction

JBA Consulting Senior Ecologist Anne Murray, was commissioned by Fingal County Council to provide an Advisory Note for the Coastal Walking and Cycling Route at Baldoyle Estuary. The aim of this project is to determine if, the loss of the land due to the Walking and Cycling Route at Baldoyle Estuary, can be considered an adverse effect on the integrity of Baldoyle Bay SAC in view of its conservation objectives. No other elements of the pathway development project, construction stage or in-combination effects are to be considered at this stage. The Advisory Note has examined the potential impacts of the coastal route specifically the potential loss of habitat and the implications under the Habitats Directive and EU Case Law of this habitat loss.

## 1.1 Constraints

This Advisory Note does not consider the Coastal Walking and Cycling Route project as a whole during site clearance, construction and operation or any of the potential in combination effects of the project with other projects and plans. This Advisory Note is solely in relation to the loss of grassland within the SAC in isolation to other potential impacts of the Coastal Walking and Cycling Route.

### 1.1.1 Scope

The Advisory Note has been prepared with the following elements covered in the report:

1. General compilation of information on the qualifying interests and conservation objectives of the Baldoyle Bay SAC
2. General Description of the project (maps to be provided by FCC)
3. Description of the habitat affected (based on flora report prepared this year and provided)
4. To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could *cause delays in progress towards achieving the conservation objectives of the site?*
5. To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could *interrupt progress towards achieving the conservation objectives of the site?*
6. To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could *disrupt those factors that help to maintain the favourable conditions of the site?*
7. To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could *interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?*
8. To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could *cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?*
9. To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could *change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?*
10. To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could *interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?*
11. To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could *reduce the area of key habitats?*
12. To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could *reduce the population of key species?*
13. To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could *reduce the flora diversity of the site?*
14. To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could *result in habitat fragmentation?*
15. To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could *result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?*
16. To determine if the Galway Bypass court case is applicable to the situation at the Racecourse park (e.g. are the circumstances identical or not)

17. To determine if there have been any other relevant EU Habitat Directive court cases that would affect this project (e.g. where non-qualifying interest habitat, non-Annex I priority habitat would be lost as a result of a project)
18. Would the impact of the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC *be deemed to be significant, potentially significant, or uncertain at the AA screening stage?*
19. To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC *would trigger an EIS in EIA screening*
20. Concluding statement if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC *could be considered significant and affect the integrity of the Baldoyle Bay SAC*

## 2 Methodology

The following tasks have been undertaken for the Advisory Note;

- Examination of the baseline information on Baldoyle Bay SAC;
- Desktop Study;
- Ecological Site walkover to understand the site and relevant ecological features;
- Examination of the potential for the project to affect either directly or indirectly the Conservation Objectives of Baldoyle Bay SAC and the Site Integrity (to address Q4-Q15) with both ecological and hydrological input;
- Examination of the relevance of EU Case law in particular, the Sweetman Case to this project (Q16);
- Examination of EU Case law regarding habitat loss within a Natura 2000 site including habitat loss of non-qualifying features or non-priority Annex I habitat (Q 16 & Q17);
- Determination of the potential AA Screening stage outcomes, in terms of likely significance, potentially significant, or uncertain at the AA screening stage. This will be addressed using best guidance relating to the Habitats Directive and also relevant EU Case law (Q18).
- EIS in EIA screening examined by our JBA Environment Director with reference to the amended EIA Directive 2014 (to be implemented in Member States 2017) (Q19).

## 3 Project Description

### 3.1 Background

Fingal County Council prepared Local Area Plans for the Stapolin lands in Baldoyle and for Portmarnock South. The LAPs include specific objectives for the provision for a cycle and pedestrian path along the eastern boundary of the park and west of the Coast road (in blue on map below) between Portmarnock and Baldoyle. The principle behind this pathway is to guide the new and existing residents in the LAP lands away from the more sensitive estuarine lands, thereby avoiding potential impacts on the habitats and species of Baldoyle Bay.

No detailed design work has been undertaken yet, but based on best practice in the provision of walking and cycling routes, it is envisaged that the width of the route will range between a minimum of a 3m shared walking and cycling route path to a maximum of a 3m wide cycle lane, a 2.4m wide grass verge and a 2m wide pedestrian path. The route crosses the Baldoyle Bay SAC over a length of approx 415m to the south of the Moyne Road. Accordingly, this proposal will lead to a reduction in area of the designated site of 1245m<sup>2</sup> – 2075m<sup>2</sup>. The habitat type on which the pathway would be located is dry neutral-calcareous grassland which was surveyed in 2016 (Fitzgerald 2016).

Fingal County Council wishes to enhance the nature conservation value of these fields in particular for breeding birds and protected flora species associated with freshwater and brackish water conditions. The Council is keen to try to restore the *Puccinellia fasciculata* (Borrer's Saltmarsh-grass) and *Hordeum secalinum* (Meadow Barley) populations that occurred here in the past. Grazing with Highland cattle was introduced in the southern field in 2013, while grazing in the northern field started in 2015. New ponds, scrapes and drains were dug in the wet grassland to encourage infiltration of brackish water into the grassland and to provide standing open water.



Fig 1-1 Baldoyle Racecourse Route Options in Baldoyle Bay SAC (FCC, 2016)

## 4 Desktop Study

This report references the following documents:

- Birds Directive (Council Directive 79/409/EEC on the conservation of wild birds);
- Habitats Directive (Council Directive 92/43/EEC);
- The desktop review makes reference to the following documents:
- DoEHLG (2009 rev 2010) Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government;
- European Communities (EC) (2000) Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission;
- EC (2002) Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission;
- EC (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission. European Commission;
- EC (2007) Interpretation Manual of European Union Habitats. Version EUR 27. European Commission;

- National Parks and Wildlife Service (NPWS) (2008). The Status of EU Protected Habitats and Species in Ireland. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland;
- NPWS (2014). The Status of EU Protected Habitats and Species in Ireland. Habitats Assessment Volume 2. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland;
- NPWS (2014). The Status of EU Protected Habitats and Species in Ireland. Species Assessment Volume 3. Habitats Assessment Volume 2. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland;
- NPWS (2012) Conservation Objectives: Baldoyle Bay SAC 000199. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht;
- NPWS (1999, 2015 Updated) Natura 2000 Standard Data Form National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht;
- NPWS (2013 Revised) Baldoyle Bay SAC (000199) Site Synopsis;
- NPWS, Unpublished (2012) Baldoyle Bay SAC (000199) conservation objectives supporting document document - coastal habitats);
- NPWS Unpublished (2012) Baldoyle Bay SAC (000199) Conservation objectives supporting document - marine habitats [Version 1];
- NPWS Unpublished (2012) Intertidal Benthic Survey Baldoyle Bay SAC and Baldoyle Bay SPA;
- Ryle T., Murray, A., Connolly, K. Swann, M. (2009) Coastal Monitoring Project 2004-2006;
- McCorry & Ryle (2009 Rev 2010) Saltmarsh Monitoring Project 2007-2008. Volume 2;
- McCorry, M. (2007) Saltmarsh Monitoring Project 2006;
- NPWS Unpublished (2013) Baldoyle Bay SPA 004016 Conservation objectives supporting doc;
- Fitzgerald, A. (2016) Vegetation Study of Baldoyle Racecourse Park, Co. Dublin;
- C-258/11 Peter Sweetman, Ireland, Attorney General, Minister for the Environment, Heritage and the Local Government v An Bord Pleanala (Sweetman);
- Other EU Case Law

#### 4.1 Natura 2000 Sites

The relevant Natura 2000 site to this Advisory Note is the Baldoyle Estuary SAC and its designated features are described below.

The Natura 2000 Site - Baldoyle Bay SAC (Site Code: 000199) is designated for the following habitats:

- 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 maritima*);
- 1410 Mediterranean salt meadows (*Juncetalia maritimi*).

Other important species of flora and fauna (optional) listed on the Natura 2000 site form as they are on the National Red List include:

- *Puccinellia fasciculata*
- *Hordeum secalinum*

These are also noted in the Site Synopsis as follows:

*The site includes a brackish marsh along the Mayne River. Soils here have a high organic content and are poorly drained, and some pools occur. Rushes (Juncus spp.) and salt tolerant species such as Common Scurvygrass (Cochleria officinalis) and Greater Sea-spurrey (Spergularia media) are typical of this area. Knotted Hedge-parsley (Torilis nodosa), a scarce plant in eastern Ireland, has been recorded here, along with Brackish Water-crowfoot (Ranunculus baudotti), a species of brackish pools and ditches which has declined in most places due to habitat loss. Two plant species, legally protected under the Flora (Protection) Order, 1999, occur in the Mayne marsh, Borrer's Saltmarsh-grass (Puccinellia fasciculata) and Meadow Barley (Hordeum secalinum).*

## 4.2 Baldoye Estuary SAC

### 4.2.1 Brief Description of Baldoye Estuary SAC

Attribute	Measure	Target	Notes
<b>1140 Mudflats and sandflats not covered by seawater at low tide</b>			
<i>To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Baldoye Bay SAC, which is defined by the following list of attributes and targets:</i>			
Habitat Area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes.	Habitat area was estimated as 409ha using OSi data
Community Distribution	Hectares	Conserve the following community types in a natural condition: Fine sand dominated by <i>Angulus tenuis</i> community complex; and Estuarine sandy mud with <i>Pygospio elegans</i> and <i>Tubificoides benedii</i> community complex.	Habitat structure was elucidated from intertidal surveys undertaken in 2007 (Aquafact, 2007) and 2010 (MERC and ERM, 2012). See marine habitats supporting document for further information.
<b>1310 Salicornia and other annuals colonizing mud and sand</b>			
<i>To maintain the favourable conservation condition of Salicornia and other annuals colonizing mud and sand in Baldoye Bay SAC, which is defined by the following list of attributes and targets:</i>			
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: Baldoye - 0.383ha.	Based on data from Saltmarsh Monitoring Project (SMP) (McCorry, 2007). Habitat recorded at one sub-sites surveyed and mapped, giving a total estimated area of 0.38ha. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.	Based on data from McCorry (2007). This habitat was more extensive in the past. Salicornia is an annual species, so its distribution can vary significantly from year to year. See coastal habitats supporting document for further details.
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions	Based on data from McCorry (2007). Sediment supply is particularly important for this pioneer saltmarsh community, as the distribution of this habitat depends on accretion rates. At Baldoye there are some signs of erosion of the saltmarsh in the mid part and south-eastern corner of the estuary. Accretion has occurred at the lower end of Portmarnock spit. See coastal habitats backing document for further details

Attribute	Measure	Target	Notes
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry (2007). Creeks deliver sediment throughout saltmarsh system. See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	Based on data from McCorry (2007). This pioneer saltmarsh community requires regular tidal inundation. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from McCorry (2007). See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimeters	Maintain structural variation within sward	Based on data from McCorry (2007). Saltmarshes at Baldoye are not grazed by livestock and have a diverse sward structure. See coastal habitats supporting document for further details
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated	Based on data from McCorry (2007). See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover	Maintain the presence of species-poor communities with typical species listed in the Saltmarsh Monitoring Project (McCorry and Ryle, 2009)	Based on data from McCorry (2007). See coastal habitats supporting document for further details
Vegetation structure: negative indicator species- <i>Spartina anglica</i>	Hectares	No significant expansion of common cordgrass ( <i>Spartina anglica</i> ), with an annual spread of less than 1%	Based on data from McCorry (2007). <i>Spartina</i> swards occur extensively throughout the Baldoye sub-site. Additional clumps of cordgrass are present within the <i>Salicornia</i> flats, although at low cover values. See coastal habitats supporting document for further details

Attribute	Measure	Target	Notes
<b>1330 Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)</b>			
<i>To maintain the favourable conservation condition of Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) in Baldoyle Bay SAC, which is defined by the following list of attributes and targets:</i>			
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: Baldoyle - 11.98ha.	Based on data from the Saltmarsh Monitoring Project (McCorry, 2007). One sub-site supporting Atlantic salt meadow was mapped giving a total estimated area of 11.98ha. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.	Based on data from McCorry (2007). No indications of any loss in extent of ASM at Baldoyle. See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions	Based on data from McCorry (2007). There are some small areas of erosion in places and these may have been exacerbated by infilling and sea defence measures (sea wall). See coastal habitats supporting document for further details
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure to develop, subject to natural processes, including erosion and succession	Based on data from McCorry (2007). The largest area of ASM at Baldoyle has a well developed creek and pan structure. The other parts have a poorly developed structure. See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from McCorry (2007). At Baldoyle there are transitions to sanddune habitats as well as transitional mosaics within the saltmarsh habitats. See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimeters	Maintain structural variation within sward	Based on data from McCorry (2007). The saltmarshes around Baldoyle are not grazed by livestock allowing a diverse sward structure to develop. See coastal habitats supporting document for further details
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of the area outside of the creeks vegetated	See coastal habitats supporting document for further details

Attribute	Measure	Target	Notes
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with typical species listed in the Saltmarsh Monitoring Project (McCorry and Ryle, 2009)	Based on data from McCorry (2007). Species of local distinctiveness at Baldoye include the Red Data Book species, Borrer's saltmarsh-grass ( <i>Puccinellia fasciculata</i> ) and meadow barley ( <i>Hordeum secalinum</i> ). The locally rare species rock lavender ( <i>Limonium binervosum</i> ) was also recorded at Baldoye. See coastal habitats supporting document for further details
Vegetation structure: negative indicator species- <i>Spartina anglica</i>	Hectares	No significant expansion of common cordgrass ( <i>Spartina anglica</i> ), with an annual spread of less than 1%	Based on data from McCorry (2007). <i>Spartina</i> occurs extensively at Baldoye bay. See coastal habitats supporting document for further details
<b>1410 Mediterranean salt meadows (<i>Juncetalia maritimi</i>)</b>			
<i>To maintain the favourable conservation condition of Mediterranean salt meadows (<i>Juncetalia maritimi</i>) in Baldoye Bay SAC, which is defined by the following list of attributes and targets:</i>			
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: Baldoye - 2.64ha.	Based on data from the Saltmarsh Monitoring Project (McCorry, 2007). One sub-site that support Mediterranean Salt Meadow was mapped, giving a total estimated area of 2.64ha. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.	See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/ absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions	Based on data from McCorry (2007). There are some indications that the area of brackish marsh at Mayne including the MSM community has decreased. Older maps show that the brackish vegetation was more extensive in the recent past. See coastal habitats supporting document for further details
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession	Based on data from the Saltmarsh Monitoring Project (McCorry, 2007). The MSM at Baldoye has a poorly developed topography. See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	Mediterranean salt meadow is found high up in the saltmarsh but requires occasional tidal inundation. See coastal habitats supporting document for further details.

Attribute	Measure	Target	Notes
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from McCorry (2007). At Baldoyle there are transitions to sand dune habitats as well as transitional mosaics within the saltmarsh habitats. See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimeters	Maintain structural variation within the sward	Based on data from McCorry (2007). The saltmarshes around Baldoyle are not grazed by livestock allowing a diverse sward structure to develop. See coastal habitats supporting document for further details
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of the area outside of the creeks vegetated	Based on data from McCorry (2007). See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with typical species listed in the Saltmarsh Monitoring Project (McCorry and Ryle, 2009)	Based on data from McCorry (2007). Species of local distinctiveness at Baldoyle include the Red Data Book species, Borrer's saltmarsh-grass ( <i>Puccinellia fasciculata</i> ) and meadow barley ( <i>Hordeum secalinum</i> ). The locally rare species rock lavender ( <i>Limonium binervosum</i> ) was also recorded at Baldoyle. See coastal habitats supporting document for further details
Vegetation structure: negative indicator species- <i>Spartina anglica</i>	Hectares	No significant expansion of common cordgrass ( <i>Spartina anglica</i> ), with an annual spread of less than 1%	Based on data from McCorry (2007). <i>Spartina</i> occurs extensively at Baldoyle bay. See coastal habitats supporting document for further details



Fig 4.1 Baldoyle Estuary SAC (NPWS) and site location

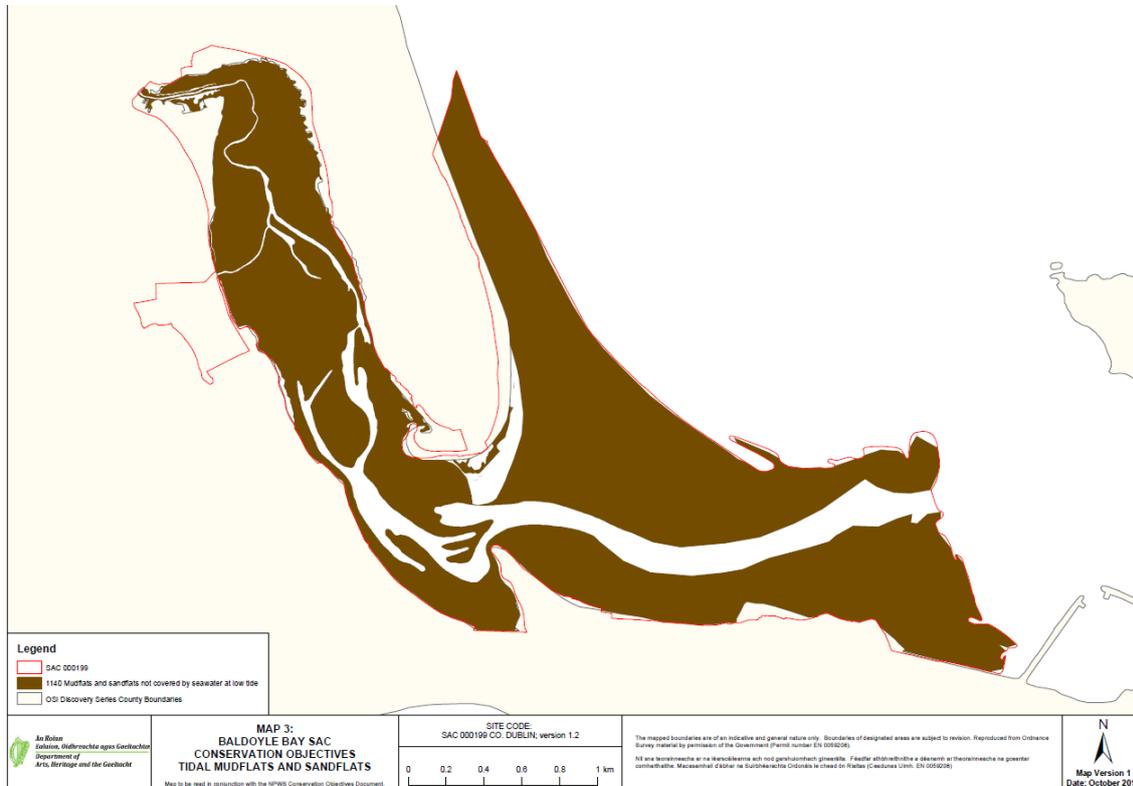


Fig 4.2 Baldoyle Estuary SAC (NPWS) and location of designated features Mudflats and Sandflats

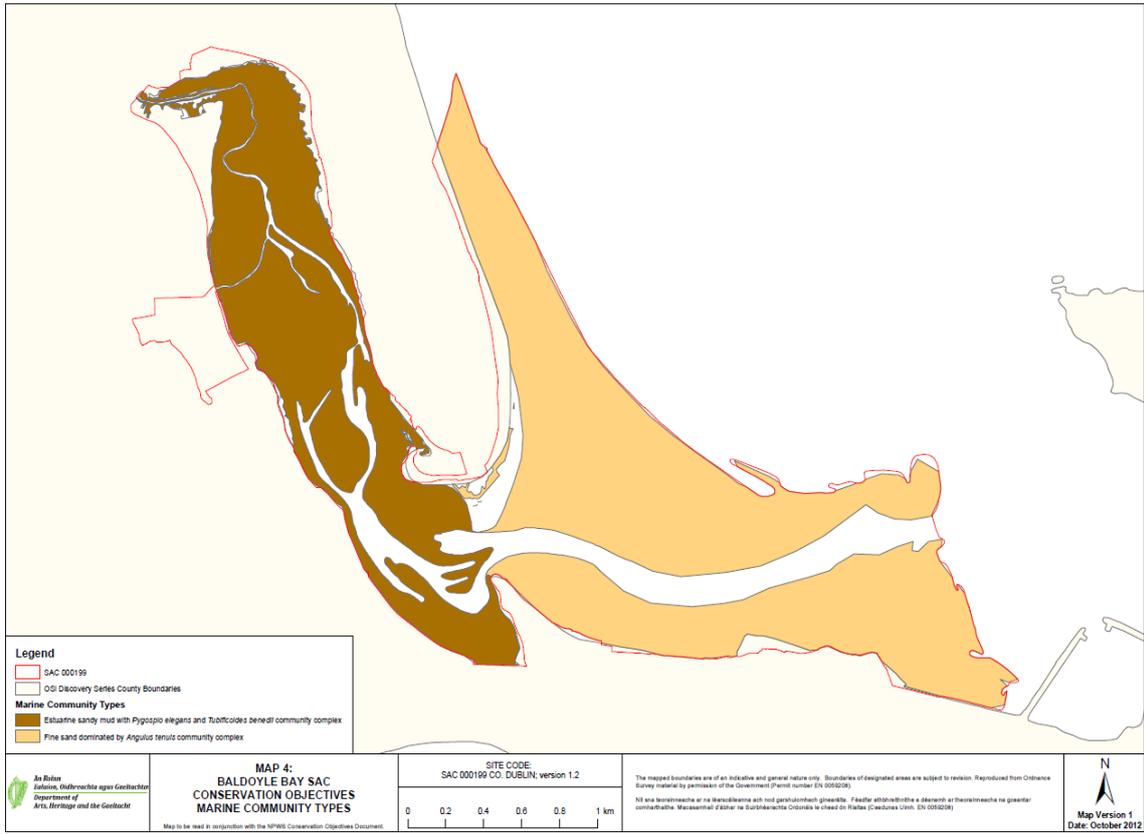


Fig 4.3 Baldoyle Estuary SAC (NPWS) and location of designated features Marine Communities

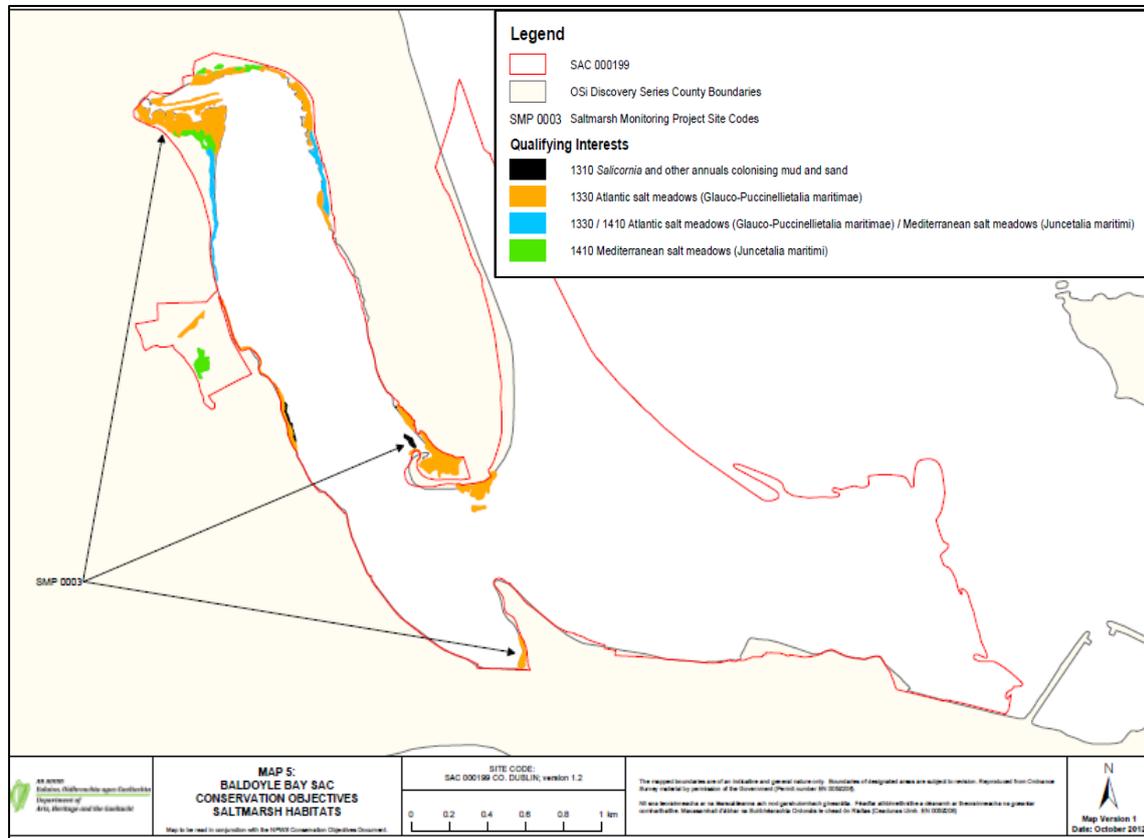


Fig 4.4 Baldoyle Estuary SAC (NPWS) and location of designated features saltmarsh habitats

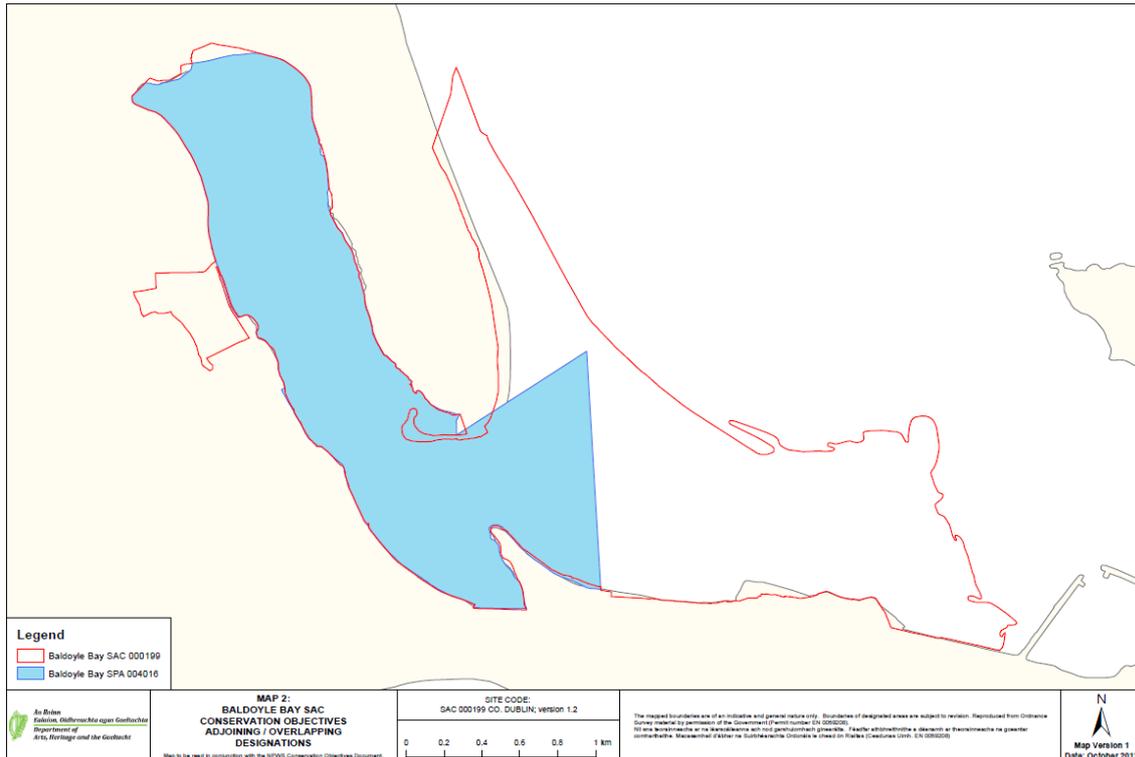


Fig 4.5 Baldoye Estuary SAC (NPWS) and location of the Baldoye Bay SPA

#### 4.2.2 Vegetation Survey

A vegetation survey was conducted in 2016 to provide a floristic baseline appraisal of part of the Baldoye Racecourse Park which has been set aside for nature conservation purposes along the Coast Road. The survey is shown in Fig 4.6.

The fields of Baldoye Racecourse Park that are within the Baldoye Bay SAC (000199) (NPWS 2012) are described as follows by Fitzgerald, 2016:

Fields 3 and 6 of Baldoye Racecourse Park are within the Baldoye Bay SAC (000199) (NPWS 2012). A number of rare species have been historically recorded here and are key reasons for the protection status it has been afforded. Furthermore, two habitat types, which are listed in Annex I of the EU Habitats Directive, have been historically found at the site. These are 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritima*), which has been historically found by the southern banks of the Mayne River in field 3, and 1410 Mediterranean salt meadows (*Juncetalia maritimi*), which has been historically found near the eastern edge of the Grange Stream in field 3 (NPWS 2012).

Field 3 comprises wet freshwater and brackish grassland vegetation and is under high grazing pressure. Cattle, horses and sheep graze this field, the latter animal often having a more negative effects on vegetation. However, as mentioned previously, grazing has only been present in this field since 2015, so the vegetational effects of the grazing have yet not become completely clear. Rabbit burrows are also evident at the eastern edge of the field and their grazing pressure also has an effect on the vegetation at the site.

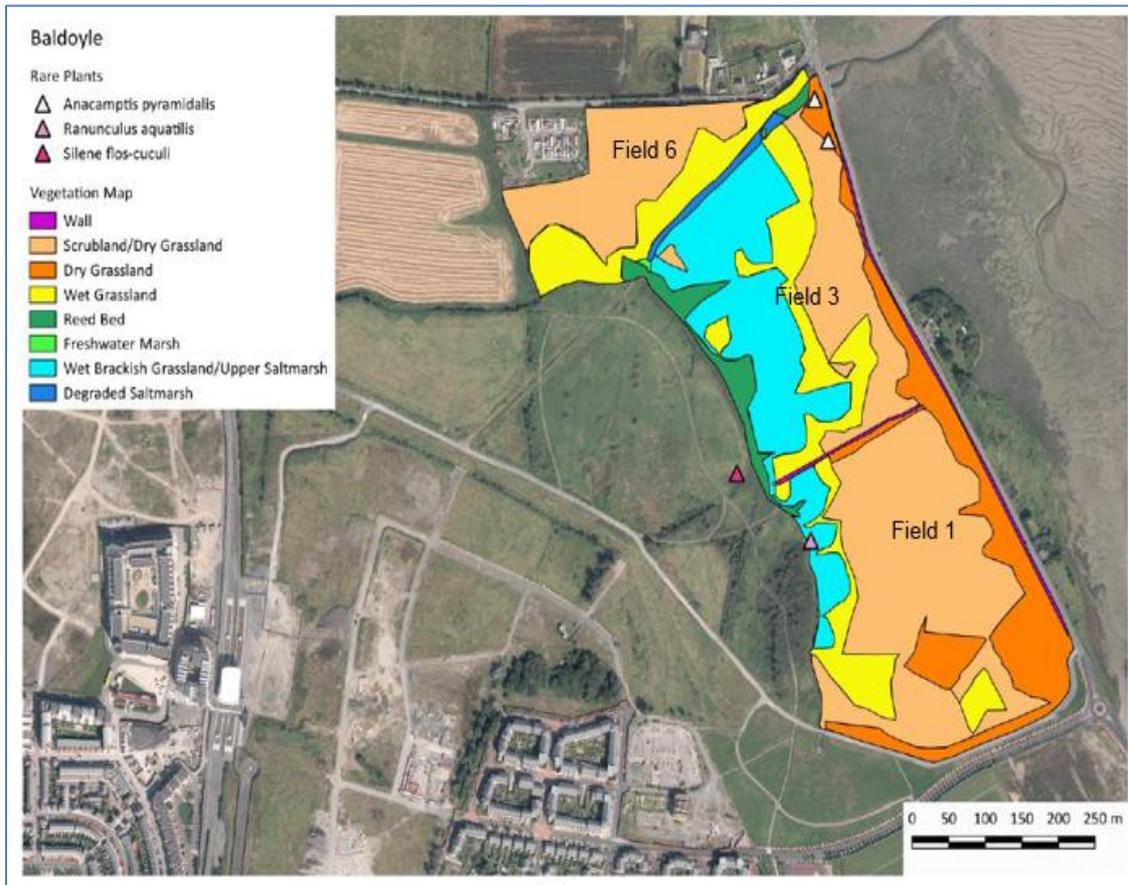


Fig 4.6 Vegetation Survey Baldoyle Racecourse fields (Fitzgerald, 2016)

New ditches/linear ponds were excavated in Field 3 in a north-south (and east-west) direction from the field to near the river in 2015, along with some smaller ponds, in order to access the lowered water table and increase water percolation in the field, which was once wetter and supported a number of legally protected/rare plant species.

Near the river and ditches/linear ponds in this field, a typical wet brackish grassland/upper saltmarsh vegetation has developed. *Bolboschoenus maritimus* is the first saline indicator species to appear in the vegetation in most areas, as the vegetation grades from wet grassland into brackish grassland and ultimately into saltmarsh vegetation by the banks of the river. The (degraded) saltmarsh vegetation on the riverbanks occurs in where the saltwater influence is strongest, the river being very near to Baldoyle Bay. Flooding of the vegetation with salt water occurs most frequently here. Submerged in the water, saltwater green algae such as *Ulva intestinalis* (Gutweed) grow, indicative of the increased salt content in the water. Tall, emergent plants such as *Bolboschoenus maritimus* and *Schoenoplectus tabernaemontani* (Grey Club-rush) occupy the very edge of the river, where the substrate first becomes colonisable. Low growing swards of *Puccinellia maritima* (Common Saltmarsh-grass) and *Agrostis stolonifera* dominate the shore of the river, along with *Cochlearia officinalis* (Common Scurvygrass), *Glaux maritima*, *Atriplex prostrata* (Spear-leaved Orache), *Aster tripolium* (Sea Aster), *Spergularia marina* (Lesser Sea-spurrey) and *Juncus bufonius* agg. The vegetation here is currently heavily grazed and thus it is kept quite low. However, smaller and rhizomatous/stoloniferous plants still thrive here, including *Agrostis stolonifera* and others mentioned above. These are often also accompanied by species such as *Juncus gerardii*, *Carex otrubae* and *Atriplex prostrata*.

The more saltmarsh-like vegetation is most prevalent by the north and south banks of the river as it flows east towards Baldoyle Bay (see above), however, this vegetation is degraded and not clearly definable in this field. Here, the elevation is higher, the area is only rarely inundated with saltwater during very high tides or heavy periods of rain and the influence of percolating freshwater is strongest.

However, ditches and wet hollows now penetrate quite far into the field, allowing wet brackish grassland vegetation to grow quite a distance from the river. This has led to the formation of a complex mix of brackish and freshwater wet grassland vegetation in the field. The wet freshwater grassland vegetation includes species such as *Epilobium hirsutum*, *Potentilla anserina*, *Lathyrus pratensis*, *Pulicaria dysenterica*, *Juncus inflexus*, *Juncus articulatus*, *Carex hirta* and *Carex disticha*. *Primula veris* (Cowslip) occurs occasionally on the drier, more free-draining ground. A small area of gorse and bramble scrub exists at the southern end of this field, with *Sambucus nigra* trees developing here also.

#### 4.2.2.1 Racecourse track area

The direct loss of this dry grassland within the area shown in Figure 4.6. is the potential impact under consideration for this Advisory Note. Potential indirect impacts as a result of the loss of this habitat on designated features of Baldoyle Bay SAC are also considered as part of this Advisory Note.



Fig 4.7 Area of grassland vegetation under study at eastern edge of Baldoyle Racecourse Park adjacent to the Coast Road. (Fitzgerald, 2017)

This area formed part of the Baldoyle Racecourse track which was in operation from the 1850's right up until 1972 as shown in Fig 4.7. The track was a turf track and was likely to be seeded with *Lolium perenne* (Perennial Ryegrass), *Festuca rubra* agg. (Red Fescue) and *Poa* spp. (Meadow-grass). which would have been maintained for wear and tear from use. After the Racecourse closed, no further management took place of the turf track. A number of the originally sown grass species still persist here today, while several other grass species now occur in the vegetation along with the originally sown species having slowly colonised the former track in recent decades. These include *Arrhenatherum elatius* (False Oat-grass), *Dactylis glomerata* (Cock's-foot), *Agrostis capillaris* (Common Bent), *Festuca pratensis* (Meadow Fescue), *Alopecurus pratensis* (Meadow Foxtail), *Anthoxanthum odoratum* (Sweet Vernal-grass) and *Anisantha sterilis* (Barren Brome). Also occurring here are *Carex flacca* (Glaucous Sedge), *Luzula campestris* (Field Woodrush), *Plantago lanceolata* (Ribwort Plantain), *Potentilla reptans* (Creeping Cinquefoil), *Vicia sativa* ssp. *segetalis* (Common Vetch), *Vicia sepium* (Bush Vetch), *Artemisia vulgaris* (Mugwort), *Heracleum sphondylium* (Common Hogweed), etc.

Two grass species of local conservation interest also occur here,. These are *Trisetum flavescens* (Yellow Oat-grass) and *Avenula pubescens* (Downy Oat-grass) (Doogue et al. 1998).

As noted in the vegetation report (Fitzgerald, 2017) this grassland vegetation does not classify as any European Union Habitats Directive Annex I habitat (as defined - Calaciura et al. 2008).



Fig 4.6 Baldoyle Racecourse track

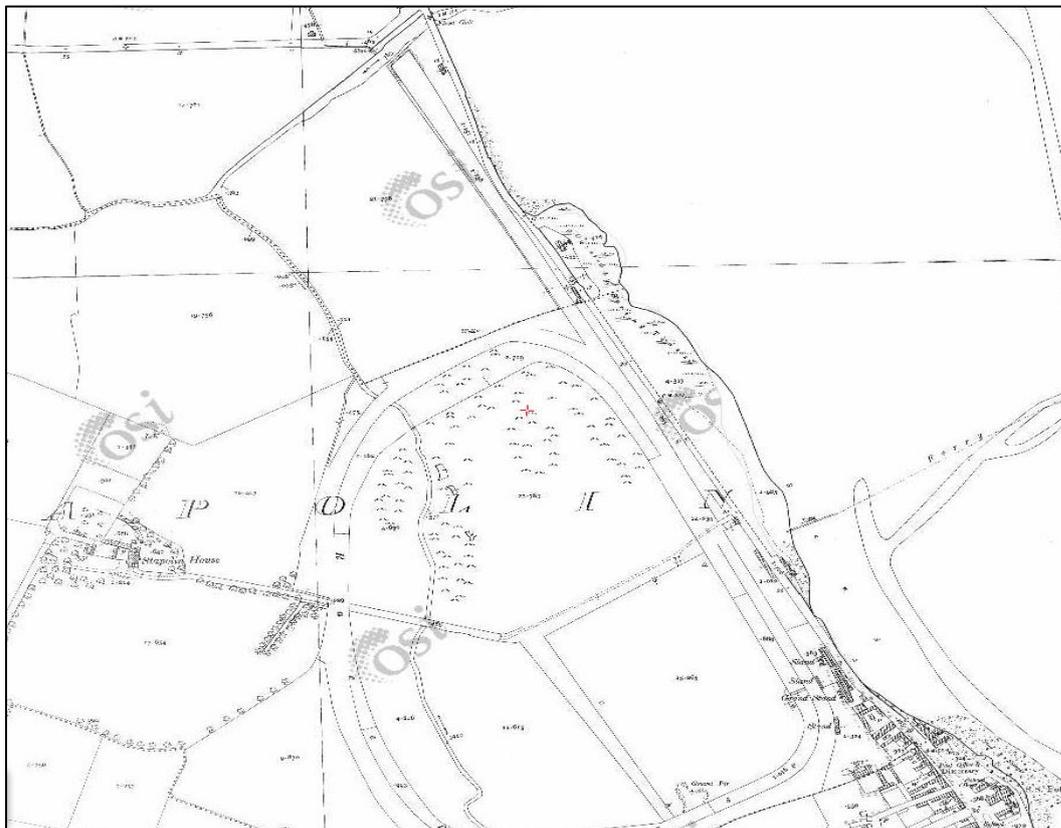


Fig 4.6 Baldoyle Racecourse track (OSI)

## 5 Assessment

To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could cause delays in progress towards achieving the conservation objectives of the site?

The Conservation Objectives for Baldoyle Bay SAC are given in Table 5.1 below. A question could arise in relation to the Attribute of Vegetation Structure and Zonation. The target for this Attribute is to maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession. Based on data from McCorry (2007, 2009) at Baldoyle there are transitions to sand dune habitats as well as transitional mosaics within the saltmarsh habitats. However, the presence of the coast road has altered the natural transitions to terrestrial habitats and the area of grassland that will be lost occurs alongside the road in a part of the site that has been altered by human activities over the past 100 years at least. The area to be lost has been part of a previous residence and also the old Baldoyle Racecourse. Therefore, the loss of this strip of grassland is not considered a significant loss and is not considered to cause delays in progress towards achieving the conservation objectives of the site, especially given that it is a linear strip that was previously part of a racecourse and did not form part of the development of saltmarsh in the field.

Table 5.1 Impacts of loss of grassland area on the conservation objectives of Baldoyle Bay SAC.

Attribute	Measure	Target	Notes	Indirect Impact as a result of loss of grassland	Direct Impact as a result of loss of grassland
<b>1140 Mudflats and sandflats not covered by seawater at low tide</b>					
<i>To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Baldoyle Bay SAC, which is defined by the following list of attributes and targets:</i>					
Habitat Area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes.	Habitat area was estimated as 409ha using OSi data	No impact - no indirect impacts to the area of this habitat due to the loss of the grassland area.	No Impact - no direct loss
Community Distribution	Hectares	Conserve the following community types in a natural condition: Fine sand dominated by <i>Angulus tenuis</i> community complex; and Estuarine sandy mud with <i>Pygospio elegans</i> and <i>Tubificoides benedii</i> community complex.	Habitat structure was elucidated from intertidal surveys undertaken in 2007 (Aquafact, 2007) and 2010 (MERC and ERM, 2012). See marine habitats supporting document for further information.	No impact - no indirect impacts to the area of this habitat or its structure and associated communities due to the loss of the grassland area.	No Impact - no direct loss

Attribute	Measure	Target	Notes	Indirect Impact as a result of loss of grassland	Direct Impact as a result of loss of grassland
<b>1310 Salicornia and other annuals colonizing mud and sand</b>					
<i>To maintain the favourable conservation condition of Salicornia and other annuals colonizing mud and sand in Baldoyle Bay SAC, which is defined by the following list of attributes and targets:</i>					
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: Baldoyle - 0.383ha.	Based on data from Saltmarsh Monitoring Project (SMP) (McCorry, 2007). Habitat recorded at one sub-sites surveyed and mapped, giving a total estimated area of 0.38ha. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details	No impact - no indirect impacts to the area of this habitat due to the loss of the grassland area.	No Impact - no direct loss
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.	Based on data from McCorry (2007). This habitat was more extensive in the past. <i>Salicornia</i> is an annual species, so its distribution can vary significantly from year to year. See coastal habitats supporting document for further details.	No Impact - no indirect impacts on the habitat distribution due to the loss of the grassland area.	No Impact - no direct loss

Attribute	Measure	Target	Notes	Indirect Impact as a result of loss of grassland	Direct Impact as a result of loss of grassland
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions	Based on data from McCorry (2007). Sediment supply is particularly important for this pioneer saltmarsh community, as the distribution of this habitat depends on accretion rates. At Baldoyle there are some signs of erosion of the saltmarsh in the mid part and south-eastern corner of the estuary. Accretion has occurred at the lower end of Portmarnock spit. See coastal habitats backing document for further details	No indirect impact to natural circulation and organic matter or physical obstruction - due to loss of grassland area. The grassland area is currently not part of the function of sediment supply. It has been a fixed feature historically.	No Impact - no direct impact on natural circulation and organic matter or physical obstruction - due to loss of grassland area. The grassland is currently not part of the function of sediment supply. It has been a fixed feature historically.

Attribute	Measure	Target	Notes	Indirect Impact as a result of loss of grassland	Direct Impact as a result of loss of grassland
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry (2007). Creeks deliver sediment throughout saltmarsh system. See coastal habitats supporting document for further details	No indirect impact to creek and pan structure - due to loss of grassland area. The grassland area does not influence the physical structure and development of creeks and pans. The development of the <i>Salicornia</i> mudflats in adjacent area relates to the inundation of mudflats. The further development of creeks and pans in the mudflats are not influenced by the loss of the area of grassland in the field.	No Impact - no direct impact on creeks and pans- due to loss of grassland area. The grassland is currently not part of the function of the development of creeks and pans outside the field in the main estuary area.
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	Based on data from McCorry (2007). This pioneer saltmarsh community requires regular tidal inundation. See coastal habitats supporting document for further details	No indirect impact to the natural tidal regime will occur due to loss of grassland area. The grassland area does not influence the tidal regime for the <i>Salicornia</i> mudflats which occur outside of the field in the main estuary. The natural tidal regime is not influenced by the loss of the area of grassland.	No Impact - no direct impact on the natural tidal regime - due to loss of grassland area.  The grassland area does not influence the tidal regime for the <i>Salicornia</i> mudflats which occur outside of the field in the main estuary.

Attribute	Measure	Target	Notes	Indirect Impact as a result of loss of grassland	Direct Impact as a result of loss of grassland
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from McCorry (2007). See coastal habitats supporting document for further details	No indirect impacts and the loss of the area of grassland will not influence the current zonation in relation to succession of this habitat to saltmarsh. The area of grassland is not physically linked to the <i>Salicornia</i> mudflats.	No Impact - The area of grassland is not linked to the <i>Salicornia</i> mudflats and does not form part of the natural succession from mudflats to saltmarsh. It is physically interrupted by the presence of the coast road along this stretch of coastline. McCorry (2007) clarifies the transitional habitats in the Note regarding the zonation - 'any transitional zones <i>Spartina</i> – <i>Salicornia</i> , <i>Salicornia</i> – Atlantic'. These are the typical transitions for the successional stages of these habitats and do not include the area of dry grassland.
Vegetation structure: vegetation height	Centimeters	Maintain structural variation within sward	Based on data from McCorry (2007). Saltmarshes at Baldoyle are not grazed by livestock and have a diverse sward structure. See coastal habitats supporting document for further details	No Impact	No Impact

Attribute	Measure	Target	Notes	Indirect Impact as a result of loss of grassland	Direct Impact as a result of loss of grassland
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated	Based on data from McCorry (2007). See coastal habitats supporting document for further details	No Impact	No Impact
Vegetation composition: typical species and sub-communities	Percentage cover	Maintain the presence of species-poor communities with typical species listed in the Saltmarsh Monitoring Project (McCorry and Ryle, 2009)	Based on data from McCorry (2007). See coastal habitats supporting document for further details	No Impact	No Impact
Vegetation structure: negative indicator species- <i>Spartina anglica</i>	Hectares	No significant expansion of common cordgrass ( <i>Spartina anglica</i> ), with an annual spread of less than 1%	Based on data from McCorry (2007). <i>Spartina</i> swards occur extensively throughout the Baldoyle sub-site. Additional clumps of cordgrass are present within the Salicornia flats, although at low cover values. See coastal habitats supporting document for further details	No Impact	No Impact

Attribute	Measure	Target	Notes	Indirect Impact as a result of loss of grassland	Direct Impact as a result of loss of grassland
<b>1330 Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>)</b>					
<i>To maintain the favourable conservation condition of Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) in Baldoyle Bay SAC, which is defined by the following list of attributes and targets:</i>					
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: Baldoyle - 11.98ha.	Based on data from the Saltmarsh Monitoring Project (McCorry, 2007). One sub-site supporting Atlantic salt meadow was mapped giving a total estimated area of 11.98ha. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details	No impact - no indirect impacts to natural processes for this habitat	No Impact - no direct loss
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.	Based on data from McCorry (2007). No indications of any loss in extent of ASM at Baldoyle. See coastal habitats supporting document for further details	No Impact - no indirect impacts on the habitat distribution due to the loss of the grassland area	No Impact - no direct loss

Attribute	Measure	Target	Notes	Indirect Impact as a result of loss of grassland	Direct Impact as a result of loss of grassland
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions	Based on data from McCorry (2007). There are some small areas of erosion in places and these may have been exacerbated by infilling and sea defence measures (sea wall). See coastal habitats supporting document for further details	No indirect impact to natural circulation and organic matter or physical obstruction - due to loss of grassland area. The grassland area is currently not part of the function of sediment supply. It has been a fixed feature historically due to the presence of the road.	No Impact - no direct impact on natural circulation and organic matter or physical obstruction - due to loss of grassland area. The grassland is currently not part of the function of sediment supply. It has been a fixed feature historically.
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure to develop, subject to natural processes, including erosion and succession	Based on data from McCorry (2007). The largest area of ASM at Baldoyle has a well developed creek and pan structure. The other parts have a poorly developed structure. See coastal habitats supporting document for further details	No indirect impact to creek and pan development or related natural processes. The grassland area does not influence the physical structure and development of creeks and pans. The development of the saltmarsh in this field relates to the inundation of brackish and saltwater through the culvert at Mayne Bridge and associated tidal flows that periodically flood the field and/or infiltrate through groundwater. Given the decline in this habitat over the years it would appear that the link with the culvert and river are the main influences. The further development of creeks and pans in the saltmarsh habitats in the field are not influenced by the loss of the area of grassland.	No Impact - no direct impact on creek and pan structures - due to loss of grassland area. The grassland is currently not part of the function of the development of creeks and pans. It has been a fixed feature historically due to the presence of the road.

Attribute	Measure	Target	Notes	Indirect Impact as a result of loss of grassland	Direct Impact as a result of loss of grassland
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	See coastal habitats supporting document for further details	No indirect impact to the natural tidal regime will occur due to loss of grassland area. The grassland area does not influence the tidal regime. The presence of the coast road, the culvert with flapvalves and land drainage influence the development of the saltmarsh in the field. These features control the tidal regime and the inundation of brackish and saltwater through the culvert at Mayne Bridge and associated tidal flows that periodically flood the field and/or infiltrate through groundwater. The natural tidal regime is not influenced by the loss of the area of grassland.	No Impact - no direct impact on the natural tidal regime - due to loss of grassland area. The coast road and associated culverts and land drainage are affecting the current tidal regime of the saltmarsh in the field.
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from McCorry (2007). At Baldoyle there are transitions to sand dune habitats as well as transitional mosaics within the saltmarsh habitats. See coastal habitats supporting document for further details	No indirect impact - the area is manmade, previously a race track which has become a fixed feature due to the presence of the coast road.	No Impact - the area is manmade, previously a race track along the coast road side of the field.

Attribute	Measure	Target	Notes	Indirect Impact as a result of loss of grassland	Direct Impact as a result of loss of grassland
Vegetation structure: vegetation height	Centimeters	Maintain structural variation within sward	Based on data from McCorry (2007). The saltmarshes around Baldoyle are not grazed by livestock allowing a diverse sward structure to develop. See coastal habitats supporting document for further details.	No Impact	No Impact
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of the area outside of the creeks vegetated	See coastal habitats supporting document for further details	No Impact	No Impact
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of subcommunities with typical species listed in the Saltmarsh Monitoring Project (McCorry and Ryle, 2009)	Based on data from McCorry (2007). Species of local distinctiveness at Baldoyle include the Red Data Book species, Borrer's saltmarsh-grass ( <i>Puccinellia fasciculata</i> ) and meadow barley ( <i>Hordeum secalinum</i> ). The locally rare species rock lavender ( <i>Limonium binervosum</i> ) was also recorded at Baldoyle. See coastal habitats supporting document for further details	No Impact	No Impact

Attribute	Measure	Target	Notes	Indirect Impact as a result of loss of grassland	Direct Impact as a result of loss of grassland
Vegetation structure: negative indicator species- <i>Spartina anglica</i>	Hectares	No significant expansion of common cordgrass ( <i>Spartina anglica</i> ), with an annual spread of less than 1%	Based on data from McCorry (2007). <i>Spartina</i> occurs extensively at Baldoyle bay. See coastal habitats supporting document for further details	No Impact	No Impact
<b>1410 Mediterranean salt meadows (<i>Juncetalia maritimi</i>)</b>					
<i>To maintain the favourable conservation condition of Mediterranean salt meadows (<i>Juncetalia maritimi</i>) in Baldoyle Bay SAC, which is defined by the following list of attributes and targets:</i>					
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: Baldoyle - 2.64ha.	Based on data from the Saltmarsh Monitoring Project (McCorry, 2007). One sub-site that supports Mediterranean Salt Meadow was mapped, giving a total estimated area of 2.64ha. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details	No impact - no indirect impacts to natural processes for this habitat	No Impact - no direct loss
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.	See coastal habitats supporting document for further details	No Impact - no indirect impacts on the habitat distribution due to the loss of the grassland area	No Impact - no direct loss

Attribute	Measure	Target	Notes	Indirect Impact as a result of loss of grassland	Direct Impact as a result of loss of grassland
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions	Based on data from McCorry (2007). There are some indications that the area of brackish marsh at Mayne including the MSM community has decreased. Older maps show that the brackish vegetation was more extensive in the recent past. See coastal habitats supporting document for further details	No indirect impact to natural circulation and organic matter or physical obstruction - due to loss of grassland area. The grassland area is currently not part of the function of sediment supply. It has been a fixed feature historically due to race track and the coast road.	No Impact - no direct impact on natural circulation and organic matter or physical obstruction - due to loss of grassland area. The grassland is currently not part of the function of sediment supply. It has been a fixed feature historically.
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession	Based on data from the Saltmarsh Monitoring Project (McCorry, 2007). The MSM at Baldoyle has a poorly developed topography. See coastal habitats supporting document for further details	No indirect impact to creek and pan structure and natural processes - due to loss of grassland area. The grassland area does not influence the physical structure and development of creeks and pans. The development of the saltmarsh in this field relates to the inundation of brackish and saltwater through the culvert at Mayne Bridge and associated tidal flows that periodically flood the field and/or infiltrate through groundwater. The further development of creeks and pans in the saltmarsh habitats in the field are not influenced by the loss of the area of grassland.	No Impact - no direct impact on creek and pan structures - due to loss of grassland area. The grassland is currently not part of the function of the development of creeks and pans. It has been a fixed feature historically due to the presence of the road.

Attribute	Measure	Target	Notes	Indirect Impact as a result of loss of grassland	Direct Impact as a result of loss of grassland
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	Mediterranean salt meadow is found high up in the saltmarsh but requires occasional tidal inundation. See coastal habitats supporting document for further details	No indirect impact to the natural tidal regime will occur due to loss of grassland area. The grassland area does not influence the tidal regime. The presence of the coast road, the culvert and land drainage have operated to influence the development of the saltmarsh in the field. These control current tidal regime and the inundation of brackish and saltwater through the culvert at Mayne Bridge and associated tidal flows that periodically flood the field and/or infiltrate through groundwater. The natural tidal regime is not influenced by the loss of the area of grassland.	No Impact - no direct impact on the natural tidal regime - due to loss of grassland area. The coast road and associated culverts and land drainage are affecting the current tidal regime of the saltmarsh in the field.
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from McCorry (2007). At Baldoyle there are transitions to sand dune habitats as well as transitional mosaics within the saltmarsh habitats. See coastal habitats supporting document for further details	No indirect impact - the area is manmade, previously a race track along the coast road side of the field.	No Impact - the area is manmade, previously a race track along the coast road side of the field.

Attribute	Measure	Target	Notes	Indirect Impact as a result of loss of grassland	Direct Impact as a result of loss of grassland
Vegetation structure: vegetation height	Centimeters	Maintain structural variation within the sward	Based on data from McCorry (2007). The saltmarshes around Baldoyle are not grazed by livestock allowing a diverse sward structure to develop. See coastal habitats supporting document for further details.	No Impact	No Impact
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of the area outside of the creeks vegetated	Based on data from McCorry (2007). See coastal habitats supporting document for further details	No Impact	No Impact
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with typical species listed in the Saltmarsh Monitoring Project (McCorry and Ryle, 2009)	Based on data from McCorry (2007). Species of local distinctiveness at Baldoyle include the Red Data Book species, Borrer's saltmarsh-grass ( <i>Puccinellia fasciculata</i> ) and meadow barley ( <i>Hordeum secalinum</i> ). The locally rare species rock lavender ( <i>Limonium binervosum</i> ) was also recorded at Baldoyle. See coastal habitats supporting document for further details	No Impact	No Impact

Attribute	Measure	Target	Notes	Indirect Impact as a result of loss of grassland	Direct Impact as a result of loss of grassland
Vegetation structure: negative indicator species- <i>Spartina anglica</i>	Hectares	No significant expansion of common cordgrass ( <i>Spartina anglica</i> ), with an annual spread of less than 1%	Based on data from McCorry (2007). <i>Spartina</i> occurs extensively at Baldoyle bay. See coastal habitats supporting document for further details	No Impact	No Impact

To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could interrupt progress towards achieving the conservation objectives of the site?

Each of the conservation objectives have been examined and are addressed in Table 5.1 above.

The Conservation Objectives for Baldoyle Bay SAC are given in Table 5.1 below. A question could arise in relation to the Attribute of Vegetation Structure and Zonation. Based on data from McCorry (2007, 2009) at Baldoyle there are transitions to sand dune habitats as well as transitional mosaics within the saltmarsh habitats. However, the presence of the coast road has altered the natural transitions to terrestrial habitats and the area of grassland that will be lost occurs alongside the road in a part of the site that has been altered by human activities over the past 100 years at least. The area to be lost has been part of a previous residence and also the old Baldoyle Racecourse. Therefore, the loss of this strip of grassland is not considered a significant loss and is not considered to interrupt progress towards achieving the conservation objectives of the site, including given that it is a linear strip that was previously part of a racecourse.

To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could disrupt those factors that help to maintain the favourable conditions of the site?

‘Conservation status’ is defined in Article 1 of the Habitats Directive as the ‘sum of all influences’ acting on natural habitats or species by reference to factors such as distribution, structure, function and abundance, thereby also determining that it is not just the state of the designated feature itself, but also of its relevant surroundings/influences, which determine conservation status. Moreover, the conservation status of a listed natural habitat automatically includes its typical species, and it will only be taken as ‘favourable’ if the status of its ‘typical species’ is itself also favourable. It is also defined by the continued availability of ‘the specific structure and functions which are necessary for its long-term maintenance’ and a stable or increasing natural range. Favourable conservation status of a natural habitat therefore goes beyond the simple protection of the relevant natural habitat and extends not only to typical species, which exist within a protected site in connection with a protected habitat, but also other contributing ecological functions.

When assessing the conservation status of habitats, four parameters are considered. These are: range, area, structure and function (referred to as habitat condition) and future prospects. For species, the parameters are: range, population, habitat (extent and condition) and future prospects. Each of these parameters is assessed as being in one of the following conditions: Favourable, Unfavourable-inadequate, Unfavourable-Bad, or Unknown. The European Commission and Member States have agreed standards for these assessments, and the European Commission has also produced supplementary guidance to assist in the assessment process.

The potential for the loss of grassland is not likely to affect the conservation status of the designated features of Baldoyle Bay SAC. In terms of the structure of the saltmarsh habitats located in the field, and the zonation as discussed above it is unlikely that the grassland forms part of a natural transitional area given the historic landuse of this part of the site and the presence of the coast road which has altered the natural succession of habitats.

To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?

It is unlikely that the loss of the grassland area will interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site. The key species that form the indicator species for each of the designated features are as follows:

**Mudflats and sandflats not covered by seawater at low tide in Baldoyle Bay SAC**

This habitat is located beyond the field and grassland area and occurs within the main estuary. The species associated with this habitat are marine communities that rely on the habitat structure and also water quality and tidal flows within the estuary. The loss of the grassland within the field will not affect the habitat or species that it supports as it does not have any role in the maintenance of this habitat or species either directly or indirectly.

### **Salicornia and other annuals colonizing mud and sand in Baldoyle Bay SAC**

This habitat may be termed Pioneer Saltmarsh and is located beyond the field and grassland area and occurs within the main estuary. The species associated with this habitat are vegetation communities that rely on the sediment supply and also water quality and tidal flows within the estuary. The loss of the grassland within the field will not affect the habitat or species that it supports as it does not have any role in the maintenance of this habitat or species either directly or indirectly.

### **Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) in Baldoyle Bay SAC and Mediterranean salt meadows (*Juncetalia maritimi*) in Baldoyle Bay SAC**

This habitat has been noted in the field where the grassland occurs. The species associated with this habitat are vegetation communities that develop in response to saltmarsh development landward and usually occur in the mid to upper areas of saltmarshes, however there has been historic influences on the composition of the saltmarsh in the field due to land management and the presence of the coast road.

The location, character, and dynamic behaviour of saltmarshes is governed by four physical factors: sediment supply, tidal regime, wind-wave climate and the movement of relative sea level. There are four elements necessary for the development and growth of a salt marsh:

- a relatively stable area of sediment that is covered by the tide for a shorter period than the time it is exposed
- a supply of suitable sediment available within the period of tidal cover
- water velocities that are sufficiently low for some of the sediment to settle out
- a supply of seeds or other propagules for the establishment of vegetation cover.

The loss of the grassland within the field will not affect these saltmarsh habitats or species that they support as it does not have any role in the maintenance of this habitat or species either directly or indirectly. The main influences on these saltmarsh habitats vegetation composition relate to the connections to the estuary under the coast road, the flooding of the field during floods and high tides, the supply of seeds and sediments, via flood and tides and the land drainage of the field.

To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?

The main influences on the nutrient cycling relate to detritus or dissolved nutrients transported by runoff during rainfall, however given the sandy nature of the grassland it may be largely through surface water percolation to groundwater and/or travel into the adjacent ditch along the roadside. Tidal infiltration from the seaward side through sands may also move nutrients through the grassland. Fauna of the grassland may be involved in recycling nutrients and exchange such as microbes, small mammals and birds. Surface water flows and runoff may also be slowed by the presence of the grassland while tidal flows especially tide flood flows through the sand may be slowed also by the presence of vegetation roots.

To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?

As noted above the main influences on the habitats of the SAC in terms of structure and vegetation composition relate to the connections to the estuary under the coast road, the flooding of the field during floods and high tides, the supply of seeds and sediments, via flood and tides and the land drainage of the field. Therefore, the loss of the grassland within the field is not likely to change the dynamics of the relationships that define the structure of the site and in particular the saltmarsh habitat in the field.

To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?

The hydrology and water dynamics are considered below and the loss of grassland is unlikely to affect the predicted or expected natural changes to the site in relation to hydrology, hydraulics, hydromorphology and flooding.

Other natural changes such as increases in tidal inundations in the long term and increases in salinity or increases in fluvial flows and decreases in salinity are not expected to be affected by the loss of the grassland as it is currently not influencing the hydrology of the site and/or chemical composition of the water including salinity.

To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could reduce the area of key habitats?

As noted above the main influences on the habitats of the SAC in terms of structure and vegetation composition relate to the connections to the estuary under the coast road, the flooding of the field during floods and high tides, the supply of seeds and sediments, via flood and tides and the land drainage of the field. Therefore, the loss of the grassland within the field is not likely to reduce the area of key habitats of Baldoyle Bay SAC and in particular the saltmarsh habitat in the field.

To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could reduce the population of key species?

As noted above the main influences on the habitats of the SAC in terms of structure and vegetation composition relate to the connections to the estuary under the coast road, the flooding of the field during floods and high tides, the supply of seeds and sediments, via flood and tides and the land drainage of the field. Therefore, the loss of the grassland within the field is not likely to reduce the population of key species of Baldoyle Bay SAC and in particular the saltmarsh habitat species in the field.

To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could reduce the flora diversity of the site?

The area of grassland loss located on the former racecourse track is aimed at avoiding any areas of grassland of local conservation interest to ensure that the flora diversity is not reduced. This will be an important aspect of route selection as although the grassland is not Annex I habitat, it does contain some locally important plants and therefore it will be necessary to design the route to avoid areas containing these.

To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could result in habitat fragmentation?

Given the location of the loss of grassland along an existing coast road and the presence of adjacent wildlife corridors such as the ditch, scrub and grassland mosaic that run parallel to this strip of grassland and provide greater cover and refuges, it is unlikely that the loss of grassland will result in habitat fragmentation once the proposed cycleway and walkway is not fenced off from the surrounding area with impenetrable barriers. The design stage of the cycleway and walkway should avoid the creation of barriers to the movement of animals, especially mammals, amphibians and invertebrates, and plants with limited powers of dispersal.

To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?

The key features related to Baldoyle SAC are mainly sediment supply, tidal regime, flooding and important species. As noted above the main input of sediment and seed sources are from the transport of these on the flood and tidal waters and these will not be affected by the removal of the grassland. In relation to the loss of the grassland and the key features of hydrology, hydraulics, hydromorphology and flooding the following is noted:

The extract below from Fingal East Meath CFRAM Final Hydraulics Report<sup>1</sup> suggests that flapped outfalls located on the downstream (eastern) face of the road bridge strongly influence and restrict the propagation of tidal flows upstream on the Mayne River.

*"The tidal/fluvial dominance transition point in the river channel is almost indistinguishable due to the presence of a flapped outfall at the mouth of the river where it discharges to the estuary (based on the 1% AEP fluvial and tidal event)."*

*"The flapped outfalls at the downstream end of the model are considered a formal flood defences. The flapped outfalls prevent the high tides from propagating upstream at any % AEP event."*

<sup>1</sup> [http://fem.cfram.com/downloads/FinalHydraulicsReport\\_27Oct2011.pdf](http://fem.cfram.com/downloads/FinalHydraulicsReport_27Oct2011.pdf)  
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During high tides, fluvial river flow from these watercourses is unable to discharge into Baldoye Estuary and ponds upstream (to the west) of the flapped outfalls and road bridge. This reduction in flow velocity during normal flow and the inability to mix with tidal flows may result in a greater degree of sediment deposition than if tidal flows were able to propagate upstream.

The flapped gates do not allow fluvial flows to discharge to Baldoye Estuary during high tides and cause fluvial flooding of lands within the SAC.

The upstream catchment processes (hydromorphology) and hydrology of the Mayne River and the tributary from the south that are strongly dominated by the Dublin Airport Draining and Pollution System Control, urban drainage networks and the long lengths of culverts.

The Fingal East Meath CFRAM tidal flood maps show that the maximum extent of the 0.1% AEP (most extreme flood) is the existing road. The effect of high tides on flood risk from the Mayne River is discussed above. There is no overland tidal flooding to the west of the existing road.

There is no evidence of groundwater percolation of high tides contributing to surface water ponding of the SAC to the west of the existing road. The volume of freshwater ponding behind the flapped outfalls is likely to be greater than the volume of any saline groundwater.

The proposed surface water drainage of the cycleway needs to consider the potential for changes in runoff patterns and sediment rates and how these may affect the habitats present. The plans for the proposed cycleway include annotations where the cycleway will transverse existing low lying ditches. Changes to the function and form of these ditches could impact habitats in the SAC.

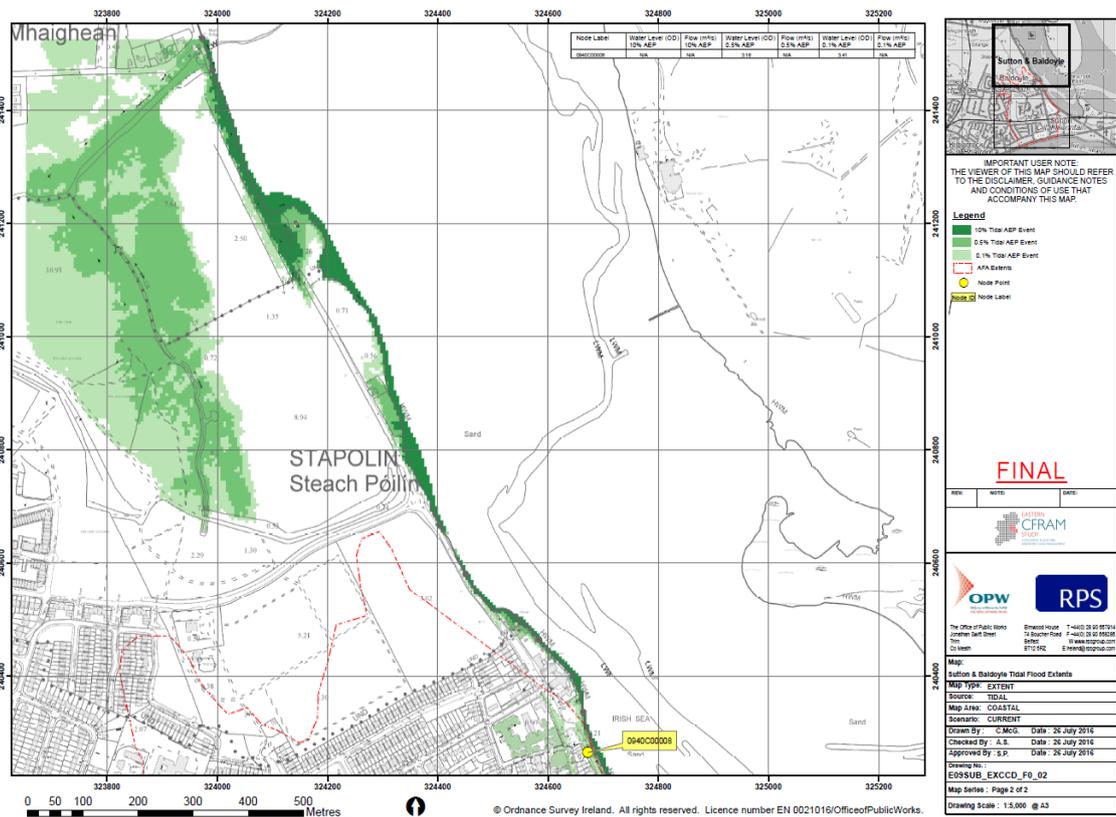


Figure 5.1 CFRAM tidal flood extents, showing the flood risk from the Mayne River during high tides when the river is unable to discharge to the Baldoye Estuary.

If the proposed removal of the grassland does not alter the existing flapped gates and the new bridge soffit levels are at the same level or above the existing road bridge soffit levels, it is unlikely that the new cycleway will alter the hydromorphology, hydrology or flood risk from the Mayne River.

Assuming the proposed cycleway will be at the same elevation as the ridge to the west of the existing road, there will be no change in tidal flooding overland. With the flapped outfall in place and operational there is no tidal ingress of saline water in to the SAC habitats to the west of the existing road.

To determine if the Galway Bypass court case is applicable to the situation at the Racecourse park (e.g. are the circumstances identical or not)

### Site Integrity

Galway Bypass court case (Sweetman case)<sup>2</sup> is applicable to the situation at the Racecourse park in relation to answering whether or not the loss of the grassland affects the site integrity not because it is a loss of a designated feature (which it is not) but whether or not the loss of this area of habitat within the SAC affects the ability of the site to reach its conservation objectives and favourable conservation status. The court made clear that there has to be 'lasting preservation' of the characteristics of the site connected to the feature for which the site is designated.

It unclear in the Sweetman case whether and when possible loss or damage, even if permanent or long lasting, to a non-priority habitat type that falls within the designated site afforded protection by means of the designation of a site will amount to an adverse effect on the integrity of that site or as in the case of the loss of a non designated feature of grassland at the Baldoyle Racecourse.

However, the requirement to consider a site's constitutive characteristics as elaborated in Sweetman is consistent with the fact that even activities conducted away from the immediate boundary of a protected habitat, which is a qualifying feature of a site, are capable of affecting a site's conservation objectives. Therefore, assessment of whether there will be adverse effects on the integrity of the site as defined by its conservation objectives and conservation status must apply the precautionary principle and involves completion of the EU Guidance 'integrity of site checklist'. As regards the site's conservation objectives, the checklist asks whether the project delays or interrupts progress towards achieving the conservation objectives of the site, whether it disrupts key factors which help to maintain the favourable conditions of the site, and whether it interferes with the balance, distribution and density of key species that are indicators of the favourable condition of the site. It also asks whether the project impacts upon a range of other indicators, including vital aspects of the structure and functioning of the site, the area of key habitats, the diversity of the site, the population of and balance between key species, habitat fragmentation, and loss or reduction of key ecological features. This Advisory note has examined if the loss of the area of grassland will have a lasting adverse effect on those characteristics and has completed the 'integrity of site checklist'.

The following discussion supports this approach and is taken from Client Earth Briefing 2013<sup>3</sup>.

The concept of 'integrity of the site', which must not be adversely affected, is only specifically referred to in Article 6(3). It is not defined.

The legislation is clearly drafted so that it is 'site' integrity, which is the relevant consideration, rather than the integrity of a specific habitat or species for which a particular site may have been designated. 'Site' is defined in the Directive as a 'geographically defined area whose extent is clearly delineated'.

The judgment of the CJEU in Sweetman<sup>4</sup> has provided recent clarification on the concept of site integrity. This case relates to a proposal for a road bypass, which would bring about partial and permanent loss of an Annex I habitat, which the site was partially designated to protect (namely limestone pavement). The judgment provides a ruling on the 'criteria in law to be applied by a competent authority to an assessment of the likelihood of a plan or project the subject of Article 6(3) of the Habitats Directive, having an adverse effect on the integrity of the site'.

In its reasoning, the Court recalls previously established jurisprudence to the effect that 'the Habitats Directive has the aim that the Member States take appropriate protective measures to preserve the ecological characteristics of sites which host natural habitat types' (emphasis added) Therefore, the judgment explains, in order for the integrity of a site not to be adversely affected, the site needs to be preserved at a favourable conservation status, and this entails 'the lasting preservation of the constitutive characteristics of the site concerned that are connected to the presence of a natural habitat type whose preservation was the objective justifying the designation of that site...'

<sup>2</sup> Case C-258/11 Sweetman v. An Bord Pleanála, Judgment of the Court, 11 April 2013

<sup>3</sup> [www.clientearth.org/reports/natura-2000-site-integrity-briefing](http://www.clientearth.org/reports/natura-2000-site-integrity-briefing)

The conclusions of the Sweetman judgment appear to support a holistic approach to the site's constitutive characteristics where such characteristics are connected to the protected habitat or habitat of a relevant species and to the question of whether 'site integrity' is affected. Specifically, any intervention in a site which will 'prevent the lasting preservation of the constitutive characteristics of the site that are connected to the presence of a priority natural habitat whose conservation was the objective justifying the designation of the site', will be held to be an 'adverse effect on site integrity'. The arguments in this case are expressed to apply a fortiori to priority natural habitat types - and it has been argued that it would also be applicable to any natural habitat covered by Annex I.

The requirement to consider a site's constitutive characteristics as elaborated in Sweetman is consistent with the fact that even activities conducted away from the immediate boundary of a protected habitat, which is a qualifying feature of a site, are capable of affecting a site's conservation objectives. This could be by means of an indirect effect on the feature (e.g. damage to a sandy area, affecting abundance of molluscs and crustaceans available as food for predators occurring on protected reef features). It could further be by adversely affecting the site as a whole and its ecological resilience and functioning, or by the removal (by extractive fishing) of a key species that provides an essential ecological role to the maintenance of a protected habitat's favourable conditions. Whilst the case of Sweetman itself concerns damage directly to an area of Annex I habitat, it nevertheless provides clear confirmation that consideration of the ecological functioning of a site with regard to the designated features is necessary.

In relation to 'habitat types or species other than those listed in Annex I or Annex II' referred to in the above extract, the EU guidance also refers to the definition of 'integrity of the site' used in the UK's PPG 9, UK Department of the Environment of October 1994 (now superseded), namely: 'the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitats, complex of habitats and/or the levels of populations of the species for which it was classified'.<sup>38</sup> This definition, which has been applied in the UK, also confirms that adverse effects to part of a site, even if not a part which is a designated feature, are relevant to a consideration of site integrity to ensure a coherent approach to a site's ecological function across its whole area.

In *Akester*<sup>5</sup>, the High Court considered whether the introduction of a new type of ferry into the service on the Lymington to Yarmouth route, which passes through an SAC, should be considered to be a 'plan or project' under Article 6(3). In accepting that the ferry could potentially adversely affect the natural surroundings, the judgment states at paragraph 77 that: 'The question is whether the activity gives rise to a risk of adverse effects on the protected sites, whether directly or indirectly'.

The judgement in *Akester* also briefly touches on an oral submission by the defendant, which amounted to a *de minimis* argument, whereby the adverse effects which were reported were agreed to be minimal. The court confirms that given the high level of protection afforded by Article 6(3) any such argument 'is not an argument which would of itself have carried sufficient weight to remove any doubt as to a possible adverse effect.'

The approach of the UK Courts is consistent with the conclusions stated that the critical consideration in relation to site integrity is not the extent or degree of an impact, or whether an impact is direct or indirect, but whether the implications of any activities affecting a site, either individually or in combination with other plans or projects, affect the site's ability to achieve its conservation objectives and favourable conservation status. These conclusions are also consistent with, and must be applied in the light of, the judgment in Sweetman.

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<sup>5</sup> R (*Akester & Anor*) (On Behalf of the Lymington River Association) v Dept for Environment, Food and Rural Affairs and Wightlink [2010] EWHC 232 (Admin) Case No: CO/1834/2009.  
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To determine if there have been any other relevant EU Habitat Directive court cases that would affect this project (e.g. where non qualifying interest habitat, non Annex I priority habitat would be lost as a result of a project)

There are no published EU Habitat Directive court cases available that have relevance to this project in terms of the loss of a non qualifying interest habitat and non Annex I priority habitat. All publicly available cases have made reference to loss of qualifying interest habitat (Priority and Non- Priority).

English Nature published a study on legal judgements and decisions on habitat loss entitled - *How the scale of effects on internationally designated nature conservation sites in Britain has been considered in decision making: A review of authoritative decisions*. The main points are summarised below:

Whilst there is some guidance available, there has been no definitive explanation as to the scale of effect that should be regarded as significant, or how large scale an effect needs to be before it may be regarded as potentially adversely affecting the integrity of a site. In order to assist in future case work, English Nature commissioned a research report to conduct a review of previous legal judgments and Inspectors' decisions and reports in cases where the spatial scale of impacts was material to the conclusions reached.

The case studies

After a preliminary analysis of many cases, the study looked at thirteen cases in detail. There are six examples of small scale effects of approx 1.0% or less of land take or habitat loss:

- London Gateway Port, Essex 0.1%
- Quay 2005 Hull 0.01% (in fact 0.03 when calculated correctly)
- Gilwern to Hafodyrynys Pipeline South Wales 0.15%
- Dibden Bay Terminal Southampton 0.76%
- The Outer Harbour Immingham 0.145%
- Santoña Marshes, Spain 0.5%

All these have the authority of being Secretary of State decisions except Santoña Marshes which is a ECJ judgment. All concluded a likely significant effect and all determined or implied an adverse effect on integrity. There is a need to take into account a number of other factors in some cases, but there are three cases that appear to be wholly or largely related to landtake effects / habitat loss. They are Quay 2005, Gilwern and Immingham. Two further cases are important because they too are made by Secretaries of State and both involve landtake as the sole or primary issue, they are Barksore Marshes (1.79%) and Bathside Bay (1.87%).

Recommended guidelines

Unless a particular loss of habitat could be regarded as so trivial as to be **de minimis**<sup>6</sup>, it is capable of being a significant effect and may also be an adverse effect on the integrity of the site. Bearing in mind the precautionary principle embedded in the legislation, applied consistently by Secretaries of State and endorsed in court judgments, habitat loss of very small scale, including losses in the order of 0.1% or less of a site, can clearly be regarded as an adverse effect on the integrity of a designated site. By definition, the larger the SPA or SAC or Ramsar site, the larger an area would be that is represented by 0.1%, and thus the more important it may be in supporting individual plants or animals, or ecosystems, for which the site is classified, designated or listed.

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<sup>6</sup>Whilst it is concluded that very small scale losses cannot ascertain no adverse effect on integrity purely because of the small scale of the effect, there must be a point at which the effect is considered *de minimis*. The term *de minimis* is widely used in a legal sense and is defined by the LAW.COM Dictionary as "Latin for 'of minimum importance' or 'trifling.' Essentially it refers to something or a difference that is so little, small, miniscule or tiny that the law does not refer to it and will not consider it."

The value of each and every part of a large site is further emphasized when it is considered that all parts of large areas such as estuaries are potentially important because they are very dynamic and different parts of the system are used at differing times for different reasons, by the birds for which they were classified; for habitats that are rare, such as certain types of heathlands, peatlands or orchid-rich calcareous grasslands, every part of a large site is an important part of a globally scarce resource and part of a functional ecosystem.

Equally, whilst a 0.1% loss from a smaller site may represent a small area in spatial terms, it can be important to the ecological functioning of the site which, being a smaller unit, is likely to depend on much smaller ecosystems or communities, in spatial terms. The argument that a small loss does not matter is one that can be repeated until substantial losses have been incurred. This insidious reduction of habitat is as potentially damaging as a single larger loss. Such arguments are supported by the decisions examined in this research. The cases identified and examined concentrated on single projects (albeit some had many component parts).

Only Mawcarse (3.8) and Tideways (3.12) explicitly referred to combined effects with other projects. However, it is logical to conclude that the decision makers would come to the same conclusion about the significance of an effect irrespective of whether the effect was caused by one, ten or a hundred projects. In other words, where small scale effects are caused by a combination of even smaller-scale effects, the overall effect is still significant and can result in an adverse effect on integrity. Thus, even projects that may appear, *prima facie*, to be *de minimis*, may not be when their effects are combined with other, similarly very small scale effects.

The aim should be to avoid any significant disturbance or deterioration or habitat loss, other than trivial or inconsequential loss, from international sites, if projects are to avoid being subject to 'appropriate assessment' and potentially to the tests of regulation 49 of the Habitats Regulations 1994 (Article 6(4) of the Habitats Directive).

Currently there are no defining effect-based significance and *de minimis* thresholds in EU guidance or legislation. This has been recommended in the EU Fitness Check for the Habitats Directive and the Birds Directive (Albrecht et al., 2016).

All of these cases refer to habitat loss related to designated features of Natura 2000 sites. However it does point out that *Unless a particular loss of habitat could be regarded as so trivial as to be de minimis, it is capable of being a significant effect and may also be an adverse effect on the integrity of the site*. Therefore, in relation to the loss of grassland at the Racecourse it is proposed that the loss of habitat could be regarded as trivial given that although it is within the SAC, it does not form an integral part of the site integrity as outlined in Table 5.1.

Would the impact of the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC be deemed to be significant, potentially significant, or uncertain at the AA screening stage?

This question cannot be answered in isolation as the AA Screening must consider other aspects of the project and also the, in combination effects. The loss of the grassland cannot be considered alone in this context.

However, the loss of the grassland is not considered significant in terms of site integrity for the reasons outlined in Table 5.1.

In the European Court of Justice C-127/02. 'Waddenzee' case<sup>7</sup> the European Court of Justice ruled that a plan or project should undergo an appropriate assessment, "if it cannot be excluded on the basis of objective information, that it will have a significant effect on the site". Therefore, 'likely' in the context of AA has been interpreted strictly. It means that unless a significant effect can be objectively ruled-out with certainty, then it is 'likely'.

The examination of the loss of grassland and the reasoning that has been provided have objectively ruled out with certainty that a significant effect is not likely as a result of the loss of the grassland. However, this does not address or rule out any other potential significant impacts associated with the Coastal Walking and Cycling Route at Baldoyle Estuary that may result in significant, potentially significant or uncertain impacts at AA Screening stage.

<sup>7</sup> C-127/02 - Waddervereniging and Vogelsbeschermingvereniging  
Advisory Note Impact Assess Baldoyle Coastal walkway 2017 v2

To determine if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC would trigger an EIS in EIA screening

The EIA Directive divides projects into two categories; Annex 1 where an EIA is mandatory and Annex II project where an EIA is required if the project is 'likely' to have a 'significant' impact on the environment based on its type and size. These Annex I type projects have been copied verbatim in Part 1 of Schedule 5 of the Planning & Development Regulations. Annex II type projects have been transposed with various thresholds into Part 2 of Schedule 5 of the Planning & Development Regulations 2001 -2015 (as amended). The proposed development at Baldoyle does not fall within either Part 1 or Part 2 of Schedule 5 of the Planning & Development Regulations.

The screening process for an EIA for a sub-threshold developments (which this one is), is set out in Article 103 (1) of the Planning and Development Regulations. This is further investigated in Schedule 7 of the Planning & Development Regulations which simply poses 3 questions on the development:

1. The characteristics of the development
2. The location of the development
3. The potential impact of the development

Schedule 7 of the Regulations requires details on the potential significant effects of the proposed development in relation to criteria set out above, and having regard in particular to:

- The extent of the impact (geographical area or size of the affected population)
- The transfrontier nature of the impact
- The magnitude and complexity of the impact
- The probability of the impact
- The duration, frequency and reversibility of the impact.

Based on the desktop assessment carried out for this advisory note it is concluded that the dry calcareous grassland is not a designated feature of the Baldoyle SAC and the loss of this small portion (1,245-2,075m<sup>2</sup>) will not significantly impact on the integrity of the SAC. However, the ECJ ruling 87/02 states that:

It must be observed that a decision by which the national competent authority takes the view that a project's characteristics do not require it to be subjected to an assessment of its effects on the environment must contain or be accompanied by all the information that makes it possible to check that it is based on adequate screening, carried out in accordance with the requirements of Directive 85/337. (para 49).

The guidance on EIS Screening states:

A specific additional requirement for environmental assessment arises under Article 6(3) of the Habitats Directive (92/43/EEC). Member States must implement legislation requiring an assessment to be made of any project which is likely to have significant effects on a Natura 2000 site (a Special Protection Area (SPA) designated under Directive 79/409/EEC or a Special Area of Conservation (SAC) designated under Directive 92/43/EEC).

EIA is required for all projects in Annex I and for those in Annex II which are likely to have a significant effect on the environment. An assessment may also be required under Article 6(3) of the Habitats Directive (92/43/EEC) if the project is likely to have a significant effect on a Natura 2000 site. A separate screening decision will be required for Habitats Directive assessments.

This is illustrated in the EIS Screening process outlined in Fig 5.2. Given the conclusions above that the loss of the grassland area within the SAC is not considered significant, then it is unlikely that this alone will trigger the need for an EIS.

The examination of the loss of grassland and the reasoning that has been provided would therefore suggest that a significant effect is not likely, as a result of the loss of the grassland. However, this does not address or rule out any other potential significant impacts associated with the Coastal Walking and Cycling Route at Baldoyle Estuary that may result in significant, potentially significant or uncertain impacts at EIS Screening stage.

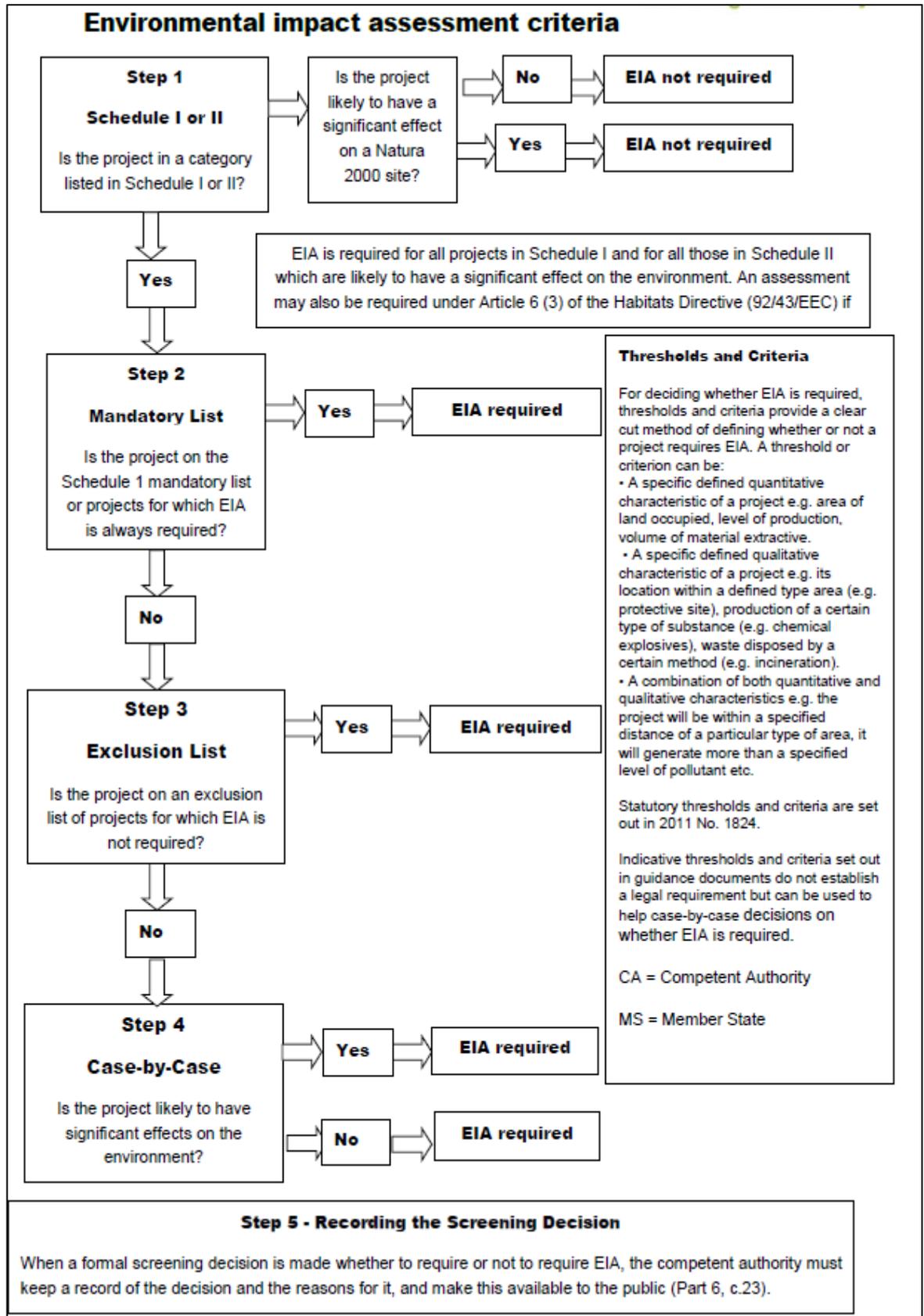


Fig 5.2 EIA Screening Process (EC,2001)

**Concluding statement if the loss of 1245m<sup>2</sup> – 2075m<sup>2</sup> of grassland within the Baldoyle Bay SAC could be considered significant and affect the integrity of the Baldoyle Bay SAC**

The proposed walking and cycling route is located within the Baldoyle Bay SAC. However, this grassland is not a designated feature for the Baldoyle Bay SAC or an Annex I habitat type. The area was part of the Baldoyle Racecourse and the vegetation present still reflects this former use, but it has been colonised with other species also. The loss of this area of grassland is not deemed to be a significant impact on the integrity of Baldoyle Bay SAC. As outlined in the Sweetman Case - in order for the integrity of a site not to be adversely affected, the site needs to be preserved at a favourable conservation status, and this entails 'the lasting preservation of the constitutive characteristics of the site concerned that are connected to the presence of a natural habitat type whose preservation was the objective justifying the designation of that site. This has been examined through the attributes and targets of each designated feature for Baldoyle Bay SAC and through the site integrity checklist and it has been concluded from that analysis that the loss of the grassland is unlikely to significantly impact on the designated features or the integrity of the site.

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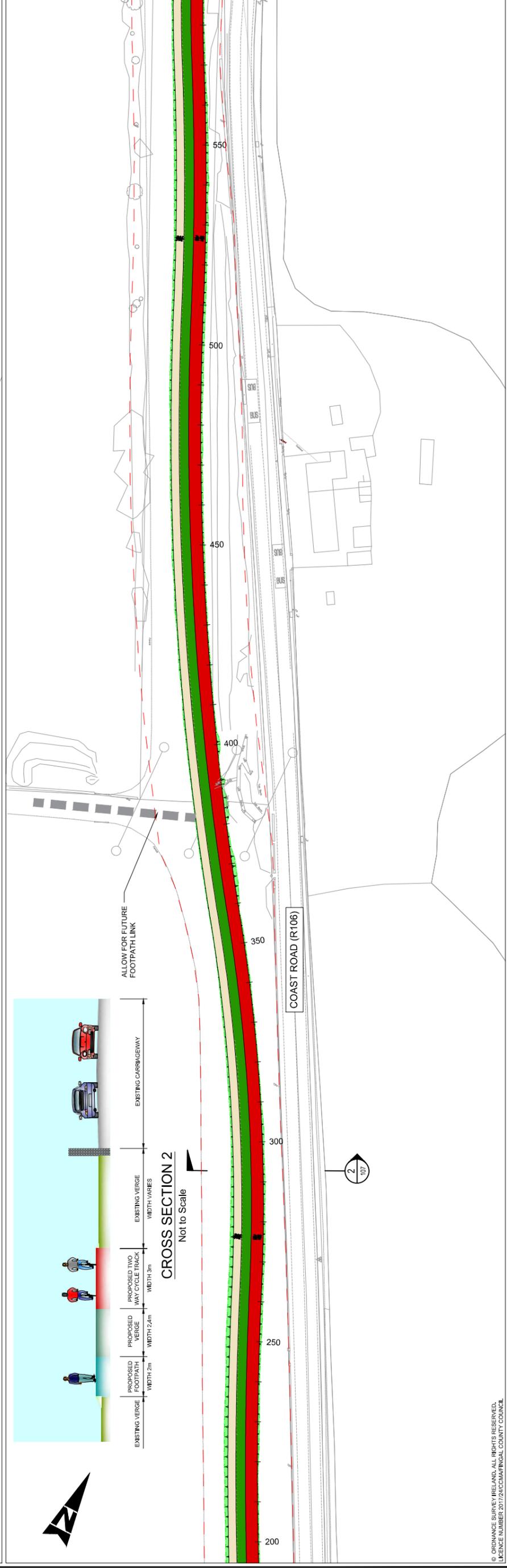
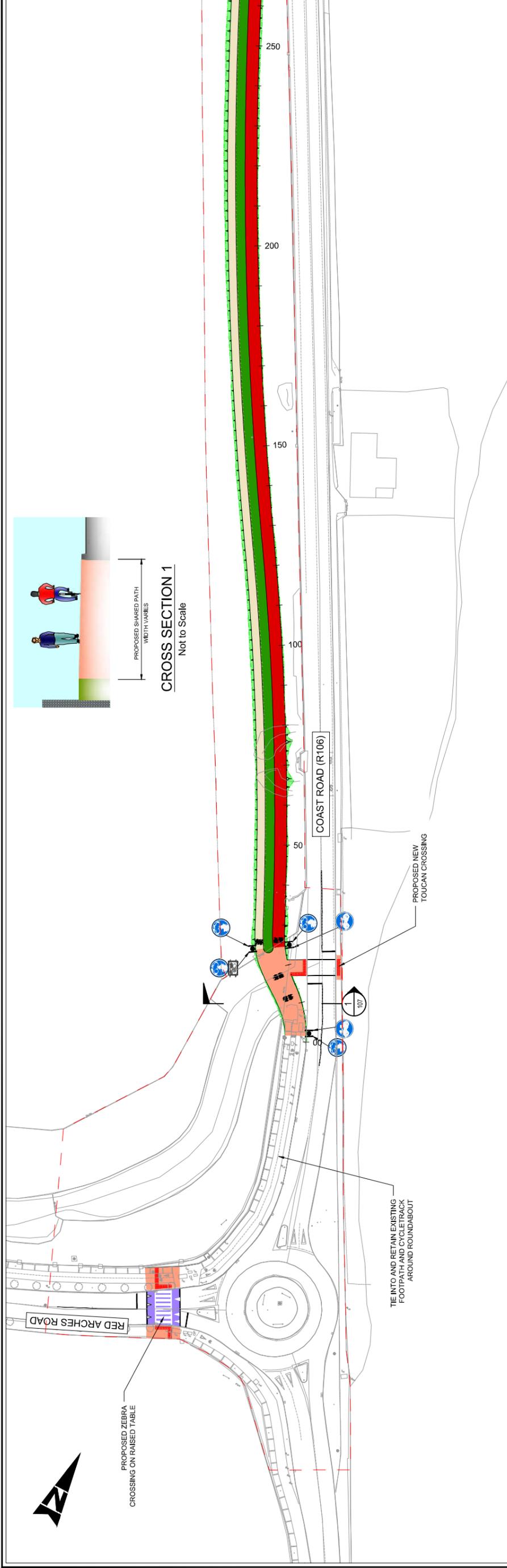
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## **Appendix E. Design Drawings**



**LEGEND**

- PROPOSED SHARED PATH
- PROPOSED FOOTPATH
- PROPOSED SHARED BRIDGE
- PROPOSED TWO WAY CYCLE TRACK
- PROPOSED VERGE
- MODIFIED BUS STOP
- PROPOSED RAISED TABLE
- PROPOSED EMBANKMENT
- EXTENT OF WORKS BOUNDARY

**KEY PLAN**

0107 0108 0109 0109 0109

IRISH SEA

Strand Road

Moyle Road

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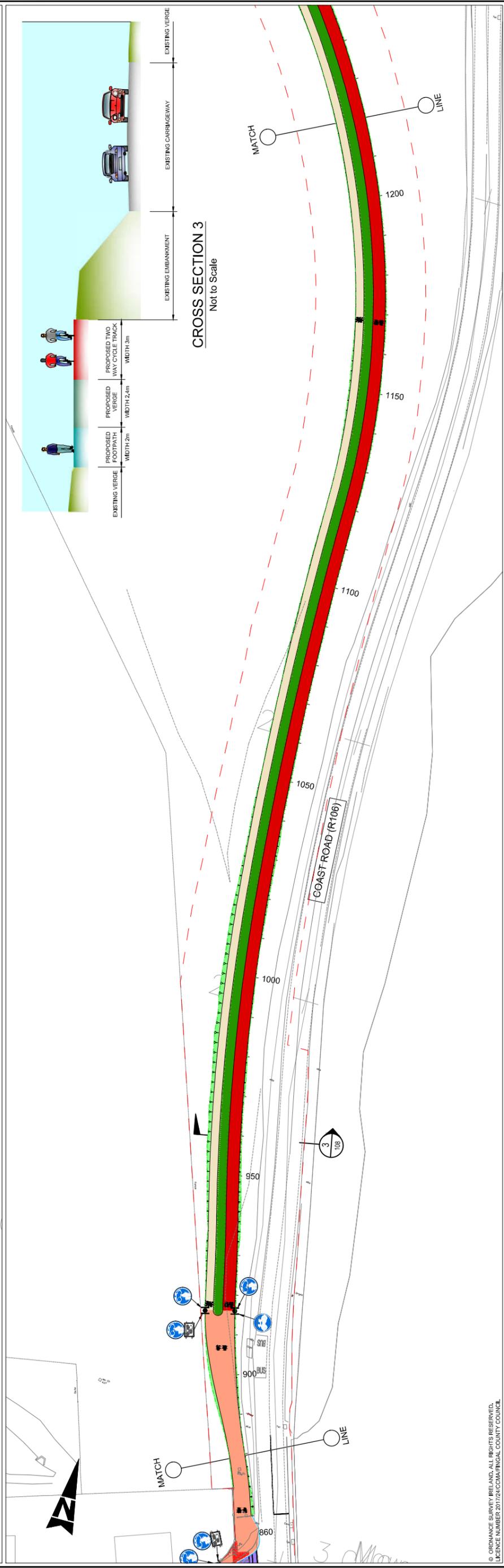
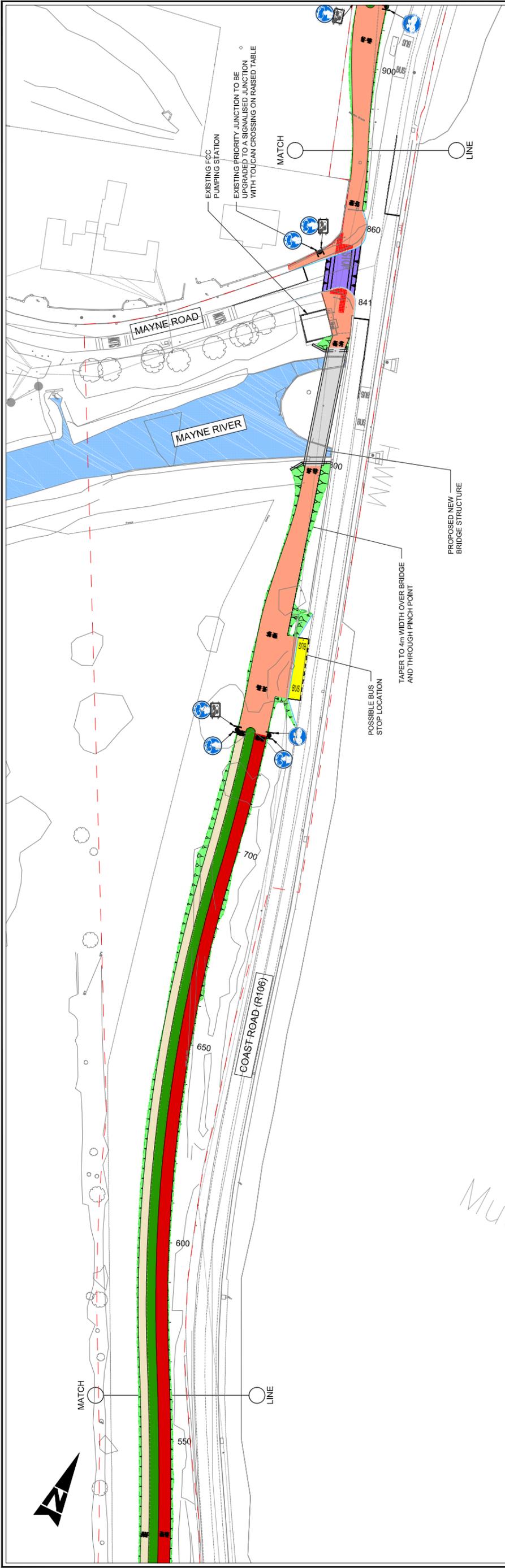
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**SITE LAYOUT PLAN SHEET 1 OF 3**

Project: BALDOYLE TO PORTMARNOCK WALKING AND CYCLING ROUTE

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**LEGEND**

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- PROPOSED SHARED BRIDGE
- PROPOSED TWO WAY CYCLE TRACK
- PROPOSED VERGE
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- PROPOSED RAISED TABLE
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**Project**  
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 WALKING AND CYCLING ROUTE

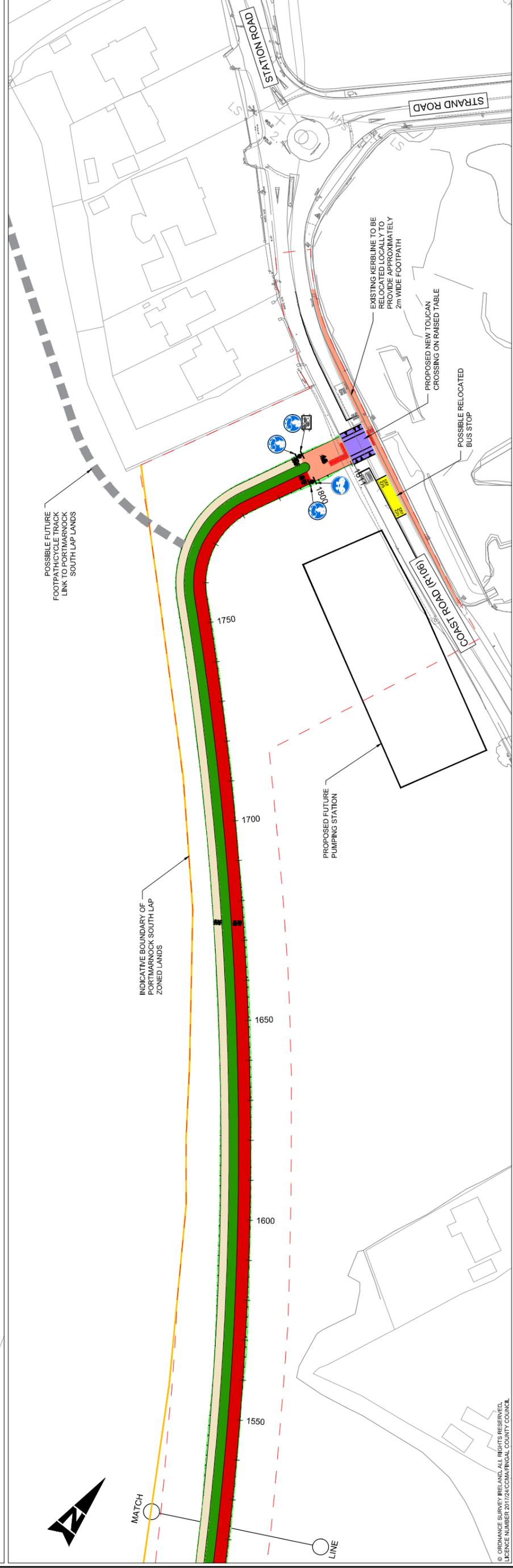
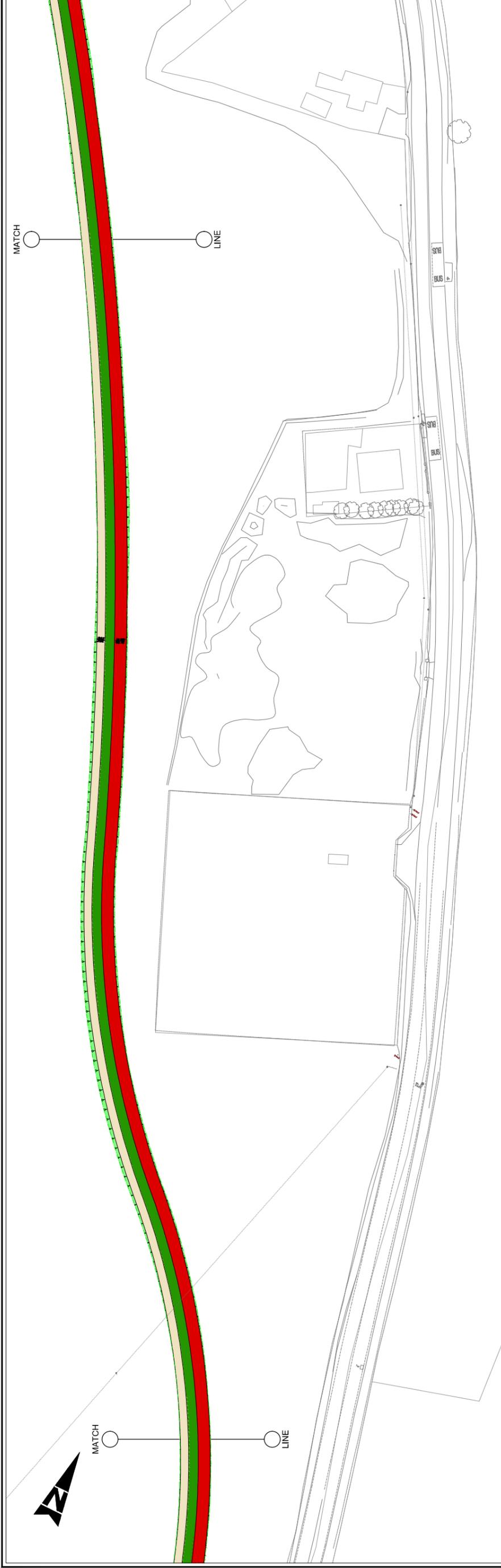
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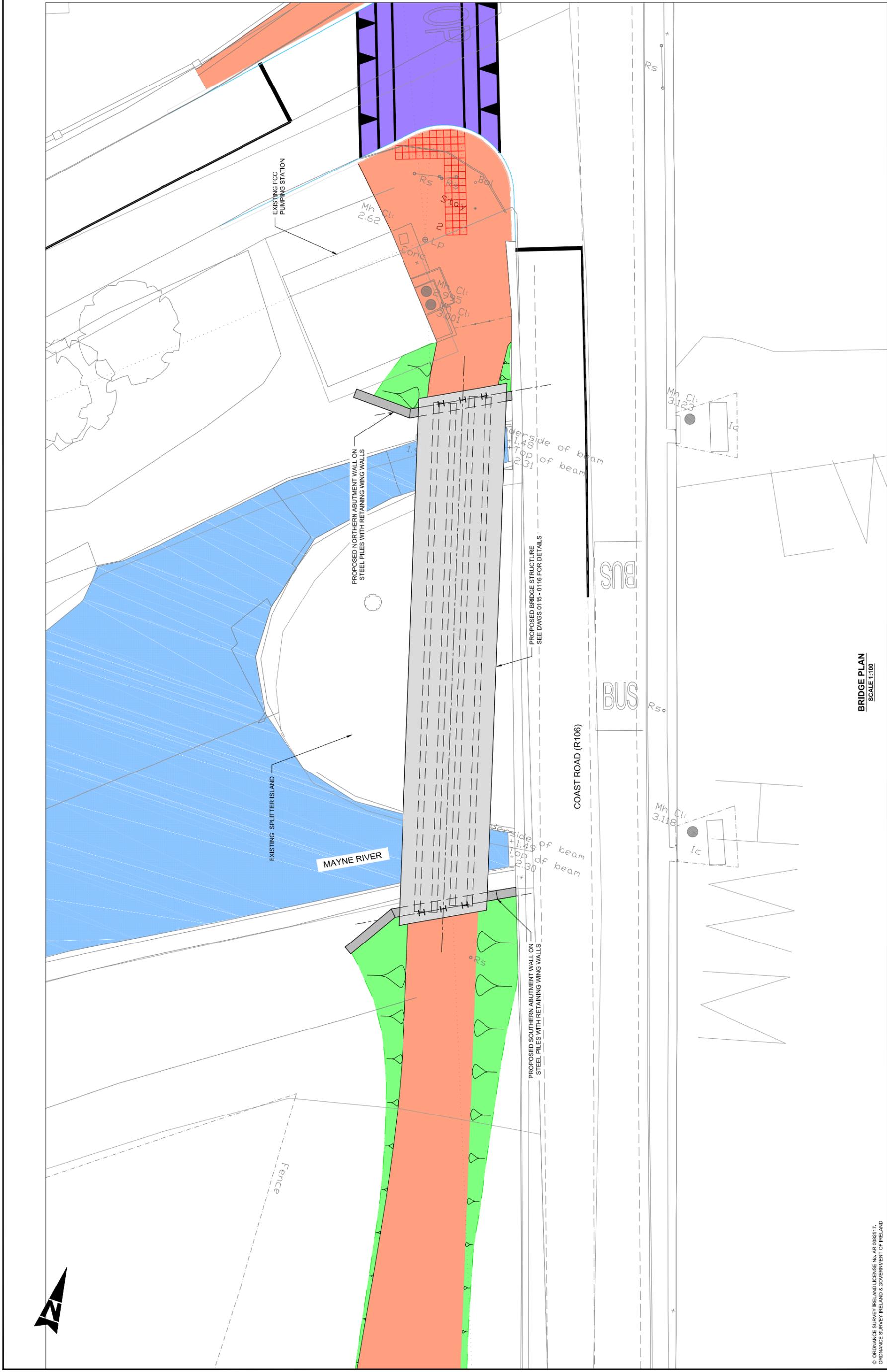
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- PROPOSED TWO WAY CYCLE TRACK
- PROPOSED VERGE
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- PROPOSED RAISED TABLE
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BRIDGE PLAN  
 SCALE 1:100

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- PROPOSED VERGE
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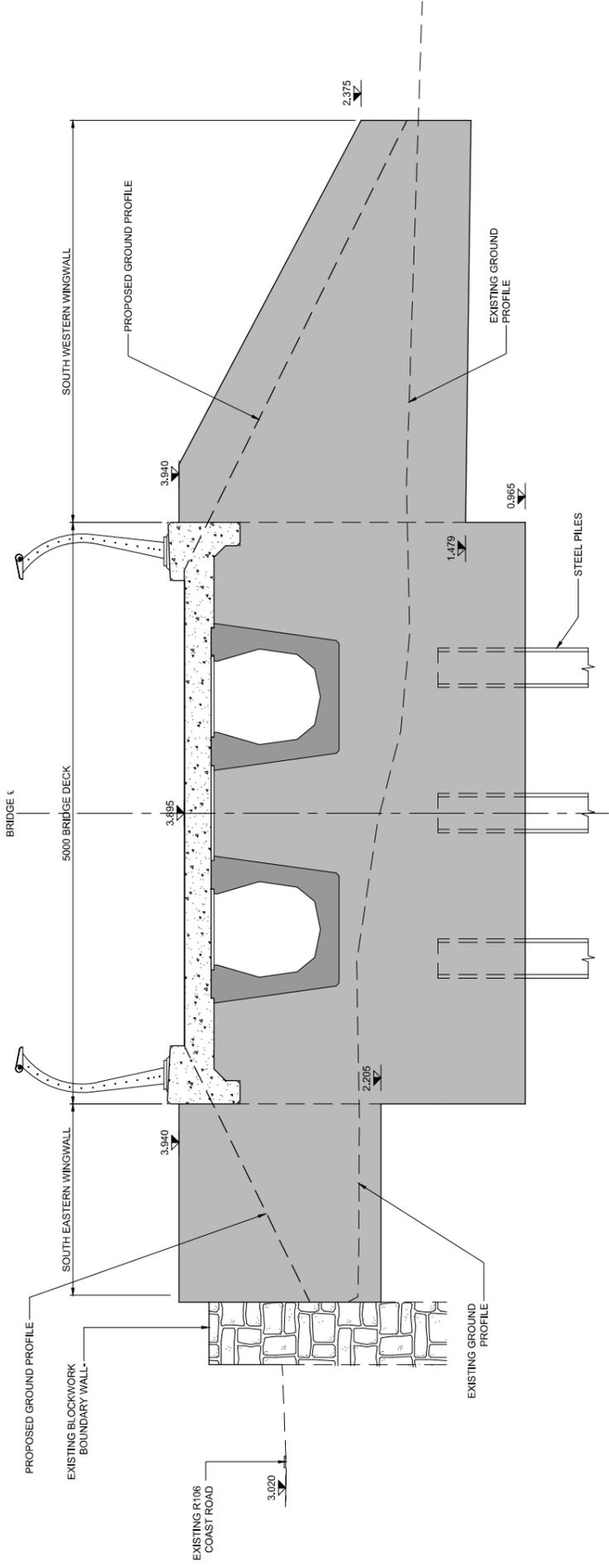
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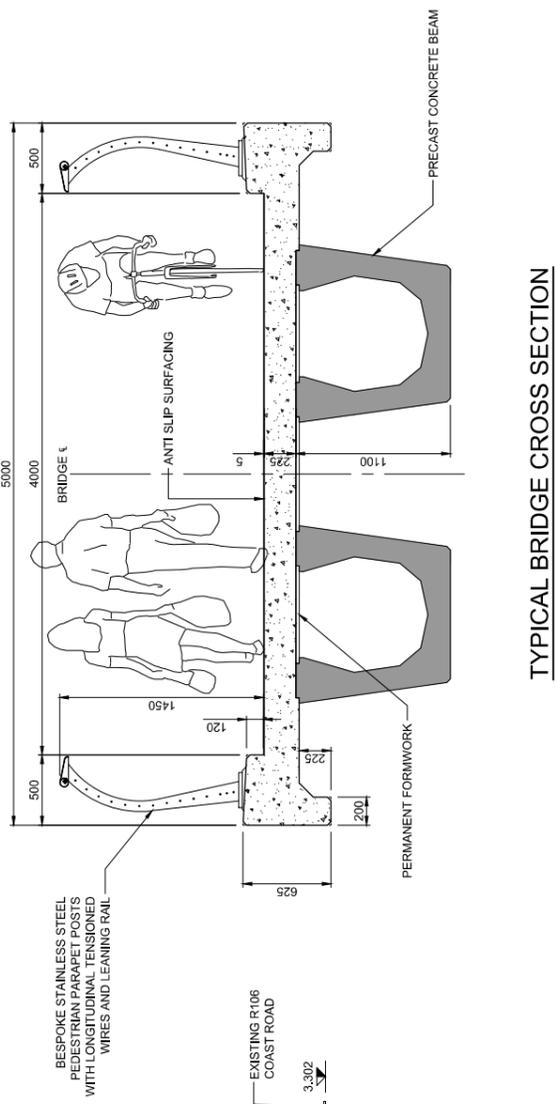
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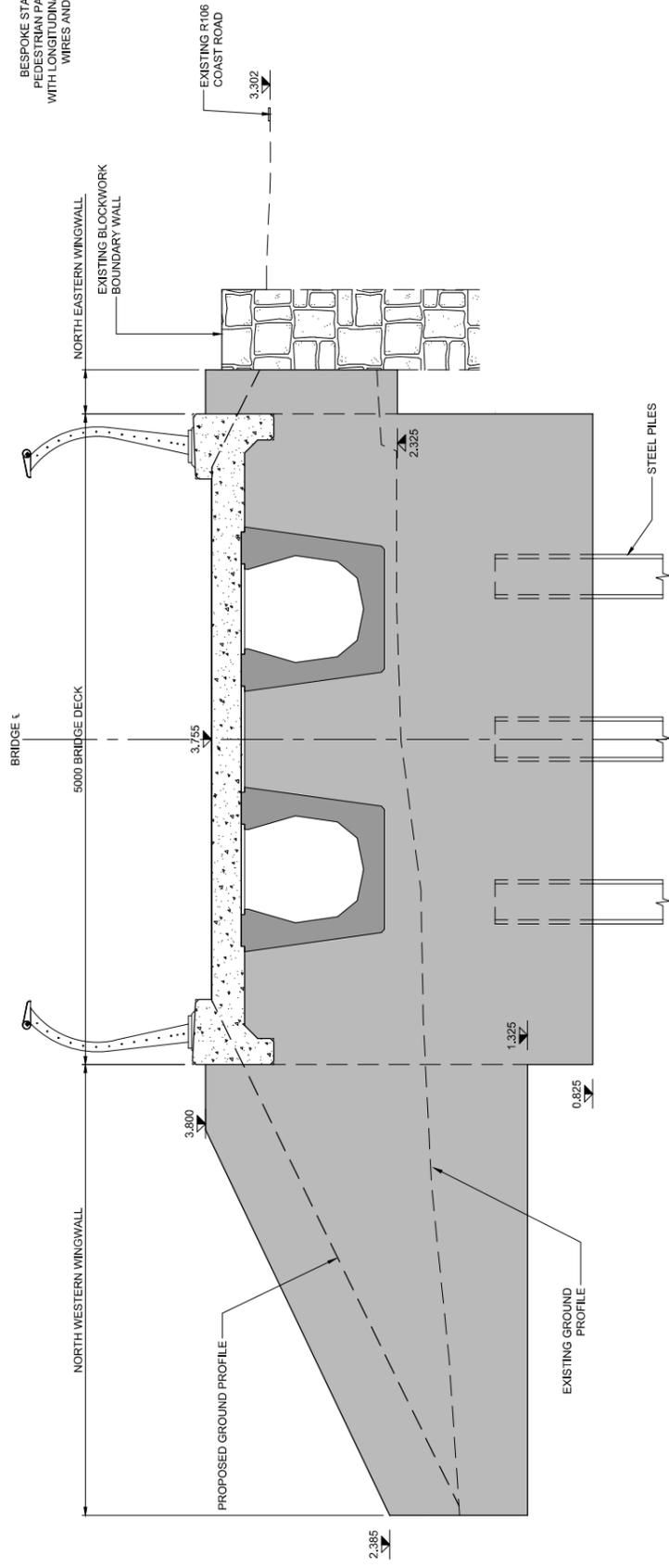
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**TYPICAL BRIDGE CROSS SECTION**

Scale at A1 1:25  
Scale at A3 1:50



**ELEVATION - NORTHERN BRIDGE ABUTMENT**

Scale at A1 1:25  
Scale at A3 1:50

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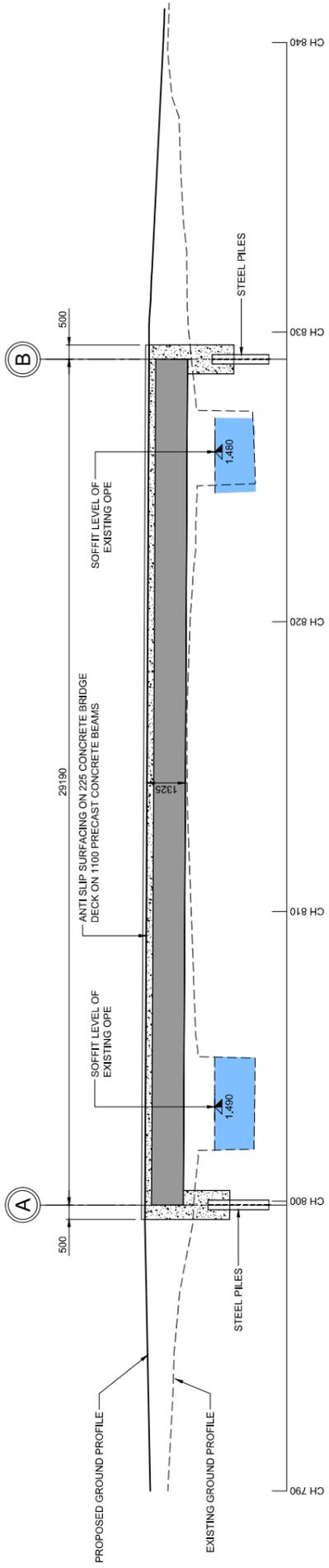
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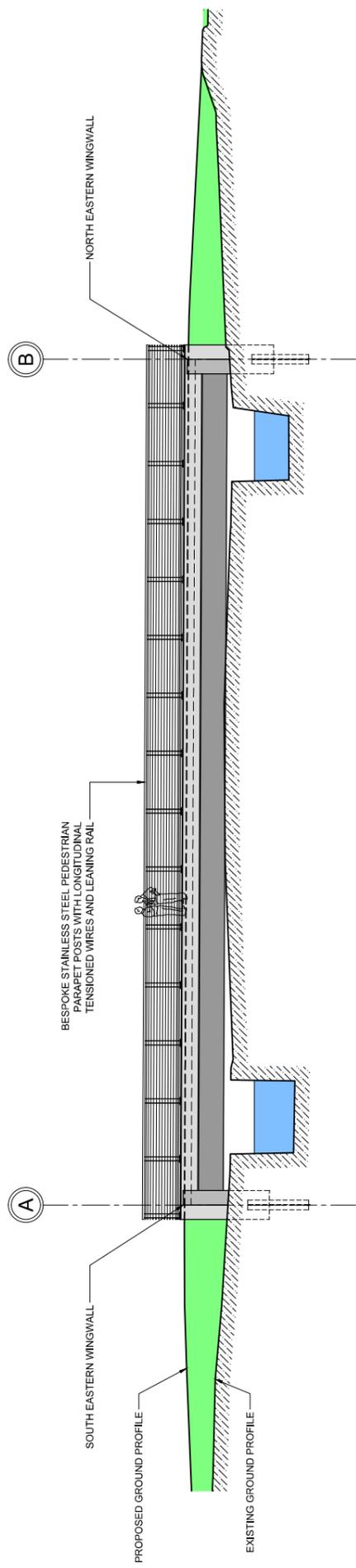
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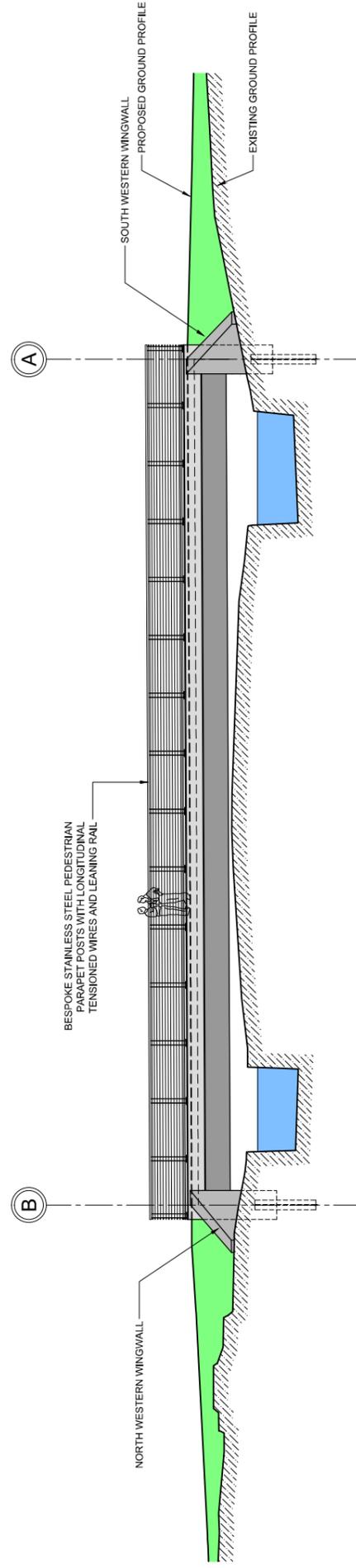
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Drawing Number	5158369 / HTR / SK / 0115						
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**TYPICAL LONGITUDINAL SECTION**  
Scale at A1 1:100  
Scale at A3 1:200



**EASTERN ELEVATION**  
Scale at A1 1:100  
Scale at A3 1:200



**WESTERN ELEVATION**  
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Scale at A3 1:200

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Status	I
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