codling wind park

Environmental Impact Assessment Report

Volume 4

Appendix 10.11 Intertidal Disturbance and Displacement – Magnitude of Impact and Residual Effects


codling
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Abbreviations

Abbreviation	Term in Full
ABP	An Bord Pleanála
CWP	Codling Wind Park
EIAR	Environmental Impact Assessment Report
SPA	Special Protection Area
PA	Preferred Alignment
AAM	Alternative Alignment for the purposes of Modelling [alignment]
NA	Not Applicable

APPENDIX 10.11 INTERTIDAL DISTURBANCE AND DISPLACEMENT – MAGNITUDE OF IMPACT AND RESIDUAL EFFECTS

1 Introduction

1. This appendix forms part of Chapter 10 (Ornithology) of the Environmental Impact Assessment Report (EIAR) for the CWP Project. Specifically, this appendix relates to **Chapter 10 Ornithology** and within this contains a detailed account of intertidal waterbird disturbance and displacement impact magnitudes (both pre- and post-mitigation) associated with intertidal landfall works within the South Dublin Bay and River Tolka Estuary SPA. The impact pathways that this Appendix pertain to are:

- Offshore and Intertidal – Construction: Impact 2 – Disturbance and displacement – Intertidal – Magnitude of Impact; and
- Offshore and Intertidal – Construction: Impact 2 – Disturbance and displacement – Intertidal – Significance of Effect.

2 Magnitude of Impact

2. As stated in **Chapter 10 Ornithology** Offshore and Intertidal – Construction: Impact 2 – Disturbance and displacement – Intertidal – Magnitude of Impact, the determination of overall disturbance and displacement impacts to all species as a result of landfall construction activities have been assessed and are provided in **Sections 2.1** to **Section 2.33**, below**.** These individual species accounts provide a detailed account of how impact magnitude conclusions were assessed for both acoustic and visual disturbance types. For determination of acoustic and visual impact magnitudes, taken into consideration were the numbers and proportions of individuals for each given species in relation to that species' most sensitive piling location (distributions within the South Dublin Bay survey area varied between species) and the same metrics as an average for all piling activities and visual cable route activities. These proportions and numbers of individuals impacted were compared to the maximum site use as a proportion of each species' regional population, in order to contextualise the overall disturbance impacts to that regional population. This determination of overall impact magnitude was carried out for both the Preferred Alignment (PA)and Alternative Alignment for the purposes of Modelling(AAM) intertidal landfall scenarios.

2.1 Light-bellied brent goose

Table 1 Determination of overall disturbance and displacement impacts to light-bellied brent goose as a result of landfall construction disturbance and displacement under the PA and AAM scenarios.

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Large (21.42%)	Small (16.7)	Very small (1.72%)
Most sensitive location average for average count	Up to 1 day	Large (27.69%)	Small (21.59)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Large (24.43%)	Small (19.05)	Very small (1.72%)

Impact magnitude conclusion: Although any given piling event may, on average, result in potential disturbance to a large proportion of light-bellied brent geese present within South Dublin Bay (and a large proportion where piling occurs at the most sensitive location(s)), the number of potentially impacted individuals is, on average, considered to be small (and small where piling occurs at the most sensitive location(s)) and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a large proportion of the light-bellied brent geese present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be small and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration and frequency of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to light-bellied brent goose within the South Dublin Bay area is assessed to be low on account that any potential impact will be of, at most, low consequence to the regional light-bellied brent goose population.

Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Large (25.56%)	Small (19.93)	Very small (1.72%)
Most sensitive location average for average count	Up to 1 day	Large (28.19%)	Small (21.98)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Large (29.73%)	Small (23.18)	Very small (1.72%)

Impact magnitude conclusion: Although any given piling event may, on average, result in potential disturbance to a large proportion of light-bellied brent geese present within South Dublin Bay (and a large proportion where piling occurs at the most sensitive location(s)), the number of potentially impacted individuals is, on average, considered to be small (and small where piling occurs at the most sensitive location(s)) and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a large proportion of the light-bellied brent geese present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be small and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration and frequency of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to light-bellied brent goose within the South Dublin Bay area is assessed to be low on account that any potential impact will be of, at most, low consequence to the regional light-bellied brent goose population.

2.2 Shelduck

Table 2 Determination of overall disturbance and displacement impacts to shelduck as a result of landfall construction disturbance and displacement under the PA and AAM scenarios.

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Large (29.82%)	Very small (1.64)	Very small (0.45%)
Most sensitive location average for average count	Up to 1 day	Large (39.53%)	Very small (2.17)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Large (35.44%)	Very small (1.95)	Very small (0.45%)
Impact magnitude conclusion: Although, any given piling event may, on average, result in potential disturbance to a large proportion of shelduck present within South Dublin Bay (and a large proportion where piling occurs at the most sensitive location(s)), the number of potentially impacted individuals is, on average, considered to be very small and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population (and a very small proportion where piling occurs at the most sensitive location(s)). Similarly, although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a large proportion of the shelduck present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be very small and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to shelduck within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional shelduck population.				
Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Large (33.59%)	Very small (1.85)	Very small (0.45%)

Most sensitive location average for average count	Up to 1 day	Large (36.61%)	Very small (2.01)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Large (35.52%)	Very small (1.95)	Very small (0.45%)

Impact magnitude conclusion: Although, any given piling event may, on average, result in potential disturbance to a large proportion of shelduck present within South Dublin, the number of potentially impacted individuals is, on average, considered to be very small and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a large proportion of the shelduck present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be very small and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to shelduck within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional shelduck population.

2.3 Shoveler

3. This species occurs in very small numbers (peak survey count six, mean count 5.49) on intertidal habitats within South Dublin Bay. This constitutes a very small proportion of the biogeographic population (up to 0.3% of the national threshold for wintering waterbirds in Ireland; Burke *et al*., 2018).

4. The ecological sensitivity of this species to both acoustic and visual impacts is assessed to be medium (See **10: Ornithology– Section 10.10.2**). There is no level of overlap between the occurrence of shoveler recorded throughout the survey period and areas which are predicted to be subject to acoustic or visual disturbance at levels to which this species is sensitive under either the PA or AAM scenarios.

5. Impact magnitude conclusion: Given the short temporal duration and number of disturbance inducing activities expected to take place as part of the construction works, the occurrence and ecological importance of shoveler within South Dublin Bay, and the nil extent of overlap between areas of usage by this species and areas predicted to be subject to acoustic and visual disturbance, the magnitude of impact is assessed as being negligible on account that any potential impact will be of, at most, very low consequence to the regional shoveler population.

2.4 Pintail

6. Very small numbers of this species (peak survey count 16, mean count 0.2) were recorded from the South Dublin Bay survey area, with all birds observed during the baseline period occurring as a single transient flock. The number recorded constitutes a very small proportion of the biogeographic population (up to 1.02% of the estimated wintering population in Ireland; Burke *et al*., 2018).

7. The ecological sensitivity of this species to both acoustic and visual impacts is assessed to be medium (See **Chapter 10: Ornithology– Section 10.10.2**). There is no level of overlap between the occurrence of pintail recorded throughout the survey period and areas which are predicted to be subject to acoustic or visual disturbance at levels to which this species is sensitive under either the PA or AAM scenarios.

8. Impact magnitude conclusion: Given the short temporal duration and number of disturbance inducing activities expected to take place as part of the construction works, the occurrence and ecological importance of pintail within South Dublin Bay, and the nil extent of overlap between areas of usage by this species and areas predicted to be subject to acoustic and visual disturbance, the magnitude of impact is assessed as being negligible on account that any potential impact will be of, at most, very low consequence to the regional pintail population.

2.5 Teal

Table 3 Determination of overall disturbance and displacement impacts to teal as a result of landfall construction disturbance and displacement under the PA and AAM scenarios.

Preferred Alignment Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.11%)	Very small (0.00)	Very small (0.20%)
Most sensitive location average for average count	Up to 1 day	Very small (0.88%)	Very small (0.03)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (1.09%)	Very small (0.04)	Very small (0.20%)

Impact magnitude conclusion: Any given piling event is predicted to, on average, result in potential disturbance to a very small proportion of teal present within South Dublin Bay area (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, also considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation are predicted, on average, to result in potential disturbance to a very small proportion of the teal present within South Dublin Bay, the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to teal within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional teal population.

Alternative Alignment for the purposes of Modelling Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.09%)	Very small (0.00)	Very small (0.20%)

Most sensitive location average for average count	Up to 1 day	Very small (0.88%)	Very small (0.03)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (1.17%)	Very small (0.04)	Very small (0.20%)

Impact magnitude conclusion: Any given piling event is predicted to, on average, result in potential disturbance to a very small proportion of teal present within the South Dublin Bay area (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, also considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation are predicted, on average, to result in potential disturbance to a very small proportion of the light-bellied brent geese present within South Dublin Bay, the number of potentially impacted individuals is, on average, also considered to be very small and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to teal within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional teal population.

2.6 Oystercatcher

Table 4 Determination of overall disturbance and displacement impacts to oystercatcher as a result of landfall construction disturbance and displacement under the PA and AAM scenarios.

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (4.67%)	Medium (40.22)	Small (6%)
Most sensitive location average for average count	Up to 1 day	Small (8.35%)	Medium (71.9)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Large (20.44%)	Large (176.02)	Small (6%)

Impact magnitude conclusion: Although any given piling event may, on average, result in potential disturbance to a very small proportion of oystercatcher present within South Dublin Bay (or a small proportion where piling occurs at the most sensitive location(s)), the number of potentially impacted individuals is, on average, considered to be medium (or large where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population.

Although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a large proportion of the oystercatcher present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be large and the South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to oystercatcher within the South Dublin Bay area is assessed to be low on account that any potential impact will be of, at most, low consequence to the regional oystercatcher population.

Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Small (5.91%)	Medium (50.88)	Small (6%)
Most sensitive location average for average count	Up to 1 day	Medium (12.67%)	Large (109.1)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Large (29.08%)	Large (250.42)	Small (6%)

Impact magnitude conclusion: Although any given piling event may, on average, result in potential disturbance to a small proportion of oystercatcher present within South Dublin Bay (or a medium proportion where piling occurs at the most sensitive location(s)), the number of potentially impacted individuals is, on average, considered to be medium (or large where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population.

Although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a large proportion of the oystercatcher present within South Dublin Bay, the number of potentially impacted individuals is, on average, considered to be large and the South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to oystercatcher within the South Dublin Bay area is assessed to be low on account that any potential impact will be of, at most, low consequence to the regional oystercatcher population.

2.7 Golden plover

Table 5 Determination of overall disturbance and displacement impacts to golden plover as a result of landfall construction disturbance and displacement under the PA and AAM scenarios.

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.85%)	Very small (0.21)	Very small (0.50%)
Most sensitive location average for average count	Up to 1 day	Very small (17.92%)	Very small (0.55)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (3.68%)	Very small (0.89)	Very small (0.50%)

Impact magnitude conclusion: Any given piling event is predicted to, on average, result in potential disturbance to a very small proportion of golden plover present within the South Dublin Bay area (and a very small proportion where piling occurs at the most sensitive location(s)), and the number of potentially impacted individuals is, on average, also considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a very small proportion of the grey plover present within South Dublin Bay, the number of potentially impacted individuals is, on average, considered to be very small and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to golden plover within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional golden plover population.

Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Very small (1.83%)	Very small (0.44)	Very small (0.50%)
Most sensitive location average for average count	Up to 1 day	Very small (1.99%)	Very small (0.48)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (10.15%)	Small (24.14)	Very small (0.50%)

Impact magnitude conclusion: Any given piling event is predicted to, on average, result in potential disturbance to a very small proportion of golden plover present within the South Dublin Bay area (and a very small proportion where piling occurs at the most sensitive location(s)), and the number of potentially impacted individuals is, on average, also considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the grey plover present within South Dublin Bay, the number of potentially impacted individuals is, on average, considered to be small and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to golden plover within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional golden plover population.

2.8 Grey plover

Table 6 Determination of overall disturbance and displacement impacts to grey plover as a result of landfall construction disturbance and displacement under the PA and AAM scenarios.

Preferred Alignment Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (3.93%)	Very small (0.12)	Very small (1.50%)
Most sensitive location average for average count	Up to 1 day	Medium (17.92%)	Very small (0.55)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (15.83%)	Very small (0.49)	Very small (1.50%)

Impact magnitude conclusion: Although any given piling event may, on average, result in potential disturbance to a very small proportion of grey plover present within South Dublin Bay (and a medium proportion where piling occurs at the most sensitive location(s)), the number of potentially impacted individuals is, on average, considered to be very small on average (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the grey plover present within South Dublin Bay, the number of potentially impacted individuals is, on average, considered to be very small and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to grey plover within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional grey plover population.

Alternative Alignment for the purposes of Modelling Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Small (7.19%)	Very small (0.22)	Very small (1.50%)
Most sensitive location average for average count	Up to 1 day	Small (30.94%)	Very small (0.95)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Large (35.83%)	Very small (1.1)	Very small (1.50%)

Impact magnitude conclusion: Although any given piling event may, on average, result in potential disturbance to a small proportion of grey plover present within South Dublin Bay (and a small proportion where piling occurs at the most sensitive location(s)), the number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a large proportion of the grey plover present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be very small and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to grey plover within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional grey plover population.

2.9 Ringed plover

Table 7 Determination of overall disturbance and displacement impacts to ringed plover as a result of landfall construction disturbance and displacement under the PA and AAM scenarios.

Preferred Alignment Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.02%)	Very small (0.01)	Very small (3.30%)
Most sensitive location average for average count	Up to 1 day	Very small (0.06%)	Very small (0.02)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (3.26%)	Very small (1.08)	Very small (3.30%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of ringed plover present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a very small proportion of the ringed plover present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to ringed plover within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional ringed plover population.

Alternative Alignment for the purposes of Modelling Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Very small (0.04%)	Very small (0.01)	Very small (3.30%)
Most sensitive location average for average count	Up to 1 day	Very small (0.12%)	Very small (0.04)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (13.16%)	Very small (4.36)	Very small (3.30%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of ringed plover present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small, and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the ringed plovers present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be very small and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to ringed plover within the South Dublin Bay area is assessed to be low on account that any potential impact will be of, at most, very low consequence to the regional ringed plover population.

2.10 Curlew

Table 8 Determination of overall disturbance and displacement impacts to curlew as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (3.38%)	Very small (1.61)	Very small (0.70%)
Most sensitive location average for average count	Up to 1 day	Very small (4.23%)	Very small (2.02)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (15.41%)	Very small (7.35)	Very small (0.70%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of curlew present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the curlew present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be very small and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to curlew within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional curlew population.

Alternative Alignment for the purposes of Modelling Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Very small (4.45%)	Very small (2.12)	Very small (0.70%)
Most sensitive location average for average count	Up to 1 day	Very small (4.46%)	Very small (2.13)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Large (23.47%)	Small (11.2)	Very small (0.70%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of curlew present within South Dublin Bay (and a small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a large proportion of the curlew present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be small and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to curlew within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional curlew population.

2.11 Bar-tailed godwit

Table 9 Determination of overall disturbance and displacement impacts to bar-tailed godwit as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.95%)	Very small (1.69)	Small (7.40%)
Most sensitive location average for average count	Up to 1 day	Very small (2.53%)	Very small (4.5)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (4.45%)	Very small (7.91)	Small (7.40%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of bar-tailed godwit present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a very small proportion of the bar-tailed godwit present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be very small. The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to bar-tailed godwit within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional bar-tailed godwit population.

Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Very small (2.40%)	Very small (4.26)	Small (7.40%)
Most sensitive location average for average count	Up to 1 day	Small (8.37%)	Small (14.86)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (13.90%)	Small (24.69)	Small (7.40%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of bar-tailed godwit present within South Dublin Bay (and a small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (or small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by a small proportion of the regional wintering population.

Visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the bar-tailed godwits present within South Dublin Bay. The number of potentially impacted individuals is, on average, considered to be small. The South Dublin Bay area is used at any one time by a small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to bar-tailed godwit within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional bar-tailed godwit population.

2.12 Black-tailed godwit

Table 10 Determination of overall disturbance and displacement impacts to black-tailed godwit as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.56%)	Very small (0.62)	Very small (3.00%)
Most sensitive location average for average count	Up to 1 day	Very small (0.69%)	Very small (0.76)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (3.18%)	Very small (3.52)	Very small (3.00%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of black-tailed godwits present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a very small proportion of the black-tailed godwits present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to black-tailed godwit within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional black-tailed godwit population.

Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Very small (1.24%)	Very small (1.38)	Very small (3.00%)
Most sensitive location average for average count	Up to 1 day	Very small (3.84%)	Very small (4.25)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Small (7.62%)	Very small (8.44)	Very small (3.00%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of black-tailed godwits present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a small proportion of the black-tailed godwits present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to black-tailed godwit within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional black-tailed godwit population.

2.13 Turnstone

Table 11 Determination of overall disturbance and displacement impacts to turnstone as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.02%)	Very small (0.01)	Very small (2.80%)
Most sensitive location average for average count	Up to 1 day	Very small (0.17%)	Very small (0.11)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (0.92%)	Very small (0.61)	Very small (2.80%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of turnstones present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a very small proportion of the turnstones present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to turnstone within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional turnstone population.

Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Very small (0.05%)	Very small (0.03)	Very small (2.80%)
Most sensitive location average for average count	Up to 1 day	Very small (0.42%)	Very small (0.28)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (1.11%)	Very small (0.74)	Very small (2.80%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of turnstones present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a very small proportion of the turnstones present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to turnstone within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional turnstone population.

2.14 Knot

Table 12 Determination of overall disturbance and displacement impacts to knot as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Medium (14.97%)	Large (116.06)	Very large (53.70%)
Most sensitive location average for average count	Up to 1 day	Large (36.62%)	Large (283.89)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (1.99%)	Small (15.42)	Very large (53.70%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a medium proportion of knot present within South Dublin Bay (and a large proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be large. The South Dublin Bay area may be used at any one time by a very large proportion of the regional wintering population.

Visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a very small proportion of the knot present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be small. The South Dublin Bay area may be used at any one time by a very large proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to knot within the South Dublin Bay area is assessed to be medium on account that any potential impact will be of, at most, medium consequence to the regional knot population.

Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Medium (17.65%)	Large (136.83)	Very large (53.70%)
Most sensitive location average for average count	Up to 1 day	Large (32.50%)	Large (251.98)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Small (9.95%)	Medium (77.16)	Very large (53.70%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a medium proportion of knot present within South Dublin Bay (and a large proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be large. The South Dublin Bay area may be used at any one time by a very large proportion of the regional wintering population.

Visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a small proportion of the knot present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be medium. The South Dublin Bay area may be used at any one time by a very large proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to knot within the South Dublin Bay area is assessed to be medium on account that any potential impact will be of, at most, medium consequence to the regional knot population.

2.15 Sanderling

Table 13 Determination of overall disturbance and displacement impacts to sanderling as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.02%)	Very small (0.01)	Very small (4.90%)
Most sensitive location average for average count	Up to 1 day	Very small (0.13%)	Very small (0.07)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (1.09%)	Very small (0.58)	Very small (4.90%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of sanderlings present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a very small proportion of the sanderlings present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to sanderling within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional sanderling population.

Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Very small (0.08%)	Very small (0.04)	Very small (4.90%)
Most sensitive location average for average count	Up to 1 day	Very small (0.55%)	Very small (0.29)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (3.34%)	Very small (1.77)	Very small (4.90%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of sanderlings present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a very small proportion of the sanderlings present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to sanderling within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional sanderling population.

2.16 Dunlin

Table 14 Determination of overall disturbance and displacement impacts to dunlin as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.27%)	Very small (1.62)	Medium (11.90%)
Most sensitive location average for average count	Up to 1 day	Very small (0.70%)	Very small (4.2)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (16.61%)	Medium (99.1)	Medium (11.90%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of dunlin present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used by, at most, a medium proportion of the regional wintering population at any one time.

Visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the dunlin present within South Dublin Bay and the number of potentially impacted individuals is, on average considered to be medium. The South Dublin Bay area is used by, at most, a medium proportion of the regional wintering population at any one time.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to dunlin within the South Dublin Bay area is assessed to be low on account that any potential impact will be of, at most, low consequence to the regional dunlin population.

Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Very small (0.29%)	Very small (1.74)	Medium (11.90%)
Most sensitive location average for average count	Up to 1 day	Very small (0.70%)	Very small (4.2)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Large (26.84%)	Large (160.17)	Medium (11.90%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of dunlin present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a medium proportion of the regional wintering population.

Visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a large proportion of the dunlin present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be large. The South Dublin Bay area is used at any one time by, at most, a medium proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to dunlin within the South Dublin Bay area is assessed to be medium on account that any potential impact will be of, at most, medium consequence to the regional dunlin population.

2.17 Redshank

Table 15 Determination of overall disturbance and displacement impacts to redshank as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Large (29.75%)	Medium (49.6)	Very small (3.00%)
Most sensitive location average for average count	Up to 1 day	Large (36.87%)	Medium (61.47)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (11.04%)	Small (18.41)	Very small (3.00%)

Impact magnitude conclusion: Although any given piling event may, on average, result in potential disturbance to a large proportion of redshank present within South Dublin Bay (and a large proportion where piling occurs at the most sensitive location(s)), the number of potentially impacted individuals is, on average, considered to be medium (and medium where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the redshank present within South Dublin Bay and the number of potentially impacted individuals is, on average considered to be small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to redshank within the South Dublin Bay area is assessed to be low on account that any potential impact will be of, at most, low consequence to the regional redshank population.

Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Large (32.68%)	Medium (54.48)	Very small (3.00%)
Most sensitive location average for average count	Up to 1 day	Large (48.76%)	Medium (81.28)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (16.04%)	Small (26.74)	Very small (3.00%)

Impact magnitude conclusion: Although any given piling event may, on average, result in potential disturbance to a large proportion of redshank present within South Dublin Bay (and a large proportion where piling occurs at the most sensitive location(s)), the number of potentially impacted individuals is, on average, considered to be medium (and medium where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the redshank present within South Dublin Bay and the number of potentially impacted individuals is, on average considered to be small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to redshank within the South Dublin Bay area is assessed to be low on account that any potential impact will be of, at most, low consequence to the regional redshank population.

2.18 Black-headed gull

Table 16 Determination of overall disturbance and displacement impacts to black-headed gull as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.27%)	Very small (2.03)	Very small (3.83%)
Most sensitive location average for average count	Up to 1 day	Very small (0.84%)	Very small (6.35)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (10.76%)	Medium (81.07)	Very small (3.83%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of black-headed gulls present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the black-headed gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be medium. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Gulls, in general, are extremely adaptable, typically demonstrating a high level of tolerance and habituation to human activities (Calladine *et al.*, 2006). This adaptability, along with a high degree of flexibility in their usage of habitats, provides these species with an ability to adapt to very high levels of visual and acoustic disturbance which may arise as a result of anthropogenic activities. It is considered, therefore, that the assessment of any impacts to black-headed gull are likely to be precautionary; i.e. numbers of individuals occurring within areas corresponding with the generic 'low' visual and acoustic level impacts (typically used to characterise impact magnitudes to receptors with low ecological sensitivity) are likely to be far greater than the actual numbers of black-headed gulls which may experience potential visual or acoustic disturbance within extremely localised areas around construction activities.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route

scenario to black-headed gull within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional black-headed gull population.

Alternative Alignment for the purposes of Modelling Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.28%)	Very small (2.08)	Very small (3.83%)
Most sensitive location average for average count	Up to 1 day	Very small (0.61%)	Very small (4.56)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (15.52%)	Large (116.94)	Very small (3.83%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of black headed gulls present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the black-headed gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be large. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Gulls, in general, are extremely adaptable, typically demonstrating a high level of tolerance and habituation to human activities (Calladine *et al.*, 2006). This adaptability, along with a high degree of flexibility in their usage of habitats, provides these species with an ability to adapt to very high levels of visual and acoustic disturbance which may arise as a result of anthropogenic activities. It is considered, therefore, that the assessment of any impacts to black-headed gull are likely to be precautionary; i.e. numbers of individuals occurring within areas corresponding with the generic 'low' visual and acoustic level impacts (typically used to characterise impact magnitudes to receptors with low ecological sensitivity) are likely to be far greater than the actual numbers of black-headed gulls which may experience potential visual or acoustic disturbance within extremely localised areas around construction activities.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to black-headed gull within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional black-headed gull population.

2.19 Great crested grebe

Table 17 Determination of overall disturbance and displacement impacts to great crested grebe as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (1.50%)	Very small (0.87)	Large (30.4%)
Most sensitive location average for average count	Up to 1 day	Very small (5.37%)	Very small (3.09)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (10.67%)	Very small (6.13)	Large (30.4%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of great crested grebes present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by a large proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the great crested grebes present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be very small. The South Dublin Bay area is used at any one time by a large proportion of the regional wintering population.

As such and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to great crested grebe within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional great crested grebe population.

Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Very small (2.33%)	Very small (1.34)	Large (30.4%)
Most sensitive location average for average count	Up to 1 day	Very small (5.37%)	Very small (3.09)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (24.67%)	Small (14.18)	Large (30.4%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of great crested grebes present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by a large proportion of the regional wintering population.

Visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the great crested grebes present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be small. The South Dublin Bay area is used at any one time by a large proportion of the regional wintering population.

As such and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route route scenario to great crested grebe within the South Dublin Bay area is assessed to be low, on account that any potential impact will be of, at most, low consequence to the regional great crested grebe population.

2.20 Red-breasted merganser

Table 18 Determination of overall disturbance and displacement impacts to red-breasted merganser as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Medium (16.21%)	Very small (2.86)	Small (6.10%)
Most sensitive location average for average count	Up to 1 day	Medium (25.54%)	Very small (4.5)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (17.03%)	Very small (3)	Small (6.10%)

Impact magnitude conclusion: Although any given piling event may, on average, result in potential disturbance to a medium proportion of red-breasted mergansers present within South Dublin Bay (or a medium proportion where piling occurs at the most sensitive location(s)), the number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s). The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population.

Similarly, although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the red-breasted mergansers present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be very small. The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to red-breasted merganser within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional red-breasted merganser population.

Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Large (20.96%)	Very small (3.69)	Small (6.10%)
Most sensitive location average for average count	Up to 1 day	Medium (33.89%)	Very small (5.97)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Large (20.72%)	Very small (3.65)	Small (6.10%)

Impact magnitude conclusion: Although any given piling event may, on average, result in potential disturbance to a large proportion of red-breasted mergansers present within South Dublin Bay (or a medium proportion where piling occurs at the most sensitive location(s)), the number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s). The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population.

Similarly, although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a large proportion of the red-breasted mergansers present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be very small. The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to red-breasted merganser within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional red-breasted merganser population.

2.21 Red-throated diver

Table 19 Determination of overall disturbance and displacement impacts to red-throated diver as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (1.60%)	Very small (0.07)	Very small (0.56%)
Most sensitive location average for average count	Up to 1 day	Very small (5.01%)	Very small (0.21)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (1.60%)	Very small (0.07)	Very small (0.56%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of red-throated divers present within South Dublin Bay (and a small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a very small proportion of the red-throated divers present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to red-throated diver within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional red-throated diver population.

Alternative Alignment for the purposes of Modelling Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Very small (4.82%)	Very small (0.2)	Very small (0.56%)
Most sensitive location average for average count	Up to 1 day	Small (7.64%)	Very small (0.32)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (2.15%)	Very small (0.09)	Very small (0.56%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of red-throated divers present within South Dublin Bay (and a small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a very small proportion of the red-throated divers present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to red-throated diver within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional red-throated diver population.

2.22 Herring gull

Table 20 Determination of overall disturbance and displacement impacts to herring gull as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.10%)	Very small (0.34)	Very small (3.02%)
Most sensitive location average for average count	Up to 1 day	Very small (0.33%)	Very small (1.18)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Small (8.21%)	Medium (29.14)	Very small (3.02%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of herring gulls present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a small proportion of the herring gulls present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be medium. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Gulls, in general, are extremely adaptable, typically demonstrating a high level of tolerance and habituation to human activities (Calladine *et al.*, 2006). This adaptability, along with a high degree of flexibility in their usage of habitats, provides these species with an ability to adapt to very high levels of visual and acoustic disturbance which may arise as a result of anthropogenic activities. It is considered, therefore, that the assessment of any impacts to herring gull are likely to be precautionary; i.e. numbers of individuals occurring within areas corresponding with the generic 'low' visual and acoustic level impacts (typically used to characterise impact magnitudes to receptors with low ecological sensitivity) are likely to be far greater than the actual numbers of herring gulls which may experience potential visual or acoustic disturbance within extremely localised areas around construction activities.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route

scenario to herring gull within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional herring gull population.

Alternative Alignment for the purposes of Modelling Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.13%)	Very small (0.47)	Very small (3.02%)
Most sensitive location average for average count	Up to 1 day	Very small (0.11%)	Very small (0.40)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (10.98%)	Medium (38.99)	Very small (3.02%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of herring gulls present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the herring gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be medium. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Gulls, in general, are extremely adaptable, typically demonstrating a high level of tolerance and habituation to human activities (Calladine *et al.*, 2006). This adaptability, along with a high degree of flexibility in their usage of habitats, provides these species with an ability to adapt to very high levels of visual and acoustic disturbance which may arise as a result of anthropogenic activities. It is considered, therefore, that the assessment of any impacts to herring gull are likely to be precautionary; i.e. numbers of individuals occurring within areas corresponding with the generic 'low' visual and acoustic level impacts (typically used to characterise impact magnitudes to receptors with low ecological sensitivity) are likely to be far greater than the actual numbers of herring gulls which may experience potential visual or acoustic disturbance within extremely localised areas around construction activities.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred cable-route scenario to herring gull within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional herring gull population.

2.23 Little egret

Table 21 Determination of overall disturbance and displacement impacts to little egret as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (3.59%)	Very small (0.29)	Small (5.00%)
Most sensitive location average for average count	Up to 1 day	Small (5.52%)	Very small (0.45)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (14.34%)	Very small (1.17)	Small (5.00%)

Impact magnitude conclusion: Although any given piling event may, on average, result in potential disturbance to a very small proportion of little egrets present within South Dublin Bay (or a small proportion where piling occurs at the most sensitive location(s)), the number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population.

Similarly, although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the little egrets present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to little egret within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional little egret population.

Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Very small (4.07%)	Very small (0.33)	Small (5.00%)
Most sensitive location average for average count	Up to 1 day	Small (4.91%)	Very small (0.40)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (14.36%)	Very small (1.17)	Small (5.00%)

Impact magnitude conclusion: Although any given piling event may, on average, result in potential disturbance to a very small proportion of little egrets present within South Dublin Bay (or a small proportion where piling occurs at the most sensitive location(s)), the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population.

Similarly, although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the little egrets present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be very small. The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to little egret within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional little egret population.

2.24 Greenshank

Table 22 Determination of overall disturbance and displacement impacts to greenshank as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Medium (15.50%)	Very small (0.69)	Very small (1.10%)
Most sensitive location average for average count	Up to 1 day	Large (22.60%)	Very small (1.01)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (16.37%)	Very small (0.73)	Very small (1.10%)

Impact magnitude conclusion: Although, any given piling event may, on average, result in potential disturbance to a medium proportion of greenshank present within South Dublin Bay (and a large proportion where piling occurs at the most sensitive location(s)), the number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the greenshank present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to greenshank within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional greenshank population.

Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Medium (16.65%)	Very small (0.74)	Very small (1.10%)
Most sensitive location average for average count	Up to 1 day	Large (22.82%)	Very small (1.02)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (16.33%)	Very small (0.73)	Very small (1.10%)

Impact magnitude conclusion: Although, any given piling event may, on average, result in potential disturbance to a medium proportion of greenshank present within South Dublin Bay (and a large proportion where piling occurs at the most sensitive location(s)), the number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the greenshank present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to greenshank within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional greenshank population.

2.25 Mediterranean gull

Table 23 Determination of overall disturbance and displacement impacts to Mediterranean gull as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.07%)	Very small (0.01)	Large (38.00%)
Most sensitive location average for average count	Up to 1 day	Very small (0.24%)	Very small (0.14)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (2.78%)	Very small (0.35)	Large (38.00%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of Mediterranean gulls present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by a large proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a very small proportion of the Mediterranean gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be very small. The South Dublin Bay area is used at any one time by a large proportion of the regional wintering population.

Gulls, in general, are extremely adaptable, typically demonstrating a high level of tolerance and habituation to human activities (Calladine *et al.*, 2006). This adaptability, along with a high degree of flexibility in their usage of habitats, provides these species with an ability to adapt to very high levels of visual and acoustic disturbance which may arise as a result of anthropogenic activities. It is considered, therefore, that the assessment of any impacts to Mediterranean gull are likely to be precautionary; i.e. numbers of individuals occurring within areas corresponding with the generic 'low' visual and acoustic level impacts (typically used to characterise impact magnitudes to receptors with low ecological sensitivity) are likely to be far greater than the actual numbers of Mediterranean gulls which may experience potential visual or acoustic disturbance within extremely localised areas around construction activities.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to Mediterranean gull within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional Mediterranean gull population.

Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.06%)	Very small (0.01)	Large (38.00%)
Most sensitive location average for average count	Up to 1 day	Very small (0.15%)	Very small (0.09)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (3.10%)	Very small (0.39)	Large (38.00%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of Mediterranean gulls present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by a large proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a very small proportion of the Mediterranean gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be very small. The South Dublin Bay area is used at any one time by a large proportion of the regional wintering population.

Gulls, in general, are extremely adaptable, typically demonstrating a high level of tolerance and habituation to human activities (Calladine *et al.*, 2006). This adaptability, along with a high degree of flexibility in their usage of habitats, provides these species with an ability to adapt to very high levels of visual and acoustic disturbance which may arise as a result of anthropogenic activities. It is considered, therefore, that the assessment of any impacts to Mediterranean gull are likely to be precautionary; i.e. numbers of individuals occurring within areas corresponding with the generic 'low' visual and acoustic level impacts (typically used to characterise impact magnitudes to receptors with low ecological sensitivity) are likely to be far greater than the actual numbers of Mediterranean gulls which may experience potential visual or acoustic disturbance within extremely localised areas around construction activities.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to Mediterranean gull within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional Mediterranean gull population.

2.26 Common gull

Table 24 Determination of overall disturbance and displacement impacts to common gull as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.06%)	Very small (0.03)	Very small (0.33%)
Most sensitive location average for average count	Up to 1 day	Very small (0.24%)	Very small (0.14)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (3.89%)	Very small (2.31)	Very small (0.33%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of common gulls present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a very small proportion of the common gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Gulls, in general, are extremely adaptable, typically demonstrating a high level of tolerance and habituation to human activities (Calladine *et al.*, 2006). This adaptability, along with a high degree of flexibility in their usage of habitats, provides these species with an ability to adapt to very high levels of visual and acoustic disturbance which may arise as a result of anthropogenic activities. It is considered, therefore, that the assessment of any impacts to common gull are likely to be precautionary; i.e. numbers of individuals occurring within areas corresponding with the generic 'low' visual and acoustic level impacts (typically used to characterise impact magnitudes to receptors with low ecological sensitivity) are likely to be far greater than the actual numbers of common gulls which may experience potential visual or acoustic disturbance within extremely localised areas around construction activities.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route

scenario to common gull within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional common gull population.

Alternative Alignment for the purposes of Modelling Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.06%)	Very small (0.03)	Very small (0.33%)
Most sensitive location average for average count	Up to 1 day	Very small (0.15%)	Very small (0.09)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (4.61%)	Very small (2.73)	Very small (0.33%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of common gulls present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a small proportion of the common gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Gulls, in general, are extremely adaptable, typically demonstrating a high level of tolerance and habituation to human activities (Calladine *et al.*, 2006). This adaptability, along with a high degree of flexibility in their usage of habitats, provides these species with an ability to adapt to very high levels of visual and acoustic disturbance which may arise as a result of anthropogenic activities. It is considered, therefore, that the assessment of any impacts to common gull are likely to be precautionary; i.e. numbers of individuals occurring within areas corresponding with the generic 'low' visual and acoustic level impacts (typically used to characterise impact magnitudes to receptors with low ecological sensitivity) are likely to be far greater than the actual numbers of common gulls which may experience potential visual or acoustic disturbance within extremely localised areas around construction activities.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to common gull within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional common gull population.

2.27 Great black-backed gull

Table 25 Determination of overall disturbance and displacement impacts to great black-backed gull as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.09%)	Very small (0.03)	Very small (0.45%)
Most sensitive location average for average count	Up to 1 day	Medium (13.88%)	Very small (4.94)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (4.64%)	Very small (1.65)	Very small (0.45%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of great black-backed gulls present within South Dublin Bay (and a medium proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a very small proportion of the great black-backed gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Gulls, in general, are extremely adaptable, typically demonstrating a high level of tolerance and habituation to human activities (Calladine *et al.*, 2006). This adaptability, along with a high degree of flexibility in their usage of habitats, provides these species with an ability to adapt to very high levels of visual and acoustic disturbance which may arise as a result of anthropogenic activities. It is considered, therefore, that the assessment of any impacts to great black-backed gull are likely to be precautionary; i.e. numbers of individuals occurring within areas corresponding with the generic 'low' visual and acoustic level impacts (typically used to characterise impact magnitudes to receptors with low ecological sensitivity) are likely to be far greater than the actual numbers of great black-backed gulls which may experience potential visual or acoustic disturbance within extremely localised areas around construction activities.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to great black-backed gull within the South Dublin Bay area is assessed to be negligible on account

that any potential impact will be of, at most, very low consequence to the regional great black-backed gull population.

Alternative Alignment for the purposes of Modelling Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.11%)	Very small (0.04)	Very small (0.45%)
Most sensitive location average for average count	Up to 1 day	Medium (10.40%)	Very small (3.7)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Small (6.10%)	Very small (2.17)	Very small (0.45%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of great black-backed gulls present within South Dublin Bay (and a medium proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a small proportion of the great black-backed gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Gulls, in general, are extremely adaptable, typically demonstrating a high level of tolerance and habituation to human activities (Calladine *et al.*, 2006). This adaptability, along with a high degree of flexibility in their usage of habitats, provides these species with an ability to adapt to very high levels of visual and acoustic disturbance which may arise as a result of anthropogenic activities. It is considered, therefore, that the assessment of any impacts to great black-backed gull are likely to be precautionary; i.e. numbers of individuals occurring within areas corresponding with the generic 'low' visual and acoustic level impacts (typically used to characterise impact magnitudes to receptors with low ecological sensitivity) are likely to be far greater than the actual numbers of great black-backed gulls which may experience potential visual or acoustic disturbance within extremely localised areas around construction activities.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to great black-backed gull within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional great black-backed gull population.

2.28 Lesser black-backed gull

Table 26 Determination of overall disturbance and displacement impacts to lesser black-backed gull as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.08%)	Very small (0.01)	Very small (0.09%)
Most sensitive location average for average count	Up to 1 day	Very small (0.16%)	Very small (0.02)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Small (7.85%)	Very small (0.98)	Very small (0.09%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of lesser black-backed gulls present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a small proportion of the lesser black-backed gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Gulls, in general, are extremely adaptable, typically demonstrating a high level of tolerance and habituation to human activities (Calladine *et al.*, 2006). This adaptability, along with a high degree of flexibility in their usage of habitats, provides these species with an ability to adapt to very high levels of visual and acoustic disturbance which may arise as a result of anthropogenic activities. It is considered, therefore, that the assessment of any impacts to lesser black-backed gull are likely to be precautionary; i.e. numbers of individuals occurring within areas corresponding with the generic 'low' visual and acoustic level impacts (typically used to characterise impact magnitudes to receptors with low ecological sensitivity) are likely to be far greater than the actual numbers of lesser black-backed gulls which may experience potential visual or acoustic disturbance within extremely localised areas around construction activities.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to lesser black-backed gull within the South Dublin Bay area is assessed to be negligible on account

that any potential impact will be of, at most, very low consequence to the regional lesser black-backed gull population.

Alternative Alignment for the purposes of Modelling Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.10%)	Very small (0.01)	Very small (0.09%)
Most sensitive location average for average count	Up to 1 day	Very small (0.48%)	Very small (0.06)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (11.39%)	Very small (1.42)	Very small (0.09%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of lesser black-backed gulls present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the lesser black-backed gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Gulls, in general, are extremely adaptable, typically demonstrating a high level of tolerance and habituation to human activities (Calladine *et al.*, 2006). This adaptability, along with a high degree of flexibility in their usage of habitats, provides these species with an ability to adapt to very high levels of visual and acoustic disturbance which may arise as a result of anthropogenic activities. It is considered, therefore, that the assessment of any impacts to lesser black-backed gull are likely to be precautionary; i.e. numbers of individuals occurring within areas corresponding with the generic 'low' visual and acoustic level impacts (typically used to characterise impact magnitudes to receptors with low ecological sensitivity) are likely to be far greater than the actual numbers of lesser black-backed gulls which may experience potential visual or acoustic disturbance within extremely localised areas around construction activities.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to lesser black-backed gull within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional lesser black-backed gull population.

2.29 Shag

Table 27 Determination of overall disturbance and displacement impacts to shag as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.54%)	Very small (0.04)	Very small (0.45%)
Most sensitive location average for average count	Up to 1 day	Very small (2.71%)	Very small (0.22)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (4.10%)	Very small (0.33)	Very small (0.45%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of shags present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a very small proportion of the shags present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to shag within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional shag population.

Alternative Alignment for the purposes of Modelling Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Very small (0.69%)	Very small (0.06)	Very small (0.45%)
Most sensitive location average for average count	Up to 1 day	Very small (2.71%)	Very small (0.22)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (4.81%)	Very small (0.39)	Very small (0.45%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of shag present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a very small proportion of the shag present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route alignment scenario to shag within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional shag population.

2.30 Black guillemot

Table 28 Determination of overall disturbance and displacement impacts to black-guillemot as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (0.08%)	Very small (0.00)	Very small (3.07%)
Most sensitive location average for average count	Up to 1 day	Very small (0.48%)	Very small (0.02)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (0.60%)	Very small (0.02)	Very small (3.07%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of black guillemot present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a very small proportion of the black guillemot present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to black guillemot within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional black guillemot population.

Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Very small (0.07%)	Very small (0.00)	Very small (3.07%)
Most sensitive location average for average count	Up to 1 day	Very small (0.48%)	Very small (0.02)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (0.48%)	Very small (0.02)	Very small (3.07%)

Impact magnitude conclusion: Any given piling event may, on average, result in potential disturbance to a very small proportion of black guillemot present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)). The number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a very small proportion of the black guillemot present within South Dublin Bay, and the number of potentially impacted individuals is, on average considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route alignment scenario to black guillemot within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional black guillemot population.

2.31 Common scoter

Table 29 Determination of overall disturbance and displacement impacts to common scoter as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Small (5.16%)	Very small (0.36)	Very small (0.93%)
Most sensitive location average for average count	Up to 1 day	Medium (16.42%)	Very small (1.13)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Small (5.75%)	Very small (0.4)	Very small (0.93%)

Impact magnitude conclusion: Although any given piling event may, on average, result in potential disturbance to a small proportion of common scoter present within South Dublin Bay (or a medium proportion where piling occurs at the most sensitive location(s)), the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a small proportion of the common scoter present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be very small and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to common scoter within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional common scoter population.

Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Medium (10.06%)	Very small (0.69)	Very small (0.93%)
Most sensitive location average for average count	Up to 1 day	Large (43.17%)	Very small (2.97)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Small (5.81%)	Very small (0.4)	Very small (0.93)

Impact magnitude conclusion: Although any given piling event may, on average, result in potential disturbance to a small proportion of common scoter present within South Dublin Bay (or a large proportion where piling occurs at the most sensitive location(s)), the number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the common scoter present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be very small and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to common scoter within the South Dublin Bay area is assessed to be on account that any potential impact will be of, at most, very low consequence to the regional common scoter population.

2.32 Grey heron

Table 30 Determination of overall disturbance and displacement impacts to grey heron as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				
All piling average for average count	Up to 26 days	Very small (2.83%)	Very small (0.09)	Very small (0.96%)
Most sensitive location average for average count	Up to 1 day	Very small (5.61%)	Very small (0.18)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (11.83%)	Very small (0.38)	Very small (0.96%)

Impact magnitude conclusion: Although any given piling event may, on average, result in potential disturbance to a very small proportion of grey heron present within South Dublin Bay (and a very small proportion where piling occurs at the most sensitive location(s)), the number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population.

Similarly, although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the grey heron present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to grey heron within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional grey heron population.

Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				

All piling average for average count	Up to 26 days	Very small (2.88%)	Very small (0.09)	Very small (0.96%)
Most sensitive location average for average count	Up to 1 day	Very small (4.67%)	Very small (0.15)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (12.15%)	Very small (0.39)	Very small (0.96%)

Impact magnitude conclusion: Although any given piling event may, on average, result in potential disturbance to a very small proportion of grey heron present within South Dublin Bay (and a very proportion where piling occurs at the most sensitive location(s)), the number of potentially impacted individuals is, on average, considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population.

Similarly, although visual impacts associated with intertidal cable route installation may, on average, result in potential disturbance to a medium proportion of the grey heron present within South Dublin Bay, the number of potentially impacted individuals is, on average considered to be very small (and very small where piling occurs at the most sensitive location(s)). The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to grey heron within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional grey heron population.

2.33 Tern species

9. Consideration of potential disturbance and displacement impact magnitudes associated with construction phase activities during diurnal periods within intertidal areas of South Dublin Bay are provided in **Chapter 10: Ornithology– Section 10.10.2**, for *Sterna* tern species and for Sandwich tern

Table 31 Consideration of diurnal impacts to *Sterna* tern species as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted (from diurnal baseline survey data)	Number of individuals impacted (from diurnal baseline survey data)	Maximum diurnal site use as proportion of regional population
Acoustic disturbance impacts				Very small (0.35%) at any one time, however there is considered to be considerable turnover of individuals using tern aggregation sites in South Dublin Bay within each season, therefore a much greater proportion of the regional population is predicted to pass through this area each post-breeding season.
All piling average for average count	Up to 26 days	Very small (0.95%)	Very small (0.19)	
Most sensitive location average for average count	Up to 1 day	Very small (2.88%)	Very small (0.58)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Small (6.22%)	Very small (1.25)	

Impact magnitude conclusion: Any given piling event during daylight hours, when birds are typically not forming nocturnal roosting aggregations within South Dublin Bay (from sunrise until approximately two hours before sunset [Tierney *et al*., 2016]), may, on average, result in potential disturbance to a very small proportion of *Sterna* terns present within South Dublin Bay and this number of potentially impacted individuals is, on average, considered to be very small.

Similarly, visual impacts associated with intertidal cable route installation activities between sunrise and approximately two hours before sunset may, on average, result in potential disturbance to a small proportion of the *Sterna* terns present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small.

Although the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional *Sterna* tern population, there is considered to be considerable turnover of individuals using tern aggregation sites in South Dublin Bay within each season, therefore a much greater proportion of the regional population is predicted to pass through this area each post-breeding season.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the impact magnitude of diurnal construction phase disturbance and displacement for the preferred alignment cable-route scenario to *Sterna* terns within the South Dublin Bay area is assessed to be low on account that any

potential impact will be of, at most, low consequence to regional *Sterna* tern populations. **[Note, however, that crepuscular and nocturnal construction phase impacts are considered separately, below]**

Alternative Alignment for the purposes of Modelling Scenario

Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturbance impacts				Very small (0.35%) at any one time, however there is considered to be considerable turnover of individuals using tern aggregation sites in South Dublin Bay within each season, therefore a much greater proportion of the regional population is predicted to pass through this area each post-breeding season.
All piling average for average count	Up to 26 days	Very small (1.49%)	Very small (0.3)	
Most sensitive location average for average count	Up to 1 day	Very small (4.91%)	Very small (0.99)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Medium (10.91%)	Very small (2.2)	

Impact magnitude conclusion: Any given piling event during daylight hours, when birds are typically not forming nocturnal roosting aggregations within South Dublin Bay (from sunrise until approximately two hours before sunset [Tierney *et al*., 2016]), may, on average, result in potential disturbance to a very small proportion of *Sterna* terns present within South Dublin Bay and this number of potentially impacted individuals is, on average, considered to be very small.

Similarly, visual impacts associated with intertidal cable route installation activities between sunrise and approximately two hours before sunset may, on average, result in potential disturbance to a medium proportion of the *Sterna* terns present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small.

Although the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional *Sterna* tern population, there is considered to be considerable turnover of individuals using tern aggregation sites in South Dublin Bay within each season, therefore a much greater proportion of the regional population is predicted to pass through this area each post-breeding season.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the impact magnitude of diurnal construction phase disturbance and displacement for the AAM cable-route scenario to *Sterna* terns within the South Dublin Bay area is assessed to be low on account that any potential impact will be of, at most, low consequence to regional *Sterna* tern populations. **[Note, however, that crepuscular and nocturnal construction phase impacts are considered separately, below]**

Table 32 Consideration of diurnal impacts to Sandwich tern as a result of landfall construction disturbance and displacement under the PA and AAM scenarios

Preferred Alignment Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**
Acoustic disturbance impacts				Very small (1.59%) at any one time, however there is considered to be considerable turnover of individuals using tern aggregation sites in South Dublin Bay within each season, therefore a much greater proportion of the regional population is predicted to pass through this area each post-breeding season.
All piling average for average count	Up to 26 days	Very small (0.40%)	Very small (0.07)	
Most sensitive location average for average count	Up to 1 day	Very small (1.07%)	Very small (0.18)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very small (2.78%)	Very small (0.47)	

Impact magnitude conclusion: Any given piling event during daylight hours, when birds are typically not forming nocturnal roosting aggregations within South Dublin Bay (from sunrise until approximately two hours before sunset [Tierney *et al*., 2016]), may, on average, result in potential disturbance to a very small proportion of Sandwich terns present within South Dublin Bay and this number of potentially impacted individuals is, on average, considered to be very small.

Similarly, visual impacts associated with intertidal cable route installation activities between sunrise and approximately two hours before sunset may, on average, result in potential disturbance to a very small proportion of Sandwich terns present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small.

Although the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional Sandwich tern population, there is considered to be considerable turnover of individuals using tern aggregation sites in South Dublin Bay within each season, therefore a much greater proportion of the regional population is predicted to pass through this area each post-breeding season.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the impact magnitude of diurnal construction phase disturbance and displacement for the preferred alignment cable-route scenario to Sandwich tern within the South Dublin Bay area is assessed to be low on account that any potential impact will be of, at most, low consequence to the regional sandwich tern population. **[Note, however, that crepuscular and nocturnal construction phase impacts are considered separately, below]**

Alternative Alignment for the purposes of Modelling Scenario				
Activity location sensitivity	**Duration of activity**	**Proportion of individuals impacted**	**Number of individuals impacted**	**Maximum site use as proportion of regional population**

Acoustic disturbance impacts				Very small (1.59%) at any one time, however there is considered to be considerable turnover of individuals using tern aggregation sites in South Dublin Bay within each season, therefore a much greater proportion of the regional population is predicted to pass through this area each post-breeding season.
All piling average for average count	Up to 26 days	Very small (0.63%)	Very small (0.11)	
Most sensitive location average for average count	Up to 1 day	Very small (1.43%)	Very small (0.24)	
Visual disturbance impacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Small (5.65%)	Very small (0.95)	

Impact magnitude conclusion: Any given piling event during daylight hours, when birds are typically not forming nocturnal roosting aggregations within South Dublin Bay (from sunrise until approximately two hours before sunset; Tierney *et al*., 2016), may, on average, result in potential disturbance to a very small proportion of Sandwich terns present within South Dublin Bay and this number of potentially impacted individuals is, on average, considered to be very small.

Similarly, visual impacts associated with intertidal cable route installation activities between sunrise and approximately two hours before sunset may, on average, result in potential disturbance to a small proportion of Sandwich terns present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small.

Although the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional Sandwich tern population, there is considered to be considerable turnover of individuals using tern aggregation sites in South Dublin Bay within each season, therefore a much greater proportion of the regional population is predicted to pass through this area each post-breeding season.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the impact magnitude of diurnal construction phase disturbance and displacement for the AAM cable-route scenario to Sandwich tern within the South Dublin Bay area is assessed to be low on account that any potential impact will be of, at most, low consequence to the regional sandwich tern population. **[Note, however, that crepuscular and nocturnal construction phase impacts are considered separately, below]**

10. Although potential disturbance and displacement impacts to terns parameterised in **Chapter 10: Ornithology– Section 10.10.2** and considered in impact magnitude terms in **Table 1** (*Sterna* terns) and **Table 32** (Sandwich tern), relate to diurnal effects, aggregations of post-breeding terns within South Dublin Bay primarily utilise the site as an overnight roosting location, with birds typically congregating within the intertidal zone from up to two hours before sunset and departing within the hour before sunrise (Tierney *et al*., 2016).

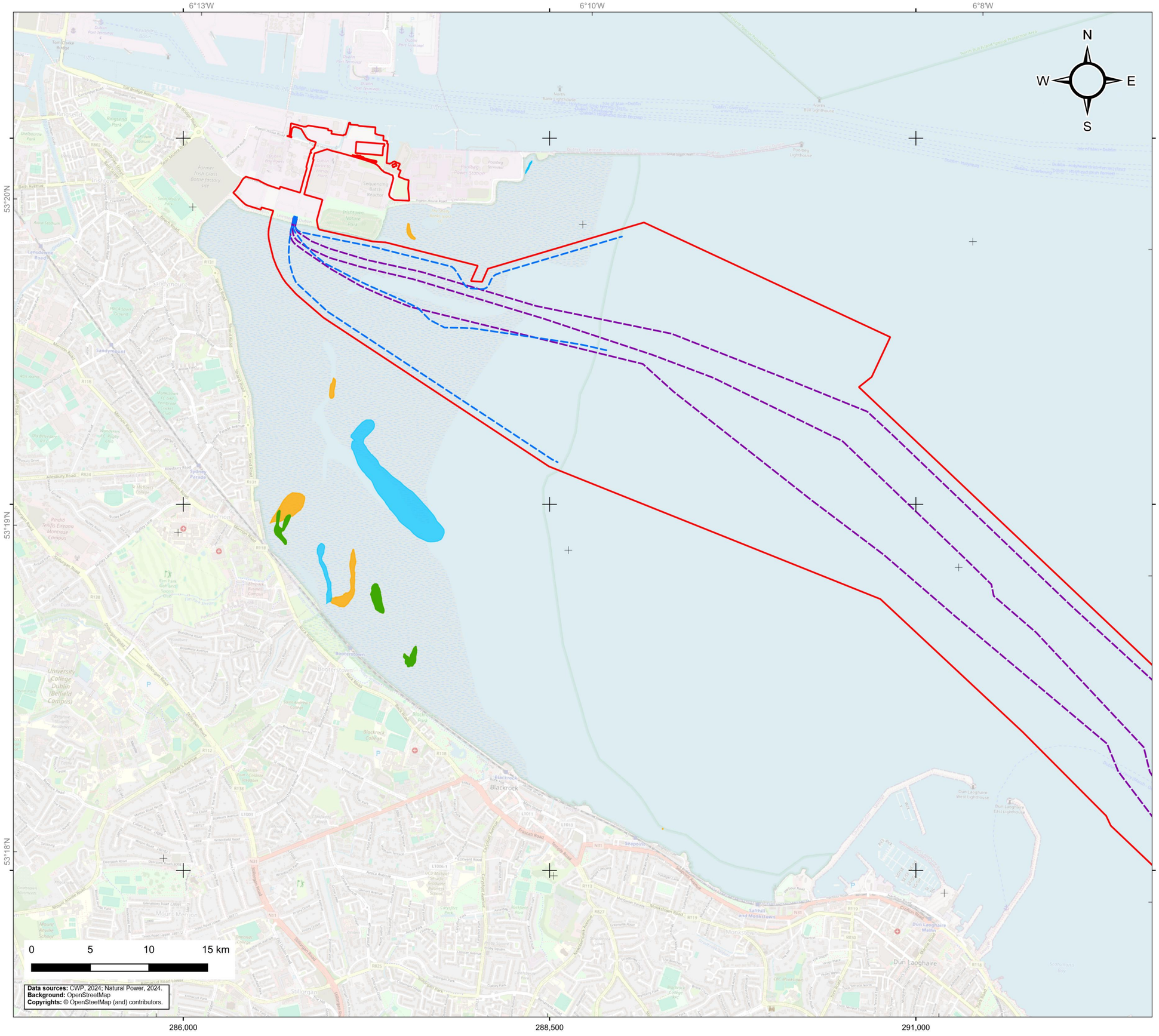
11. **Table 33** below shows the mean and mean peak counts of tern species recorded in South Dublin Bay during diurnal surveys within the period in which terns were recorded in this area (**Figure 1** to **Figure 5**), compared to the mean and mean peak counts of tern species recorded during 2021 and 2022 roosting tern surveys.

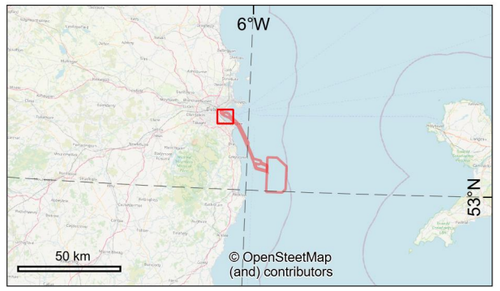
Table 33 Mean count per survey recorded during diurnal surveys and mean peak counts recorded during roosting tern surveys within South Dublin Bay

Species / species group	Diurnal surveys		Crepuscular (nocturnal roost) surveys – Mid-July to September post-breeding aggregation period	
	Mean (Period present and number of surveys)	Mean peak (over 3 years)	Mean (No of surveys)	Mean peak (over 2 years)
Sterna terns	78 (Mid-April to September – 20 surveys)	177	1675.38 (8)	3221
Sandwich tern	56.38 (Mid-March to early-October – 21 surveys)	191	139.25 (8)	384.5

12. Although both *Sterna* and Sandwich terns were found to utilise the intertidal areas within South Dublin Bay during the day in (on average) medium numbers, the numbers of birds recorded within this area during surveys to count nocturnally roosting birds were significantly greater. Mean numbers of *Sterna* terns nocturnally roosting within the survey area during the post-breeding period were estimated to be 21.5 times greater than mean numbers present during daylight hours throughout the wider period in which the species was present within South Dublin Bay. Similarly, although to a less pronounced extent, mean numbers of Sandwich tern nocturnally roosting within the survey area during the post-breeding period were estimated to be 2.47 times greater than mean numbers present during daylight hours throughout the wider period in which the species was present within South Dublin Bay.

13. Unlike during diurnal periods, for which information relating to the ecological sensitivity of *Sterna* and Sandwich terns to visual and acoustic stimuli is available, disturbance responses of nocturnal roosting terns to such stimuli are unknown. As such, in the absence of being able to overlap disturbance effect ranges with receptor distributions, to inform the assessment of potential disturbance and displacement impact magnitudes to roosting tern receptors for both PA and AAM intertidal cable installation scenarios the distribution of potential acoustic (piling) and visual (cable route laying) nocturnal disturbance sources are compared to roosting tern aggregation locations noted during baseline post-breeding tern aggregation surveys (**Figure 1**) and roosting tern aggregation locations which have been noted during other surveys of South Dublin Bay (**Figure 2** to **Figure 5**).





Legend

- Planning Application Boundary (PAB)
- Offshore export cable
- Offshore export cable – alternative alignment

Post-breeding tern roosting locations

- Sterna tern
- Sandwich tern
- Sterna and sandwich tern

codling wind park

Project: Codling Wind Park

Contractor: natural power www.naturalpower.com

Figure 1
Distribution of post-breeding tern roosting locations recorded during baseline surveys (2021 – 22) relative to intertidal cable route scenarios

CWP doc. number: CWP-NPC-ENG-08-01-MAP-1791

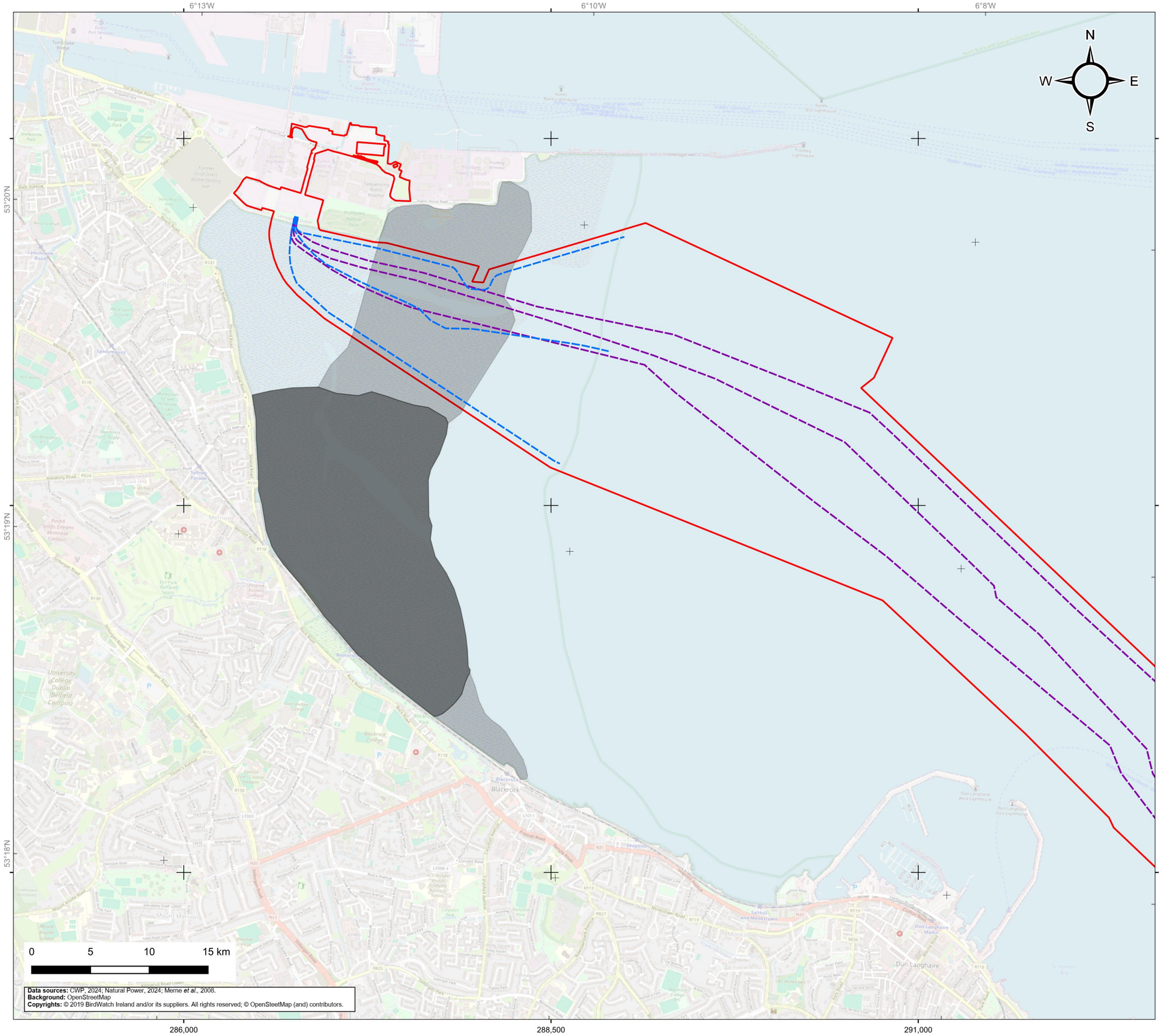
Internal descriptive code: PB_DLH - PAB. OECs.3PB.OptB. OECs 3PB.OptB.INTERTIDAL:ALTER ALIGN - ROOSTTERNs.STERNA.SANDWICH - (OSM. EIAR.Vol.04. Ch 10.Ap.11.FIG.01)

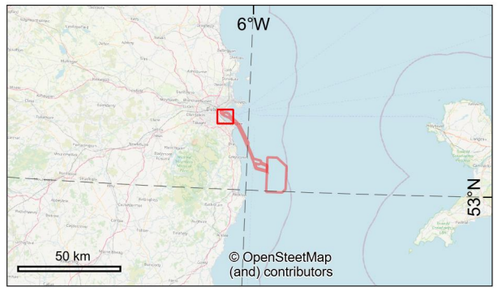
Size: A3

Scale: 1:25,000

CRS: EPSG 25830

Rev.	Updates	Date	By	Chk'd	App'd
00	Final for issue	2024/08/19	AC	FM/EA	CP





Legend

- Planning Application Boundary (PAB)
- Offshore export cable
- Offshore export cable – alternative alignment

Indicative locations of core and peripheral areas used by roosting terns as described in Merne et al. (2008)

- Core roosting area
- Peripheral roosting area

codling wind park

Project: Codling Wind Park

Contractor: natural power www.naturalpower.com

Figure 2
Distribution of post-breeding tern roosting locations recorded during previous monitoring (Merne et al., 2008 data)

CWP doc. number: CWP-NPC-ENG-08-01-MAP-1792

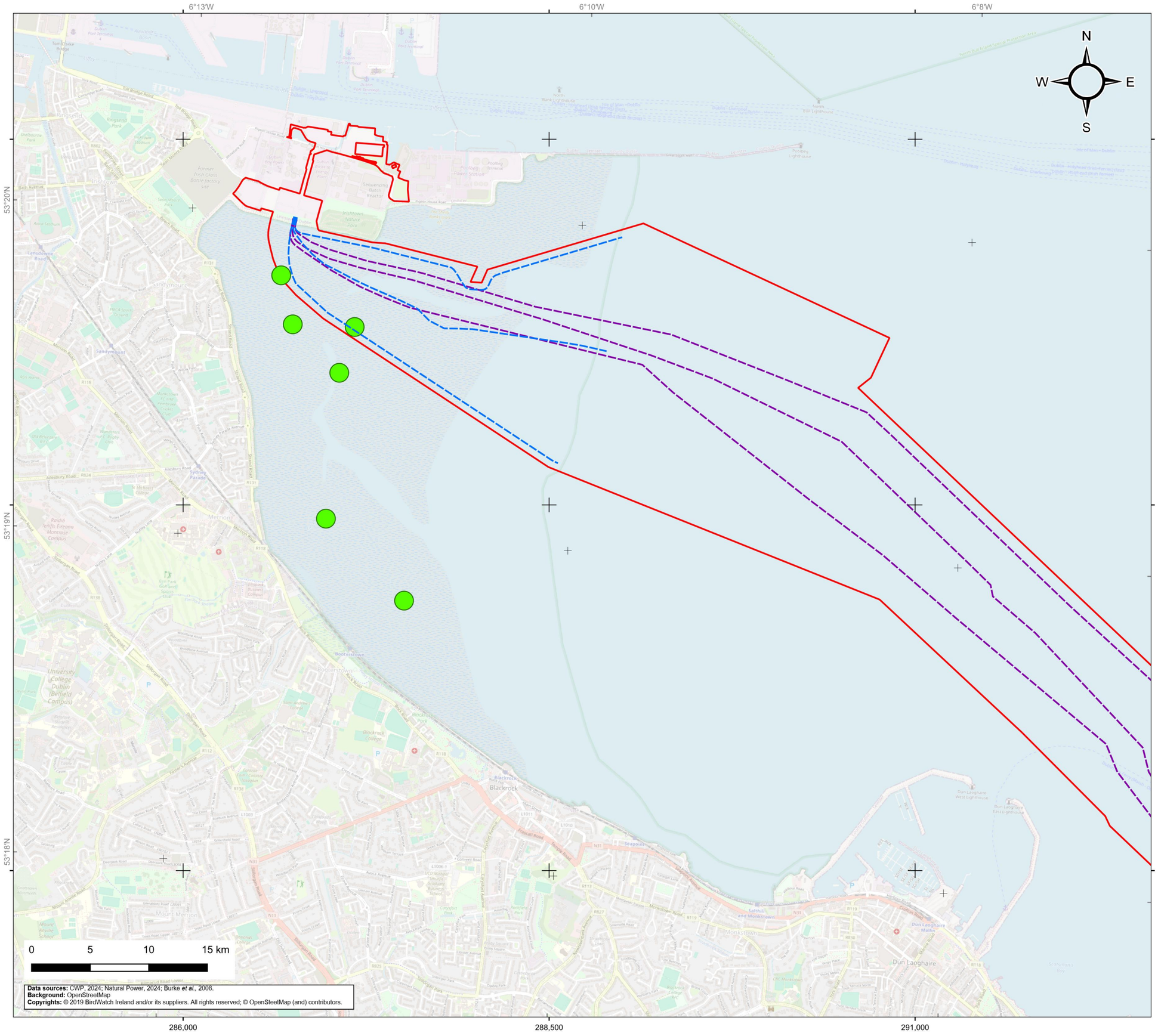
Internal descriptive code: PB_DLH - PAB_OECs.3PB.Opt8_OECs.3PB.Opt8.INTERTIDAL.ALTER ALIGN - TRAs.2008 - (OSM_EIAR.Vol.04.Ch.10.Ap.11.F6L02)

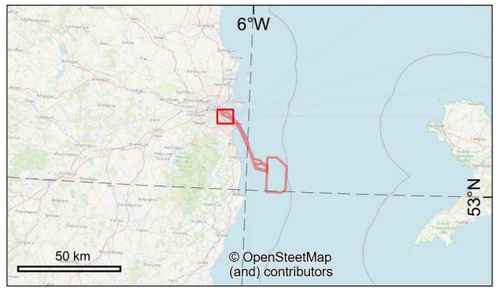
Size: A3

Scale: 1:25,000

CRS: EPSG 25830

Rev.	Updates	Date	By	Chk'd	App'd
00	Final for issue	2024/08/19	AC	FM/EA	CP





Legend

- Planning Application Boundary (PAB)
- Offshore export cable
- Offshore export cable – alternative alignment
- Area used by roosting terns 2017 Burke et al. (2018)

codling wind park

Project: Codling Wind Park

Contractor: natural power www.naturalpower.com

Figure 3
Distribution of post-breeding tern roosting locations recorded during previous monitoring (Burke et al., 2018 data)

CWP doc. number: CWP-NPC-ENG-08-01-MAP-1793

Internal descriptive code: PB..DLH - PAB..OECs.3PB.Opt8..OECs.3PB.Opt8.INTERTIDAL.ALTER. ALIGN - TRPs.2018 - (OSM..EIAR.Vol.04.Ch.10.Ap.11.FIG.03)

Size: A3

Scale: 1:25,000

CRS: EPSG 25830

Rev.	Updates	Date	By	Chk'd	App'd
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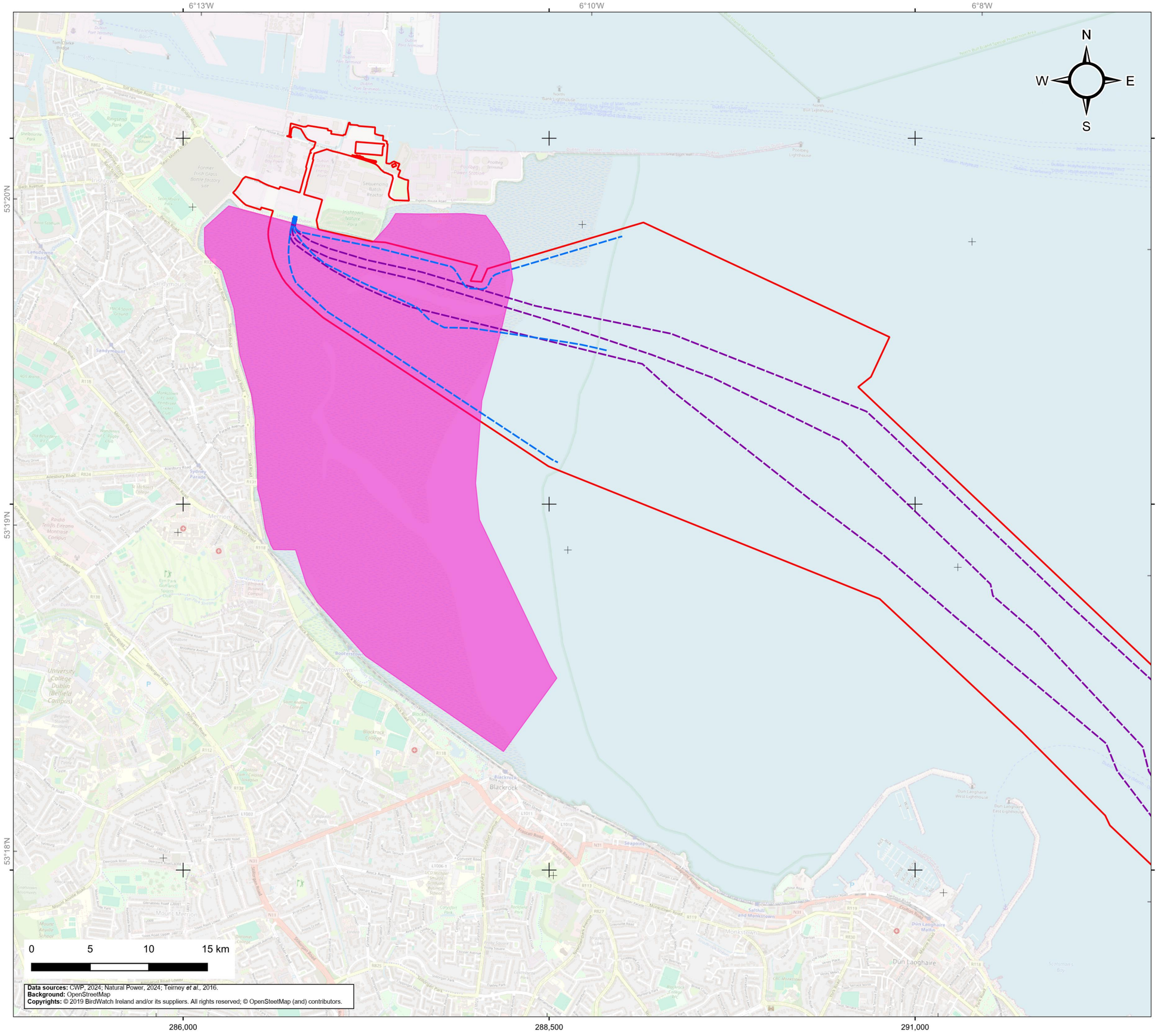
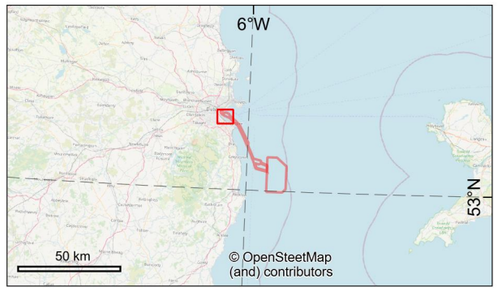




Legend

- Planning Application Boundary (PAB)
- Offshore export cable
- Offshore export cable – alternative alignment
- Area used by roosting terns 2013–2016 Teirney et al. (2016)

codling wind park

Project: Codling Wind Park

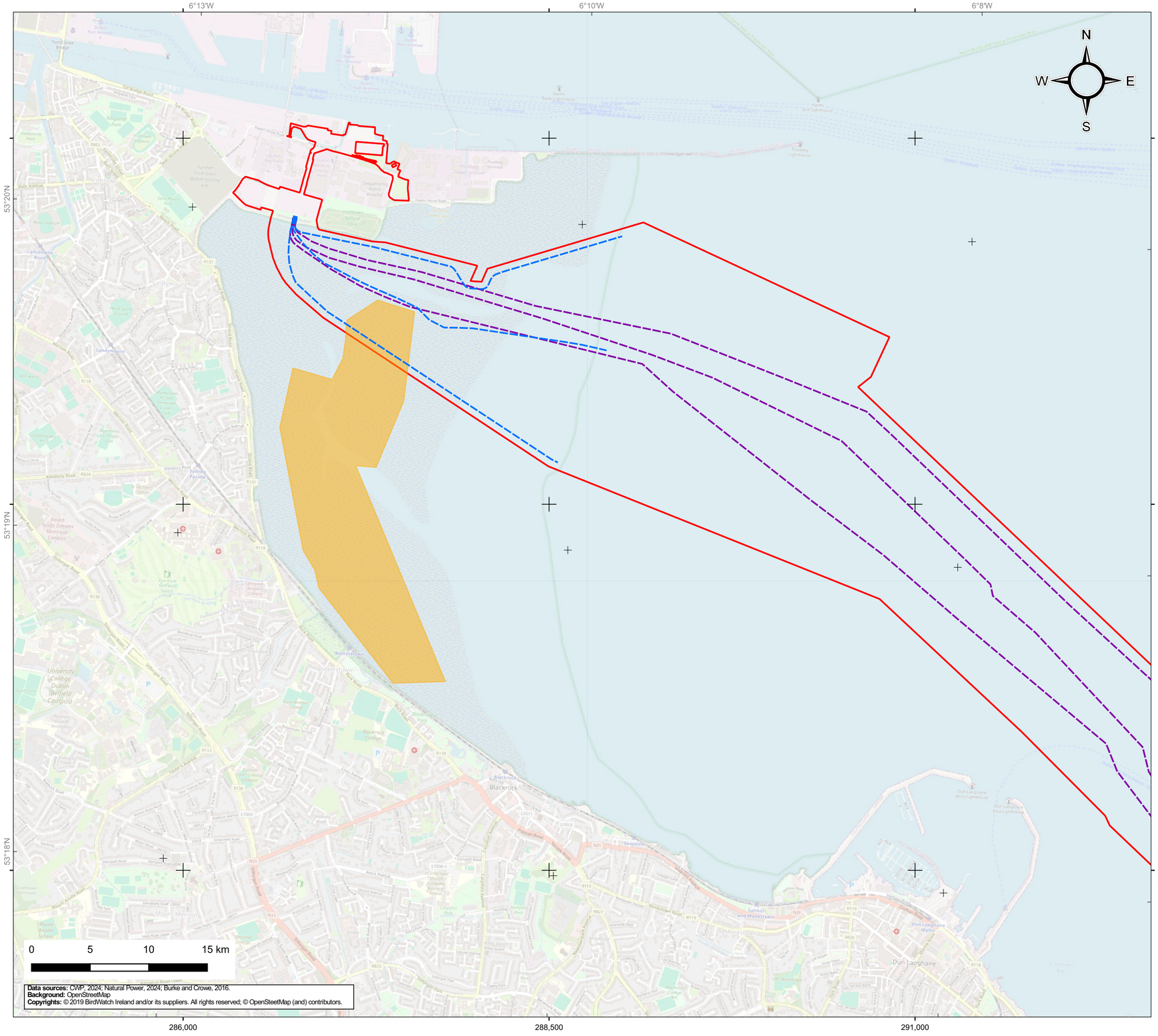
Contractor: natural power www.naturalpower.com

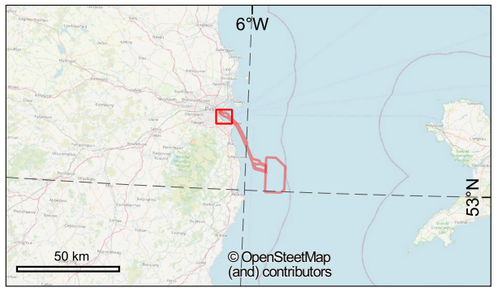
Figure 4
Distribution of post-breeding tern roosting locations recorded during previous monitoring (Tierney et al., 2016 data)

CWP doc. number: CWP-NPC-ENG-08-01-MAP-1794

Internal descriptive code:	*Size:*	*CRS:*
PB_DLH - PAB_OECs.3PB.Opt8_OECs.3PB.Opt8.INTERTIDAL.ALTER. ALIGN - TRA.2013.2016 - (OSM_EIAR.Vol.04.Ch.10.Ap.11.FIG.04)	*Scale:* 1:25,000	EPSG 25830

Rev.	*Updates*	*Date*	*By*	*Chk'd*	*App'd*
00	Final for issue	2024/08/19	AC	FM/EA	CP





Legend

- Planning Application Boundary (PAB)
- Offshore export cable
- Offshore export cable – alternative alignment
- Area used by roosting terns 2016 Burke and Crowe (2016)

codling wind park

Project: Codling Wind Park

Contractor: natural power www.naturalpower.com

Figure 5
Distribution of post-breeding tern roosting locations recorded during previous monitoring (Burke and Crowe et al., 2016 data)

CWP doc. number: CWP-NPC-ENG-08-01-MAP-1795

Internal descriptive code: PB_DLH - PAB_OECs.3PB.Opt8_OECs.3PB.Opt8.INTERTIDAL.ALTER. ALIGN - TRA.2016 - (OSM_EIAR.Vol.04.Ch.10.Ap.11.FIG.05)

Size: A3

Scale: 1:25,000

CRS: EPSG 25830

Rev.	Updates	Date	By	Chk'd	App'd
00	Final for issue	2024/08/19	AC	FM/EA	CP

14. This comparison of tern roosting locations and cable route infrastructure indicates that, were cable route installation activities (for both PA and AAM scenarios) to be undertaken during periods where roosting terns were occupying roost sites (i.e. from two hours before sunset to sunrise – Tierney *et al*., 2016, between mid-July and late September) there is the potential for disturbance impacts to large or very large proportions of large or very large numbers of roosting individuals within an area which is of high or very high regional importance to *Sterna* and Sandwich terns. As such, despite the limited duration of potential acoustic and visual disturbance impacts, the impact magnitude of crepuscular and nocturnal construction phase disturbance and displacement for the PA and AAM cable-route scenarios to *Sterna* tern and Sandwich tern within the South Dublin Bay area is assessed to be high.

15. As, in absence of additional mitigation, construction phase activities within intertidal areas of South Dublin Bay are not excluded from occurring during crepuscular or nocturnal periods. As such, overall construction phase disturbance and displacement impact magnitude for the PA and AAM cable-route scenarios to Sterna tern and Sandwich tern within the South Dublin Bay area is assessed to be high.

3 Residual effects

16. Evidence of the efficacy of additional mitigation (outlined in **Chapter 10: Ornithology: Section 10.10: Impact Assessment – Section 10.10 (Construction phase) – Offshore and Intertidal – Construction: Impact 2 – Disturbance and displacement – Intertidal – Significance of Effect**) is provided in **Table 34**, below. Estimated impact magnitude parameters are presented for when the mitigations outlined in the EIAR are implemented (i.e. where construction works within intertidal areas are constrained to occurring within the April to August period only and, for terns, where daily temporary restrictions are applied during the post-breeding period). Species shown in bold are those for which pre-mitigation assessment predicted a significant effect.

17. As the application of mitigation in the form of a seasonal restriction limiting construction activities to take place between the months of April to August, inclusive, results in potential changes to impact magnitude for all screened-in species (and not just those for which a significant effect was predicted) residual impact magnitudes for each all receptors are reassessed in **Table 35.**

Table 34 Residual visual and acoustic impact magnitude parameters resultant from construction phase activities within intertidal areas of South Dublin Bay for each species and each intertidal cable route scenario

Species	Peak count during April to August (proportion of regional population)	Mean Count per survey across all 81 baseline surveys (Number of surveys receptor recorded)	Mean Count per survey across 27 baseline surveys corresponding with non-restricted April to August period in which works can be undertaken (Number of surveys receptor recorded)	Intertidal cable route Scenario	Acoustic impacts associating with piling activity during non-restricted April to August period in which works can be undertaken		Visual impacts associated with activities along intertidal cable routes during non-restricted April to August period in which works can be undertaken
					Average no. of individuals impacted per piling event (Proportion of all survey mean count)	Max average no. of individuals impacted per piling event (Proportion of all survey mean count)	Average no. of individuals impacted (Proportion of mean count)
Light-bellied brent goose	412 (1.17% of regional non-breeding population)	77.98 (52/81)	18.26 (4/27)	PA	7.66 (9.83%)	16.57 (21.25%)	6.46 (8.28%)
				AAM	10.20 (13.08%)	16.31 (20.92%)	14.64 (18.77%)
Shelduck	45 (0.44% of regional non-breeding population)	5.49 (51/81)	4.63 (12/27)	PA	0.76 (13.82%)	1.59 (28.91%)	1.22 (22.25%)
				AAM	1.01 (18.41%)	1.42 (25.93%)	1.59 (29.00%)
Shoveler	0 (0% of regional non-breeding population)	0.09 (2/81)	0.00 (0/27)	PA and AAM	There is no level of overlap between the occurrence of shoveler recorded throughout the survey period and areas which are predicted to be subject to acoustic or visual disturbance at levels to which this species is sensitive under either the PA or AAM scenarios		
Pintail	0 (0% of regional non-breeding population)	0.19 (1/81)	0.00 (0/27)	PA and AAM	There is no level of overlap between the occurrence of pintail recorded throughout the survey period and areas which are predicted to be subject to acoustic or visual disturbance at levels to which this species is sensitive under either the PA or AAM scenarios		
Teal	0 (0% of regional non-breeding population)	3.41 (16/81)	0.00 (0/27)	PA	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
				AAM	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
Oystercatcher	1195 (1.97% of regional non-breeding population)	861.19 (80/81)	295.63 (19/27)	PA	10.48 (1.22%)	28.16 (3.27%)	141.81 (16.47%)
				AAM	12.71 (1.48%)	28.16 (3.27%)	235.40 (27.33%)
Golden plover	0 (0% of regional non-breeding population)	24.14 (15/81)	0.00 (0/27)	PA	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
				AAM	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
Grey plover	0 (0% of regional non-breeding population)	3.07 (23/81)	0.00 (0/27)	PA	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
				AAM	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
Ringed plover	99 (0.85% of regional non-breeding population)	33.14 (55/81)	9.96 (8/27)	PA	0.00 (0.00%)	0.00 (0.00%)	0.63 (1.91%)
				AAM	0.00 (0.00%)	0.00 (0.00%)	0.79 (2.37%)
Curlew	189 (0.54% of regional non-breeding population)	47.73 (69/81)	27.93 (16/27)	PA	1.14 (2.38%)	1.96 (4.11%)	13.65 (28.60%)
				AAM	1.53 (3.20%)	3.53 (7.39%)	25.26 (52.93%)
Bar-tailed godwit	405 (2.45% of regional non-breeding population)	177.62 (63/81)	33.04 (11/27)	PA	0.02 (0.01%)	0.11 (0.06%)	0.18 (0.10%)
				AAM	0.11 (0.06%)	0.75 (0.42%)	0.74 (0.42%)
Black-tailed godwit	587 (2.96% of regional non-breeding population)	110.81 (57/81)	49.56 (9/27)	PA	0.07 (0.06%)	0.22 (0.20%)	0.22 (0.20%)
				AAM	0.05 (0.04%)	0.22 (0.20%)	0.22 (0.20%)
Turnstone	262 (2.76% of regional non-breeding population)	66.37 (73/81)	32.26 (16/27)	PA	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
				AAM	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
Knot	**0 (0% of regional non-breeding population)**	**775.28 (36/81)**	0.00 (0/27)	**PA**	0.00 (0.00%)	**0.00 (0.00%)**	**0.00 (0.00%)**
				AAM	0.00 (0.00%)	**0.00 (0.00%)**	**0.00 (0.00%)**
Sanderling	39 (0.46% of regional non-breeding population)	53.06 (47/81)	3.56 (3/27)	PA	0.00 (0.00%)	0.00 (0.00%)	0.03 (0.07%)
				AAM	0.00 (0.01%)	0.03 (0.06%)	0.08 (0.15%)
Dunlin	**422 (0.92% of regional non-breeding population)**	**596.75 (57/81)**	44.74 (4/27)	PA	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
				AAM	0.00 (0.00%)	**0.00 (0.00%)**	**0.00 (0.00%)**
Redshank		166.70 (68/81)	21.07 (10/27)	PA	1.52 (0.91%)	2.70 (1.62%)	1.46 (0.87%)

	207 (0.87% of regional non-breeding population)			AAM	1.62 (0.97%)	2.56 (1.53%)	1.60 (0.96%)
Black-headed gull	2128 (2.13% of regional non-breeding population)	753.30 (80/81)	450.70 (19/27)	PA	0.89 (0.12%)	1.95 (0.26%)	108.61 (14.42%)
				AAM	1.03 (0.14%)	1.45 (0.19%)	196.48 (26.08%)
***Sterna* terns (diurnal)**	**497 (0.33% of regional *Sterna* tern post-breeding migration population)**	**20.16 (23/81)**	57.78 (16/27)	**PA**	0.00 (0.00%)	**0.00 (0.00%)**	**0.00 (0.00%)**
				AAM	0.00 (0.00%)	**0.00 (0.00%)**	**0.00 (0.00%)**
Great crested grebe	120 (4.10% of regional non-breeding population)	57.49 (64/81)	11.22 (12/27)	PA	0.07 (0.12%)	0.26 (0.45%)	0.49 (0.85%)
				AAM	0.23 (0.40%)	1.19 (2.07%)	2.55 (4.43%)
Red-breasted merganser	151 (6.21% of regional non-breeding population)	17.62 (67/81)	9.74 (12/27)	PA	1.32 (7.47%)	3.11 (17.66%)	0.61 (3.47%)
				AAM	1.98 (11.23%)	5.58 (31.66%)	2.07(11.74%)
Red-throated diver	6 (0.05% of regional non-breeding population)	4.19 (42/81)	0.22 (1/27)	PA	0.08 (1.91%)	0.15 (3.54%)	0.16(3.91%)
				AAM	0.09 (2.23%)	0.15 (3.54%)	0.20(4.78%)
Herring gull	2,058 (1.10% of regional non-breeding population)	355.09 (79/81)	365.22 (20/27)	PA	0.57 (0.16%)	2.09 (0.59%)	149.01(41.96%)
				AAM	0.60 (0.17%)	2.72 (0.77%)	207.12(58.33%)
Little egret	21 (1.51% of regional non-breeding population)	8.15 (66/81)	9.56 (20/27)	PA	0.43 (5.29%)	0.66 (8.07%)	2.38(29.26%)
				AAM	0.51 (6.28%)	0.83 (10.22%)	3.93(48.19%)
Greenshank	8 (0.61% of regional non-breeding population)	4.47 (39/81)	0.74 (2/27)	PA	0.06 (1.24%)	0.07 (1.66%)	0.13(2.87%)
				AAM	0.07 (1.59%)	0.07 (1.66%)	0.11(2.52%)
Mediterranean gull	87 (38.99% of Lewis, 2018 – non-breeding population)	12.59 (55/81)	25.56 (13/27)	PA	0.01 (0.10%)	0.06 (0.51%)	1.44(11.47%)
				AAM	0.01 (0.07%)	0.03 (0.27%)	1.41(11.20%)
Common gull	77 (0.11% of regional non-breeding population)	59.26 (78/81)	16.96 (20/27)	PA	0.01 (0.01%)	0.02 (0.04%)	0.61(1.02%)
				AAM	0.01 (0.02%)	0.05 (0.09%)	0.87(1.47%)
Great black-backed gull	227 (0.43% of regional non-breeding population)	35.59 (76/81)	36.11 (19/27)	PA	0.04 (0.10%)	0.27 (0.75%)	7.16(20.12%)
				AAM	0.02 (0.06%)	0.08 (0.23%)	6.70(18.84%)
Lesser black-backed gull	150 (0.09% of regional non-breeding population)	12.47 (61/81)	26.85 (19/27)	PA	0.02 (0.19%)	0.06 (0.51%)	3.85(30.91%)
				AAM	0.03 (0.27%)	0.19 (1.54%)	6.00(48.12%)
Sandwich tern (diurnal)	**231 (1.59% of regional *Sterna* tern post-breeding migration population)**	**16.81 (28/81)**	43.85 (16/27)	**PA**	0.05 (0.31%)	**0.40 (2.35%)**	**0.63(3.74%)**
				AAM	0.19 (1.10%)	**0.73 (4.36%)**	**2.16(12.83%)**
Shag	26 (0.15% of regional non-breeding population)	8.11 (71/81)	4.74 (15/27)	PA	0.04 (0.53%)	0.19 (2.28%)	0.26(3.20%)
				AAM	0.06 (0.71%)	0.19 (2.28%)	0.52(6.39%)
Black guillemot	18 (1.73% of regional non-breeding population)	4.15 (62/81)	4.81 (18/27)	PA	0.01 (0.23%)	0.07 (1.79%)	0.07(1.79%)
				AAM	0.01 (0.20%)	0.07 (1.79%)	0.07(1.79%)
Common scoter	6 (0.06% of regional non-breeding population)	6.88 (23/81)	0.22 (1/27)	PA	0.00 (0.00%)	0.00 (0.00%)	0.00(0.00%)
				AAM	0.00 (0.00%)	0.00 (0.00%)	0.00(0.00%)
Grey heron	16 (0.61% of regional non-breeding population)	3.21 (70/81)	3.37 (18/27)	PA	0.10 (3.18%)	0.28 (8.81%)	0.72(22.35%)
				AAM	0.10 (3.24%)	0.29 (8.93%)	0.77(24.05%)

Table 35 Interpretation of residual visual and acoustic impact magnitude parameters resultant from construction phase activities within intertidal areas of South Dublin Bay to determine residual overall residual impact magnitudes for each species and each intertidal cable route scenario.

Species	Intertidal cable route scenario	Peak count during April to August as proportion of regional population	Acoustic impacts				Visual impacts	
			Average piling		Most sensitive piling location		Average all cable routes	
			Proportion of individuals impacted	No of individuals impacted	Proportion of individuals impacted	No of individuals impacted	Proportion of individuals impacted	No of individuals impacted
Light-bellied Brent goose	PA	very small	small	very small	large	small	small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a small proportion of light-bellied brent geese present within South Dublin Bay area. However, the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a small proportion of the light-bellied brent geese present within South Dublin Bay. The number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to light-bellied brent geese within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (a reduction from low prior to consideration of additional mitigation measures).						
	AAM	very small	medium	small	large	small	medium	small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a medium proportion of light-bellied brent geese present within South Dublin Bay area. However, the number of potentially impacted individuals is, on average, considered to be small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a medium proportion of the light-bellied brent geese present within South Dublin Bay. The number of potentially impacted individuals is, on average, also considered to be small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to light-bellied brent geese within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (a reduction from low prior to consideration of additional mitigation measures).						
Shelduck	PA	very small	medium	very small	large	very small	large	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a medium proportion of shelduck present within the South Dublin Bay area. The number of potentially impacted individuals is, on average, considered to be very small and the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a large proportion of the shelduck present within South Dublin Bay and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to shelduck within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).						
	AAM	very small	medium	very small	large	very small	large	very small

	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a medium proportion of shelduck present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a large proportion of the shelduck present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to shelduck within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
Shoveler	PA and AAM	Zero	very small	very small	NA	Zero	NA	Zero
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of shoveler present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are not predicted to result in any potential disturbance shoveler present within South Dublin Bay, as this species was absent during baseline surveys which took place during the months of April to August. The number of potentially impacted individuals is therefore predicted to be zero. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for both the PA and the limit of deviation cable-route scenario to shoveler within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
Pintail	PA and AAM	Zero	very small	very small	NA	Zero	NA	Zero
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of pintail present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are not predicted to result in any potential disturbance pintail present within South Dublin Bay, as this species was absent during baseline surveys which took place during the months of April to August. The number of potentially impacted individuals is therefore predicted to be zero. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for both the PA and the limit of deviation cable-route scenario to pintail within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
Teal	PA	Zero	very small	very small	NA	Zero	NA	Zero
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of teal present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are not predicted to result in potential disturbance to teal within South Dublin Bay, as this species was absent during baseline surveys which took place during the months of April to August. The number of potentially impacted individuals is therefore predicted to be zero. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to teal within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	Zero	very small	very small	NA	Zero	NA	Zero

	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of teal present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are not predicted to result in potential disturbance to teal within South Dublin Bay, as this species was absent during baseline surveys which took place during the months of April to August. The number of potentially impacted individuals is therefore predicted to be zero. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to teal within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
Oystercatcher	PA	very small	very small	small	Very small	medium	medium	large
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of oystercatchers present within South Dublin Bay area, the number of potentially impacted individuals is, on average, considered to be small. The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a medium proportion of the oystercatchers present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be large. The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to oystercatchers within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (a reduction from low prior to consideration of additional mitigation measures).							
	AAM	very small	very small	small	Very small	medium	large	large
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of oystercatchers present within South Dublin Bay area, the number of potentially impacted individuals is, on average, considered to be small. The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a large proportion of the oystercatchers present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be large. The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to oystercatchers within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (a reduction from low prior to consideration of additional mitigation measures).							
Golden plover	PA	Zero	very small	very small	NA	Zero	NA	Zero
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of golden plover present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are not predicted to result in any potential disturbance to golden plover within South Dublin Bay, as this species was absent during baseline surveys which took place during the months of April to August. The number of potentially impacted individuals therefore predicted to be zero. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to golden plover within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	Zero	very small	very small	NA	Zero	NA	Zero

	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of golden plover present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are not predicted to result in any potential disturbance to golden plover within South Dublin Bay, as this species was absent during baseline surveys which took place during the months of April to August. The number of potentially impacted individuals is therefore predicted to be zero. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to golden plover within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
Grey plover	PA	Zero	very small	very small	NA	Zero	NA	Zero
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of grey plover present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are not predicted to result in any potential disturbance to grey plover within South Dublin Bay, as this species was absent during baseline surveys which took place during the months of April to August. The number of potentially impacted individuals is therefore predicted to be zero. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to grey plover within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	Zero	very small	very small	NA	Zero	NA	Zero
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of grey plover present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are not predicted to result in any potential disturbance to grey plover within South Dublin Bay, as this species was absent during baseline surveys which took place during the months of April to August. The number of potentially impacted individuals is therefore predicted to be zero. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to grey plover within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
Ringed plover	PA	Very small	very small	very small	NA	Zero	very small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of ringed plover present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the ringed plover present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to ringed plover within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	very small	very small	very small	NA	Zero	very small	very small

	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of ringed plover present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the ringed plover present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to ringed plover within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (a reduction from low prior to consideration of additional mitigation measures).							
Curlew	PA	very small	very small	very small	very small	very small	large	small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of curlew present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a large proportion of the curlew present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to curlew within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	very small	very small	very small	small	very small	very large	medium
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of curlew present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very large proportion of the curlew present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be medium. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to curlew within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
Bar-tailed godwit	PA	very small	very small	very small	very small	very small	very small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of bar-tailed godwit present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the bar-tailed godwit present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to bar-tailed godwit within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	very small	very small	very small	very small	very small	very small	very small

	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of bar-tailed godwit present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the bar-tailed godwit present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to bar-tailed godwit within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (a reduction from low prior to consideration of additional mitigation measures).							
Black-tailed godwit	PA	very small	very small	very small	very small	very small	very small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of black-tailed godwit present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the black-tailed godwit present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to black-tailed godwit within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	very small	very small	very small	very small	very small	very small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of black-tailed godwit present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the black-tailed godwit present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to black-tailed godwit within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
Turnstone	PA	very small	very small	very small	NA	Zero	NA	Zero
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of turnstone present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are not predicted to result in any potential disturbance to turnstone present within South Dublin Bay, and the number of potentially impacted individuals is also predicted to be zero. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to turnstone within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	very small	very small	very small	NA	Zero	NA	Zero

	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of turnstone present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are not predicted to result in any potential disturbance to turnstone present within South Dublin Bay, and the number of potentially impacted individuals is also predicted to be zero. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to turnstone within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
Knot	PA	Zero	very small	very small	NA	Zero	NA	Zero
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of knot present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are not predicted to result in any potential disturbance to knot within South Dublin Bay, as this species was absent during baseline surveys which took place during the months of April to August. The number of potentially impacted individuals is therefore predicted to be zero. The South Dublin Bay area is used at any one time by, at most, a very large proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to knot within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (a reduction from medium prior to consideration of additional mitigation measures).							
	AAM	Zero	very small	very small	NA	Zero	NA	Zero
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of knot present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are not predicted to result in any potential disturbance to knot within South Dublin Bay, as this species was absent during baseline surveys which took place during the months of April to August. The number of potentially impacted individuals is therefore predicted to be zero. The South Dublin Bay area is used at any one time by, at most, a very large proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to knot within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (a reduction from medium prior to consideration of additional mitigation measures).							
Sanderling	PA	very small	very small	very small	NA	Zero	very small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of sanderling present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the sanderlings present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to sanderlings within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	very small	very small	very small	Very small	Very small	very small	very small

<table>
<tr><td></td><td colspan="8">Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of sanderling present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the sanderlings present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to sanderlings within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).</td></tr>
<tr><td rowspan="4">Dunlin</td><td>PA</td><td>very small</td><td>very small</td><td>very small</td><td>NA</td><td>Zero</td><td>NA</td><td>Zero</td></tr>
<tr><td colspan="8">Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of dunlin present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are not predicted to result in any potential disturbance to dunlin present within South Dublin Bay, and the number of potentially impacted individuals is also predicted to be zero. The South Dublin Bay area is used at any one time by, at most, a medium proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to dunlin within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (a reduction from low prior to consideration of additional mitigation measures).</td></tr>
<tr><td>AAM</td><td>very small</td><td>very small</td><td>very small</td><td>NA</td><td>Zero</td><td>NA</td><td>Zero</td></tr>
<tr><td colspan="8">Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of dunlin present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are not predicted to result in any potential disturbance to dunlin present within South Dublin Bay, and the number of potentially impacted individuals is also predicted to be zero. The South Dublin Bay area is used at any one time by, at most, a medium proportion of the regional wintering population.

As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to dunlin within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (a reduction from medium prior to consideration of additional mitigation measures).</td></tr>
<tr><td rowspan="2">Redshank</td><td>PA</td><td>very small</td><td>very small</td><td>very small</td><td>very small</td><td>very small</td><td>very small</td><td>very small</td></tr>
<tr><td colspan="8">Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of redshank present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.

Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the redshank present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population.</td></tr>
</table>

	As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to redshank within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (a reduction from low prior to consideration of additional mitigation measures).							
	AAM	very small	very small	very small	very small	very small	very small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of redshank present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the redshank present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to redshank within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (a reduction from low prior to consideration of additional mitigation measures).							
Black-headed gull	PA	very small	very small	very small	very small	very small	medium	large
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of black-headed gulls present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a medium proportion of the black-headed gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be large. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to black-headed gull within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	very small	very small	very small	very small	very small	large	large
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of black-headed gulls present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a large proportion of the black-headed gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be large. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to black-headed gull within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
***Sterna* terns**	PA	very small, but considerable turnover	very small	very small	very small	very small	medium	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period and between sunrise and one hour before sunset during the period of mid-July to August, inclusive, is predicted to result in potential disturbance to, on average a very small proportion of *Sterna* terns present within South Dublin Bay and this number of potentially impacted individuals is, on average, considered to be very small.							

	Visual impacts associated with intertidal cable route installation during the non-restricted April to August period and between sunrise and one hour before sunset during the period of mid-july to August, inclusive, are predicted to result in potential disturbance to, on average, a medium proportion of *Sterna* terns present within South Dublin Bay, although the number of potentially impacted individuals is, on average, considered to be very small. Although the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional *Sterna* tern population, there is considered to be considerable turnover of individuals using tern aggregation sites in South Dublin Bay within each season, therefore a much greater proportion of the regional population is predicted to pass through this area each post-breeding season. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to *Sterna* terns within the South Dublin Bay area is assessed to be low on account that any potential impact will be of, at most, low consequence to the regional population (a reduction from high prior to consideration of additional mitigation measures).							
	AAM	very small, but considerable turnover	very small	very small	small	very small	large	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period and between sunrise and one hour before sunset during the period of mid-July to August, inclusive, is predicted to result in potential disturbance to, on average a very small proportion of *Sterna* terns present within South Dublin Bay and this number of potentially impacted individuals is, on average, considered to be very small. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period and between sunrise and one hour before sunset during the period of mid-july to August, inclusive, are predicted to result in potential disturbance to, on average, a large proportion of *Sterna* terns present within South Dublin Bay, although the number of potentially impacted individuals is, on average, considered to be very small. Although the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional *Sterna* tern population, there is considered to be considerable turnover of individuals using tern aggregation sites in South Dublin Bay within each season, therefore a much greater proportion of the regional population is predicted to pass through this area each post-breeding season. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the residual impact magnitude of construction phase disturbance and displacement for the limit of deviation cable-route scenario to *Sterna* terns within the South Dublin Bay area is assessed to be low on account that any potential impact will be of, at most, low consequence to the regional population (a reduction from high prior to consideration of additional mitigation measures).							
Great crested grebe	PA	very small	very small	very small	very small	very small	very small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of great crested grebes present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a large proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the great crested grebes present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a large proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to great crested grebe within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	very small	very small	very small	very small	very small	very small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of great crested grebes present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a large proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the great crested grebes present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a large proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to great crested grebe within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (a reduction from low prior to consideration of additional mitigation measures).							

Red-breasted merganser	PA	small	small	very small	medium	very small	very small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a small proportion of red-breasted mergansers present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the red-breasted mergansers present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to red-breasted merganser within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	small	medium	very small	medium	very small	medium	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a medium proportion of red-breasted mergansers present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a medium proportion of the red-breasted mergansers present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to red-breasted merganser within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).						
Red-throated diver	PA	very small	very small	very small	very small	very small	very small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of red-throated divers present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the red-throated divers present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to red-throated diver within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).						
	AAM	very small	very small	very small	very small	very small	small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of red-throated divers present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a small proportion of the red-throated divers present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to red-throated diver within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).						

Herring gull	PA	very small	very small	very small	very small	very small	large	large
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of herring gulls present within South Dublin Bay area and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a large proportion of the herring gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be large. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to herring gull within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	very small	very small	very small	very small	very small	very large	large
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of herring gulls present within South Dublin Bay area and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very large proportion of the herring gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be large. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to herring gull within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measure).							
Little egret	PA	very small	small	very small	small	very small	large	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a small proportion of little egrets present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a large proportion of the little egrets present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to little egret within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	very small	small	very small			large	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a small proportion of little egrets present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a large proportion of the little egrets present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to little egret within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measure).							

Greenshank	PA	very small	very small	very small	very small	very small	very small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of greenshank present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the greenshank present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to greenshank within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	very small	very small	very small	very small	very small	very small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of greenshank present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the greenshank present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to greenshank within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
Mediterranean gull	PA	large	very small	very small	very small	very small	very small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of Mediterranean gulls present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a large proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the Mediterranean gulls present within South Dublin Bay and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a large proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to Mediterranean gull within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	large	very small	very small	very small	very small	small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of Mediterranean gulls present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a large proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a small proportion of the Mediterranean gulls present within South Dublin Bay and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a large proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to Mediterranean gull within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							

Common gull	PA	very small	very small	very small	very small	very small	very small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of common gulls present within South Dublin Bay area, the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the common gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to common gull within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	very small	very small	very small	very small	very small	very small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of common gulls present within South Dublin Bay area, the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the common gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to common gull within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
Great black-backed gull	PA	very small	very small	very small	very small	very small	large	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of great black-backed gulls present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a large proportion of the great black-backed gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to great black-backed gulls within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	very small	very small	very small	very small	very small	medium	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of great black-backed gulls present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a medium proportion of the great black-backed gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to great black-backed gulls within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							

Lesser black-backed gull	PA	very small	very small	very small	very small	very small	large	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of lesser black-backed gulls present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a large proportion of the lesser black-backed gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to lesser black-backed gulls within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	very small	very small	very small	very small	very small	large	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of lesser black-backed gulls present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a large proportion of the lesser black-backed gulls present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to lesser black-backed gulls within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
Sandwich tern	PA	very small, but considerable turnover	very small	very small	very small	very small	very small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period and between sunrise and one hour before sunset during the period of mid-July to August, inclusive, is predicted to result in potential disturbance to, on average a very small proportion of Sandwich terns present within South Dublin Bay and this number of potentially impacted individuals is, on average, considered to be very small. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period and between sunrise and one hour before sunset during the period of mid-july to August, inclusive, are predicted to result in potential disturbance to, on average, a very small proportion of Sandwich terns present within South Dublin Bay and the number of potentially impacted individuals is, on average, considered to be very small. Although the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional Sandwich tern population, there is considered to be considerable turnover of individuals using tern aggregation sites in South Dublin Bay within each season, therefore a much greater proportion of the regional population is predicted to pass through this area each post-breeding season. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to Sandwich terns within the South Dublin Bay area is assessed to be low on account that any potential impact will be of, at most, low consequence to the regional population (a reduction from high prior to consideration of additional mitigation measures).							
	AAM	very small, but considerable turnover	very small	very small	very small	very small	medium	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period and between sunrise and one hour before sunset during the period of mid-July to August, inclusive, is predicted to result in potential disturbance to, on average a very small proportion of Sandwich terns present within South Dublin Bay and this number of potentially impacted individuals is, on average, considered to be very small.							

	Visual impacts associated with intertidal cable route installation during the non-restricted April to August period and between sunrise and one hour before sunset during the period of mid-july to August, inclusive, are predicted to result in potential disturbance to, on average, a medium proportion of Sandwich terns present within South Dublin Bay, although the number of potentially impacted individuals is, on average, considered to be very small. Although the South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional Sandwich tern population, there is considered to be considerable turnover of individuals using tern aggregation sites in South Dublin Bay within each season, therefore a much greater proportion of the regional population is predicted to pass through this area each post-breeding season. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the residual impact magnitude of construction phase disturbance and displacement for the limit of deviation cable-route scenario to Sandwich terns within the South Dublin Bay area is assessed to be low on account that any potential impact will be of, at most, low consequence to the regional population (a reduction from high prior to consideration of additional mitigation measures).							
Shag	PA	very small	very small	very small	very small	very small	very small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of shags present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the shags present within South Dublin Bay and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to shag within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	very small	very small	very small	very small	very small	very small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of shags present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the shags present within South Dublin Bay and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to shag within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
Black guillemot	PA	very small	very small	very small	very small	very small	very small	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of black guillemots present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the black guillemots present within South Dublin Bay, the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to black guillemot within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed to consideration of additional mitigation measures).							
	AAM	very small	very small	very small	very small	very small	very small	very small

	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of black guillemots present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a very small proportion of the black guillemots present within South Dublin Bay, the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to black guillemot within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
Common scoter	PA	very small	very small	very small	NA	Zero	NA	Zero
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of common scoter present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are not predicted to result in potential disturbance to any common scoter present within South Dublin Bay, and the number of potentially impacted individuals is assessed to be zero. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to common scoter within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	very small	very small	very small	NA	Zero	NA	Zero
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of common scoter present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Similarly, visual impacts associated with intertidal cable route installation during the non-restricted April to August period are not predicted to result in potential disturbance to any common scoter present within South Dublin Bay, and the number of potentially impacted individuals is assessed to be zero. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to common scoter within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
Grey heron	PA	very small	very small	very small	small	very small	large	very small
	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of grey herons present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, also considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a large proportion of the grey herons present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the preferred alignment cable-route scenario to grey heron within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).							
	AAM	very small	very small	very small	small	very small	large	very small

	Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period is predicted to result in potential disturbance to, on average, a very small proportion of grey herons present within South Dublin Bay area, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during the non-restricted April to August period are predicted, on average, to result in potential disturbance to a large proportion of the grey herons present within South Dublin Bay, and the number of potentially impacted individuals is, on average, considered to be very small. The South Dublin Bay area is used at any one time by, at most, a very small proportion of the regional wintering population. As such, and given the limited duration of potential acoustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and displacement for the AAM cable-route scenario to grey heron within the South Dublin Bay area is assessed to be negligible on account that any potential impact will be of, at most, very low consequence to the regional population (as was assessed prior to consideration of additional mitigation measures).

4 References

18. Burke, B., Lewis, L. J., Fitzgerald, N., Frost, T., Austin, G., & Tierney, T. D. (2018). Estimates of waterbird numbers wintering in Ireland, 2011/12–2015/16. Irish Birds, 11, 1-12.

19. Burke, B. & Crowe, O. (2016) Post-breeding Tern Report 2016: Assessment of Numbers and Distribution of Post-breeding Terns at a Selection of East and South Coast Wetlands in August & September 2016. BirdWatch Ireland I-WeBS Team Report. BirdWatch Ireland, Wicklow.

20. Calladine, J.R., Park, K.J, Thompson, K. & Wernham, C.V. (2006). Review of Urban Gulls and their Management in Scotland, BTO Scotland & Centre for Conservation Science School of Biological and Environmental Sciences, University of Stirling, Stirling.

21. Merne, O.J., Madden, B., Archer, E., & Porter, B. (2008). Autum roosting by terns in south Dublin Bay, Irish Birds 8: 335-340.

22. Tierney, N., Whelan, R., & Valentin, A. (2016). Post-breeding aggregations of roosting terns in south Dublin Bay in late summer, Irish Birds 10: 339-344.