



Environmental Impact Assessment Report

Volume 4

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





Table of contents

1	Introduction	8
2	Magnitude of Impact	8
3	Residual effects	81
4	References	102



List of tables

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.
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
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
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 16
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 18
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
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
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
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 26
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 28
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
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
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
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
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
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 40
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 42
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
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 46

Page 4 of 102



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
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
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
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 54
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 56
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
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
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
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 64
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 66
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
Table 31 Consideration of diurnal impacts to <i>Sterna</i> tern species as a result of landfall construction disturbance and displacement under the PA and AAM scenarios
Table 32 Consideration of diurnal impacts to Sandwich tern as a result of landfall construction disturbance and displacement under the PA and AAM scenarios
Table 33 Mean count per survey recorded during diurnal surveys and mean peak counts recorded during roosting tern surveys within South Dublin Bay
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
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



List of figures

Figure 1 Distribution of tern roosting locations recorded during baseline post-breeding tern aggregation surveys (2021 – 22) in relation to intertidal cable route scenarios	
Figure 2 Distribution of tern roosting locations recorded during previous monitoring of post-breedin tern aggregations within South Dublin Bay in relation to intertidal cable route scenarios (Merne et a 2008)	
Figure 3 Distribution of tern roosting locations recorded during previous monitoring of post-breedin tern aggregations within South Dublin Bay in relation to intertidal cable route scenarios (Burke <i>et a</i> 2018)	
Figure 4 Distribution of tern roosting locations recorded during previous monitoring of post-breedin tern aggregations within South Dublin Bay in relation to intertidal cable route scenarios (Tierney et 2016)	
Figure 5 Distribution of tern roosting locations recorded during previous monitoring of post-breedin tern aggregations within South Dublin Bay in relation to intertidal cable route scenarios (Burke and Crowe <i>et al</i> , 2016)	_



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 Alignm	ent Scenario			
Activity location sensitivity	Duration of activity	Proportion of individuals impacted	Number of individuals impacted	Maximum site use as proportion of regional population
Acoustic disturban	ce 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.

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

Page 9 of 102



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	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 i	mpacts			
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 imp	pacts			
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%)		

Page 11 of 102



Most sensitive location average for average count	Up to 1 day	Large (36.61%)	Very (2.01)	small		
Visual disturbance imp	Visual disturbance impacts					
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Large (35.52%)	Very (1.95)	small	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 Proportion of individuals impacted		Number of individuals impacted		Maximum site use as proportion of regional population	
Acoustic disturbance i	mpacts					
All piling average for average count	Up to 26 days	Very (0.11%)	small	Very (0.00)	small	Very small (0.20%)
Most sensitive location average for average count	Up to 1 day	Very (0.88%)	small	Very (0.03)	small	
Visual disturbance imp	pacts					
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very (1.09%)	small	Very (0.04)	small	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 Alignmer	nt for the purp	ooses 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 i	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%)				

Page 14 of 102



Most sensitive location average for average count	Up to 1 day	Very sma (0.88%)	Very si (0.03)	small	
Visual disturbance imp	oacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very sma (1.17%)	Very si (0.04)	small	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 Alignmen	t 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 im	pacts			
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		Number of individuals impacted	Maximum proportion population	site of	use as regional
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 im	pacts			
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 Duration of activity		Proportion of Number of individuals impacted impacted		Maximum site use as proportion of regional population		
Acoustic disturbance	e 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 ir	npacts					
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							

Page 18 of 102



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 in	mpacts					
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 Duration Proportion** of Number of Maximum site use as sensitivity of activity individuals individuals proportion regional impacted impacted population

Page 20 of 102

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 in	mpacts			
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 im	npacts					
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 proportion population	site of	use as regional
Acoustic disturbance	impacts					

Page 22 of 102



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 count	Up to 1 day	Very small (0.12%)	Very small (0.04)						
Visual disturbance im	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 im	pacts					
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 Alignme Activity location	nt for the pur Duration		ing of	Scenario Number	of	Maximum	site	use	as
sensitivity	of activity	individuals impacted		individuals impacted		proportion population	of	regio	onal
Acoustic disturbance	impacts	-							

Page 24 of 102



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 im	pacts			
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 im	pacts		•	
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 proportion population	site of	use as regional
Acoustic disturbance	impacts					

Page **26** of **102**



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 im	pacts			
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 Alignmen	t 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 im	pacts			
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 **Duration Proportion** of Number of Maximum site use as sensitivity of activity individuals individuals proportion of regional impacted impacted population

Acoustic disturbance impacts

Page 28 of 102



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 im	pacts			
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 Alignmen	t 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 im	pacts			
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 proportion population	site of	use as regional	
Acoustic disturbance	Acoustic disturbance impacts						

Page 30 of 102



All piling average for average count	Up to 26 days	Very (0.05%)	small	Very small (0.03)	Very small (2.80%)	
Most sensitive location average for average count	Up to 1 day	Very (0.42%)	small	Very small (0.28)		
Visual disturbance im	pacts					
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very (1.11%)	small	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 count	Up to 1 day	Large (36.62%)	Large (283.89)				
Visual disturbance in	npacts						
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 proportion population	site of	use as regional
Acoustic disturbance impacts						

Page **32** of **102**



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 im	pacts						
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 o individuals impacted	Number individuals impacted	of	Maximum proportion population	site of	use as regional
Acoustic disturbance	impacts						

Page 34 of 102



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 im	pacts		•				
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 proportion population	site of	use as regional	
Acoustic disturbance impacts							

Page 36 of 102



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 im	pacts			
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 Alignmen	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 im	pacts							
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 o individuals impacted	Number individuals impacted	of	Maximum proportion population	site of	use regio	as onal
Acoustic disturbance	impacts							

Page 38 of 102



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 im	pacts			
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	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 im	pacts						
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
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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 im	pacts			
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 im	pacts					
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 individuals impacted	Maximum proportion population	site of	use regio	as nal
A 41 11 4 1							

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 im	pacts			
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 im	pacts						
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 proportion population	site of	use as regional	
Acoustic disturbance impacts							

Page 44 of 102



All piling average for average count	Up to 26 days	Large (20.96%)	Very (3.69)	small	Small (6.10%)
Most sensitive location average for average count	Up to 1 day	Medium (33.89%)	Very (5.97)	small	
Visual disturbance im	pacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Large (20.72%)	Very (3.65)	small	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 redbreasted 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 Alignmen	t 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	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 im	pacts							
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 proportion population	site of	use as regional
Acoustic disturbance	impacts					

Page 46 of 102



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 im	pacts			
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 redthroated 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 i	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 imp	pacts			
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.

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

Acoustic disturbance impacts

All piling average for average count	Up to 26 days	Very s (0.13%)	small	Very (0.47)	small	Very small (3.02%)
Most sensitive location average for average count	Up to 1 day	Very s (0.11%)	small	Very (0.40)	small	

Visual disturbance impacts

All intertidal cable route average for average count overlap between activities)	Medium (10.98%)	Medium (38.99)	Very small (3.02%)
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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 Alignmen	t 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 im	pacts			
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 proportion population	site of	use as regional	
Acoustic disturbance impacts							

Page 50 of 102



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 im	pacts			
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 im	pacts			
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 proportion population	site of	use as regional
Acoustic disturbance impacts						

Page 52 of 102



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

Page 54 of 102



Alternative Alignme	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 im	pacts						
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 im	pacts			
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

Page 56 of 102



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	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 im	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 im	npacts					
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

Page 58 of 102



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

Alternative Alignme	nt for the pur	poses of Modelling	g 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 im	pacts			
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 in	npacts						
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 imp	acts						
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

Page 60 of 102



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 in	npacts						
All piling average for average count			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 imp	acts						
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 Alignmen	t 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 im	pacts			
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 proportion population	site of	use as regional
Acoustic disturbance	impacts					

Page 62 of 102



All piling average for average count	Up to 26 days	Very sma (0.69%)	Very small (0.06)	Very small (0.45%)
Most sensitive location average for average count	Up to 1 day	Very sma (2.71%)	Very small (0.22)	
Visual disturbance im	pacts			
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very sma (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 Alignmen	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 im	pacts						
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 proportion population	site of	use regio	as nal
Acoustic disturbance	impacts						

Page 64 of 102



All piling average for average count	Up to 26 days	Very sma (0.07%)	Very small (0.00)	Very small (3.07%)	
Most sensitive location average for average count	Up to 1 day	Very sma (0.48%)	Very small (0.02)		
Visual disturbance im	pacts				
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Very sma (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 Alignmen	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 im	pacts						
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 proportion population	site of	use as regional
Acoustic disturbance	impacts					

Page 66 of 102



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 im	pacts				
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 im	npacts						
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 proportion population	site of	use as regional
Acoustic disturbance impacts						

Page 68 of 102



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 im	npacts				
All intertidal cable route 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

 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		
All piling average for average count	Up to 26 days	Very small (0.95%)	Very small (0.19)	time, however there is considered to be considerable turnover of individuals using		
Most sensitive location average for average count	Up to 1 day	Very small (2.88%)	Very small (0.58)	tern aggregation sites in South Dublin Bay within each season, therefore a much greater proportion of the regional		
Visual disturbance impacts				population is predicted to pass through this area each post-		
All intertidal cable route average count	Up to 177 days (if no overlap between activities)	Small (6.22%)	Very small (1.25)	through this area each pos breeding season.		

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

Page 70 of 102



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
All piling average for average count	Up to 26 days	Very small (1.49%)	Very small (0.3)	considered to be considerable turnover of individuals using
Most sensitive location average count	Up to 1 day	Very small (4.91%)	Very small (0.99)	tern aggregation sites in South Dublin Bay within each season, therefore a much greater proportion of the regional
Visual disturbance im	npacts			population is predicted to pass through this area each post-
All intertidal cable route average count	Up to 177 days (if no overlap between activities)	Medium (10.91%)	Very small (2.2)	breeding season.

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	Very small (1.59%) at any one			
All piling average for average count	Up to 26 days	Very small (0.40%)	Very small (0.07)	time, however there is considered to be considerable turnover of individuals using
Most sensitive location average for average count	Up to 1 day	Very small (1.07%)	Very small (0.18)	tern aggregation sites in South Dublin Bay within each season, therefore a much greater proportion of the regional
Visual disturbance im	population is predicted to pass through this area each post-			
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)	breeding season.

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		Proportion of individuals impacted		Maximum proportion population	site of	use regio	as nal
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Page 72 of 102



Acoustic disturbance	impacts			Very small (1.59%) at any one
All piling average for average count	Up to 26 days	Very small (0.63%)	Very small (0.11)	time, however there is considered to be considerable turnover of individuals using
Most sensitive location average for average count	Up to 1 day	Very small (1.43%)	Very small (0.24)	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-
Visual disturbance im	pacts			
All intertidal cable route average for average count	Up to 177 days (if no overlap between activities)	Small (5.65%)	Very small (0.95)	breeding season.

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.

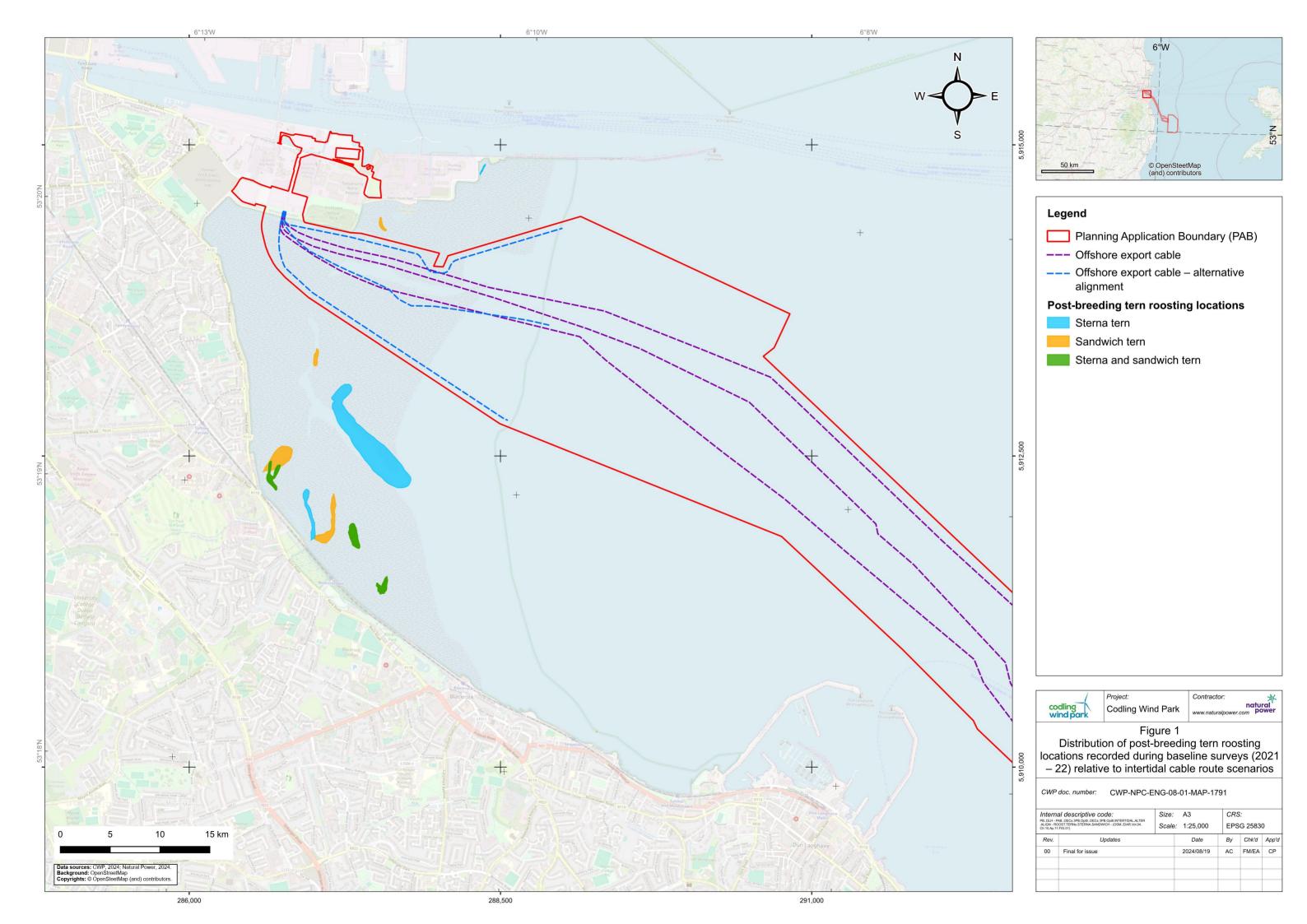
Page 73 of 102

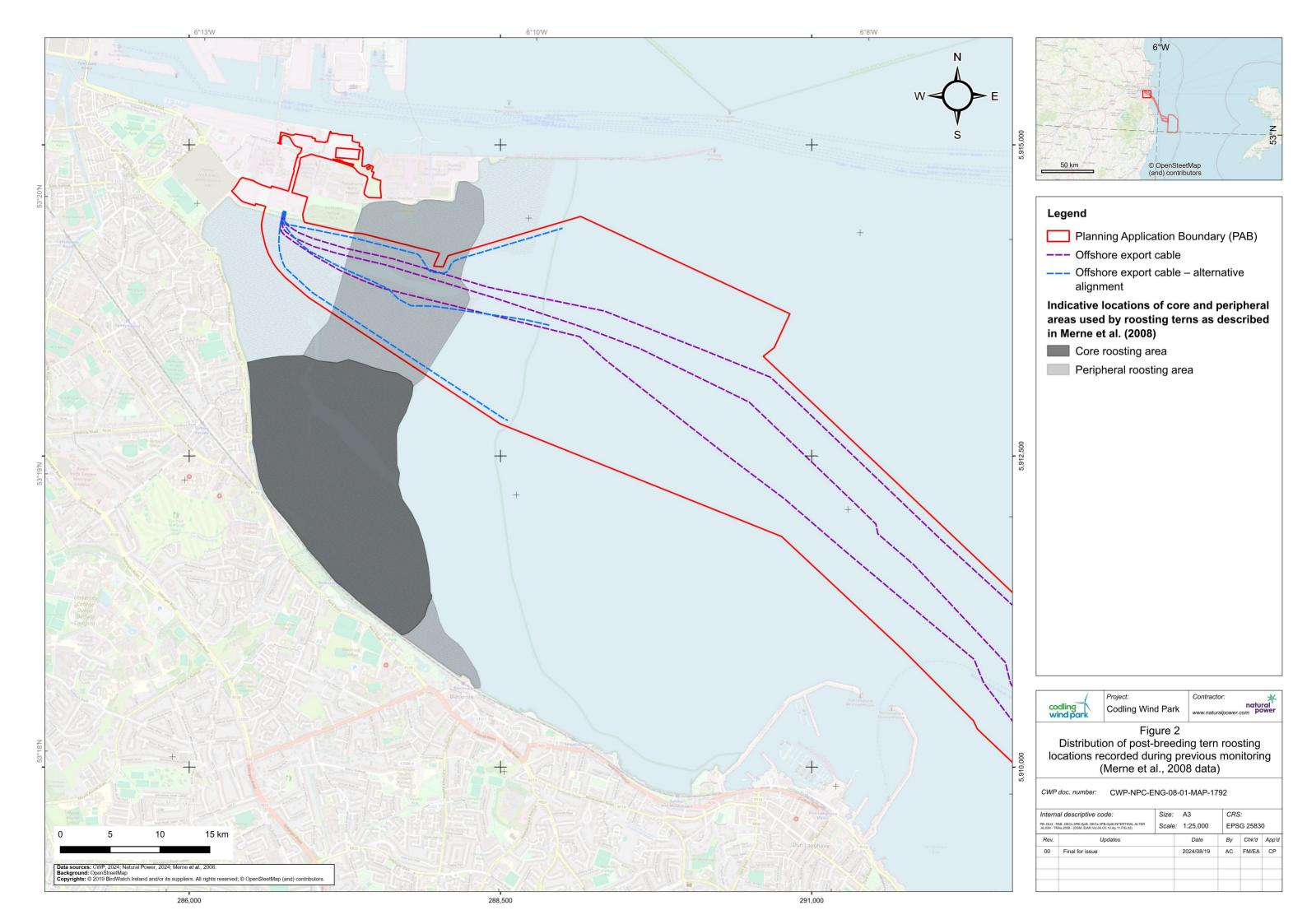


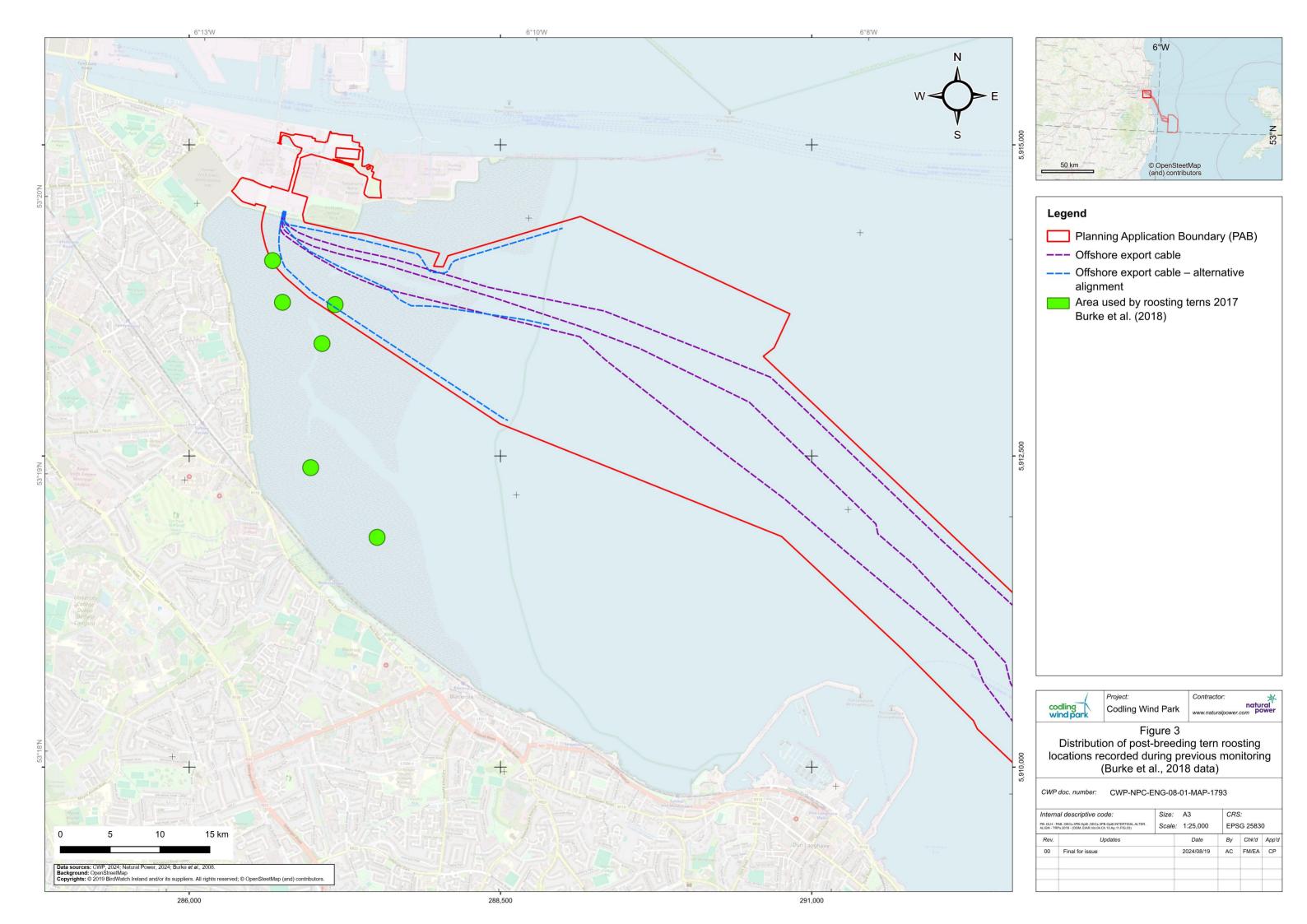
Table 33 Mean count per survey recorded during diurnal surveys and mean peak counts recorded during roosting tern surveys within South Dublin Bay

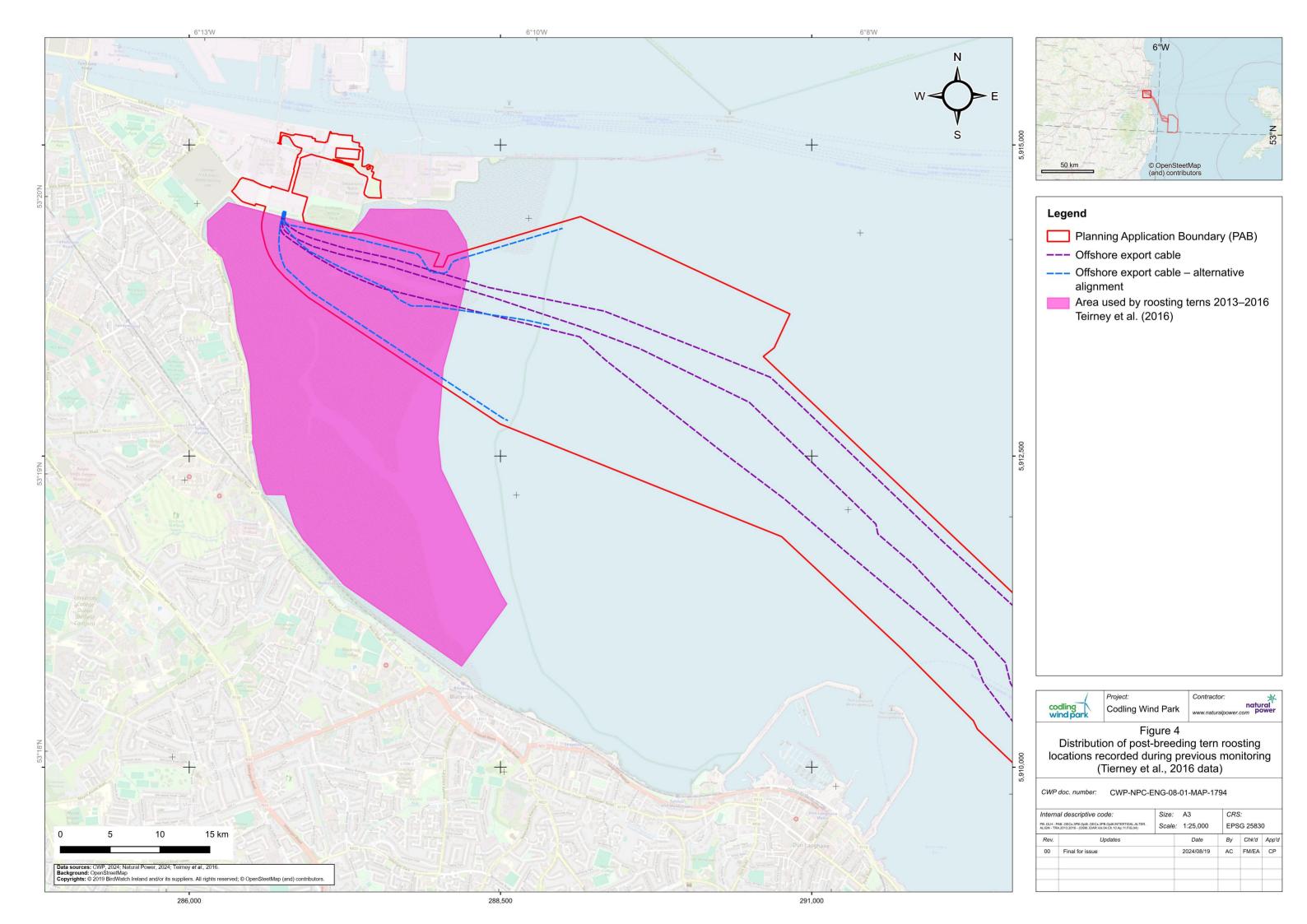
Species / species group	Diurnal surveys		Crepuscular (nocturnal roost) surveys – Mid-July to September post-breeding aggregation period		
	Mean (Period present and number of surveys)	Mean peak (over 3 years)	Mean (No of surveys)	Mean peak (over 2 years)	
Sterna terns	78 (Mid-April to September – 20 surveys)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

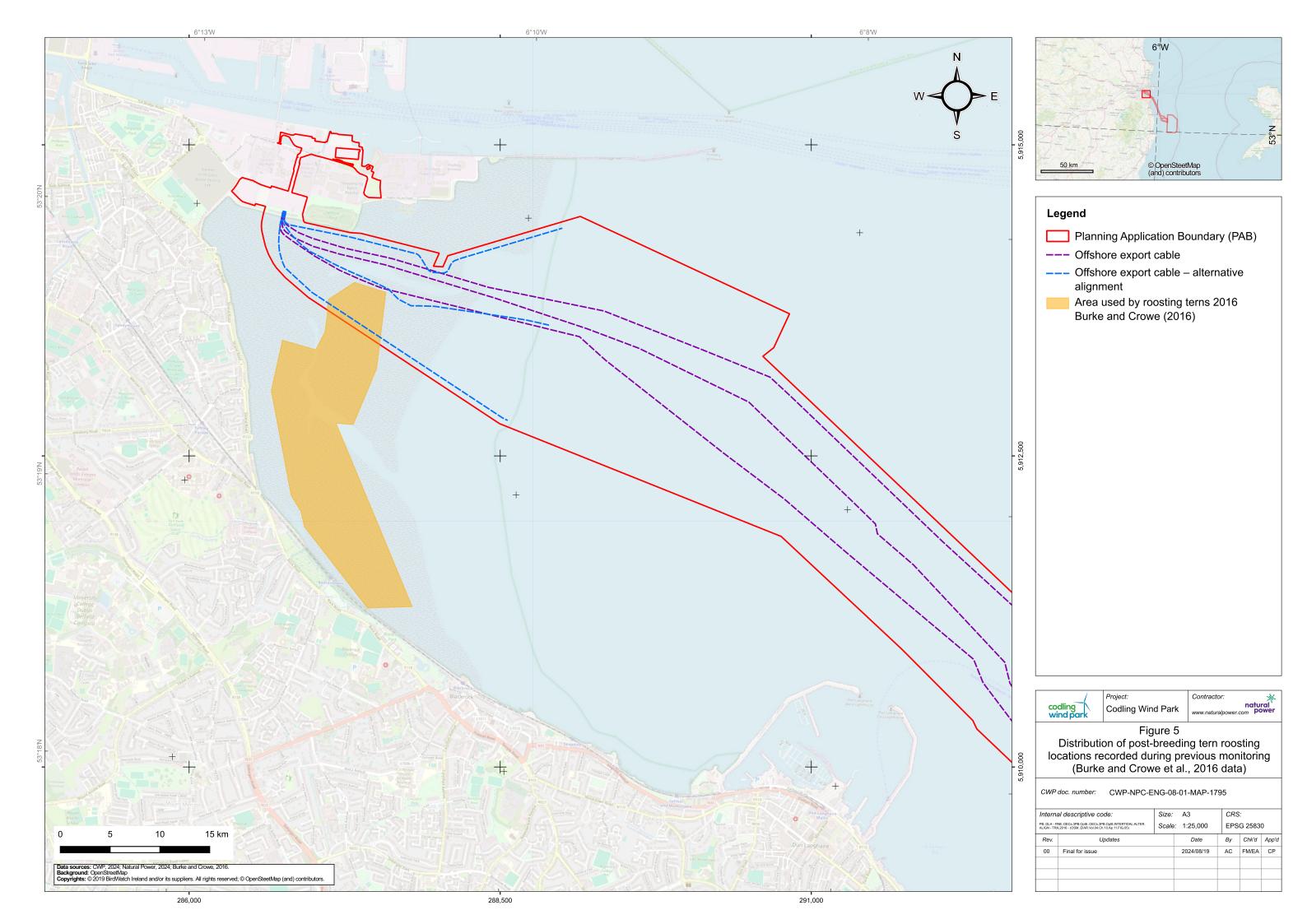
- 12. Although both *Sterna* and Sandwich terns were found to utilise the intertidal areas within South Dublin Bay during the day in (on average) medium numbers, the numbers of birds recorded within this area during surveys to count nocturnally roosting birds were significantly greater. Mean numbers 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**).













- 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	Mean Count per survey across 27 baseline surveys corresponding with non-	Intertidal cable route	Acoustic impacts associating with pi to August period in which works can	iling activity during non-restricted April be undertaken	Visual impacts associated with activities along intertidal cable routes during non-restricted April to August period in which works can be undertaken
		surveys (Number of surveys receptor recorded)	restricted April to August period in which works can be undertaken (Number of surveys receptor recorded)	Scenario	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	412 (1.17% of regional non-	77.98 (52/81)	18.26 (4/27)	PA	7.66 (9.83%)	16.57 (21.25%)	6.46 (8.28%)
goose	breeding population)			AAM	10.20 (13.08%)	16.31 (20.92%)	14.64 (18.77%)
Shelduck	45 (0.44% of regional non-	5.49 (51/81)	4.63 (12/27)	PA	0.76 (13.82%)	1.59 (28.91%)	1.22 (22.25%)
	breeding population)			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		ct to acoustic or visual disturbance	corded throughout the survey period and areas at levels to which this species is sensitive
Pintail	0 (0% of regional non- breeding population)	0.19 (1/81)	0.00 (0/27)	PA and AAM		ct to acoustic or visual disturbance	ded throughout the survey period and areas at levels to which this species is sensitive
Teal	0 (0% of regional non-	3.41 (16/81)	0.00 (0/27)	PA	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
· oai	breeding population)	0.11 (10/01)	,	AAM	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
Oystercatcher	1195 (1.97% of regional	861.19 (80/81)	295.63 (19/27)	PA	10.48 (1.22%)	28.16 (3.27%)	141.81 (16.47%)
Cyclorodiono.	non-breeding population)	001110 (00/01)	,	AAM	12.71 (1.48%)	28.16 (3.27%)	235.40 (27.33%)
Golden plover	0 (0% of regional non-	24.14 (15/81)) 0.00 (0/27)	PA	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
	breeding population)			AAM	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
Grey plover	0 (0% of regional non-	3.07 (23/81)	7 (23/81) 0.00 (0/27)	PA	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
, ,	breeding population)	, ,		AAM	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
Ringed plover	99 (0.85% of regional non-	33.14 (55/81)	9.96 (8/27)	PA	0.00 (0.00%)	0.00 (0.00%)	0.63 (1.91%)
	breeding population)			AAM	0.00 (0.00%)	0.00 (0.00%)	0.79 (2.37%)
Curlew	189 (0.54% of regional non-	47.73 (69/81)	27.93 (16/27)	PA	1.14 (2.38%)	1.96 (4.11%)	13.65 (28.60%)
	breeding population)			AAM	1.53 (3.20%)	3.53 (7.39%)	25.26 (52.93%)
Bar-tailed godwit	405 (2.45% of regional non-	177.62 (63/81)	33.04 (11/27)	PA	0.02 (0.01%)	0.11 (0.06%)	0.18 (0.10%)
	breeding population)			AAM	0.11 (0.06%)	0.75 (0.42%)	0.74 (0.42%)
Black-tailed godwit	587 (2.96% of regional non-	110.81 (57/81)	49.56 (9/27)	PA	0.07 (0.06%)	0.22 (0.20%)	0.22 (0.20%)
	breeding population)			AAM	0.05 (0.04%)	0.22 (0.20%)	0.22 (0.20%)
Turnstone	262 (2.76% of regional non-	66.37 (73/81)	32.26 (16/27)	PA	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
	breeding population)			AAM	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
Knot	0 (0% of regional non-	775.28 (36/81)	0.00 (0/27)	PA	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
	breeding population)			AAM	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
Sanderling	39 (0.46% of regional non-	53.06 (47/81)	3.56 (3/27)	PA	0.00 (0.00%)	0.00 (0.00%)	0.03 (0.07%)
	breeding population)			AAM	0.00 (0.01%)	0.03 (0.06%)	0.08 (0.15%)
Dunlin	422 (0.92% of regional	596.75 (57/81)	44.74 (4/27)	PA	0.00 (0.00%)	0.00 (0.00%)	0.00 (0.00%)
	non-breeding population)			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%)

Page **82** of **102**



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

pecies Intertidal cable route scenario	Intertidal cable		Acoustic impacts	i			Visual impacts						
	route scenario	August as	Average piling		Most sensitive p	iling location	Average all cable routes						
		proportion of regional population	Proportion of individuals impacted	No of individuals impacted	Proportion of individuals impacted	No of individuals impacted	Proportion of individuals impacted	No of individuals impacted					
ight-bellied rent goose	PA	very small	small	very small	large	small	small	very small					
	bellied brent gees		h Dublin Bay area. F	lowever, the number				sturbance to, on average, a small proportion of lig small. The South Dublin Bay area is used at any o					
	the light-bellied bro	ent geese present wi	thin South Dublin Ba	y. The number of p				result in potential disturbance to a small proportion II. The South Dublin Bay area is used at any one ti					
	alignment cable-ro	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 preferre 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					
	bellied brent gees by, at most, a very	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 tiby, 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 proport 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 of time by, at most, a very small proportion of the regional wintering population.											
	of the light-bellied	brent geese present	within South Dublin	Bay. The number of									
	of the light-bellied time by, at most, a As such, and give route scenario to	brent geese present a very small proportion in the limited duration	within South Dublin on of the regional win of potential acoustivese within the South	Bay. The number of tering population. c and visual disturb Dublin Bay area	of potentially impact pance impacts, the is assessed to be	ted individuals is, o	n average, also considered to be act magnitude of construction pha	small. The South Dublin Bay area is used at any asse disturbance and displacement for the AAM ca					
helduck	of the light-bellied time by, at most, a As such, and give route scenario to	brent geese present a very small proportion in the limited duration light-bellied brent ge	within South Dublin on of the regional win of potential acoustivese within the South	Bay. The number of tering population. c and visual disturb Dublin Bay area	of potentially impact pance impacts, the is assessed to be	ted individuals is, o	n average, also considered to be act magnitude of construction pha	small. The South Dublin Bay area is used at any of ase disturbance and displacement for the AAM cal					
helduck	of the light-bellied time by, at most, at most, at such, and give route scenario to population (a redu	brent geese present a very small proportio n the limited duratior light-bellied brent ge action from low prior to very small magnitude conclusion	within South Dublin in of the regional win of potential acousting ese within the South oconsideration of acomedium ion: Any given piling rea. The number of potential acousting is a south occurrence within the south occurrence	Bay. The number of tering population. c and visual disturbing Dublin Bay area diditional mitigation of the very small event during the no	of potentially impacts ance impacts, the is assessed to be measures). large n-restricted April to	ted individuals is, o overall residual imp negligible on accou very small August period is pre	n average, also considered to be act magnitude of construction phant that any potential impact will be large	small. The South Dublin Bay area is used at any case disturbance and displacement for the AAM calce of, at most, very low consequence to the region very small ance to, on average, a medium proportion of sheld					
nelduck	of the light-bellied time by, at most, at most, at most, at most, at most, at a such, and give route scenario to population (a reduited present within the very small proport Similarly, visual in the shelduck present within the	brent geese present a very small proportio n the limited duratior light-bellied brent ge action from low prior to very small wagnitude conclusi South Dublin Bay ar ion of the regional win pacts associated with	within South Dublin in of the regional win of potential acoustings within the South oconsideration of acousting medium ion: Any given piling rea. The number of protering population. The intertidal cable routing bay and the number of the say and the	Bay. The number of tering population. c and visual disturbing the number of potentially impacted atteinstallation during the notice of potentially impacted atteinstallation during the number of potentially impacted atteins at a second content at the number of potentially impacted atteins at the number of potential atteins at the number	particled April to individuals is, on a	very small August period is preverage, considered	n average, also considered to be act magnitude of construction phant that any potential impact will be large edicted to result in potential disturb to be very small and the South Driod are predicted, on average, to	small. The South Dublin Bay area is used at any of ase disturbance and displacement for the AAM calcolor of, at most, very low consequence to the region very small ance to, on average, a medium proportion of sheld bublin Bay area is used at any one time by, at most result in potential disturbance to a large proportion					
helduck	of the light-bellied time by, at most, at most, at most, at most, at most, at a such, and give route scenario to population (a reduited present within the very small proport Similarly, visual in the shelduck present a very small proport as such, and give alignment cable-route.	brent geese present a very small proportio n the limited duratior light-bellied brent ge lection from low prior to very small wagnitude conclusi South Dublin Bay ar ion of the regional wi ent within South Dublin bortion of the regional wi en the limited duration	within South Dublin in of the regional win of potential acoustings within the South oconsideration of a medium ion: Any given piling ea. The number of proteing population. It intertidal cable routing Bay and the number wintering population. In of potential acoustiduck within the South	Bay. The number of tering population. c and visual disturbing the number of potentially impacted attempts and visual disturbing the number of potentially impacted attempts and visual disturbing the number of potentially impacted attempts and visual disturbing the number of potentially impacted attempts and visual disturbing the number of potentially impacted attempts.	parce impacts, the is assessed to be measures). large n-restricted April to individuals is, on a g the non-restricted pacted individuals is bance impacts, the is assessed to be	very small August period is preverage, considered April to August pess, on average, considered considered of the consid	act magnitude of construction phant that any potential impact will be large edicted to result in potential disturb to be very small and the South Diriod are predicted, on average, to idered to be very small. The South pact magnitude of construction p	small. The South Dublin Bay area is used at any case disturbance and displacement for the AAM calbe of, at most, very low consequence to the region					

Page **84** of **102**



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 cableroute 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). NA Shoveler PA and AAM Zero very small very small 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 verv small NA Zero NA Zero verv 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 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). PΑ Zero NA Teal very small very small NA Zero 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 NA Zero NA Zero very small very small Page 85 of 102



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 cableroute 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 PΑ 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 verv small verv small small Verv 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 cableroute 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). PΑ Zero NA NA Golden plover very small very small Zero 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 NA Zero NA Zero very small very small Page **86** of **102**



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 cableroute 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). Zero NA **Grey plover** PΑ very small very small 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 NA Zero NA Zero verv small verv 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 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 cableroute 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). PΑ NA Ringed plover Very small very small Zero 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 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 NA very small very small very small Zero very small very small Page 87 of 102



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 cableroute 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). PΑ Curlew 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 verv small verv small small verv small very large medium verv 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 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 cableroute 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). PΑ **Bar-tailed godwit** 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 bartailed 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 Page 88 of 102

Document No: CWP-CWP-CON-08-03-04-10-APP-0011



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 bartailed 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 cableroute 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). very small Black-tailed PΑ very small very small very small very small very small very small godwit 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 blacktailed 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 verv small verv small verv small verv small verv small verv 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 blacktailed 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 cableroute 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). PΑ NA NA **Turnstone** very small very small Zero Zero 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 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). NA AAM NA Zero Zero very small very small very small Page 89 of 102



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 cableroute 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). PΑ Zero NA Knot very small very small 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 NA Zero NA Zero verv small verv 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 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 cableroute 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). PΑ NA Sanderling very small very small Zero 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 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 Page **90** of **102**

Title: Volume 4, Appendix 10.11: Intertidal Disturbance and Displacement - Magnitude of Impact and Residual Effects



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 cableroute 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). PΑ NA NA Zero Zero Dunlin 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 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). AAM NA NA Zero Zero 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 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 cableroute 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). Redshank PΑ 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.

Page **91** of **102**



		ction from low prior to	Consideration of ac	I I I I I I I I I I I I I I I I I I I	neasures).		ı						
	AAM	very small	very small	very small	very small	very small	very small	very small					
	redshank present at most, a very sm	within South Dublin E all proportion of the r	Bay area, and the nu egional wintering po	imber of potentially pulation.	impacted individua	ls is, on average, a	so considered to be very small. T	isturbance to, on average, a very small proportion of the South Dublin Bay area is used at any one time by					
	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 proport 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 at most, a very small proportion of the regional wintering population.												
	route scenario to re		outh Dublin Bay area	a is assessed to be				ase disturbance and displacement for the AAM cable w consequence to the regional population (a reduction					
Black-headed Juli	PA	very small	very small	very small	very small	very small	medium	large					
	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 blace 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 tire 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 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 tire												
	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 cab 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 populati (as was assessed prior to consideration of additional mitigation measures).												
	PA	very small, but	very small	very small	very small	very small	medium	very small					

Page **92** of **102**



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 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

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

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).

Page 93 of 102



Red-breasted merganser	PA	small	small	very small	medium	very small	very small	very small						
	breasted mergar	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 rebreasted 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 of time by, at most, a small proportion of the regional wintering population.												
	red-breasted me	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 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 time by, at most, a small proportion of the regional wintering population.												
	alignment cable-	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 prefer 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 regional population (as was assessed prior to consideration of additional mitigation measures).												
	AAM	small	medium	very small	medium	very small	medium	very small						
	breasted mergar	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 rebreasted 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 or time by, at most, a very small proportion of the regional wintering population.												
	breasted mergar	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 reconstruction 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 or time by, at most, a small proportion of the regional wintering population.												
	route scenario to		nser within the Sout	h Dublin Bay area	is assessed to be			ase disturbance and displacement for the AAM cabloe of, at most, very low consequence to the region						
Red-throated	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 rethroated 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 tirby, at most, a very small proportion of the regional wintering population.													
	throated divers p	resent within South D	ublin Bay area, and t	he number of poten	itially impacted indiv	viduals is, on averag	ge, also considered to be very sm							
diver	throated divers p by, at most, a ve Similarly, visual i of the red-throate	resent within South Diry small proportion of mpacts associated wit	ublin Bay area, and t the regional wintering th intertidal cable rou n South Dublin Bay,	he number of poteng g population. te installation during and the number of p	g the non-restricted	April to August peri	od are predicted, on average, to re							
	throated divers p by, at most, a ve Similarly, visual i of the red-throate time by, at most, As such, and giv alignment cable-	resent within South Dry small proportion of mpacts associated wited divers present within a very small proportion of the limited duration	ublin Bay area, and the regional wintering the intertidal cable round in South Dublin Bay, on of the regional wind of potential acoust throated diver within	the number of potenty population. te installation during and the number of period tering population. tic and visual disturns the South Dublin	g the non-restricted potentially impacted bance impacts, the Bay area is assess	April to August peri I individuals is, on a	od are predicted, on average, to relate and are predicted, on average, to relate a second considered to be vereposed to the process of the construction of the constru	all. The South Dublin Bay area is used at any one times						
	throated divers p by, at most, a ve Similarly, visual i of the red-throate time by, at most, As such, and giv alignment cable-	resent within South Dry small proportion of mpacts associated with divers present within a very small proportion on the limited duration route scenario to redered	ublin Bay area, and the regional wintering the intertidal cable round in South Dublin Bay, on of the regional wind of potential acoust throated diver within	the number of potenty population. te installation during and the number of period tering population. tic and visual disturns the South Dublin	g the non-restricted potentially impacted bance impacts, the Bay area is assess	April to August peri I individuals is, on a	od are predicted, on average, to relate and are predicted, on average, to relate a second considered to be vereposed to the process of the construction of the constru	all. The South Dublin Bay area is used at any one timesult in potential disturbance to a very small proportion small. The South Dublin Bay area is used at any or whase disturbance and displacement for the preferre						

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

Page **94** of **102**

at most, a very small proportion of the regional wintering population.

(as was assessed prior to consideration of additional mitigation measures).



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 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 langual 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 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 disalignment 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 population (as was assessed prior to consideration of additional mitigation measures). AAM very small proportion of the regional wintering population. As a such, and given the limited out 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 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 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 dispirate scenario to herring gull within the South Dublin Bay area is assessed to be neglig	jull PA	very small	very small	very small	very small	very small	large	large						
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 small proportion of the regional winering population. As such, and given the limited duration of potential accustic and visual disturbance impacts, the overall residual impact magnitude of construction phase disturbance and diafigment 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 population (as was assessed prior to consideration of additional miligation measures). AAM very small 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 a 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 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 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 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 dispiratous exernation 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 assessed prior to consideration of additional miligation measure). Visual impacts associated with inter	herring gulls pr	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 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 tilby, at most, a very small proportion of the regional wintering population.												
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-population (as was assessed prior to consideration of additional mitigation measures). AAM 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 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 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 disproute 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 assessed prior to consideration of additional mitigation measure). **Residual impact magnitude conclusion: Any given piling event during the non-restricted April to August period are predicted to result in potential disturbance to 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 proportion of the regional wintering population. Visual impacts associated with intertidal cable route installation during	gulls present w	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 he 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 small proportion of the regional wintering population.												
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 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 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 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 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 disproute 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 assessed prior to consideration of additional mitigation measure). **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 s 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 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 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 population (as was as	alignment cable	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 prefer 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 region population (as was assessed prior to consideration of additional mitigation measures).												
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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 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 disproved 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 assessed prior to consideration of additional mitigation measure). The second of the regional windering population in the second of the regional windering population. Wisual impacts associated with intertidal cable route installation during the non-restricted April to August period is predicted, on average, to result in potential disturbance to a grets 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 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 disalignment 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 oppoulation (as was assessed prior to consideration of additional mitigation measures). AMM very small small very small very small large very small. The South Dublin Bay area is used at any 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 population (as was assessed prior to consideration of additional mitigation measures).	herring gulls pr	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 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 tir by, at most, a very small proportion of the regional wintering population.												
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 assessed prior to consideration of additional mitigation measure). PA	herring gulls pr	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 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 very small proportion of the regional wintering population.												
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 spresent 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 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 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 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 disalignment 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 of 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 spresent 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	route scenario	to herring gull within the	South Dublin Bay a	rea is assessed to I										
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 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 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 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 disalignment 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 or 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 s 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	et PA	very small	small	very small	small	very small	large	very small						
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 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 disalignment 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 of 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 spresent 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	present within S	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 egreent 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 supproportion of the regional wintering population.												
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 of 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 sepresent 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	egrets present	t within South Dublin Bay	y, and the number o											
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 s 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	alignment cable	le-route scenario to little	egret within the So	uth Dublin Bay area	a is assessed to be									
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	AAM	very small	small	very small			large	very small						
	present within S	South Dublin Bay area, a	and the number of po											
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 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 small proportion of the regional wintering population.	Visual impacts egrets present	associated with intertidate within South Dublin Bay	al cable route installay, and the number o											

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

Page **95** of **102**

assessed prior to consideration of additional mitigation measure).



Greenshank	PA	very small	very small	very small	very small	very small	very small	very small						
	greenshank prese	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 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 to by, at most, a very small proportion of the regional wintering population.												
	of the greenshank	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 by, at most, a very small proportion of the regional wintering population.												
	alignment cable-re	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 prefer 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 reg 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						
	greenshank prese	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.												
	of the greenshank	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 tip by, at most, a very small proportion of the regional wintering population.												
	route scenario to		e South Dublin Bay a	rea is assessed to				ase disturbance and displacement for the AAM ca y low consequence to the regional population (as						
editerranean II	PA	large	very small	very small	very small	very small	very small	very small						
	Mediterranean gu	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 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 of time by, at most, a large proportion of the regional wintering population.												
	of the Mediterrane	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 time by, at most, a large proportion of the regional wintering population.												
	alignment cable-re	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 prefer 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 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						
	Mediterranean gu		ıth Dublin Bay area,	and the number of p				isturbance to, on average, a very small proportion small. The South Dublin Bay area is used at any						
	Mediterranean gu		ıth Dublin Bay and th	ne number of potent				in potential disturbance to a small proportion of ill. The South Dublin Bay area is used at any one						
	route scenario to	Mediterranean gull w		n Bay area is asses				ase disturbance and displacement for the AAM canost, very low consequence to the regional populations.						

Page **96** of **102**

(as was assessed prior to consideration of additional mitigation measures).



ommon gull	PA	very small	very small	very small	very small	very small	very small	very small						
	common gulls pres	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 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 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 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 preferalignment 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 region 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						
	common gulls pres	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 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 proporti 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 tir by, at most, a very small proportion of the regional wintering population.													
	route scenario to o		e South Dublin Bay	area is assessed to				ase disturbance and displacement for the AAM ca y low consequence to the regional population (as						
eat black- cked gull	PA	very small	very small	very small	very small	very small	large	very small						
onou gun	black-backed gulls	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 gradual 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 of time by, at most, a very small proportion of the regional wintering population.												
	black-backed gulls	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 g 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 most, a very small proportion of the regional wintering population.												
	alignment cable-ro		black-backed gulls	within the South Du	blin Bay area is ass			hase disturbance and displacement for the preference to mpact will be of, at most, very low consequence to						
	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 go 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 time by, at most, a very small proportion of the regional wintering population.													
			n of the regional win	tering population.										

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

Page **97** of **102**

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						
	black-backed gulls		n Dublin Bay area, a	and the number of p				bance to, on average, a very small proportion of lesser small. The South Dublin Bay area is used at any one						
	black-backed gulls	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 less 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, 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 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						
	black-backed gulls	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.												
	black-backed gulls	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.												
	route scenario to		gulls within the Sou	ith Dublin Bay area	a is assessed to be			ase disturbance and displacement for the AAM cable- be of, at most, very low consequence to the regional						
Sandwich tern	PA	very small, but considerable turnover	very small	very small	very small	very small	very small	very small						
	inclusive, is predict average, consider Similarly, visual in August, inclusive,	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, or 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 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 individual												
	Although the Sout	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.												
	cable-route scena		within the South Du	blin Bay area is ass				urbance and displacement for the preferred alignment w consequence to the regional population (a reduction						
	AAM	very small, but considerable turnover	very small	very small	very small	very small	medium	very small						
	inclusive, is predic							before sunset during the period of mid-July to August, I this number of potentially impacted individuals is, on						

Page **98** of **102**



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 cableroute 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). PΑ Shag 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). AAMvery 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 cableroute 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 PΑ 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 verv small very small very small very small very small very small very small

Page 99 of 102



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 cableroute 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). NA Common scoter PΑ verv small very small very small 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 verv small NA Zero NA Zero verv small verv 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 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 cableroute 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). PΑ **Grey heron** very small very small 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 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 Page **100** of **102**



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

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