

# Lower Thames Crossing

## 9.89 Responses to the Examining Authority's ExQ1 Appendix G – 11. Biodiversity (Part 6 of 6)

Infrastructure Planning (Examination  
Procedure) Rules 2010

Volume 9

**DATE: September 2023**  
**DEADLINE: 4**

Planning Inspectorate Scheme Ref: TR010032  
Examination Document Ref: TR010032/EXAM/9.89

**VERSION: 1.0**

## Lower Thames Crossing

### 9.89 Responses to the Examining Authority's ExQ1 Appendix G – 11. Biodiversity (Part 6 of 6)

#### List of contents

	Page number
<b>1 Introduction .....</b>	<b>1</b>
1.1 Introduction.....	1
<b>2 Responses to the Examining Authority's ExQ1 11 .....</b>	<b>2</b>
<b>Glossary .....</b>	<b>3</b>
<b>Annexes.....</b>	<b>6</b>
<b>Annex A - Coalhouse Point Mitigation Water Supply Structure</b>	
<b>Annex B - LTC technical note considerations of in combination development within traffic modelling</b>	
<b>Annex C - Coalhouse Point e-mail update 24 February 2023</b>	
<b>Annex D - Underwater noise e-mail update 24 April 2023</b>	
<b>Annex E1 - Air Quality Methodology briefing note</b>	
<b>Annex E2 - Feedback received by email from Natural England</b>	
<b>Annex F1 - Methodology for the assessment of in-combination effects</b>	
<b>Annex F2 - Feedback received from Natural England</b>	
<b>Annex H - HRA and EIA Evidence Technical Note Rev1 Air Quality from vehicle emissions</b>	
<b>Annex I - Technical note on the methodology for assessing speed limits</b>	
<b>Annex J - Note on Modelling Approach for Designated Sites</b>	
<b>Annex K - Technical Note Ramsar Advanced Grouting Tunnel and Main Tunnels Numerical Model</b>	
<b>Annex L - Advanced Grout Tunnel Technical Note</b>	
<b>Annex M1 - Disturbance – noise and visual methodology briefing note</b>	
<b>Annex M2 - 02 April 2020 Feedback received from Natural England</b>	
<b>Annex N1 - 18 March 2020 Groundwater Assessment Methodology briefing note</b>	
<b>Annex N2 - 02 April 2020 Feedback received from Natural England</b>	
<b>Annex O1 - 08 April 2020 Epping Forest detailed botanical survey briefing note</b>	
<b>Annex O2 - 30 April 2020 Feedback received from Natural England</b>	
<b>Annex O3 - 12 May 2020 Feedback received from Natural England</b>	

- Annex P1 - 06 May 2020 HRA Briefing Note Defining functionally linked land**
- Annex P2 - 18 May 2020 Feedback received from Natural England**
- Annex Q1 - 04 June 2020 Technical Note North Portal drainage discharge options**
- Annex Q2 - 25 June 2020 Feedback received from Natural England**
- Annex R - 18 May 2020 Epping Forest detailed botanical survey briefing note –  
Revision 1**
- Annex S1 - 04 June 2020 Jetty Refurbishment Use and Decommissioning Paper**
- Annex S2 - 26 June 2020 Feedback received from Natural England)**
- Annex T1 - 04 June 2020 Technical Note North Portal Discharge Construction**
- Annex T2 - 25 June 2020 Feedback received from Natural England**
- Annex U - 18 May 2020 HRA Briefing Note Ornithology baseline**
- Annex V - 18 May 2020 Figures detailing European site locations in relation to ARN**
- Annex W - 22 May 2020 Figure showing land take in relation to European sites and  
functionally linked land**
- Annex X - 22 May 2020 Approach to climate change assessment**
- Annex Y - 10 June 2020 Land take methodology**
- Annex Z - 02 June 2020 Construction traffic modelling and AQ effects briefing**
- Annex AA1 - Technical Note Ramsar Advanced Grouting Tunnel and Main Tunnels  
Numerical Model (R1)**
- Annex AA2 - Technical Note Baseline Water Balance for the Ramsar site (Filborough  
Marshes)**
- Annex BB - 22 July 2020 Stage 1 Screening Figure 31 – Predicted change in  
nitrogen deposition at European sites**
- Annex CC - 10 September 2020 DCO1.0 Stage 1 Screening – Appendix H – LA 105  
NEA001 Comparison**
- Annex DD1 - 28 January 2021 Technical Note: Recreational disturbance - Additional  
analysis to support HRA screening**
- Annex DD2 - 24 June 2021 Feedback received from Natural England**
- Annex EE - 12 February 2021 Technical Note - Habitat enhancement to maintain  
baseline functionality of functionally linked land**
- Annex FF - 23 February 2021 Technical Note - Habitat enhancement to maintain  
baseline functionality of functionally linked land (Revision 1)**
- Annex GG - 09 March 2021 Technical Note – Dust measures**
- Annex HH - 09 March 2021 Technical Note - Operational Noise & Visual Disturbance**

**Annex II - 09 March 2021 Technical Note - No LSE from Lighting Construction and Operation**

**Annex JJ - 13 April 2021 Technical Note - Construction Noise and Mitigation**

**Annex KK - 13 April 2021 Technical Note - Ramsar Surface Water Ecology Baseline (Construction surface water discharge)**

**Annex LL1 - 22 April 2021 Technical Note - Habitat enhancement to maintain baseline functionality of functionally linked land (Revision 2)**

**Annex LL2 - 28 July 2021 Feedback (partial) received from Natural England**

**Annex MM - 22 April 2021 Technical note - Iteration of the extent of functionally linked land**

**Annex NN - 12 May 2021 Technical Note - Ramsar Surface Water Ecology Baseline (Construction surface water discharge) Revision 1**

**Annex OO - 12 May 2021 Revised Technical Note - Dust measures (Revision 1)**

**Annex PP - 12 May 2021 Technical Note - No LSE from Lighting Construction and Operation**

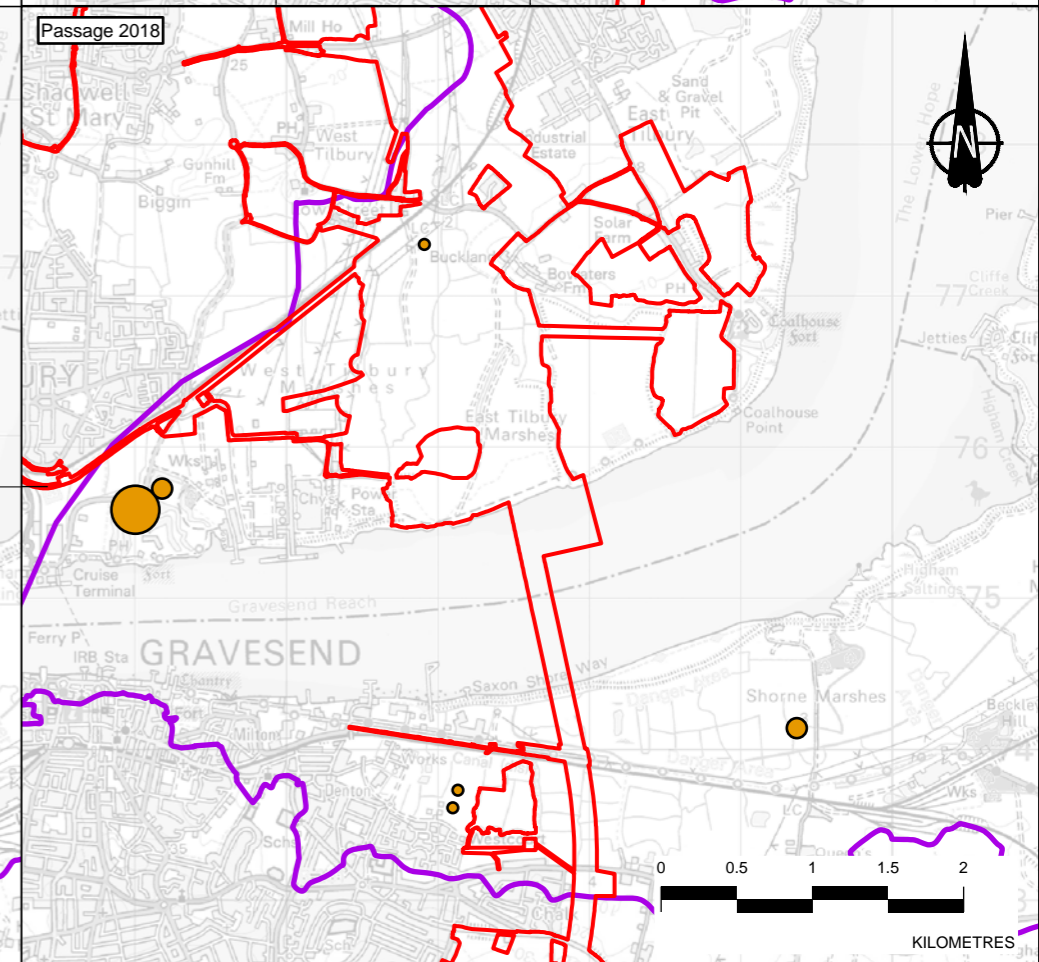
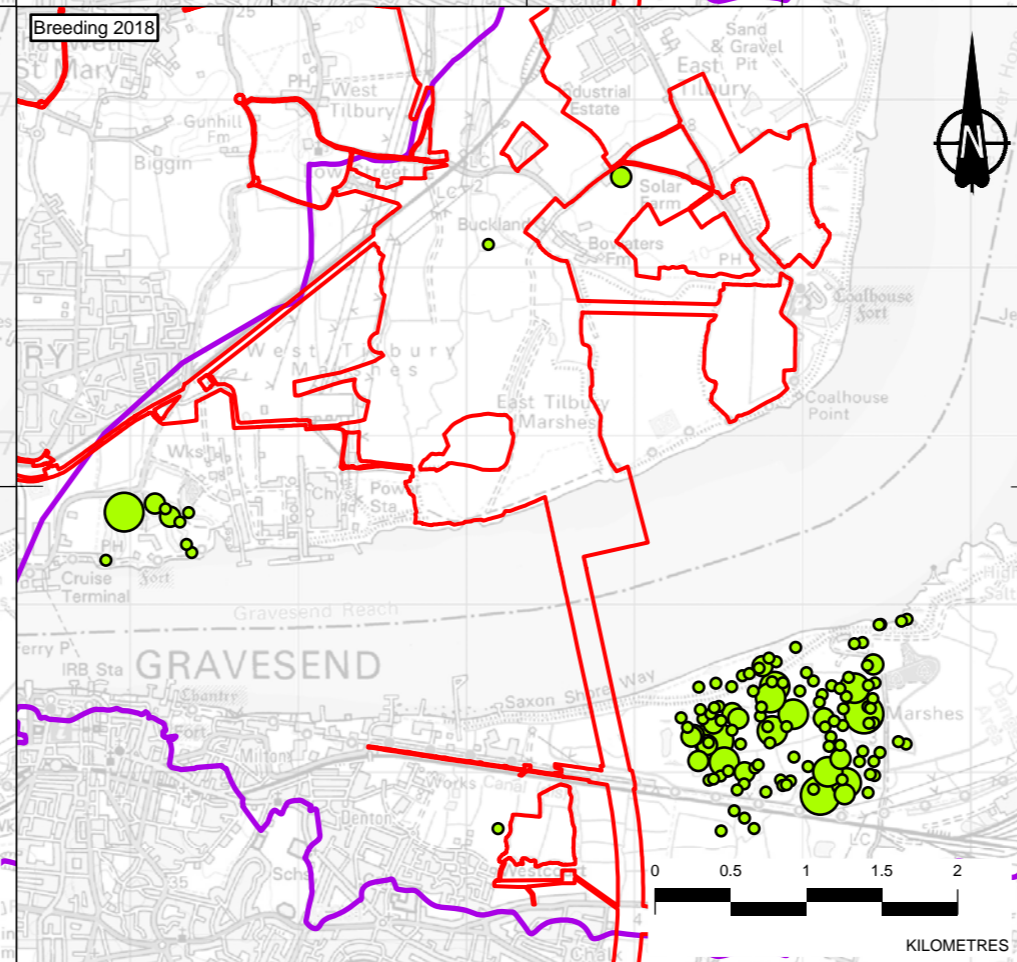
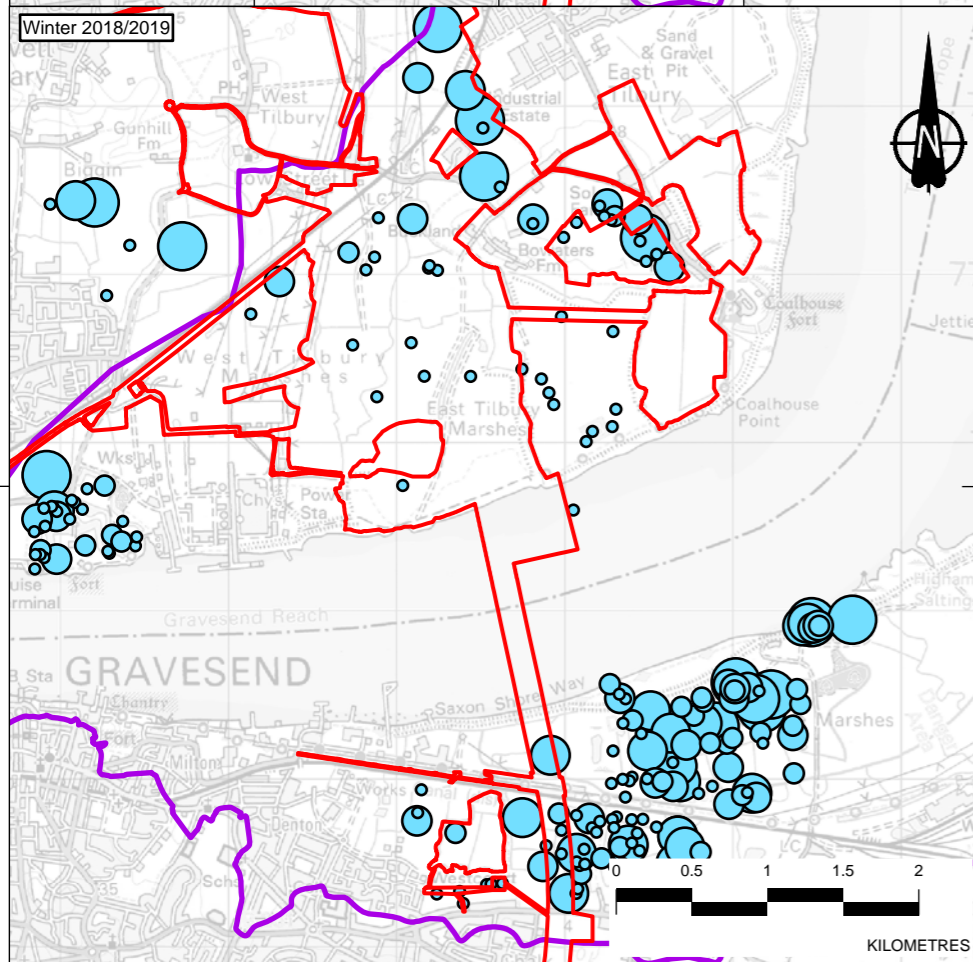
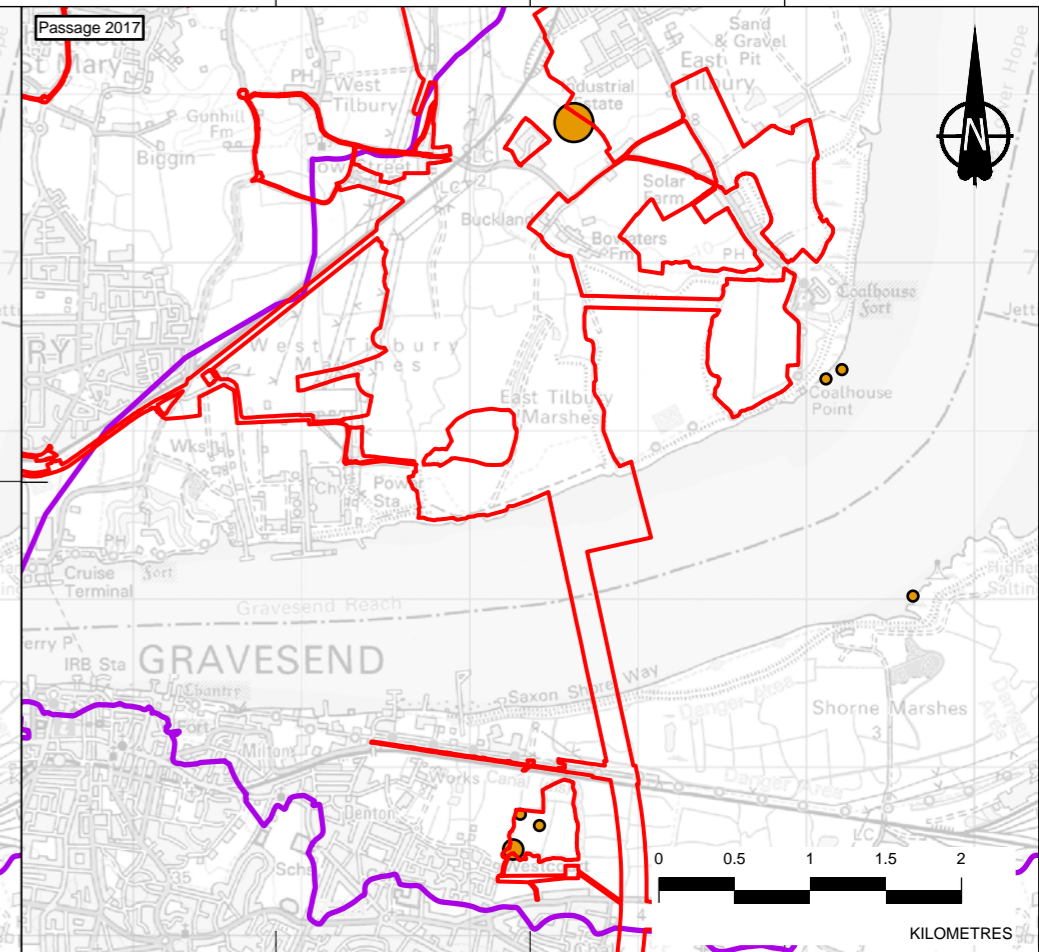
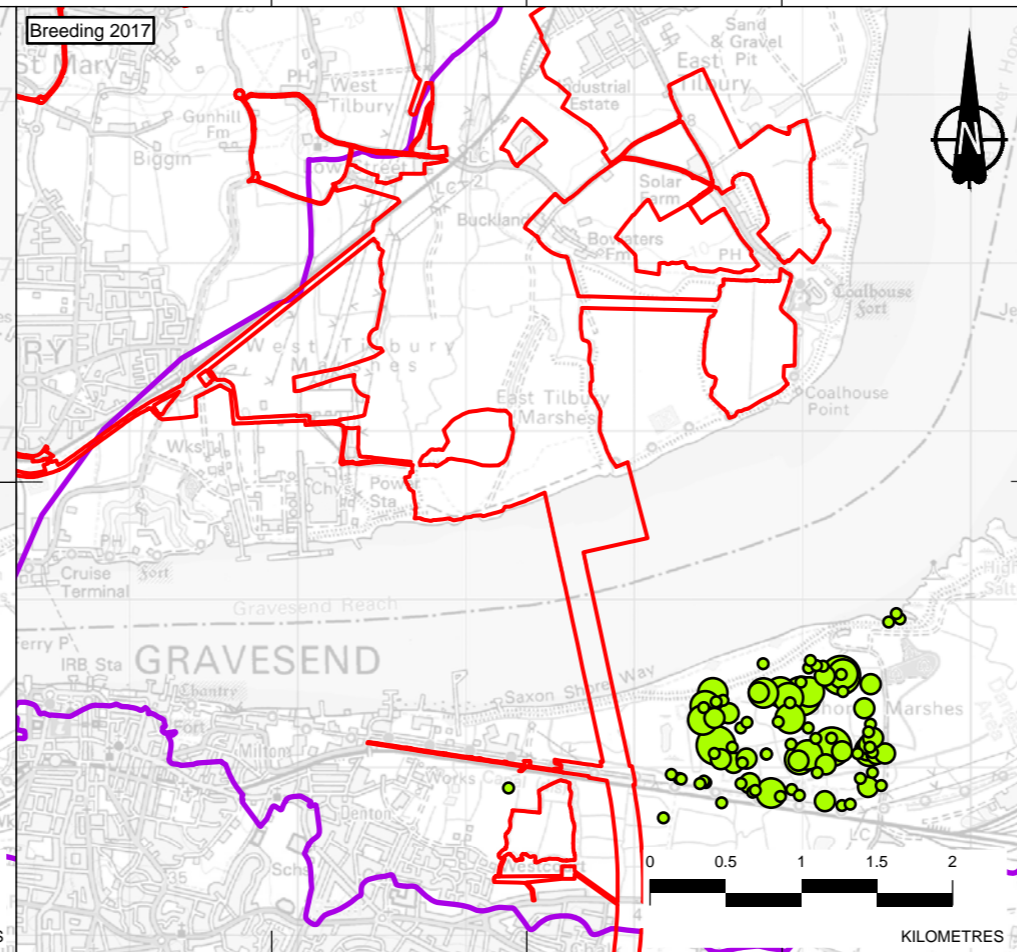
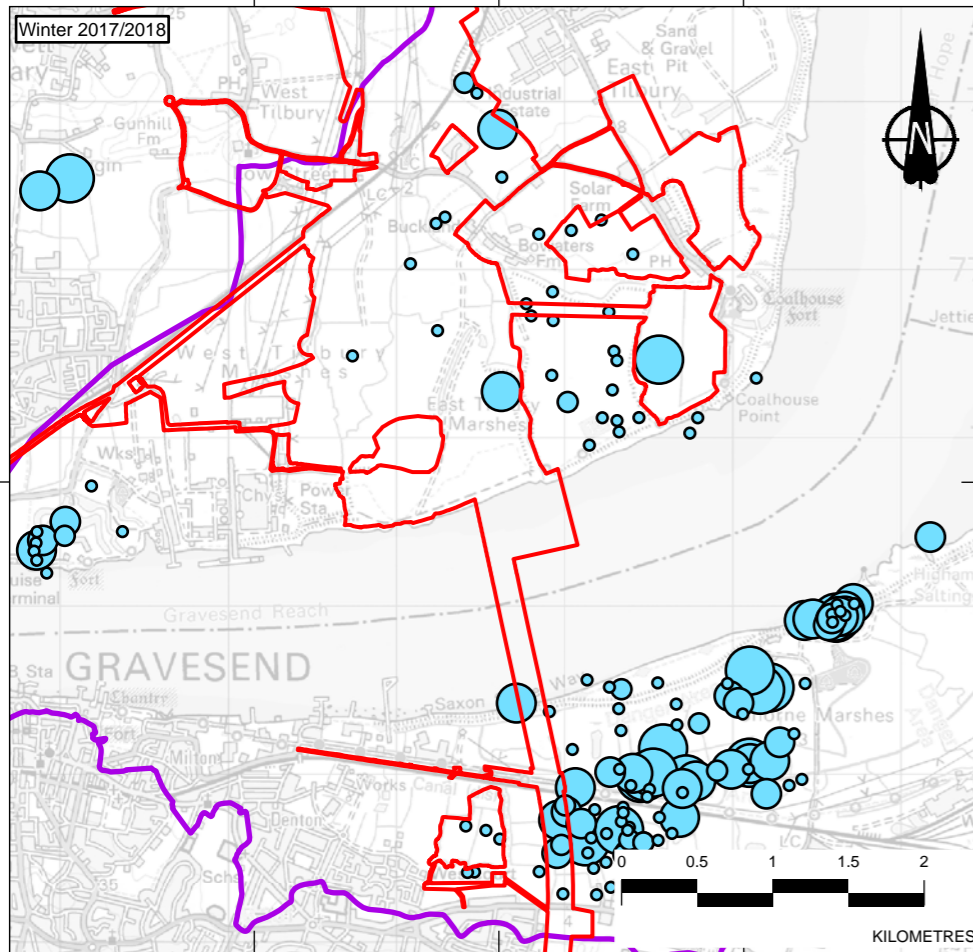
**Annex QQ1 - 11 August 2021 HRA Evidence Technical Note Rev 0: Air Quality from vehicle emissions**

**Annex QQ2 - 03 December 2021 Feedback received from Natural England**

*\*Annex G not used*

## Annex QQ1 11 August 2021 HRA Evidence Technical Note Rev 0: Air Quality from vehicle emissions

(Continued from Part 5 of 6)



Contains Ordnance Survey data. © Crown copyright and database rights 2021. Ordnance Survey 100030649

P02	S8	08/07/2021	DRAFT	AD	IP	RC
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprv'd

**Legend**

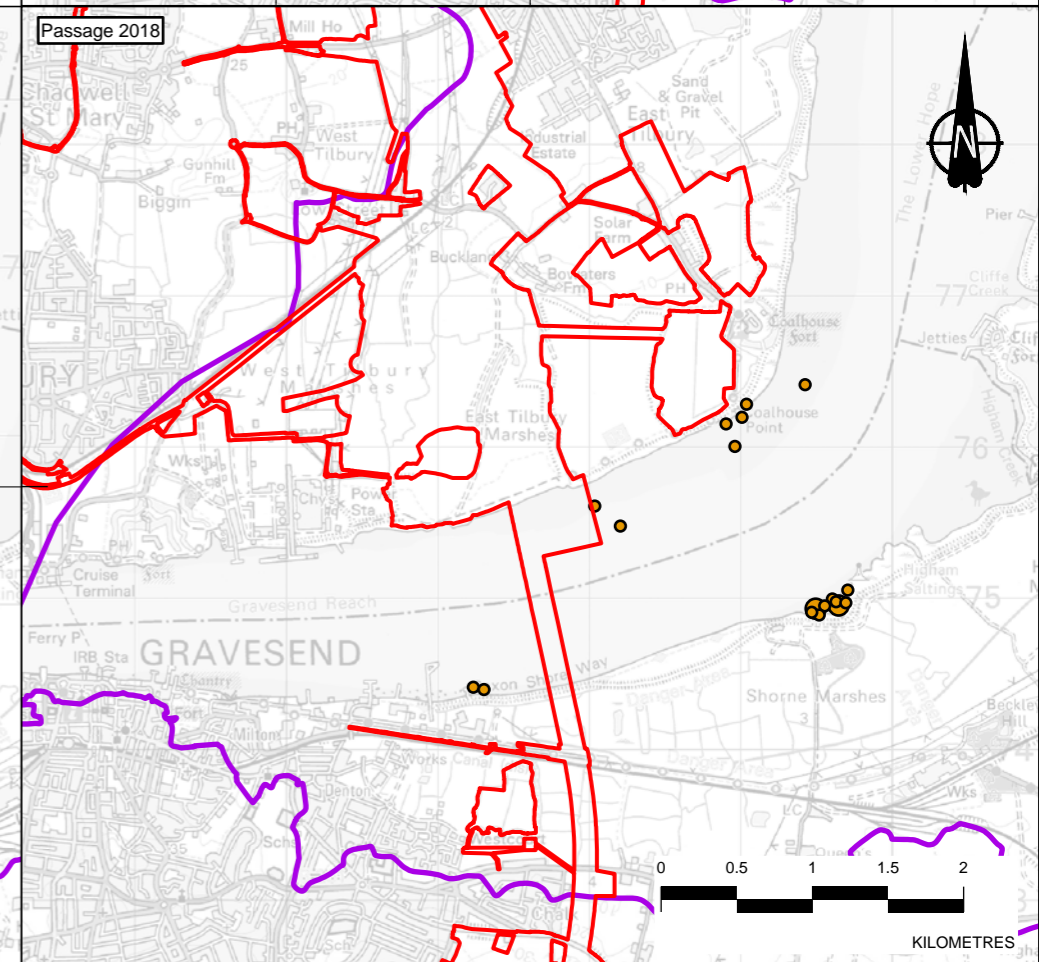
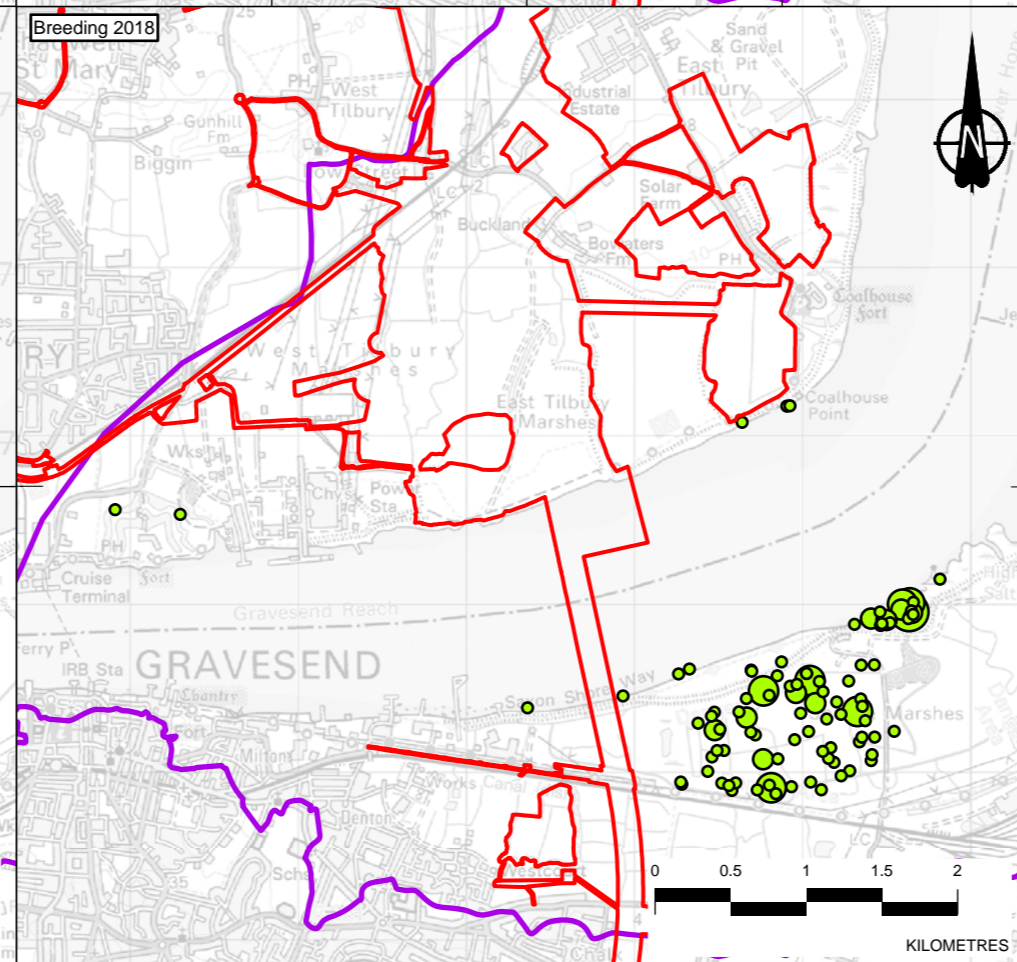
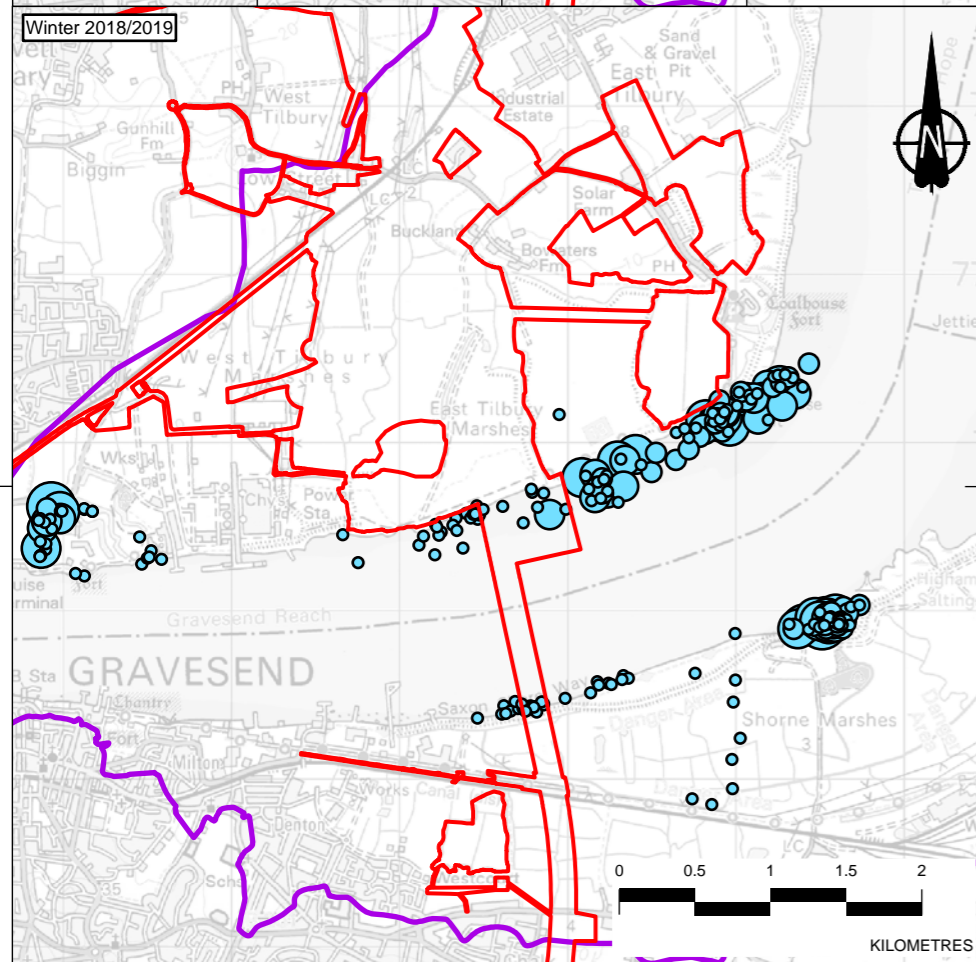
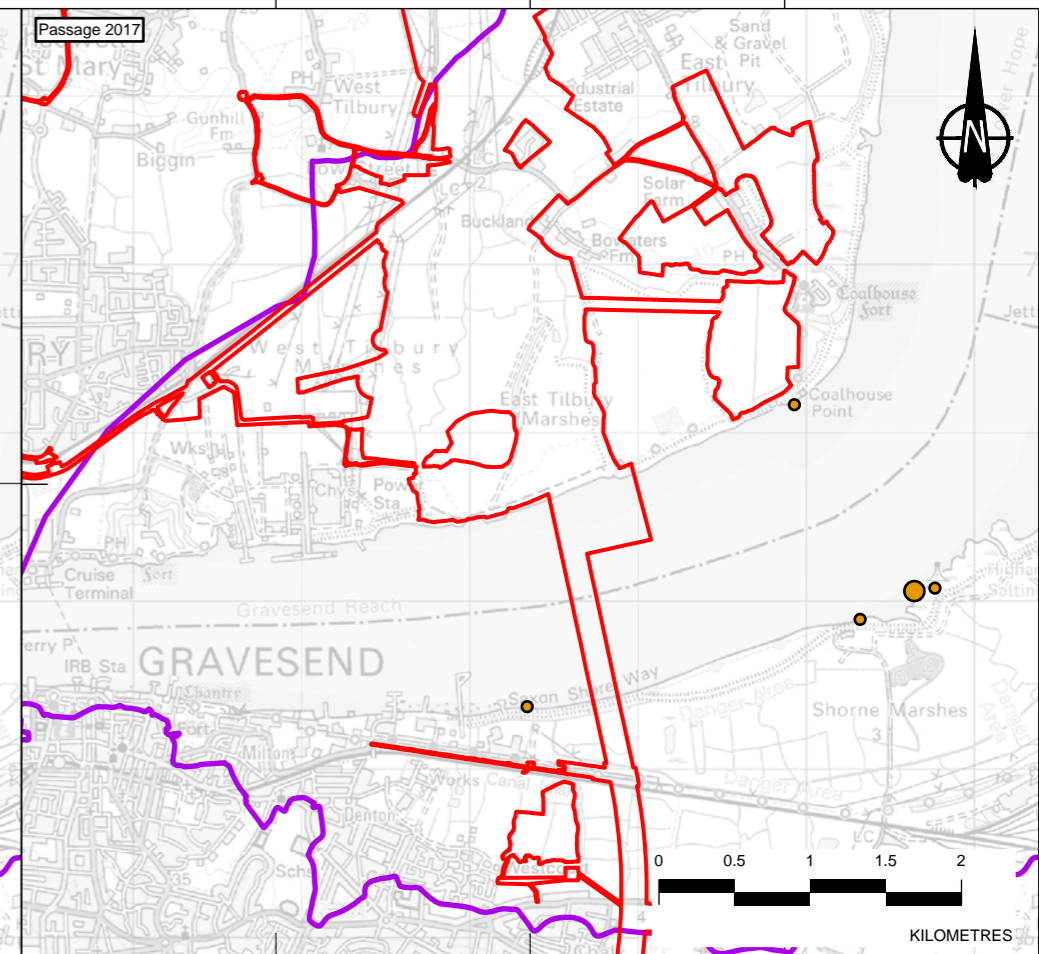
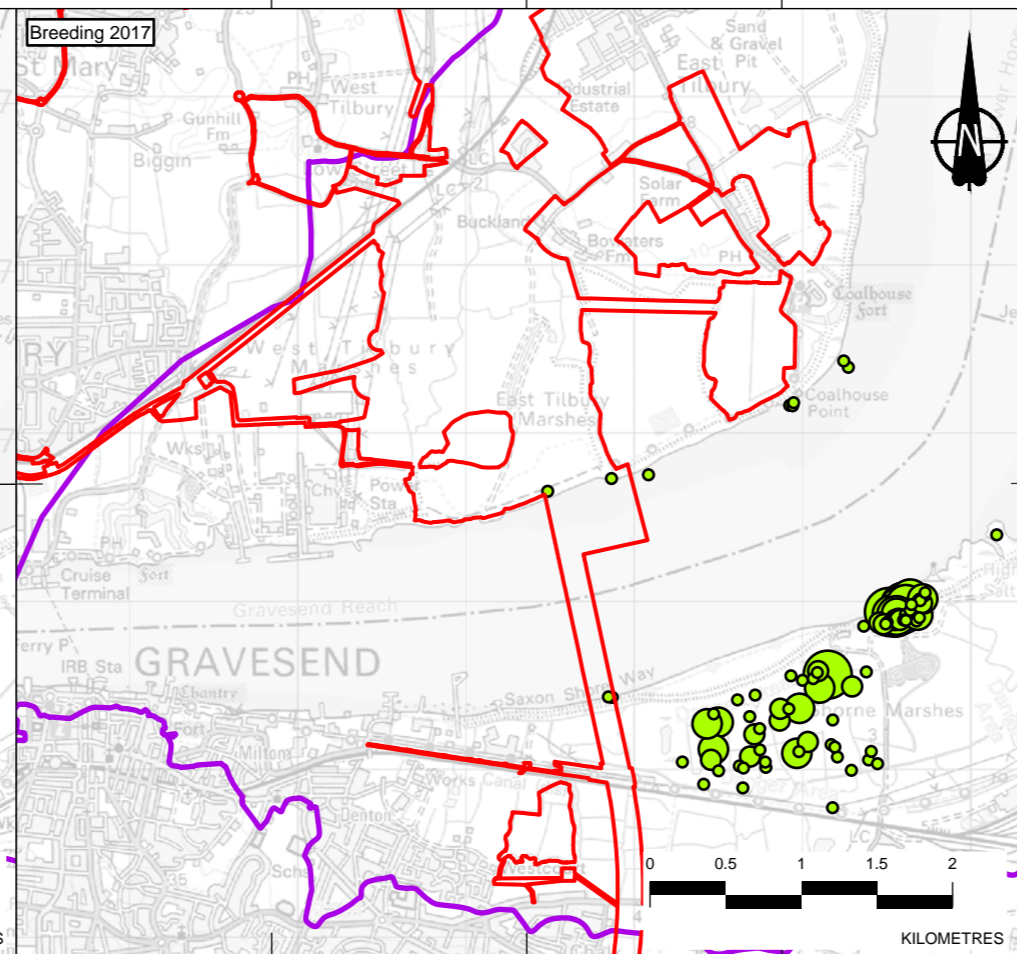
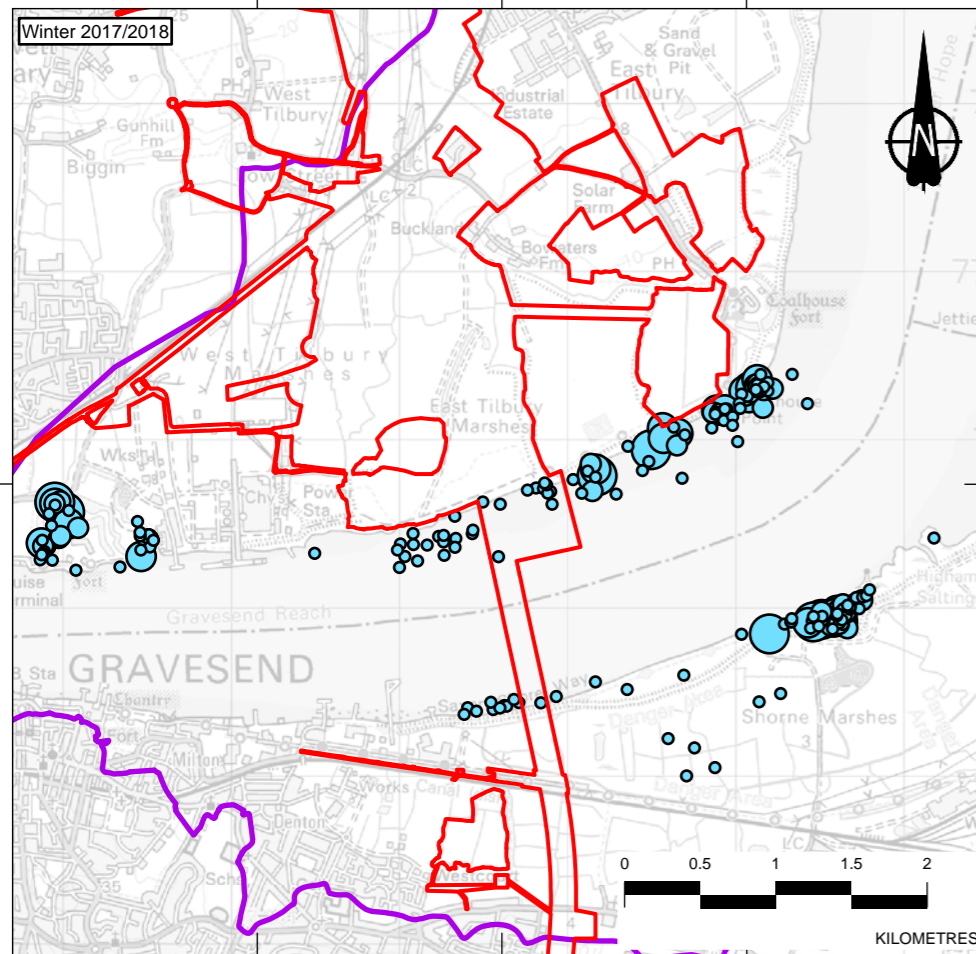
- Order Limits (Red outline)
- Functionally Linked Land (Purple outline)

Winter Season (Nov-Mar) record Number:	11 - 20	Breeding season (Apr-Jul) record Number:	11 - 20	Passage Season (Aug-Oct) record Number:	11 - 20
● 1 - 5	● 21 - 50	● 1 - 5	● 21 - 50	● 1 - 5	● 21 - 50
● 6 - 10	● > 50	● 6 - 10	● > 50	● 6 - 10	● > 50

Client: highways england

Project: LOWER THAMES CROSSING

Status	DRAFT	Original Size	A3	Revision	P02
Application Document Number	TR010032/APP/6.5		Scale	1:50,000	
Drawing Title	Figure 11g - QF: Lapwing Numbers recorded in each season				
Drawing Number	Page 7 of 10				



Contains Ordnance Survey data. © Crown copyright and database rights 2021. Ordnance Survey 100030649

P02	S8	08/07/2021	DRAFT	AD	IP	RC
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprvd

**Legend**

- Order Limits (Red outline)
- Functionally Linked Land (Purple outline)

Winter Season (Nov-Mar) record Number:

- 1 - 5 (Small blue circle)
- 6 - 10 (Medium blue circle)
- 11 - 20 (Large blue circle)
- 21 - 50 (Very large blue circle)
- > 50 (Extremely large blue circle)

Breeding season (Apr-Jul) record Number:

- 1 - 5 (Small green circle)
- 6 - 10 (Medium green circle)
- 11 - 20 (Large green circle)
- 21 - 50 (Very large green circle)
- > 50 (Extremely large green circle)

Passage Season (Aug-Oct) record Number:

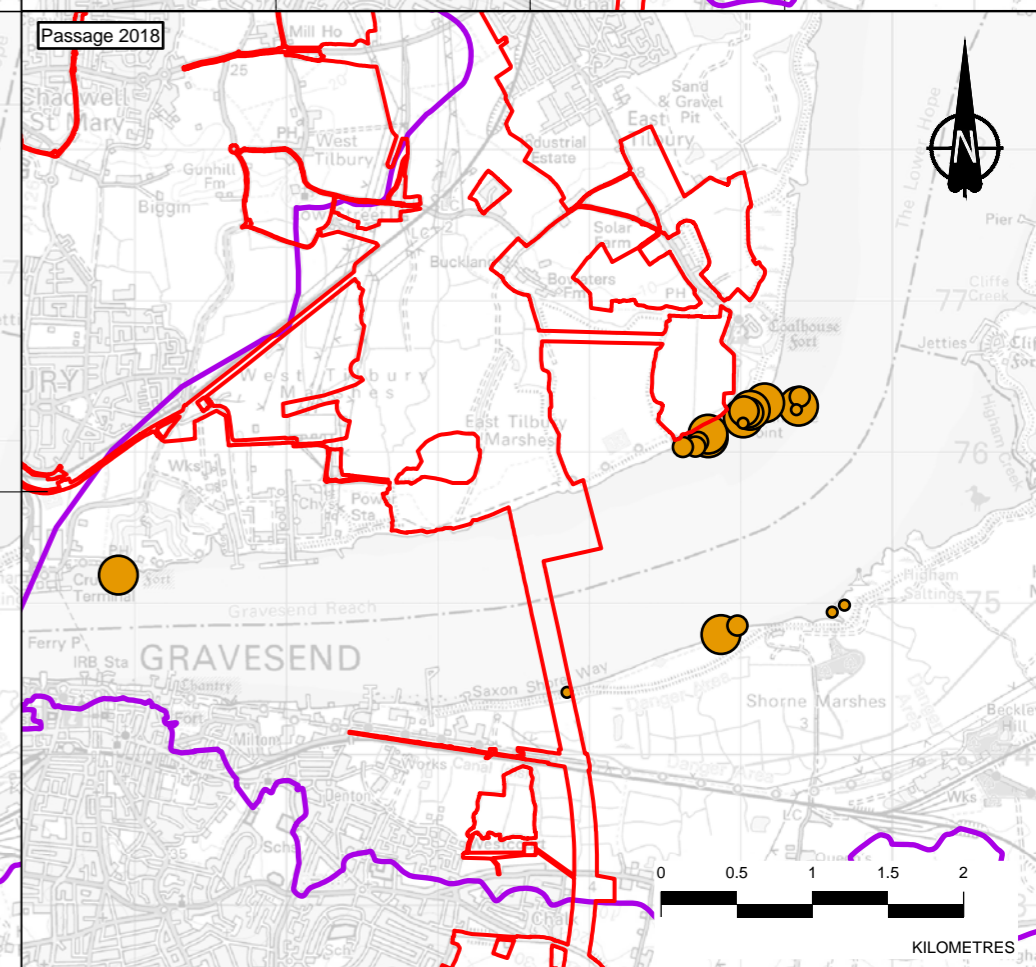
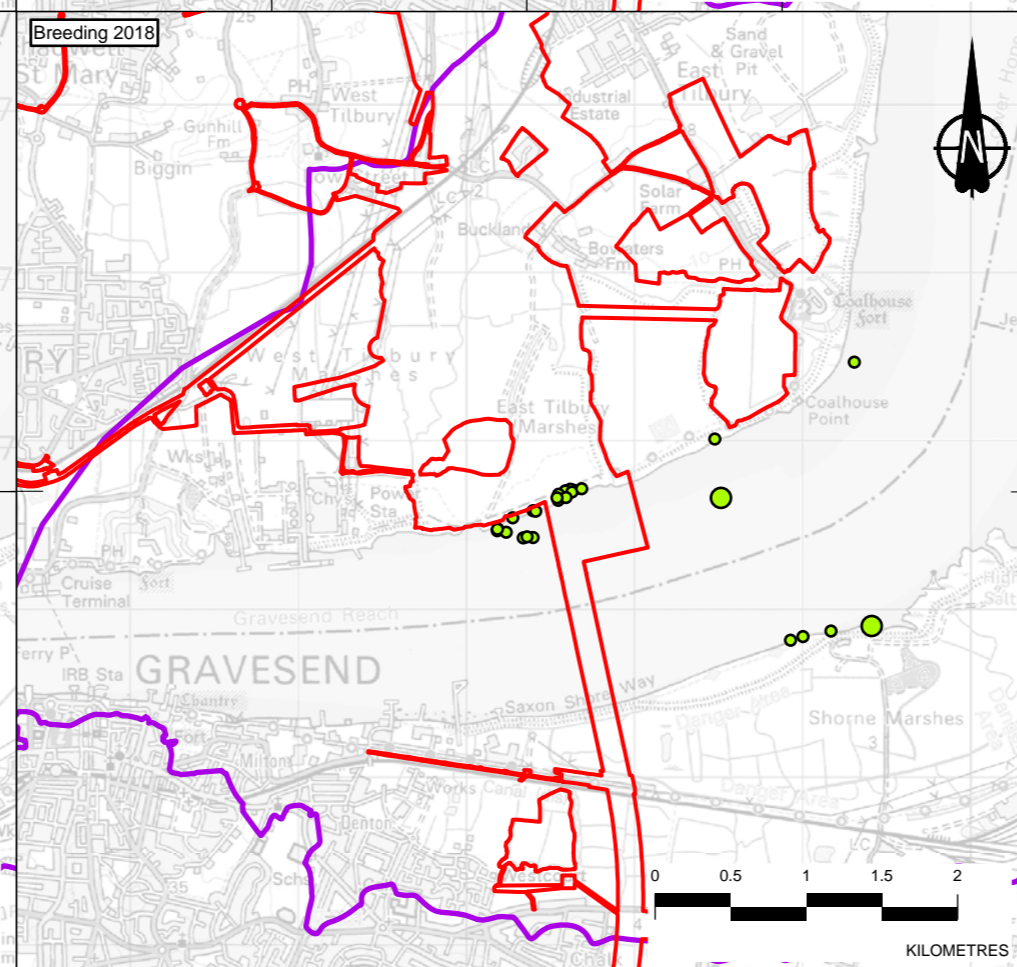
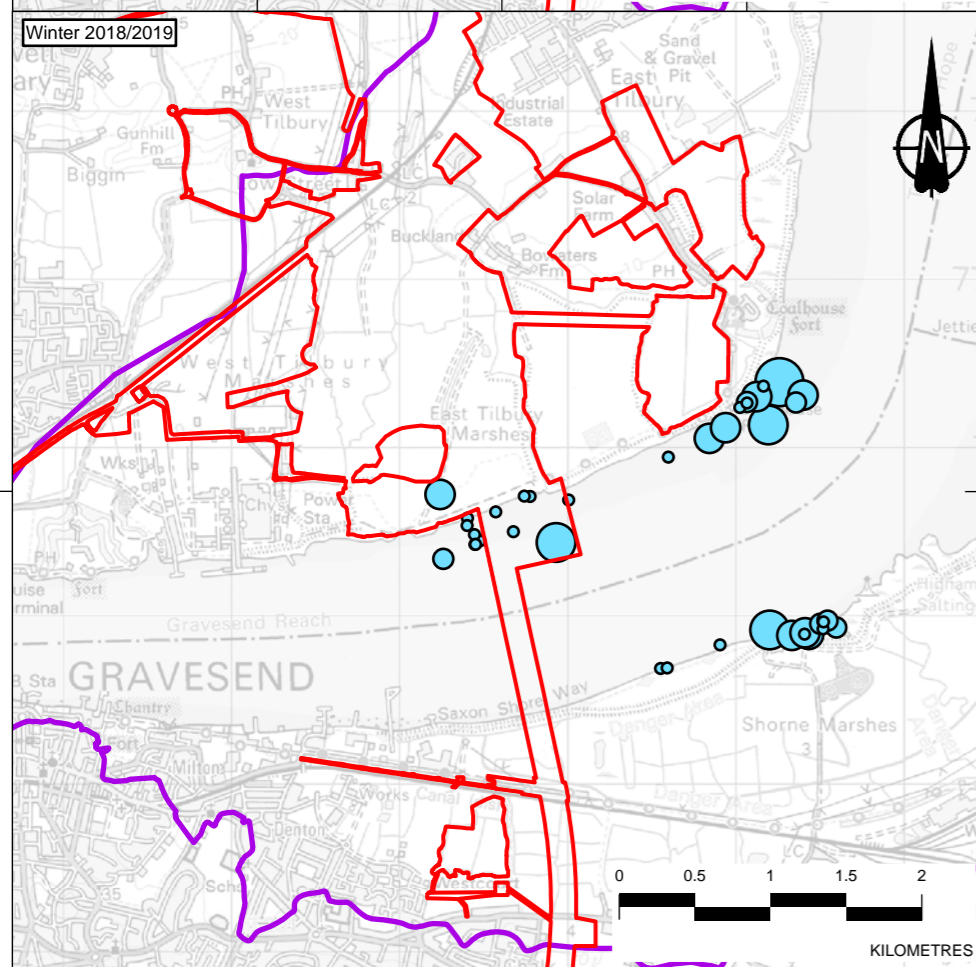
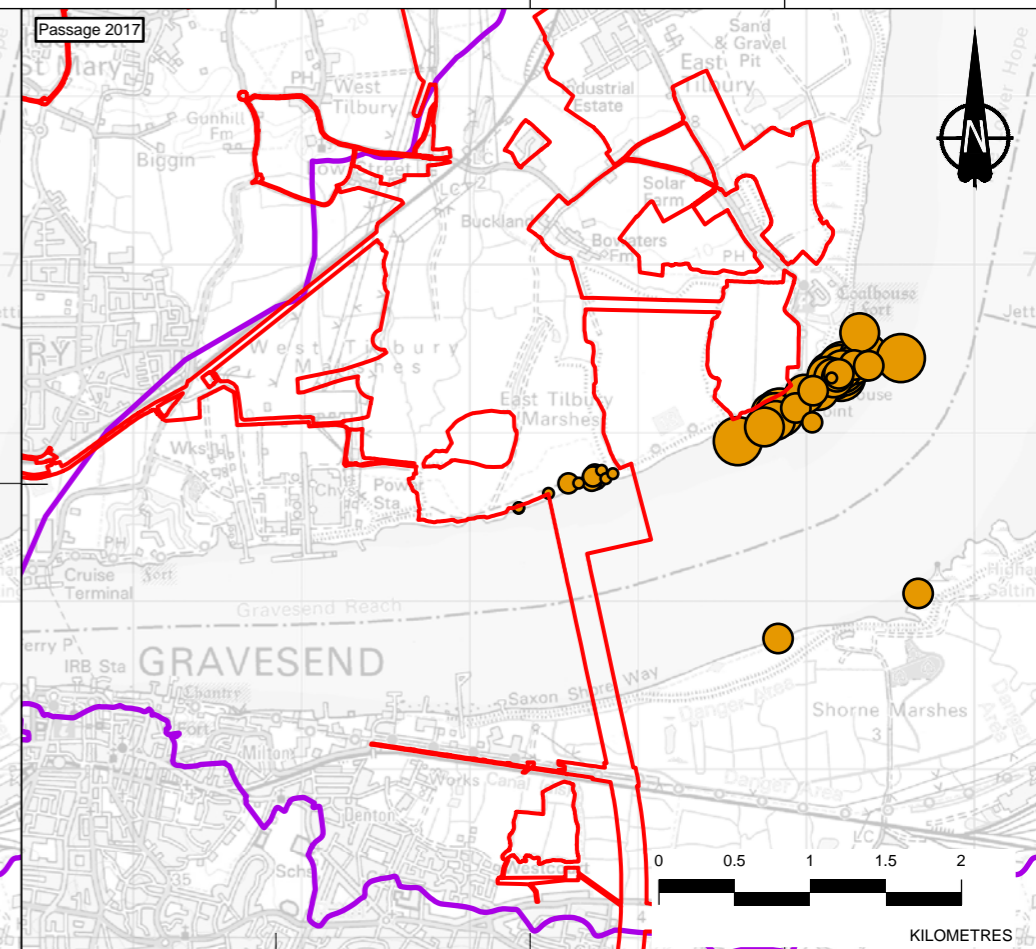
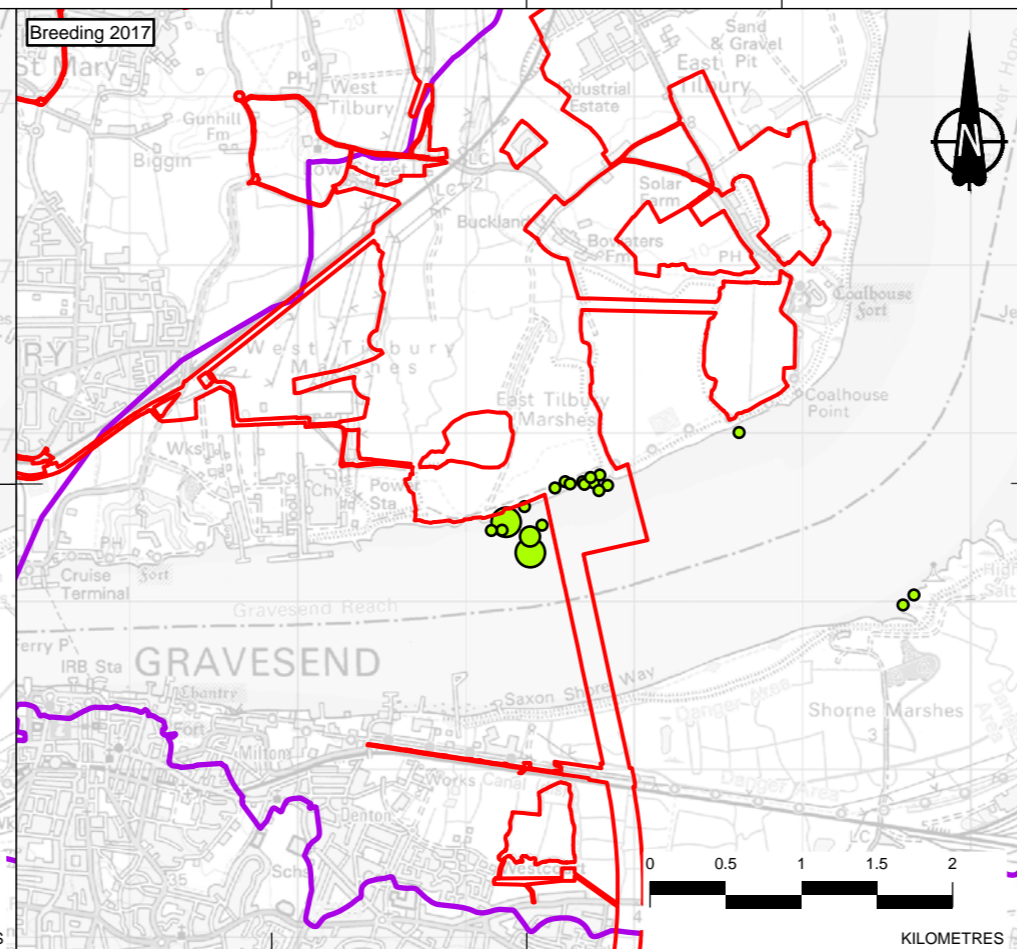
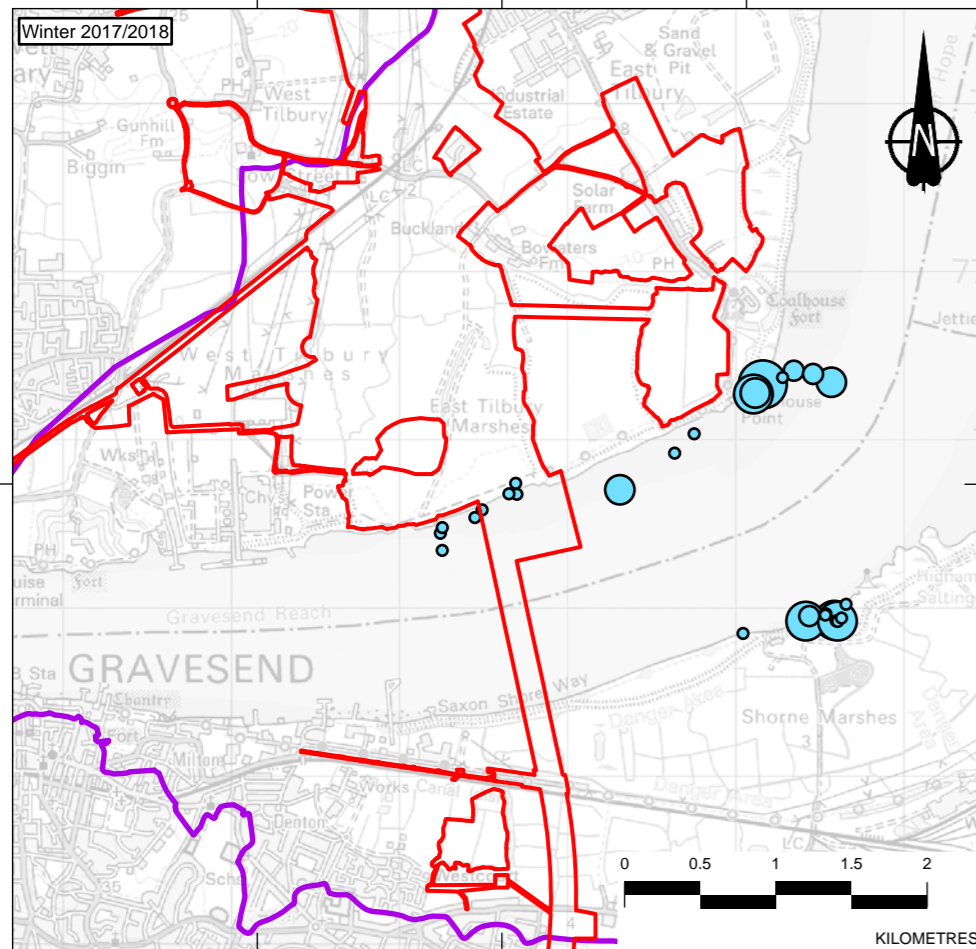
- 1 - 5 (Small yellow circle)
- 6 - 10 (Medium yellow circle)
- 11 - 20 (Large yellow circle)
- 21 - 50 (Very large yellow circle)
- > 50 (Extremely large yellow circle)



Client: highways england

Project: LOWER THAMES CROSSING

Status	DRAFT	Original Size	A3	Revision	P02
Application Document Number	TR010032/APP/6.5		Scale	1:50,000	
Drawing Title	Figure 11h - QF: Redshank Numbers recorded in each season				
Drawing Number	Page 8 of 10				



Contains Ordnance Survey data. © Crown copyright and database rights 2021. Ordnance Survey 100030649

P02	S8	08/07/2021	DRAFT	AD	IP	RC
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprvd

**Legend**

- Order Limits (Red outline)
- Functionally Linked Land (Purple outline)

Winter Season (Nov-Mar) record Number:

- 1 - 5 (Small blue circle)
- 6 - 10 (Medium blue circle)
- 11 - 20 (Large blue circle)
- 21 - 50 (Very large blue circle)
- > 50 (Huge blue circle)

Breeding season (Apr-Jul) record Number:

- 1 - 5 (Small green circle)
- 6 - 10 (Medium green circle)
- 11 - 20 (Large green circle)
- 21 - 50 (Very large green circle)
- > 50 (Huge green circle)

Passage Season (Aug-Oct) record Number:

- 1 - 5 (Small yellow circle)
- 6 - 10 (Medium yellow circle)
- 11 - 20 (Large yellow circle)
- 21 - 50 (Very large yellow circle)
- > 50 (Huge yellow circle)

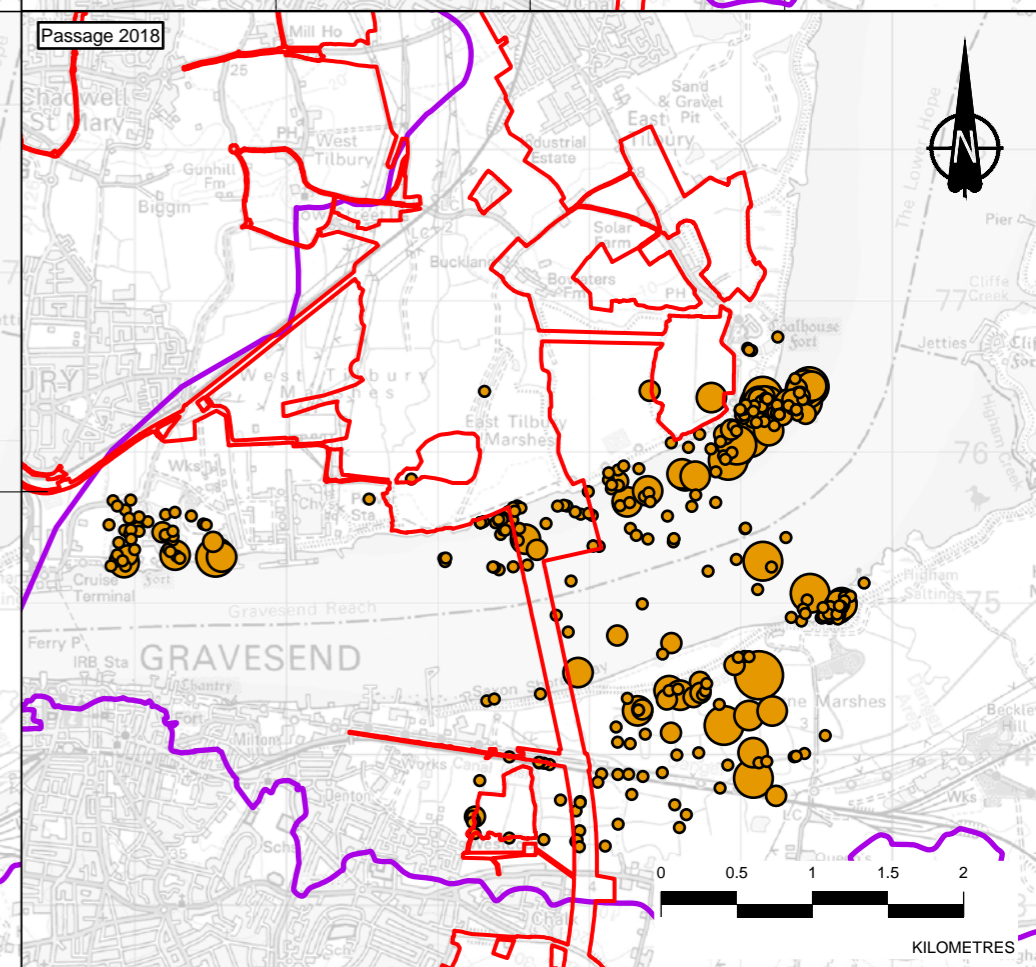
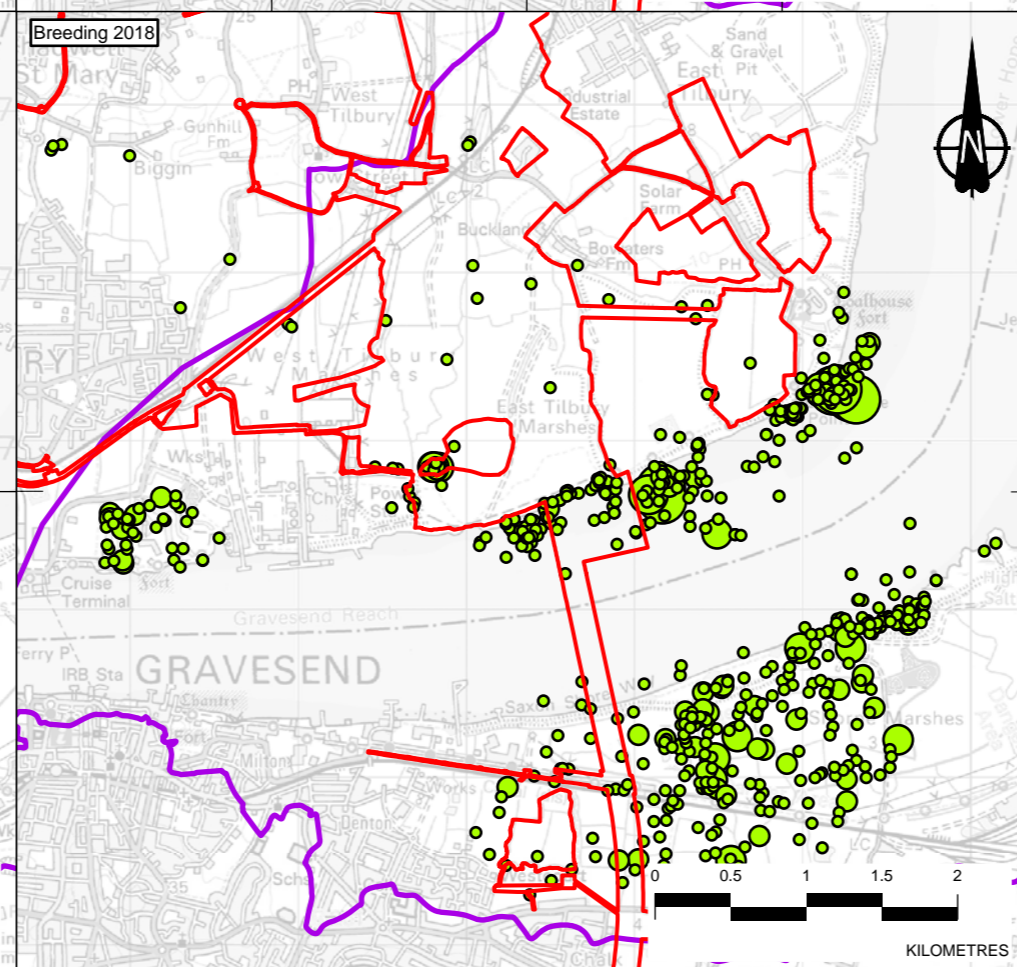
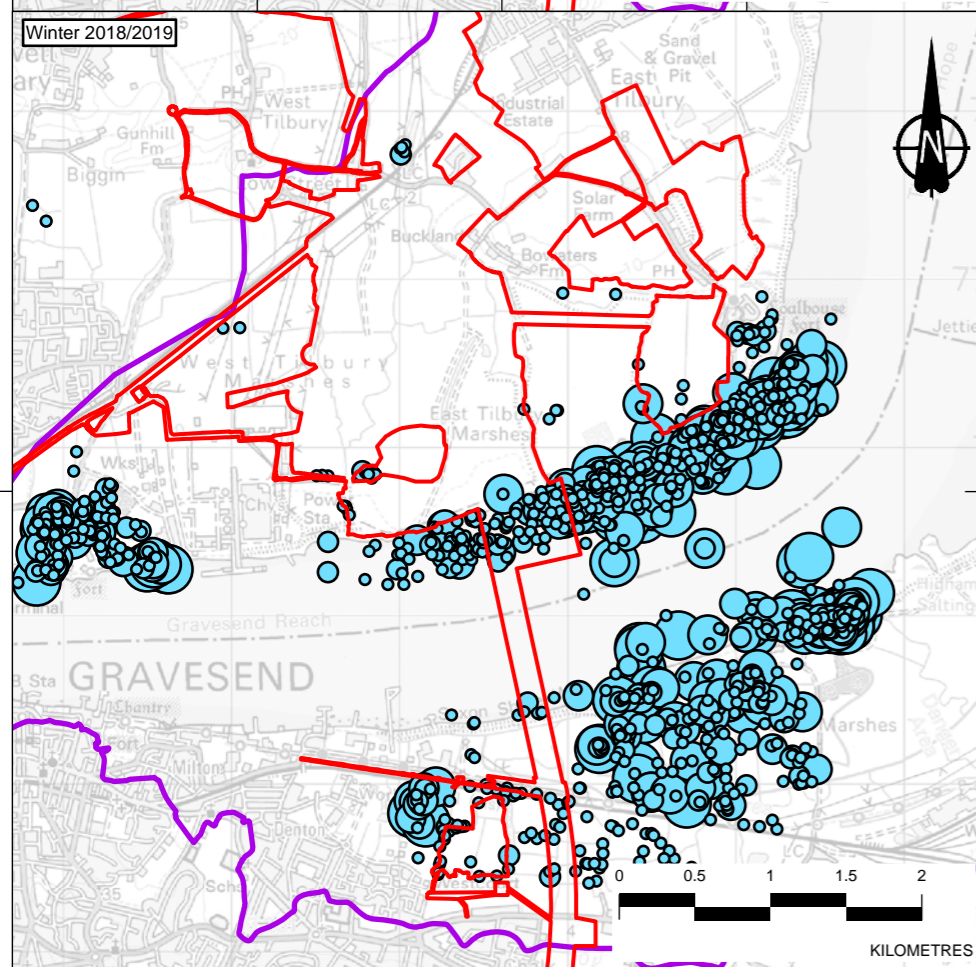
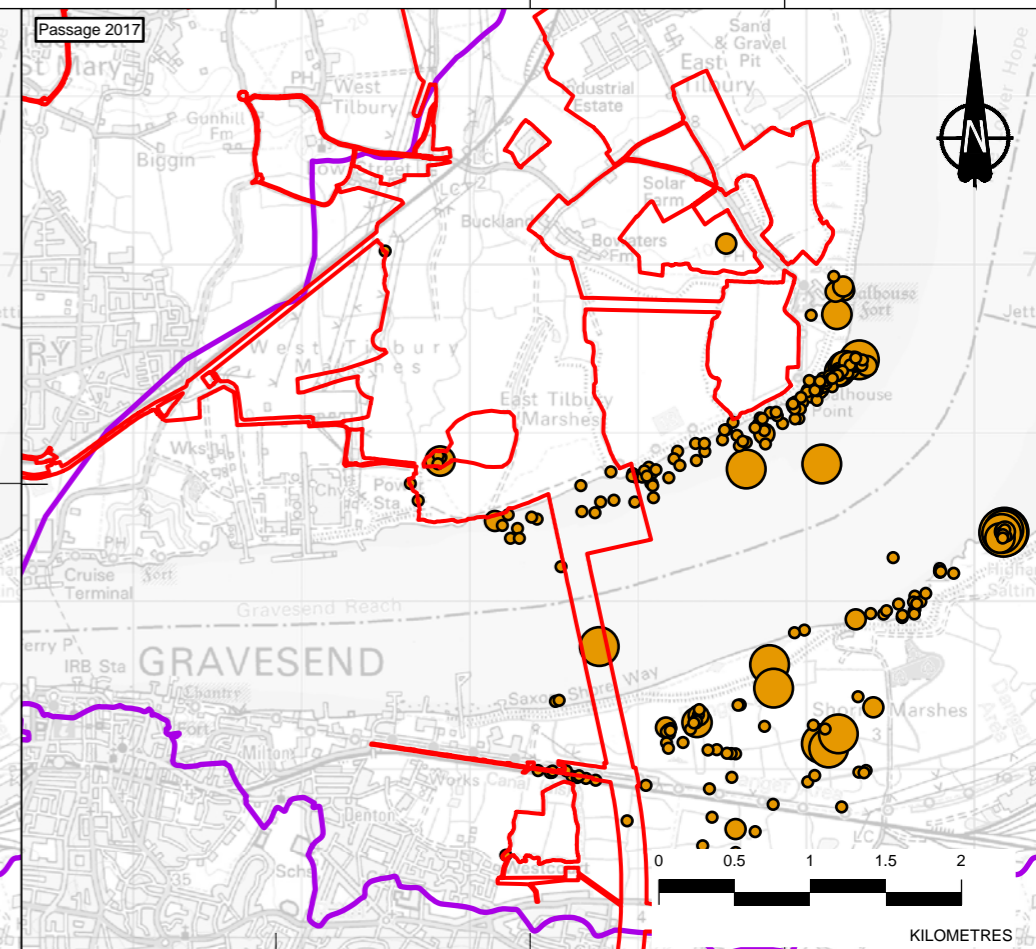
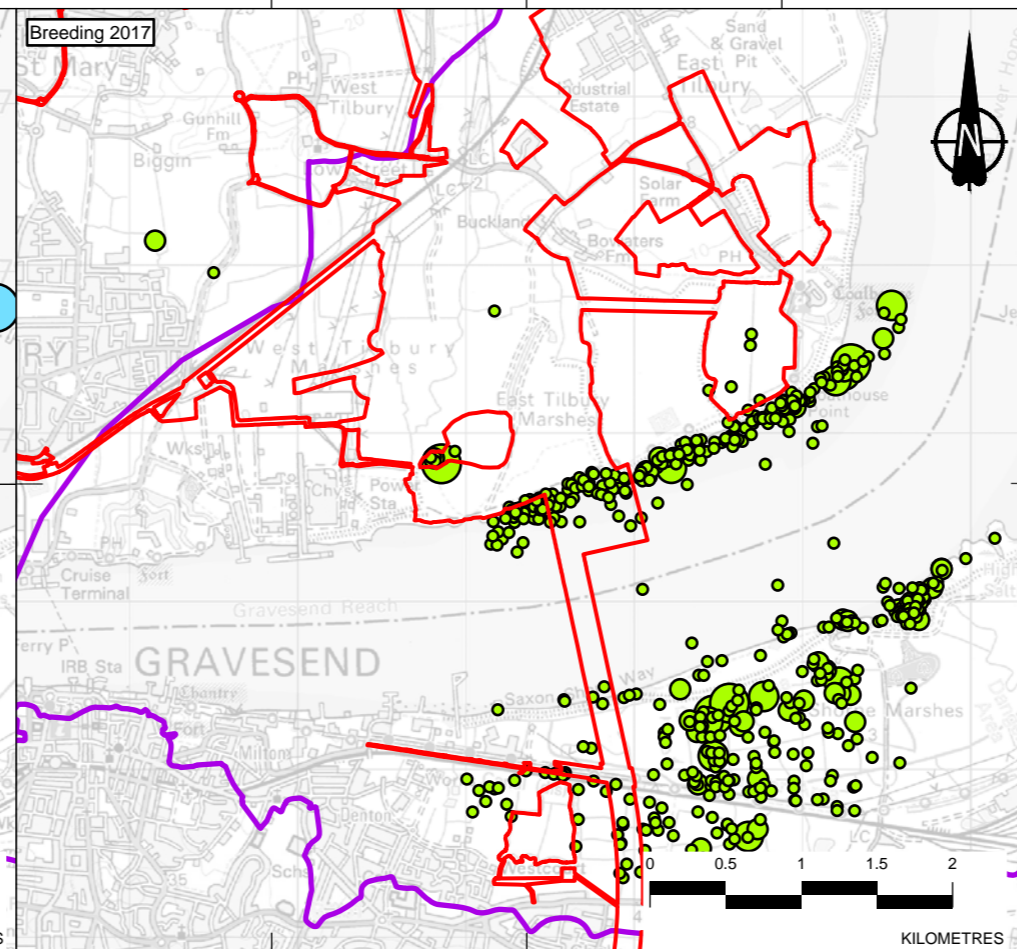
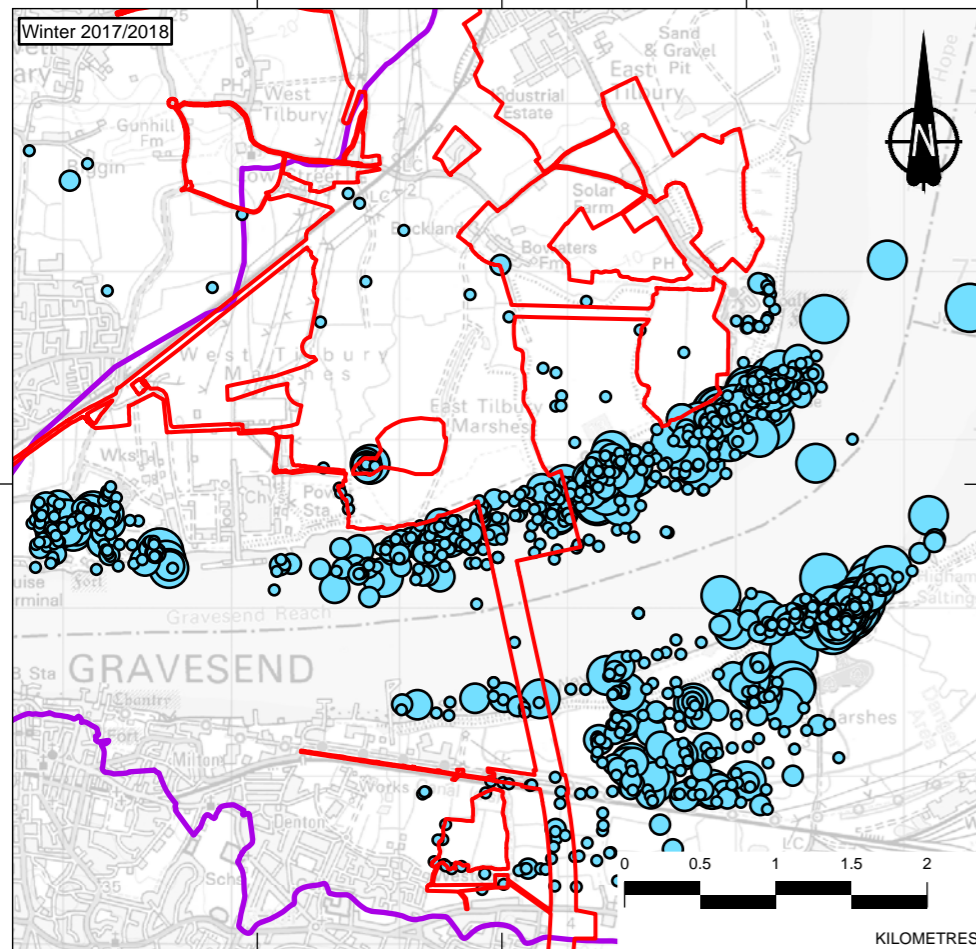


Client: highways england

Project: LOWER THAMES CROSSING

Status	DRAFT	Original Size	A3	Revision	P02
Application Document Number	TR010032/APP/6.5		Scale	1:50,000	
Drawing Title	Figure 11i - QF: Ringed plover Numbers recorded in each season Page 9 of 10				
Drawing Number					





Contains Ordnance Survey data. © Crown copyright and database rights 2021. Ordnance Survey 100030649

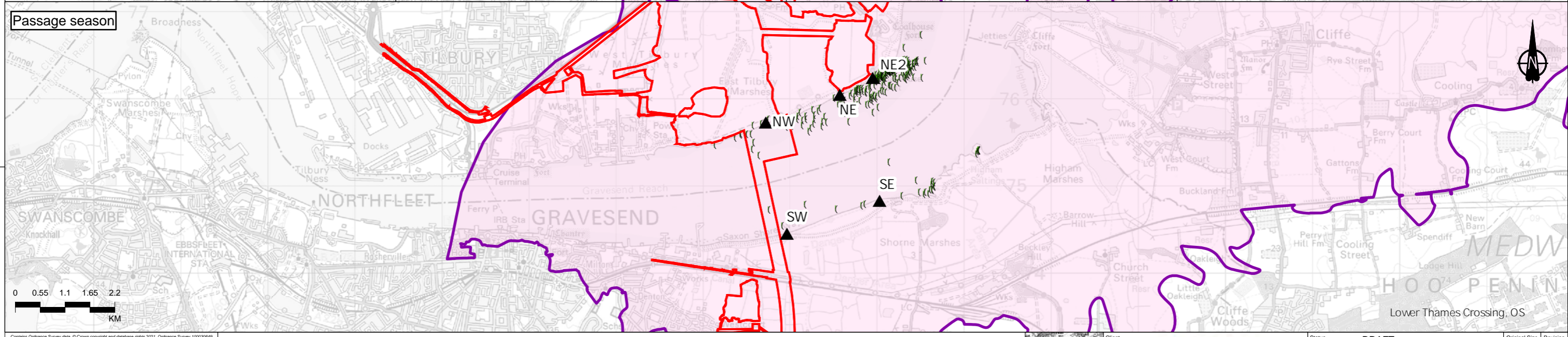
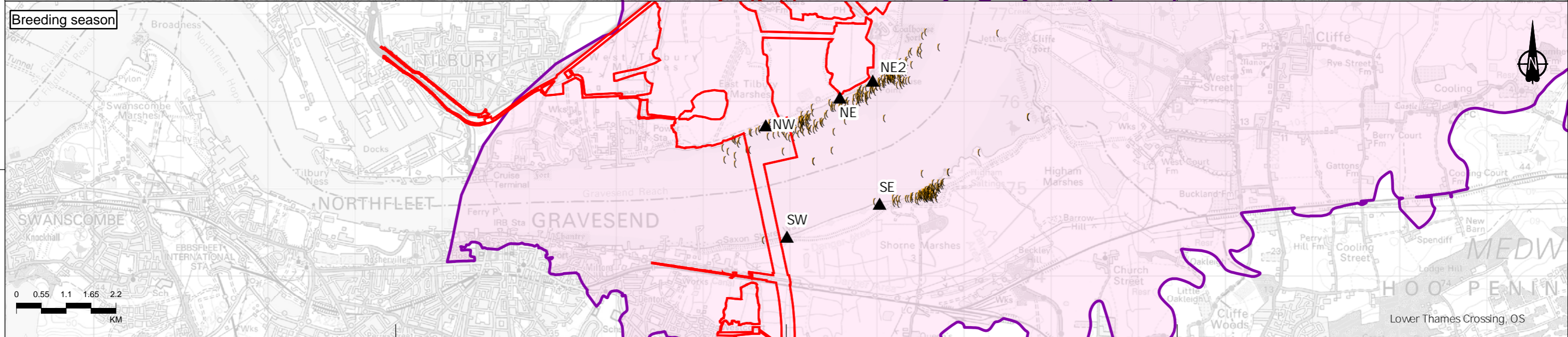
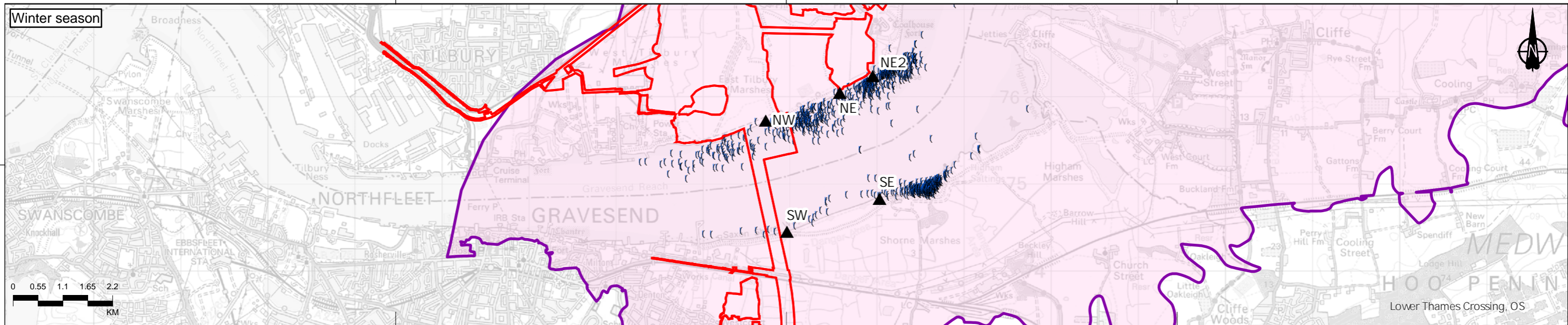
P02	S8	08/07/2021	DRAFT	AD	IP	RC
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprv'd

**Legend**

- Order Limits (Red outline)
- Functionally Linked Land (Purple outline)

Winter Season (Nov-Mar) record Number:	11 - 20	Breeding season (Apr-Jul) record Number:	11 - 20	Passage Season (Aug-Oct) record Number:	11 - 20
● 1 - 5	● 21 - 50	● 1 - 5	● 21 - 50	● 1 - 5	● 21 - 50
● 6 - 10	● > 50	● 6 - 10	● > 50	● 6 - 10	● > 50

	Status	DRAFT	Original Size	A3	Revision	P02	
	Application Document Number	TR010032/APP/6.5		Scale	1:50,000		
Client	LOWER THAMES CROSSING					Drawing Title	Figure 11j - QF: Over Winter Bird Assemblage Numbers recorded in each season
Project						Drawing Number	Page 10 of 10



Contains Ordnance Survey data. © Crown copyright and database rights 2021. Ordnance Survey 100030649

P02	S8	05/08/2021	DRAFT	AD	IP	RC
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprvd

**Legend**

▭ Order Limits

▭ Functionally Linked Land

▲ Intertidal Vantage Point Surveys - Twice per month April 2017 to March 2019 (inclusive)

SPA/Ramsar qualifying feature recorded

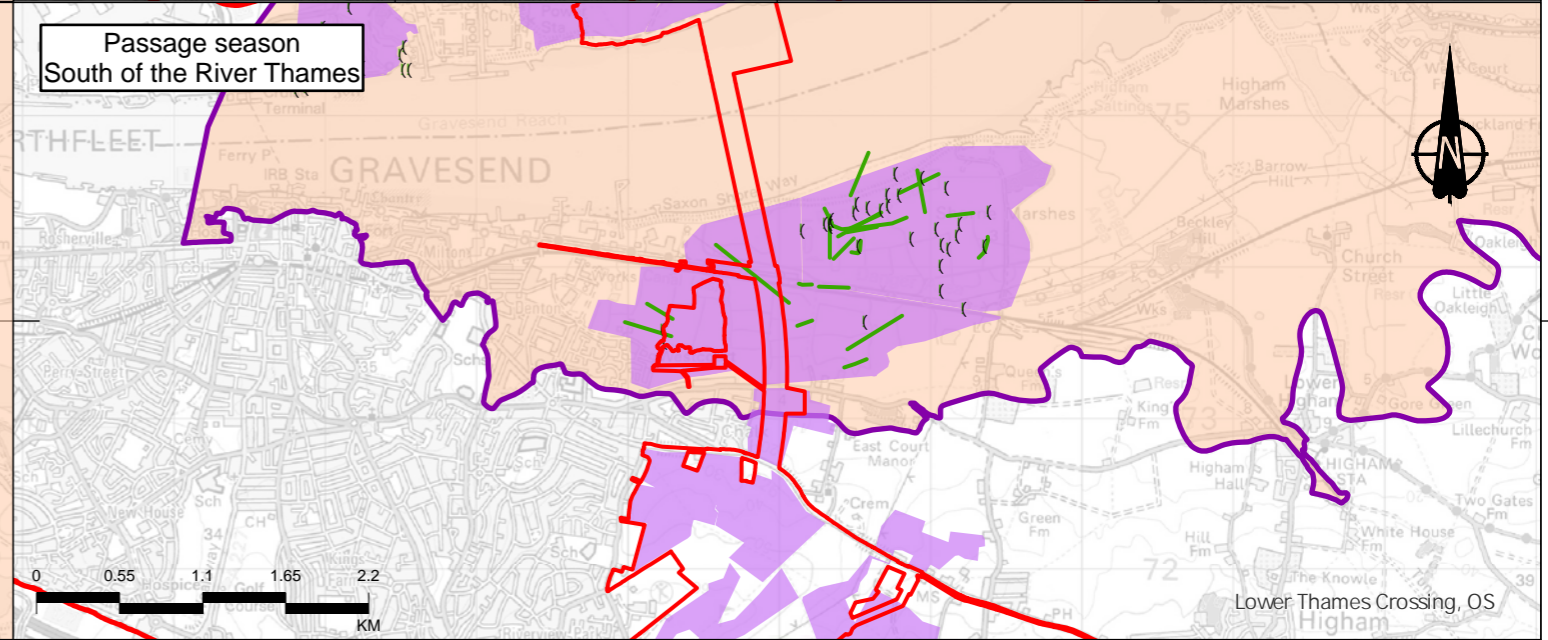
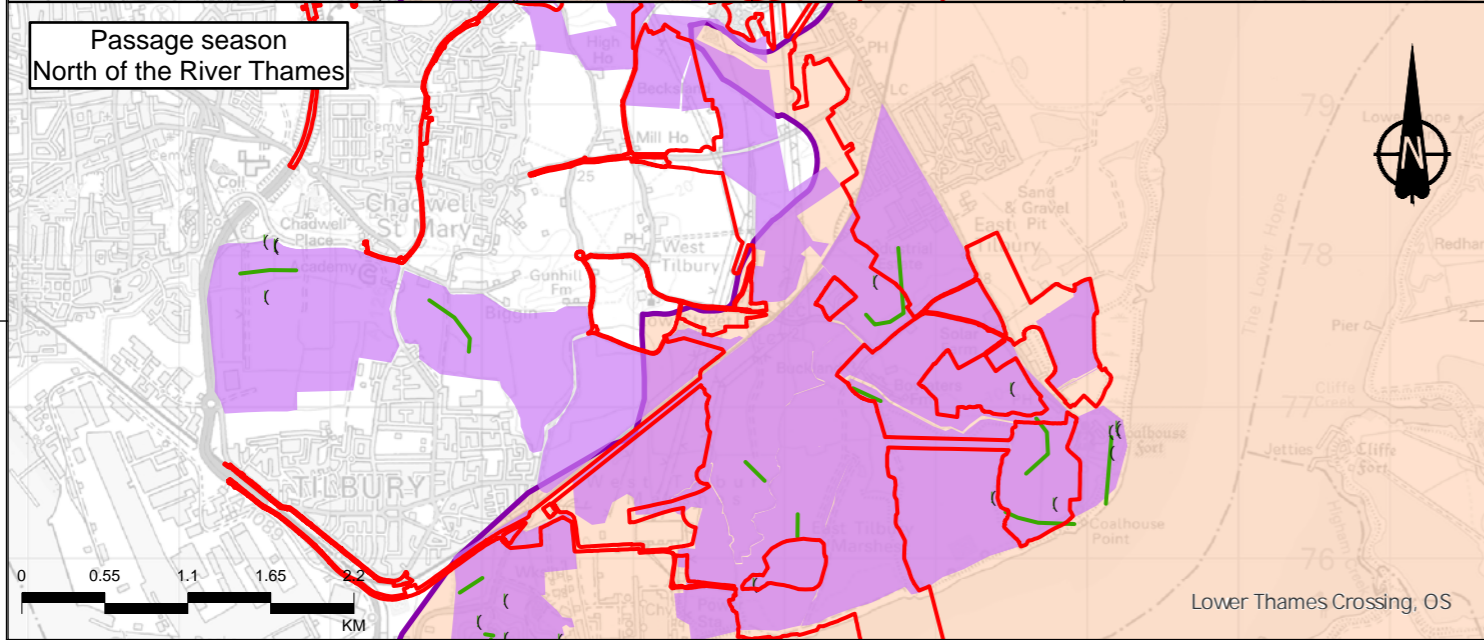
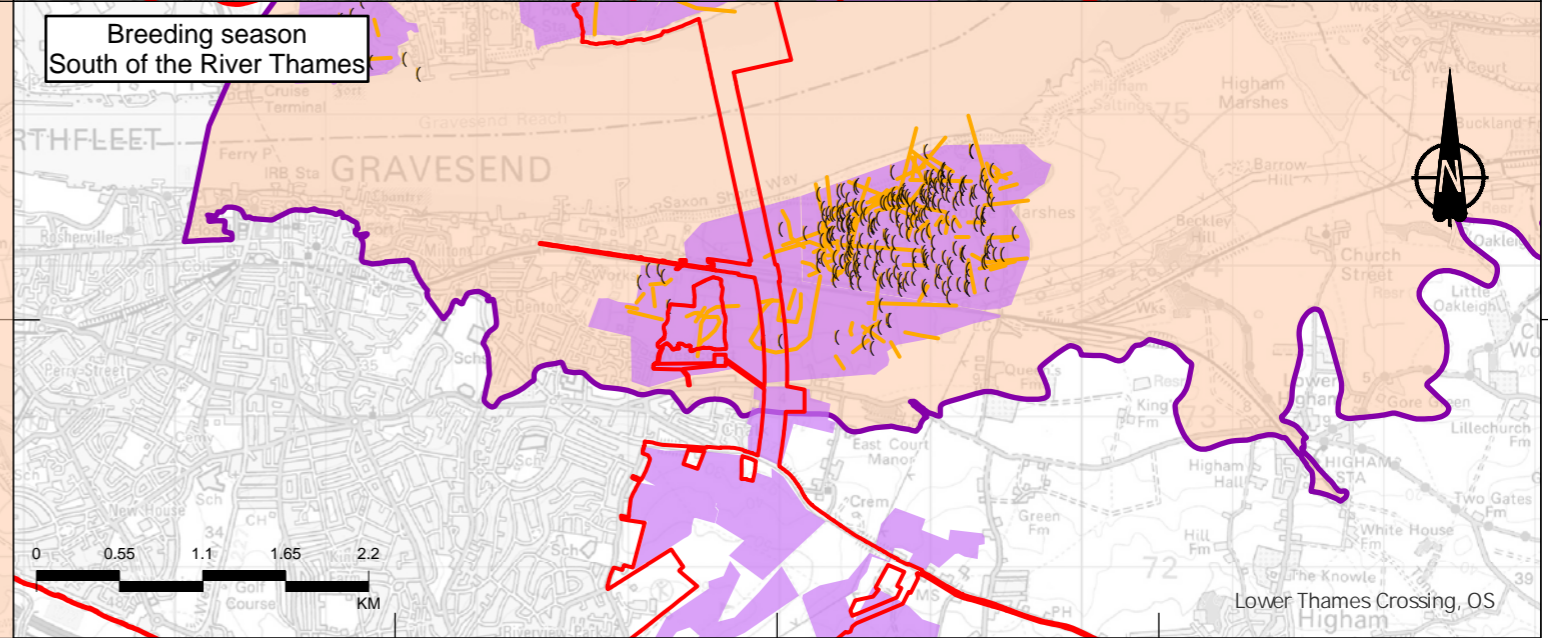
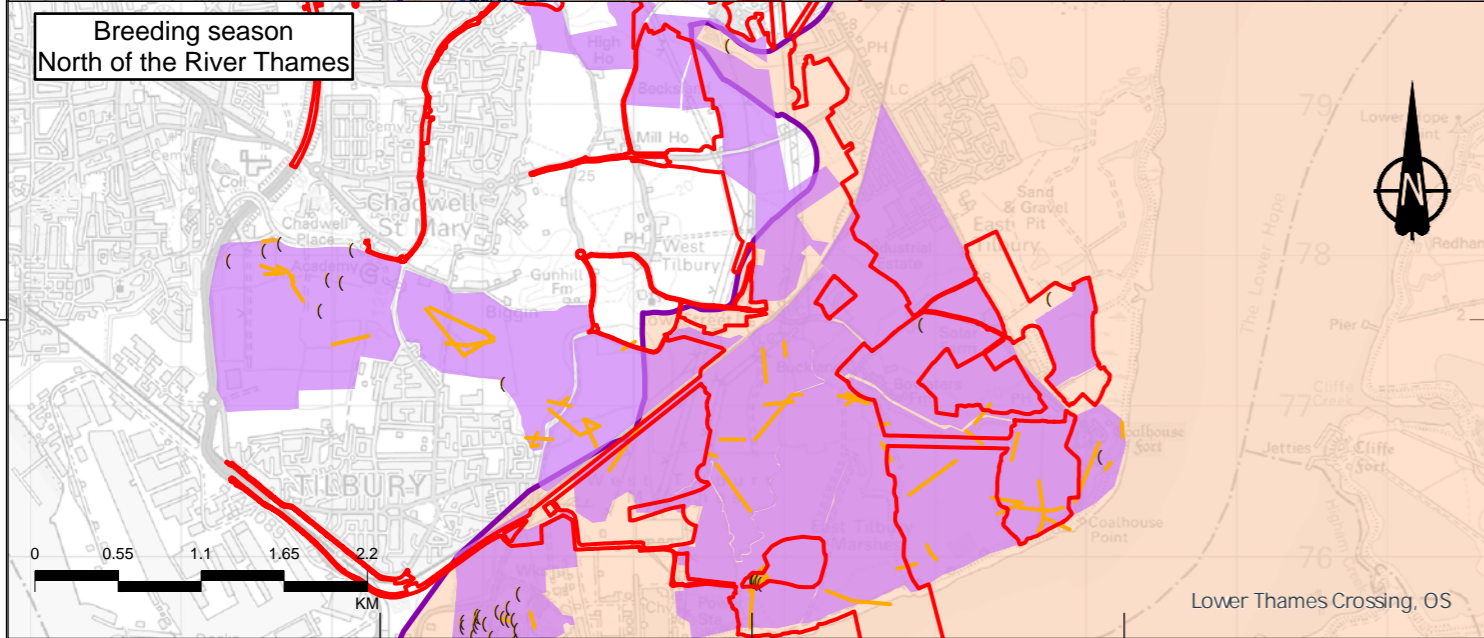
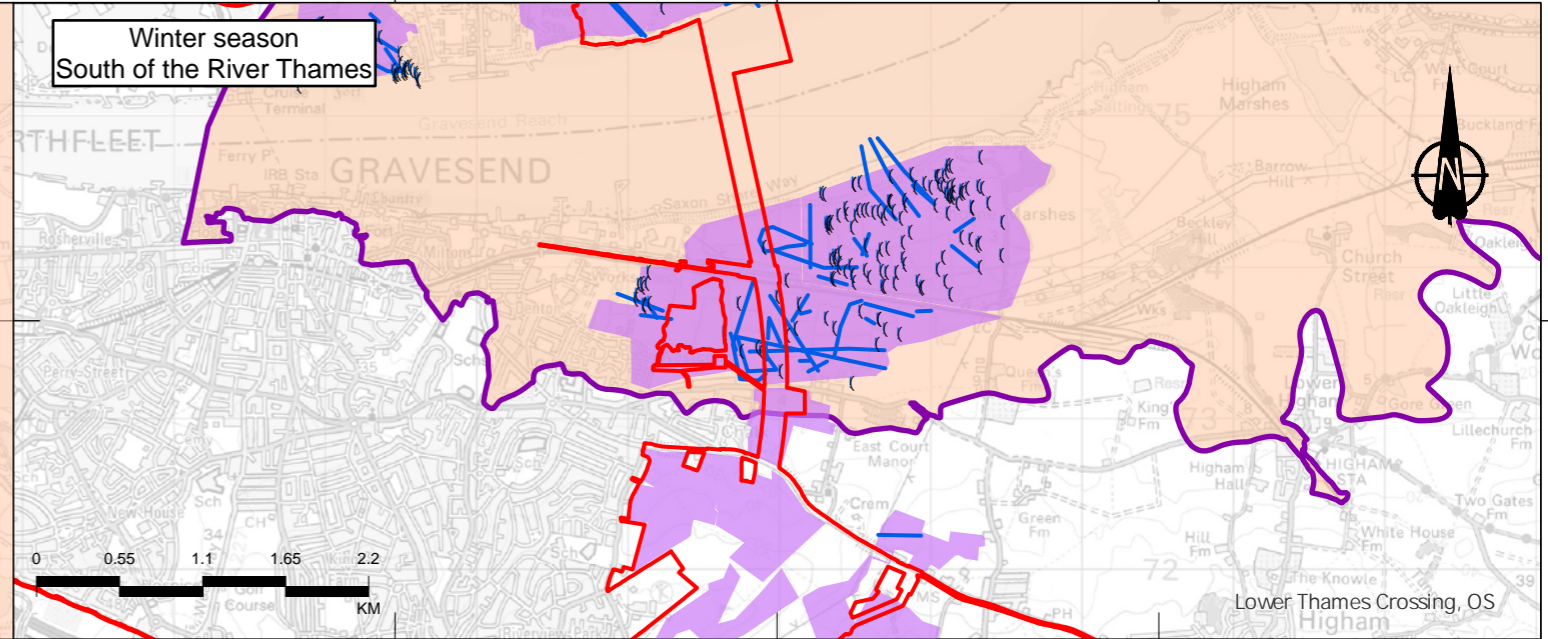
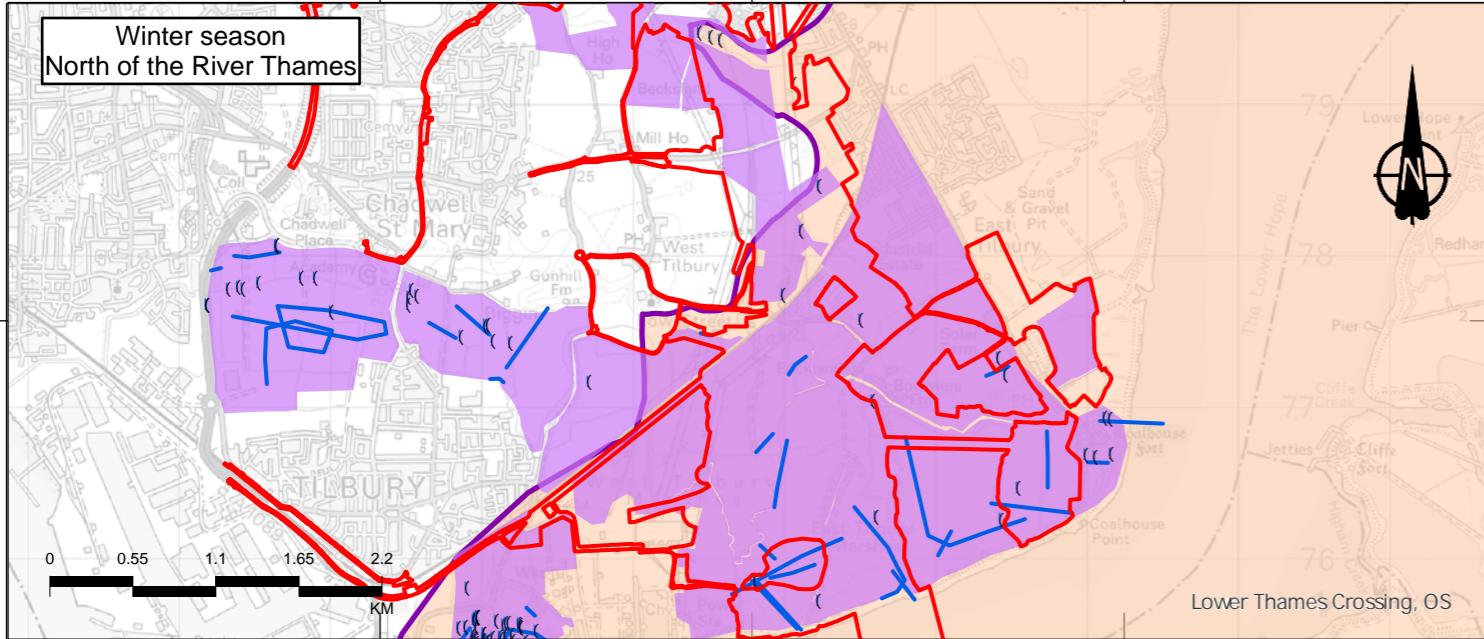
- ( Breeding season (Apr-Jul)
- ( Passage season (Aug-Oct)
- ( Winter season (Nov-Mar)



Client  
**highways england**

Project  
**LOWER THAMES CROSSING**

Status	DRAFT	Original Size	A3	Revision	P02
Application Document Number	TR010032/APP/6.5	Scale	1:45,000		
Drawing Title	Figure 12 - Location of VP surveys and distribution of records of SPA/Ramsar species by season				
Drawing Number					



Contains Ordnance Survey data. © Crown copyright and database rights 2021. Ordnance Survey 100030649

P02	S8	05/08/2021	DRAFT	AD	IP	RC
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprvd

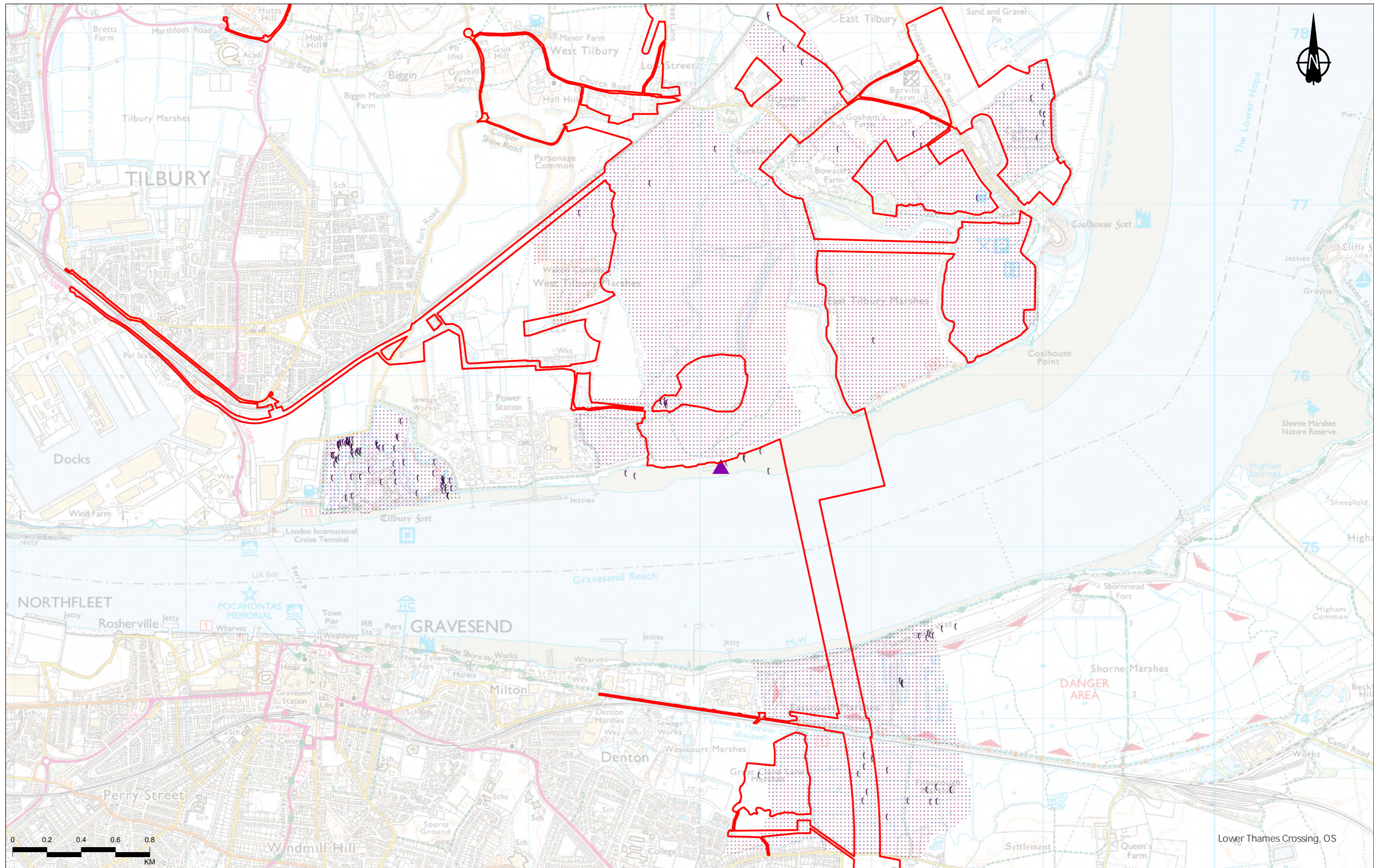
Legend	
	Order Limits
	Functionally Linked Land
	All diurnal transect areas
	SPA/Ramsar qualifying feature recorded
	( Breeding (Apr-Jul)
	( Passage (Aug-Oct)
	( Winter (Nov-Mar)
	SPA/Ramsar qualifying feature recorded (Bird recorded in flight)
	Breeding (Apr-Jul)
	Passage (Aug-Oct)
	Winter (Nov-Mar)



Client  
**highways england**

Project  
**LOWER THAMES CROSSING**

Status	DRAFT	Original Size	A3	Revision	P02
Application Document Number	TR010032/APP/6.5	Scale	1:50,000		
Drawing Title	<b>Figure 13 - Diurnal survey areas and distribution of records of SPA/Ramsar species by season</b>				
Drawing Number					



Contains Ordnance Survey data. © Crown copyright and database rights 2021. Ordnance Survey 100030649

P02	S8	16/07/2021	DRAFT	AD	IP	RC
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprvd

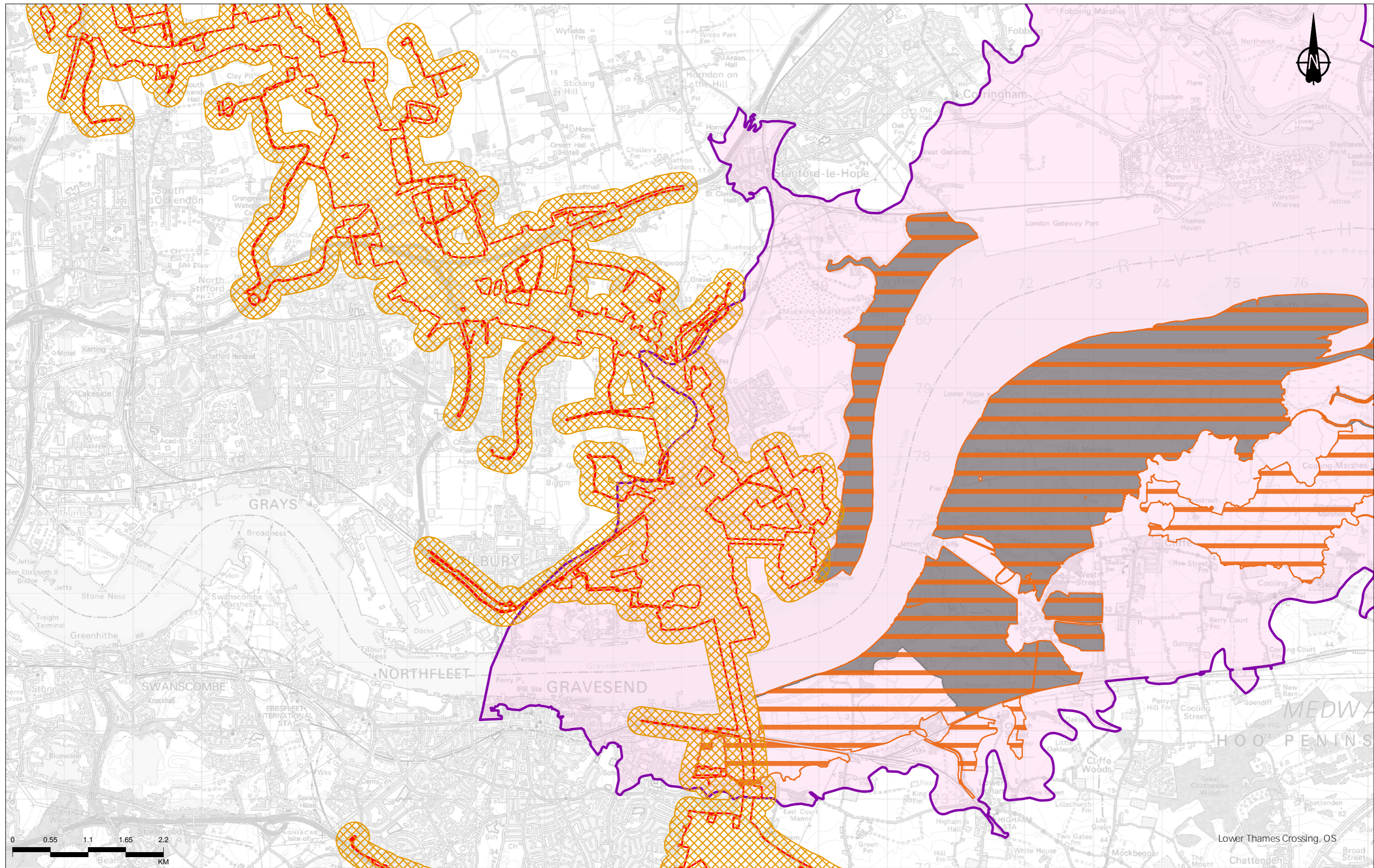
Legend	
	Order Limits
	Nocturnal transect areas
	Vantage Point Surveys - Twice per month April 2017 to March 2019 (inclusive)
	SPA/Ramsar qualifying feature recorded



Client

Project  
**LOWER THAMES CROSSING**

Status	DRAFT	Original Size	A3	Revision	P02
Application Document Number	TR010032/APP/6.5	Scale	1:20,000		
Drawing Title	Figure 14 - Nocturnal survey areas and distribution of records of SPA/Ramsar species (winter survey only)				
Drawing Number					



Contains Ordnance Survey data. © Crown copyright and database rights 2021. Ordnance Survey 100030649

P02	S8	13/07/2021	DRAFT	AD	IP	RC
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprvd

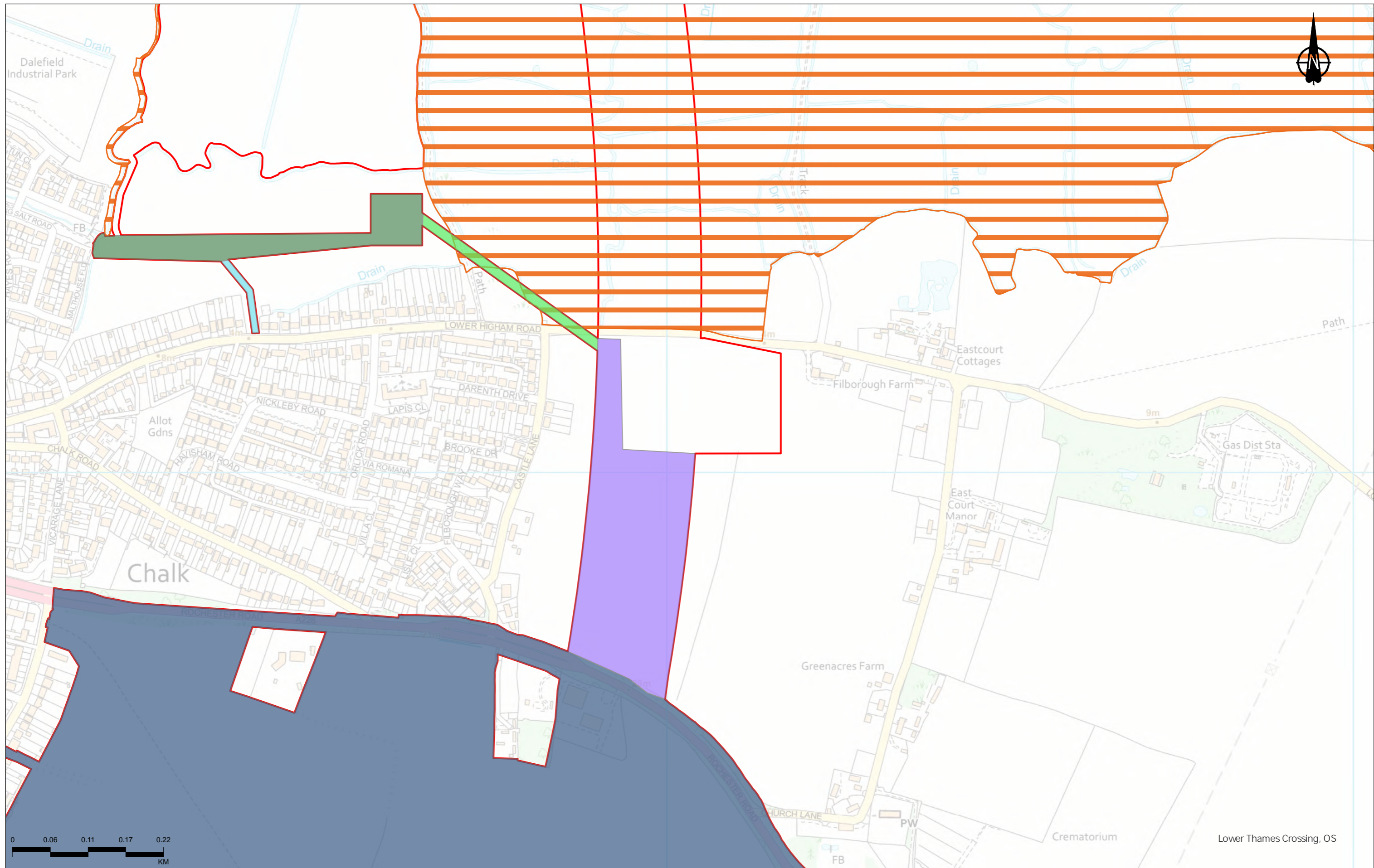
**Legend**

- Order Limits
- Functionally Linked Land
- Area Potentially Affected By Dust Emissions
- Thames Estuary and Marshes RAMSAR
- Thames Estuary and Marshes Special Protection Area



Client  
  
 Project  
**LOWER THAMES CROSSING**

Status	DRAFT	Original Size	A3	Revision	P02
Application Document Number	TR010032/APP/6.5	Scale	1:50,000		
Drawing Title	Figure 15 - Potential dust emissions in relation to the European sites and the functionally linked land				
Drawing Number					



Contains Ordnance Survey data. © Crown copyright and database rights 2021. Ordnance Survey 100030649

P02	S8	05/08/2021	DRAFT	AD	IP	RC
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Appr'd

Legend	
	Order Limits
	Thames Estuary and Marshes Ramsar
	Drainage Treatment Area
	Sub-Surface Pipe Construction
	Construction Working Area For The Discharge Pipe and Outfall
	Compound CA3
	Indicative location of the CA3 construction drainage discharge
	Access To The Working Area

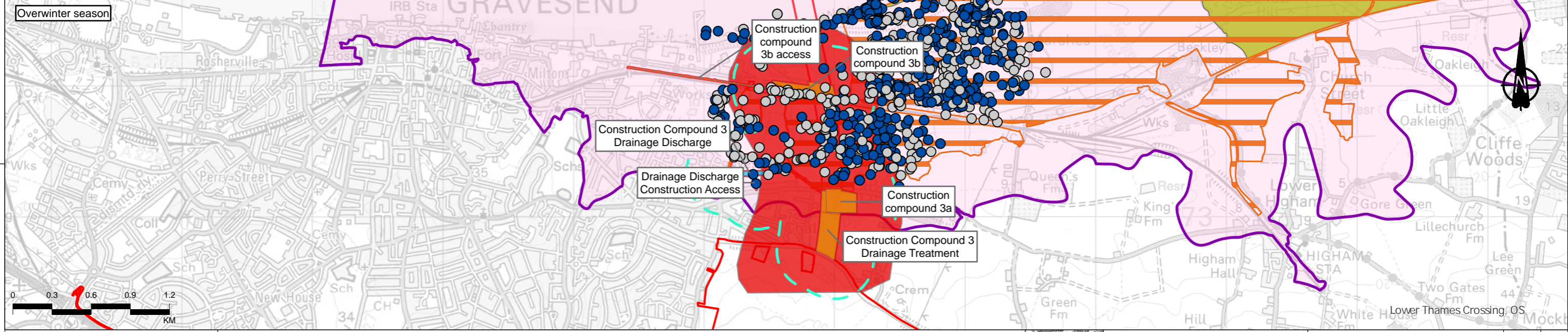
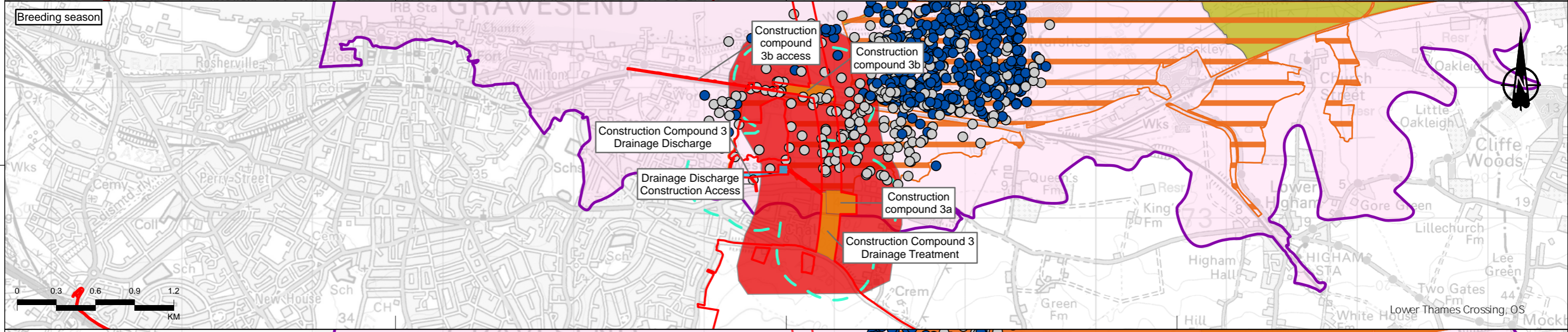
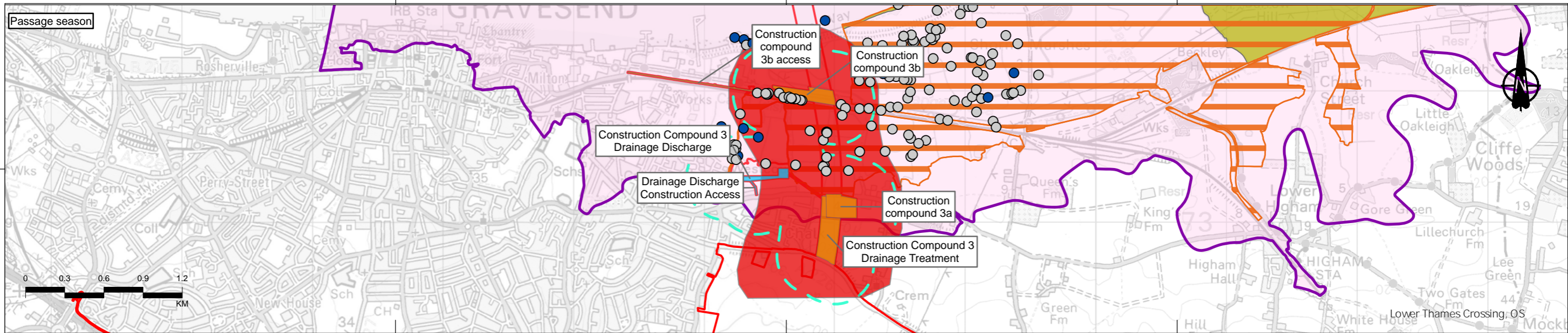


Client

Project

**LOWER THAMES CROSSING**

Status	DRAFT	Original Size	A3	Revision	P02
Application Document Number	TR010032/APP/6.5	Scale	1:5,000		
Drawing Title	Figure 16 - Location of the compound CA3 construction drainage discharge in relation to the Thames Estuary and Marshes Ramsar				
Drawing Number					



Contains Ordnance Survey data. © Crown copyright and database rights 2021. Ordnance Survey 100030649

P02	S8	05/08/2021	DCO Application	AD	IP	RC
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprv'd

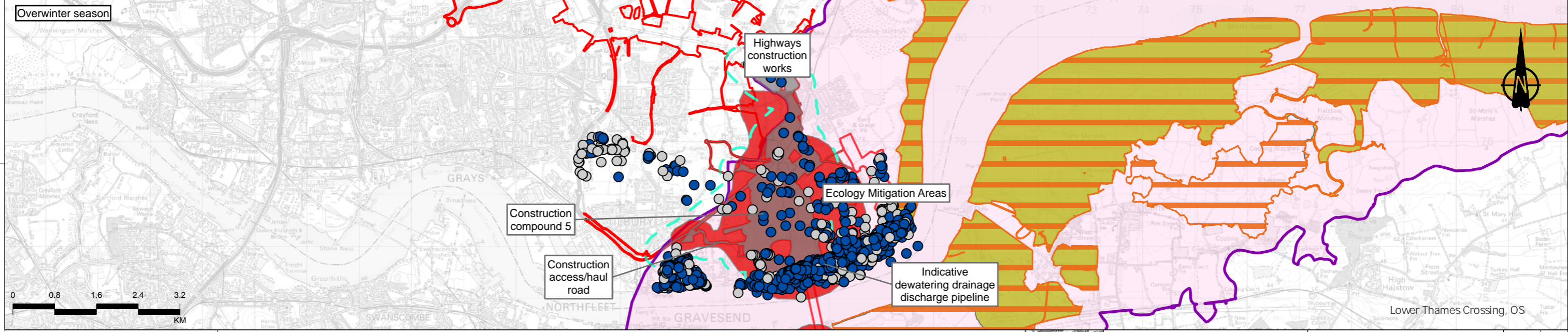
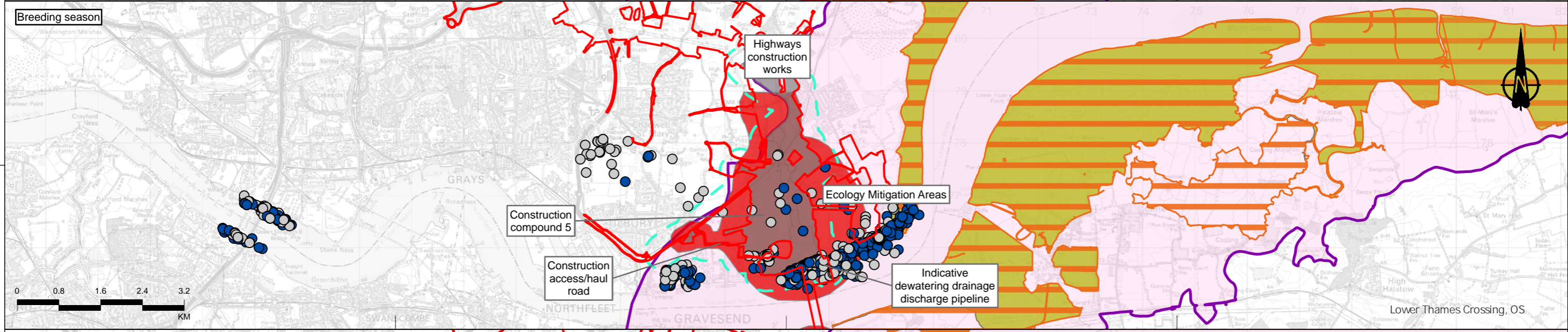
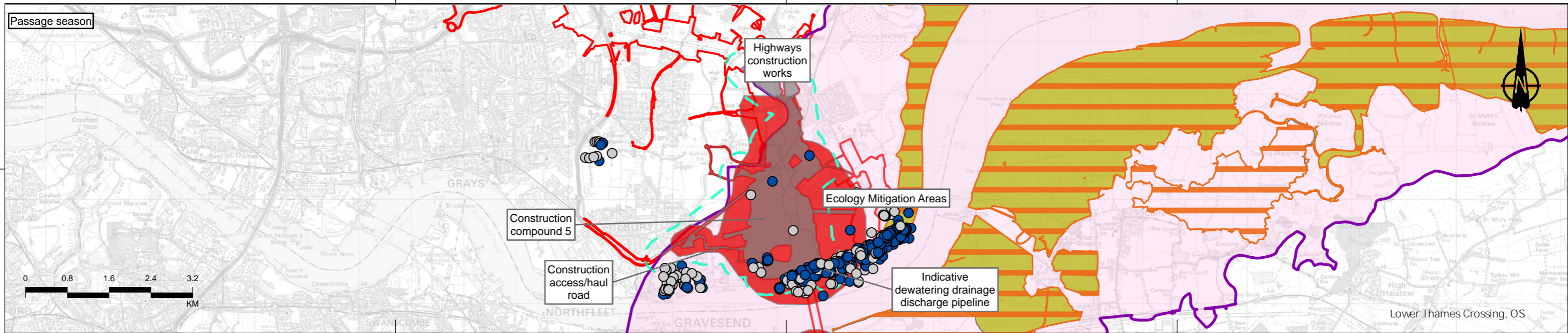
Legend		Field Survey Record		Duration of construction activity		Extent of area potentially disturbed	
	Order Limits		Thames Estuary and Marshes Special Protection Area		Individual qualifying species		Works > 5yrs
	Functionally Linked Land		Waterbird assemblage qualifying species		Works < 1yr		Noise >55dB/3dB change - unmitigated
	Thames Estuary and Marshes RAMSAR				Works 1 - 5yr		Visual 300m - unmitigated



Client  
**highways england**

Project  
**LOWER THAMES CROSSING**

Status	DCO APPLICATION	Original Size	A3	Revision	P02
Application Document Number	TR010032/APP/6.5	Scale	1:30,000		
Drawing Title	Figure 17 - South of the River Thames Bird records (from Project ornithology field surveys) in potential disturbance areas (noise >55dB/>3dB change or visual change)				
Drawing Number					



Contains Ordnance Survey data. © Crown copyright and database rights 2021. Ordnance Survey 100030649

P02	S8	19/07/2021	DCO Application	AD	IP	RC
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprv'd

**Legend**

- Order Limits
- Functionally Linked Land
- Thames Estuary and Marshes RAMSAR
- Thames Estuary and Marshes Special Protection Area
- Field Survey Record
- Waterbird assemblage qualifying species
- Individual qualifying species
- Duration of construction activity
- Works < 1yr
- Works 1 - 5yr
- Works > 5yrs
- Extent of Area Potentially Disturbed
- Noise >55dB or 3dB change - unmitigated
- Visual 300m - unmitigated

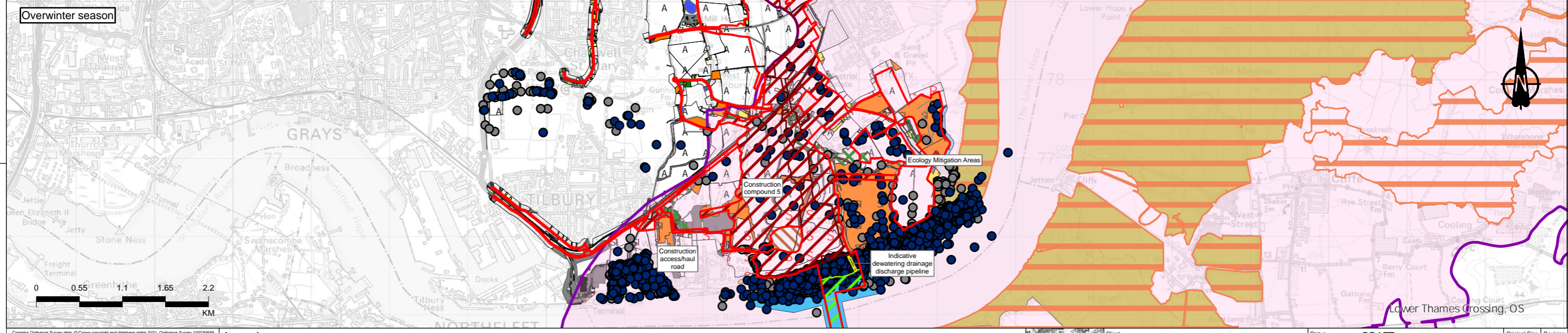
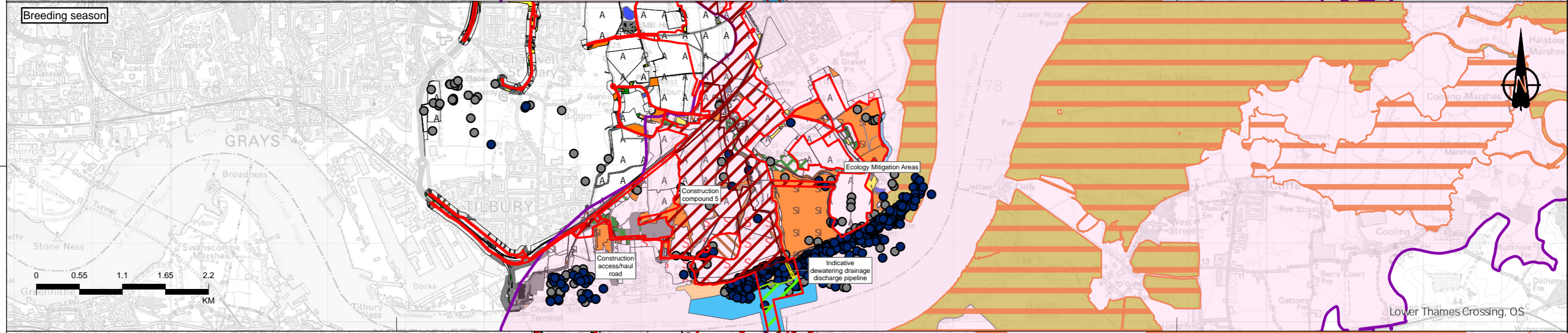
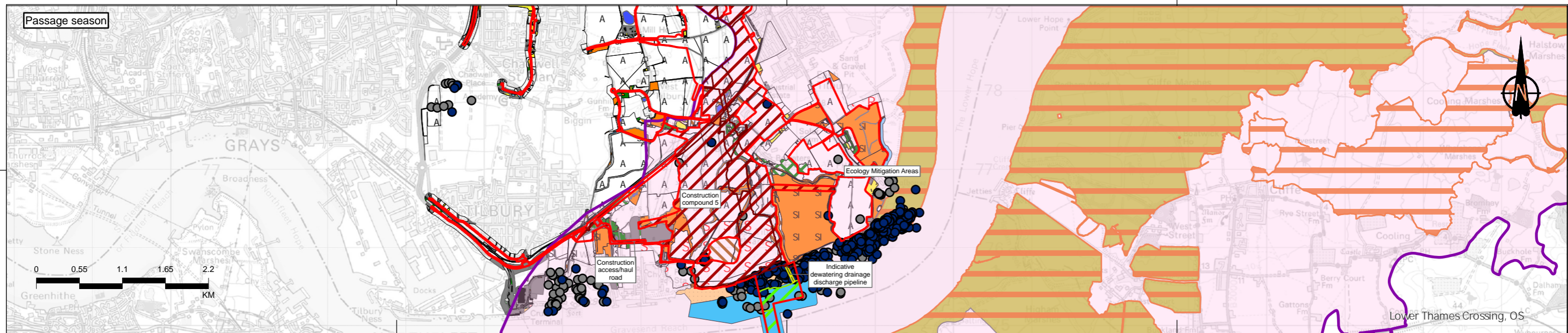


Client: **highways england**

Project: **LOWER THAMES CROSSING**

Status	DCO APPLICATION	Original Size	A3	Revision	P02
Application Document Number	TR010032/APP/6.5	Scale	1:75,000		
Drawing Title	Figure 18 - North of the River Thames Bird records (from Project ornithology field surveys) in potential disturbance areas (noise >55dB/>3dB change or visual change)				
Drawing Number					





Contains Ordnance Survey data. © Crown copyright and database rights 2021. Ordnance Survey 100030649

P02	S8	06/06/2021	DRAFT	AD	IP	RC
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprv'd

**Legend**

- ▭ Order Limits
- ▭ Functionally Linked Land
- ▭ Thames Estuary and Marshes RAMSAR
- ▭ Thames Estuary and Marshes Special Protection Area
- Field survey record
  - Waterbird assemblage qualifying species
  - Individual qualifying species
- Areas of habitat loss within FLL
  - ▭ No surface works
  - ▭ Land take - temporary
  - ▭ Land take - semi-permanent and permanent

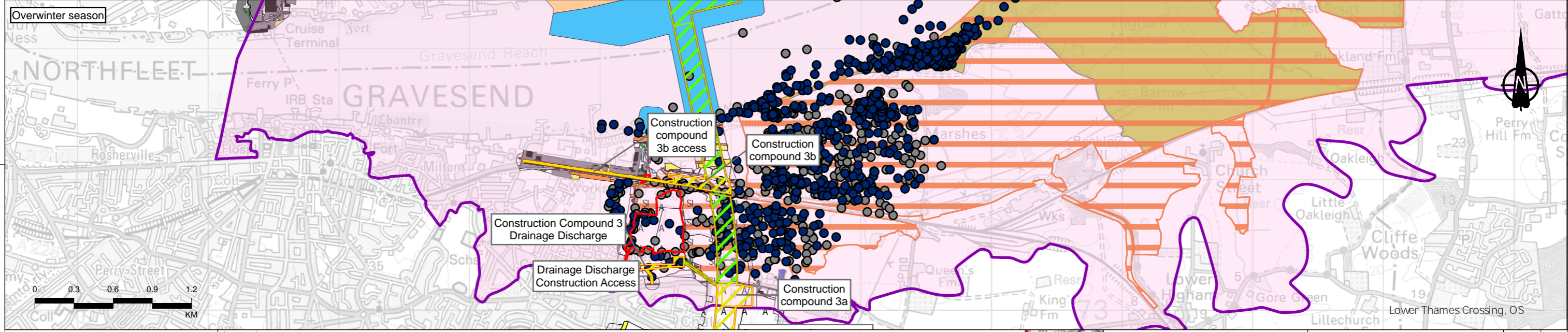
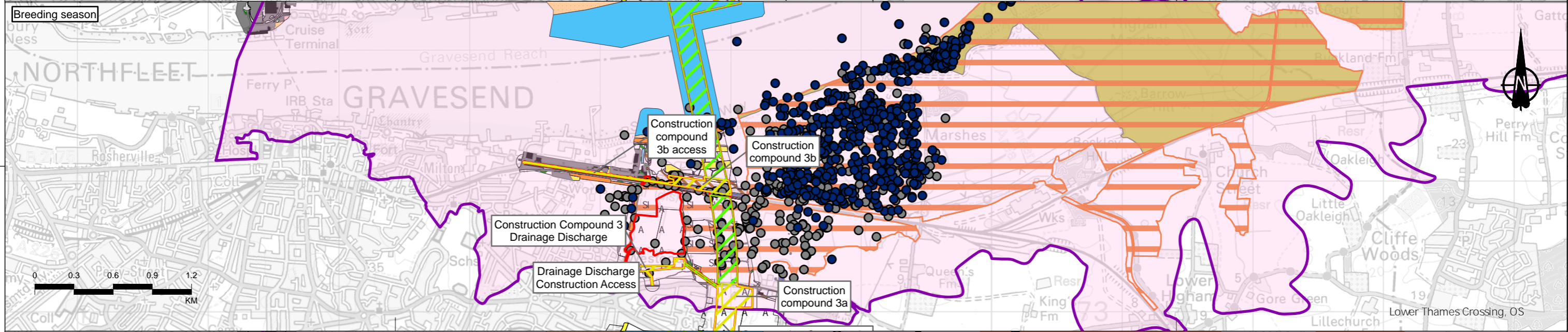
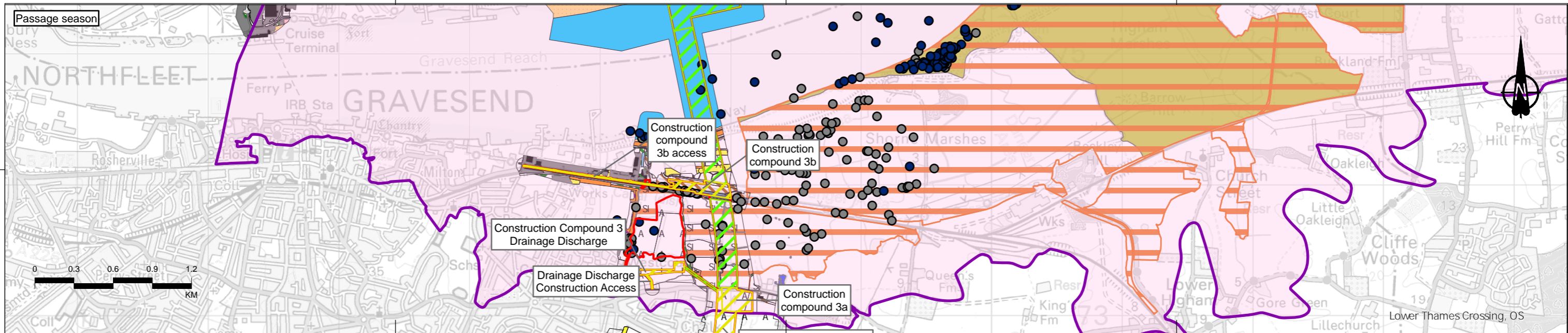
Note: For phase 1 data symbology, please refer to the separate phase 1 legend sheet.



Client  
**highways england**

Project  
**LOWER THAMES CROSSING**

Status	DRAFT	Original Size	A3	Revision	P02
Application Document Number	TR010032/APP/6.5	Scale	1:50,000		
Drawing Title	Figure 19 - Distribution of bird records (from Project ornithology field surveys) in habitats lost north of the River Thames				
Drawing Number					



Contains Ordnance Survey data. © Crown copyright and database rights 2021. Ordnance Survey 100030649

P02	S8	06/06/2021	DRAFT	AD	IP	RC
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprvd

**Legend**

- ▬ Order Limits
- ▬ Functionally Linked Land
- ▬ Thames Estuary and Marshes RAMSAR
- ▬ Thames Estuary and Marshes Special Protection Area
- Field survey record
  - Waterbird assemblage qualifying species
  - Individual qualifying species
- Areas of habitat loss within FLL
  - ▬ No surface works
  - ▬ Land take - temporary
  - ▬ Land take - semi-permanent and permanent

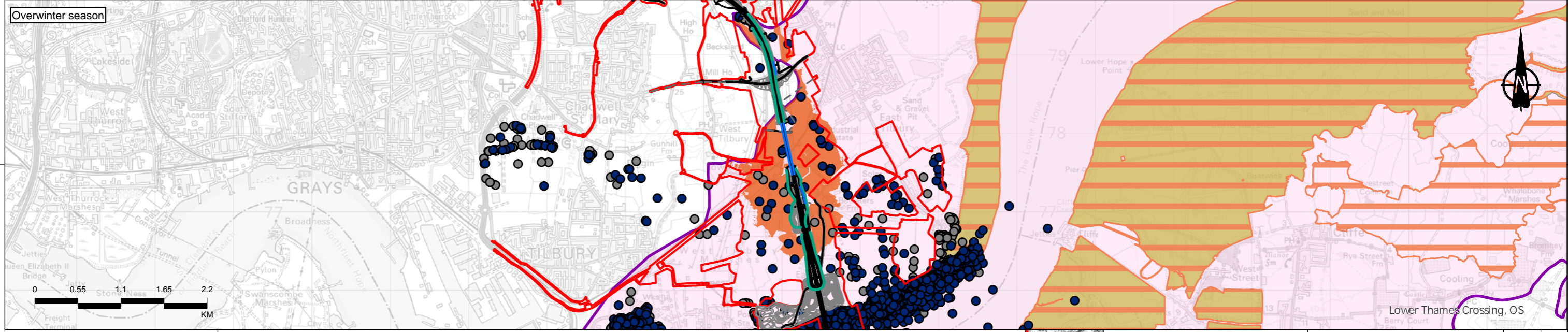
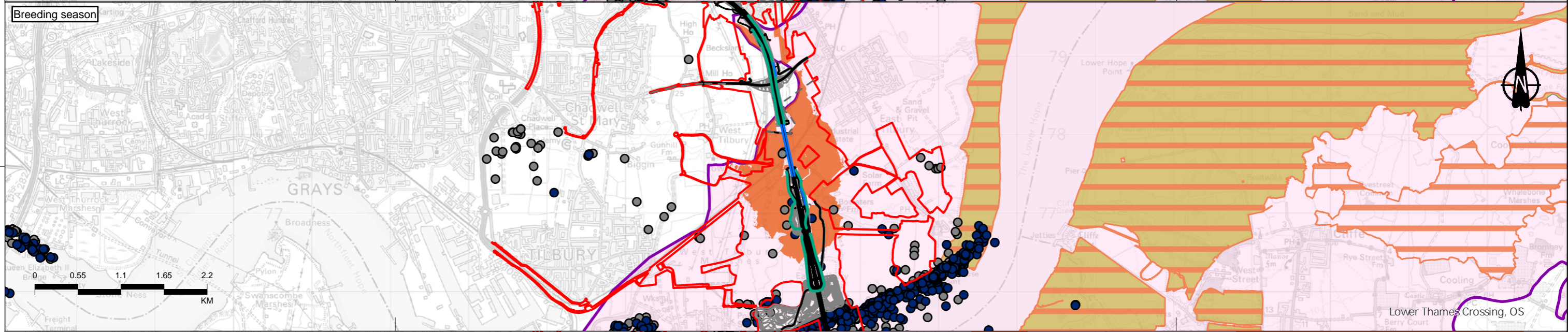
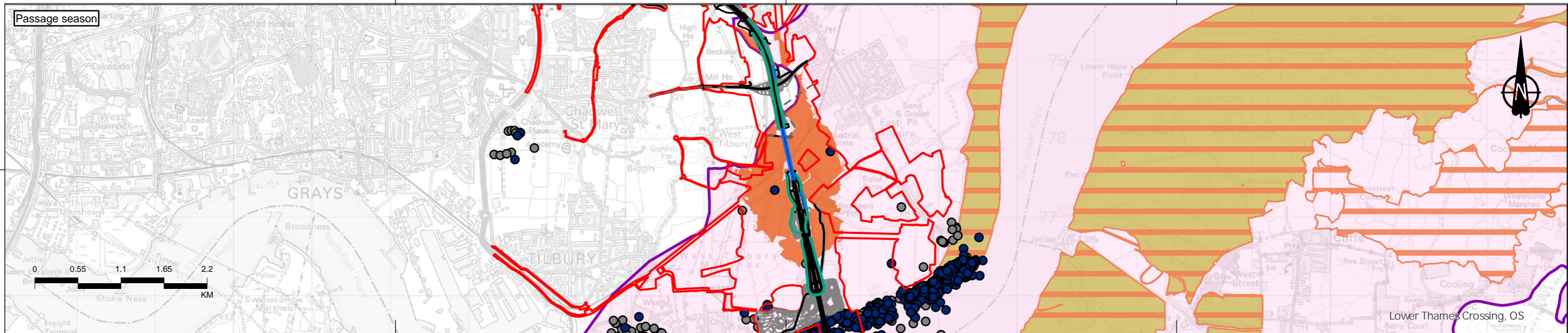
Note: For phase 1 data symbology, please refer to the separate phase 1 legend sheet.



Client  
**highways england**

Project  
**LOWER THAMES CROSSING**

Status	DRAFT	Original Size	A3	Revision	P02
Application Document Number	TR010032/APP/6.5	Scale	1:30,000		
Drawing Title	Figure 20 - Distribution of bird records (from Project ornithology field surveys) in habitats lost south of the River Thames				
Drawing Number					



Contains Ordnance Survey data. © Crown copyright and database rights 2021. Ordnance Survey 100030649

P02	S8	06/06/2021	DRAFT	AD	IP	RC
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprvd

**Legend**

- Order Limits
- Functionally Linked Land
- Thames Estuary and Marshes RAMSAR
- Thames Estuary and Marshes Special Protection Area

**Project - Operation**

- Alignment
- Earthworks
- NMU Routes

**Field survey record**

- Waterbird assemblage qualifying species
- Individual qualifying species
- Extent of area potentially disturbed
- Noise > 55dB or 3dB change - mitigated

**Operational noise attenuation measures**

- Acoustic barrier
- Up to 2m high false cutting
- Up to 4m high false cutting



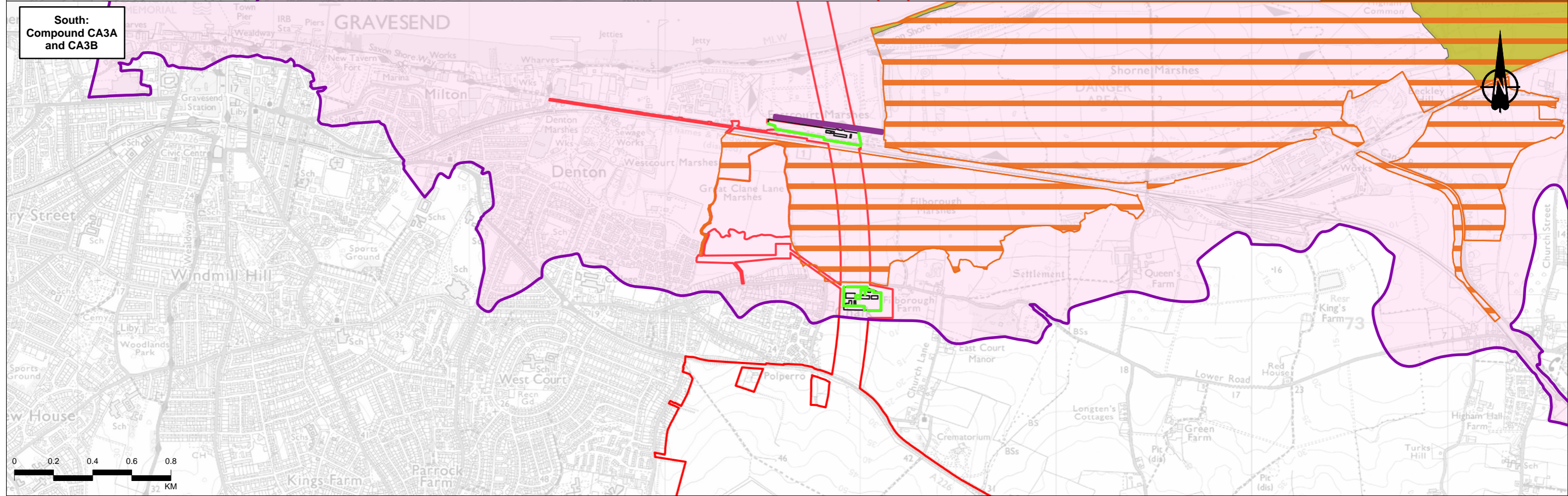
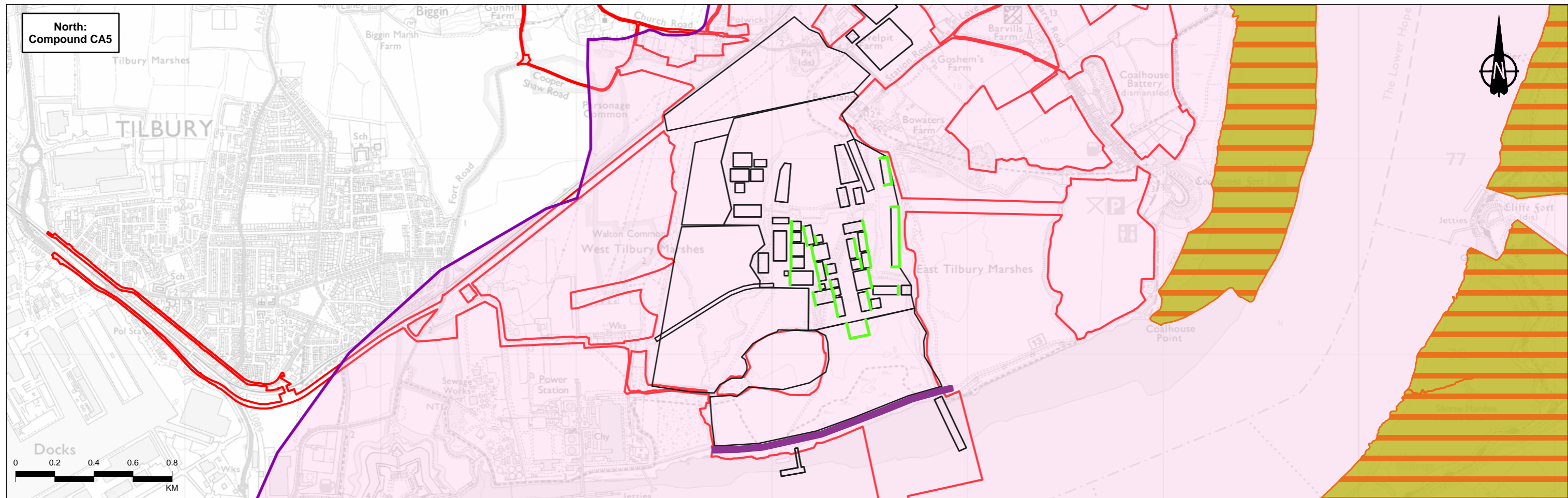
Client

Project

**LOWER THAMES CROSSING**

Status	DRAFT	Original Size	A3	Revision	P02
Application Document Number	TR010032/APP/6.5	Scale	1:50,000		
Drawing Title	Figure 21 - Distribution of bird records (from Project ornithology field surveys) in the functionally linked land potentially disturbed during operation				
Drawing Number					

Figures 22 and 23 are not included in this draft



Contains Ordnance Survey data. © Crown copyright and database rights 2021. Ordnance Survey 100030649

P02	S8	05/08/2021	DRAFT	AD	IP	RC
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprv'd

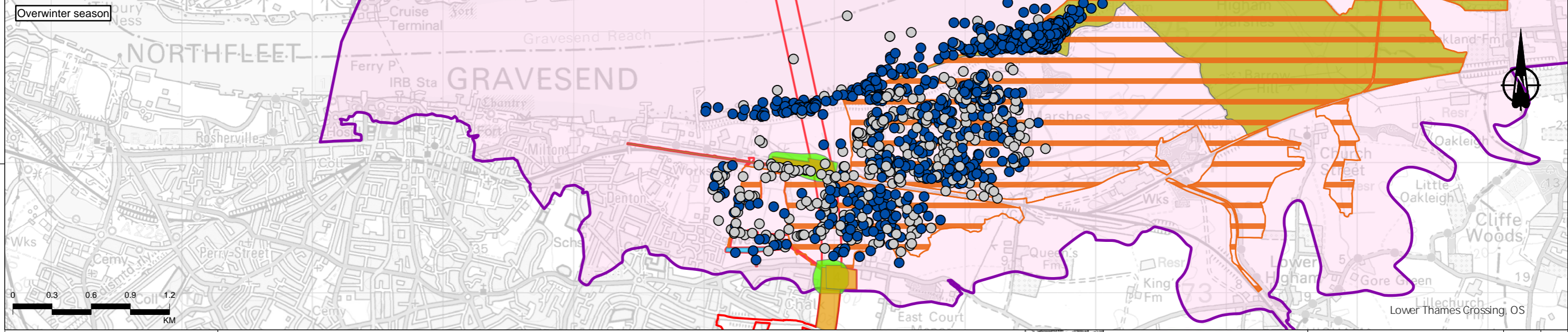
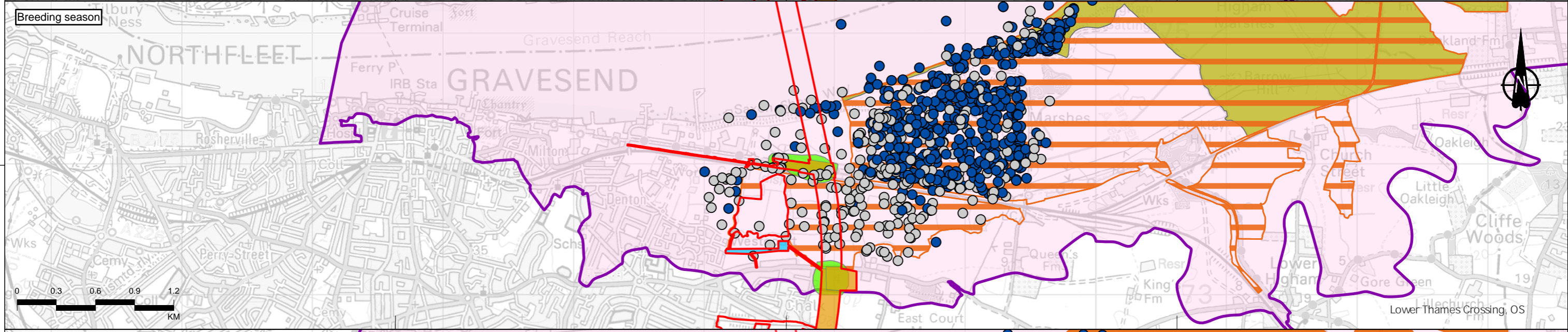
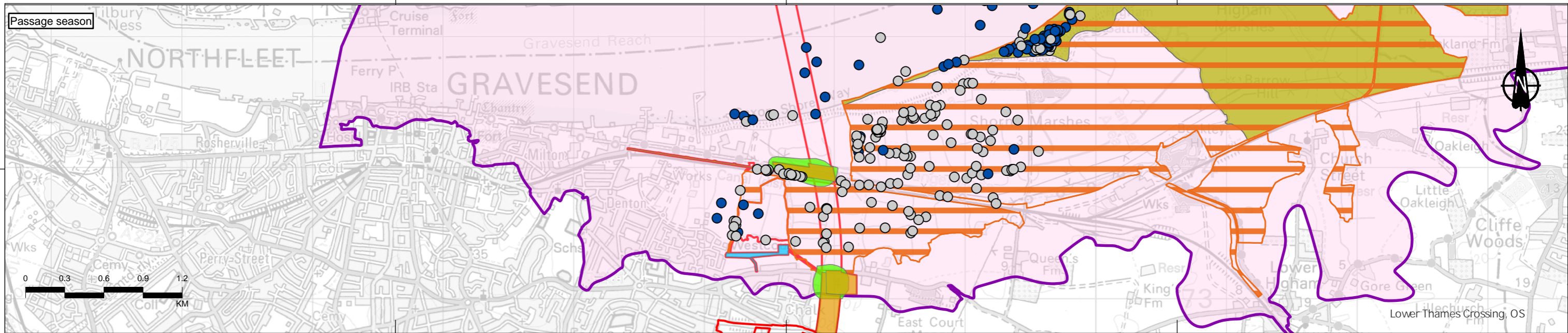
Order Limits	Compound Elements
Thames Estuary and Marshes RAMSAR	Bunds
Thames Estuary and Marshes Special Protection Area	Barriers
Functionally Linked Land	Noise Attenuation Measures



Client

Project **LOWER THAMES CROSSING**

Status	DRAFT	Original Size	A3	Revision	P02
Application Document Number	TR010032/APP/6.5	Scale	1:20,000		
Drawing Title	Figure 24 - Location of the noise attenuation measures - construction				
Drawing Number					



Contains Ordnance Survey data. © Crown copyright and database rights 2021. Ordnance Survey 100030649

P02	S8	02/08/2021	DCO Application	AD	IP	RC
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprvd

**Legend**

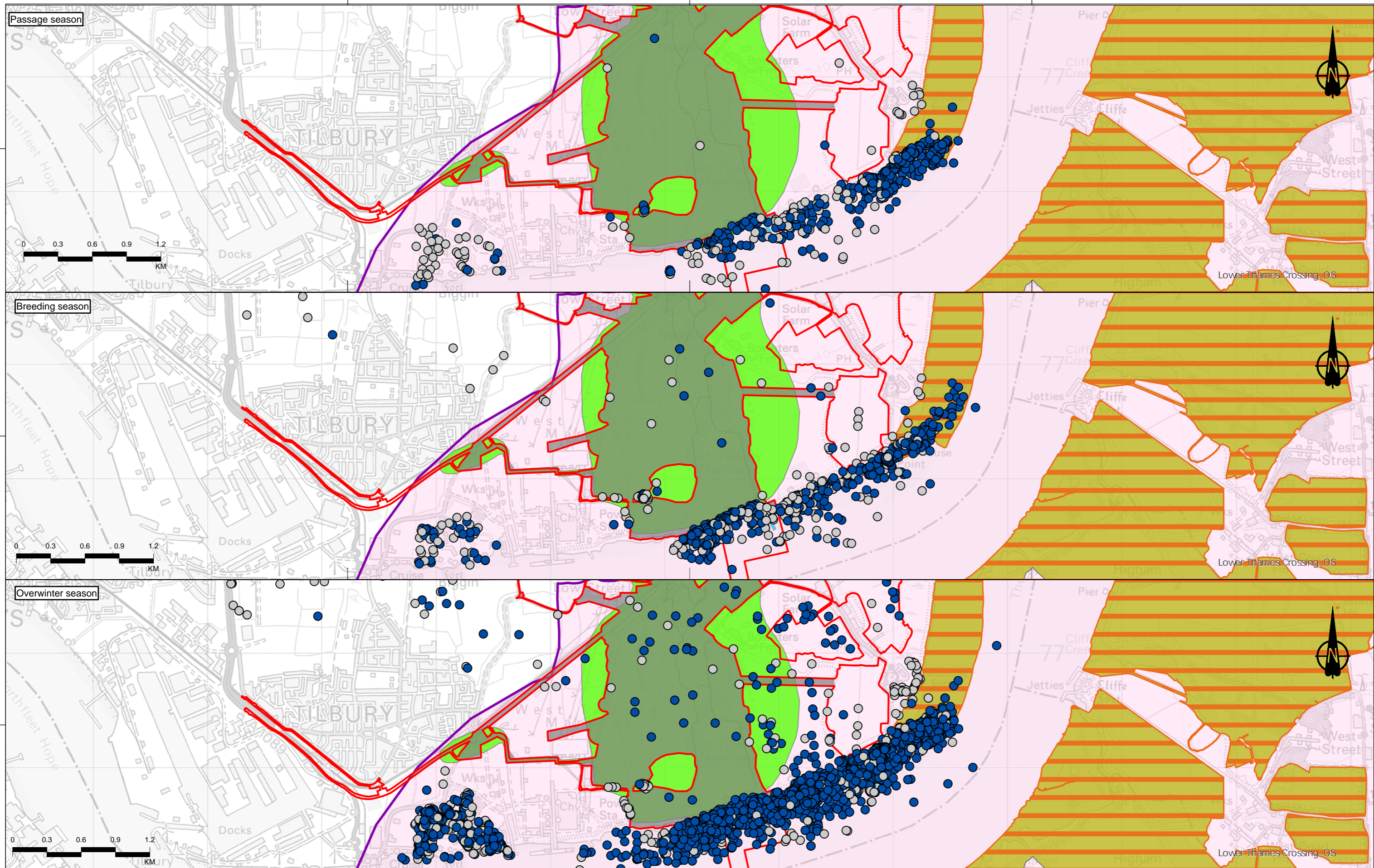
- ▭ Order Limits
- ▭ Functionally Linked Land
- ▭ Thames Estuary and Marshes RAMSAR
- ▭ Thames Estuary and Marshes Special Protection Area
- ▭ Works > 5yrs
- ▭ Works < 1yr
- ▭ Works 1 - 5yr
- Individual qualifying species
- Waterbird assemblage qualifying species
- ▭ Duration of construction activity
- ▭ Noise >55dB or 3dB change - mitigated
- ▭ Extent of area potentially disturbed



Client: **highways england**

Project: **LOWER THAMES CROSSING**

Status	DCO APPLICATION	Original Size	A3	Revision	P02
Application Document Number	TR010032/APP/6.5	Scale	1:30,000		
Drawing Title	Figure 25: South of the River Thames - Bird records (from Project ornithology field surveys) in potential disturbance areas (noise >55dB/>3dB change or visual change) with noise attenuation measures.				
Drawing Number					



Contains Ordnance Survey data. © Crown copyright and database rights 2021. Ordnance Survey 100030649

P02	S8	02/08/2021	DCO Application	AD	IP	RC
Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprvd

**Legend**

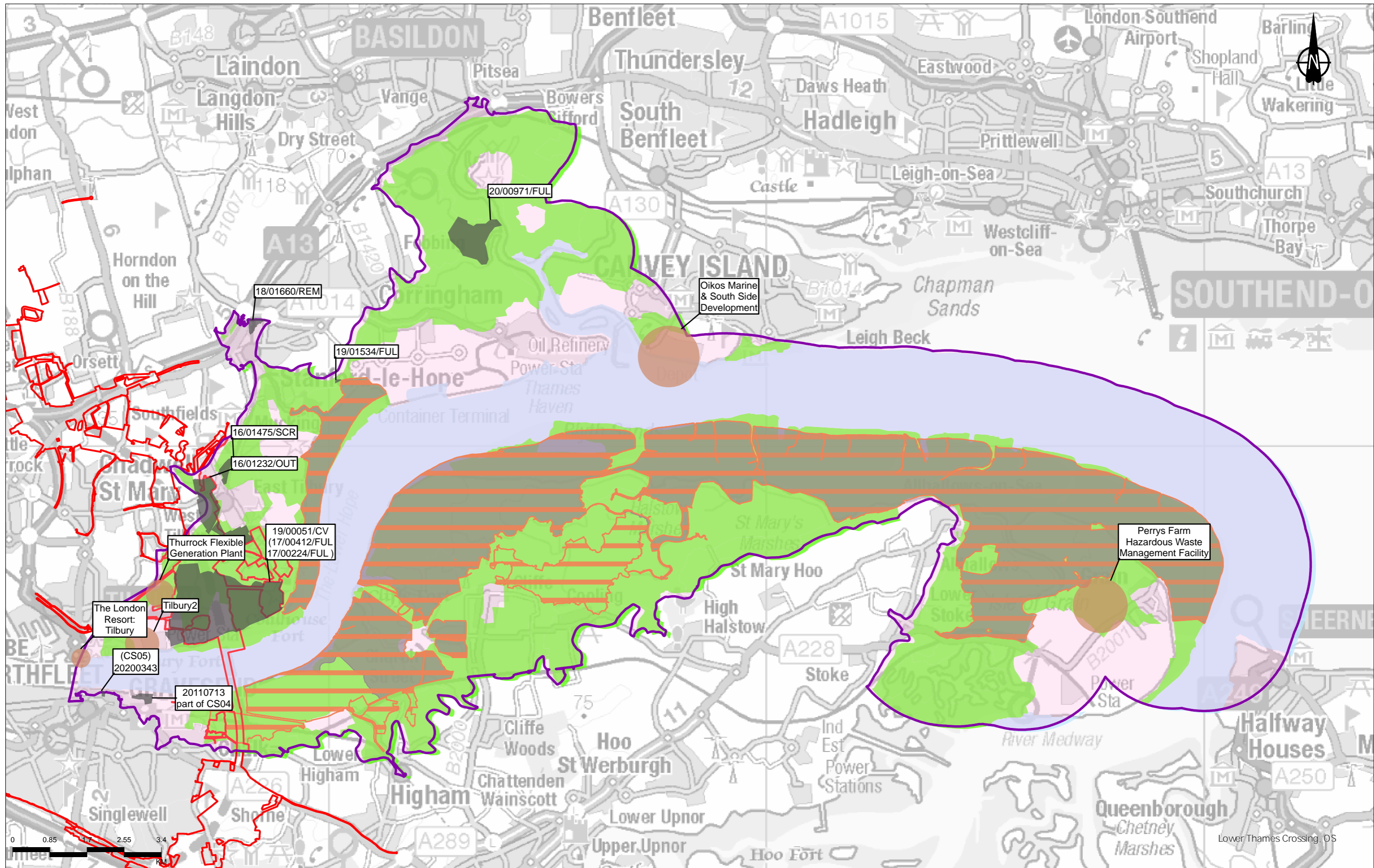
- ▬ Order Limits
- ▬ Functionally Linked Land
- Thames Estuary and Marshes RAMSAR
- Thames Estuary and Marshes Special Protection Area
- Works > 5yrs
- Works < 1yr
- Works 1 - 5yr
- Extent of area potentially disturbed
- Noise >55dB / >3dB change - mitigated
- Individual qualifying species
- Waterbird assemblage qualifying species



Client **highways england**

Project **LOWER THAMES CROSSING**

Status	DCO APPLICATION	Original Size	A3	Revision	P02
Application Document Number	TR010032/APP/6.5	Scale	1:30,000		
Drawing Title	Figure 26: North of the River Thames - Bird records (from Project ornithology field surveys) in potential disturbance areas (noise >55dB/>3dB change or visual change) with noise attenuation measures.				
Drawing Number					



Contains Ordnance Survey data. © Crown copyright and database rights 2021. Ordnance Survey 100030649

Rev	Status	Rev. Date	Purpose of revision	Drawn	Chkd	Apprvd
P02	S8	03/08/2021	DRAFT	AD	IP	RC

- Legend**
- ▬ Order Limits
  - ▬ Functionally Linked Land
  - ▬ Thames Estuary and Marshes RAMSAR
  - ▬ Thames Estuary and Marshes Special Protection Area
  - ▬ NSIP projects
  - ▬ LPA applications/allocations
  - Land Cover**
  - ▬ Suitable habitat
  - ▬ Thames Estuary



Client  
 highways england

Project  
**LOWER THAMES CROSSING**

Status	DRAFT	Original Size	A3	Revision	P02
Application Document Number	TR010032/APP/6.5	Scale	1:78,365		
Drawing Title	Figure 27 - Location of other plans or projects considered within the in-combination assessment (land take & disturbance)				
Drawing Number					



## Annex QQ2 03 December 2021 Feedback received from Natural England

**From:** [REDACTED]  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** Natural England initial response to LTC's AQ evidence plan  
**Date:** Friday, December 3, 2021 6:19:15 AM

---

Hi [REDACTED]

Below as promised is our initial response to the AQ evidence plan, to help inform our discussion on Monday.

Kind regards,

[REDACTED]

### **Natural England initial response to LTC's 'HRA and EIA Evidence Plan: Air quality effects from vehicle emissions', Nov 21**

#### **Queries re thresholds and combined modelling**

- Para. 3.1.3 - We note and support the use of the LA115 approach for Habitats Regulations purposes as this reflects NEA001. However, it would be helpful to discuss the use of different thresholds for HRA and EIA purposes, as the ecological impacts will be the same regardless of whether the site is an SSSI or a Habitats site.
- Within Table 5,1, on p.14 ('Further considerations of HRA or EIA threshold exceedances' section), the evidence plan states '*Within the HRA identification of exceedances of 0.4kg<sub>ha</sub>-1yr<sup>-1</sup> thresholds from combined modelling.*' We also note that on p.13, it is stated that the combined modelling led to an exceedance of the 1% LCL threshold for Epping Forest SAC being identified.
- It would be helpful to have further explanation of the rationale for the 0.4kg threshold being used for HRA purposes, and how the combined modelling has been undertaken.

#### **In-combination assessment**

- para. 3.2.7 – 'Other plans and projects considered in the in-combination assessment'. The contribution of traffic from other projects isn't included in this section, although we note the HRA 'SIAA (Stage 2)' in Oct 2020 stated (para. 6.4.2) that the contribution of changes in traffic from other plans or projects had been included, as the data used within the traffic model takes into account predicted changes in traffic from other plans and projects.
- It would be helpful to have this confirmed, and also to understand if emissions from agricultural sources have been included.

#### **DMRB method for calculating Ndep (NOx contribution)**

- p.12 'Could the sensitive qualifying features of the site be exposed to emissions?' – this includes ref to policies being likely to accelerate uptake of EVs and the statement that this is likely to lead to a faster reduction in vehicle emissions than assumed in the assessment.
- It would be useful to discuss the proposed inclusion of these assumptions in the HRA, where there is uncertainty of the predicted improvements occurring. We would advise that the existing EFT should be used to predict future improvements.
- The 'Updated method since DCO 1.0' section also refers to:
  - '*Additional Historic Diffusion tube data on M25 used to refine the model verification around Epping Forest.*'
  - '*Analysis of actual ammonia and NO2 monitoring on the M1 to see how close the tool predicts ammonia concentrations, shown to correlate well*'
- Is the intention to send Natural England the verification outputs, and is it possible to provide us with a summary of the validation monitoring?

#### **Inclusion of imperceptible change threshold**

- We note the methodology set out on p.13 - '*Where any changes are less than 0.3µg/m<sup>3</sup> i.e. less than 1% of the annual mean critical level of 30µg/m<sup>3</sup> set for vegetation, they would be identified as being imperceptible*', and also that the assessment for the North Downs Woodlands SAC on

p.19 refers to the exclusion of imperceptible change in concentration of NO<sub>x</sub> in the air quality model.

- It would be helpful to discuss this in more detail, including whether the 0.3ug/m<sup>3</sup> is considered in combination with other sources and also our view that, even if NO<sub>x</sub> falls below the threshold, that N deposition would still need to be calculated.

#### **Further considerations of HRA or EIA threshold exceedances**

- On p.14 the plan states '*For designated sites that are affected by more than one ARN link, the worst case (longest duration to get back to DM) is used to represent the duration of effect for that designated site.*'
- Presumably this is the basis for the Minimum to Maximum Duration Range in Years in the table ('Summary of the air quality impact for each of the designation groups') on p.20?
- Pages 15-16 of Table 5.1 - there are various questions/ matters on this page which have a particular relevance to Epping Forest SAC, and we will be providing further advice regarding this site.
- It would be helpful to discuss the Preliminary Assessment of 'Likely insignificant' for Langdon Ridge SSSI and Titsey Woods SSSI, provided separately in the 'EIA\_AQ\_PRELIM\_Assessment\_121121' spreadsheet.

#### **Use of the Nitrogen Decision Framework**

- Evidence plan question on p.16 – '*What would the NDF do that isn't already being done by the current considerations?*'
- Our advice is that the NDF is a decision framework which can be used to refine current uncertainties around exceedances of nitrogen deposition on designated sites and so provides an objective methodology for assessing the extent to which nitrogen deposition may be undermining the ability to meet conservation objective at that specific unit/site. It is therefore a tool that can assist in informing our advice on the impacts on sites from nitrogen deposition.

#### **Botanical surveys**

- The plan on p.17 states - '*Surveys now include the use of habitat condition assessment forms from Defra Metric 3.0 to provide a consistent data set.*' It would be helpful to discuss this in more detail, as the Biodiversity Metric 3.0 User Guide (link [here](#)) states, in Principle 4, that 'Impacts on protected sites (e.g. SSSIs) and irreplaceable habitats are not adequately measured by this metric.' We could include discussion of the use of Biodiversity Metric 3.0 in the discussion of woodland compensation on 7th December.

#### **Mitigation options**

- On p.25 the plan states '*Disruption of pathway mitigation options (tree planting or installing scrubbing technologies to reduce the nitrogen deposition travelling from the road source to the designated sites / habitats) - NH has evidence that they are not effective.*' However, there has been further discussion, led by LTC, of the contribution tree planting could potentially make to mitigation, e.g. by reducing N impacts to some extent by redistributing nearer the road - the evidence plan could be updated to reflect these discussions.

#### **Initial response to questions asked of Natural England**

- *Does NE agree this element of the assessment is appropriate for the purposes of stage 2 appropriate assessment?*
- Is the intention for the Evidence Plan to be incorporated into the HRA, or to help in its drafting? We would need to see how the plan informs or is incorporated into the HRA to provide our advice on this.
- *Would any disagreement contribute to NE being unable to agree the final conclusion of the assessment on AEoI?*
- Further discussion is needed on the assessment for North Downs Woodlands SAC (this will form part of the discussion on 6<sup>th</sup> December). We are still of the view that an AEoI cannot be ruled out for Epping Forest SAC, and we will send further advice on this.
- *Would any disagreement relate to advice on what could be improved in the element, but would not be of sufficient significance to contribute to being unable to agree with the final assessment conclusion on AEoI?*
- We are not certain what the question is specifically asking, so we could discuss further in the call on 6<sup>th</sup> December if that would be helpful.
- *NE further advice on "further modifications / conditions / restrictions that could, in NE's view, enable the competent authority to conclude no AEoI"*

- We will provide our further advice on Epping Forest SAC, but we note that the Evidence Plan states that the mitigation measure of a speed limit on the M25 '*has been modelled as effective*', and that the separate 'Methodology for the assessment of Speed Limits' document sent by LTC to Natural England summarises that '*Introducing a 24-hour speed restriction of 60mph on the M25 is expected to lead to a reduction in nitrogen deposition in the SAC.*'
- *Does the disagreement or further advice relate to a national policy issue or an issue in the gift of the project?*
- If it is agreed that the speed limit mitigation for Epping Forest SAC is the most effective mechanism for avoiding AEoI, we would welcome LTC's advice on whether the delivery of this is in the gift of the project. We are hopeful that this matter can be resolved at the project level, rather than requiring discussion at the national policy level.

This email and any attachments is intended for the named recipient only. If you have received it in error you have no authority to use, disclose, store or copy any of its contents and you should destroy it and inform the sender. Whilst this email and associated attachments will have been checked for known viruses whilst within the Natural England systems, we can accept no responsibility once it has left our systems. Communications on Natural England systems may be monitored and/or recorded to secure the effective operation of the system and for other lawful purposes.

If you need help accessing this or any other National Highways information, please call **0300 123 5000** and we will help you.

© Crown copyright 2023.

You may re-use this information (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence. To view this licence:

visit [www.nationalarchives.gov.uk/doc/open-government-licence/](http://www.nationalarchives.gov.uk/doc/open-government-licence/)

write to the **Information Policy Team, The National Archives, Kew, London TW9 4DU**, or email [psi@nationalarchives.gsi.gov.uk](mailto:psi@nationalarchives.gsi.gov.uk).

Mapping (where present): © Crown copyright and database rights 2023 OS 100030649. You are permitted to use this data solely to enable you to respond to, or interact with, the organisation that provided you with the data. You are not permitted to copy, sub-licence, distribute or sell any of this data to third parties in any form.

If you have any enquiries about this publication email [info@nationalhighways.co.uk](mailto:info@nationalhighways.co.uk) or call **0300 123 5000\***.

\*Calls to 03 numbers cost no more than a national rate call to an 01 or 02 number and must count towards any inclusive minutes in the same way as 01 and 02 calls.

These rules apply to calls from any type of line including mobile, BT, other fixed line or payphone. Calls may be recorded or monitored.

Printed on paper from well-managed forests and other controlled sources when issued directly by National Highways.

Registered office Bridge House, 1 Walnut Tree Close, Guildford GU1 4LZ

National Highways Limited registered in England and Wales number 09346363