# Outer Dowsing Offshore Wind Preliminary Environmental Information Report Volume 1, Chapter 21: Onshore Ecology

Date: June 2023

Outer Dowsing Document No: 6.1.21

Internal Reference: PP1-ODOW-DEV-CS-REP-0026

Rev: V1.0





Company:	Outer Dowsing Offshore Wind	Asset:	Whole Asset
Project:	Whole Wind Farm	Sub Project/Package:	Whole Asset
Document Title Onshore Ecology or Description:			
Document Number:	6.1.21	3 <sup>rd</sup> Party Doc No (If applicable):	N/A

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Rev No.	Date	Status / Reason for Issue	Author	Checked by	Reviewed by	Approved by
					Shepherd	Outer
V1.0	June 2023	Final	SLR	GoBe	and	Dowsing
					Wedderburn	Offshore Wind



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## **Abbreviations**

Acronym	Expanded name	
AIL	Abnormal Indivisible Load	
AIS	Automatic Identification System	
AoS	Area of Search	
BAEF	Boston Alternative Energy Facility	
BAP	Biodiversity Action Plan	
BCT	Bat Conservation Trust	
BNG	Biodiversity Net Gain	
CIEEM	Chartered Institute of Ecology and Environmental Management	
CIRIA	Construction Industry Research and Information Association	
DAS	Discretionary Advice Service	
DCO	Development Consent Order	
Defra	Department for Environment, Food and Rural Affairs	
DESNZ	Department for Energy Security and Net Zero, formerly Department of	
DESINZ	Business, Energy and Industrial Strategy (BEIS), which was previously	
	Department of Energy & Climate Change (DECC)	
ECC	Export Cable Corridor (offshore ECC or indicative onshore ECC)	
EcIA	Ecological Impact Assessment	
EcMS	Ecological Management Strategy	
ECoW	Ecological Clerk of Works	
EIA	Environmental Impact Assessment	
EMS	Environmental Management System	
EPP	Evidence Plan Process	
EPS	European Protected Species	
EPSL	European Protected Species Licence	
ES	Environmental Statement	
ETG	Expert Topic Group	
EU	European Union	
GCN	Great Crested Newt	
GIS	Geographical Information System	
GLNP	Greater Lincolnshire Nature Partnership	
GT R4 Ltd	The Applicant. The special project vehicle created in partnership between Corio	
OT N4 Ltd	Generation (a wholly owned Green Investment Group portfolio company), Gulf	
	Energy Development and TotalEnergies	
HDD	Horizontal Directional Drilling	
HRA	Habitats Regulations Assessment	
HSI	Habitat Suitability Index	
IEF	Important Ecological Feature	
IEMA	Institute of Environmental Management and Assessment	
INNS	Invasive Non-Native Species	
IPA	Important Plant Areas	
IPC	Infrastructure Planning Commission	
IUCN	International Union for Conservation of Nature	
TOCIV	International official for conservation of Nature	



Acronym	Expanded name
JNCC	Joint Nature Conservation Committee
LCC	Lincolnshire County Council
LEDPP	Landscape and Ecology Design Principles Plan
LEMS	Landscape and Ecology Management Strategy
LNR	Local Nature Reserve
LWS	Local Wildlife Site
LWT	Lincolnshire Wildlife Trust
MAGIC	Multi-agency Geographic Information Centre
MDS	Maximum Design Scenario
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MMU	Minimum Mapping Unit
MS	Method Statement
N/A	Not Applicable
NIA	Nature Improvement Area
NERC	Natural Environment and Rural Communities
NGET	National Grid Electricity Transmission
NG OnSS	National Grid Onshore Substation
NGR	National Grid Reference
NNR	National Nature Reserve
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
ODOW	Outer Dowsing Offshore Wind (The Project)
OLEMS	Outline Landscape and Ecological Management Strategy
Onss	Onshore Substation
OS OS	
OWF	Ordnance Survey Offshore Wind Farm
PEA	Preliminary Ecological Appraisal
	, 0 11
PEIR	Preliminary Environmental Information Report
PPEIRP	Pollution Prevention and Emergency Incident Response Plan
RAM	Reasonable Avoidance Measures
RIAA	Report to inform Appropriate Assessment
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SoS	Secretary of State
SPA	Special Protection Areas
SSSI	Site of Special Scientific Interest
The Inspectorate	The Planning Inspectorate
UK	United Kingdom
WFD	Water Framework Directive
Zol	Zone of Influence



# Terminology

Term	Definition		
Baseline	The status of the environment at the time of assessment without the		
	development in place.		
Biodiversity Net	An approach to development that leaves biodiversity in a measurably		
Gain	improved state than it was previously. Where a development has an impact on		
	biodiversity, developers are encouraged to provide an increase in appropriate		
	natural habitat and ecological features over and above that being affected, to		
	ensure that the current loss of biodiversity through development will be halted		
	and ecological networks can be restored.		
Cumulative	The combined effect of the Project acting cumulatively with the effects of a		
Effect	number of different projects, on the same single receptor/resource.		
Damage	Damage here means any form of impact such as loss of habitat, soil compaction,		
	changes in hydrology, nutrient enrichment, pollution, disturbance of species,		
	spread of invasive species, etc.		
Development	An order made under the Planning Act 2008 granting development consent for a		
Consent Order	Nationally Significant Infrastructure Project (NSIP) from the Secretary of State		
(DCO)	(SoS) for Department for Energy Security and Net Zero (DESNZ).		
Effect	Term used to express the consequence of an impact.		
Environmental	A statutory process by which certain planned projects must be assessed before		
Impact	a formal decision to proceed can be made. It involves the collection and		
Assessment	consideration of environmental information, which fulfils the assessment		
(EIA)	requirements of the Environmental Impact Assessment (EIA) Regulations,		
	including the publication of an Environmental Statement (ES).		
EIA Directive	European Union 2011/92/EU of 13 December 2011 (as amended in 2014 by		
	Directive 2014/52/EU)		
EIA Regulations	Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.		
Environmental	The suite of documents that detail the processes and results of the		
Statement (ES)	Environmental Impact Assessment (EIA).		
Evidence Plan	A voluntary process of stakeholder consultation with appropriate Expert Topic		
	Groups (ETGs) that discusses and, where possible, agrees the detailed approach		
	to the Environmental Impact Assessment (EIA) and information to support		
	Habitats Regulations Assessment (HRA) for those relevant topics included in the		
	process, undertaken during the pre-application period.		
Habitats	Habitats Regulations Assessment. A process which helps determine likely		
Regulations	significant effects and (where appropriate) assesses adverse impacts on the		
Assessment	integrity of European conservation sites and Ramsar sites. The process consists		
(HRA)	of up to four stages of assessment: screening, appropriate assessment,		
	assessment of alternative solutions and assessment of imperative reasons of		
Hand Daniel	over-riding public interest (IROPI) and compensatory measures.		
Haul Road	The track within the onshore ECC which the construction traffic would use to		
las a set	facilitate construction.		
Impact	An impact to the receiving environment is defined as any change to its baseline		
	condition, either adverse or beneficial.		



Term	Definition
Indicative	The indicative working width within the Export Cable Corridor (ECC), required for
Working	the construction of the onshore cable route.
Width	
Intertidal	Area where the ocean meets the land between high and low tides.
Joint Bays	A joint bay provides a secure environment for the assembly of cable joints as well as bonding and earthing leads. A joint bay is installed between each length of cable.
Landfall	The location at the land-sea interface where the offshore export cable will come ashore.
Link Boxes	Underground chambers or above ground cabinets next to the cable trench housing electrical earthing links.
Maximum	The maximum design parameters of the combined project assets that result in
Design Scenario	the greatest potential for change in relation to each impact assessed
Mitigation	Mitigation measures, or commitments, are commitments made by the Project to reduce and/or eliminate the potential for significant effects to arise as a result of the Project. Mitigation measures can be embedded (part of the project design) or secondarily added to reduce impacts in the case of potentially significant effects.
National Grid's OnSS	Onshore substation which is owned and operated by National Grid
National Policy Statement (NPS)	A document setting out national policy against which proposals for Nationally Significant Infrastructure Projects (NSIPs) will be assessed and decided upon.
Non-statutory consultee	Organisations that the Applicant may be required to (under Section 42 of the 2008 Act) or may otherwise choose to engage during the pre-application phases (if, for example, there are planning policy reasons to do so) who are not designated in law but are likely to have an interest in a proposed development.
Outer Dowsing Offshore Wind (ODOW)	The Project
Onshore Export Cable Corridor (ECC)	The Onshore Export Cable Corridor (Onshore ECC) is the area within which the export cable running from the landfall to the onshore substation will be situated.
Onshore substation (OnSS)	The Project's onshore substation, containing electrical equipment to enable connection to the National Grid.
Onshore	The combined name for all onshore infrastructure associated with the Project
Infrastructure	from landfall to grid connection.
Pre-	The phases of the Project before and after construction takes place.
construction	
and post- construction	
Preliminary Environmental	The PEIR is written in the style of a draft Environmental Statement (ES) and provides information to support and inform the statutory consultation process in the pre-application phase. Following that consultation, the PEIR



Term	Definition		
Information	documentation will be updated to produce the Project's ES that will accompany		
	the application for the Development Consent Order (DCO).		
Report (PEIR)			
PEIR Boundary	The PEIR Boundary is outlined in Figure 3.1 of Volume 1, Chapter 3: Project		
	Description and comprises the extent of the land and/or seabed for which the		
D	PEIR assessments are based upon.		
Receptor	A distinct part of the environment on which effects could occur and can be the		
	subject of specific assessments. Examples of receptors include species (or		
	groups) of animals or plants, people (often categorised further such as		
Challan	'residential' or those using areas for amenity or recreation), watercourses etc.		
Statutory	Organisations that are required to be consulted by the Applicant, the Local		
Consultee	Planning Authorities and/or The Inspectorate during the pre-application and/or		
	examination phases, and who also have a statutory responsibility in some form		
	that may be relevant to the Project and the DCO application. This includes those		
Ctudu Araa	bodies and interests prescribed under Section 42 of the Planning Act 2008.		
Study Area	Area(s) within which environmental impact may occur - Area within which the		
	desk-based studies for habitats and species have been undertaken. Habitats and		
C A	species have bespoke study areas which are described within this chapter.		
Survey Area	Area within which the field-based surveys for habitats and species have been		
The Discusion	undertaken. Habitats and species may have bespoke survey areas.		
The Planning	The agency responsible for operating the planning process for Nationally		
Inspectorate	Significant Infrastructure Projects (NSIPs).		
The Project	Outer Dowsing Offshore Wind including proposed onshore and offshore		
Transition Islant	infrastructure		
Transition Joint	The offshore and onshore cable circuits are jointed on the landward side of the		
Bay (TJBs)	sea defences/beach in a Transition Joint Bay (TJB). The TJB is an underground		
	chamber constructed of reinforced concrete which provides a secure and stable environment for the cable.		
Tuonabloss			
Trenchless	Trenchless technology is an underground construction method of installing,		
technique	repairing and renewing underground pipes, ducts and cables using techniques		
	which minimize or eliminate the need for excavation. Trenchless technologies		
	involve methods of new pipe installation with minimum surface and		
	environmental disruptions. These techniques may include Horizontal Directional		
	Drilling (HDD), thrust boring, auger boring, and pipe ramming, which allow ducts		
	to be installed under an obstruction without breaking open the ground and		
Tranched	digging a trench.		
Trenched	Trenching is a construction excavation technique that involves digging a narrow		
technique	trench in the ground for the installation, maintenance, or inspection of pipelines,		
	conduits, or cables.		



## 21 Onshore Ecology

#### 21.1 Introduction

- 21.1.1 This Chapter of the Preliminary Environmental Information Report (PEIR) presents the results to date of the Environmental Impact Assessment (EIA) process for the potential impacts of Outer Dowsing Offshore Wind ("the Project") on Onshore Ecology, including biodiversity and nature conservation receptors, but excluding birds. Breeding and wintering birds and sites designated for birds are discussed in Volume 1, Chapter 22: Onshore Ornithology. Specifically, this Chapter considers the potential impact of the Project from the mean high water spring (MHWS), along the Onshore Export Cable Corridor (onshore ECC), and incorporating the Onshore substation (OnSS) during the construction, operation and maintenance, and decommissioning phases. Additionally, alongside the PEIR a draft Report to Inform Appropriate Assessment (RIAA) has been produced (Document reference 7.1).
- 21.1.2 This assessment is preliminary as many ecological baseline surveys are ongoing with only the desk study and preliminary habitat, badger (*Meles meles*) and bat roost assessment surveys largely complete at the time of writing. Information from the remaining baseline surveys will be incorporated at the Environmental Statement (ES) stage.
- 21.1.3 Ongoing surveys include those for bats (activity and presence / absence and roost characterisation), otter (*Lutra lutra*), water vole (*Arvicola amphibius*), great crested newt (GCN)(*Triturus cristatus*), reptiles and habitats.
- 21.1.4 GT R4 Limited (trading as Outer Dowsing Offshore Wind) hereafter referred to as the 'Applicant', is proposing to develop the Project. The Project will be located approximately 54km from the Lincolnshire coastline in the southern North Sea. The Project will include both offshore and onshore infrastructure including an offshore generating station (windfarm), export cables to landfall, onshore cables, and connection to the electricity transmission network, and ancillary and associated development (see Volume 1, Chapter 3: Project Description for full details).
- 21.1.5 There are three OnSS locations under consideration in this PEIR; Lincolnshire Node, Weston Marsh North and Weston Marsh South. All of these options share a common landfall at Wolla Bank where the onshore ECC will come ashore and continue on to the adopted OnSS option. There are also three Onshore ECC options under consideration, one to the Lincolnshire Node connection point and two options under consideration for the Weston Marsh connection point. All onshore ECC options are defined by a 300m width corridor within which the onshore ECC would be developed. As a collective, the landfall, onshore ECC and OnSS search zones are referred to as the onshore PEIR Boundary. Figure 3.1 in Volume 1, Chapter 3: Project Description illustrates the extent of the PEIR Boundary for the three options.
- 21.1.6 Relevant technical appendices that should be read alongside this Chapter include:
  - Volume 2, Appendix 21.1 Onshore Ecology Desk Study;
  - Volume 2, Appendix 21.2

     Preliminary Habitat Study Report;
  - Volume 2, Appendix 21.3 Preliminary Bat Roost Assessment Report;



- Volume 2, Appendix 21.4 Badger Survey Report; and
- Document Reference 8.7 Landscape and Ecology Design Principles Plan (LEDPP).
- 21.1.7 Breeding and wintering birds and sites designated for birds are discussed in Volume 1, Chapter 22: Onshore Ornithology.
- 21.1.8 Intertidal habitats are discussed separately in Volume 1, Chapter 9: Benthic and Intertidal Ecology.

### 21.2 Statutory and Policy Context

21.2.1 The relevant legislation and planning policy for offshore renewable energy Nationally Significant Infrastructure Projects (NSIPs), specifically in relation to Onshore Ecology, is outlined in Table 21.1 below.



Table 21.1: Legislation and Policy Context

Legislation/policy	Key provisions	Section where key provisions addressed
Legislation		
Conservation of Habitats and Species Regulations 2017 (as amended)	Protection of Special Protection Areas (SPA) and Special Areas of Conservation (SAC).  Protection of certain animal species and their resting places or shelter, including but not limited to all species of bat, great crested newt ( <i>Triturus cristatus</i> ), otter ( <i>Lutra lutra</i> ) and natterjack toad ( <i>Epidalea calamita</i> ).  Protection of certain plant species, including but not limited to creeping marshwort ( <i>Apium repens</i> ) and floating-leaved water plantain ( <i>Luronium natans</i> ).	The relevant provisions of the Conservation of Habitat and Species Regulations are addressed in sections 21.4 to 21.9
Wildlife and Countryside Act 1981 (as amended)	Protection of certain animals and plant species and their place of shelter or protection including species of bird listed under Schedule 1, species of invertebrate, all species of bat, water vole and otter listed under Schedule 5, plant species protected under Schedule 8. Prohibition of allowing certain non -native plant species listed in Schedule 9(14) to grow or spread in the wild.	The relevant provisions of the Wildlife and Countryside Act are addressed in sections 21.4 to 21.9
The Environment Act 2021	The Environment Act has wide ranging provisions including those around Environmental governance, Environmental regulation, Waste and resource efficiency, Air quality and environmental recall, Water, Nature and biodiversity, and Conservation covenants. Schedule 15 of the 2021 Act is of particular relevance, and introduces "biodiversity gain in nationally significant infrastructure projects (NSIP)". The part of the Environment Act relating to biodiversity net gain (and the associated amendments to the Planning Act 2008) is not yet in force, with the parts relating to NSIPs unlikely to commence until November 2025.	The relevant provisions of the Environment Act are addressed in sections 21.4 to 21.9



Legislation/policy	Key provisions	Section where key provisions addressed
Protection of	Protection of badgers (Meles meles) from killing and injury (section	The relevant provisions of the Protection of Badgers
Badgers Act 1992	1) and disturbance whilst occupying a sett (section 3). The 1992 Act	Act are provided in confidential Volume 2, Appendix
	makes it an offence to obstruct, damage or destroy a sett (section 3).	21.4: Badger Survey.
Natural	This Act obliges the Secretary of State (SoS) to compile a list of	The relevant provisions of the NERC Act are
<b>Environment and</b>	habitats and species of principal importance in England. The list	addressed in sections 21.4 to 21.9.
Rural	includes 56 habitats and 943 species first identified as Priority	
Communities	Habitats and species in the UK Biodiversity Action Plan. Relevant	
(NERC) Act 2006	Priority Habitats are detailed in Section 1.4 Priority species include	
	common toad, natterjack toad, great crested newt, species of alga,	
	invertebrates, birds, fish, fungi, lichen, water vole (Arvicola	
	amphibius), otter, hedgehog (Erinaceus europaeus), brown hare	
	(Lepus lepus, harvest mouse (Micromys minutus), common seal	
	(Phoca vitulina), noctule bat (Nyctalus noctule), barbastelle bat	
	(Barbastellus barbastellus), Bechstein's bat (Myotis bechsteinii),	
	soprano pipistrelle bat ( <i>Pipistrellus pygmaeus</i> ) and brown long-eared	
	bat ( <i>Plecotus auritus</i> ).	
Hedgerow	Protection of hedgerows deemed "important" under ecological or	The relevant provisions of the Hedgerow Regulations
Regulations 1997	historical criteria set out in the Regulations.	are addressed in sections 21.4 to 21.9.
The Water	The Water Framework Directive is transposed into law in England	WFD assessment is provided in Volume 2, Appendix
Environment	and Wales by The Water Environment (Water Framework Directive)	8.1: Water Framework Directive.
(Water	(England and Wales) Regulations 2017 (the 2017 Regulations). Part 3	
Framework	of the regulations provide for the protection of areas of habitats or	
Directive	species where maintenance of the status of water is an important	
(England and	factor. Under the regulations additional consideration may need to	
Wales)	be given to sites in the form of a Water Framework Directive (WFD)	
Regulations 2017	assessment where a project lies in proximity to a water body or to	
	linked water bodies which could be affected. This includes	
	consideration of whether water bodies are WFD receptors, in	
	particular those of high status or which have high status morphology.	



Legislation/policy	Key provisions	Section where key provisions addressed
National		
Planning Policy		
Government	This circular provides administrative guidance on the application of	The relevant guidance is taken into account in
Circular 06/05	Biodiversity and geological conservation law relating to planning and	sections 21.4 to 21.9.
	nature conservation as it applies in England. It complements the	
	national planning policy in the National Planning Policy Framework	
	and the relevant planning practice guidance.	
National	Section 15: Conservation and enhancing the natural environment:	Volume 1, Chapter 4: Site Selection and
Planning Policy	174. 'Planning policies and decisions should contribute to and	Consideration of Alternatives illustrates how direct
Framework	enhance the natural and local environment by:	impacts on designated sites have been avoided
	a) protecting and enhancing valued landscapes, sites of biodiversity	through project design. Also, how blocks of
	or geological value and soils (in a manner commensurate with their	woodland are avoided and the loss of individual trees
	statutory status or identified quality in the development plan);	and hedgerows has been minimised.
	b) recognising the intrinsic character and beauty of the countryside,	
	and the wider benefits from natural capital and ecosystem services –	Embedded mitigation measures are provided in
	including the economic and other benefits of the best and most	Table 21.13. These will be updated in the ES once
	versatile agricultural land, and of trees and woodland;	baseline surveys are complete and more detailed
	c) maintaining the character of the undeveloped coast, while	project information is available.
	improving public access to it where appropriate;	
	d) minimising impacts on and providing net gains for biodiversity,	Further mitigation measures, including those for
	including by establishing coherent ecological networks that are more	biodiversity offsetting, will be developed within the
	resilient to current and future pressures'	LEDPP (document reference 8.7) and the subsequent
	175. 'Plans should: distinguish between the hierarchy of	Outline Landscape and Ecological Management
	international, national and locally designated sites; allocate land	Strategy (OLEMS) to be submitted with ES.
	with the least environmental or amenity value, where consistent with	
	other policies in this Framework; take a strategic approach to	The hierarchy of designated sites is provided in
	maintaining and enhancing networks of habitats and green	section 21.4.
	infrastructure; and plan for the enhancement of natural capital at a	
	catchment or landscape scale across local authority boundaries.'	



		OFFSHORE WIND
Legislation/policy	Key provisions	Section where key provisions addressed
Overarching NPS for Energy 2011 (EN-1)	179. To protect and enhance biodiversity and geodiversity, plans should:  a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and, b) promote the conservation, restoration and enhancement of Priority Habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.'  Para 5.3.3: 'Where the development is subject to EIA the applicant should ensure that the ES [Environmental Statement] clearly sets out any effects on internationally, nationally and locally designated sites of ecological or geological conservation importance, on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity. The applicant should provide environmental information proportionate to the infrastructure where EIA is not required to help the Infrastructure Planning Commission (IPC) [now the Planning Inspectorate] consider thoroughly the potential effects of a proposed project.'	Priority Habitats have been included within the desk-based study (section 21.4) and impacts are assessed in section 21.7.  An assessment of effects is presented in section 21.7 Impact Assessment.
	Para 5.3.11: 'Where a proposed development on land within or outside a Site of Special Scientific Interest (SSSI) is likely to have an adverse effect on an SSSI (either individually or in combination with other developments), development consent should not normally be granted. Where an adverse effect, after mitigation, on the site's notified special interest features is likely, an exception should only be	Designated sites are presented in section 21.4  The route options have been selected to minimise impacts to interest features within designated sites.  Embedded mitigation measures are provided in Table 21.13



Legislation/policy	Key provisions	Section where key provisions addressed
	made where the benefits (including need) of the development at this	
	site, clearly outweigh both the impacts that it is likely to have on the	
	features of the site that make it of special scientific interest and any	
	broader impacts on the national network of SSSIs	
	Para 5.3.16-5.3.17: 'The IPC shall have regard to the protection of	Embedded mitigation measures are provided in
	legally protected species and habitats and species of principal	Table 21.13.
	importance for nature conservation.  The IPC should refuse consent where harm to the habitats or species	The Biodiversity and Marine Net Gain Principles and
	and their habitats would result, unless the benefits (including need)	Approach (document reference 8.3) outlines the
	of the development outweigh that harm. In this context, the IPC	commitment of the Project to adopting Biodiversity
	should give substantial weight to any such harm to the detriment of	Net Gain. A Biodiversity Net Gain assessment using
	biodiversity features of national or regional importance which it	the latest metric will be provided with the ES.
	considers may result from a proposed development.'	
		Further mitigation measures, including those for
		biodiversity offsetting, will be developed within the
		LEDPP (document reference 8.7) and the subsequent
		OLEMS to be submitted with ES.
Overarching NPS	Para 5.4.2: 'The government's policy for biodiversity in England is set	Embedded mitigation measures are presented in
for Energy 2023	out in the Environmental Improvement Plan, Biodiversity 2020, the	Table 21.13.
draft (EN-1)	National Pollinator Strategy and the UK Marine Strategy. The aim is to halt overall biodiversity loss, support healthy well-functioning	
	ecosystems and establish coherent ecological networks, with more	
	and better places for nature for the benefit of wildlife and people.	
	This aim needs to be viewed in the context of the challenge presented	
	by climate change. Healthy, naturally functioning ecosystems and	
	coherent ecological networks will be more resilient and adaptable to	
	climate change effects. Failure to address this challenge will result in	
	significant adverse impact on biodiversity and the ecosystem services	
	it provides.'	



Legislation/policy	Key provisions	Section where key provisions addressed
	Para 5.4.8: 'Development on land within or outside a SSSI, and which is likely to have an adverse effect on it (either individually or in	Designated sites are presented in section 21.4
	combination with other developments), should not normally be permitted. The only exception is where the benefits (including need)	The route options have been selected to minimise impacts to interest features within designated sites.
	of the development in the location proposed clearly outweigh both its	Embedded mitigation measures are provided in
	likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of SSSIs'.	Table 21.13
	Para 5.4.17: Where the development is subject to EIA the applicant should ensure that the ES clearly sets out any effects on integrationally partially and leavily designated sites of each pion.	An assessment of effects is presented in section 21.7 Impact Assessment and will be addressed fully in the
	internationally, nationally, and locally designated sites of ecological or geological conservation importance (including those outside England), on protected species and on habitats and other species	ES.
	identified as being of principal importance for the conservation of biodiversity, including irreplaceable habitats.	
	Para 5.4.19: 'The applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests'.	Embedded mitigation measures are provided in Table 21.13.
		The Biodiversity and Marine Net Gain Principles and Approach (document reference 8.3) outlines the commitment of the Project to adopting Biodiversity Net Gain. A Biodiversity Net Gain assessment using the latest metric will be provided with the ES.
		Further mitigation measures, including those for biodiversity offsetting, will be developed within the LEDPP (document reference 8.7) and the subsequent OLEMS to be submitted with ES.



Legislation/policy	Key provisions	Section where key provisions addressed
Legislation/policy	Para 5.4.20: 'Applicants should consider wider ecosystem services and benefits of natural capital when designing enhancement measures'	Proposals for enhancement will be presented in the ES.
	Para 5.4.21: 'As set out in Section 4.6, the design process should embed opportunities for nature inclusive design. Energy infrastructure projects have the potential to deliver significant benefits and enhancements beyond Biodiversity Net Gain, which result in wider environmental gains (see Section 4.5 on Environmental and Biodiversity Net Gain). The scope of potential gains will be dependent on the type, scale, and location of each project.'	A Biodiversity and Marine Net Gain Principles and Approach (document reference 8.3) has been prepared which outlines the commitment of the Project to providing Biodiversity Net Gain. A Biodiversity Net Gain assessment using the latest metric will be provided with the ES.
	Para 5.4.32: 'Applicants should include measures to mitigate the direct and indirect effects of development on ancient woodland, veteran trees or other irreplaceable habitats during both construction and operational phase.'	Embedded mitigation measures are provided in Table 21.13.
	Para 5.4.33: 'Applicants should also consider any reasonable opportunities to maximise the restoration, creation, and enhancement of wider biodiversity, and the protection and restoration of the ability of habitats to store or sequester carbon'	Embedded mitigation measures are provided in Table 21.13.  The Biodiversity and Marine Net Gain Principles and Approach (document reference 8.3) outlines the commitment of the Project to adopting Biodiversity Net Gain. A Biodiversity Net Gain assessment using the latest metric will be provided with the ES.  Further mitigation measures, including those for biodiversity offsetting, will be developed within the LEDPP (document reference 8.7) and the subsequent OLEMS to be submitted with ES.
	Para 5.4.35: 'Applicants should include appropriate avoidance, mitigation, compensation and enhancement measures as an integral	Embedded mitigation measures are provided in Table 21.13



Legislation/policy	Key provisions	Section where key provisions addressed
	part of the proposed development. In particular, the applicant should demonstrate that: during construction, they will seek to ensure that activities will be confined to the minimum areas required for the works the timing of construction has been planned to avoid or limit disturbance during construction and operation best practice will be followed to ensure that risk of disturbance or damage to species or habitats is minimised, including as a consequence of transport access arrangements habitats will, where practicable, be restored after construction works have finished opportunities will be taken to enhance existing habitats rather than replace them, and where practicable, create new habitats of value within the site landscaping proposals. Where habitat creation is required as mitigation, compensation, or enhancement the location and quality will be of key importance. In this regard habitat creation should be focused on areas where the most ecological and ecosystems benefits can be realised.'	The Biodiversity and Marine Net Gain Principles and Approach (document reference 8.3) outlines the commitment of the Project to adopting Biodiversity Net Gain. A Biodiversity Net Gain assessment using the latest metric will be provided with the ES.  Further mitigation measures, including those for biodiversity offsetting, will be developed within the LEDPP (document reference 8.7) and the subsequent OLEMS to be submitted with ES.
	Para 5.4.35: 'Applicants should produce and implement a Biodiversity Management Strategy as part of their development proposals. This could include provision for biodiversity awareness training to employees and contractors so as to avoid unnecessary adverse impacts on biodiversity during the construction and operation stages.'	The Biodiversity and Marine Net Gain Principles and Approach (document reference 8.3) outlines the commitment of the Project to adopting Biodiversity Net Gain. A Biodiversity Net Gain assessment using the latest metric will be provided with the ES.  Further mitigation measures, including those for biodiversity offsetting, will be developed within the LEDPP (document reference 8.7) and the subsequent OLEMS to be submitted with ES.
	Para 5.4.42 As a general principle, and subject to the specific policies below, development should, in line with the mitigation hierarchy, aim to avoid significant harm to biodiversity and geological conservation	Embedded mitigation measures are provided in Table 21.13



Legislation/policy	Key provisions	Section where key provisions addressed
	interests, including through consideration of reasonable alternatives Where significant harm cannot be avoided, impacts should be mitigated and as a last resort, appropriate compensation measures should be sought.	The Biodiversity and Marine Net Gain Principles and Approach (document reference 8.3) outlines the commitment of the Project to adopting Biodiversity Net Gain. A Biodiversity Net Gain assessment using the latest metric will be provided with the ES.
		Further mitigation measures, including those for biodiversity offsetting, will be developed within the LEDPP (document reference 8.7) and the subsequent OLEMS to be submitted with ES.
	Para 5.4.44 The Secretary of State should consider what appropriate requirements should be attached to any consent and/or in any	Mitigation measures, including those for biodiversity offsetting, will be developed within the LEDPP
	planning obligations entered into, in order to ensure that any mitigation or biodiversity net gain measures, if offered, are delivered	(document reference 8.7) and the subsequent OLEMS to be submitted with ES.
	and maintained. Any habitat creation or enhancement delivered	OLLIVIS to be submitted with LS.
	including linkages with existing habitats for compensation or biodiversity net gain should generally be maintained for a minimum	
	period of 30 years, or for the lifetime of the project, if longer.	
	Para 5.4.49 The Secretary of State must consider whether the project may have a likely significant effect on a protected site which is part of the National Site Network (an HRA Site), a Marine Protected Area (MPA), or on any site to which the same protection is applied as a matter of policy, either alone or in combination with other plans or projects	An assessment of effects is presented in section 21.7 Impact Assessment and will be addressed fully in the ES.
	Para 5.4.50 The Secretary of State should use requirements and/or	Embedded mitigation measures are provided in
	planning obligations to mitigate the harmful aspects of the development and, where possible, to ensure the conservation and	Table 21.13
	enhancement of the site's biodiversity or geological interest.	The Biodiversity and Marine Net Gain Principles and Approach (document reference 8.3) outlines the commitment of the Project to adopting Biodiversity



Legislation/policy	Key provisions	Section where key provisions addressed
		Net Gain. A Biodiversity Net Gain assessment using the latest metric will be provided with the ES.
		Further mitigation measures, including those for biodiversity offsetting, will be developed within the LEDPP (document reference 8.7) and the subsequent OLEMS to be submitted with ES.
NPS for Renewable	Para 2.4.2: 'Proposals for renewable energy infrastructure should demonstrate good design in respect of landscape and visual amenity,	Project design is an iterative process that has sought to avoid sensitive features wherever possible.
Energy Infrastructure 2011 (EN-3)	and in the design of the project to mitigate impacts such as noise and effects on ecology.'	Embedded mitigation measures are provided in Table 21.13.
		Further mitigation measures will be developed and presented in the OLEMS to be submitted with ES.
	Section 2.6.71: 'Ecological monitoring is likely to be appropriate during the construction and operational phases to identify the actual impact so that, where appropriate, adverse effects can then be mitigated and to enable further useful information to be published relevant to future projects.'	Further mitigation measures will be developed within the LEDPP (document reference 8.7) and the subsequent OLEMS to be submitted with ES.
NPS for Renewable Energy Infrastructure 2023 draft (EN-3)	Para 3.5.2: 'Proposals for renewable energy infrastructure should demonstrate good design, particularly in respect of landscape and visual amenity, opportunities for co-existence/co-location with other marine uses, and in the design of the project to mitigate impacts such as noise and effects on ecology and heritage.'	Project design is an iterative process that has sought to avoid sensitive features wherever possible.  Embedded mitigation measures are provided in Table 21.13.



Legislation/policy	Key provisions	Section where key provisions addressed
		Further mitigation measures will be developed within the LEDPP (document reference 8.7) and the subsequent OLEMS to be submitted with ES.
	Para 3.8.236: 'Applicants are advised to develop an ecological monitoring programme to monitor impacts during the preconstruction, construction and operational phases to identify the actual impacts caused by the project and compare them to what was predicted in the EIA/HRA.'	Further mitigation measures will be developed within the LEDPP (document reference 8.7) and the subsequent OLEMS to be submitted with ES.  Alongside the PEIR a draft Report to Inform Appropriate Assessment has been produced (Document reference 7.1).
NPS for Electricity Networks Infrastructure 2023 draft (EN-5)	Paragraph 2.5.1: 'When planning and evaluating the proposed development's contribution to environmental and biodiversity net gain, it will be important – for both the applicant and the Secretary of State – to supplement the generic guidance set out in EN-1 (Section 4.5) with recognition that the linear nature of electricity networks infrastructure can allow for excellent opportunities to: reconnect important habitats via green corridors, biodiversity stepping zones, and reestablishment of appropriate hedgerows; and/or connect people to the environment, for instance via footpaths and cycleways constructed in tandem with environmental enhancements.	The Biodiversity and Marine Net Gain Principles and Approach (document reference 8.3) outlines the commitment of the Project to adopting Biodiversity Net Gain. A Biodiversity Net Gain assessment using the latest metric will be provided with the ES.
The UK Biodiversity Action Plan (UK BAP): 1992-2012	The UK BAP set out definitions of Priority Habitats and Species which continue to be used to define habitats and species of principal importance listed by the SoS in response to obligations under S41 of the NERC Act.	The definitions provided within the UK BAP have been referred to in order to identify Important Ecological Features (IEFs) within the Chapter and associated appendices.
Local Planning Policy East Lindsey Core Strategy	1.'Development proposals should seek to protect and enhance the biodiversity and geodiversity value of land and buildings and	Section 21.8: Important ecological receptors including statutory and non-statutory designations



		OFFSHORE WIND
Legislation/policy	Key provisions	Section where key provisions addressed
Strategic Policy	minimise fragmentation and maximise opportunities for connection between natural habitats.	will be avoided and safeguarded through careful design.
24 Biodiversity and Geodiversity	2.The Council will protect sites designated internationally, nationally or locally for their biodiversity and geodiversity importance, species populations and habitats identified in the Lincolnshire Biodiversity Action Plan and the Natural Environment and Rural Communities (NERC) Act 2006. Development, which could adversely affect such a site, will only be permitted in exceptional circumstances:	Ancient woodlands have been scoped out of the assessment as there are no designations of this type within the PEIR or 2km study area.  Embedded mitigation measures are provided in
	In the case of internationally designated sites, where there is no alternative solution and there are overriding reasons of public	Table 21.13.
	interest for the development; In the case of nationally designated sites, there is no alternative solution and the reasons for the development clearly outweigh the biodiversity value of the site; or	Further mitigation measures will be developed within the LEDPP (document reference 8.7) and the subsequent OLEMS to be submitted with ES.
	In the case of locally designated sites, and sites that meet the criteria for selection as a Local Site, the reasons for the development clearly outweigh the need to protect the site in the long term.  3. In exceptional circumstances, where adverse impacts are demonstrated to be unavoidable and development is permitted	The Biodiversity and Marine Net Gain Principles and Approach (document reference 8.3) outlines the commitment of the Project to adopting Biodiversity Net Gain. A Biodiversity Net Gain assessment using the latest metric will be provided with the ES.
	which would damage the nature conservation or geological value of a site, the Council will ensure that such damage is kept to a minimum and will ensure appropriate mitigation, compensation or enhancement of the site through the use of planning conditions or	
	planning obligations. Compensation measures towards loss of habitat will be used only as a last resort where there is no alternative. Where any mitigation and compensation measures are required, they should be in place before development activities start that may disturb protected or important habitats and species. Proposals to provide or enhance a site will be supported.	



Logiclation/policy	Voy provisions	Saction where key provisions addressed
Legislation/policy	Key provisions	Section where key provisions addressed
	4.Where new habitat is created it should, where possible, be linked	
	to other similar habitats to provide a network of such sites for	
	wildlife.	
	5.Planning permission will only be granted for development which	
	directly or indirectly leads to loss or harm to ancient woodland or	
	aged or veteran trees, in exceptional circumstances, where the	
	developer can demonstrate that the wider benefits of that loss clearly	
	outweigh the protection of the trees.'	
East Lindsey Core	'The Council will safeguard and deliver a network of accessible green	Section 21.4 provides details of all statutory and non-
Strategy	infrastructure by:	statutory designations within the study areas.
ot. acoby	Protecting and safeguarding all greenspace identified through the	statutory designations within the stady dreast
SP 25 – Green		Embedded mitigation measures are provided in
Infrastructure	Maximising opportunities for new and enhanced green infrastructure	Table 21.13.
iiii astructure	and publicly accessible open spaces in and around all communities;	Table 21.13.
		The Diadiversity and Marine Net Cain Dringinles and
	Seek opportunities to connect existing green infrastructure to	The Biodiversity and Marine Net Gain Principles and
	improve the network of spaces and accessibility for both the local	Approach (document reference 8.3) outlines the
	population and wildlife.	commitment of the Project to adopting Biodiversity
	In the case of sites not identified on the Inset Maps, development will	Net Gain. A Biodiversity Net Gain assessment using
	only be permitted on open spaces provided unacceptable harm will	the latest metric will be provided with the ES.
	not be caused to their appearance, character or role in providing: a	
	locally important habitat.'	Further mitigation measures will be developed
		within the LEDPP (document reference 8.7) and the
		subsequent OLEMS to be submitted with ES.
South East	'A high quality, comprehensive ecological network of interconnected	Embedded mitigation measures are provided in
Lincolnshire	designated sites, sites of nature conservation importance and	Table 21.13
Local Plan 2011-	wildlife-friendly greenspace will be achieved by protecting,	
2036	enhancing and managing natural assets:	Further mitigation measures will be developed
		within the LEDPP (document reference 8.7) and the
	1. Internationally-designated sites, on land or at sea:	subsequent OLEMS to be submitted with ES.
		22224200 22200 22 222000000 00000000000
		<u> </u>



		OFFSHORE WIND
Legislation/policy	Key provisions	Section where key provisions addressed
Policy 28 – The Natural Environment	1(a) development proposals that would cause harm to these assets will not be permitted, except in exceptional circumstances, where imperative reasons of overriding public interest exist, and the loss will be compensated by the creation of sites of equal or greater nature conservation value;'	Alongside the PEIR a draft RIAA has been produced (Document reference 7.1).
	'Where the project-level HRA concludes that avoidance and/or mitigation measures are required, it is expected that;'	
	<ul> <li>1(iv)' Suitable Alternative Natural Greenspaces should be designed in accordance with capacity and facility requirements in relation to the developments they mitigate for, best practice elsewhere and relevant evidence.</li> <li>2. Nationally or locally-designated sites and protected or Priority Habitats and species:</li> </ul>	
	a. development proposals that would directly or indirectly adversely affect these assets will not be permitted unless: (a) i. there are no alternative sites that would cause less or no harm; and (a)ii. the benefits of the development at the proposed site, clearly outweigh the adverse impacts on the features of the site and the wider network of natural habitats; and (a)iii. suitable prevention, mitigation and compensation measures are provided.	
	3. Addressing gaps in the ecological network:	
	a. by ensuring that all development proposals shall provide an overall net gain in biodiversity, by:	



Legislation/policy	Key provisions	Section where key provisions addressed
	(a)i. protecting the biodiversity value of land, buildings and trees	
	(including veteran trees) minimising the fragmentation of habitats;	
	(a)ii. maximising the opportunities for restoration, enhancement and	
	connection of natural habitats and species of principal importance;	
	(a)iii. incorporating beneficial biodiversity conservation features on	
	buildings, where appropriate; and maximising opportunities to	
	enhance green infrastructure and ecological corridors, including	
	water space; and	
	(a)iv. conserving or enhancing biodiversity or geodiversity	
	conservation features that will provide new habitat and help wildlife	
	to adapt to climate change, and if the development is within a Nature	
	Improvement Area (NIA), contributing to the aims and objectives of	
	the NIA.'	
Lincolnshire	The Lincolnshire BAP sets out definitions of Priority Habitats and	The definitions provided within the Lincolnshire BAP
Biodiversity	Species present within the county, refining, where appropriate,	have been referred to in order to identify IEFs within
Action Plan:	descriptions provided in the UK BAP.	the Chapter and associated appendices.
Action for		
Wildlife in		
Lincolnshire 2 <sup>nd</sup>		
Edition (2006)		



#### 21.3 Consultation

- 21.3.1 Consultation is a key part of the Development Consent Order (DCO) application process. Consultation regarding Onshore Ecology has been conducted through the Evidence Plan Process (EPP) Expert Technical Group (ETG) meetings and the EIA scoping process (ODOW, 2022). An overview of the Project consultation process is presented within Volume 1, Chapter 6: Consultation Process.
- 21.3.2 A summary of the key issues raised, in relation to Onshore Ecology, within the Scoping Opinion (Case Reference: EN010130, The Planning Inspectorate (The Planning Inspectorate), 2022), consultee meetings, ETGs and Discretionary Advice Service (DAS) responses are outlined in Table 21.2 below, together with where these issues are addressed within this Chapter or will be addressed at a later date in the ES. Referencing of responses follows that presented in the Scoping Opinion. Consultee responses with specific relevance to survey scope and methodologies are provided in Annex 1: Survey Scope to be included in ES and relevant Consultee Comments.
- 21.3.3 The Scoping Opinion was based on an Area of Search (AoS) which has subsequently been reduced and refined to the PEIR boundary which has been fixed for the purposes of this assessment. Therefore, some Important Ecological Features (IEFs) highlighted at the scoping stage are no longer within the area likely to be impacted by the Project. Some issues raised by stakeholders during the consultation process are therefore now considered redundant, as certain receptors are no longer at risk of being impacted. Any such instances are explained within Table 21.2 below.



Table 21.2: Summary of consultation responses relating to Onshore Ecology

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
ETG 9 <sup>th</sup> June 2022	Discussion surrounding the need for Biodiversity Net Gain commitment and the incorporation of functionally linked habitats within the assessment.	A Biodiversity Net Gain Principles and Approach document has been produced as part of the PEIR (Document reference 8.3) The impact section (21.7) of this Chapter states that functionally linked habitats are being considered.
ETG 19 <sup>th</sup> July 2022	Updates provided by the Project on survey progress.	Details of surveys completed to date are provided in Appendices 21.4 to 21.4.
Scoping Opinion (the Planning Inspectorate, 9 <sup>th</sup> September 2022) Comment ID: 3.15.1	Impacts to ancient woodland: 'The Scoping Report identifies that there is no ancient woodland present within 2km of Lincolnshire Node or Weston Marsh. The Inspectorate is content to scope out impacts to ancient woodland on the basis that the ES demonstrates ancient woodland would not be directly or indirectly affected by the Proposed Development.'	Section 21.4 confirms no ancient woodland exists within 2km of the PEIR boundary.
Scoping Opinion (the Planning Inspectorate, 9 <sup>th</sup> September 2022) Comment ID: 3.15.2	Study area and data collection: 'The Environmental Statement (ES) should clearly define and justify the study area for each ecological feature, with reference to the Zone of Influence (ZoI) for the Proposed Development. The Applicant's attention is directed to the comments of Natural England (Appendix 2 of this Opinion) that identifies some concerns with regards to the spatial scope of the data sources, as specified in Table	Natural England's comments have been taken into account and study areas revised accordingly.  Study areas and data sources referenced for each ecological feature are provided in section 21.4. Desk study data are summarised in Volume 2, Appendix 21.1: Desk Study.



Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
	8.3.1. The Applicant should seek to agree the	
	sources and extent of data sources with	
	relevant consultation bodies, including	
	Natural England, as the onshore element of	
	the scheme develops further.'	
Scoping Opinion (the Planning Inspectorate,	Mitigation measures for Invasive Non-Native	Section 21.4 details known records of INNS.
9 <sup>th</sup> September 2022)	Species (INNS): 'INNS are identified in the	Additional records from field survey work will
Comment ID: 3.15.3	study areas. The ES should detail and secure	be included in the ES. Embedded mitigation
	mitigation/ biosecurity measures during all	(Table 21.13) includes measures to avoid the
	phases of the Proposed Development to	spread of INNS.
	avoid/ reduce the spread and introduction of	An INNS Management Plan will be provided
	INNS. Effort should be made to agree the	with the ES.
	approach with the relevant consultation	
	bodies.'	
Scoping Opinion (the Planning Inspectorate,	Drilling fluid breakout plan: 'Scoping Report	
9 <sup>th</sup> September 2022)	paragraph 3.6.6 states that high-speed	Conditions includes an assessment of the risk
Comment ID: 3.15.4	directional drilling (HDD) may be utilised for	of trenchless breakout.
	construction. The ES should confirm where	•
	HDD will be employed and should this have	being included and engineered to avoid
	potential to impact sensitive ecological	designated sites and sensitive ecological
	features, appropriate mitigation, such as	features.
	measures to be included in a drilling fluid	Those potential impacts on ecological
	breakout plan, should be described in the ES	features that cannot be avoided will be
	and appropriately secured.'	mitigated for, with details to be provided in
Consider Origina (the District	Lancata la calcula de Cilia de	the ES.
Scoping Opinion (the Planning Inspectorate,	Impacts to waterbodies, fish and freshwater	As all sizeable water bodies and those with
9 <sup>th</sup> September 2022)	species: 'Surveys are proposed for otter and	significant flow will be avoided or trenchless
Comment ID: 3.15.5	water vole; however, impacts to fish and other	techniques used at their crossing, the need to
	freshwater species and on water quality have	survey for fish and other freshwater species is
	not been considered in the Onshore Ecology	at present, considered unnecessary.



Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
	aspect Chapter of the Scoping Report. The ES	However, on receipt of more detailed design
	should assess impacts to fish and other	information the risks will be reassessed and
	freshwater species and on water quality,	further assessment will be included, where
	where significant effects are likely to occur,	necessary, in the ES.
	supported by desk study information and	
	surveys as necessary. Effort should be made	Volume 1, Chapter 24: Hydrology,
	to agree the methodology with the relevant	Hydrogeology and Flood Risk of the PEIR
	consultation bodies.'	presents an assessment of impacts on water
		quality.
Scoping Opinion (the Planning Inspectorate,	Survey methodologies: 'The Scoping Report	Volume 2, Appendices 21.1 – 21.4 provide
9 <sup>th</sup> September 2022)	contains limited detail concerning the	information regarding desk study and field
Comment ID: 3.15.6	proposed species-specific surveys for onshore	survey work undertaken to date.
	ecology and at this stage, the location of the	
	onshore ECC and OnSS is not yet known. Effort	Annex 1: Survey Scope to be included in ES
	should be made to agree the approach to	and relevant Consultee Comments outlines
	surveys with relevant consultation bodies,	the survey scopes for protected species.
	including Natural England, as part of the EPP.	
	The ES should detail the specific	Details of the methodologies adopted in
	methodologies, this information could be	further 2023 surveys have been discussed will
	included within appendices to the ES aspect	stakeholders through the EPP Process and will
	Chapter.'	be provided in the ES (Volume 1, Chapter 6:
		Consultation Process).
Scoping Opinion (the Planning Inspectorate,	Confidential Annexes: 'Public bodies have a	Badger data has been presented in Volume 2,
9 <sup>th</sup> September 2022)	responsibility to avoid releasing	Appendix 21.4: Badger surveys (Confidential).
Comment ID: 3.15.7	environmental information that could bring	Information relating to the locations of
	about harm to sensitive or vulnerable	badger setts, other protected species resting
	ecological features. Specific survey and	places or rare and vulnerable plants that
	assessment data relating to the presence and	could be subject to disturbance or
	locations of species such as badgers, rare	persecution if they became publicly known,



Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
	birds and plants that could be subject to	will be included within a confidential annex to
	disturbance, damage, persecution, or	the ES.
	commercial exploitation resulting from	
	publication of the information, should be	
	provided in the ES as a confidential annex. All	
	other assessment information should be	
	included in an ES Chapter, as normal, with a	
	placeholder explaining that a confidential	
	annex has been submitted to the Inspectorate	
	and may be made available subject to	
	request.'	
Scoping Report Response	Biodiversity Net Gain (BNG): 'Lincolnshire	A Biodiversity Net Gain Principles and
	Wildlife Trust (LWT) would have liked to see	Approach document has been produced as
	stronger commitments to biodiversity net	part of the PEIR (Document reference 8.3),
	gain (BNG) detailed in the Scoping Report	which will set out measure to achieve up to
	(terrestrial and marine), given the importance	10% gain.
	of biodiversity recovery and the mandatory	
	requirements that will be in place by the end	
	of this proposed project. The main	
	requirements of concern being:	
	Minimum 10% gain required, calculated using	
	the Biodiversity Metric, and approval of a	
	biodiversity plan	
	Habitat secured for at least 30 years via	
	planning obligations and/or conservation	
	covenants.'	
ETG 12 <sup>th</sup> October 2022	The Project confirmed that ancient	Volume 2, Appendix 21.1: Desk Study details
	woodlands of <2ha will be included in the ES	the scope of the desk study.
	if records are made available by Greater	As all sizeable water bodies and those with
		significant flow will be avoided or trenchless



Date and consultation phase/ type	Consultation and key issues raised  Lincolnshire Nature Partnership (GLNP) in time for incorporation into the ES.  The Project confirmed that the desk study for roosting bats will be increased to 5 km.  The Project confirmed that surveys of breeding populations of natterjack toads at Saltfleetby-Theddlethorpe Dunes, fish and freshwater species, and mitigation measures for INNS will all be scoped into the assessment, along with functionally linked land between Within Wood and Hornby/Mother Woods.  Lincolnshire Wildlife Trust (LWT) outlined the need for Biodiversity Net Gain and a 30-year commitment to secure habitats.	techniques used at their crossing, the need to survey for fish and other freshwater species is at present, considered unnecessary. However, on receipt of more detailed design information the risks will be reassessed, and further consideration will be given, where necessary in the ES.  The LEDPP (Document reference 8.7) sets out principles relating to mitigation and avoidance measures for INNS.  Biodiversity Net Gain Principles and Approach document has been produced as part of the PEIR (Document reference 8.3)
Natural England DAS Response, letter dated 29 <sup>th</sup> July 2022	Biodiversity Net Gain: 'While Natural England recognises that we are currently in the transition period before the requirements for Biodiversity Net Gain (BNG) delivery are mandatory for Nationally Significant Infrastructure Projects (NSIPs), Natural England strongly advises that the project engages with this at an early stage to maximise positive environmental impact and in order to ensure your project is future proofed.'	A Biodiversity Net Gain Principles and Approach document has been produced to support the PEIR (Document reference 8.3).
Natural England DAS Response, letter dated 29 <sup>th</sup> July 2022	'Natural England advises that 'Moderate or large-scale impacts' need to be defined.	The LEDPP (document reference 8.7) sets out principles relating to mitigation and



Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
	Presence/likely absence surveys are not	compensation for reptile habitat. The LEDPP
	proposed for 'low potential habitat'. And	(document reference 8.7) and the subsequent
	whilst Reasonable Avoidance Measures	OLEMS to be submitted with ES will ensure
	(RAM) will be employed, Natural England	appropriate mitigation and compensation
	would anticipate a contingency plan included	practices are introduced to ensure there are
	within the Outline Landscape and	no significant adverse impacts on reptile
	Environment Management plan to account	populations (if present).
	for situations where avoidance is not	
	possible.'	
ETG 26 <sup>th</sup> January 2023	The Project provided an update on the survey	Section 21.7 mirrors the approach outlined
	results to date and provided the scope for the	during the 26 <sup>th</sup> January ETG.
	impact assessment which will follow	
	Chartered Institute of Ecology and	
	Environmental Management (CIEEM)	
-	guidelines.	
Natural England Meeting 30 <sup>th</sup> January 2023	Natural England asked for a justification	The Project responded in a letter dated 17 <sup>th</sup>
	around the decision for 2km study area for	February 2023 (Doc No. ODO-NAE-LET-
	mobile species and 5km for roosting bats.	0000008) to provide justification and
	Natural England ask that bat activity surveys	confirmed that bat activity surveys would be
	cover the migration period for barbestelle	carried out between May and October.
Monting with David Conint for the Ductostics	and nathusius' pipistrelle (May and Sept/Oct).	Future discussions and consultation with the
Meeting with Royal Society for the Protection	Greater Frampton Vision: Landscape	Future discussions and consultation with the
of Birds (RSPB) (8 <sup>th</sup> March 2023): Emailed comments from RSPB dated 8 <sup>th</sup> March 2023	Recovery Project: RSPB stated 'we currently	RSPB will be undertaken to provide
comments from RSPB dated 8" March 2023	have a landscape recovery project running in the area that will be looking at how the land	assurances that the location and design of the cable route corridor will be compatible with
	to the south-east of Boston can be developed	Greater Frampton Vision. Opportunities to
	to the south-east of Boston can be developed to expand the habitats that have developed so	support and contribute to the Greater
	successfully at Frampton Marsh and Freiston	Frampton Vision will be explored with RSPB
	Shore to seek to better link the reserve areas	over the coming months. Any commitments
	and provide a greater area for wildlifewe	to the Vision will be clearly set out in the ES.



Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
	have serious concerns about projects that would limit the ability to deliver the vision for the area. It was encouraging to hear about how the project might help deliver biodiversity benefits as part of net gain actions. We will be happy to explore these and potentially how they could help us deliver the landscape work we would like to in the area, although this will be subject to securing sufficient certainties that a cable in this location was appropriate.'	
ETG 16 <sup>th</sup> March 2023	Natural England sought clarity on GCN survey methodology and licensing approaches.	DAS Letter sent to Natural England regarding GCN surveys methods and licensing approaches in May 2023.  The survey approach proposed within the letter was as described within this Chapter, and the proposed licencing approach was to use Licencing Policy 1 to secure long-term habitat gains for GCN, whilst safeguarding the construction programme.



#### 21.4 Baseline Environment

- 21.4.1 This section seeks to establish the current baseline conditions and identify the presence of and potential for IEFs within the study and survey areas, as far as is possible at this time.
- 21.4.2 The assessment scope has been informed by relevant national and local planning policy and guidance, established best practice and experience, as well as via the Project's consultation process.
- 21.4.3 Ecological surveys necessary to inform the Ecological Impact Assessment (EcIA) are outlined in Annex 1: Survey Scope to be included in ES and relevant Consultee Comments, which also provides details of any relevant consultee responses. Many of the required surveys are either ongoing, or yet to commence and therefore, due to time required for follow-up analyses, interpretation and reporting, only the desk study and those surveys completed by the end of February 2023 are presented within this PEIR. The baseline information presented herein comprises:
  - Volume 2, Appendix 21.1: Desk study;
  - Volume 2, Appendix 21.2: Preliminary habitat study;
  - Volume 2, Appendix 21.3: Preliminary roost surveys for bats; and
  - Volume 2, Appendix 21.4: Badger surveys (CONFIDENTIAL)
- 21.4.4 Full details are presented in the associated appendices, with detail necessary for the assessment summarised within this Chapter.

#### Study Area

- 21.4.5 The study / survey area selected for each of the baseline studies completed to date is listed below:
  - Desk study areas include the following:
    - Internationally designated sites (Special Areas of Conservation (SAC) and nationally designated sites (Sites of Special Scientific Interest (SSSI) and Local Nature Reserves (LNR)) within 15km;
    - Locally designated sites Local Wildlife Sites (LWS) within 2km from the PEIR Boundary; and
    - Section 41 Priority Habitats and Species and protected or notable species within 2km from the PEIR boundary, extended to 5km from the PEIR boundary for bat roosts.
  - Habitat surveys within the PEIR boundary plus the surrounding 100m;
  - Preliminary bat roost assessment of all accessible trees and buildings / structures within the PEIR boundary and a 100m buffer; and
  - Badger surveys or all accessible suitable habitat within the PEIR boundary and a 100m buffer.
- 21.4.6 Figure 21.1 illustrates the extent of the Lincolnshire Node desk study and study areas for each receptor, and Figure 21.2 provides the desk study and study areas for Weston Marsh.



## **Desk Study Sources**

- 21.4.7 A desk-based study has been undertaken to identify sources of pre-existing ecological data of relevance to the Project. The results of this study are provided in Volume 2, Appendix 21.1: Desk Study. The sources consulted included the following:
  - Joint Nature Conservation Committee (JNCC);
  - Multi-agency Geographic Information Centre (MAGIC) website and Natural England's datasets at data.gov.uk;
  - Greater Lincolnshire Nature Partnership (GLNP); and
  - Lincolnshire Wildlife Trust (LWT): Nature conservation from the Humber to the Wash.

## Study / Survey Methods

21.4.8 Table 21.3 below sets out a summary of the survey methods used during baseline data collection to date, along with a reference to the relevant appendix where the full survey method is presented in detail.

Table 21.3: Survey or Study methods

Survey / Study Type	Methodology
Initial habitat Study	All habitat types mapped from aerial images in Geographical Information System (GIS) using the UK Habitat Classification Documents V1.1 using the highest level of the UKHab Primary Habitat Hierarchy possible. Undertaken with reference to UKHab habitat definitions (Butcher, 2020), and small sample ground-truthed. Full details provided in Volume 2, Appendix 21.2: Initial Habitat Survey.
Preliminary roost surveys (bats)	Inspection of buildings / structures and trees for potential roost features and evidence of use by bats. Undertaken with reference to Collins (2016). Full details provided in Volume 2, Appendix 21.3: Preliminary Roost Surveys for Bats.
Badger surveys	Walkover of suitable habitat to search for and classify setts, and to record other evidence of badger activity. Undertaken with reference to Cheeseman (1996). Full details provided in Volume 2, Confidential Appendix 21.4: Badger Survey.

## Uncertainty and Technical Difficulties Encountered

21.4.9 Most ecological surveys required for robust impact assessment are currently ongoing and therefore it is only possible to assess impacts on a limited range of IEFs at this stage. A full assessment for all IEFs will be provided in the ES.



- 21.4.10 The existing Ancient Woodland Inventory, from the 1980s, only includes areas of ancient woodland at least 0.5ha in area. The Greater Lincolnshire Nature Partnership is contributing to the Ancient Woodland Inventory Update Project which will provide more up to date information and include pockets of ancient woodland smaller than 0.5ha. This will account for strips of ancient woodland along field margins. The Ancient Woodland Inventory Update Project is anticipated to be completed in 2024. Until that time, the existing Ancient Woodland Inventory will be relied upon, although habitat surveys will identify small areas of ancient and semi-natural ancient woodland, if present, during future field surveys.
- 21.4.11 The Initial Habitat Study was a GIS exercise using aerial imagery and as such only very generic habitat categories could be used, and in some cases, land could not be categorised (See Appendix 21.2). At the time of writing, field surveys are ongoing to more accurately record the habitats present and more detailed information will be presented within the ES.
- 21.4.12 At the time of writing, the baseline for bats and badgers has not been characterised to a level of detail sufficient to determine the importance of any populations which may be present within the study area. This is due in part to access constraints limiting the coverage of data. Such valuations will be informed by data generated during further surveys, such as presence / absence and roost characterisation surveys, and will be presented within the ES.
- 21.4.13 As parts of the scheme design remain unresolved at this stage, the Maximum Design Scenarios (MDS) for each route have informed the assessment and these are detailed in section 21.5.

## **Ongoing Data Collection**

- 21.4.14 Baseline data will continue to be collated and assessed beyond the publication date of this PEIR for inclusion within the EcIA. Further data collection will include ground-based habitat surveys for the study area.
- 21.4.15 Ongoing habitat surveys will inform the need and extent of species-specific surveys within suitable habitats, including those for:
  - Important plants, reptiles, invertebrates, badger (where access not possible prior to end of February 2023), bats (where access not possible prior to 2023, and for activity and presence / absence and roost characterisation) and other mammals within the 100m Survey Area;
  - Water vole within the PEIR Boundary and both 200m upstream and downstream beyond;
  - Fish (if update assessment indicates necessary) and otter within the PEIR Boundary and both 250m upstream and downstream from the PEIR Boundary; and
  - GCN within the PEIR Boundary and up to 250m beyond it.



### **Baseline Environment**

- 21.4.16 The three route options, Lincolnshire Node and Weston Marsh north of the A52 and south of the A52, are situated on the Lincolnshire coast on low-lying, predominantly agricultural land. Each route is described below. Due to the length of each route, they have been divided into segments to assist with locating features of interest, as illustrated in Figure 3.1, Volume 1, Chapter 3: Project Description. Descriptions for Weston Marsh via north of the A52, and Weston Marsh via south of the A52 have been presented in the same section to avoid excessive repetition of descriptions for segments which are common to both options (as further explained below).
- 21.4.17 In addition to the Project OnSS a National Grid OnSS (NG OnSS) and associated enabling works will be required at, or near to, the Project OnSS, further details can be found in Volume 1, Chapter 3: Project Description.

#### Lincolnshire Node

21.4.18 The Lincolnshire Node connection option has a proposed 11km onshore ECC from the Project's landfall at Wolla Bank. The onshore ECC runs west and then in a north-westerly direction to the OnSS search area south of Asserby. It has been divided into two indicative route segments: 'LN1 – Landfall to A52 – Mumby' and 'LN2 – A52 – Mumby to Lincolnshire Node'. The route segments are listed in Table 21.4 along with a short description defining the extent of each respective segment and are shown on the relevant figures in this Chapter as well as Figure 3.3 in Volume 1, Chapter 3: Project Description.

Table 21.4: Route Segments for Lincolnshire Node

Route Segment – Full Name	Description	Ecological Context
LN1 – Landfall to A52 – Mumby	MHWS to Station Road (A52) northwest of Mumby. Crosses Main Drain.	Beach, sand dunes and dune grassland are present at the landfall. Designations include Chapel Point to Wolla Bank SSSI, Sea Bank Clay Pits SSSI, Anderby Creek Sand Dunes LWS, Chapel Six Marshes LWS, Marsh Yard to Anderby Creek Dunes LWS and Wolla Bank South LWS. Anderby Marsh LWT Reserve is a traditional coastal grazing marsh. Inland from Anderby Marsh, are predominantly low-lying agricultural fields with a network of drainage ditches. Hedgerows and woodlands are relatively scarce.
LN2 - A52 — Mumby to Lincolnshire Node	Station Road (A52) northwest of Mumby to land near Boy Grift Drain, south of Asserby.	Predominantly low-lying agricultural fields with a network of drainage ditches. Hedgerows and woodlands are relatively scarce.



Route Segment – Full Name	Description	Ecological Context	
		A tree and scrub lined former	
		railway line, now used as a public	
		footpath is present at the	
		substation zone.	

### Weston Marsh North of the A52 and Weston Marsh South of the A52

- 21.4.19 There are two ECC options for the Weston Marsh Connection option, both of which are approximately 80km long from the Project's landfall at Wolla Bank. The onshore ECCs progress southwest to meet the two potential OnSS search areas for the Weston Marsh connection option: Weston Marsh North and Weston Marsh South.
- 21.4.20 The two options follow the same route from landfall to Low Road, but then bifurcate and run approximately parallel to each other; Weston Marsh south of the A52 and Weston Marsh north of the A52. The two options then converge at Church End Lane and follow the same route to terminate at the substation study areas.
- 21.4.21 Weston Marsh North substation study area lies to the north of the River Welland, and covers an area of approximately 1,500ha. The Weston Marsh South substation study area crosses the River Welland before running south towards existing National Grid infrastructure near Wykeham Lane, Wykeham. It covers an area of just over 300ha.
- 21.4.22 The route segments are listed in Table 21.5 along with a short description defining the extent of each respective segment and are shown on the relevant figures in this Chapter as well as in Figure 3.5 of Volume 1, Chapter 3: Project Description.



Table 21.5: Route Segments for Weston Marsh South of the A52 and Weston Marsh North of the A52

Route Segment – Full Name	South of A52	N <b>orth</b> of A52	Description	Ecological Context
WM1 - Landfall to A52 – Hogsthorpe	Y	Y	MHWS to Station Road (A52) northwest of Hogsthorpe, passing across or near to Four Hundred Acre Drain, Wigg Drain. The onshore ECC splits into two options between Lowgate Road and Station Road.	Beach, sand dunes and dune grassland are present at the landfall. Designations include Chapel Point to Wolla Bank SSSI, Sea Bank Clay Pits SSSI, Anderby Creek Sand Dunes LWS, Chapel Six Marshes LWS, Marsh Yard to Anderby Creek Dunes LWS and Wolla Bank South LWS. Anderby Marsh LWT Reserve is a traditional coastal grazing marsh. Inland from Anderby Marsh, the corridor is predominantly low-lying agricultural fields with a network of drainage ditches. Hedgerows and woodlands are relatively scarce.
WM2 - A52 Hogsthorpe to Marsh Lane	Y	Y	Station Road (A52) northwest of Hogsthorpe to Marsh Lane, west of Addlethorpe. Passing Willoughy High Drain, Wyche Drain and Orby Drain.	Predominantly low-lying agricultural fields with a network of drainage ditches. Hedgerows and woodlands are relatively scarce.
WM3 - Marsh Lane to A158 Skegness Road	Υ	Υ	Marsh Lane, west of Addlethorpe to A158 Skegness Road. Passing close to South Drain at Marsh Lane.	Predominantly low-lying agricultural fields with a network of drainage ditches. Hedgerows and woodlands are relatively scarce.
WM4 - A158 Skegness Road to Low Road	Y	Y	A158 Skegness Road to Steeping River (Wainfleet Haven), splitting at Rookery Farm to just beyond Steeping River. Passing across Wedland's Drain, Catchwater Drain and twice across Croft Drain.	Predominantly low-lying agricultural fields with a network of drainage ditches. Hedgerows and woodlands are relatively scarce.
WM5 - Low Road to Steeping River	Υ	N	From Low Road passing south across A52 and the Skegness to Wainfleet All Saints railway line to Steeping River	



Route Segment – Full Name	South of A52	N <b>orth</b> of A52	Description	Ecological Context
WM6 - Steeping	Υ	N	Steeping River to Ivy House Farm/ Marsh	
River to Ivy House			Yard.	
Farm/Marsh Yard				
WM7 - Ivy House	Υ	N	Ivy House Farm/ Marsh Yard to Staples	Predominantly low-lying agricultural fields with a network
Farm/Marsh Yard			Farm running almost parallel with the	large number of drainage ditches. Hedgerows are relatively
to Staples Farm			coastline.	scarce and there are no woodlands.
			Wrangle Drain is within the onshore ECC.	
WM8 - Staples	Υ	N	Staples Farm at Friskney Flats to Crowhall	
Farm to Crowhall			Lane. The width of the onshore ECC	
Lane			extends at Roman Bank Cottage, Sea Lane.	
WM9 - Crowhall	Υ	N	A shorter segment between Crowhall Lane	
Lane to Church			and Church End Lane, to the southeast of	
End Lane			Butterwick.	
A1 - Low Road to	N	Υ	From Low Road running southwest	From Low Road passing southwest across Bell Water Drain and
Steeping River			crossing The Lymn, Wainfleet Road, the	passing west of Wainfleet All Saints to Steeping River.
			Wainfleet Relief Channel ending at	Predominantly low-lying agricultural fields with a network
			Steeping River	large number of drainage ditches.
A2 - Steeping River	N	Υ	Segment between Steeping River and	From Steeping River passing through predominantly large
to Fodder Dike			Fodderdyke bank running west of	agricultural fields, some with tree lines along boundaries,
Bank / Fen Bank			Wainfleet St Mary's.	hedgerows and ditches, and crossing several small roads.
A3 - Fodder Dike	N	Υ	West of Friskney	From Fodder Dike Road passing southwest across large
Bank / Fen Bank to				agricultural fields and associated drainage ditches, with
Broadgate				occasional hedges and lines of trees, and further to the south
		.,		crossing Gold Fen Dike.
A4 - Broadgate to	N	Υ	West of Old Leake	From Broad Gate (road) southwest across very large
Ings Drove				agricultural fields, with associated drainage ditches and
				several small roads.



Route Segment – Full Name	South of A52	N <b>orth</b> of A52	Description	Ecological Context
A5 - Ings Drove to	N	Υ	West of Butterwick	From Ings Drove, southwest then south, crossing the A52 and
Church End Lane				running to the east of the Hobhole Drain.
WM10 - Church	Υ	Υ	A shorter segment between Church End	Crosses Havenside LNR.
End Lane to The			Lane and the north eastern bank of The	Predominantly low-lying agricultural fields with a network
Haven			Haven. Passing across Hobhole Drain.	large number of drainage ditches.
WM11 - The	Υ	Υ	Includes The Haven. Also passes across	The Haven is a tidal river that takes water from the River
Haven to Marsh			Wyberton Branch Drain, Craile Eau at	Witham and South Forty Foot Drain. It flows through Boston
Road			Sandholme and Frampton Towns Drain.	town before discharging into The Wash. South of this, low-
			Boundary Drain is inside the route	lying agricultural fields dominate the landscape. A series of
			corridor. The segment finishes at Marsh	drainage ditches, several of which are large, form field
			Road.	boundaries. Hedgerows and woodlands are relatively scarce.
WM12 - Marsh	Υ	Υ	Marsh Road to Fosdyke Bridge passing	A tree and scrub line extend from Fosdyke Bridge to the
Road to Fosdyke			Kirkton Drain. At Fosdyke Bridge the route	northwest.
Bridge			splits into two; leading to Weston Marsh	Predominantly low-lying agricultural fields with a network
			North and Weston Marsh South.	large number of drainage ditches.
WM13 - Fosdyke	Υ	Υ	The route runs southwest from Fosdyke	Arable fields with main watercourses in close proximity. A tree
Bridge to Weston			Bridge along the left bank of the River	and scrub lined lane (potentially a valuable wildlife corridor)
Marsh North			Welland where it crosses Five Towns	meanders in parallel to the River Welland.
			Drain, Risegate Eau and Bicker Creek.	The substation study area comprises several large, arable
				fields. There are no trees within the substation zone.
WM14 – Fosdyke	Υ	Υ	From the River Welland at Fosdyke Bridge,	The onshore ECC crosses the western edge of Moulton Marsh
to Weston Marsh			the route runs south-southwest and	LWS/ LWT Reserve.
South			crosses Lord's Drain.	The substation zone includes several large arable fields. Away
				from the River Welland, hedgerows and trees are relatively
				scarce.



## **Designated Sites**

### Lincolnshire Node

- 21.4.23 Figure 21.3 shows the location of statutory and non-statutory designated sites in relation to the PEIR Boundary for Lincolnshire Node. Descriptions for each site, including details of their qualifying or notified features, are provided in Volume 2, Appendix 21.1: Desk Study. As set out in the Introduction (Section 21.1), this Chapter does not address offshore sites or ornithology, including onshore, ornithology related designations.
- 21.4.24 Table 21.6 presents the designated sites within the study areas for the Lincolnshire Node and their distance from the nearest segment.
- 21.4.25 There are three SACs, 14 SSSIs (excluding those designated for geological interest or solely for their ornithological interest) and two NNRs within the Lincolnshire Node study area.
- 21.4.26 There are 12 LWS and six LWT reserves within the study area. Some sites are designated as both a LWS and a LWT reserve, for example Chapel Six Marshes, Spendluffe Meadow and Chapel Pit, although it should be noted that the surface area of each site does vary slightly between the two types of designation.
- 21.4.27 There are no Important Plant Areas (IPA) within the study area. The nearest is North Norfolk Coast and The Wash IPA, 11.9km south-southeast.
- 21.4.28 There are no areas of ancient semi-natural or ancient replanted woodland within the study areas.

Table 21.6:Designated sites within the Lincolnshire Node study area

Site Name and Designation	Distance from the PEIR Boundary (km)	Nearest Segment	Compass Direction
Statutory designations			
The Wash (and North	13.4	LN1 – Landfall to A52	SSE
Norfolk Coast) SAC	0.6	– Mumby	N.
Saltfleetby - Theddlethorpe Dunes and Gibraltar Point SAC	9.6	LN2 – A52 – Mumby to Lincolnshire Node	N
Humber Estuary SAC	16.0	LN2 – A52 – Mumby to Lincolnshire Node	NW
Sea Bank Clay Pits SSSI	0	LN1 – Landfall to A52 – Mumby	ESE
Willoughby Meadow SSSI	4.5	LN2 – A52 – Mumby to Lincolnshire Node	SSW
Hoplands Wood SSSI	5.1	LN2 – A52 – Mumby to Lincolnshire Node	SW
Willoughby Wood SSSI	5.3	LN2 – A52 – Mumby to Lincolnshire Node	SW
Skendleby Psalter Banks SSSI	6.5	LN2 – A52 – Mumby to Lincolnshire Node	SW



Site Name and Designation	Distance from the PEIR Boundary (km)	Nearest Segment	Compass Direction
Candlesby Hill SSSI	7.7	LN2 – A52 – Mumby to Lincolnshire Node	SSW
Calceby Marsh SSSI	8.7	LN2 – A52 – Mumby to Lincolnshire Node	W
Swaby Village SSSI	9.4	LN2 – A52 – Mumby to Lincolnshire Node	W
Saltfleetby- Theddlethorpe Dunes SSSI (and National Nature Reserve (NNR))	9.7	LN2 – A52 – Mumby to Lincolnshire Node	N
Bratoft Meadows SSSI	10.9	LN2 - A52 - Mumby to Lincolnshire Node	S
Muckton Wood SSSI	11.1	LN2 – A52 – Mumby to Lincolnshire Node	WNW
Gibraltar Point SSSI (and NNR)	11.8	LN1 – Landfall to A52 – Mumby	Е
Mavis Enderby Valley SSSI	15.0	LN2 – A52 – Mumby to Lincolnshire Node	WSW
The Wash SSSI (and NNR)	16.3	LN1 – Landfall to A52 – Mumby	SSE
Gibraltar Point NNR	13.3	LN1 – Landfall to A52 – Mumby	S
Saltfleetby- Theddlethorpe Dunes NNR	9.8	LN2 – A52 – Mumby to Lincolnshire Node	N
Local Wildlife Sites			
Anderby Creek Sand Dunes	0	LN1 – Landfall to A52 – Mumby	ENE
Chapel Six Marshes	0	LN1 – Landfall to A52 – Mumby	ESE
Marsh Yard to Anderby Creek Dunes	0	LN1 – Landfall to A52 – Mumby	NNE
Wolla Bank South	0	LN1 – Landfall to A52 – Mumby	ESE
Spendluffe Meadows	0	LN2 - A52 - Mumby to Lincolnshire Node	SE
Anderby Gravity Outfall	0.06	LN1 – Landfall to A52 – Mumby	NE
Chapel Point Dunes, North	0.3	LN1 – Landfall to A52 – Mumby	NNE
Chapel Pit Nature Reserve (non-SSSI)	0.3	LN1 – Landfall to A52 – Mumby	SE



Site Name and Designation	Distance from the PEIR Boundary (km)	Nearest Segment	Compass Direction
Chapel Point Dunes, South	1.0	LN1 – Landfall to A52 – Mumby	SE
Moggs Eye Sea Bank Ponds	1.2	LN1 – Landfall to A52 – Mumby	N
Huttoft Carr Terrace to Marsh Yard Dunes	1.4	LN1 – Landfall to A52 – Mumby	N
Hogsthorpe Pit	1.8	LN1 – Landfall to A52 – Mumby	NNE
Lincolnshire Wildlife Tr	ust Reserves		
Anderby Marsh	0	LN1 – Landfall to A52 – Mumby	ENE
Chapel Six Marshes	0	LN1 – Landfall to A52 – Mumby	ESE
Wolla Bank Pit	0	LN1 – Landfall to A52 – Mumby	ESE
Wolla Bank Reedbed	0	LN1 – Landfall to A52 – Mumby	Е
Spendluffe Meadows	0	LN2 – A52 – Mumby to Lincolnshire Node	SE
Chapel Pit	0.3	LN1 – Landfall to A52 – Mumby	SE

- 21.4.29 Weston Marsh South of the A52 and Weston Marsh North of the A52 Figure 21.5 shows the location of statutory and non-statutory designated sites in relation to the PEIR Boundary for Weston Marsh south of the A52 and Weston Marsh north of the A52. Descriptions for each site, including details of their qualifying or notified features, are provided in Volume 2, Appendix 21.1: Desk Study. As set out in the Introduction (Section 21.1), this Chapter does not address offshore or ornithology, including onshore, related designations.
- 21.4.30 Table 21.7 presents the designated sites within the study areas for the two Weston Marsh options in relation to individual segments of the onshore ECCs.
- 21.4.31 There are three SACs, 15 SSSIs (excluding geological designations or sites designated solely for their ornithological interest), three NNRs and one LNR within the onshore study areas for both Weston Marsh south of the A52 and Weston Marsh north of the A52.
- 21.4.32 A total of 34 non-statutory Local Wildlife Sites occur within the study area for Weston Marsh south of the A52, and a total of 37 non-statutory LWS occur within the study area for Weston Marsh north of the A52. For both options, 12 of these sites fall within/partially within the PEIR Boundary.
- 21.4.33 There are seven Lincolnshire Wildlife Trust Reserves (LWT Reserves) within the 2km study area including five within/partially within the PEIR Boundary for both options.
- 21.4.34 Additionally, North Norfolk Coast and The Wash Important Plant Area is situated 146m east of segment WM11 The Haven to Marsh Road (both options). The IPA has been identified for the vascular plant species richness of coastal habitats.



21.4.35 There are no areas of ancient semi-natural or ancient replanted woodland within the study areas.

Table 21.7: Designated sites within Weston Marsh south of the A52 and Weston Marsh north of the A52 study areas

Site Name	Distance from the PEIR Boundary (km)	Nearest Segment	Compass Direction
Statutory designations			
The Wash (and North Norfolk Coast) SAC	0.01	WM11 - The Haven to Marsh Road (both routes)	E
Saltfleetby - Theddlethorpe Dunes and Gibraltar Point SAC	2.3 (south of A52)	WM6 - Steeping River to Ivy House Farm / Marsh Yard	ENE
	3.7 (north of A52)	WM5 - Low Road to Steeping River	ESE
Humber Estuary SAC	18.5	WM1 - Landfall to A52 – Hogsthorpe (both routes)	NW
Sea Bank Clay Pits SSSI	0	WM1 - Landfall to A52 – Hogsthorpe (both routes)	ENE
The Wash SSSI	0.01	WM11 - The Haven to Marsh Road (both routes)	Е
Gibraltar Point SSSI	2.3 (south of A52)	WM6 - Steeping River to Ivy House Farm / Marsh Yard	Е
	3.7 (north of A52)	WM5 - Low Road to Steeping River	
Bratoft Meadows SSSI	3.1	WM4 - A158 – Skegness Road to Low Road (both routes)	WNW
Surfleet Lows SSSI	3.5	WM14 - Fosdyke Bridge to Weston Marsh Substation South (both routes)	WSW
Willoughby Meadow SSSI	5.5	WM2 - A52 – Hogsthorpe to Marsh Lane (both routes)	W



			OFFSHORE WIND
Site Name	Distance from the PEIR Boundary (km)	Nearest Segment	Compass Direction
Willoughby Wood	6.3	WM2 - A52 –	W
SSSI		Hogsthorpe to Marsh	
		Lane (both routes)	
Candlesby Hill SSSI	6.5	WM3 - Marsh Lane to	WNW
,		A158 – Skegness	
		Road (both routes)	
Hoplands Wood SSSI	6.6	WM2 - A52 –	W
·		Hogsthorpe to Marsh	
		Lane (both routes)	
Skendleby Psalter	8.5	WM2 - A52 –	W
Banks SSSI		Hogsthorpe to Marsh	
		Lane (both routes)	
Jenkins Carr SSSI	12.3 (south of A52)	WM4 - A158 –	W
	,	Skegness Road to	
		Low Road	
	10.0 (north of A52)	A2 – Steeping River	NW
	,	to Fodder Dike	
		Bank/Fen Bank	
Saltfleetby-	12.1	WM1 - Landfall to	NNW
Theddlethorpe Dunes		A52 – Hogsthorpe	
SSSI		(both routes)	
Keal Carr SSSI	13.0 (south of A52)	WM4 - A158 –	WNW
	,	Skegness Road to	
		Low Road	
	10.5 (north of A52)	A2 – Steeping River	NW
	,	to Fodder Dike	
		Bank/Fen Bank	
Calceby Marsh SSSI	13.4	WM1 - Landfall to	W
•		A52 – Hogsthorpe	
		(both routes)	
Swaby Village SSSI	14.1	WM1 - Landfall to	WNW
,		A52 – Hogsthorpe	
		(both routes)	
The Wash NNR	0.5	WM12 - Marsh Road	ENE
		to Fosdyke Bridge	
		(both Routes)	
Gibraltar Point NNR	2.5 (south of A52)	WM6 - Steeping River	Е
		to Ivy House Farm /	
		Marsh Yard	
	3.9 (north of A52)	WM5 - Low Road to	ESE
	·	Steeping River	
Saltfleetby-	12.3	WM1 - Landfall to	NNW
Theddlethorpe Dunes		A52 - Hogsthorpe	
NNR		(both Routes)	



			1 <b>2</b> 0113113112111112
Site Name	Distance from the PEIR Boundary (km)	Nearest Segment	Compass Direction
Havenside Country	0	WM10 - Church End	/
Park LNR		Lane to The Haven	
		(both Routes)	
Local Wildlife Sites			
Anderby Creek Sand	0	WM1 - Landfall to	NNE
Dunes		A52 – Hogsthorpe	2
Danes		(both routes)	
Chapel Six Marshes	0	WM1 - Landfall to	E
Chaper Six iviarshes		A52 – Hogsthorpe	
		(both routes)	
Llogetherne Dit		+ '	C/M
Hogsthorpe Pit	0	WM1 - Landfall to	SW
		A52 – Hogsthorpe	
		(both routes)	
Marsh Yard to	0	WM1 - Landfall to	N
Anderby Creek Dunes		A52 – Hogsthorpe	
		(both routes)	
Wolla Bank South	0	WM1 - Landfall to	ENE
		A52 – Hogsthorpe	
		(both routes)	
Shore Road Drain	0 (south of A52)	WM9 - Crowhall Lane	SSW
		to Church End Lane	
	0 (north of A52)	A5 - Ings Drove to	SSE
		Church End Lane	
Havenside	0	WM10 - Church End	W
		Lane to The Haven	
		(both routes)	
Hobhole Bank	0	WM10 - Church End	SSW
		Lane to The Haven	
		(both routes)	
Hobhole Drain,	0	WM10 - Church End	NNW
Baker's Bridge South		Lane to The Haven	
J		(both routes)	
Risegate Eau	0	WM13 - Fosdyke	W
· ·		Bridge to Weston	
		Marsh Substation	
		North (both routes)	
Moulton Marsh	0	WM14 - Fosdyke	NE
		Bridge to Weston	
		Marsh Substation	
		South (both routes)	
Dove's Lane Drain	0 (south of A52)	WM9 - Crowhall Lane	SW
DOVE 3 Latte Dialit	0 (300th 01 A32)	to Church End Lane	JVV
	0 (north of A52)	A5 - Ings Drove to	SSE
	o (Horth of A32)	Church End Lane	JJL
		Charch cha ratie	



Site Name	Distance from the PEIR Boundary (km)	Nearest Segment	Compass Direction
South Bank Fosdyke	0.05	WM13 - Fosdyke	NNE
•		Bridge to Weston	
		Marsh Substation	
		North (both routes)	
Anderby Gravity	0.06	WM1 - Landfall to	N
Outfall		A52 – Hogsthorpe	
		(both routes)	
Middlemarsh Farm	0.1	WM4 - A158 –	ESE
		Skegness Road to	
		Low Road (both	
		routes)	
Hobhole Drain,	0.1 (north of A52)	A5 - Ings Drove to	NNW
Benington Bridge to	,	Church End Lane	
Baker's Bridge			
Wrangle Brick Pits	1.5 (south of A52)	WM7 - Ivy House	W
J	,	Farm / Marsh Yard to	
		Staples Farm	
	0.2 (north of A52)	A3 - Fodder Dike	SSW
	,	Bank/Fen Bank to	
		Broadgate	
Frampton Hall	0.3	WM11 - The Haven to	WNW
•		Marsh Road (both	
		routes)	
Chapel Point Dunes,	0.3	WM1 - Landfall to	ESE
North		A52 - Hogsthorpe	
		(both routes)	
Chapel Pit Nature	0.3	WM1 - Landfall to	ESE
Reserve (non-SSSI)		A52 - Hogsthorpe	
		(both routes)	
Moulton River	0.4	WM14 - Fosdyke	ENE
		Bridge to Weston	
		Marsh Substation	
		South (both Routes)	
Surfleet Bank	0.5	WM13 - Fosdyke	SW
		Bridge to Weston	
		Marsh Substation	
		North (both routes)	
Surfleet Seas End	0.7	WM14 - Fosdyke	WSW
Saltmarsh		Bridge to Weston	
		Marsh Substation	
		South (both routes)	
Sloothby Low Lane	0.7	WM2 - A52 –	WNW
		Hogsthorpe to Marsh	
		Lane (both routes)	



			• • OFFSHORE WIND
Site Name	Distance from the PEIR Boundary (km)	Nearest Segment	Compass Direction
Middlemarsh	0.7	WM4 - A158 -	NNE
Meadows		Skegness Road to	
		Low Road (both	
Variable Barta	0.7	routes)	CIAI
Vernatt's Drain	0.7	WM14 - Fosdyke	SW
		Bridge to Weston  Marsh Substation	
		South (both routes)	
River Glen Corridor	1.0	WM14 - Fosdyke	WSW
Kiver Gleff Corridor	1.0	Bridge to Weston	VVSVV
		Marsh Substation	
		South (both routes)	
Steeping Marsh	1.0 (south of A52)	WM6 - Steeping River	ENE
Steeping Warsh	1.0 (300111 01 A32)	to Ivy House Farm /	LIVE
		Marsh Yard	
	2.3 (north of A52)	WM5 - Low Road to	ESES
	2.5 (1.51 (1.7.52)	Steeping River	
Chapel Point Dunes,	1.0	WM1 - Landfall to	SE
South		A52 - Hogsthorpe	
		(both routes)	
A16 verges North of	1.0	WM13 - Fosdyke	SW
the River Glen		Bridge to Weston	
		Marsh Substation	
		North (both routes)	
The Lymn	1.2 (north of A52)	WM5 - Low Road to	WNW
		Steeping River	
Blue Gowt Drain,	1.2	WM14 - Fosdyke	WSW
North		Bridge to Weston	
		Marsh Substation	
		South (both routes)	
Moggs Eye Sea Bank	1.2	WM1 - Landfall to	N
Ponds		A52 - Hogsthorpe	
		(both routes)	
Hobhole Drain,	1.4 (north of A52)	A4 - Broadgate to	W
Simmon House		Ings Drove	
Bridge to Benington			
Bridge		14/8/44 1 15 11 -	N.
Huttoft Carr Terrace	1.4	WM1 - Landfall to	N
to Marsh Yard Dunes		A52 - Hogsthorpe	
Dinchhook March	1 5	(both routes)	CVA/
Pinchbeck Marsh	1.5	WM14 - Fosdyke Bridge to Weston	SW
		Marsh Substation	
		South (both routes)	
		Journ (porn routes)	1



Site Name	Distance from the PEIR Boundary (km)	Nearest Segment	Compass Direction
Slippery Gowt Sea Bank	1.5	WM10 - Church End Lane to The Haven (both routes)	W
Lincolnshire Wildlife Tr	ust Reserves		
Anderby Marsh	0	WM1 - Landfall to A52 – Hogsthorpe (both routes)	NNE
Chapel Six Marshes	0	WM1 - Landfall to A52 – Hogsthorpe (both routes)	E
Wolla Bank Pit	0	WM1 - Landfall to A52 – Hogsthorpe (both routes)	ENE
Wolla Bank Reedbed	0	WM1 - Landfall to A52 – Hogsthorpe (both routes)	NE
Moulton Marsh	0	WM14 - Fosdyke Bridge to Weston Marsh Substation South (both routes)	NE
Chapel Pit	0.3	WM1 - Landfall to A52 – Hogsthorpe (both routes)	ESE
Frampton Marsh	0.7	WM11 - The Haven to Marsh Road (both routes)	E

### Habitats

## Section 41 Priority Habitats and Lincolnshire Biodiversity Action Plan (BAP) Habitats

- 21.4.36 Habitats of Principal Importance (i.e., those included under Section 41 of the NERC Act (2006), many of which are also included on Annex 1 of the Habitats Directive) have been identified in Natural England's Priority Habitat Inventory dataset (MAGIC website).
- 21.4.37 The Lincolnshire BAP (Lincolnshire Biodiversity Partnership, 2011) seeks to meet the needs of those UK priority species and habitats found in Lincolnshire as well as addressing more local needs.
- 21.4.38 Table 21.8 provides a list of Priority Habitats and Lincolnshire BAP habitats that have been identified within the study area. Definitions for these habitats are provided in Volume 2, Appendix 21.1: Desk Study.
- 21.4.39 The field-based habitat survey, which is currently underway, may find further Priority Habitats within the PEIR Boundary.



Table 21.8: UK BAP Habitats and Lincolnshire BAP Habitats identified within the study area

Priority Habitat	Lincolnshire BAP Habitat
Coastal and marine	
Coastal sand dunes	Coastal sand dunes
Saline lagoons	Saline lagoons
Coastal saltmarsh	Saltmarsh
Mudflats	
Farmland and grassland	
Coastal and floodplain grazing marsh	Grazing marsh
Hedgerows	Hedgerows and trees
Lowland meadows	Lowland meadows
Rivers and wetland	
Ponds	Ponds, lakes and reservoirs
Eutrophic standing waters	
Reedbeds	Reedbeds and bittern
Rivers, springs and flushes	Rivers, canals and drains
Trees and woodland	
Lowland mixed deciduous woodland	Lowland mixed deciduous woodland
Traditional orchards	Traditional orchards

- 21.4.40 In addition to the Priority Habitats identified using the MAGIC website, at least three other Priority Habitats have been identified during the Preliminary Habitat Study. These are:
  - Hedgerows and hedgerow trees;
  - Ponds, lakes and reservoirs; and
  - Rivers, canals and drains.
- 21.4.41 The quality and condition of all habitat types is being explored during the field surveys and will be reported in the ES.

## Lincolnshire Node

- 21.4.42 A summary of the Priority Habitats for the entire route, based on desk study and preliminary habitat survey data collected to date, is provided in Table 21.10. Within the table, the total area of each Priority Habitat is provided for both the land within the PEIR Boundary and also the within the 2km study area. Linear measurements and counts for hedgerows, rivers and drain and water bodies have been calculated within the PEIR Boundary and also for the PEIR Boundary plus the 100m buffer.
- 21.4.43 Figure 21.7 illustrates the locations and extent of the terrestrial Priority Habitats within the study area. See Figure 21.8 for River Canals and Drains, and Figure 21.19 for hedgerows and hedgerow trees which are currently identified within the Boundary and 100m buffer. The total areas for Priority Habitats per route segment are provided in Volume 2, Appendix 21.2: Initial Habitat Survey.



- 21.4.44 The desk study identified 10 Priority Habitat types within the Lincolnshire Node study area, with Coastal Floodplain Grazing Marsh and Coastal Sand Dunes occupying the largest extent.
- 21.4.45 Within the PEIR Boundary less than 5% of the land is mapped as Priority Habitats. Coastal Sand Dunes concentrated at the landfall are the most abundant Priority Habitat within the PEIR Boundary, with reedbeds and mudflats also present.
- 21.4.46 Within the PEIR Boundary, 18 water bodies have been identified.

Table 21.9: Summary of Total Areas, Lengths and Counts for Priority Habitats for Lincolnshire Node

Priority Habitat	Total within PEIR Boundary	Total within the 100m buffer beyond PEIR Boundary	Total for PEIR Boundary plus 2km buffer
Coastal and floodplain	-	-	49.25
grazing marsh (ha)			
Coastal sand dunes (ha)	6.74	-	25.97
Lowland mixed deciduous	0.01	-	6.31
woodland (ha)			
Lowland meadows (ha)	2.51	-	3.35
Mudflats (ha)	3.05	-	3.94
Reedbeds (ha)	3.05	-	3.15
Traditional orchard (ha)	0	-	0.52
Total Area (ha)	15.36	-	92.49
Hedgerow and Hedgerow	7.44	5.76	-
Trees (km)			
Rivers, Canals and Drains (km)	22.88	9.45	-

### Weston Marsh south of the A52 and Weston Marsh north of the A52

- 21.4.47 A summary of the Priority Habitats for the entire route is provided in Table 21.10 for Weston Marsh south of the A52 and Weston Marsh north of the A52 and Table 21.11 for Weston Marsh north of the A52. Within the table, the total area of each Priority Habitat is provided for land within the PEIR Boundary and the surrounding 2km study area. Linear measurements and counts for hedgerows, rivers and drain and water bodies have been calculated within the PEIR Boundary and 100m buffer zone.
- 21.4.48 Figure 21.10 illustrates the locations and extent of the terrestrial Priority Habitats within the study area. See Figure 21.11 for River Canals and Drains, and Figure 21.12 for hedgerows and hedgerow trees which are currently identified within the Boundary and 100m buffer. The total areas for Priority Habitats per route segment are provided in Volume 2, Appendix 21.2: Initial Habitat Survey.
- 21.4.49 The desk study recorded 12 Priority Habitat types within the Weston Marsh 2km study area for both onshore ECC options. The largest total area of Priority Habitat was Coastal Saltmarsh (17.49 ha for Weston Marsh south of the A52 and 29.95 ha for Weston Marsh north of the A52 study areas), followed by Coastal Saltmarsh (8.5 ha for both options).



21.4.50 A total of 25 ponds have been recorded within the PEIR Boundary for Weston Marsh south of the A52, with 27 recorded within the PEIR Boundary for Weston Marsh north of the A52 study areas.

Table 21.10: Summary of Total Areas, Lengths and Counts for Priority Habitats at Weston Marsh south of the A52

Priority Habitat	Total within PEIR Boundary	Total within the 100m buffer	Total for PEIR Boundary and 2km study area
Coastal and floodplain	17.49	-	991.32
grazing marsh (ha)			
Coastal saltmarsh (ha)	8.50	-	1258.42
Coastal sand dunes (ha)	6.70	-	25.97
Lowland mixed	2.56	-	70.86
deciduous woodland (ha)			
Lowland calcareous grassland (ha)	0	-	5.05
Mudflats (ha)	5.95	-	60.48
Reedbeds (ha)	3.05	-	3.15
Saline lagoons (ha)	0	-	8.55
Traditional orchard (ha)	0	-	11.10
Total Area (ha)	44.28	-	2434.92
Hedgerow and Hedgerow Trees (km)	12.20	28.34	_
Rivers, Canals and Drains (km)	135.93	235.38	-

Table 21.11: Summary of Total Areas, Lengths and Counts for Priority Habitats at Weston Marsh north of the A52 study areas

Priority Habitat	Total within PEIR Boundary	Total within the 100m buffer	Total for PEIR Boundary and 2km study area
Coastal and floodplain grazing marsh (ha)	29.95	-	1158.068
Coastal saltmarsh (ha)	8.50	-	454.730
Coastal sand dunes (ha)	6.70	-	25.974
Lowland mixed deciduous woodland (ha)	2.79	-	81.363
Lowland calcareous grassland (ha)	0	-	5.052
Mudflats (ha)	5.98	-	60.476
Reedbeds (ha)	3.05	-	3.154
Saline lagoons (ha)	0	-	1.449
Traditional orchard (ha)	0	-	14.403



Priority Habitat	Total within PEIR	Total within the	Total for PEIR
	Boundary	100m buffer	Boundary and 2km
			study area
Total Area (ha)	56.96		1804.67
Hedgerow and Hedgerow	14.73	35.21	-
Trees (km)			
Rivers, Canals and Drains (km)	209.60	362.88	-

## **Initial Habitat Study**

21.4.51 A summary of the initial habitat study findings is presented below, with further detail provided in PEIR Volume 2, Appendix 21.2: Initial Habitat Survey. This information will be updated on completion of habitat surveys within the ES.

#### Lincolnshire Node

- 21.4.52 The 300m wide onshore ECC covers approximately 400 ha of land in total, with the 100m buffer zone extending the study area to just over 600 ha. Using Level 2 UK Habitat Classification, the main habitat types present are cropland, grassland, heathland and shrub, rivers and lakes, sparsely vegetated ground, woodland and forest, and urban habitats. Almost 70% of the total land area is covered by cropland, including both arable and horticulture. Grassland accounts for approximately 10%, sparsely vegetated land (largely concentrated at the coast) approximately 10%, with wetland, heathland and shrub, urban, woodland and rivers and streams forming the remaining percentage of cover. Descriptions of each habitat are provided below. Figure 21.9 show the location and extent of habitats within the study area.
- 21.4.53 Weston Marsh South of the A52 and Weston Marsh North of the A52 The onshore ECC for the Weston Marsh south of the A52 option covers approximately 2,500 ha of land in total, with the 100m buffer zone extending the study area to just over 4,100 ha. Using Level 2 UK Habitat Classification, the main habitat types present are cropland, grassland, heathland and shrub, rivers and lakes, sparsely vegetated ground, woodland and forest, marine inlets and transitional waters, wetland and urban habitats. Approximately 85% of the total land area within the PEIR Boundary is covered by cropland, including both arable and horticulture. Grassland accounts for almost 7% with the remaining habitat classifications forming the remaining 8%.
- 21.4.54 The Weston Marsh north of the A52 option covers approximately 2,500 ha of land, with the 100m buffer zone included increasing the study area to just over 4,000 ha. The main habitat types for Weston Marsh north of the A52 comprise cropland, grassland, heathland and shrub, rivers and lakes, sparsely vegetated ground, woodland and forest, marine inlets and transitional waters, wetland and urban habitats. As with Weston Marsh south of the A52, the most abundant habitat type for Weston Marsh north of the A52 is cropland, accounting for approximately 80% of the total study area. The second largest habitat classification is grassland, equating to approximately 10%. All other classifications denoted above form the remaining 10% of land cover.



21.4.55 Both the onshore ECC options share similar habitat composition, with cropland making up the largest percentage of land classification. For both options, habitats such as wetland and marine inlets and transitional waters make up less than 1% (each) of total land cover. Figure 21.12 shows the location and extent of habitats within the Weston Marsh onshore ECC study areas for both options.

## **Species**

#### Lincolnshire Node

#### **Plants**

- 21.4.56 No records of protected or notable plant species were returned from GLNP within the PEIR Boundary or the surrounding 2km study area. However, the presence of important plants has been noted within Sea Bank Clay Pits SSSI, Chapel Six Marshes LWS and Spendluffe Meadows LWS and LWT Reserve. These sites are all within, or immediately adjacent to the PEIR Boundary. The species of note include green-winged orchid (*Anacamptis morio*) and soft hornwort (*Ceratophyllum submersum*) which are Red List species in England (Stroh et al., 2014).
- 21.4.57 Field surveys for habitats are ongoing in spring 2023 and any protected or notable plant species recorded will be reported in the ES.

#### **Invertebrates**

- 21.4.58 No records of invertebrates were returned from GLNP within the PEIR Boundary or the surrounding 2km study area. However, records have been made within designated sites at the landfall.
- 21.4.59 If permanent loss of good quality habitats suitable for potentially important invertebrate communities may occur, prescriptive invertebrate surveys will be undertaken to adequately assess impacts and inform mitigation for impacts that may significantly affected important populations and species and will be reported in the ES. However, based on the results of the Initial Habitat Study, the habitats within the OnSS search areas appear unlikely to be important to invertebrates, and impacts to designated sites will be avoided, therefore impacts are considered unlikely.

#### Fish

- 21.4.60 No records of fish were returned during the desk study. The chemical status of the main watercourses within the PEIR Boundary (Anderby Main Drain and Boy Grift Drain) is 'failed' due to land management practices and this may detrimentally effect fish populations.
- 21.4.61 Further information on the presence of fish species will be gathered during the remaining desk surveys. At the time of writing, a desk-based search of Environment Agency online records is underway and will be reported within the ES.

### **Amphibians**

- 21.4.62 There are records for four species of amphibian within the 2km study area. These are:
  - Great crested newt (GCN) (Triturus cristatus);
  - Smooth newt (Lissotriton vulgaris);



- Common toad (Bufo bufo); and
- Common frog (Rana temporaria).
- 21.4.63 GCN are protected through inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and in Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). GCN is also a Section 41 species.
- 21.4.64 The majority of amphibian records are from habitats around the landfall. The locations of records for amphibians are illustrated in Figure 21.13 with the number of records provided in Volume 2, Appendix 21.1: Desk Study.
- 21.4.65 There are no records of GCN presence within the PEIR Boundary and the only positive European Protected Species Licence (EPSL) return, and the closest record, was for a site near Huttoft, 1.18km east of PEIR Boundary.
- 21.4.66 Rough grassland, scrub, field margins, hedgerow, wetland and woodland edge habitats are suitable for use by this species group. They are present across the study area, although relatively scarce and largely concentrated at the landfall and inland along field boundaries.
- 21.4.67 Habitat Suitability Index (HSI) Assessments (Oldham, 2000) are currently underway for all accessible ponds within 250m, and ditches within 100m, of the PEIR Boundary. Those accessible ponds with habitat suitability for GCN will be subject to further surveys, including eDNA testing (Biggs, 2014) followed by a population class assessment (Langton, 2001) where the eDNA survey returns a positive result.

### Reptiles

- 21.4.68 There are records for two species of reptile within the 2km study area:
  - Common lizard (Zootoca vivipara); and
  - Grass snake (Natrix natrix).
- 21.4.69 Both common lizard and grass snake are protected from intentional killing, injuring and sale under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). All species of reptile are also Species of Principal Importance in England under Section 41 of the NERC Act.
- 21.4.70 There are no existing records for reptile species within the PEIR Boundary. Instead, records for both common lizard and grass snake are concentrated further along the coast. The locations of records for reptiles are illustrated in Figure 21.14. Volume 2, Appendix 21.1: Desk Study provides a summary of the number of records for each species with the 2km study area.
- 21.4.71 Rough grassland, scrub, field margins, hedgerow, wetland and woodland edge habitats are suitable for use by this species group. They are present across the study area, although relatively scarce and largely concentrated at the landfall and inland along field boundaries. Suitable habitat that will be permanently lost is likely limited to low suitability habitats within the OnSS areas. However, where more optimal habitats are identified by ongoing habitat surveys, these will be surveyed for the presence of reptiles, with the results provided in a reptile survey report to be appended to the ES.



#### Bats

- 21.4.72 All bat species, their breeding sites and resting places are protected in the UK through inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and in Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended).
- 21.4.73 The desk study returned records of at least six species of bat within the 5km study area as listed below:
  - Brown long-eared bat (Plecotus auritus);
  - Common pipistrelle (Pipistrellus pipistrellus);
  - Soprano pipistrelle (Pipistrellus pygmaeus);
  - Nathusius' pipistrelle (Pipistrelle nathusii);
  - Noctule bat (Nyctalus noctula);
  - Myotis species (Myotis sp.); and
  - Whiskered/ Brandt's Bat (Myotis mystacinus/ Myotis brandtii).
- 21.4.74 Records for bats are concentrated inland, in the 'LN2 A52 Mumby to Lincolnshire Node' onshore ECC segment. Only one record of roosting common pipistrelle bat was returned from within the PEIR Boundary with 37 roost records in total for the whole 5km study area. The locations of records for bats are illustrated in Figure 21.15 with records for bat roost locations given in Figure 21.16. Volume 2, Appendix 21.1: Desk Study provides a summary of the number of records for each species within the study area.
- 21.4.75 The locations of buildings subject to preliminary roost surveys are presented in Figure 21.17, and Annex 1 of Volume 2, Appendix 21.3: Preliminary Roost Surveys for Bats presents full survey details for each. It is worth noting that some areas were not accessible (as shown in Figure 21.17) and will be captured in ongoing work.
- 21.4.76 No bats were directly observed roosting, and no evidence of bats was recorded within the study area for the Lincolnshire Node. No confirmed roosts or buildings with bat roosting potential were recorded within the PEIR Boundary.
- 21.4.77 Two domestic dwellings were recorded outside the PEIR Boundary as having moderate or below potential to support roosting bats, both dating from mid-late 1990s and with pitched, tiled roofs and stone / blockwork walls.
- 21.4.78 The locations of trees subject to preliminary roost potential surveys are presented in Figure 21.17, and Annex 4 of Volume 2, Appendix 21.3: Preliminary Roost Surveys for Bats presents full survey details for each.
- 21.4.79 No bats were directly observed roosting, and no evidence of bats was recorded within the study area for the Lincolnshire Node. A total of 51 trees with high, moderate or low bat roosting potential were recorded within the whole study area, with 20 of these located within the PEIR Boundary.



- 21.4.80 Species of tree assessed include ash (*Fraxinus excelsior*), beech (*Fagus sylvatica*), hawthorn (*Crataegus monogyna*), oak (*Quercus sp.*), sycamore (*Acer pseudoplatanus*), willow (*Salix sp.*) and horse chestnut (*Aesculus hippocastanum*). Trees were largely associated with field or property boundaries.
- 21.4.81 To gain a fuller understanding of the baseline for bats, survey work, including presence / absence and presence / absence and roost characterisation surveys will continue into the active seasons for 2023 from May to October.

## Badger

- 21.4.82 Badger (*Meles meles*) receives protection under the Protection of Badgers Act 1992.
- 21.4.83 Records for badger are included in Volume 2, Confidential Appendix 21.4: Badger Survey and the locations are not reported within this Chapter.
- 21.4.84 The desk study returned 207 records of badger from within the 2km study area, 27 of which were recorded within the PEIR Boundary.
- 21.4.85 Within the Lincolnshire Node study area 12 active setts were recorded during field surveys, 11 of which were located within the PEIR Boundary, a further nine of which were recorded as main setts.
- 21.4.86 To gain a fuller understanding of the baseline for badgers, survey work (of areas not accessed by the end of February 2023) will continue in 2023.

#### Otter

- 21.4.87 Otter (*Lutra lutra*) is fully protected through inclusion on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of The Conservation of Habitats and Species Regulations 2017 (as amended).
- 21.4.88 A total of 18 records for otter were returned within the Lincolnshire Node 2km study area, two of which were located within the PEIR Boundary. Figure 21.18 illustrates the locations of these records.
- 21.4.89 Otters are likely to utilise the pond and ditch network present with the area, particularly during the spring when amphibians are breeding, when frog, toad and newt prey would be abundant.
- 21.4.90 An assessment of potential otter habitat within the PEIR Boundary and within ponds and watercourses 250m upstream/ downstream of the PEIR Boundary is currently ongoing. Further otter surveys will be undertaken for those watercourses offering suitable habitat for otter. The results of otter surveys undertaken will be provided in an otter survey report appended to the ES.

### Water Vole

21.4.91 Water vole (*Arvicola amphibius*) is fully protected through its inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).



- 21.4.92 A total of 466 records were received for water vole within the Lincolnshire Node 2km study area. Water vole records are evenly distributed across the study area with a total of 36 records from within the PEIR Boundary and include records at the landfall and at the substation zone within Boy Grift Drain. Within the PEIR Boundary, water vole has also been recorded within Cocking Pit Drain, Wigg Drain and South Fen Drain.
- 21.4.93 Records for water vole are provided in Volume 2, Appendix 21.1: Desk Survey, with Figure 21.18 illustrating the locations of the data.
- 21.4.94 An initial survey of the ditch network within the PEIR Boundary and 200m upstream/ downstream of the PEIR Boundary is currently underway to evaluate habitat suitability within watercourses for water vole. Where suitable habitat exists, further water vole surveys will be carried out. The results of ongoing and further surveys will be provided in a water vole survey report appended to the ES.

## **Other Terrestrial Mammals**

- 21.4.95 No records were returned for any other species of terrestrial mammals within the Lincolnshire Node study area.
- 21.4.96 Habitat suitable for a range of small mammals such as brown hare (*Lepus europaeus*), hedgehog (*Erinaceus europaeus*), and harvest mouse (*Micromys minutus*) is present within the PEIR Boundary and therefore such species are potentially present but unrecorded. Species observed incidentally during all field surveys will be recorded, and details presented in the ES where relevant.

### Invasive Non-Native Species (INNS)

- 21.4.97 The INNS New Zealand pigmyweed has been recorded at Mogg's Eye Sea Bank LWS, 1.18km north of Lincolnshire Node PEIR Boundary.
- 21.4.98 No other records for INNS were returned by the GLNP.
- 21.4.99 The presence of INNS within the survey area will be noted during ongoing and future field surveys and reported within the ES.

### Weston Marsh South of the A52 and Weston Marsh North of the A52

#### **Plants**

- 21.4.100No records of important plant species were returned from within the PEIR Boundary for either Weston Marsh south of the A52 or Weston Marsh north of the A52.
- 21.4.101GLNP returned records for two important plant species from within the 2km study area: bluebell and Deptford pink which are both protected under the Wildlife and Countryside Act 1981 (as amended). Deptford pink is also classified as endangered on the Vascular Plant Red Data List for Great Britain (Stroh *et al.*, 2014). The locations of important plant records returned from GLNP are provided in Figure 21.20.
- 21.4.102Important plant records have also been extracted from the citations for statutory and non-statutory sites and are presented in Volume 2, Appendix 21.1: Desk Study.



#### *Invertebrates*

- 21.4.103No records of invertebrates were returned from GLNP within the PEIR Boundary or the surrounding 2km study area.
- 21.4.104Sea Bank Clay Pits SSSI and a number of non-statutory designated sites within the PEIR Boundary support rich aquatic and terrestrial assemblages of invertebrates including several nationally scarce species. Further detail is provided in Volume 2, Appendix 21.1: Desk Study.
- 21.4.105Beyond the PEIR Boundary, Gibraltar Point SSSI provides an important habitat for rare wetland invertebrates including four listed in the Red Data Book as endangered, and eight listed as rare and a further 12 considered to be nationally rare. Further details are again provided in Volume 2, Appendix 21.1: Desk Study.
- 21.4.106If permanent loss of good quality habitats suitable for invertebrate communities may occur, prescriptive invertebrate surveys will be undertaken to adequately assess and mitigate for impacts that may significantly affect important populations and species.

Fish

- 21.4.107GLNP did not return any records of fish from within the PEIR Boundaries for either Weston Marsh south of the A52 or Weston Marsh north of the A52.
- 21.4.108GLNP returned records of two fish species from the wider 2km study areas. Three records for river lamprey (*Lampetra fluviatilis*) were returned from the River Welland at the southern end of both onshore ECC options, and there was one record of burbot (*Lota lota*) from a fishing lake approximately 1.5km west of the PEIR Boundary for Marsh north of the A52, near Wainfleet All Saints. The location of these records is shown in Figure 21.21.
- 21.4.109At the time of writing a desk-based search of Environment Agency online records is underway and will be reported within the ES.

### **Amphibians**

- 21.4.110GNLP returned records of four species of amphibian from within the 2km study areas for Weston Marsh south of the A52 and Weston Marsh north of the A52. These are:
  - GCN;
  - Smooth newt;
  - Common toad; and
  - Common frog.
- 21.4.111No records of GCN were returned from within either of the study areas with relatively low numbers of records of common frog, common toad and smooth newt returned.
- 21.4.112Class Licence Survey Returns published on the MAGIC website include records of GCN presence at four locations within the study area, approximately 0.3km to the West of segment WM4 A158 Skegness Road Low Road (both options).
- 21.4.113Volume 2, Appendix 21.1: Desk Study provides details of the number of records for each species within the 2km study area.



- 21.4.114Rough grassland, scrub, field margins, ditches, hedgerow, wetland and woodland edge habitats are suitable for use by this species group. They are present across the study area, although relatively scarce and largely concentrated within designated sites at the landfall. Inland, suitable habitats are mainly found along field boundaries.
- 21.4.115 Habitat Suitability Index (HSI) Assessments are currently underway for accessible ponds and ditches within 250m of the PEIR Boundary. Those with moderate or above suitability for GCN will be subject to further surveys, where accessible, including eDNA followed by a population class assessment where the eDNA survey returned a positive result.

### Reptiles

- 21.4.116GLNP returned records of three species of reptile from the 2km study area for both options.

  These are:
  - Common lizard;
  - Grass snake; and
  - Slow worm (Anguis fragilis).
- 21.4.117A single record of grass snake was returned from within the PEIR Boundary from the River Welland near segment WM12 Marsh Road Fosdyke Bridge (both options). Records of other reptiles were from outside the PEIR Boundary.
- 21.4.118 Volume 2, Appendix 21.1: Desk Study provides a summary of the number of records for each species with the 2km study area.
- 21.4.119Rough grassland, scrub, field margins, hedgerow, wetland and woodland edge habitats are suitable for use by this species group. They are present across the study area, although relatively scarce and largely concentrated at the landfall and inland along field boundaries. Suitable habitat that will be permanently lost is likely limited to low suitability habitats within the OnSS search areas. However, where more optimal habitats are identified by ongoing habitat surveys, these will be surveyed for the presence of reptiles, with the results provided in a reptile survey report to be appended to the ES.

### Bats

- 21.4.120The desk study returned records of at least seven species of bat within the 2km study area for both options, which are listed below:
  - Brown long-eared bat;
  - Common pipistrelle;
  - Soprano pipistrelle;
  - Nathusius' pipistrelle;
  - Noctule bat;
  - Daubenton's bat (Myotis aubentoniid); and
  - Whiskered/ Brandt's Bat.



- 21.4.121Records for bats are scattered across the 2km study area, with concentrations within the residential areas of Chapel St Leonards, Hogsthorpe and Wainfleet All Saints. There are two records of roosting bats within the PEIR Boundary and approximately 250 records in the surrounding 5km Study Area. The locations of records for bats are illustrated in Figure 21.23 with records for bat roost locations given in Figure 21.25. Volume 2, Appendix 21.1: Desk Study provides a summary of the number of records for each species within the 5km Study Area.
- 21.4.122The locations of buildings subject to preliminary roost surveys are presented in Figure 21.26, and Volume 2, Appendix 21.3: Preliminary Roost Surveys for Bats presents survey details for each onshore ECC option. Not all areas were accessible and ongoing surveys will present this additional data within the ES.
- 21.4.123No bats were directly observed roosting and no evidence of bats was recorded within the Study areas for Weston Marsh south of the A52 or Weston Marsh north of the A52, however the owners of three and four separate buildings respectively, reported the historic presence of bats. All such buildings were located outside the PEIR Boundary for Weston Marsh south of the A52 and Weston Marsh north of the A52.
- 21.4.124Only one building with low bat roosting potential was recorded within both the boundaries for Weston Marsh south of the A52 and Weston Marsh north of the A52, with 50 and 56 buildings with high or below potential recorded in the wider study area for Weston Marsh south of the A52 and Weston Marsh north of the A52 respectively.
- 21.4.125 Within both Weston Marsh south of the A52 and Weston Marsh north of the A52 the majority of the buildings subject to preliminary roost assessments were agricultural barns dating from the mid-late 1900's with pitched metal roofs and stone / blockwork walls. These were mainly assessed as having low potential to support roosting bats. Domestic houses were also assessed with a range of ages and construction methods recorded, as well as ancillary sheds and modern warehouses.
- 21.4.126The locations of trees subject to preliminary roost surveys are presented in Figure 21.26, and Volume 2, Appendix 21.3: Preliminary Roost Surveys for Bats presents survey details for each.
- 21.4.127No bats were directly observed roosting, and no evidence of bats was recorded within the Survey Area for both of the Weston Marsh options.
- 21.4.128For Weston Marsh south of the A52 a total of 142 trees with high, moderate or low bat roosting potential were recorded within the whole study area, with 60 of these located within the PEIR Boundary.
- 21.4.129For Weston Marsh north of the A52 a total of 175 trees (most of which are also within the PEIR Boundary for Weston Marsh south of the A52) with high, moderate or low bat roosting potential were recorded within the whole study area, with 66 of these located within the PEIR Boundary.
- 21.4.130Species of tree assessed in both Weston Marsh south of the A52 and Weston Marsh north of the A52 included ash, beech, hawthorn, oak, poplar (*Populus* sp.), silver birch (*Betula* sp.), sycamore, willow, blackthorn (*Prunus spinosa*), cherry (*Prunus* sp.), crab apple (*Malus* sp.), elder (*Sambucus nigra*), holly (*Ilex aquifolium*), horse chestnut and maple (*Acer* sp.). Trees were largely associated with field or property boundaries and individual farmsteads.



21.4.131Survey work, including presence / absence and presence / absence and roost characterisation surveys, will continue into 2023 to give a fuller understanding of the baseline for bats.

### Badger

- 21.4.132Records for badger are included with a confidential badger appendix (Volume 2, Appendix 21.1: Desk Study and Volume 2, Confidential Appendix 21.4: Badger Survey).
- 21.4.133GLNP returned just under 400 records of badger from within the study area for Weston Marsh south of the A52 and over 500 records of badger within the study area for Weston Marsh north of the A52. Of these, only 35 are from within the Weston Marsh south of the A52 PEIR Boundary, with 37 from within the PEIR Boundary for Weston Marsh north of the A52. Details of badger records are presented separately in the Volume 2, Confidential Appendix 21.4: Badger Survey.
- 21.4.134Within the Weston Marsh south of the A52 survey area 65 active setts were recorded, 39 of which were located within the PEIR Boundary.
- 21.4.135 Within the Weston Marsh north of the A52 survey area 50 active setts (many of which are also within the PEIR Boundary for Weston Marsh south of the A52) were recorded, 22 of which were located within the PEIR Boundary.
- 21.4.136Badger surveys within areas not accessed by the end of February 2023 within the study area are currently ongoing. The results of further badger surveys will be presented in a confidential appendix to the ES.

#### Otter

- 21.4.137GLNP returned 59 records of otter within the 2km study area for Weston Marsh south of the A52 and 108 from within the 2km study area for Weston Marsh north of the A52. Of these, 12 were from within the Boundary for Weston Marsh south of the A52 and 13 from within the PEIR Boundary for Weston Marsh north of the A52. Figure 21.27 illustrates the locations of these records.
- 21.4.138Otters are likely to utilise the pond and ditch network present with the area, particularly during the spring when frog, toad and newt prey would be abundant.
- 21.4.139An assessment of potential otter habitat within the PEIR Boundary and within ponds and watercourses 250m upstream/ downstream of the PEIR Boundary is currently ongoing. Further otter surveys will be undertaken for those watercourses offering suitable habitat for otter. The results of otter surveys undertaken will be provided in an otter survey report appended to the ES.

### Water Vole

- 21.4.140GLNP returned over 2,000 records of water voles within the 2km study area for Weston Marsh south of the A52 and nearly 3,000 for the 2km study area for Weston Marsh north of the A52. Of these, 177 were from within the PEIR Boundary for Weston Marsh south of the A52 and 215 from within the PEIR Boundary for Weston Marsh north of the A52.
- 21.4.141Records for water vole are provided in Volume 2, Appendix 21.1: Desk Study with Figure 21.27 illustrating the locations of the data.



21.4.142An initial survey of the ditch network within the PEIR Boundary and 200m upstream/downstream of the PEIR Boundary is currently underway. The survey will evaluate habitat suitability within watercourses for water vole. Where suitable habitat exists, further water vole surveys will be carried out. The results of ongoing and further surveys will be provided in a water vole survey report appended to the ES.

#### **Other Terrestrial Mammals**

- 21.4.143The desk study returned a single record for red squirrel (*Sciurus vulgaris*) dated 2000, from Weston, near Spalding, within the study area for 'WM14 Fosdyke Bridge Weston Marsh South' segment (Figure 21.28). This record may be spurious and as no suitable habitat is located within the OnSS in the vicinity no targeted survey for red squirrel is proposed at the time of writing. No other records of small mammals were returned.
- 21.4.144Habitat suitable for a range of small mammals such as brown hare, hedgehog and harvest mouse (*Micromys minutus*) is present within the PEIR Boundary and therefore such species are potentially present but unrecorded. Species observed incidentally during all field surveys will be recorded, and details presented in the ES where relevant.

### Invasive Non-Native Species (INNS)

- 21.4.145The INNS New Zealand pigmyweed has been recorded at Mogg's Eye Sea Bank LWS, 1.18km north of both Weston Marsh PEIR Boundary options.
- 21.4.146No other records for INNS were returned by the GLNP.
- 21.4.147The presence of invasive species within the study area will be noted during ongoing and future field surveys and reported within the ES.

## **Future Baseline**

- 21.4.148Baseline ecological conditions could evolve in the future as a result of land use policy, environmental improvements and development pressures. There may also be some changes to the baseline over time as a result of natural variation and weather events.
- 21.4.149Climate change is also predicted to result in complex changes to biodiversity. Of most relevance at the Project location is that coastal plants and wildlife that cannot respond to sea level rise or coastal erosion by moving inland (for example, due to the presence of urban land or flood defences) are anticipated to be lost. In addition, the number and species and distribution of INNS is likely to increase.
- 21.4.150The above events and trends have the potential to alter the baseline assessment to the EcIA over time. However, in the absence of any detailed, quantifiable information it has been assumed that the baseline conditions will remain largely as they are for the purpose of the assessment (with the exception of other developments, where known, which are considered in the assessment of cumulative effects (see section 21.8).



### 21.5 Basis of Assessment

### Realistic Worst-Case Scenario

21.5.1 As the Project design is ongoing, the MDS identified in Table 21.12 has been selected as having the potential to result in the greatest effect on an identified receptor or receptor group. These scenarios have been selected from the details provided in Volume 1, Chapter 3: Project Description. Effects of greater significance are not predicted to arise should any other development scenario to that assessed here be taken forward in the final scheme design, within the assessed boundaries. The MDS takes into consideration avoidance of impacts by design and the use of trenchless techniques, as described in Table 21.12.

# Scope of the Assessment

- 21.5.2 During the scoping phase of the assessment, a range of potential impacts on Onshore Ecology were identified which may occur during the construction, operation and maintenance, and decommissioning phases. In line with the Scoping Opinion (The Planning Inspectorate, 2022), it was agreed that the majority of impacts remain scoped into the assessment until further Project design details become available.
- 21.5.3 The impacts that have been scoped into the assessment are listed below:
  - Construction:
    - Impact 1: Damage to international and national designated sites, local nature reserves, local wildlife sites, and other nature reserves within and surrounding the PEIR Boundary;
    - Impact 2: Damage to areas of priority habitat and veteran trees outside designated sites;
    - Impact 3: Permanent habitat loss, including veteran trees;
    - Impact 4: Temporary habitat loss;
    - Impact 5: Damage to populations of rare arable weeds;
    - Impact 6: Pollution of waterbodies and watercourses, especially via suspended solids but potentially also via spillage of vehicle fluids from construction machinery;
    - Impact 7: Killing, injury and disturbance of protected and priority species;
    - Impact 8: Loss and damage of habitat for protected and priority species, including disruption of movement;
    - Impact 9: Spread of INNS; and
    - Impact 10: Air quality impacts on all ecological features.
  - Operation and maintenance:
    - Impact 1: Disturbance of protected and priority species during planned and unplanned maintenance works when the Project is operational.
  - Decommissioning:



• Impacts are likely to be similar to construction, but more limited in geographical extent and timescale and there would be no permanent habitat loss.



Table 21.12: Maximum Design Scenario for Ecology (all options)

Potential effect	Maximum Design Scenario	Justification
Construction		
Impact 1: Damage to international and national designated sites, LNRs, local wildlife sites, and nature reserves within and surrounding the AoS known for including scarce and protected species.	Trenchless techniques will be adopted to prevent impacts to designated sites.	The MDS includes the maximum development footprint (temporary and permanent) and therefore the largest possible area of damage and disturbance to ecological features.  It also assumes use of the technologies likely to
Impact 2: Damage to areas of priority	Where there is no certainty that trenchless techniques will be	cause most damage where the technology to be
habitat and veteran trees outside designated sites.	used, trenched crossing has been assumed as a worst-case scenario. Trenching options for smaller watercourse crossings are considered to represent the greatest potential impact to	used is still uncertain, e.g. trenched crossing of smaller watercourses, and that the most ecologically sensitive habitats would be
AND	ecological features, either directly or indirectly through hydrological changes. For the assessment presented in the	affected, where there are different routing options.
Impact 3: Permanent habitat loss,	PEIR, the onshore ECC is assumed to be a maximum of 80m	
including veteran trees.	wide for open trench sections and approximately 120m wide for trenchless technique sections, and approximately 15km	
AND	(Lincolnshire Node), and 60 km (Weston Marsh south of the A52 and Weston Marsh north of the A52) in length.	
Impact 4: Temporary habitat loss.	· -	
AND	Permanent habitat loss associated with the onshore ECC is limited to the transition joint bays. At the time of writing design detail relating to these is not available. Temporary	
Impact 5: Damage to population of rare arable weeds.	habitat loss during construction includes land disturbed via the worst-case cable corridor route.	
AND	For PEIR, indicative OnSS locations have been provided and the following has been assumed:	



Potential effect	Maximum Design Scenario	Justification
Impact 6: Pollution of waterbodies and watercourses, especially via suspended solids.	<ul> <li>Maximum of one substation;</li> <li>Indicative permanent site area for substation of 18 ha (up to the permanent fencing)</li> <li>Indicative temporary working area for construction of substation of up to 27 ha</li> </ul>	
	Potential damage to rare arable weeds would result from temporary and permanent habitat loss, pollution and changes to hydrological conditions.	
Impact 7: Killing, injury and disturbance of protected and priority species.	The potential exists for protected or notable species to be impacted by inadvertent injury or killing, or from disturbance via light, noise and human presence.	
	Prior to the completion of detailed ecological field surveys, all UK legally protected and notable species known, or considered likely to occur within the study area are included.	
	The maximum adverse scenario for this effect is based on the temporary and permanent habitat loss areas given above.	
	At the time of writing the commencement of construction or duration is not well defined, however with regard to ecology the year is irrelevant. It is assumed that the construction will take place over 36 months and across all seasons.	
	24-hour working has been assumed to be required on occasion, otherwise it has been assumed that works would be limited to 07:00 to 19:00 from Monday to Friday.	
	Temporary lighting has been assumed to be necessary during construction hours at the times of year when working hours	



Potential effect	Maximum Design Scenario	Justification
	would otherwise be in darkness (approximately October – April).	
Impact 8: Loss and damage of habitat	The potential exists for protected or notable species to be	
for protected and priority species.	impacted by construction activities via permanent or temporary habitat loss.	
	There is potential for temporary habitat fragmentation and species isolation as a result of onshore ECC construction. Permanent habitat fragmentation and species isolation could result from land take associated with construction of the OnSS.	
	Prior to the completion of detailed ecological field surveys, all UK legally protected and notable species known, or considered likely to occur within the study area are included.	
	The maximum adverse scenario for this affect is based on the temporary and permanent habitat loss areas given above. However, the duration of temporary habitat fragmentation is habitat, location and species specific. For PEIR it is considered to last for a maximum period of five years post construction; this being the approximate duration for recovery of a hedgerow or drainage ditch to ecological function for use by	
	most species.	
Impact 9: Spread of INNS.	No INNS have been identified at present. However, there is potential for the presence of INNS which could be spread by construction activities, anywhere across an area equal to the maximum habitat loss areas anticipated.	



Potential effect	Maximum Design Scenario	Justification
Impact 10: Air quality impacts on all ecological features.	Effects from air quality are largely associated with nutrient nitrogen deposition caused by construction traffic and equipment. The assessment will focus on areas within and close to the construction zone, temporary site compounds and along access roads where the Critical Load could exceed 1%. The assessment is presented in Volume 1, Chapter 19: Onshore Air Quality.	
Operation and Maintenance		
Impact 1: Disturbance of protected and priority species during planned and unplanned maintenance works when the proposed development is	Planned maintenance of the onshore ECC requires visits to cable joint bays.  Unplanned maintenance may involve the repair of onshore	Parameters are based on those stated within the Onshore Project Description (6.1.3).
operational.	cable faults. This is extremely rare (indicatively 1-2 events per lifetime). Typically, this involves excavating the two adjacent joint bays, pulling the cable back through the ducting and pulling a new cable through. Alternatively, the area of the fault may be excavated, and two new joints installed within this area. Methods for exaction and reburial will be similar to the original installation.	
	The extent or nature of any unplanned corrective maintenance required cannot be predicted at this stage and therefore possible effects in terms of disturbance cannot be assessed. Any unplanned corrective maintenance required would be subject to any necessary consents and consultation with the relevant nature conservation bodies at the time.	



Potential effect	Maximum Design Scenario	Justification
	Planned maintenance at the OnSS is likely to be highly localised with a minimal likelihood of disturbance expected to the adjacent habitats and species.	
	For unplanned major maintenance, vehicles similar to those used for construction may also be required (rigid lorries delivering materials, low loaders delivering plant and individual vehicles for personnel). In the event of a transformer replacement or failure, an Abnormal Indivisible Load (AIL) similar to that used during construction would be required.  Lighting at the OnSS would be directional for safety and security. Task specific lighting could be used externally, if	
	required, on a very infrequent basis.	
Decommissioning		
Impact 1: Impacts likely to be similar to construction, but more limited in	Removal of the OnSS including areas of hardstanding.	The MDS includes the maximum footprint and therefore the largest possible area of
geographical extent and timescale and there would be no permanent	Buried cables would be de-energized with the ends sealed and left in place to avoid ground disturbance.	disturbance to ecological features.
habitat loss.	Transition Joint Bays to be left in place.	It assumes that the most ecologically sensitive habitats would be affected, where there are different routing options.



# **Embedded Mitigation**

- 21.5.4 Primary mitigation in respect of the proposed landfall, onshore ECC and OnSS options has involved the sensitive siting and design of the onshore infrastructure during site selection, to ensure potential impacts are avoided or reduced.
- 21.5.5 Mitigation measures that have been identified and adopted as part of the evolution of the Project design so far (embedded into the Project design) and that are relevant to Onshore Ecology are listed in Table 21.13. This list of measures may be expanded within the ES, as a result of ongoing survey findings and further development of the Project design.

Table 21.13: Embedded Mitigation relating to Onshore Ecology for all options

Project phase	Mitigation measures embedded into the Project design
General	
Project Design	Careful siting of the landfall and onshore ECC and design of key crossing points and avoidance of direct impacts to designated sites, including SSSIs, LWSs and LWT reserves followed as far as possible.
	Where the route unavoidably crosses these designations, trenchless techniques will be used.
	Avoidance of direct impacts on key areas of sensitivity including Priority Habitats (e.g., coastal sand dunes and reedbeds), wherever possible.
Construction	
Bat EPSL	Although surveys have yet to be completed, existing data suggest that roosting bats are present within the study area and that an EPSL may be required if impacts on bats, their roosts, or their resting places are unable to be avoided. If required, the conditions of the EPSL would be specified to ensure that construction and continued presence of the cable route, OnSS and associated infrastructure, does not result in significant adverse effects on the local population. This may include creation of compensation/mitigation roost spaces and habitats for use by bats.  An EPSL will be sought for any significant impacts on bats.
	Further details will be provided in the ES once surveys have been completed and mitigation/ compensation proposals have been further developed.
GCN EPSL	Although surveys have yet to be completed, existing data suggest that GCN are present within the study area and that an EPSL may be required for impacts on any aquatic or terrestrial habitats of breeding populations of GCN. If required, the conditions of the EPSL would be specified to ensure that construction and continued presence of the cable route, OnSS and associated infrastructure, does not result in significant adverse effects on the local population. This may include creation of compensation/mitigation habitats for use by GCN and other amphibians.



An EPSL will be sought for any significant impacts on GCN.  Further details will be provided in the ES once surveys have been completed and mitigation/ compensation proposals have been further developed.  Water Vole Licence (Wildlife and Countryside Act, 1981)  Water vole are present within the study area and that displacement of water voles and damage or destruction of burrows and bankside habitat may be required. Any such work would be undertaken under licence to ensure that construction and continued presence of the cable route, OnSS and associated infrastructure, does not result in significant adverse effects on the local population. This may require the creation of compensation/ mitigation habitats for water vole, in which event an ecological compensation and mitigation scheme will be developed for the Project.  Further details will be provided in the ES once surveys have been completed and mitigation/ compensation proposals have been further developed.  Badger Licence (Protection of Badgers Act, 1992)  Badgers Act, 1992)  Badgers Act, 1992)  Badgers Act, 1992)  Badger Licence be recological will be made for badger access in relevant construction areas, when work is not taking place in order to ensure normal movements as far as reasonably possible. Provision will be made to ensure avoiding the entrapment of any animals within relevant construction areas subject to further ecological Surveys. Checks will be made as required by the Ecological Clerk of Works (EcoW).  Field surveys have recorded the presence of main setts within the study area and destruction of one or more setts may be required. Any such work would be undertaken under licence to ensure that construction and continued presence of the cable route, OnSS and associated infrastructure, does not result in killing or injury of badgers or impacts to the local population. This may require the creation of compensatory setts, in which event an ecological compensation and mitigation scheme will be developed for the Project.  Further details will be provi		OFFSHORE WIND
Further details will be provided in the ES once surveys have been completed and mitigation/ compensation proposals have been further developed.  Water Vole Licence (Wildlife and Countryside Act, 1981)  Act, 198	Project phase	Mitigation measures embedded into the Project design
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	OFFSHORE WIND
Project phase	<ul> <li>Mitigation measures embedded into the Project design</li> <li>be undertaken to update the baseline and determine potential impacts at the time of construction;</li> <li>Micro-siting of the Project elements will be used to avoid IEFs where possible;</li> <li>Protective fencing will be installed around retained habitats of importance;</li> <li>An ECoW will be employed to oversee construction work and minimise risks to IEFs;</li> <li>All habitats will be reinstated as soon as practicable following construction. Hedgerows will be reinstated using a species-rich, locally appropriate native mixture including heavy standard trees at a 3:1 ratio for any lost; and</li> <li>Checks for the presence of badger setts, reptiles, amphibians, hedgehogs and other protected or notable species will be carried out by the EcoW prior to vegetation clearance. Additional reasonable</li> </ul>
Landscape and	avoidance measures will be implemented, and mitigation licences will be applied for as necessary. Details will be provided in the ES upon completion of the relevant surveys.  Ecological, mitigation and compensation will be identified within a LEMS.
Landscape and Ecology Management Strategy (LEMS)	The LEMS will also include details of proposed biodiversity enhancements. A LEDPP has been provided with the PEIR (document 8.7), and will be updated to produce the LEMS to be submitted alongside the ES once relevant surveys have been completed and proposed measures have been developed further, with a detailed final version prepared at the Detailed Design stage. The LEDPP sets out the key ecology and landscape elements that will be secured in the final LEMS which the Project will be required to submit to the relevant planning authority for approval as a requirement of the DCO.
Biosecurity and INNS Management Plan	All construction work will be undertaken in accordance with an INNS Management Plan. An outline INNS Management Plan will be included within the ES.
Pollution Prevention and Emergency Incident Response Plan	Construction practices will incorporate measures to prevent pollution. All construction work will be undertaken in accordance with a Pollution Prevention and Emergency Incident Response Plan (PPEIRP). A draft PPEIRP (document reference 8.1.4) has been provided with PEIR and will be updated to be submitted alongside the ES.
Best Practice	All construction work will be undertaken in accordance with the CoCP and relevant good practice guidance including, but not limited to:  Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors CIRIA (C532) (CIRIA, 2001);  CIRIA – SuDS Manual (C753) (CIRIA, 2015) including:  No discharge to main river watercourses will occur without permission from the relevant IDBs, including the Environment Agency (SuDS Manual or alternative appropriate standard);



Project phase	Mitigation measures embedded into the Project design					
	<ul> <li>Wheel washers and dust suppression measures to be used as appropriate to prevent the migration of pollutants (SuDS Manual or alternative appropriate standard); and</li> <li>Regular cleaning of roads of any construction waste and dirt to be carried out (SuDS Manual or alternative appropriate standard).</li> </ul>					
<b>Operation and Maint</b>	enance					
General	Operational practices will incorporate measure to prevent pollution and increased flood risk, including emergency spill response procedures, clean up and control of any potentially contaminated surface water runoff. These measures will be included within an Environmental Management System (EMS).  The EMS would also include specific measures to avoid potential impact to protected or notable species or sensitive habitats.  Where unplanned operational or maintenance works are required, appropriate mitigation measures would be developed and agreed with					
	appropriate mitigation measures would be developed and agreed with relevant consultees prior to works taking place.					
Decommissioning						
General	Decommissioning practices will incorporate measure similar to the construction phase, to prevent impact to ecological features.  Provision of a decommissioning plan in advance of decommissioning works will be a requirement of the DCO, to include protection of ecological features, based on up-to-date survey information and relevant guidance in place at the time of decommissioning.					

# 21.6 Assessment Methodology

- 21.6.1 The ecological evaluation and impact assessment approach used in this report is based on CIEEM Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland (CIEEM, 2018, updated in April 2022), which are widely regarded as industry best practice.
- 21.6.2 It has not been possible to complete the impact assessment fully owing to the continuing development of Project design and ongoing field surveys. However, an interim assessment has been provided where possible.

### Important Ecological Feature (IEFs)

- 21.6.3 Ecological features can be important for a variety of reasons and the rationale used to identify them is explained below. Importance may relate, for example, to protected status, the quality or extent of the site or habitats therein; habitat and/ or species rarity; the extent to which such habitats and/ or species are threatened throughout their range, or to their rate of decline.
- 21.6.4 Important habitats are considered to be those which:



- Match descriptions of habitats listed on Annex 1 of the Habitats Directive, so far as is applies to the UK and as transposed be The Conservation of Habitats and Species Regulations 2017 (as amended);
- Comprise irreplaceable habitats, such as (but not limited to) sand dunes, and veteran trees;
- Match descriptions for Priority Habitats and/or Lincolnshire BAP habitats; and/or
- Comprise a significant habitat resource for an important species (see below).
- 21.6.5 Important species are considered here to be those:
  - Of European conservation importance (as listed on Annexes II, IV and V of the Habitats Directive) so far as it applies to the UK and as transposed by The Conservation of Habitats and Species Regulations 2017 (as amended);
  - Specially protected under the terms of the Wildlife and Countryside Act 1981 (as amended);
  - Red listed or listed as near threatened using International Union for the Conservation of Nature (IUCN) criteria (IUCN, 2012; IUCN, 2016; IUCN, 2019), e.g., in one of the UK Species Status Project reviews, or where a more recent assessment of the taxonomic group has not yet been undertaken, listed in a Red Data Book;
  - Which are listed as a Nationally Rare or Nationally Scarce species (e.g. in one of the Species Status Project reviews) or listed as a nationally notable species where a more recent assessment of the taxonomic group has not yet been undertaken; and/or,
  - Endemic to a country of geographic location (it is appropriate to recognise endemic subspecies, phenotypes, or cultural behaviours of a population that are unique to a particular place).
- 21.6.6 The CIEEM Guidelines state that the importance of an ecological feature should be considered within a defined geographical context. At the time of writing, it is not possible to determine the importance of most habitats and species as baseline surveys have yet to be completed. However, the following frame of reference is used for features for which survey data are available (e.g. designated sites) and will be used for habitats and species in the ES:
  - International;
  - UK;
  - National (i.e. England);
  - County (i.e. Lincolnshire); and
  - Local (i.e. within *circa* 5km of the PEIR Boundary).
- 21.6.7 For the purposes of this assessment, only ecological features of Local importance or greater and/ or subject to legal protection are subject to detailed assessment (and are referred to as "IEFs"). Effects on other ecological features of lower importance are considered unlikely to be significant in legal or policy terms so are not subject to detailed assessment.



- 21.6.8 Table 21.14 outlines the IEFs that have been identified within the relevant study areas for each option, or which based upon desk study information or habitat suitability are considered likely to be present within the relevant study areas, and which may be affected by the Project.
- 21.6.9 It has not been possible to evaluate the importance of some habitats and species populations for this Chapter, as data are still being collected through ongoing baseline survey. Where this is case, it is acknowledged in tables below.
- 21.6.10 As baseline data continues to be collected it is possible that some of the valuations provided in Table 21.14 may be subject to change on completion of the ongoing and proposed surveys.

Table 21.14: IEFs identified within the route study areas

Important Ecological Feature	Reason for Importance	Geographic Scale of Importance	Route Op Lincolnshire Node	tion of rele Weston Marsh South of A52	vance Weston Marsh North of A52
The Wash (and North Norfolk Coast) SAC, SSSI and NNR	Beyond the PEIR Boundary. Site of European Importance	International	Y	Y	Υ
Saltfleetby- Theddlethorpe Dunes SAC, SSSI and NNR	Beyond PEIR Boundary. Site of European and national importance	International	Y	Υ	Υ
Humber Estuary SAC	Beyond the PEIR Boundary. Site of European Importance	International	Υ	Y	Υ
Bratoft Meadows SSSI	Beyond PEIR Boundary.  Site of national importance	National	Υ	Y	Y
Gibraltar Point SSSI and NNR	Beyond the PEIR Boundary. Site of national importance	National	Y	Y	Υ
Mavis Enderby Valley SSSI	Beyond PEIR Boundary.  Site of national importance	National	Υ	/	/
Sea Bank Clay Pits SSSI	Within PEIR Boundary.  Site of national importance	National	Υ	Υ	Υ
Surfleet Lows SSSI	Beyond PEIR Boundary.  Site of national importance	National	/	Y	Y



					TORE WIND
			Route Op	tion of rele	vance
Important		Geographic		Weston	Weston
Ecological	Reason for Importance	Scale of	Lincolnshire	Marsh	Marsh
Feature	·	Importance	Node	South of	North of
				A52	A52
	Beyond PEIR Boundary.			7.32	7132
Willoughby	Site of national	National	/	Υ	Υ
Meadow SSSI	importance	National	/	<b>'</b>	•
Willoughby	Beyond PEIR Boundary.	National	,	V	V
Wood SSSI	Site of national	National	/	Y	Υ
	importance				
Candlesby Hill	Beyond PEIR Boundary.		,		
SSSI	Site of national	National	/	Υ	Υ
	importance				
Hoplands Wood	Beyond PEIR Boundary.				
SSSI	Site of national	National	/	Υ	Υ
3331	importance				
Charadlaha Daaltan	Beyond PEIR Boundary.				
Skendleby Psalter	Site of national	National	/	Υ	Y
Banks SSSI	importance				
	Beyond PEIR Boundary.				
Jenkins Carr SSSI	Site of national	National	/	Υ	Υ
Jenning Can 5551	importance	rtacionai	,		•
	Beyond PEIR Boundary.				
Keal Carr SSSI	Site of national	National	/	Υ	Υ
icai cari 555i	importance	National	/	ı	'
	·				
Calceby Marsh	Beyond PEIR Boundary.  Site of national	National	,	V	V
SSSI		National	/	Y	Y
	importance				
Swaby Village	Beyond PEIR Boundary.		,	.,	
SSSI	Site of national	National	/	Y	Υ
	importance				
Muckton Wood	Beyond PEIR Boundary.				
SSSI	Site of national	National	Υ	/	/
	importance				
A16 verges North	Beyond PEIR Boundary.				
of the River Glen	Site of county	County	/	Υ	Υ
LWS	importance				
A all C I	Within PEIR Boundary.				
Anderby Creek	Site of County	County	Υ	Υ	Υ
Sand Dunes LWS	Importance	- 1			
	Within PEIR Boundary.				
Anderby Gravity	Site of County	County	Υ	Υ	Υ
Outfall LWS	Importance	Country		'	<b>'</b>
Anderby Marsh	importance				
	Within PEIR Boundary.	County	Υ	Υ	Υ
LWT					<u> </u>



OFFSHORE WIND					
			Route Op	tion of rele	vance
Important		Geographic		Weston	Weston
Ecological	Reason for Importance	Scale of	Lincolnshire	Marsh	Marsh
Feature		Importance	Node	South of	North of
				A52	A52
	Site of County				
	Importance				
Blue Gowt Drain,	Beyond PEIR Boundary.				
North LWS	Site of County	County	/	Υ	Υ
NOI LII LVV3	Importance				
Chapel Pit Nature	Within PEIR Boundary.				
Reserve (non-	Site of County	County	Υ	Υ	Υ
SSSI) LWS, LWT	Importance				
Chapel Point	Within PEIR Boundary.				
Dunes, North	Site of County	County	Υ	Υ	Υ
LWS	Importance				
Chapel Point	Within PEIR Boundary.				
Dunes, South	Site of County	County	Υ	Υ	Υ
LWS	Importance	•			
Chapel Point	Beyond PEIR Boundary.				
Dunes, North	Site of County	County	/	Υ	Υ
LWS	Importance				
Chapel Six	Within PEIR Boundary.				
Marshes LWS,	Site of County	County	Υ	Υ	Υ
LWT	Importance	,			
	Beyond PEIR Boundary.				
Dove's Lane	Site of County	County	/	Υ	Υ
Drain LWS	Importance	,			
	Beyond PEIR Boundary.				
Frampton Hall	Site of County	County	/	Υ	Υ
LWS	Importance				
	Beyond PEIR Boundary.				
Frampton Marsh	Site of County	County	/	Υ	Υ
LWT Reserve	Importance	•			
Havenside	Within PEIR Boundary.				
Country Park	Site of County	County	/	Υ	Υ
LNR, LWS	Importance	•			
	Within PEIR Boundary.				
Hobhole Bank	Site of County	County	/	Υ	Υ
LWS	Importance	,			
Hobhole Drain,	Within PEIR Boundary.				
Baker's Bridge	Site of County	County	/	Υ	Υ
South LWS	Importance	,			
	Beyond PEIR Boundary.				
Hobhole Drain,	Site of County	County	/	/	Υ
Benington Bridge	Importance	- 1		,	
		l	I.	<u> </u>	<u> </u>



			,		TORE WIND
Route Option of rele					
Important		Geographic		Weston	Weston
Ecological	Reason for Importance	Scale of	Lincolnshire	Marsh	Marsh
Feature		Importance	Node	South of	North of
				A52	A52
to Baker's Bridge LWS					
Hobhole Drain,					
Simmon House	Beyond PEIR Boundary.				
Bridge to	Site of County	County	/	/	Υ
Benington Bridge	Importance				
LWS					
Hogsthorpe Pit	Within. PEIR Boundary.				
LWS	Site of County	County	/	Υ	Υ
LVV3	Importance				
Handle and Bu	Within PEIR Boundary.				
Hogsthorpe Pit	Site of County	County	Υ	Υ	Υ
LWS	Importance	,			
Huttoft Carr	Within PEIR Boundary.				
Terrace to Marsh	Site of County	County	Υ	Υ	Υ
Yard Dunes LWS	Importance	,			·
Marsh Yard to	Within PEIR Boundary.				
Anderby Creek	Site of County	County	Υ	Υ	Υ
Dunes LWS	Importance	County	'	Į.	'
Dulles LVV3	•				
Middlemarsh	Beyond PEIR Boundary.	Country	,	Υ	V
Farm LWS	Site of County	County	/	Y	Υ
	Importance				
MIddlemarsh	Beyond PEIR Boundary.		,	.,	
Meadows LWS	Site of County	County	/	Y	Υ
	Importance				
Moggs Eye Sea	Within PEIR Boundary.				
Bank Ponds LWS	Site of County	County	Υ	Υ	Υ
	Importance				
Moulton Marsh	Within PEIR Boundary.				
LWS, LWT	Site of County	County	/	Υ	Υ
LVV3, LVV1	Importance				
Marillan D'	Beyond PEIR Boundary.				
Moulton River	Site of County	County	/	Υ	Υ
LWS	Importance	·			
Pinchbeck Marsh	Beyond PEIR Boundary.				
	Site of County	County	/	Υ	Υ
LWS	Importance		,		-
	Within PEIR Boundary.				
	Site of County				
Risegate Eau LWS	Importance	County	/	Υ	Υ
	importance				
			1		L



					TORE WIND
			Route Op	tion of rele	vance
Important		Geographic		Weston	Weston
Ecological	Reason for Importance	Scale of	Lincolnshire	Marsh	Marsh
Feature	·	Importance	Node	South of	North of
				A52	A52
	Beyond PEIR Boundary.			7.32	7.32
River Glen	Site of County	County	,	Υ	Υ
Corridor LWS	•	County	/	<u> </u>	'
-	Importance				
Shore Road Drain	Within PEIR Boundary.	C1	,	V	V
LWS	Site of County	County	/	Y	Υ
	Importance				
Slippery Gowt	Beyond PEIR Boundary.				
Sea Bank LWS	Site of County	County	/	Υ	Υ
	Importance				
Sloothby Low	Beyond PEIR Boundary.				
Sloothby Low Lane LWS	Site of County	County	/	Υ	Υ
	Importance				
Ca the Basel	Beyond PEIR Boundary.				
South Bank	Site of County	County	/	Y	Y
Fosdyke LWS	Importance				
Spendluffe	Within PEIR Boundary.				
Meadows LWS,	Site of County	County	Υ	/	Υ
LWT	Importance	country		,	'
	Beyond PEIR Boundary.				
Steeping Marsh	Site of County	County	,	Υ	Υ
LWS	•	County	/	ľ	I
	Importance				
Surfleet Bank	Beyond PEIR Boundary.	Carrater	,	V	V
LWS	Site of County	County	/	Y	Υ
	Importance				
Surfleet Seas End	Beyond PEIR Boundary.		,		
Saltmarsh LWS	Site of County	County	/	Υ	Y
	Importance				
	Beyond PEIR Boundary.				
The Lymn LWS	Site of County	County	/	/	Υ
	Importance				
Vornatt's Drain	Beyond PEIR Boundary.				
Vernatt's Drain	Site of County	County	/	Υ	Υ
LWS	Importance				
Malla Da I Du	Within PEIR Boundary.				
Wolla Bank Pit	Site of County	County	Υ	Υ	Υ
LWT	Importance	- 1			
	Within PEIR Boundary.				
Wolla Bank	Site of County	County	Υ	Υ	Υ
Reedbed LWT	Importance	Country		'	'
Wolla Bank South	importance				
	Within PEIR Boundary.	County	Y	Υ	Υ
LWS			<u> </u>		<u> </u>



			'		TORE WIND
			Route Op	tion of rele	vance
Important		Geographic		Weston	Weston
Ecological	Reason for Importance	Scale of	Lincolnshire	Marsh	Marsh
Feature	neason for importance	Importance	Node	South of	North of
reature		importance	Noue		
		I	I	A52	A52
	Site of County				
	Importance				
Mrangla Driek	Beyond PEIR Boundary.				
Wrangle Brick	Site of County	County	/	Υ	Υ
Pits LWS	Importance	,	·		
Coastal and					
Floodplain	Within PEIR boundary	Not assessed			
•	Examples of habitat				
Grazing Marsh –	may be Priority Habitat	pending	Υ	Υ	Υ
Priority Habitat	and Lincolnshire BAP	further			
(and Lincolnshire	habitat.	habitat survey			
BAP)	mabitat.				
Coastal Sand	Within PEIR Boundary	Not assessed			
	Examples of habitat	pending			
Dunes – Priority	may be Priority Habitat	further	Υ	Υ	Υ
Habitat (and	and Lincolnshire BAP	habitat survey			
Lincolnshire BAP)	habitat.	Trabitat sarvey			
	Within PEIR Boundary	Not assessed			
Coastal Saltmarsh	•				
<ul> <li>Priority Habitat</li> </ul>	Examples of habitat	pending	,	.,	.,
(and Lincolnshire	may be Priority Habitat	further	/	Υ	Υ
BAP)	and Lincolnshire BAP	habitat survey			
	habitat.				
Lowland Mixed	Within PEIR Boundary	Not assessed			
Deciduous	-	pending			
Woodland –	Examples of habitat	further	.,	.,	.,
Priority Habitat	may be Priority Habitat	habitat survey	Y	Υ	Υ
(and Lincolnshire	and Lincolnshire BAP	,			
BAP)	habitat.				
Lowland	Within PEIR boundary	Not assessed			
Meadows –	Examples of habitat	pending			
	·	further	Υ	,	v
Priority Habitat	may be Priority Habitat		Y	/	Υ
(and Lincolnshire	and Lincolnshire BAP	habitat survey			
BAP)	habitat.				
Lowland	Beyond the PEIR	Not assessed			
Calcareous	boundary	pending			
Grassland –	Examples of habitat	further	,	Υ	Υ
Priority Habitat	may be Priority Habitat	habitat survey	<b>'</b>	'	,
(and Lincolnshire	and Lincolnshire BAP				
BAP)	habitat.				
Saline Lagoons –	Beyond the PEIR	Not assessed	,	\ <u>'</u>	Υ
<b>Priority Habitat</b>	boundary	pending		Y	l t



			·		TORE WIND
			Route Op	tion of rele	vance
Important		Geographic		Weston	Weston
Ecological	Reason for Importance	Scale of	Lincolnshire	Marsh	Marsh
Feature	·	Importance	Node	South of	North of
, catal c		mportanee	11040	A52	A52
(and Lincolnshire	Examples of habitat	further		A32	AJZ
BAP)	may be Priority Habitat	habitat survey			
DAP	,	Habitat Survey			
	and Lincolnshire BAP				
	habitat.				
Mudflats -	Within PEIR Boundary	Not assessed			
Priority Habitat	Examples of habitat	pending			
(and Lincolnshire	may be Priority Habitat	further	Υ	Υ	Υ
BAP)	and Lincolnshire BAP	habitat survey			
DAP	habitat.				
Reedbeds/	Within PEIR Boundary	Not assessed			
Reedbeds and	Examples of habitat	pending			
Bittern – Priority	may be Priority Habitat	further	Υ	Υ	Υ
Habitat (and	and Lincolnshire BAP	habitat survey			
Lincolnshire BAP)	habitat.	,			
	Beyond the PEIR	Not assessed			
Traditional	boundary	pending			
Orchard – Priority	Examples of habitat	further			
Habitat (and	may be Priority Habitat	habitat survey	Y	Υ	Υ
·	and Lincolnshire BAP	Habitat Survey			
Lincolnshire BAP)					
	habitat.	NI-1			
Hedgerow and	Within PEIR Boundary	Not assessed			
Hedgerow Trees -	Examples of habitat	pending			
Priority Habitat	may be Priority Habitat	further	Y	Υ	Υ
(and Lincolnshire	and Lincolnshire BAP	habitat survey			
BAP)	habitat.				
Rivers, Canals	Within PEIR Boundary	Not assessed			
and Drains -	Examples of habitat	pending			
Priority Habitat	may be Priority Habitat	further	Y	Υ	Υ
(and Lincolnshire	and Lincolnshire BAP	habitat survey			
BAP)	habitat.				
Ponds, Lakes and	Within PEIR Boundary	Not assessed			
Reservoirs –	Examples of habitat	pending			
Priority Habitat	may be Priority Habitat	further	Υ	Υ	Υ
(and Lincolnshire	and Lincolnshire BAP	habitat survey			
BAP)	habitat.				
	May be present within				
	PEIR Boundary	Not assessed			
Arable field	Examples of habitat	pending	Υ	Υ	Υ
margins	likely to be present and	further	'	'	'
		habitat survey			
	may be Priority Habitat				



					HORE WIND
			Route Op	tion of rele	vance
Important		Geographic		Weston	Weston
Ecological	Reason for Importance	Scale of	Lincolnshire	Marsh	Marsh
Feature		Importance	Node	South of	North of
reature		importance	Nouc	A52	A52
	and under the			7,32	AJZ
	Lincolnshire BAP				
	Within PEIR Boundary				
	Examples of habitat and				
	may be Priority Habitat				
	under the Lincolnshire				
Urban		County	Y	Υ	Υ
	BAP and may also				
	qualify under the UK				
	BAP criteria.				
	Within PEIR Boundary				
	Not BAP habitat but				
Shrub	supports many BAP	At least Local	Y	Υ	Υ
	species.				
	Within PEIR Boundary				
	Where not Priority or	At least Local			
	-				
Grassland	BAP habitat, this habitat		Υ	Υ	Υ
Grassiana	still supports many				'
	Priority and BAP				
	species.				
	May be present within				
	PEIR Boundary				
	Records of notable	Not yet			
Important Plants	species from designated	assessed.	Υ	Υ	Υ
	sites within or	Surveys			·
	immediately adjacent to	ongoing.			
	the PEIR Boundary.				
	May be present within				
	PEIR Boundary	Not yet			
	Records of notable	assessed.			
Invertebrates			Υ	Υ	V
Invertebrates	species from designated	Habitat	ľ	Į Ť	Υ
	sites within or	survey			
	immediately adjacent to	ongoing.			
	the PEIR Boundary.				
	May be present within				
	PEIR Boundary	Not yet			
Fish	Some suitable habitat	assessed.	Υ	Υ	Υ
1 1311	present within PEIR	Desk study	'	'	'
	boundary which may	ongoing.			
	support				



			,		HORE WIND
			Route Op	tion of rele	vance
Important		Geographic		Weston	Weston
Ecological	Reason for Importance	Scale of	Lincolnshire	Marsh	Marsh
Feature		Importance	Node	South of	North of
		•		A52	A52
	protected/notable				
	species.				
	Sp 33.331				
	Present within Study				
	Area				
	Surveys ongoing,	Not yet			
		=			
Amphibians	suitable habitat present	assessed.	Υ	Υ	Υ
	within the PEIR	Surveys			
	boundary which may	ongoing.			
	support protected				
	species.				
	Present within Study				
	Area				
	Surveys ongoing,	Not yet		Y	
Reptiles	suitable habitat present	assessed.	Υ		Υ
Reptiles	within the PEIR	Surveys	•	<b>'</b>	'
	boundary which may	ongoing.			
	support protected				
	species.				
	Present within Study				
	Area				
	Surveys ongoing,				
	suitable habitat present	Not yet			
	within the PEIR	assessed.			
Bats	boundary which is likely	Surveys	Υ	Υ	Υ
	to support foraging,	ongoing.			
	commuting and	0116011161			
	potentially roosting				
	bats.				
	Present within PEIR				
		Not yet			
Dadaar	<b>Boundary</b> Presence of main setts	assessed.	Υ	Υ	Y
Badger		Surveys	Y	Y	Y
	confirmed, but surveys	ongoing.			
	ongoing.				
	Present within Study				
	Area	Not yet			
_	Surveys ongoing,	assessed.			_
Otter	suitable habitat present	Surveys	Υ	Y	Υ
	within the PEIR	ongoing.			
	boundary for this	IS			
	protected species.				



			Route Op	tion of rele	vance
Important Ecological Feature	Reason for Importance	Geographic Scale of Importance	Lincolnshire Node	Weston Marsh South of A52	Weston Marsh North of A52
	Present within Study				
Water Vole	Area Surveys ongoing, suitable habitat present within the PEIR boundary for this protected species	Not yet assessed. Surveys ongoing.	Y	Y	Υ
Other Mammals	Likely to be present within PEIR Boundary Some suitable habitat present for other notable mammal species within PEIR	Not yet assessed. Surveys ongoing.	Y	Y	Y
	boundary.				

## Impact Assessment

- 21.6.11 The impact assessment process involves the following steps:
  - Identifying and characterising potential impacts;
  - Incorporating measures to avoid and mitigate (reduce) these impacts;
  - Assessing the significance of any residual effects after mitigation;
  - Identifying appropriate compensation measures to offset significant residual effects (if required); and
  - Identifying opportunities for ecological enhancement.
- 21.6.12 When describing impacts, reference has been made to the following characteristics, as appropriate:
  - Beneficial, negligible or adverse;
  - Extent;
  - Magnitude;
  - Duration (short term <5 years, mid term 5-10 years, long term >10 years);
  - Timing;
  - Frequency; and,
  - Reversibility.
- 21.6.13 The impact assessment process considers both direct and indirect impacts:



- Direct ecological impacts are changes that are directly attributable to a defined action, e.g., the physical loss of habitat occupied by a species during the construction process; and
- Indirect ecological impacts are attributable to an action, but which affect ecological resources through effects on an intermediary ecosystem, process or features, e.g., the interruption of watercourses which cause hydrological changes, which, in the absence of mitigation, could lead to the drying out of downstream habitats.

# **Significant Effects**

- 21.6.14 The concept of ecological significance is addressed in paragraphs 5.24 through to 5.28 of the CIEEM Guidelines. Significance is a concept related to the weight that should be attached to effects when decisions are made. For the purpose of an EcIA, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'IEFs' or for biodiversity in general. Conservation objectives may be specific (e.g., for a designated site) or broad (e.g., national/ local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local and the scale of significance of an effect may or may not be the same as the geographic context in which the features is considered important.
- 21.6.15 Paragraphs 5.29-5.34 of the CIEEM Guidelines cover how significant effects are determined. To summarise:
  - For designated sites effects may be significant if they are likely to undermine the conservation objectives of the site; or positively or negatively affect the conservation status of species or habitats for which the site is designated; or may affect the condition of the site or its interest/ qualifying features;
  - For ecosystems effects may be significant if the Project is likely to result in a change in ecosystem structure and function. Consideration should be given as to whether any processes or key characteristics will be removed or changed, if there will be an effect on the nature, extent, structure and function of component habitats or if there is an effect on the average population size and viability of component species; and
  - For habitats and species consideration of conservation status is important for evaluating the effects of impacts on individual habitats and species and assessing their significance. Conservation status is defined as follows:
    - Habitats conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area; and
    - Species conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.
- 21.6.16 Aside from the desk study, initial habitat survey, preliminary bat roost assessment and badger survey, all ecological surveys required for robust impact assessment are currently ongoing and therefore it is only possible to assess impacts on a limited range of ecological features at this stage. A full assessment for all IEFs will be provided in the ES.



21.6.17 As the exact route corridor and scheme design remain to be resolved, the MDS identified in Table 21.12 has been selected as having the potential to result in the greatest effect on an identified receptor or receptor group. These scenarios have been selected from the details provided in Volume 1, Chapter 3: Project Description. Effects of greater significance are not predicted to arise should any other development scenario be taken forward in the final design scheme, assuming that it is within the assessed boundaries.

### 21.7 Impact Assessment

#### Construction

- 21.7.1 This section addresses the site clearance and construction phase impacts to the IEFs identified, through reference to the MDS presented in Table 21.12 and assuming that all of the embedded mitigation measures set out in Table 21.13 are implemented. At this stage, it is not possible to assess potential impacts to most ecological features as the baseline dataset is incomplete and the Project design is ongoing. Instead, the potential impacts are based on an interpretation of likely IEF presence and the MDS.
- 21.7.2 The 80m preferred cable route will lie within the 300m wide PEIR boundary (See PEIR Chapter 3 Project Description (document 6.1.3)). Regardless of the exact siting of the cable route and assuming that priority habitats are avoided as far as possible, the impact of habitat loss would remain broadly similar. However, as the precise area affected is currently unknown, the exact losses are unquantifiable at this stage. The MDS for the OnSS temporary works area is 27 ha, although its final footprint is currently unknown. This initial assessment is therefore a largely qualitative one and includes anticipated impacts which may alter following completion of the relevant surveys and provision of more detailed design information.
- 21.7.3 The heading 'All Options' is used in this section where a discussion of impacts is presented where these are predicted to occur for all three route options (Lincolnshire Node, Weston Marsh South of A52 and Weston Marsh North of A52).

Impact 1: Damage to international and national designated sites, local nature reserves, local wildlife sites, and nature reserves within and surrounding the PEIR Boundary

#### Lincolnshire Node

- 21.7.4 Excluding geological designations and sites designated solely for their ornithological interest there is one statutory and 11 non-statutory designations within or immediately adjacent to the PEIR Boundary (see Figure 21.1). These are:
  - Sea Bank Clay Pits SSSI (within segment LN1);
  - Anderby Creek Sand Dunes LWS (within segment LN1);
  - Chapel Six Marshes LWS and LWT Reserve (within segments LN1 and LN2);
  - Marsh Yard to Anderby Creek Dunes LWS (within segment LN1);
  - Wolla Bank South LWS(within segment LN1);
  - Spendluffe Meadows LWS and LWT Reserve (within segments LN1 and LN2);
  - Anderby Gravity Outfall LWS;



- Anderby Marsh LWT Reserve;
- Wolla Bank Reedbed LWT Reserve (within segment LN2); and
- Wolla Bank Pit LWT Reserve (within segment LN2).
- 21.7.5 These designations are largely concentrated along the coast where avoidance or trenchless techniques will be employed to ensure no temporary or permanent loss of habitats within these designations occurs.

### Weston Marsh South of A52 and Weston Marsh North of A52

- 21.7.6 There are four statutory and 20 non-statutory designations within, or immediately adjacent to the PEIR boundary (Figure 21.2). These are:
  - The Wash (and North Norfolk Coast) SAC and SSSI (within segment WM11);
  - Sea Bank Clay Pits SSSI (within segment WM1);
  - Havenside Country Park LNR (within segment WM10);
  - Anderby Creek Sand Dunes LWS (within segment WM1);
  - Chapel Six Marshes LWS and LWT Reserve (within segment WM1);
  - Hogsthorpe Pit LWS (within segment WM1);
  - Marsh Yard to Anderby Creek Dunes LWS (within segment WM1);
  - Wolla Bank South LWS (within segment WM1);
  - Shore Road Drain LWS (within segment WM9 and A5);
  - Havenside LWS (within segment WM10);
  - Hobhole Bank LWS (within segment WM10);
  - Hobhole Drain, Baker's Bridge South LWS (within segment WM10);
  - Risegate Eau LWS (within segment WM13);
  - Moulton Marsh LWS and LWT Reserve (within segment WM14);
  - Dove's Lane Drain LWS (within segment WM9 and A5);
  - South Bank Fosdyke LWS;
  - Anderby Gravity Outfall LWS;
  - Anderby Marsh LWT Reserve (within segment WM1);
  - Wolla Bank Pit LWT Reserve (within segment WM1); and
  - Wolla Bank Reedbed LWT Reserve (within segment WM1).
- 21.7.7 Trenchless techniques will be employed to ensure no temporary or permanent loss of habitats within these designations occurs.



#### All Options

- 21.7.8 For all designated sites, indirect impacts from construction activities in nearby land parcels and are possible. Indirect impacts are considered under sections relating to Impact 6 (pollution of waterbodies and watercourses) and Impact 11 (air quality impacts) below. In addition, there is potential for impacts to mobile species associated with these sites, whilst utilising habitats near to / within the PEIR boundary. Such impacts are considered below under Impact 7 (impacts to protected species of fauna) and will be explored in more detail within the ES, once detailed survey information has been collected.
- 21.7.9 Indirect impacts will be minimised through commitment to the embedded mitigation outlined in Table 21.13. Operations on functionally and hydrologically linked land may also be detrimental to habitats within the designations and the species populations for which they are designated. The connectivity of land parcels and designated sites will be investigated, and the Project designed to minimise all the potentially significant impacts identified.
- 21.7.10 **No significant effect** upon designated sites is predicted in respect of non-avian ecological qualifying/ interest features following the implementation of embedded mitigation. However, this will be subject to confirmation in the ES following a review of more detailed Project design information and analysis of the completed baseline surveys.

Impact 2: Damage to areas of priority habitat and veteran trees outside designated sites

#### Lincolnshire Node

- 21.7.11 Within the Lincolnshire Node PEIR Boundary there are approximately 12 ha of Priority Habitats which are largely associated with designated sites concentrated along the coast.
- 21.7.12 Away from the landfall, the only other Priority Habitat within the PEIR Boundary is 0.01 ha of deciduous woodland, located in segment LN1, which will be avoided in the route selection process or through the use of trenchless techniques.
- 21.7.13 Additional Priority Habitats identified during the Initial Habitat Survey include ponds, lakes and reservoirs, hedgerows and hedgerow trees and rivers and ditches which are distributed throughout the route.

#### Weston Marsh South of A52 and Weston Marsh North of A52

- 21.7.14 There are approximately 44 ha of Priority Habitat within the PEIR boundary for Weston Marsh south of A52 and 57 ha for north of A52. For both options, the coastal Priority Habitat types present within designated sites dominate, however there are small areas of coastal and floodplain grazing marsh outside of designations and within the PEIR boundaries within segments WM2, WM3, WM4 and A1. There are also small areas of lowland deciduous woodland present inland. Priority habitats will be avoided in the route selection process or through the use of trenchless techniques.
- 21.7.15 Additional Priority Habitats identified within the majority of segments across the two routes during the Initial Habitat Survey include ponds, hedgerows and hedgerow trees and rivers and ditches.



#### All Options

- 21.7.16 The temporary loss of hedgerows, smaller ditches and ponds is likely for all options. Permanent habitat loss is also possible at the OnSS search areas.
- 21.7.17 Damage to Priority Habitats within the PEIR Boundary and the wider study area is possible through the indirect impacts of pollution and significant hydrological changes. These impacts will be avoided by siting the route away from potential receptors wherever possible and adopting the embedded mitigation detailed in Table 21.13. Indirect impacts are considered under sections relating to Impact 6 (pollution of waterbodies and watercourses) and Impact 11 (air quality impacts) below.
- 21.7.18 At this stage of the Project, it is not possible to accurately estimate areas of loss of, or damage to, each Priority Habitat.
- 21.7.19 In the short term the temporary loss of Priority Habitats within the PEIR boundary, all of which are well represented in the wider area, is considered likely to have **significant temporary adverse** effect up to the county level only. **No significant effect** is predicted in the mid-term, once reinstatement has established. This assessment will be subject to confirmation in the ES following a review of more detailed Project design information and analysis of the completed baseline surveys.

#### Impact 3: Permanent habitat loss

- 21.7.20 At this stage of the Project, it is not possible to accurately estimate the extent of permanent habitat loss for the Project as the final design is not yet known and the habitat field surveys are ongoing. The true extent of the permanent habitat loss will be assessed in the ES when survey data and the Project design become available.
- 21.7.21 Volume 2, Appendix 21.1: Desk Study and Volume 2, Appendix 21.2: Initial Habitat Survey provide totals for habitat types within the PEIR Boundary. With the exception of the coastline, habitats across the PEIR Boundary are predominantly agricultural in nature.
- 21.7.22 Permanent habitat loss is anticipated within the OnSS construction footprint, with the potential for small areas of habitat associated with the onshore ECC, construction site compounds and access infrastructure to also be permanently lost. Losses will be minimised through careful Project design, the adoption of embedded mitigation detailed in Table 21.13 and through employment of trenchless techniques at the landfall, beneath designated sites and elsewhere along the onshore ECC (locations still to be determined). Where permanent habitat loss is unavoidable, opportunities for compensation will be explored and included within the ES and the OLEMS.
- 21.7.23 The permanent loss of small areas of (non-priority) habitats within the PEIR boundary, all of which are well represented in the wider area, is predicted to have **no significant** effect in the short term.



#### Impact 4: Temporary habitat loss

#### All Options

- 21.7.24 Temporary habitat loss will occur within the 80m wide corridor, at construction site compounds and along access roads, largely affecting cropland bordered by ditches, hedgerows and grassed field margins.
- 21.7.25 Loss of hedgerows will be mitigated through replanting/ reinstatement with a species-rich, locally appropriate native mixture including heavy standard trees at a 3:1 replacement ratio for any lost. New hedgerows will be created at historic field boundaries or along new ones as close to possible to the site of the original.
- 21.7.26 Where temporary loss of important grassland and/ or field margins will occur, turfs of grassland and/ or field margins will be salvaged for re-use, or a hay cut taken as seed material to aid re-establishment. The mitigation design will be developed fully and details will be provided once the Project design is finalised and field surveys are completed.
- 21.7.27 Field ditches and the vegetation within them will be subject to temporary habitat loss. These will be reinstated and allowed to recolonise naturally following completion of the construction phase. Additional planting of native and locally appropriate plants will also be included where necessary.
- 21.7.28 In the short term the temporary loss of relatively large areas of (non-priority) habitats within the PEIR boundary, all of which are well represented in the wider area, is considered likely to have **significant temporary adverse** effect at no greater than the local level. **No significant effect** is predicted in the mid-term, once reinstatement has established.

#### Impact 5: Damage to populations of rare arable weeds

- 21.7.29 Rare arable weeds are most likely to occur within field margins, road verges and grassland fields that have little or no management practices. The presence of arable weeds is being determined through ongoing surveys. Mitigation practices embedded in the Project design will help to minimise impacts including temporary and permanent habitat loss, pollution, dust deposition and hydrological changes. Additional mitigation opportunities will be explored once survey data and further information regarding Project design becomes available. These may include salvage of turf from specific areas for re-use as seed material during re-establishment and seeding of new grassland areas with native and locally appropriate seed mixes.
- 21.7.30 In the short term the temporary and permanent loss of arable habitats within the PEIR boundary, which are well represented in the wider area, could adversely impact populations of rare arable weeds, if present, therefore the Project may have a **significant temporary adverse** effect at no greater than the local level only. **No significant effect** is predicted in the mid-term, once transplanted material / seeding has established.



Impact 6: Pollution of waterbodies and watercourses, especially via suspended solids but potentially also via spillage of vehicle fluids from construction machinery

#### All Options

21.7.31 Measures to minimise the risk of a pollution event will be contained within a PPEIRP (document reference 8.1.4), a draft of which has been provided with PEIR and will be updated to be provided alongside the ES. A detailed assessment of this impact is also provided within Volume 1, Chapter 24: Hydrology, Hydrogeology and Flood Risk. To summarise, it concludes that with embedded mitigation measures in place, the impact to water quality as a result of direct spills would be negligible to minor adverse and therefore no significant effect is predicted.

Impact 7: Killing, injury and disturbance of protected and priority species, and Impact 8: Loss and damage of habitat for protected and priority species

#### All Options

21.7.32 Surveys are ongoing in respect of protected and notable species. Potential impacts along with preliminary mitigation and compensation measures that may be appropriate, if required, are outlined in Table 21.15. Note that some of the potential mitigation and compensation measures are in addition to Embedded Mitigation provided in Table 21.13. The proposed mitigation and compensation will be refined once the development proposals are finalised and the field survey data have been evaluated.

Table 21.15: Potential Impacts and Preliminary Mitigation and Compensation Measures for Important Species

·		
Important Ecology Features (and key locations of records within PEIR)	Potential Impacts	Preliminary Mitigation/ Compensation
Important plants	Temporary and permanent habitat loss.	Safeguarding of important habitats. Salvage of turf from specific areas for
(Within designated sites)	Habitat damage due to pollution.	re-use as seed material during re- establishment. Translocation of individual plants and areas of grassland. Embedded mitigation is provided to reduce pollution risks.
Invertebrates	Temporary and permanent habitat loss.	Safeguarding of important habitats. Salvage of turf from specific areas for
(Within segments LN1	Habitat damage due to	re-use as seed material during re-
and WM1 in Sea Bank	pollution.	establishment. Embedded mitigation is
Clay Pitts SSSI)		provided to reduce pollution risks.
Fish	Vibration and pollution events resulting from the use	Improvement and extension of existing habitats. Embedded mitigation is
(Within segments	of trenchless techniques and	provided to reduce pollution risks.
WM13 and WM14)	other construction activities. Temporary and permanent	



Important Ecology Features (and key locations of records within PEIR)	Potential Impacts	Preliminary Mitigation/ Compensation
	habitat loss of smaller ditches.	
Amphibians  (GCN records within 500m of segment WM4)	Temporary loss of ponds and ditches within PEIR Boundary including those used by breeding populations. Permanent pond loss is also possible, although unlikely. Temporary and permanent loss of terrestrial habitat and associated fragmentation. Accidental killing and injury.	EPSLs may be required for impacts to GCN populations. Compensation for permanent pond loss and terrestrial habitat loss provided in advance of construction. Scheduling of certain work to avoid sensitive periods of amphibian life cycles.  Translocation of amphibians in advance of site clearance operations.  Embedded mitigation is provided to reduce pollution risks.
Reptiles (Within segments WM12, WM14 and A3)	Temporary and permanent habitat loss possible. Accidental killing and injury.	Mitigation for GCN will also reduce risks to reptiles. Reasonable avoidance measures would be used, where necessary, to reduce the risk of committing an offence under the protecting legislation.
(Roosts within segments LN2, WM2, WM12 and WM14)	Loss of buildings and trees within the PEIR Boundary with the potential to support roosting bats, or disturbance or roosts (through artificial lighting) Permanent loss of flight lines and foraging habitat at the substation area. Temporary fragmentation of hedgerow flight lines (direct loss and artificial lighting) and loss of foraging habitat elsewhere within the PEIR Boundary.	EPSL for disturbance or loss of bat roosts obtained in advance if any roosts are affected.  Compensation installed for every moderate or high potential roost feature prior to loss; to include bat boxes on retained trees or installed poles, re-use of whole felled trunks by setting vertically as monoliths and/ or veteranisation (cutting and carving into healthy trees to mimic nature, to speed up the development of decay and rot holes) as appropriate.  Temporary hedgerow gaps to be filled with 'dead hedge' until such time as reinstated vegetation has established and is at least 1 m tall.  Permanent hedgerow/ tree loss to be compensated for as described in relation to Impact 4. Details to be provided in the LEDPP.



Important Ecology Features (and key locations of records within PEIR)	Potential Impacts	Preliminary Mitigation/ Compensation
		Artificial lighting to avoid light spill onto roosts, commuting / foraging habitat.
Badger	Loss or disturbance to active badger setts. Temporary and permanent loss of foraging habitat. Accidental killing and injury.	Setts closed under licence from Natural England and creation of compensatory setts if required. Reasonable avoidance measures would be used to reduce the risk of committing an offence under the protecting legislation. These may include micro-siting certain elements and/ or installing protective fencing to minimise disturbance to retained setts, ensure excavations remain closed overnight or contain ramps such that badgers cannot become trapped and ensuring stockpiled soil is fenced or regularly disturbed so as to deter badger sett creation within it.
Otter	Potential for the Project to directly impact otter holts.	Reasonable avoidance measures would be used to reduce the risk of
(Within segments LN1, LN2, WM1, WM2, WM13, WM14 and A1)	Temporary and permanent loss and fragmentation of foraging routes and areas. Disturbance to otter from construction, operations. Accidental killing and injury.	committing an offence under the protecting legislation. These would be broadly similar to those described for badger (above). A licence from Natural England may be required depending on the nature of any impact.  Artificial lighting to avoid light spill onto commuting foraging habitat.
Water Vole (Within most segments)	Potential for the Project to directly impact water vole burrows.  Temporary and permanent loss of foraging and sheltering habitat.  Temporary and permanent fragmentation of foraging areas/ routes.  Accidental killing and injury.	Mitigation for temporary habitat loss in advance; this may involve temporary relaxation of bankside cutting/ grazing remines or alterations to main river maintenance schedules.  Scheduling of work to avoid sensitive periods of the water vole life cycle.  Deterrence, or if necessary, removal of water vole from areas where there is risk of injury or death in advance.  Reinstatement of bankside habitats immediately after work, to include sowing with a species rich, locally



Important Ecology Features (and key locations of records within PEIR)	Potential Impacts	Preliminary Mitigation/ Compensation
		appropriate sward and fencing to prevent stock access.
Other Mammals	Temporary and permanent habitat loss. Temporary and permanent fragmentation of foraging areas/ routes and resting places. Disturbance and accidental killing and injury.	Embedded mitigation practices adopted. The additional mitigation and compensation measures outlined above will also benefit other mammal species. Species-specific practices (including those for hedgehog) to be adopted should important populations be identified during field surveys.

21.7.33 Taking account of the embedded mitigation measures, and additional mitigation measures if required, **no significant effect** on the local conservation status of any protected or priority species is predicted.

Impact 10: Spread of Invasive Non-Native Species (INNS)

### All Options

- 21.7.34 Although no records of INNS within the PEIR boundary have been returned, field surveys are ongoing and it is possible that some are present.
- 21.7.35 The primary ways the Project could increase the spread of INNS is via:
  - Disturbance to existing INNS populations within the construction footprint;
  - Inadvertently importing INNS from elsewhere, primarily on vehicles, but also other equipment of personnel; and
  - Via seeds, planting stock or planting substrate.
- 21.7.36 Embedded mitigation outlined in Table 21.13 will effectively minimise the spread of any INNS and **no significant effect** on any IEF is predicted.

Impact 11: Air quality impacts on all ecological features.

- 21.7.37 Impacts in relation to air quality have been assessed in Volume 1, Chapter 19: Onshore Air Quality and are summarised below in respect of ecological features:
  - The sensitivity of the study area with respect to ecological impacts in relation to earthworks and construction is considered to be high, and low in relation to trackout<sup>1</sup> activities;

<sup>&</sup>lt;sup>1</sup> The term 'trackout' refers to the movement of dust and dirt from a construction/demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network.



- The risk to ecological features from dust (without appropriate mitigation in place) is high during earthworks and construction and low in relation to trackout activities;
- Potential effects from dust during construction are temporary, short-term and intermittent depending on activity / meteorological conditions; and
- Ecological designations could experience air quality effects, in-combination.
- 21.7.38 Embedded mitigation measures are presented in the Outline Air Quality Management Plan (document reference 8.1.2). These will ensure that residual effects are negligible to minor adverse and **not significant** in terms of the EIA Regulations.

### **Operation and Maintenance**

Impact 1: Disturbance of protected and priority species during planned and unplanned maintenance works when the proposed development is operational.

- 21.7.39 Once the OnSS is operational, activities would be limited to regular inspections and occasional maintenance. This would be highly localised within the OnSS, with a minimal likelihood of disturbance expected to the adjacent habitats and species. Any such maintenance would be subject to an Ecological Method Statement (EcMS) which would include specific measures to avoid potential impacts to protected/ notable species or sensitive habitats (precise contents dependent upon ongoing survey results). The EcMS would also include measures to minimise the risk of a pollution event. Following the implementation of an agreed EcMS, no significant adverse effects are anticipated for any IEFs as a result of regular maintenance at the substation.
- 21.7.40 Details in respect of sound levels generated by the operation of the OnSS will be included within the ES. There are no statutory or non-statutory designated sites within any of the OnSS search areas and at this stage it is considered unlikely that operational noise will significantly affect IEFs, although this will need to be confirmed following completion of ongoing survey and provision of the OnSS design. Non-avian ecological features that could be affected by operational noise at the OnSS are likely to be limited to bats. Surveys are ongoing and should a significant roost be recorded in close proximity to the OnSS, there may be potential for adverse effects. Should mitigation be necessary, this will be detailed in the ES.
- 21.7.41 A lighting scheme for the OnSS has not yet been finalised but lighting will be directional for safety and security only. An outline Light Emissions Plan (document reference 8.1.10) has been submitted alongside this PEIR. It is anticipated that there would be no light spill beyond the OnSS site boundary and the lighting scheme will follow current guidance to minimise impacts to bat species (BCT, 2018).
- 21.7.42 Planned maintenance of the cable route is likely to involve an annual visit by a small team. Maintenance would be subject to an EcMS which would include specific measures to avoid potential impacts to protected/ notable species or sensitive habitats.
- 21.7.43 Taking account of the embedded mitigation measures, **no significant effect** on any IEF is predicted.



21.7.44 The extent or nature of any unplanned corrective maintenance required can't be predicted at this stage and therefore possible effects in terms of disturbance cannot be assessed. However, any effect would be of a scale and duration that is no greater than that for the construction phase and so any resulting effects would be the same or lower than the effects predicted for the construction phase. Any unplanned corrective maintenance required would be subject to any necessary consents and consultation with the relevant nature conservation bodies prior to work taking place.

### Decommissioning

Impact 1: Impacts likely to be similar to construction, but more limited in geographical extent and timescale and there would be no permanent habitat loss.

### All Options

- 21.7.45 At the time of writing, the approach to decommissioning is not defined, however it is considered likely that impacts would be much less significant that those associated with construction, as works would likely be limited to removal of cabling via jointing bays and removal of permanent infrastructure associated with the OnSSs.
- 21.7.46 Mitigation and compensation for any impacts would be in-line with that described for the construction phase impacts.
- 21.7.47 Therefore, in the short term the temporary loss of habitats non-Priority habitats within the PEIR boundary, all of which are well represented in the wider area, is considered likely to have **no significant effect**.

#### 21.8 Cumulative Impact Assessment

- 21.8.1 Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects can occur where a proposed development results in individually insignificant impacts that, when considered cumulatively with impact of other proposed or permitted plans and projects, can result in significant effects.
- 21.8.2 Projects and plans were selected as relevant to the assessment of cumulative impacts to Onshore Ecology based upon an initial screening exercise which has informed the production of Volume 2, Appendix 5.2: Onshore Cumulative Effects Assessment. Each project, plan or activity was considered and scoped in or out on the basis of effect-receptor pathway, data confidence and the temporal and spatial scales involved as presented. Where no hydrological or ecological connection exists, the project or plan is located more than 1km from any part of the onshore ECC, or 5km from the centre of the OnSS search area, or the plan or project have been considered for planning after mid-March 2023, these have been scoped out. Projects or plans which are considered to have potential for cumulative effects on Onshore Ecology are presented in Table 21.16 below.
- 21.8.3 This exercise will be repeated ahead of submission of the ES, and the updated cumulative effects assessment will be described therein. At the time of writing, there is insufficient design and baseline information to support a more detailed assessment of cumulative impacts.



Table 21.16: Projects considered to have potential for cumulative effects on Onshore Ecology

Reference Number	Description	Distance from Project (and nearest segment)	Potential contribution to cumulative effects	Explanation
B/20/048 8	Outline application for 46 residential dwellings and associated works with all matters reserved for later approval	850m NW of PEIR Boundary at Church End Lane to The Haven (WM10)	Accidental pollution of watercourses and hydrologically connected habitats, direct / indirect impacts on protected or notable species.	Moderate sized housing development. Impacts on hydrological and functional linkages will need to be assessed cumulatively within the ES.
B/20/048 9	Proposed residential development of 20 affordable dwellings and associated works	800m NW of PEIR Boundary at Church End Lane to The Haven (WM10)	Accidental pollution of watercourses and hydrologically connected habitats, direct / indirect impacts on protected or notable species.	Moderate sized housing development. Impacts on hydrological and functional linkages will need to be assessed cumulatively within the ES.
B/21/019 6	Approval of reserved matters (Access, appearance, landscaping, layout and scale) following outline approval b/16/0465 (Residential development of up to 42 dwellings)	230m N of PEIR Boundary at Crowhall Lane to Church End Lane (WM9)	Permanent and temporary habitat loss, accidental pollution of watercourses and hydrologically connected habitats, direct / indirect impacts on protected or notable species and spread of INNS.	Moderate sized housing. development. Loss of habitats, disturbance and impacts on hydrological and functional linkages will need to be assessed cumulatively within the ES.
B/21/041 9	Outline Application with all Matters (Access, Appearance,	160m SW of PEIR Boundary at Marsh Road to Fosdyke Bridge(WM12)	Permanent and temporary habitat loss, accidental pollution of watercourses and hydrologically connected	Cumulative effects are likely to be small and not significant. However, habitat loss, and impacts on hydrological and functional linkages



Reference	Description	Distance from Project (and	Potential contribution to	Explanation
Number		nearest segment)	cumulative effects	
	Landscaping, Layout		habitats, direct / indirect	will need to be assessed
	and Scale) reserved		impacts on protected or	cumulatively within the ES.
	for later approval for		notable species and spread of	
	a proposed		INNS.	
	residential			
	development of 9no.			
	self-build/ custom-			
	build homes and			
	2no. Almshouses			
	(Resubmission of			
	B/20/0295)			
N/084/01	Detailed particulars	220m SSW of PEIR	Permanent and temporary	Housing development near to the
712/22	relating to the	Boundary at Landfall to	habitat loss, accidental	PEIR Boundary. Habitat loss and
	erection of 89no.	A52 – Hogsthorpe (WM1)	pollution of watercourses and	impacts on hydrological and
	Dwellings, erection		hydrologically connected	functional linkages will need to be
	of a pumping		habitats, direct / indirect	assessed within the ES.
	station, construction		impacts on protected or	
	of a vehicular access		notable species and spread of	
	and construction of		INNS.	
	internal roads			
	(Outline planning			
	permission ref no.			
	N/084/0809/19,			
	granted 13th			
	September 2019).			



Reference	Description	Distance from Project (and	Potential contribution to	Explanation
Number		nearest segment)	cumulative effects	
Boston Alternativ e Energy Facility (BAEF)	Energy from waste facility with wharf, gasification plant, turbine plant, lightweight aggregate manufacturing plant, electrical export infrastructure and associated site infrastructure.  Secretary of State (SoS) set new deadline of 06/07/2023 to decide the application.	2.5km N of PEIR Boundary	Accidental pollution of watercourses and hydrologically connected habitats, direct / indirect impacts on protected or notable species.	Hydrological and functional linkages to the Project will need to be assessed within the ES.
Low Farm Solar Farm	Construction of a temporary 49.9MW solar farm, to include the erection of ground mounted solar panels with transformers to the maximum height of 2.46 metres, a 132KV substation, a DNO control room, a customer	Approximately 260m NW of the PEIR Boundary	Permanent and temporary habitat loss, accidental pollution of watercourses and hydrologically connected habitats, direct / indirect impacts on protected or notable species and spread of INNS.	Solar farm near to the PEIR Boundary. Habitat loss and impacts on hydrological and functional linkages will need to be assessed within the ES.



Reference Number	Description	Distance from Project (and nearest segment)	Potential contribution to cumulative effects	Explanation
	substation, GRP			
	communications			
	cabin, erection of			
	security fencing and			
	provision of			
	landscaping and			
	other associated			
	infrastructure			



### 21.9 Inter-Relationships

21.9.1 Table 21.17 below sets out the inter-relationships between this Chapter and others within the PEIR.

Table 21.17: Inter-relationships between Onshore Ecology and other Chapters within the PEIR

Topic/ Chapter	Details
Volume 1, Chapter 19: Onshore	The Onshore Air Quality Chapter considers air quality impact
Air Quality	during construction to sensitive ecological features as a result of
	dust and increased road traffic concluding that residual effects
	are not significant in terms of the EIA Regulations.
Volume 1, Chapter 22: Onshore	The Onshore Ornithology Chapter addressed impacts on birds
Ornithology	and sites designated for birds. At the time of writing, effects will
	be assessed at ES stage when more baseline information and
	detailed design information are available.
Volume 1, Chapter 24:	The Hydrology, Hydrogeology and Flood Risk Chapter provides a
Hydrology, Hydrogeology and	description of the hydrological setting of water courses within
Flood Risk	the survey area and assesses impacts upon them. It concludes
	that there will be no significant residual effects on water quality
	and flood as a result of the Project.
Volume 1, Chapter 28:	The Landscape and Visual Assessment Chapter considers the
Landscape and Visual	impact of the Project on hedgerows and trees as landscape
Assessment	resource and visual amenity elements, and concludes that there
	will be significant effects, predominantly onshore during the
	construction phase (vegetation removal).

## 21.10 Potential Transboundary Effects

- 21.10.1 The approach to assessment of potential transboundary effects is described in Section 5 of the Scoping Report.
- 21.10.2 With respect to onshore ecology and biodiversity (excluding ornithology) potential for transboundary effects is limited to migratory species of bat, such as Nathusius' pipistrelle (*Pipistrellus nathusii*), which breed or winter overseas.
- 21.10.3 Surveys in 2023 will collect bat activity data across the entire season, including during key migration periods in September, October and May (as requested by Natural England at a meeting on 30<sup>th</sup> January 2023). Analysis of data will include a review for activity peaks for species known to migrate during these key periods.

### 21.11 Avoidance, Mitigation, Compensation and Enhancement

21.11.1 When seeking mitigation or compensation solutions, the CIEEM Guidelines state that effects should be consistent with the geographical scale at which an effect is significant. For example, mitigation and compensation for effects on a species population that is significant at a county scale should ensure, wherever possible, there are no adverse effects upon the population status at a county scale. The relative geographic scale at which the effect is significant therefore has a bearing on the required outcome which must be achieved.



- 21.11.2 Where potentially significant effects have been identified, the mitigation hierarchy has been applied, as recommended in the CIEEM Guidelines. The mitigation hierarchy sets out a sequential approach beginning with the avoidance of impacts where possible, the application of mitigation measures to minimise unavoidable impacts and then compensation for any remaining impacts. Once avoidance and mitigation measures have been applied, residual effects are then identified along with any necessary compensation measures, and incorporation of proposals for biodiversity enhancement.
- 21.11.3 It is important for the EcIA to clearly differentiate between avoidance, mitigation, compensation, and enhancement. These terms are defined here as follows:
  - Avoidance is used where an impact has been avoided, e.g., through changes in the Project design;
  - Mitigation, or minimisation, is used to refer to measures to reduce or remedy a specific negative impact in situ;
  - Compensation describes measures taken to offset residual effects, i.e., where mitigation in situ is not possible; and,
  - Enhancement is the provision on new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.
- 21.11.4 At this stage, due to the ongoing development of the Project design and the ongoing collection of survey data, it is only possible to provide limited information in respect of avoidance, mitigation, compensation and enhancement for most ecological features. Mitigation and compensation principles relating to the loss of priority habitats and impacts on protected species are outlined in Principles 1 to 8 of the LEDPP. A commitment to management and monitoring for newly created habitats is outlined in Principle 9 of the LEDPP. These Principles will be built on following completion of ongoing surveys and more detailed designs, further details will be provided within the ES.
- 21.11.5 BNG is an approach to development activities that leaves the natural environment in a measurably better state than it was before. BNG works with and does not replace the mitigation hierarchy. It does not replace existing legal requirements (e.g., in relation to protected species) and it should not be applied to compensate for impacts on irreplaceable habitats.
- 21.11.6 The Project is cognisant of the good practice in respect of BNG and will align with the ten principles developed by CIEEM, Institute of Environmental Management and Assessment (IEMA) and Construction Industry Research and Information Association (CIRIA) (Baker et al., 2019) summarised below:
  - Principle 1. Apply the Mitigation Hierarchy. Avoid and then minimise impacts on biodiversity. As a last resort, and in agreement with stakeholders and decision-makers, compensate for losses that cannot be avoided;
  - Principle 2. Avoid losing biodiversity that cannot be offset by gains elsewhere. Avoid impacts on irreplaceable biodiversity – these impacts cannot be offset;



- Principle 3. Be inclusive and equitable. Engage stakeholders in designing, implementing, monitoring and evaluating the approach to Net Gain. Share the benefits fairly among stakeholders;
- Principle 4. Address risks. Mitigate difficulty and/or uncertainty using well accepted ways to add contingency when calculating biodiversity losses and gains;
- Principle 5. Make a measurable Net Gain contribution. Achieve a measurable, overall gain for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities;
- Principle 6. Achieve the best outcomes for biodiversity. Achieve the best outcomes for biodiversity by using robust, credible evidence and local knowledge;
- Principle 7. Be additional. Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e., do not deliver something that would occur anyway);
- Principle 8. Create a Net Gain legacy. Ensure Net Gain generates long-term benefits;
- Principle 9. Optimise sustainability. Prioritise BNG and, where possible, optimise the wider environmental benefits for a sustainable society and economy; and
- Principle 10. Be transparent. Communicate all Net Gain activities in a transparent and timely manner, sharing the learning with all stakeholders.
- 21.11.7 In respect of Principle 5, the Project intends to use the Defra Metric 4.0 to demonstrate measurable Net Gain contribution. It is however worth highlighting here that since the metric is a proxy, it does not account for species-specific mitigation, compensation or enhancement. Loss/ gains in this respect will be measured against monitoring targets set out within the relevant EPSL (if applicable) and OLEMS that will be submitted alongside the ES.
- 21.11.8 The Project's approach to BNG is set out in more detail in Biodiversity and Marine Net Gain Principles and Approach (document reference 8.3). A BNG assessment is not being submitted as part of the PEIR consultation as there is insufficient detail to provide one at this time.
- 21.11.9 Additional detail will be provided within the ES, based upon completed survey data and the indicative scheme design. This will include baseline and post-Project plans as well as a completed BNG Metric 4.0 spreadsheet. The requirements for auditing against the BNG objectives will be set out within an appendix to the OLEMS.

# 21.12 Summary of Effects

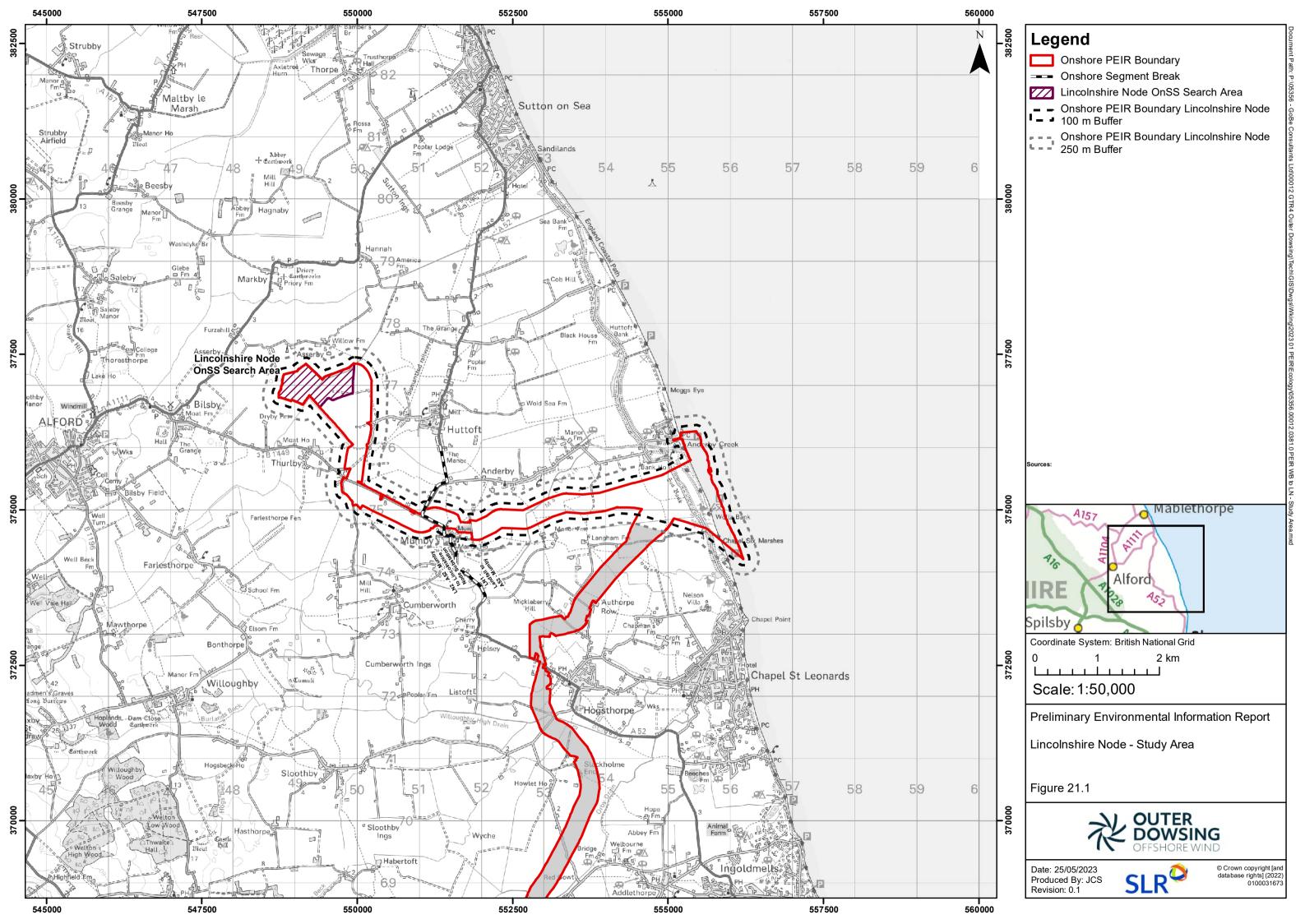
21.12.1 This assessment has considered the potential effects on Onshore Ecology (excluding ornithology, see Volume 1, Chapter 22: Onshore Ornithology) arising from onshore activities associated with the Project. Consideration has been given to potential worst-case effects arising from onshore construction, operational and decommissioning activities based upon available information. Worst-case parameters have been adopted to provide as robust an assessment as possible, based on available data collected to date.

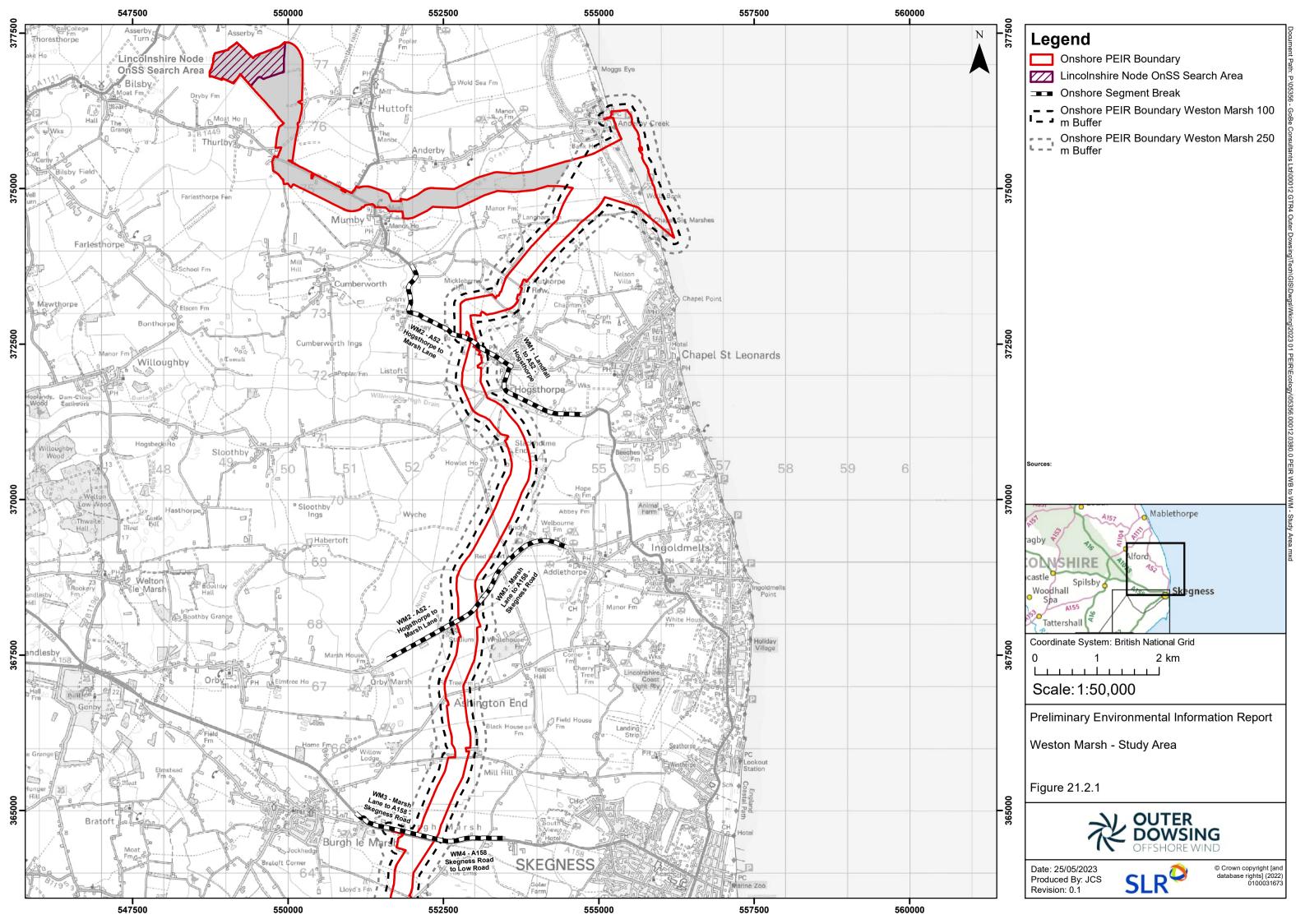


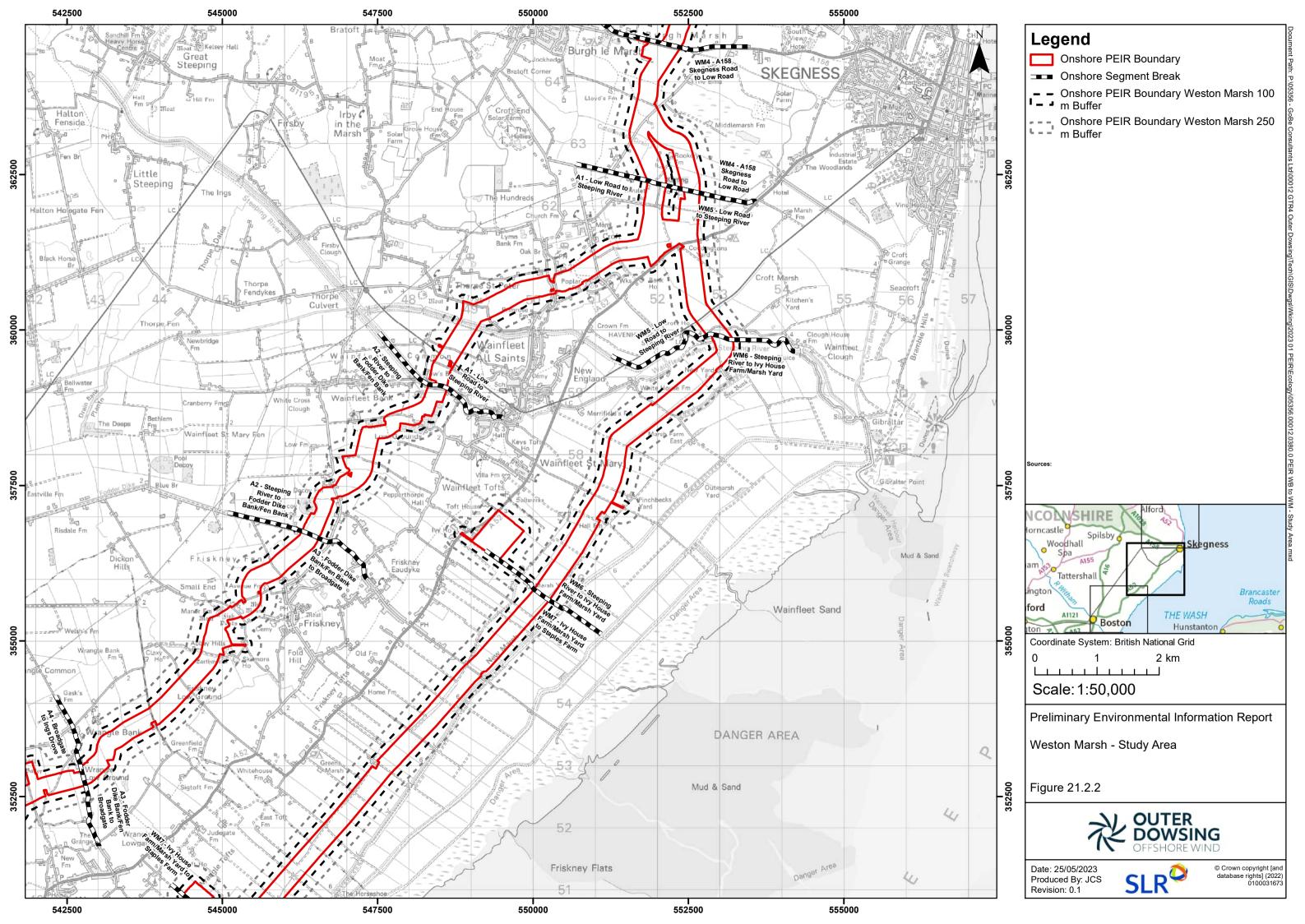
- 21.12.2 Limitations to the assessment, which largely relate to the lack of field survey data for habitats and lack of survey data for protected and notable species, surveys for many of which are ongoing, have been clearly identified. These limitations will be addressed in the ES, following completion of the relevant surveys.
- 21.12.3 The approach undertaken was based upon The Planning Inspectorate's Scoping Opinion (The Planning Inspectorate, 2022) and subsequently discussions with the Onshore Ecology ETG.
- 21.12.4 A summary of significant effects on IEFs is presented at Table 21.18 which only includes IEFs which are likely to be affected by the onshore elements of the Project. IEFs excluded from Table 21.18are not likely to be affected.

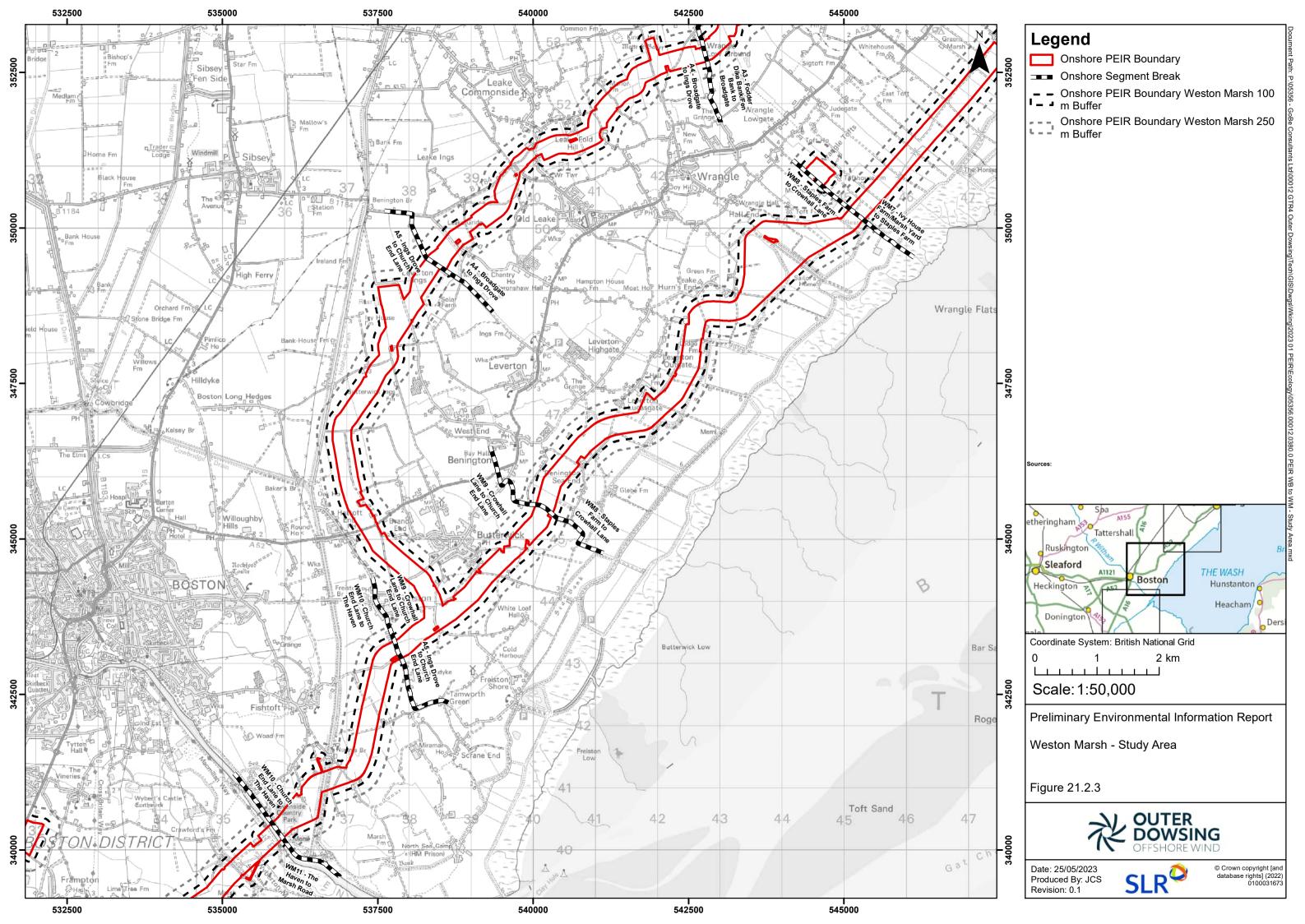
Table 21.18: Summary of significant effects arising from the Project

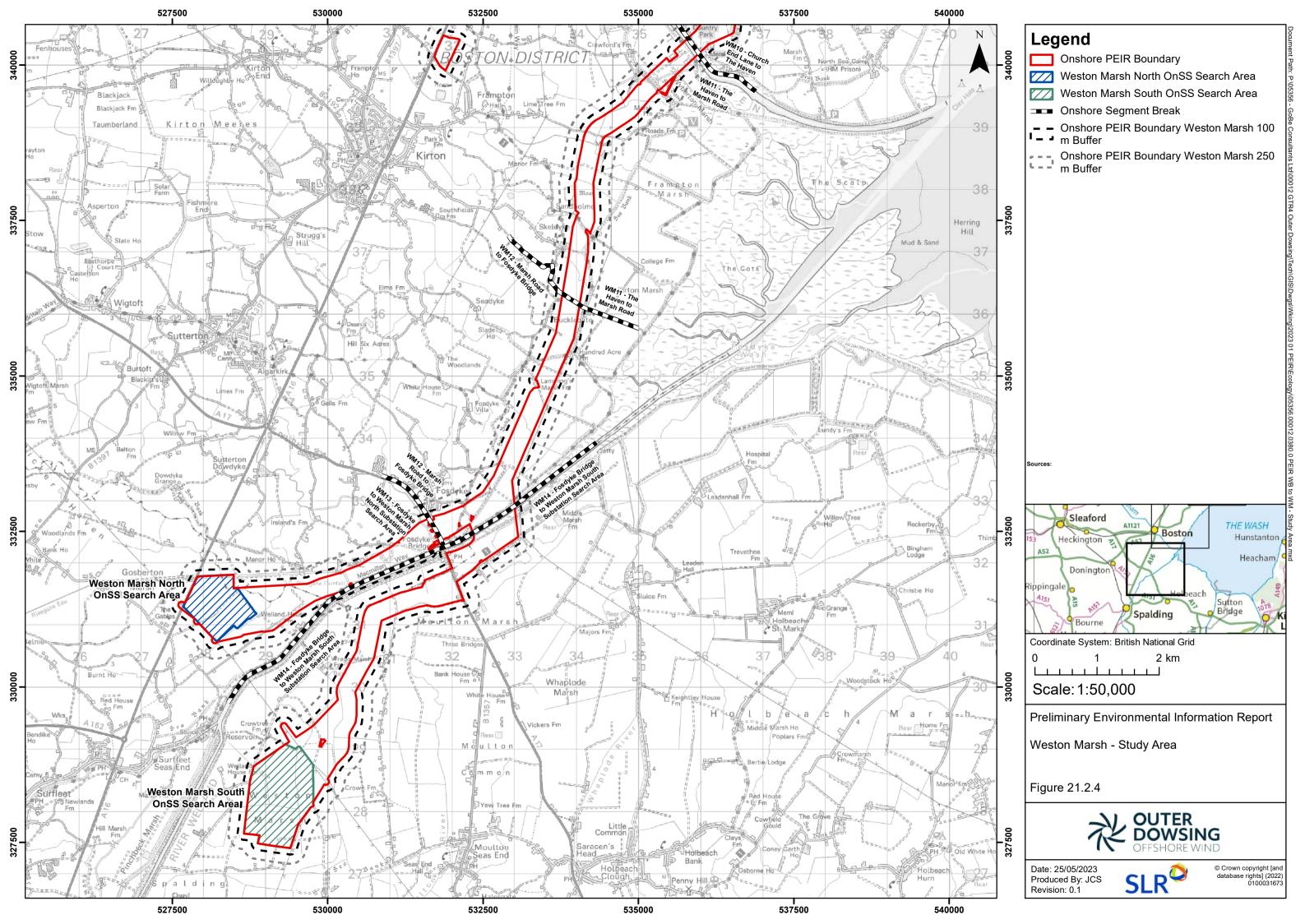
Description of impact	Effect	Additional mitigation measures	Residual impact
Construction			
Damage to areas of priority habitat and veteran trees outside designated sites	Short term significant temporary adverse greatest effect at the county level only.	Not Applicable – all mitigation will be embedded	No significant effect in the mid-term, once planting has established.
Temporary habitat loss	Short term significant temporary adverse greatest effect at the local level only.	Not Applicable – all mitigation will be embedded	No significant effect in the mid-term, once planting has established.
Damage to populations	Short term	Not Applicable – all	No significant effect
of rare arable weeds	significant	mitigation will be	in the mid-term,
	temporary adverse	embedded	once planting has
	effect at the local		established.
	level only.		
Operation and Maintenance – no significant effects predicted			
Decommissioning – no significant effects predicted			
Cumulative	- 1 6 1	- 1 6 1.	- · · · · ·
Permanent and	To be confirmed in	To be confirmed in	To be confirmed in
Temporary Habitat loss	ES To be a self-to-	ES To be a self-to-	ES To be see Consider
Pollution of waterbodies	To be confirmed in	To be confirmed in	To be confirmed in
and watercourses,	ES	ES	ES
especially via suspended solids			
301103			

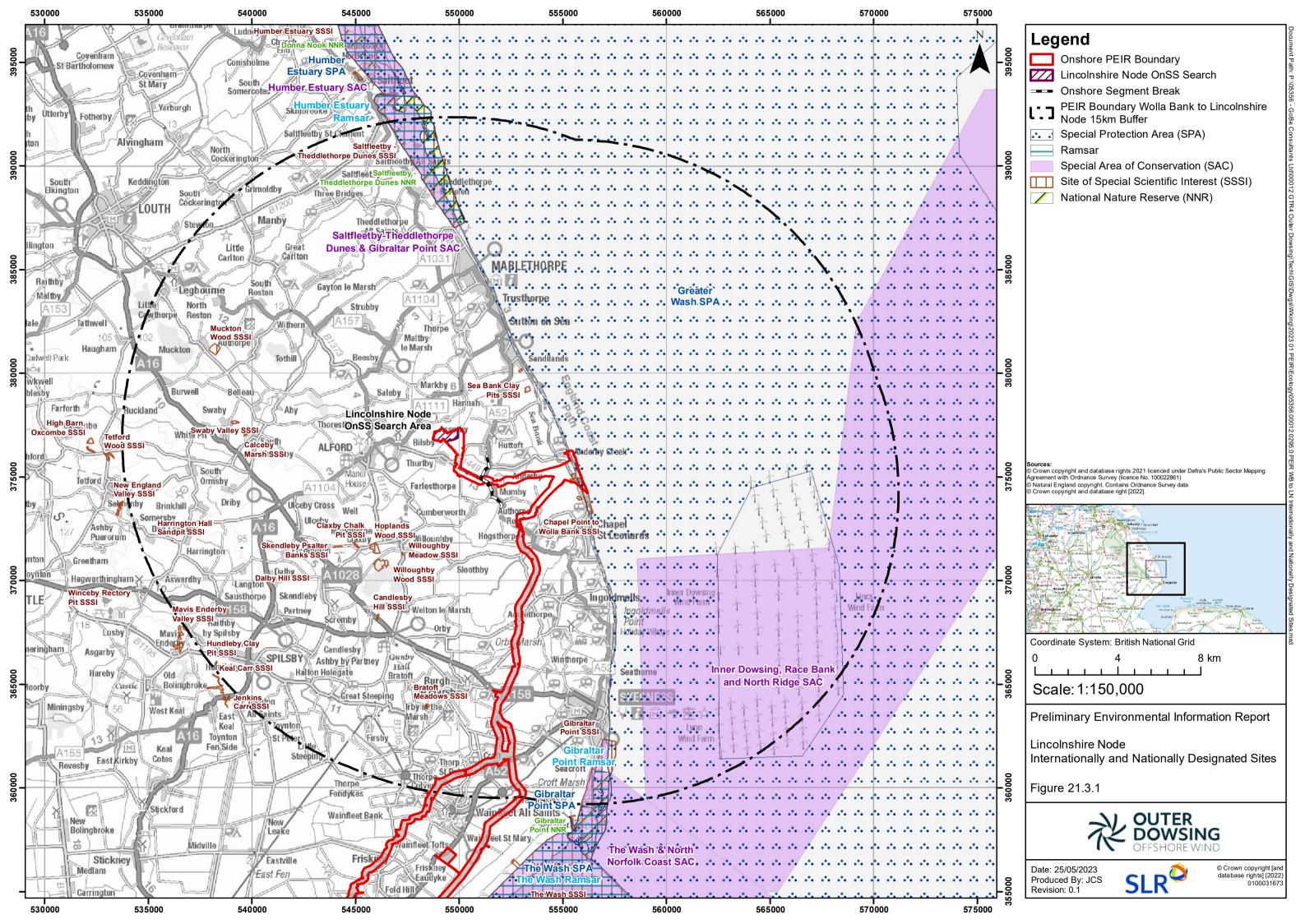


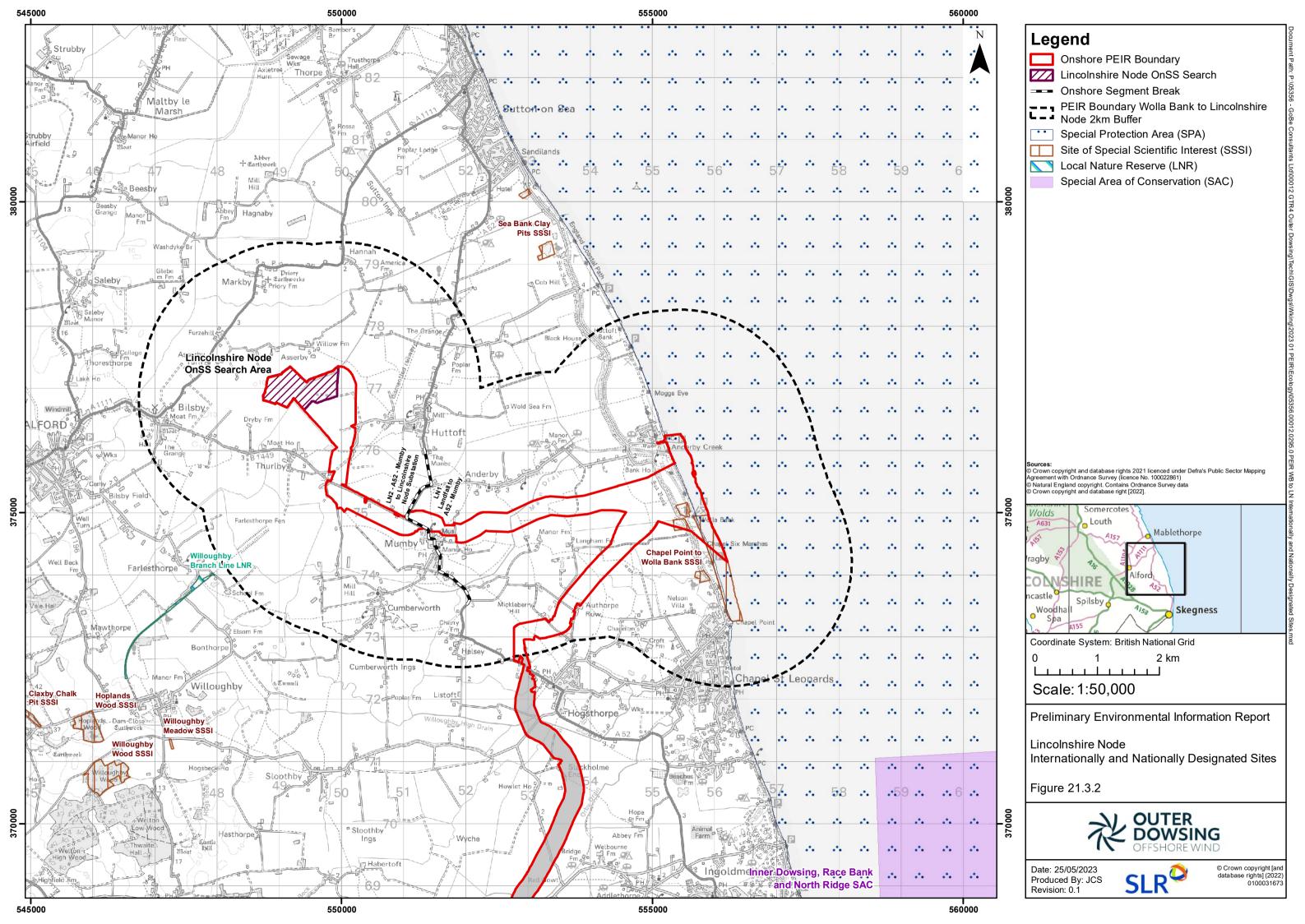


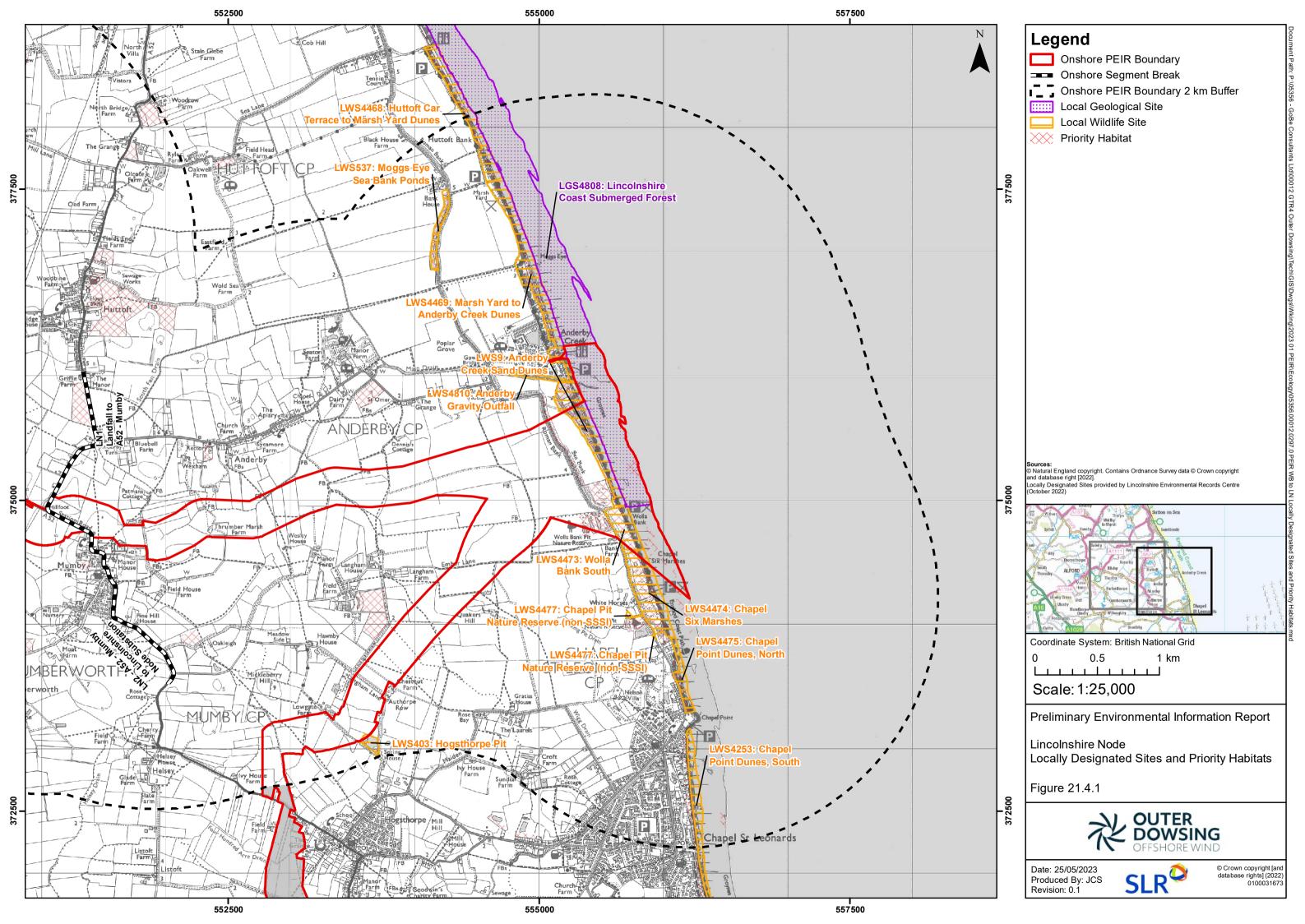


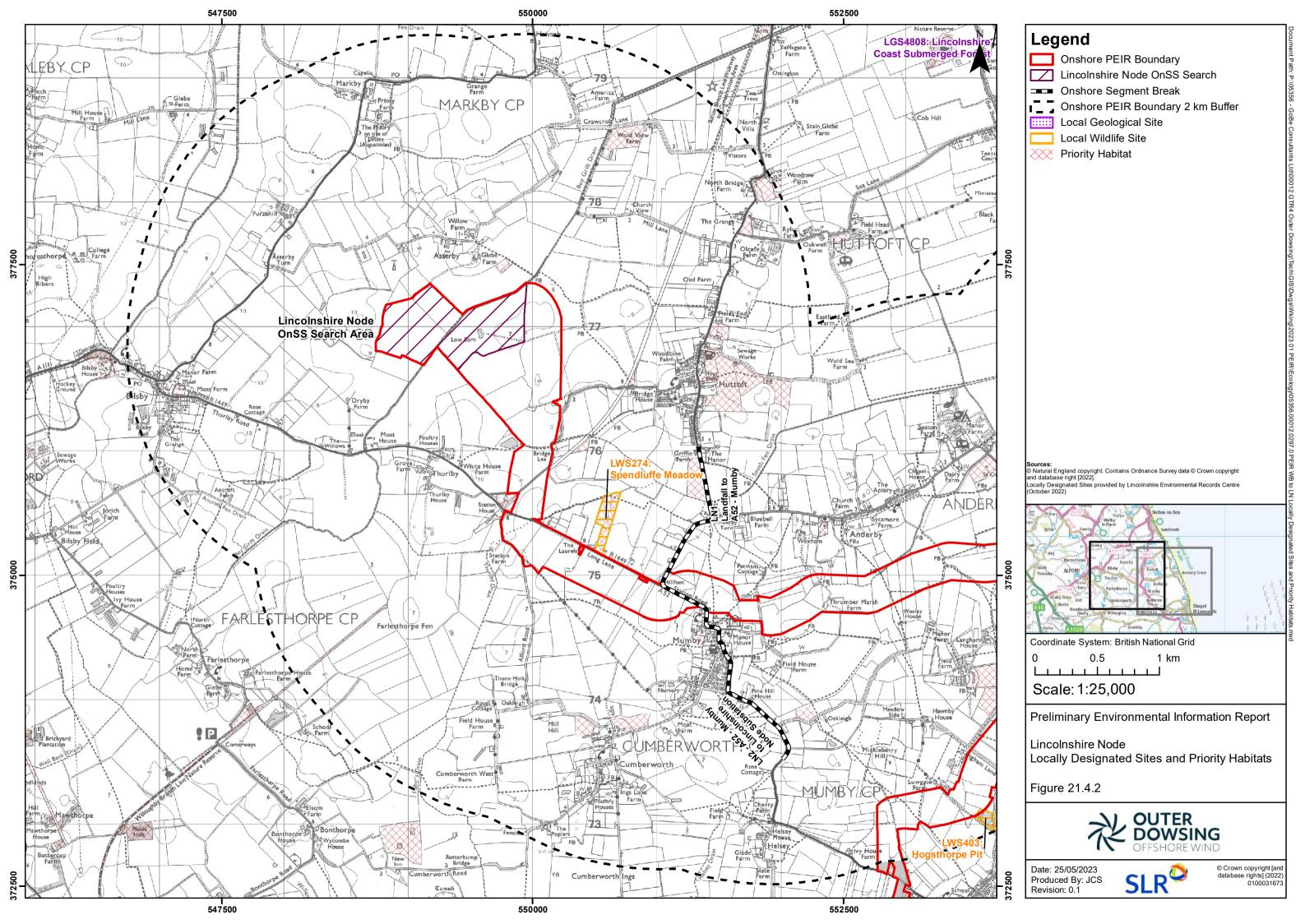


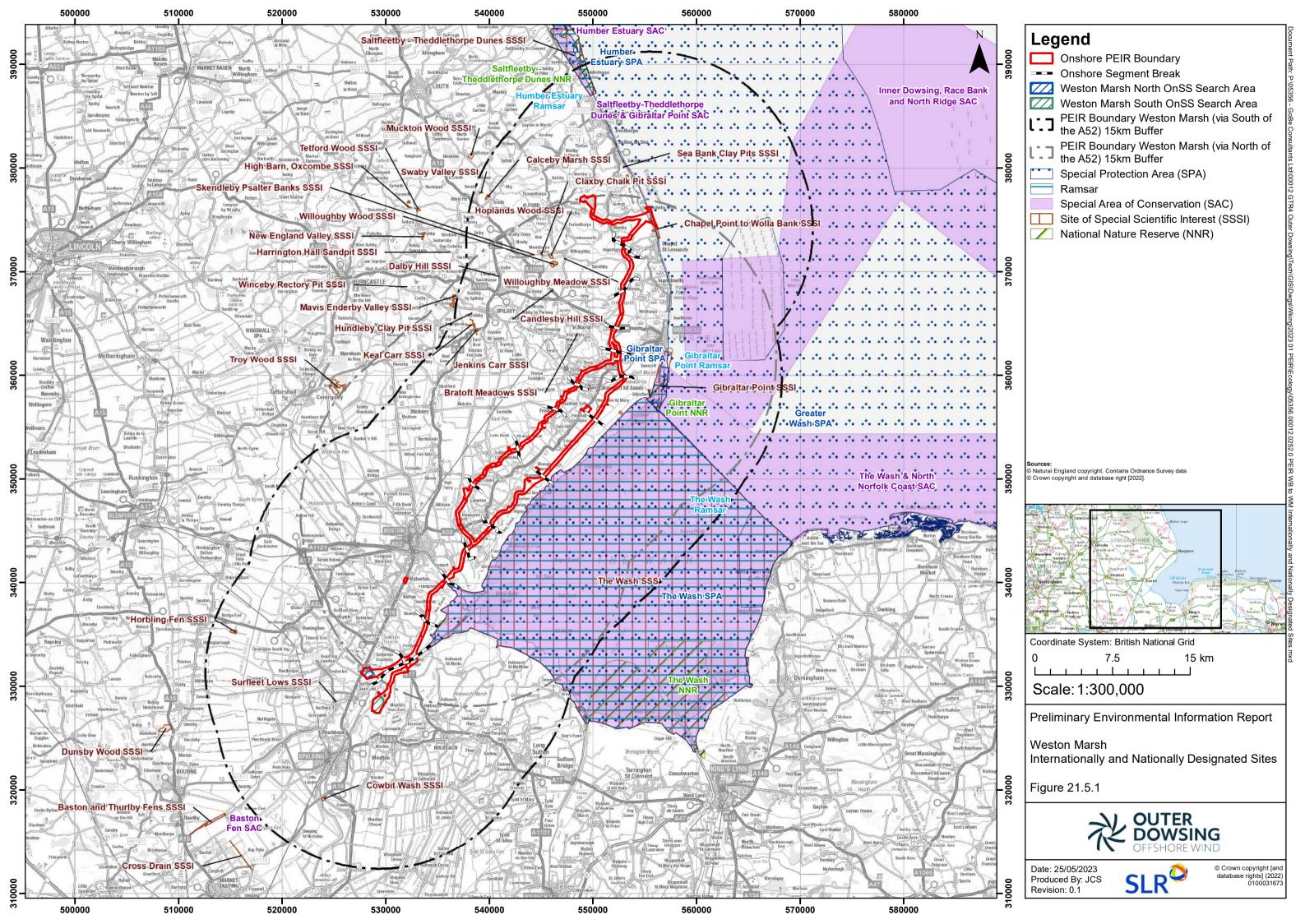


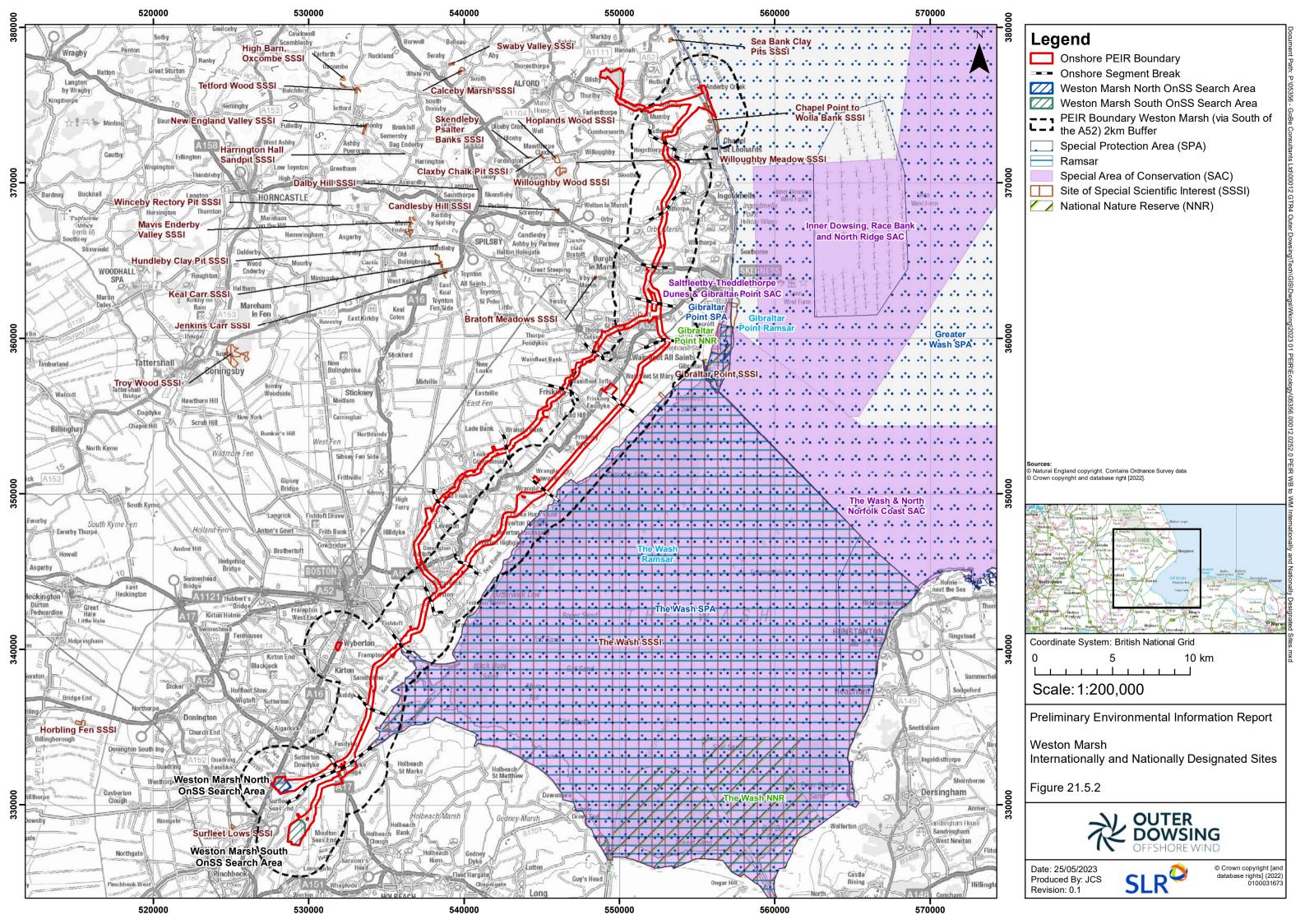


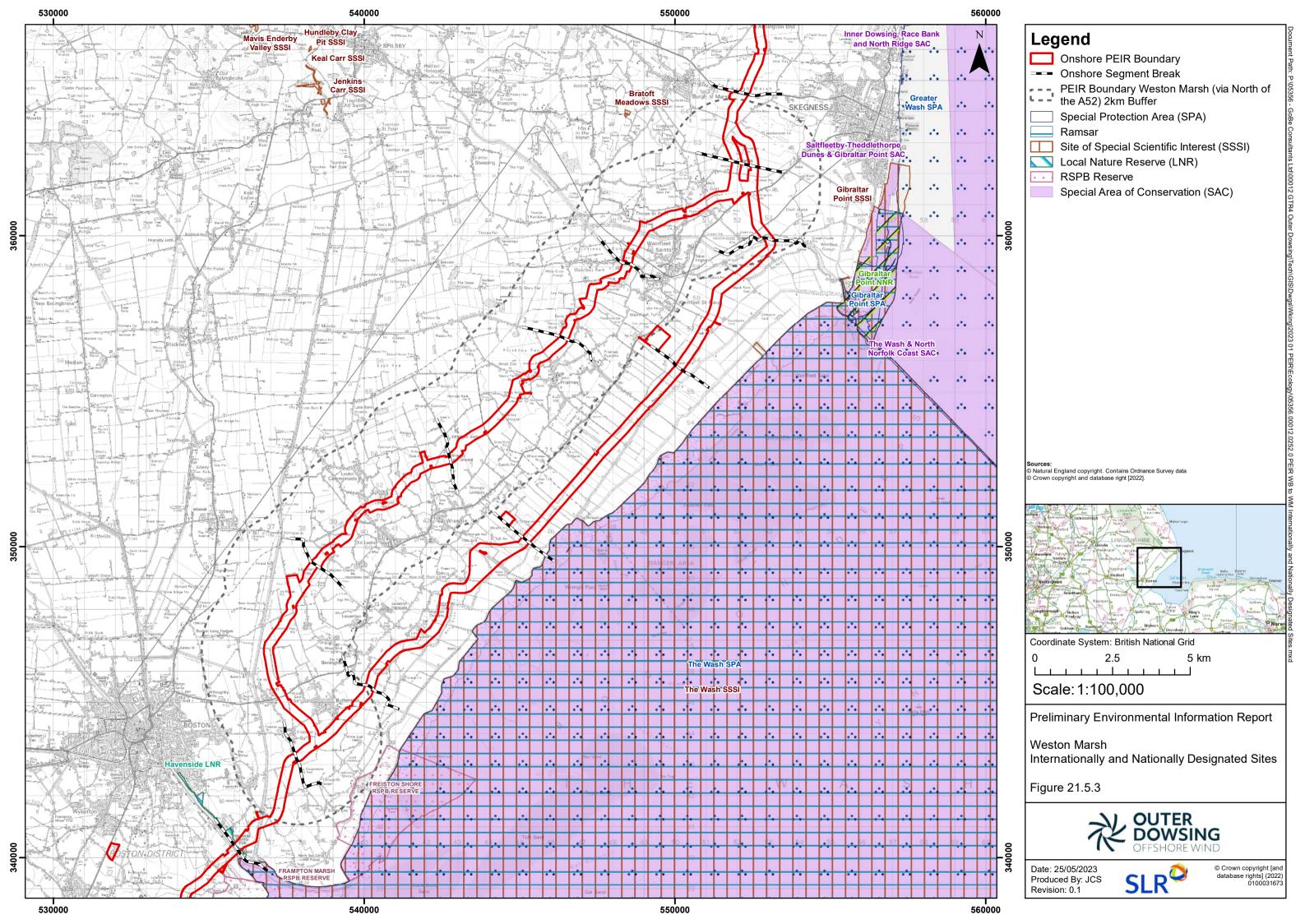


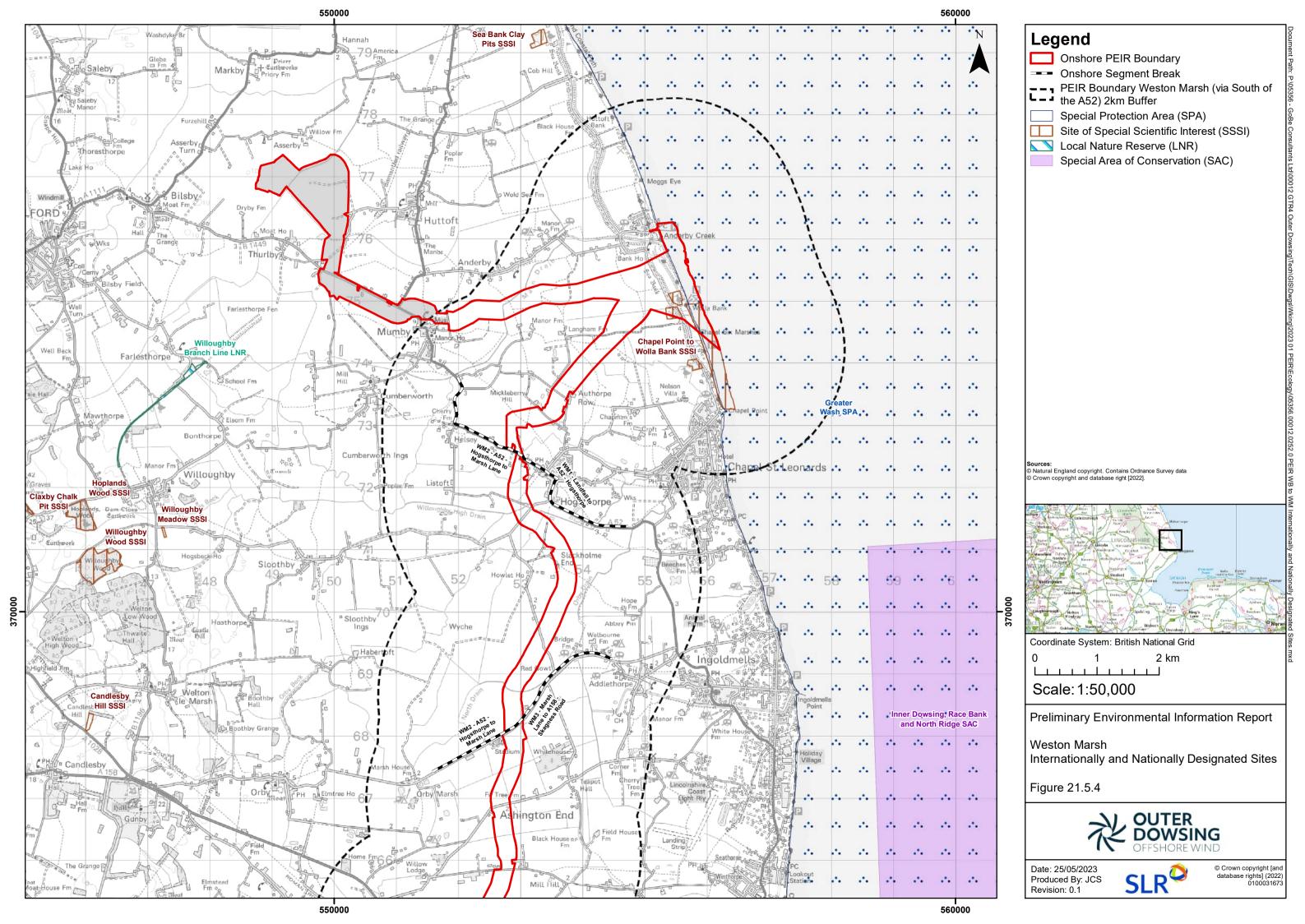


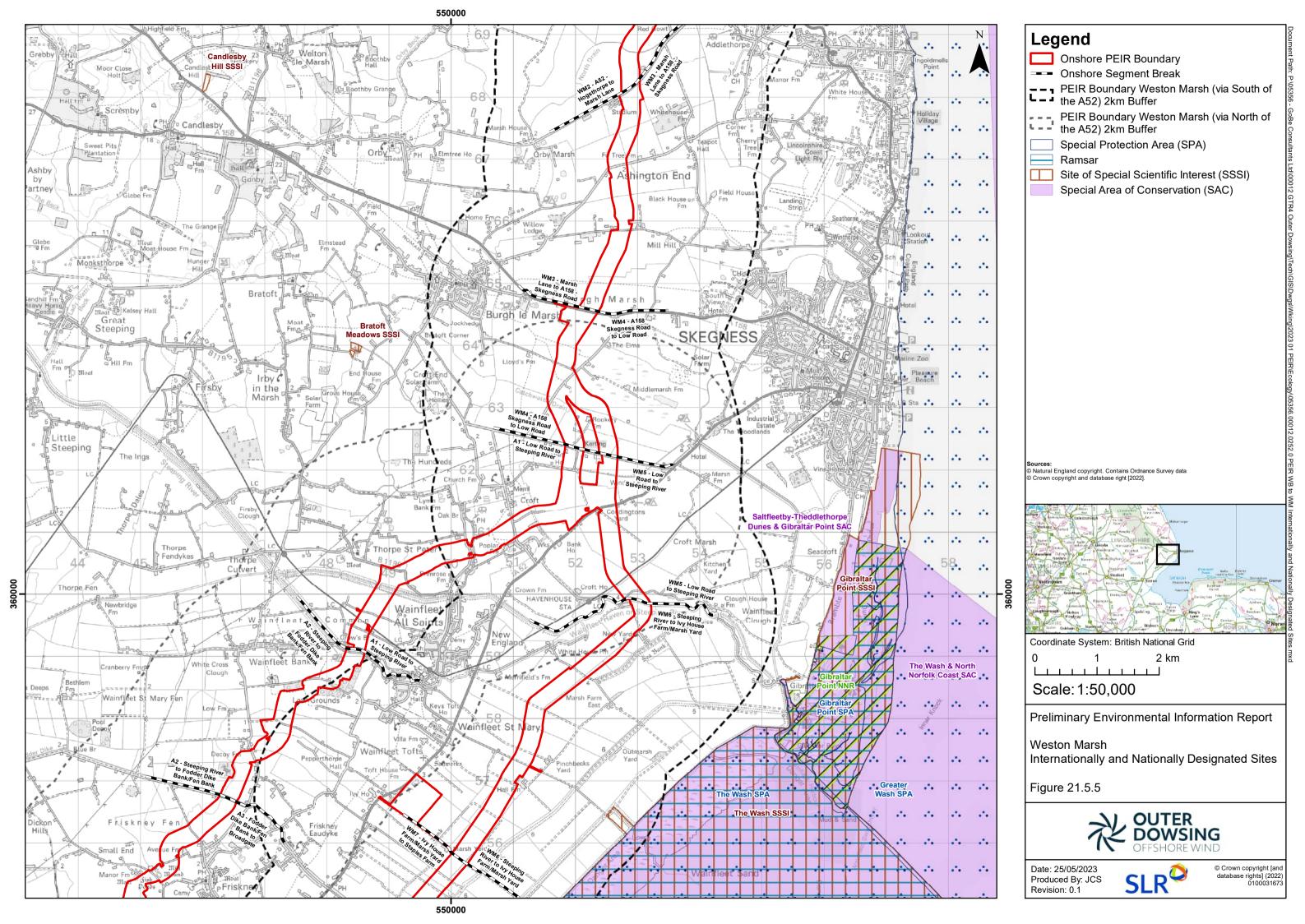


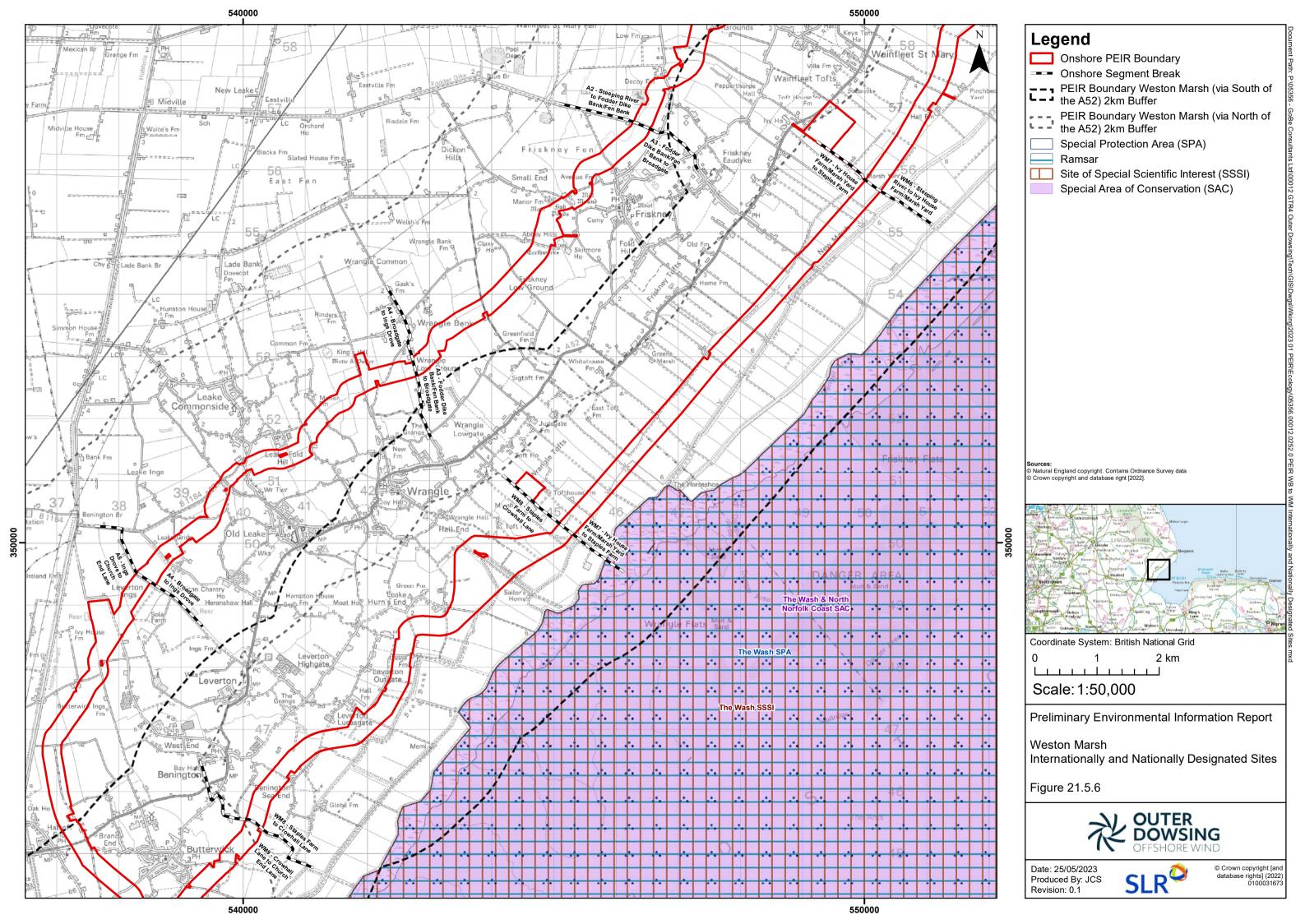


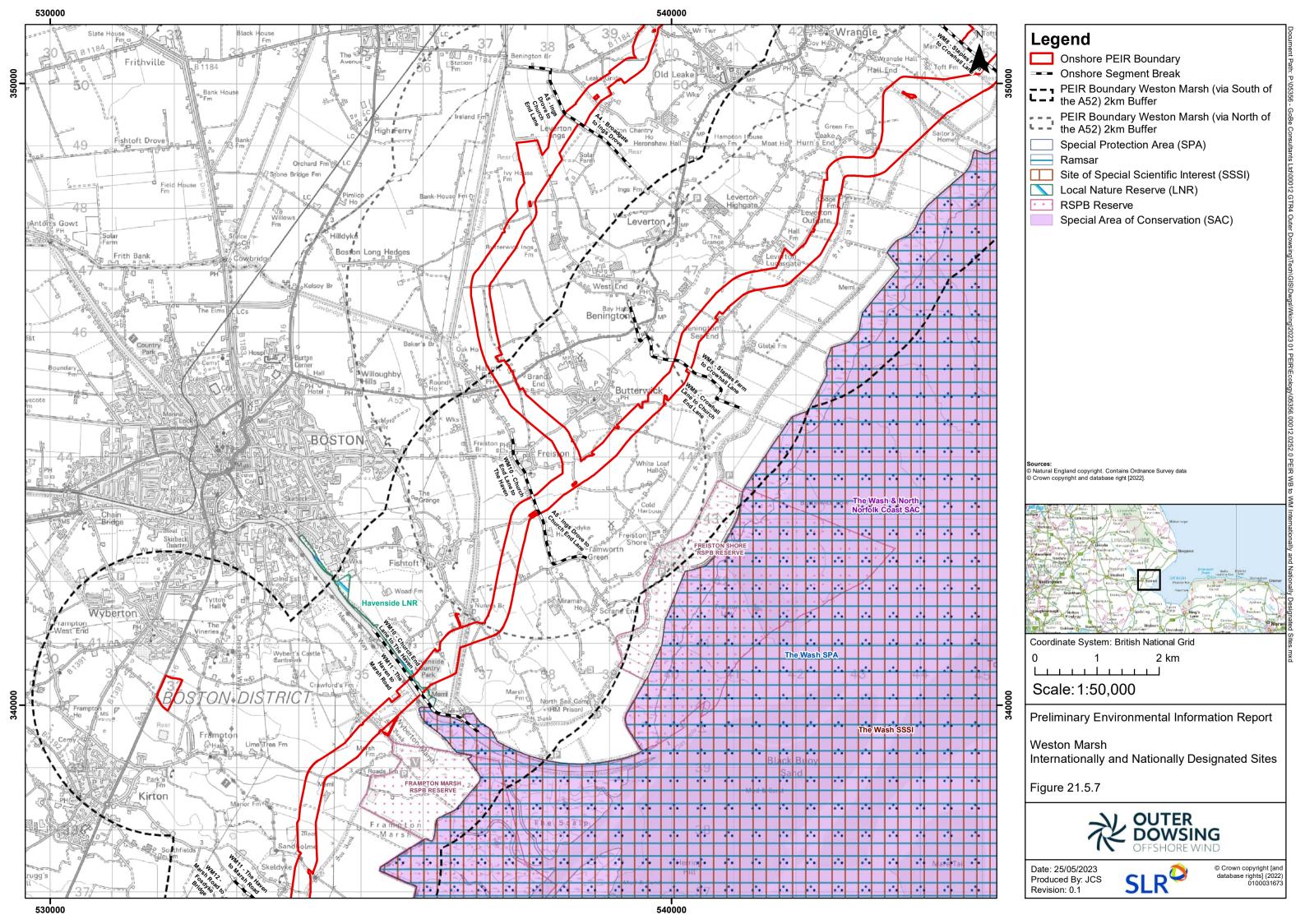


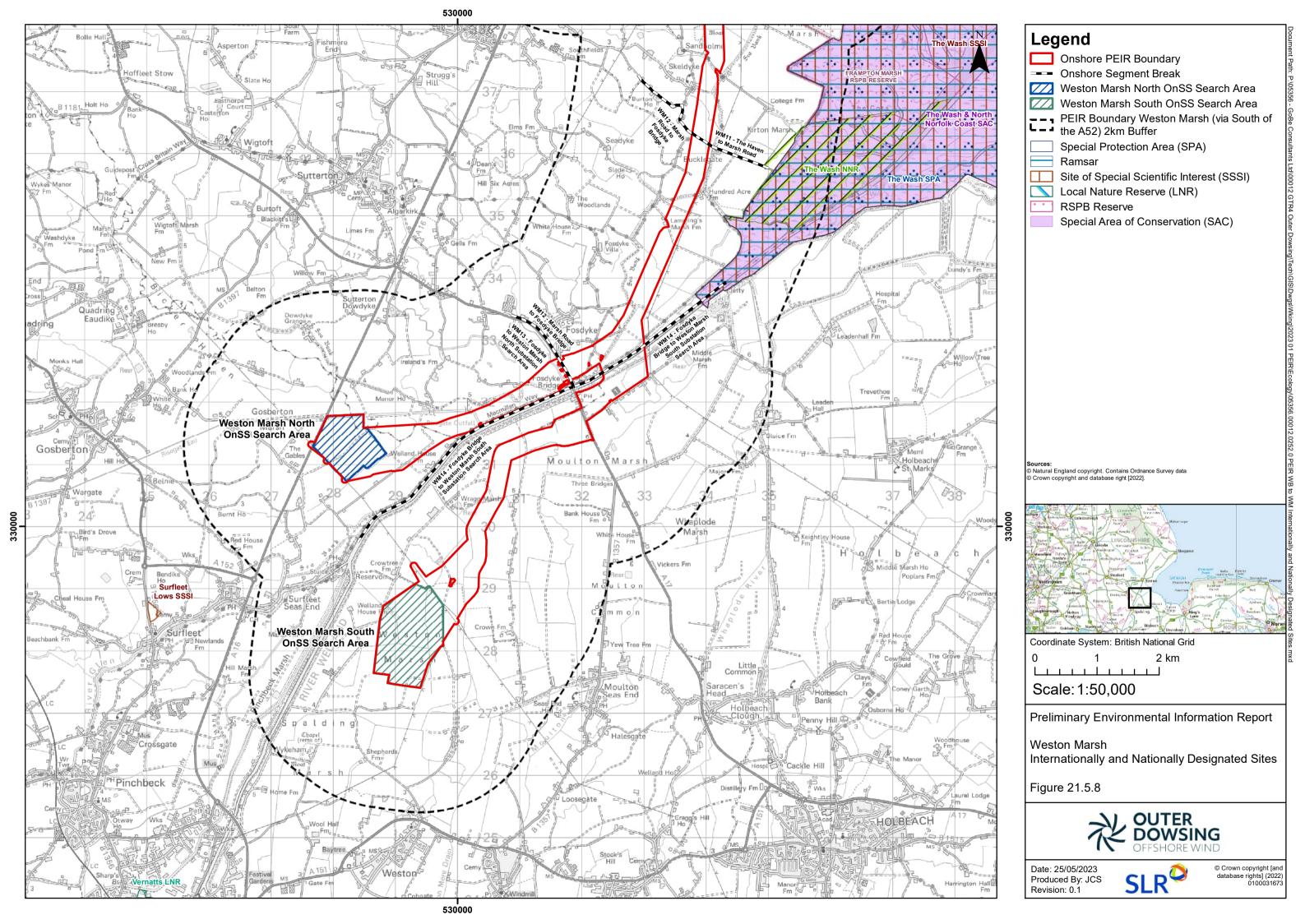


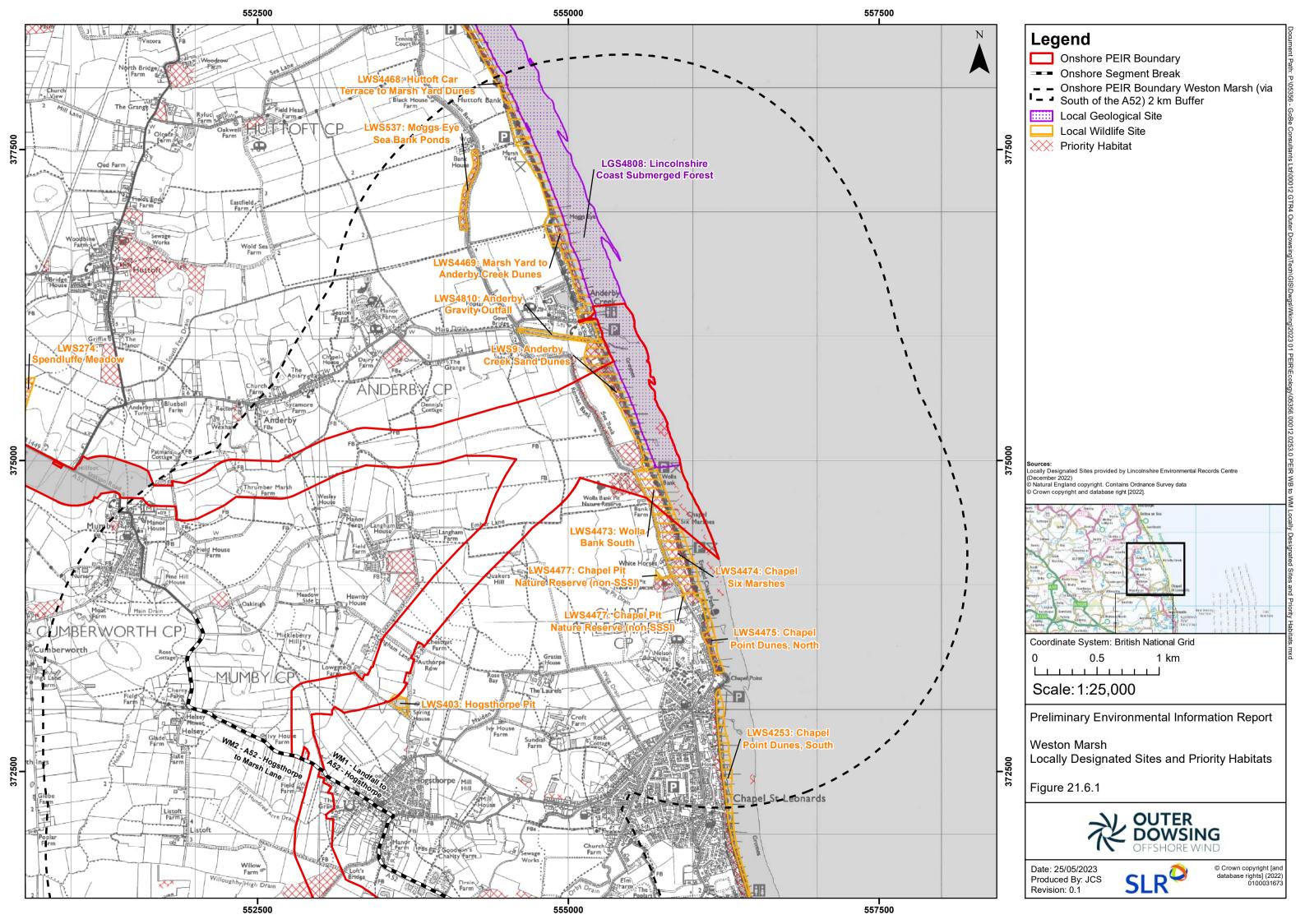


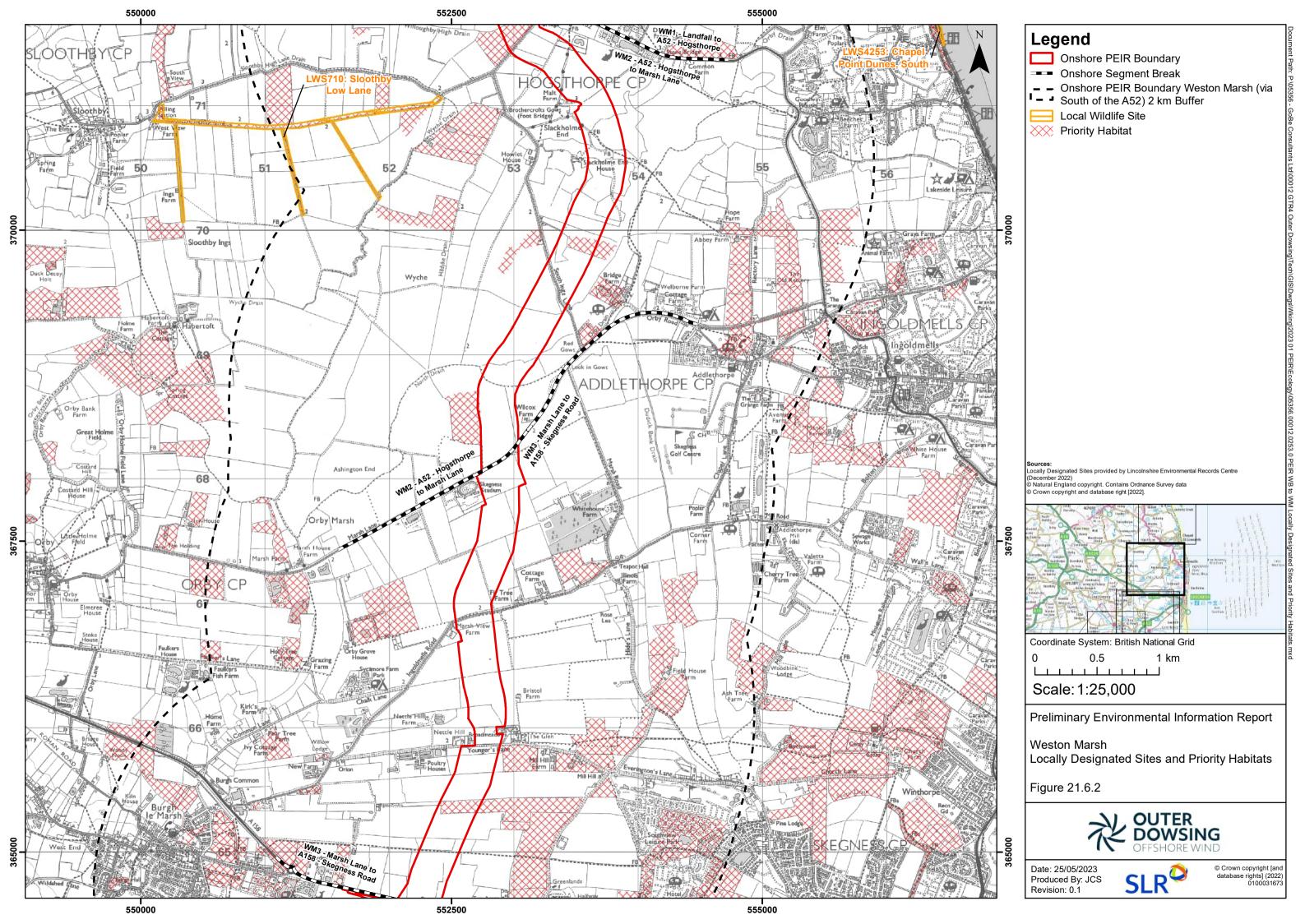


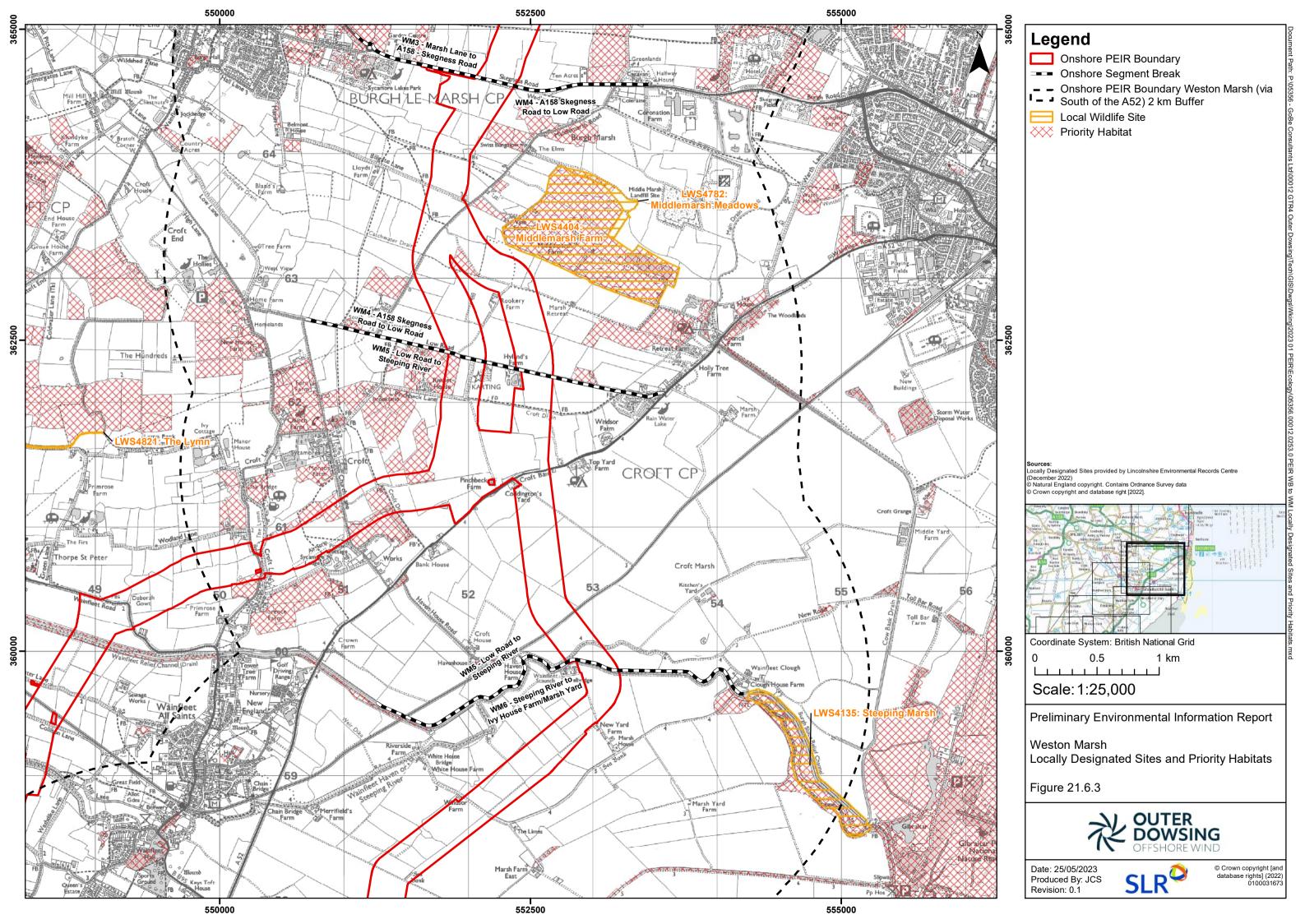


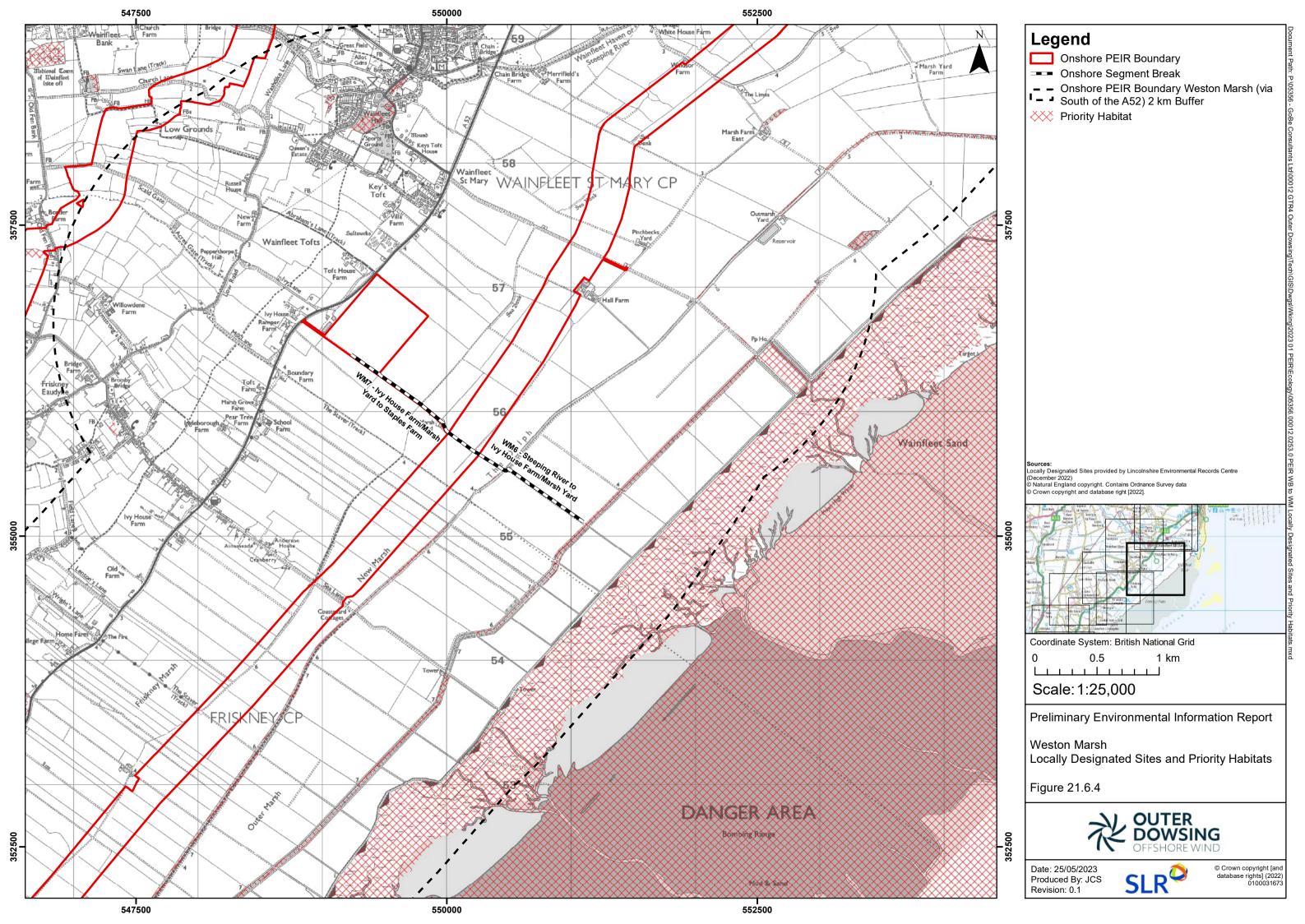


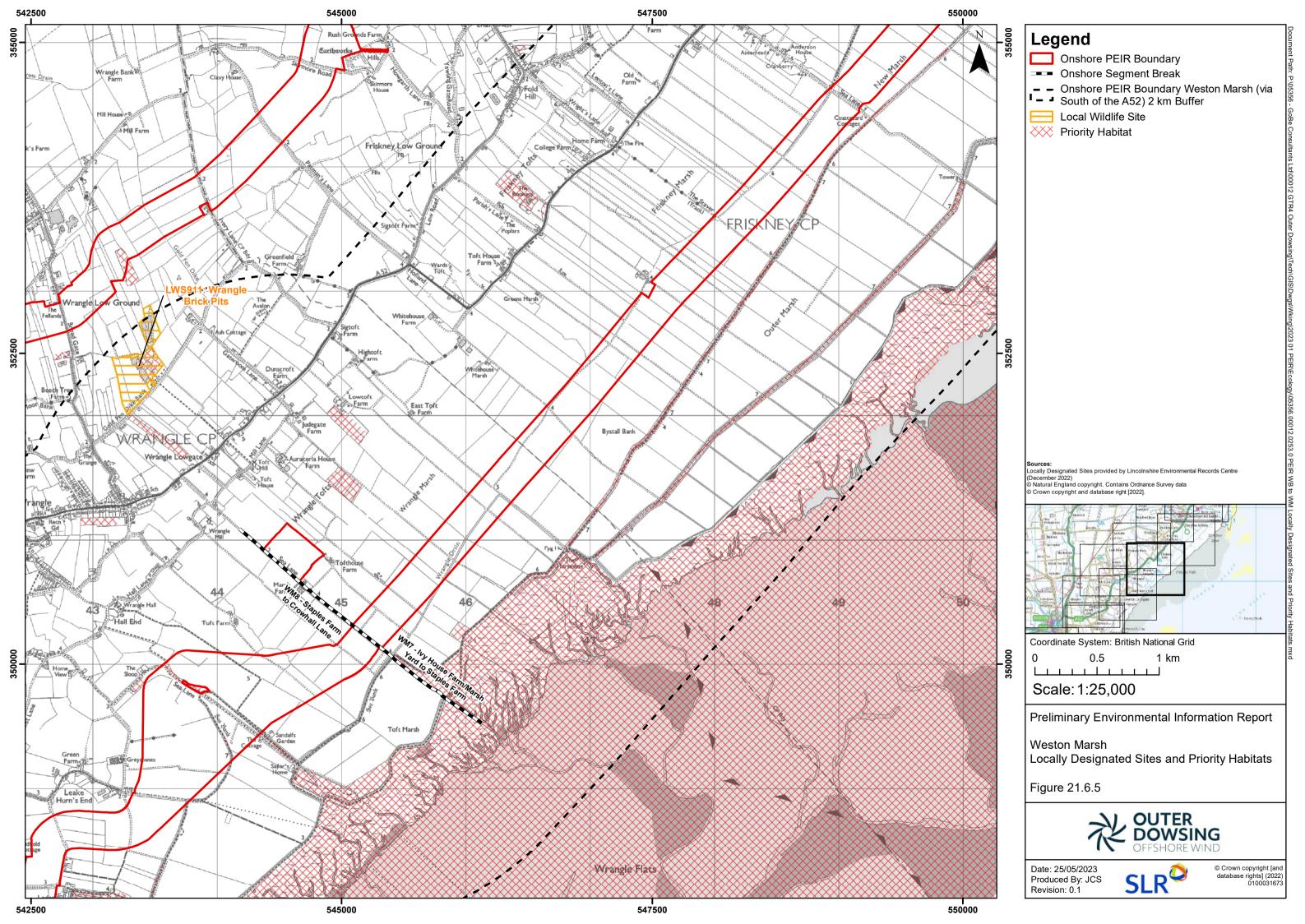


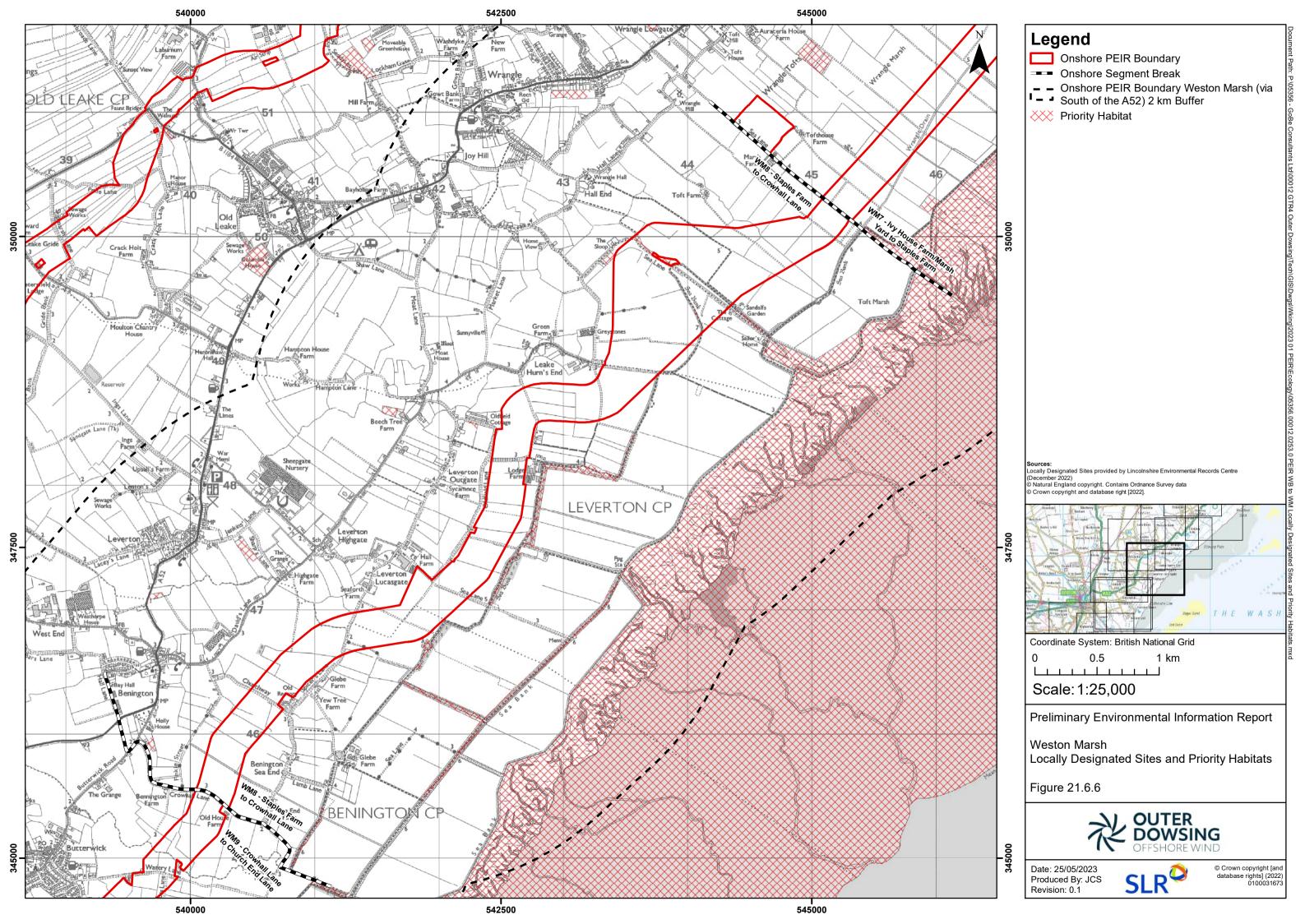


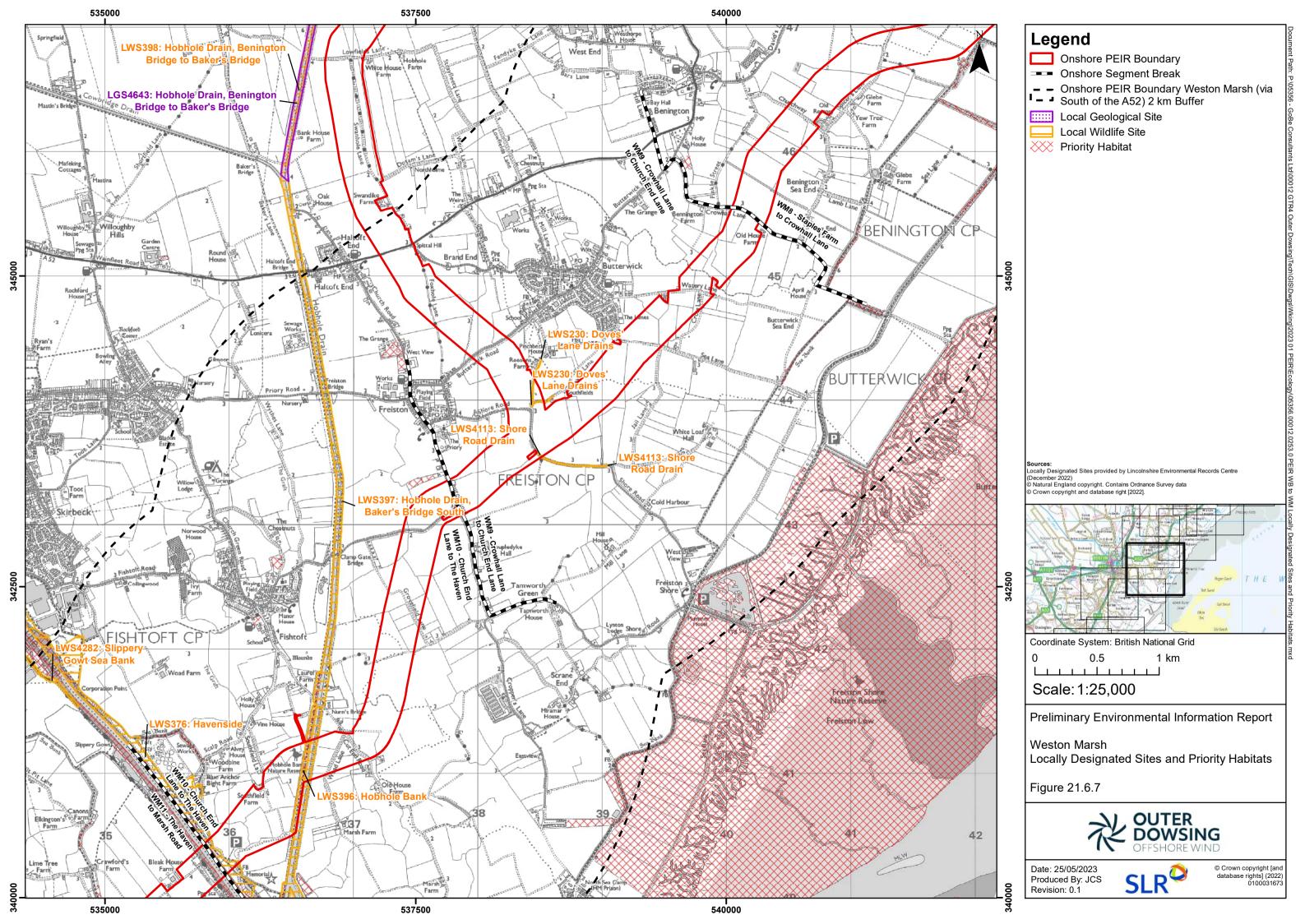


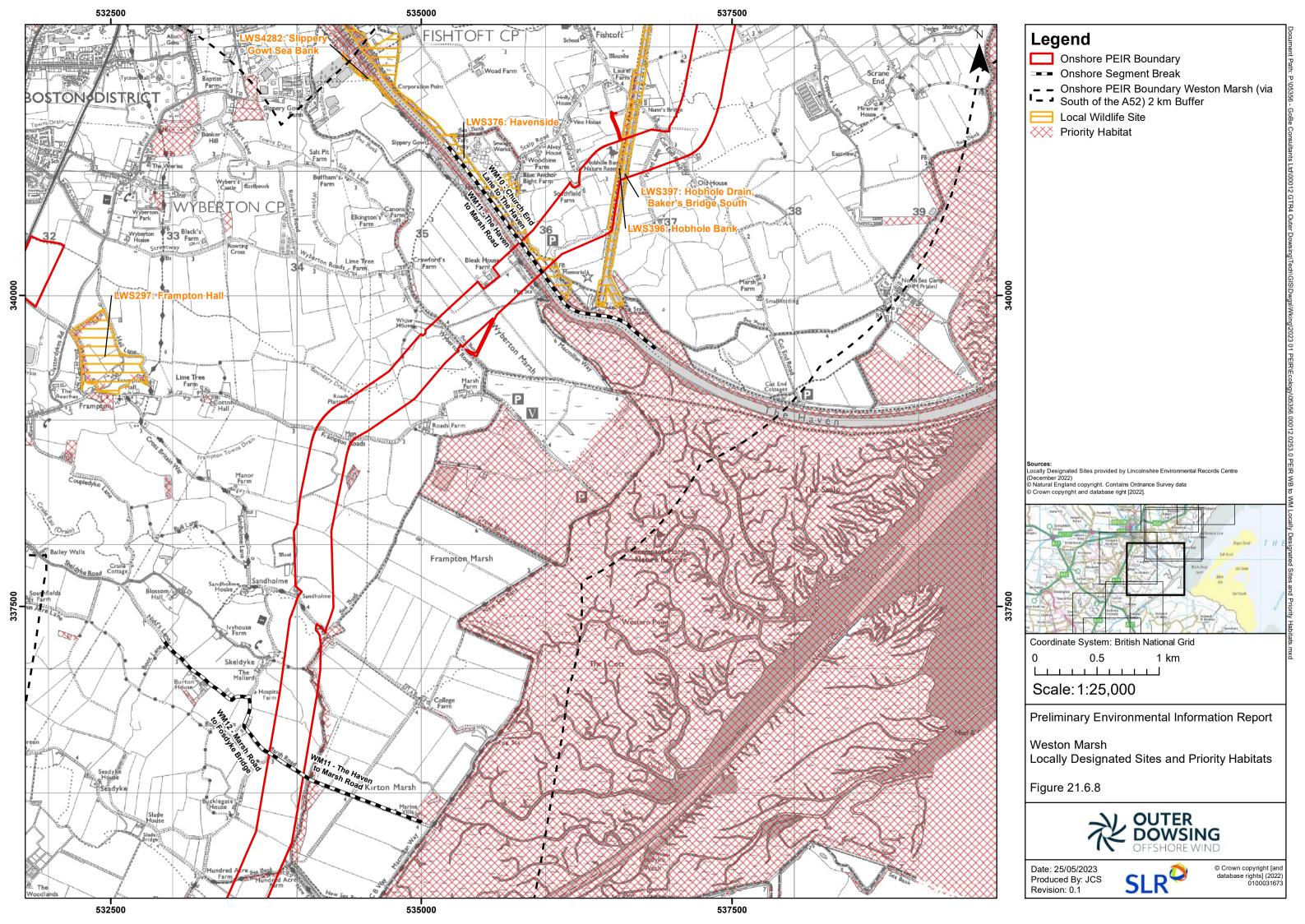


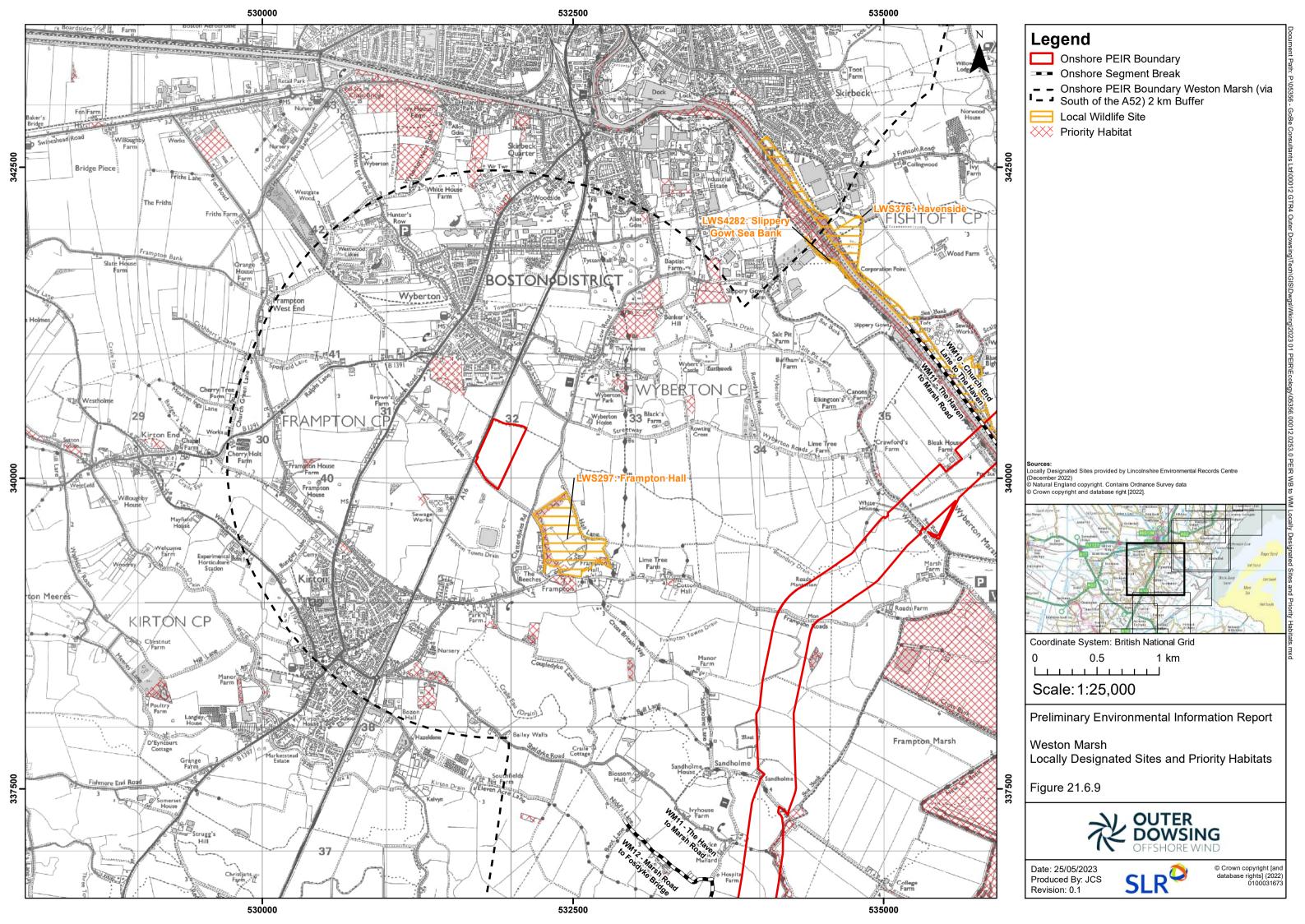


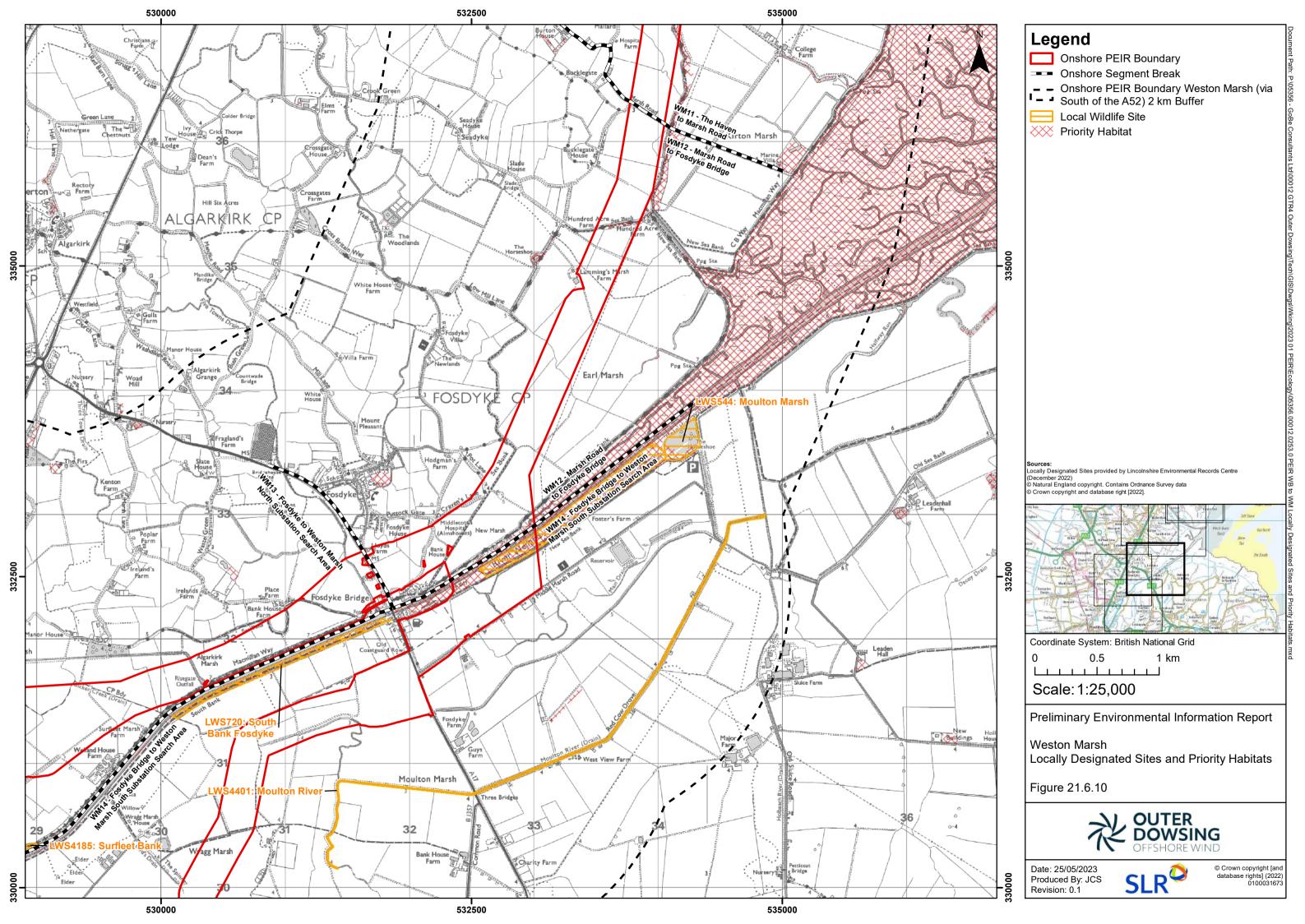


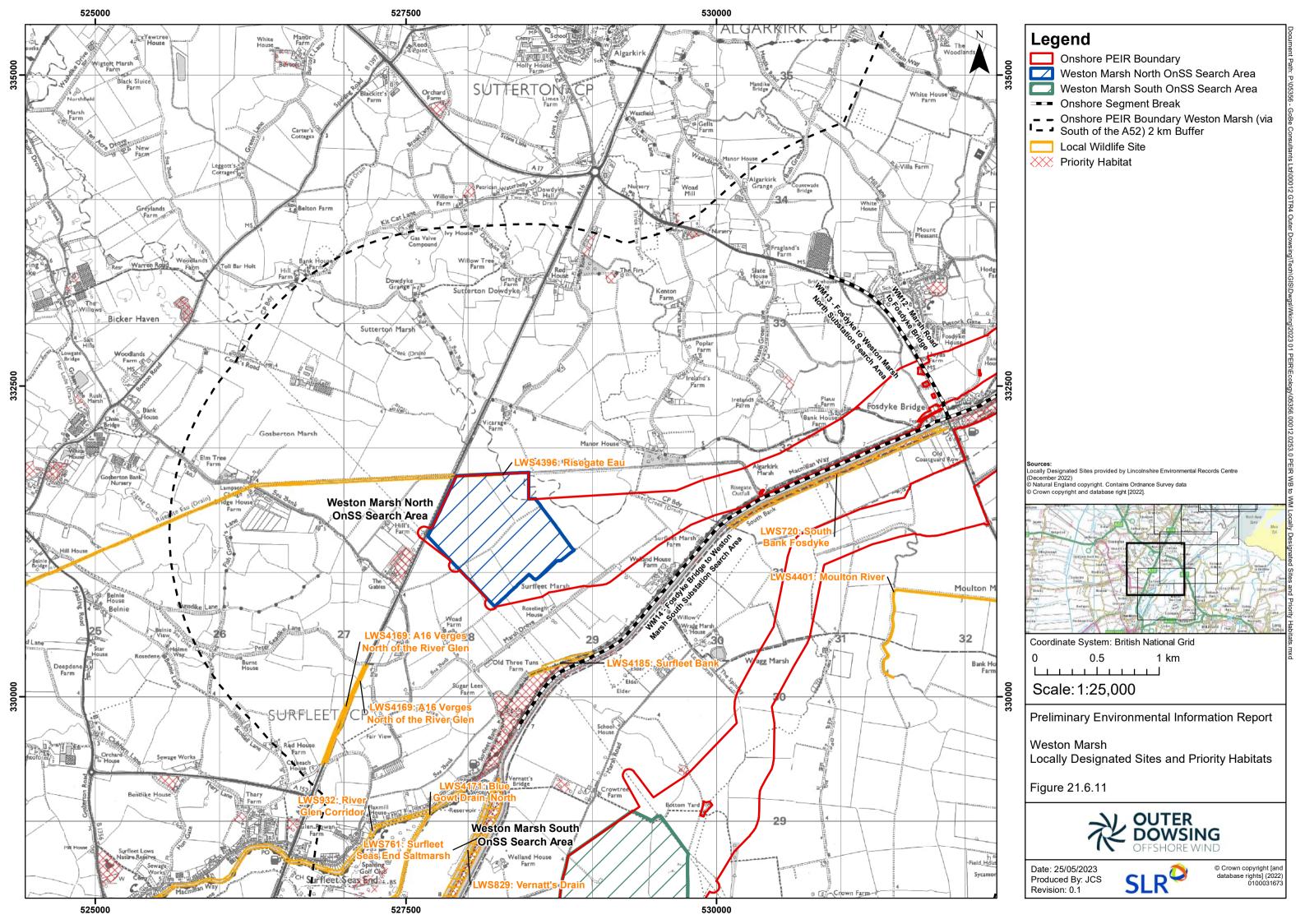


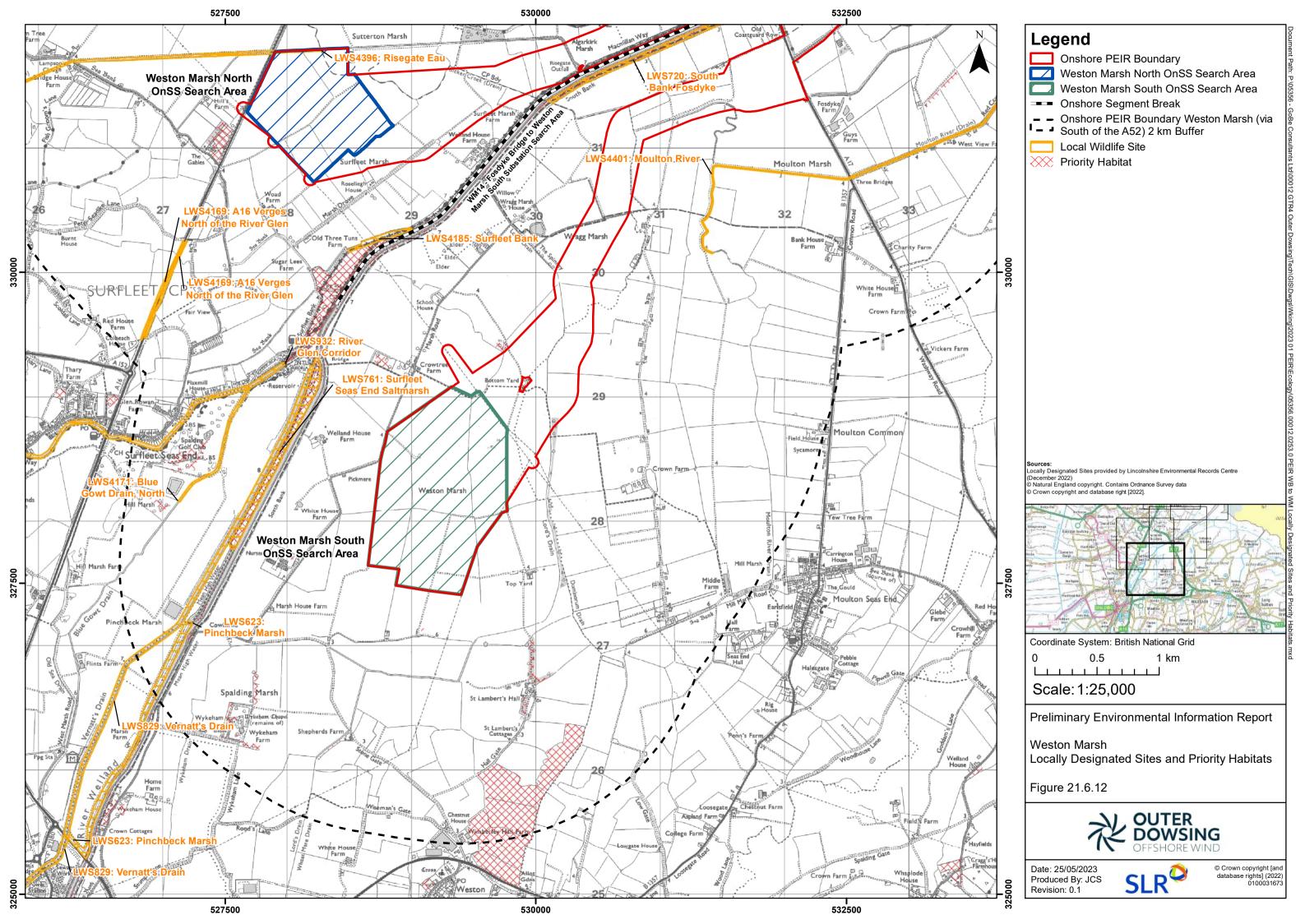


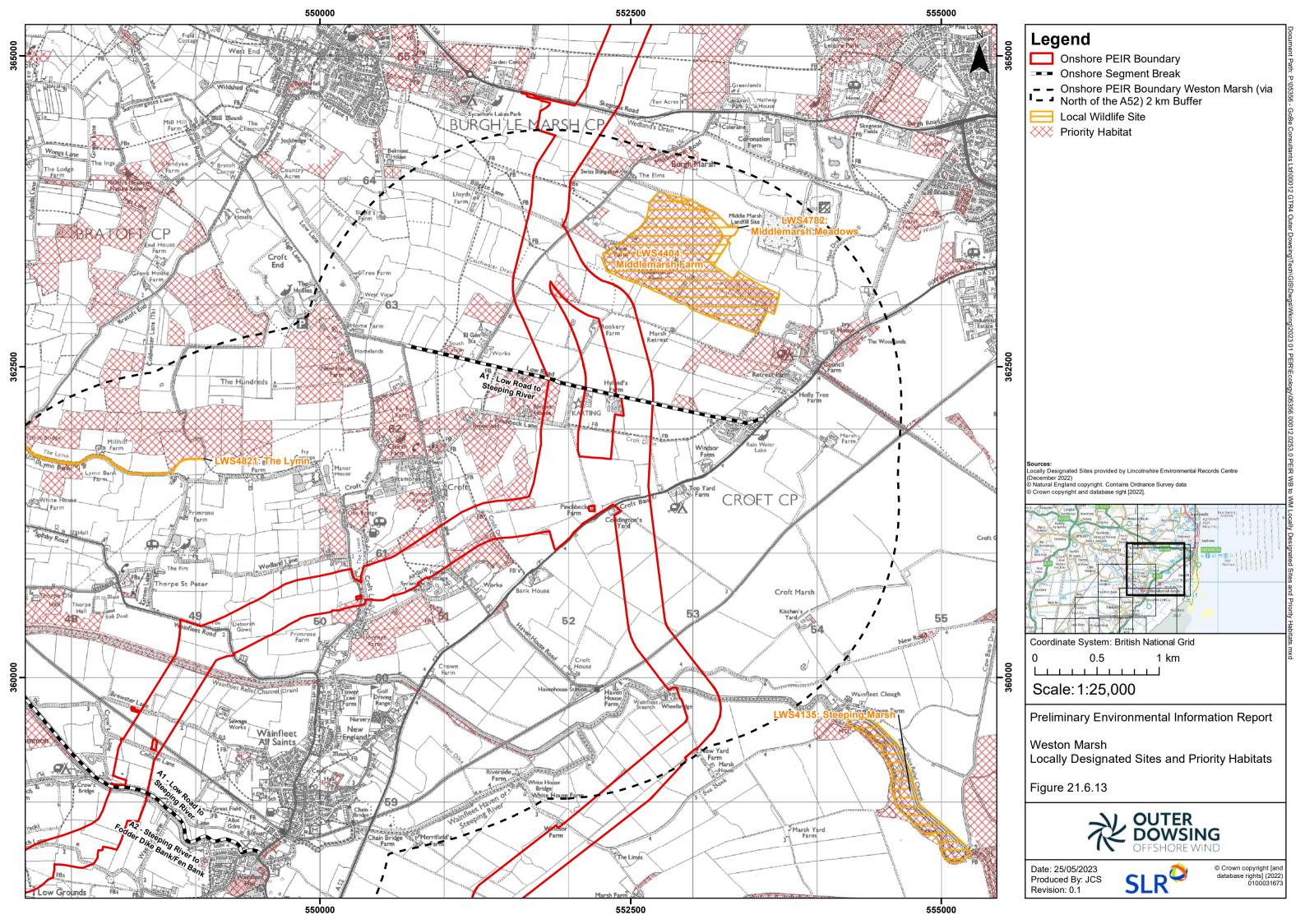


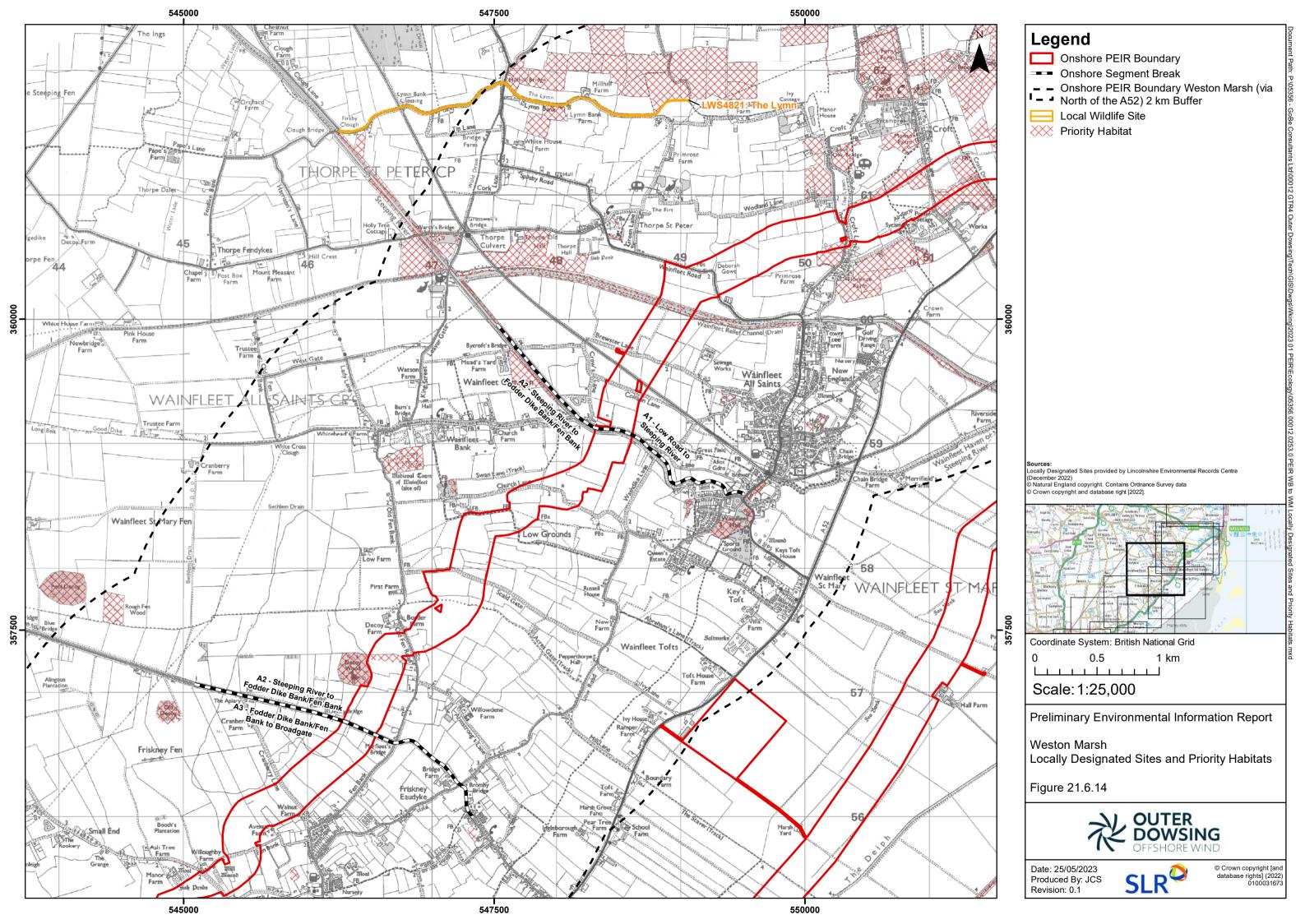


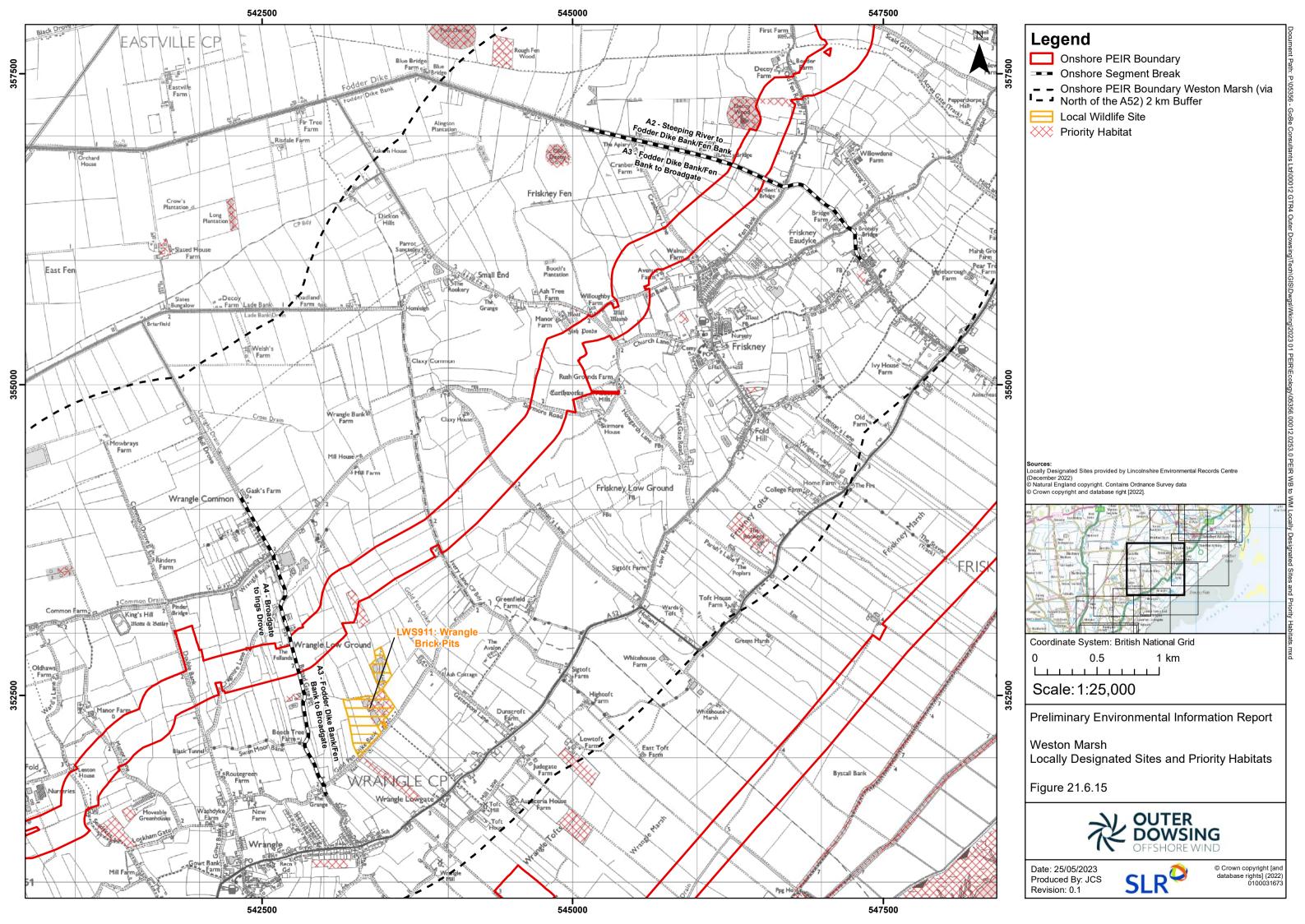


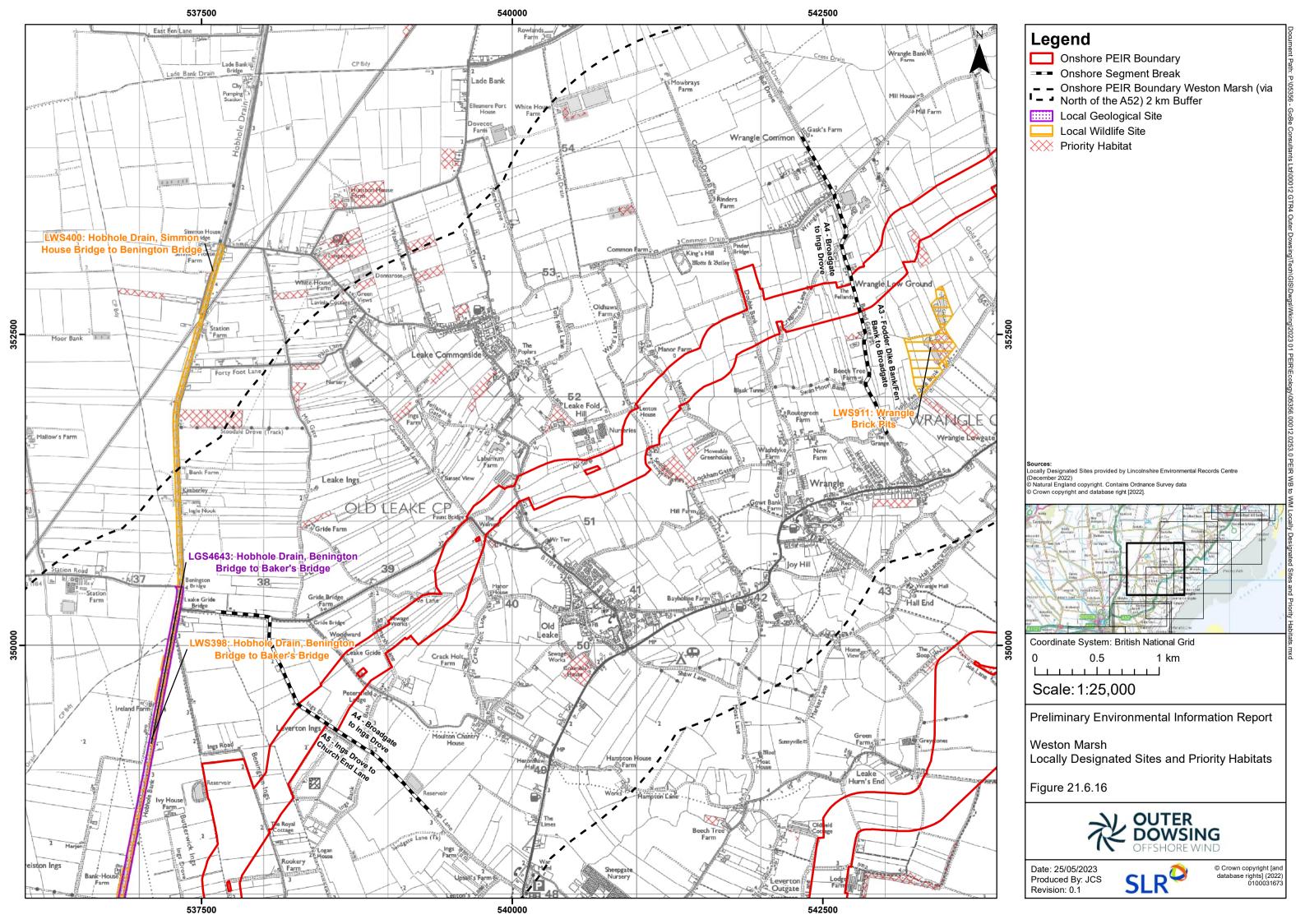


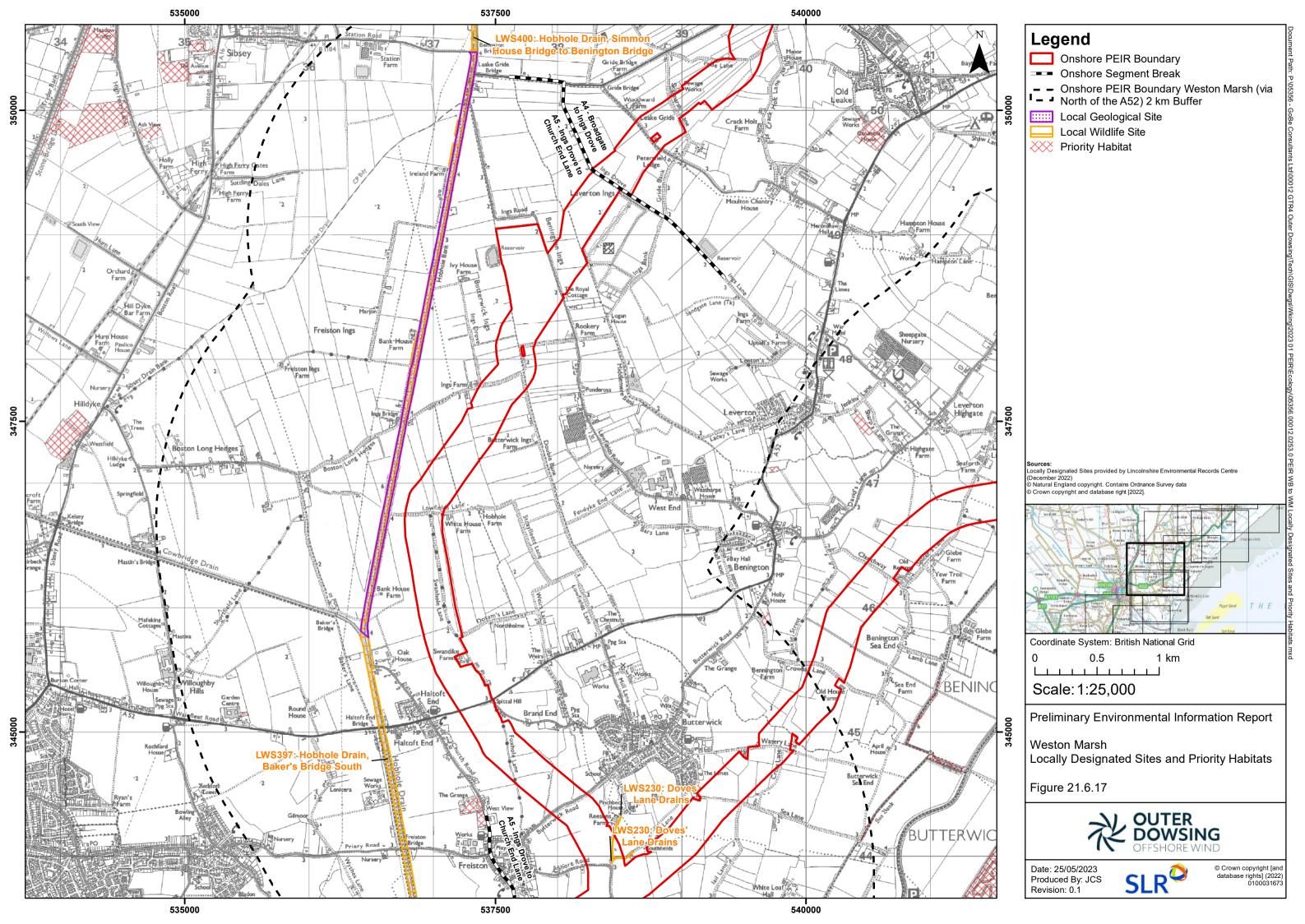


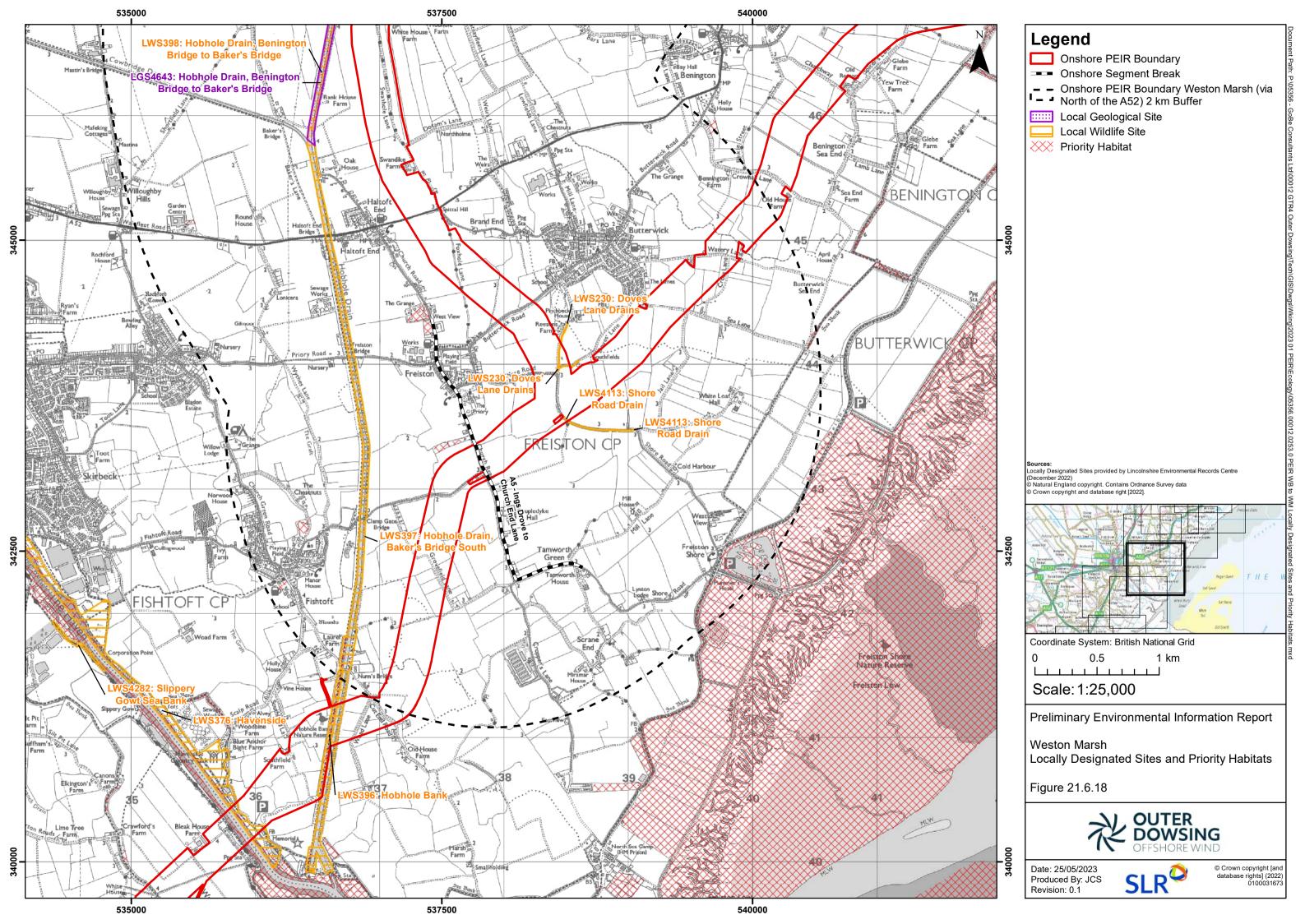


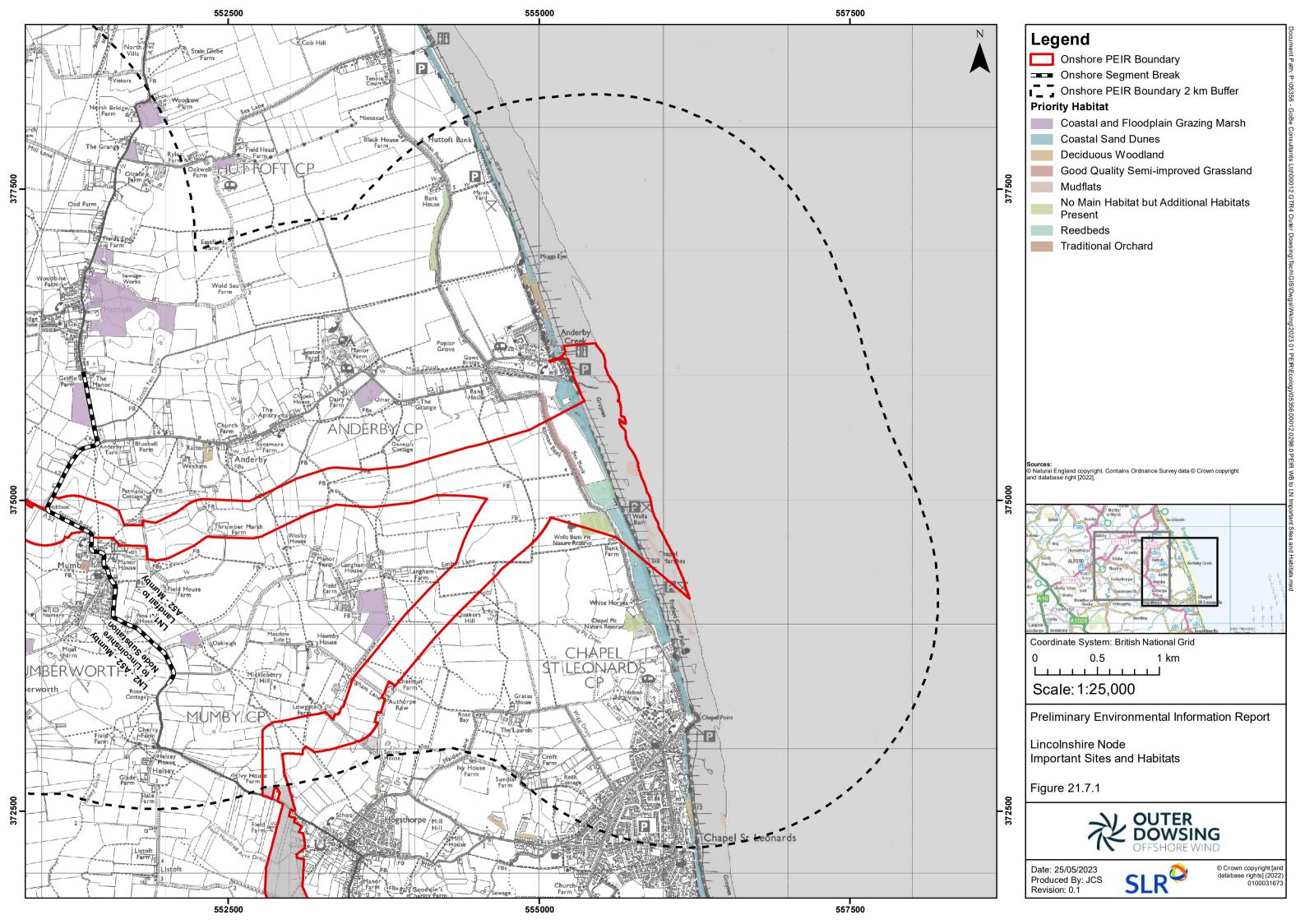


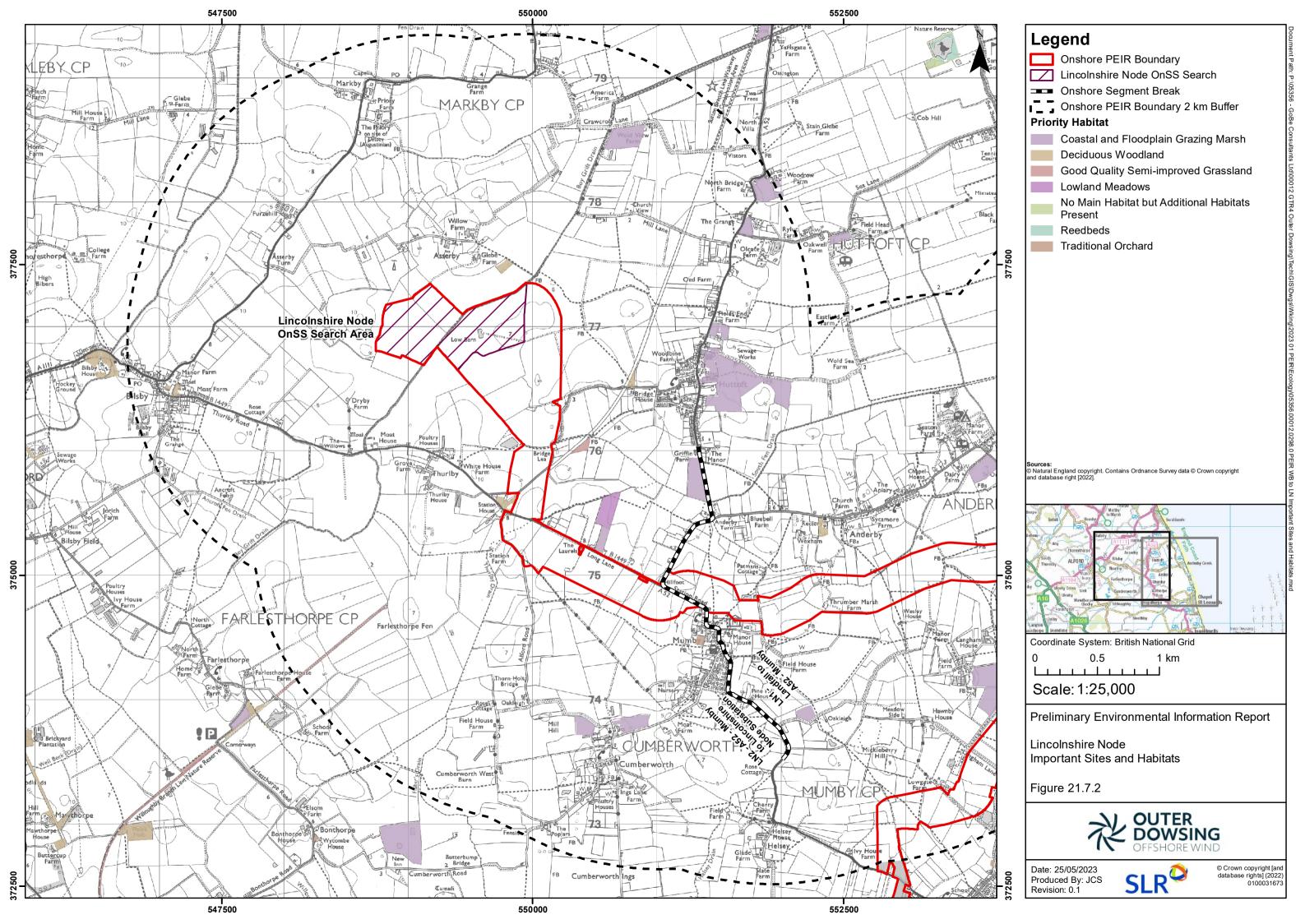


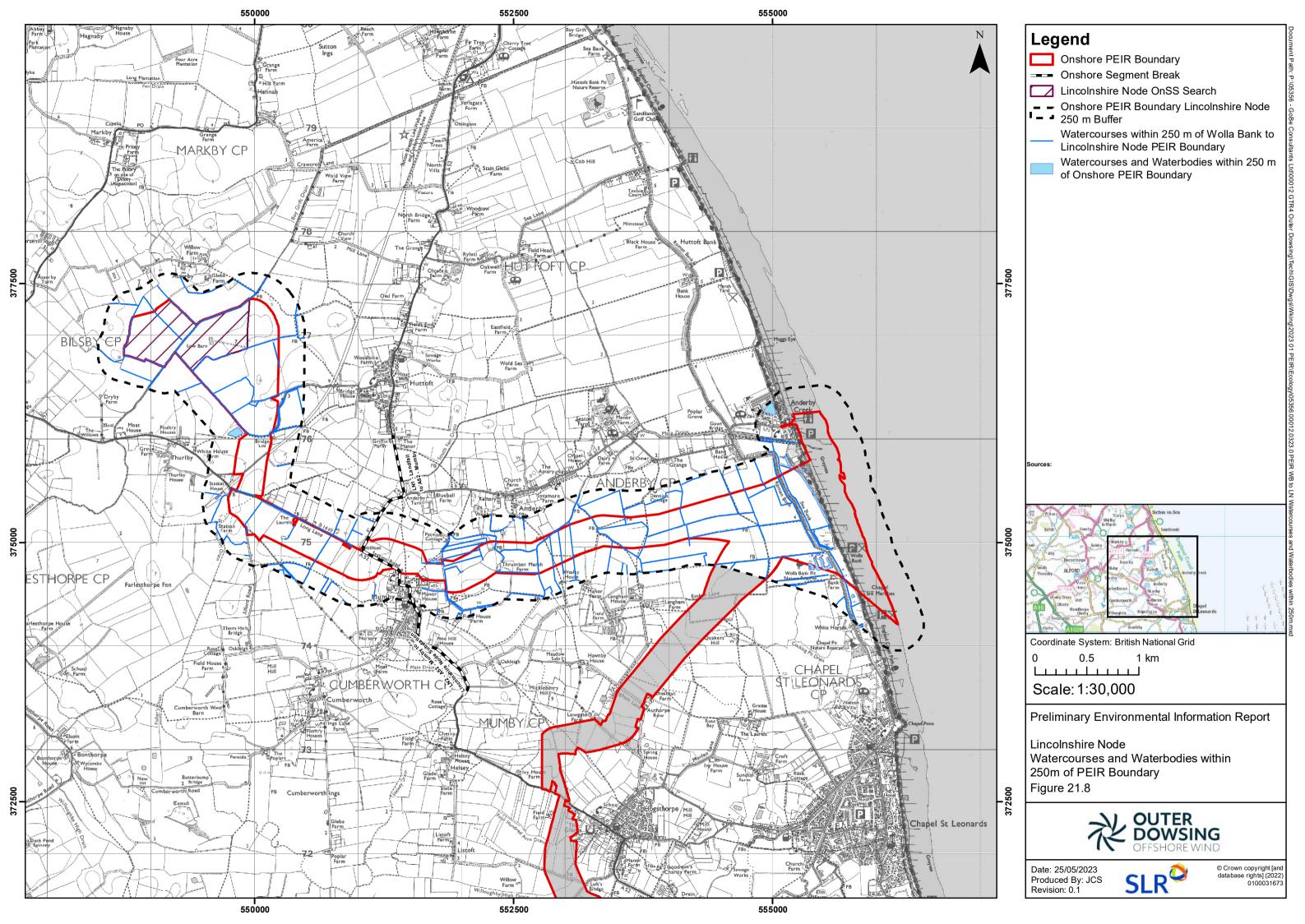


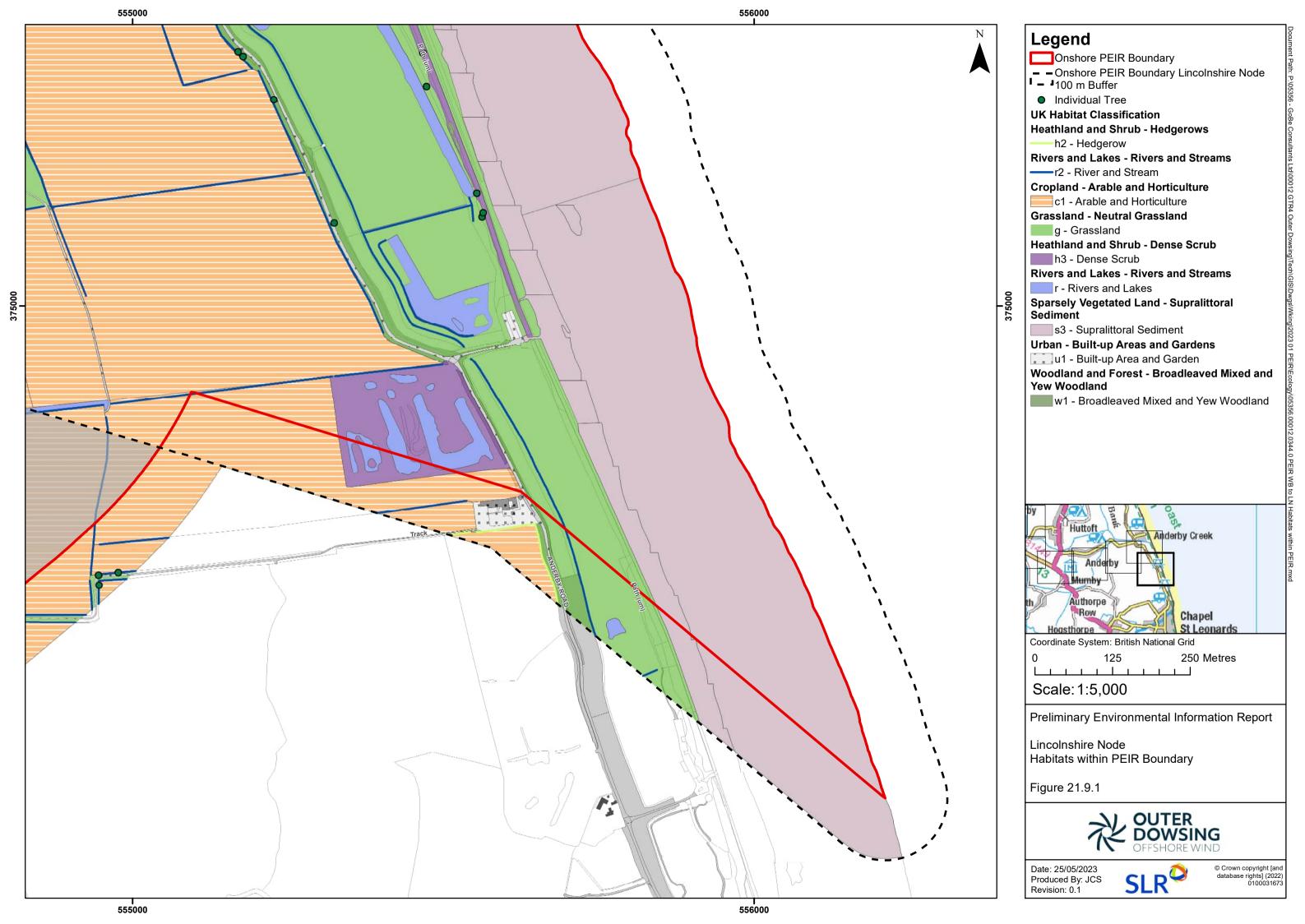


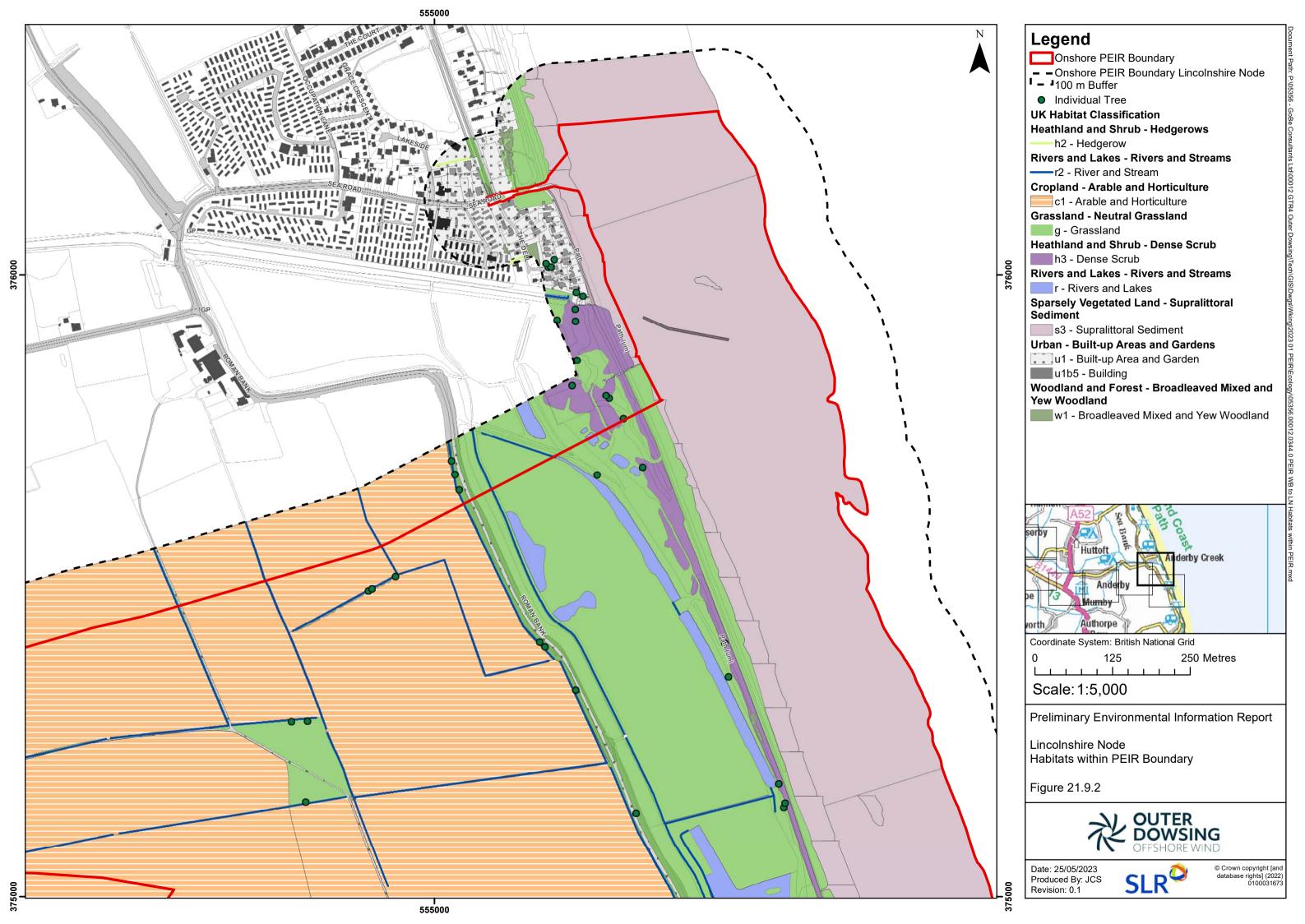


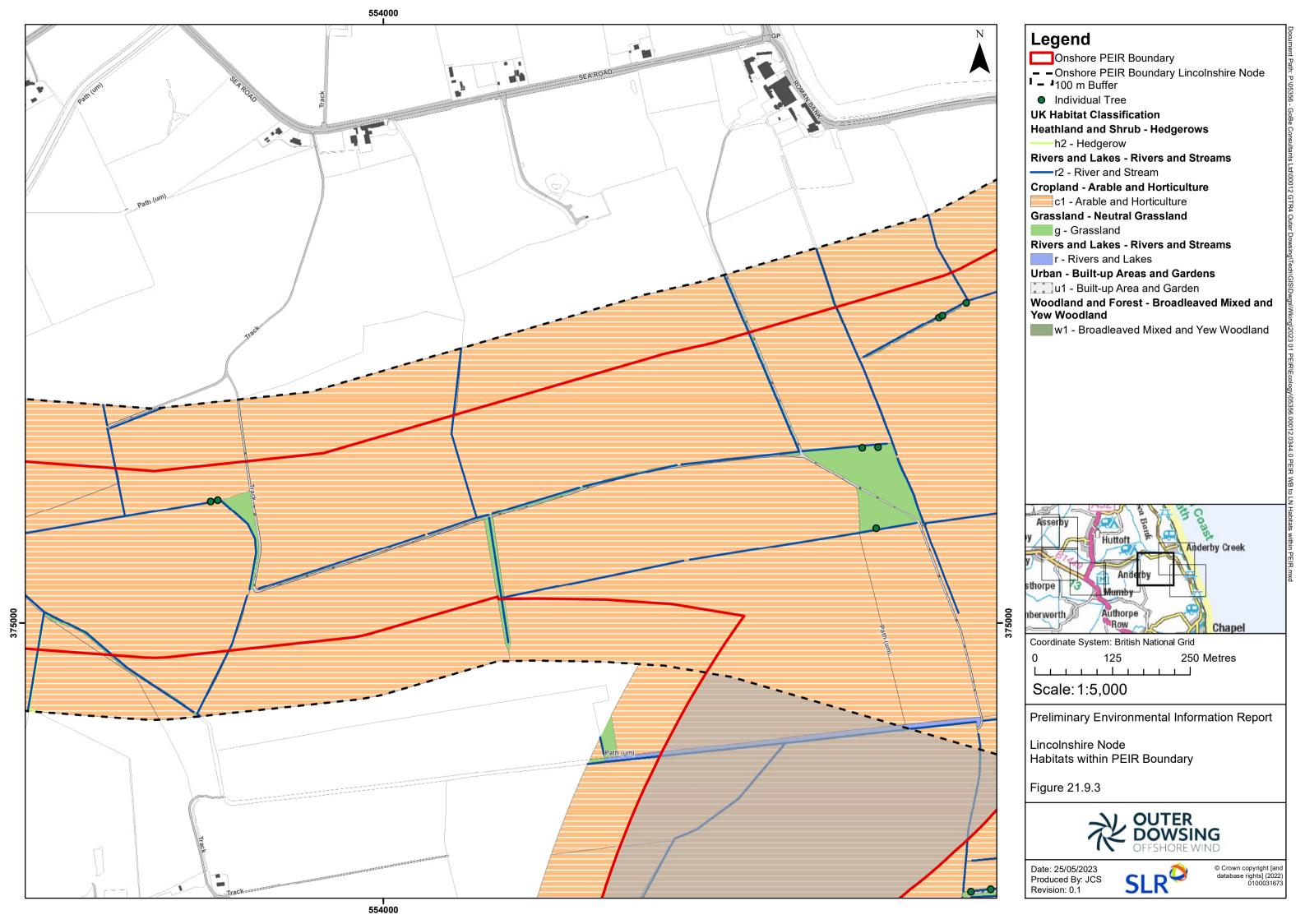


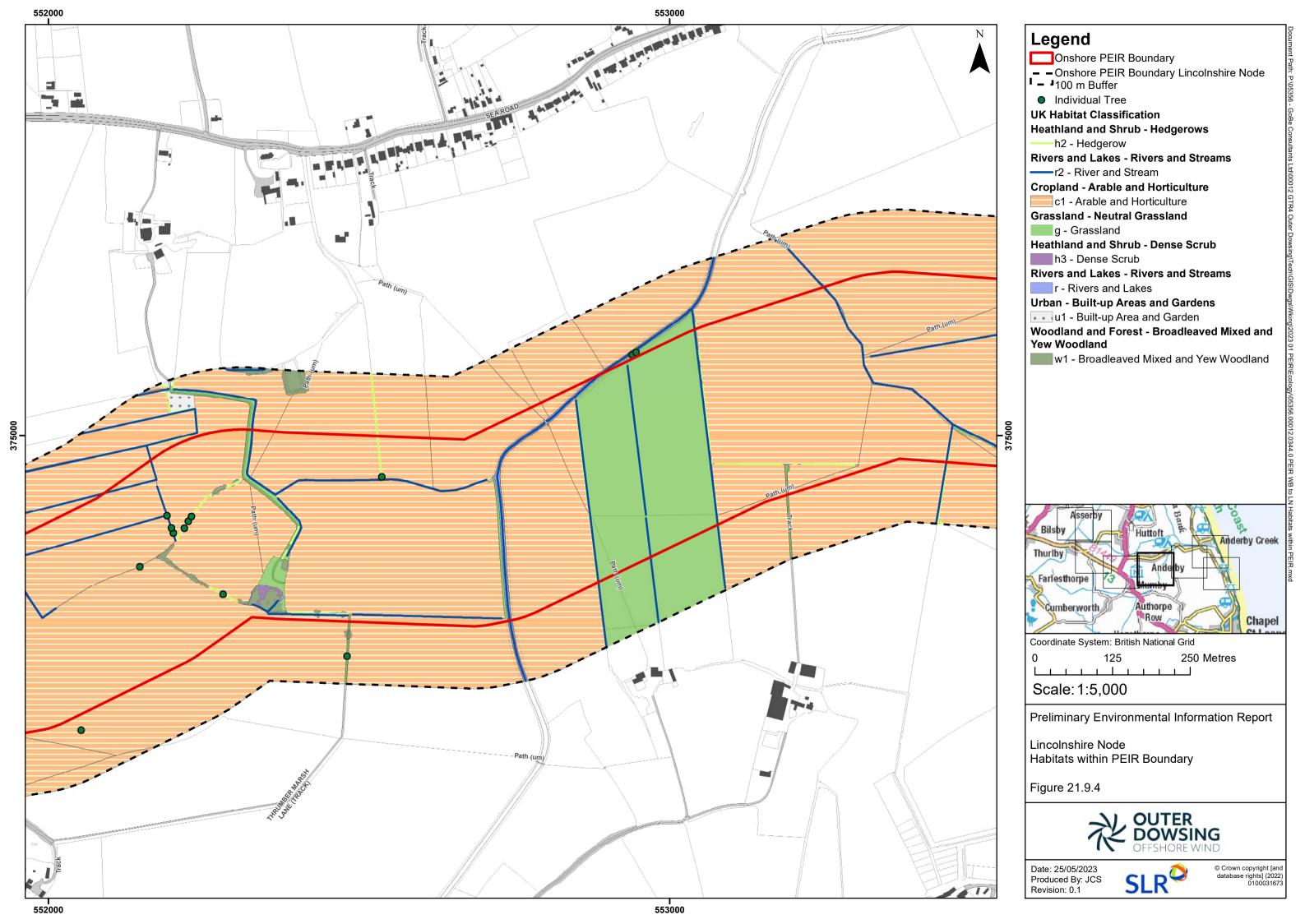


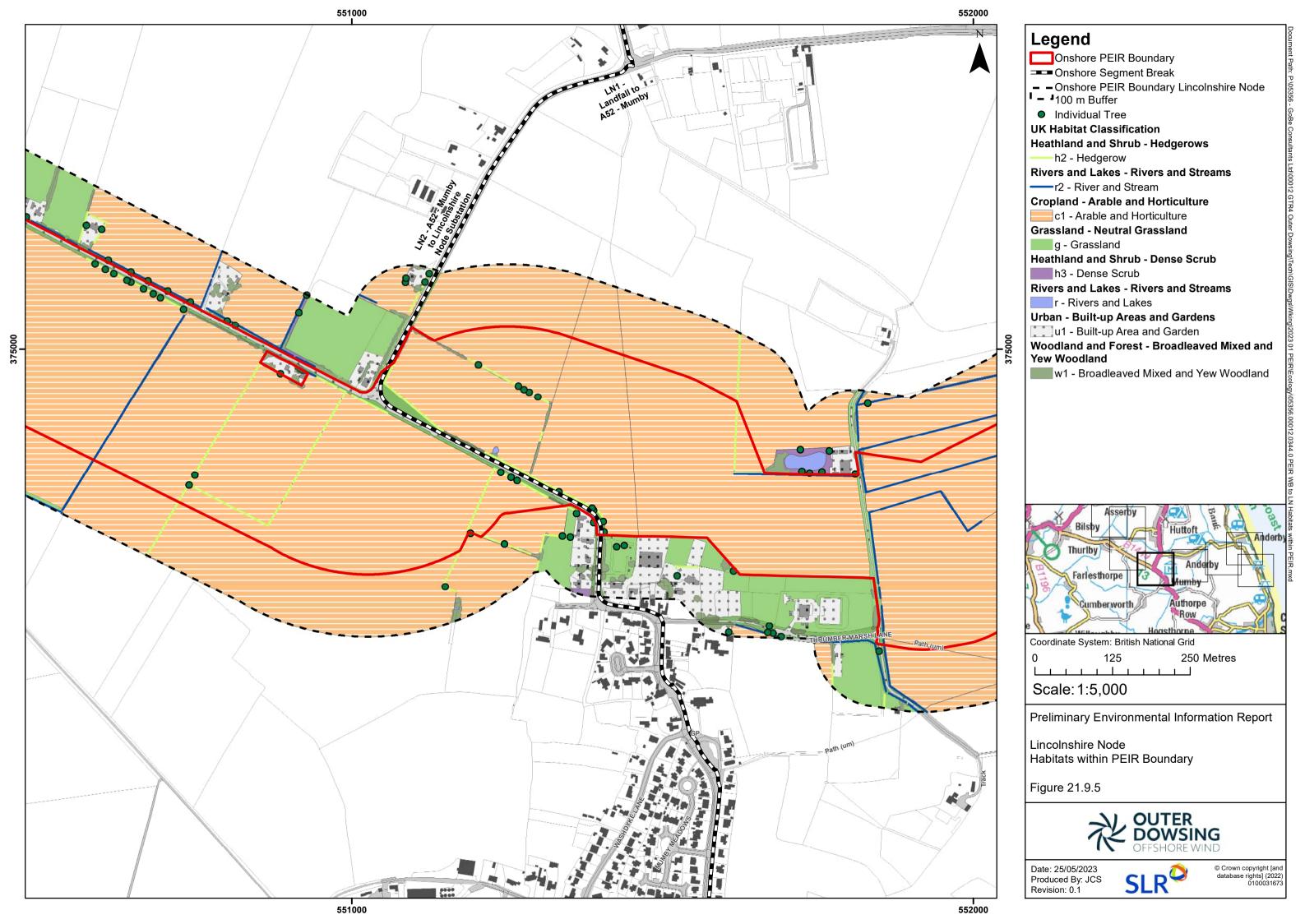


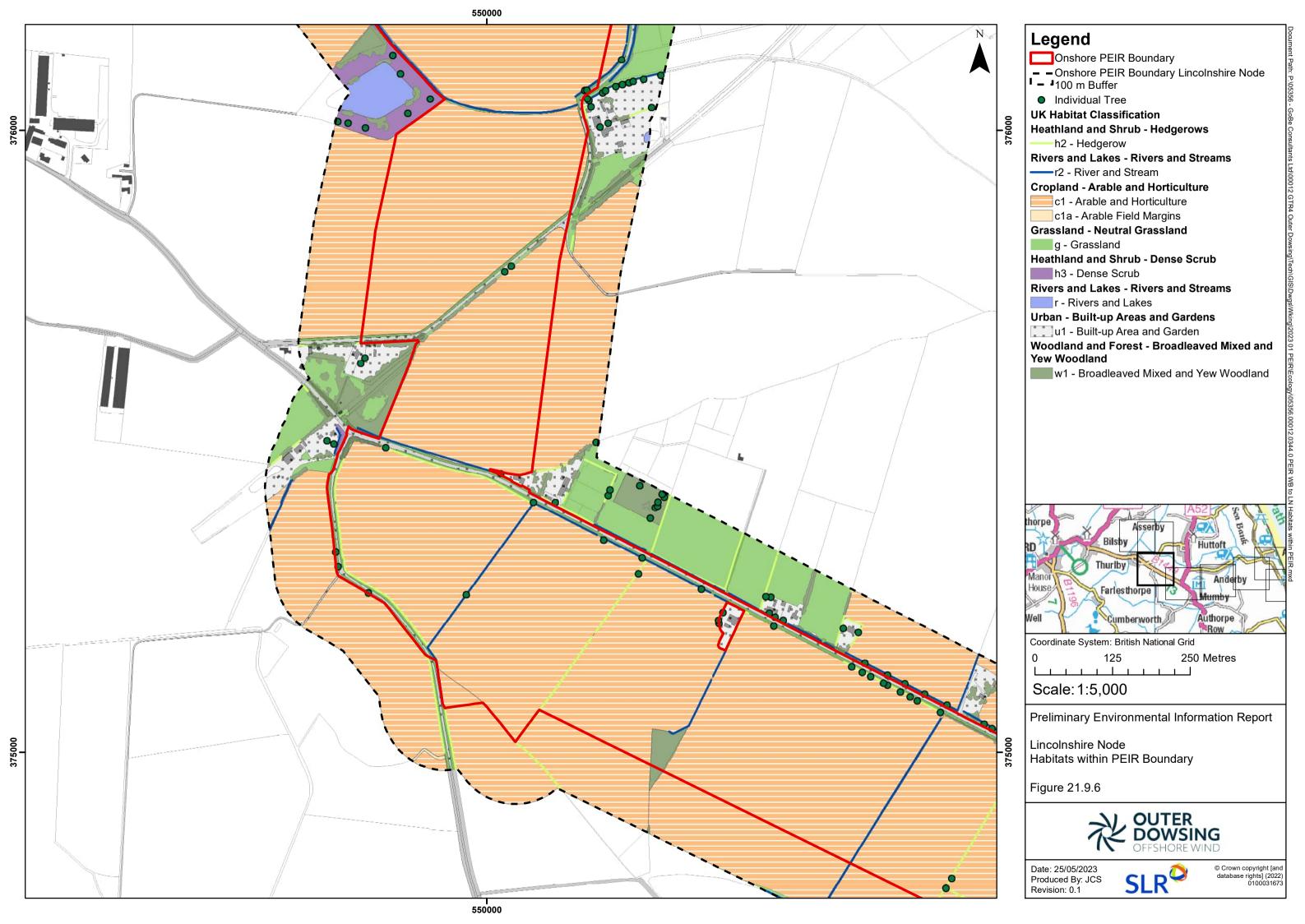


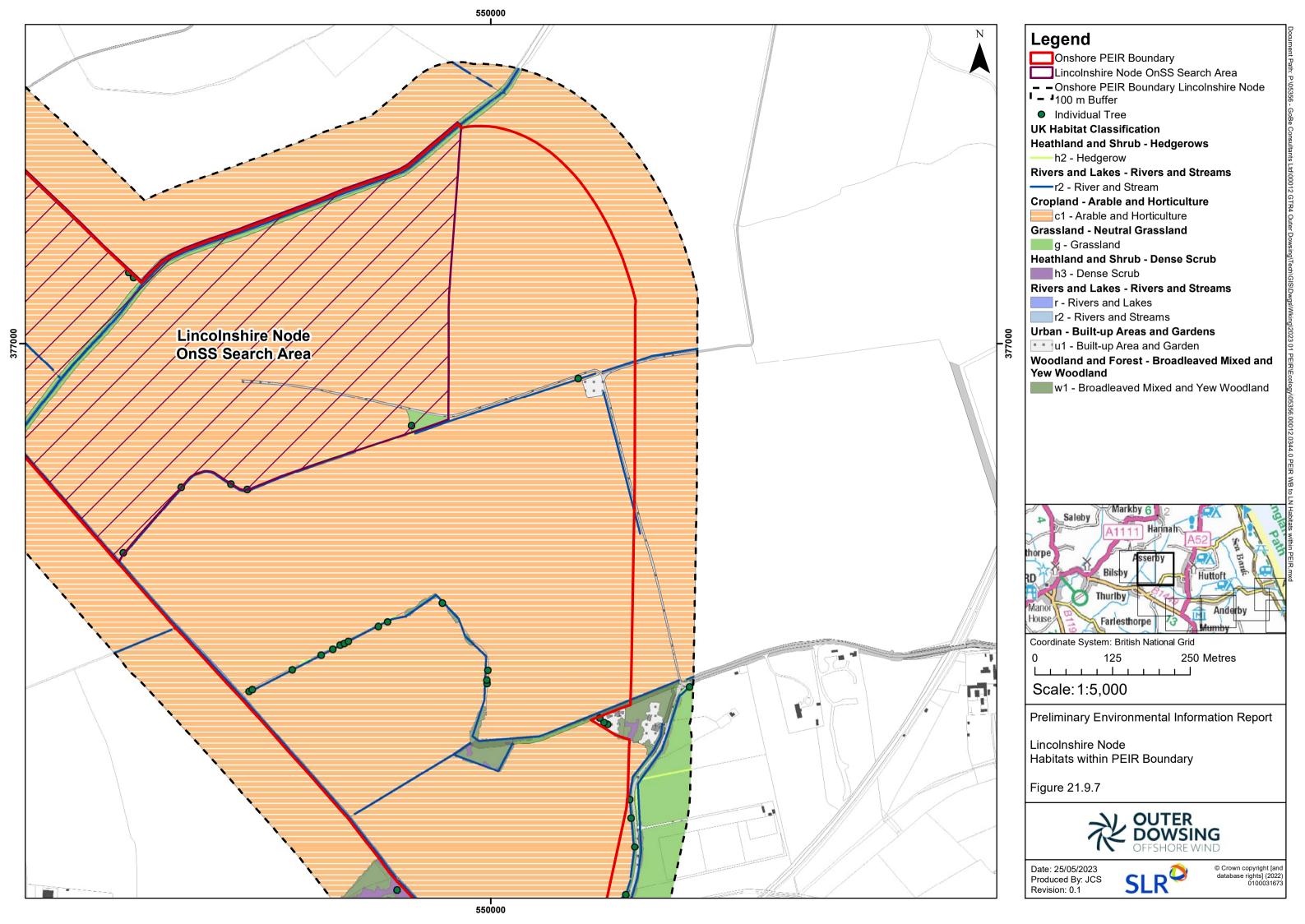


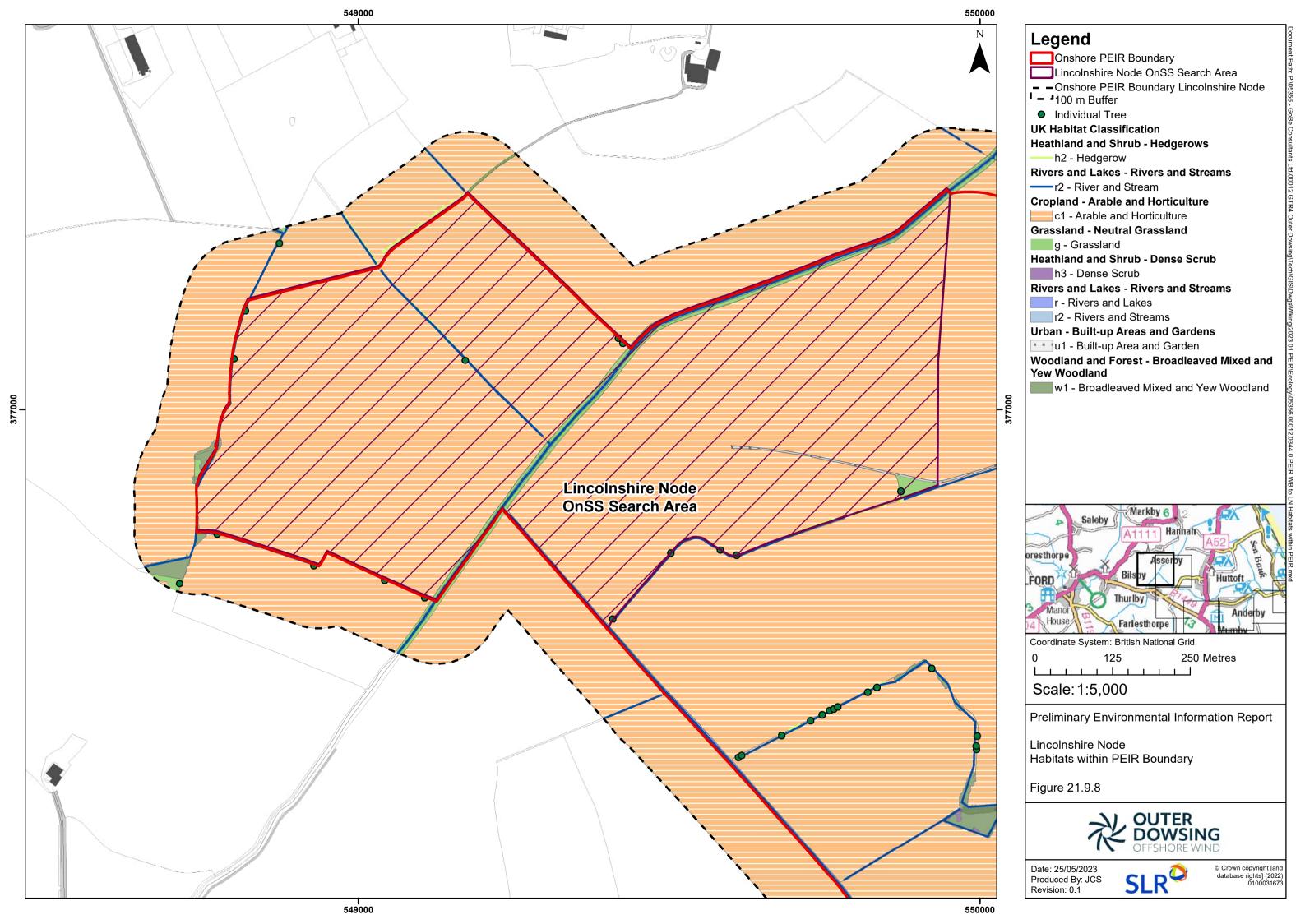


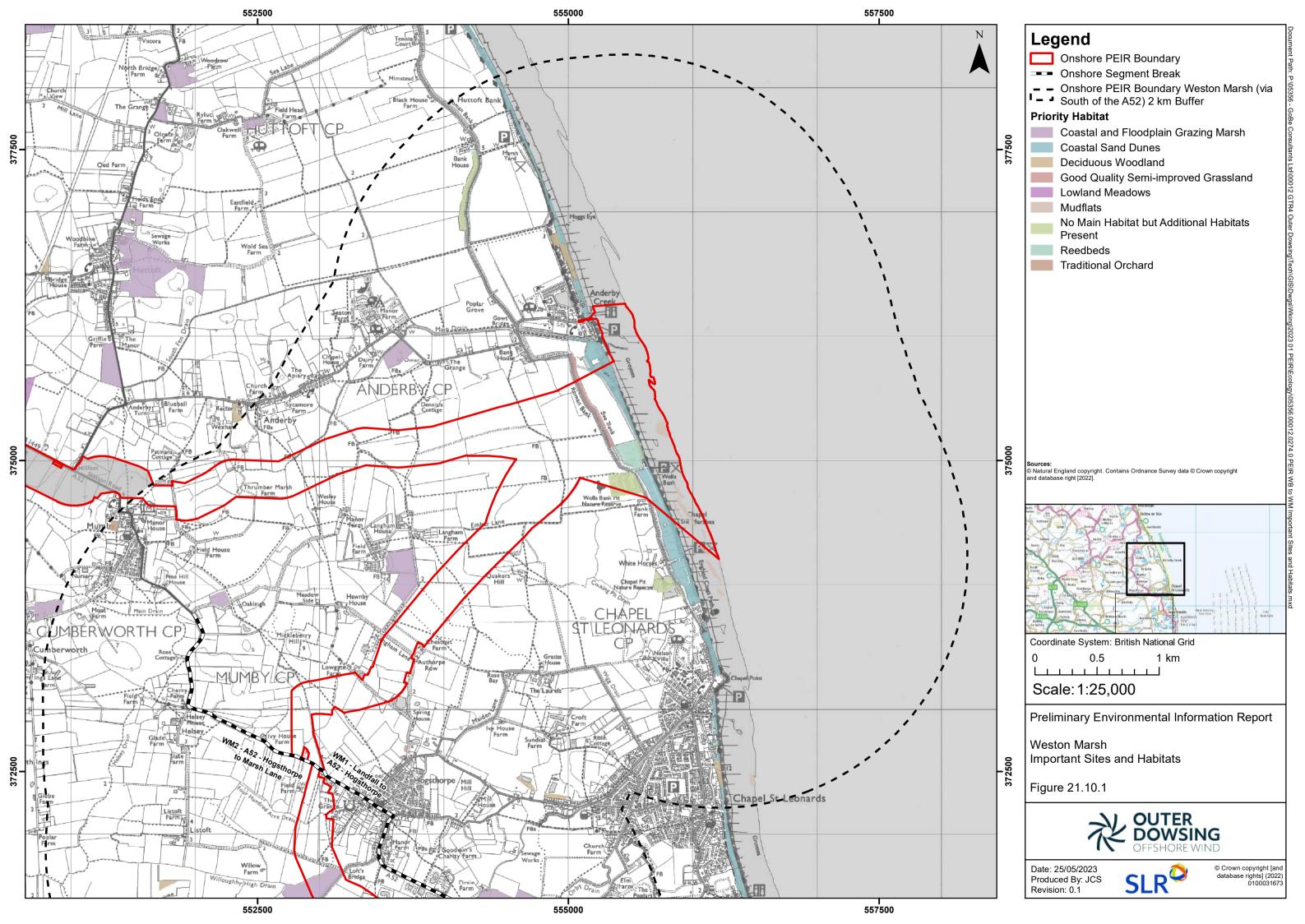


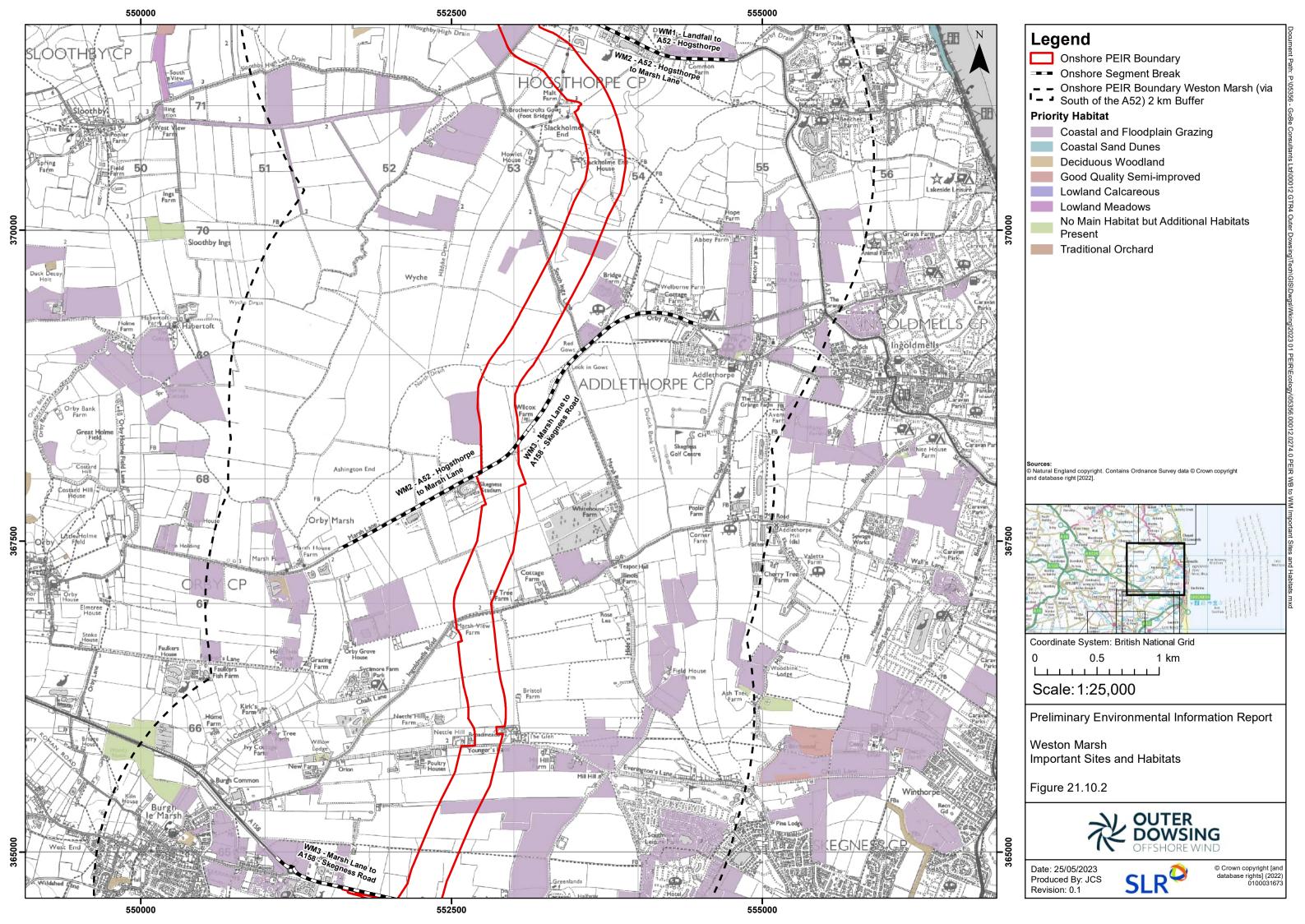


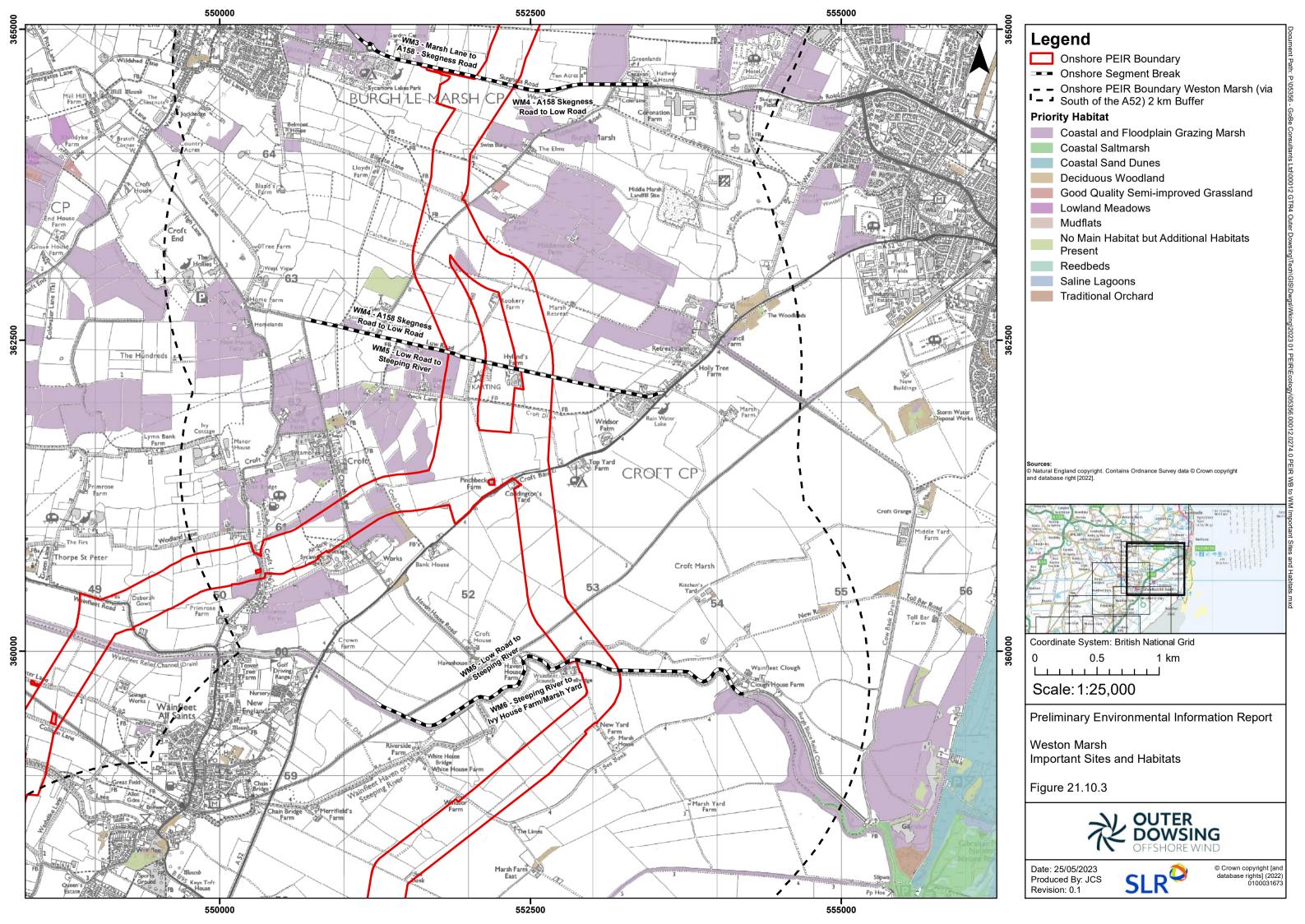


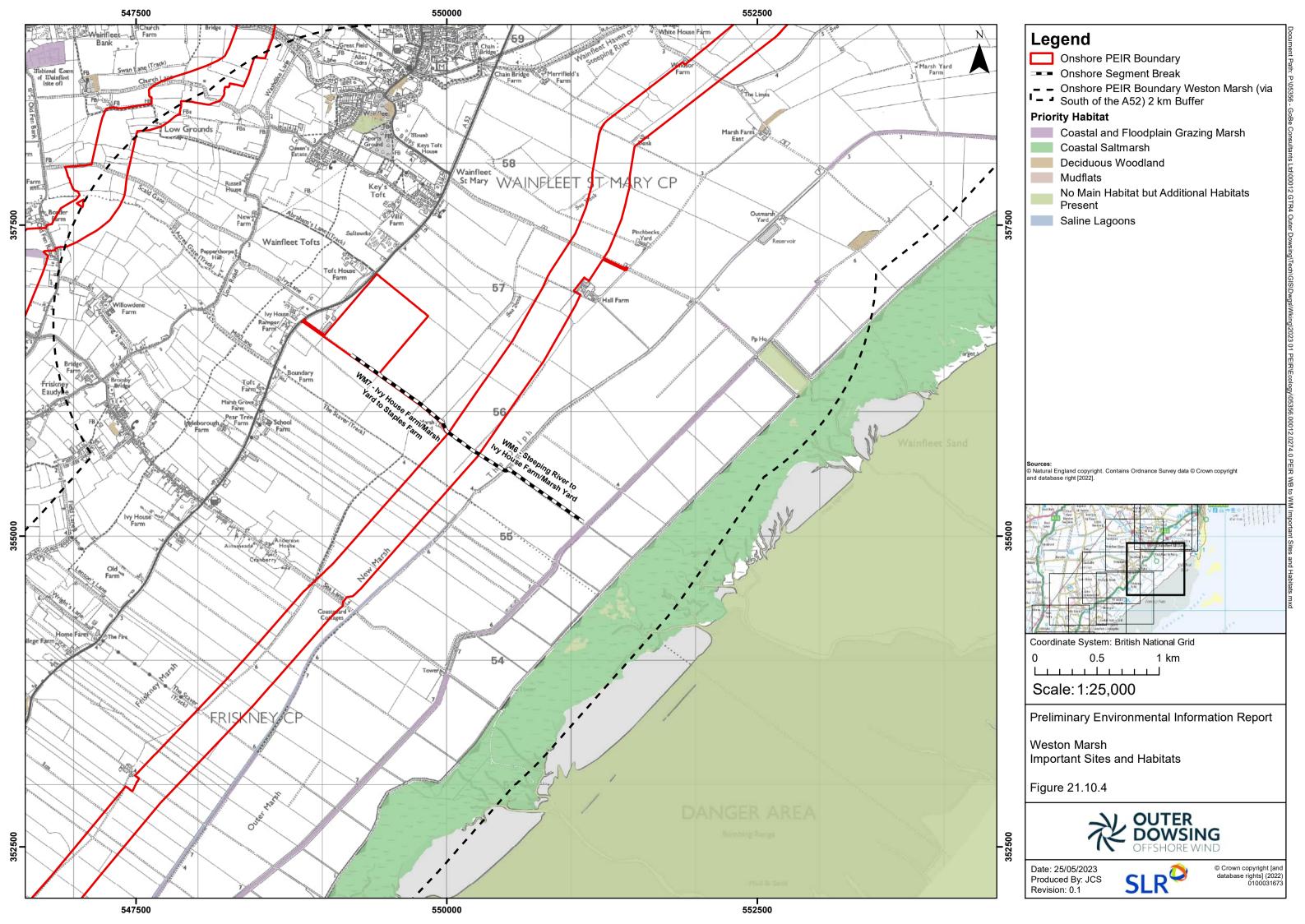


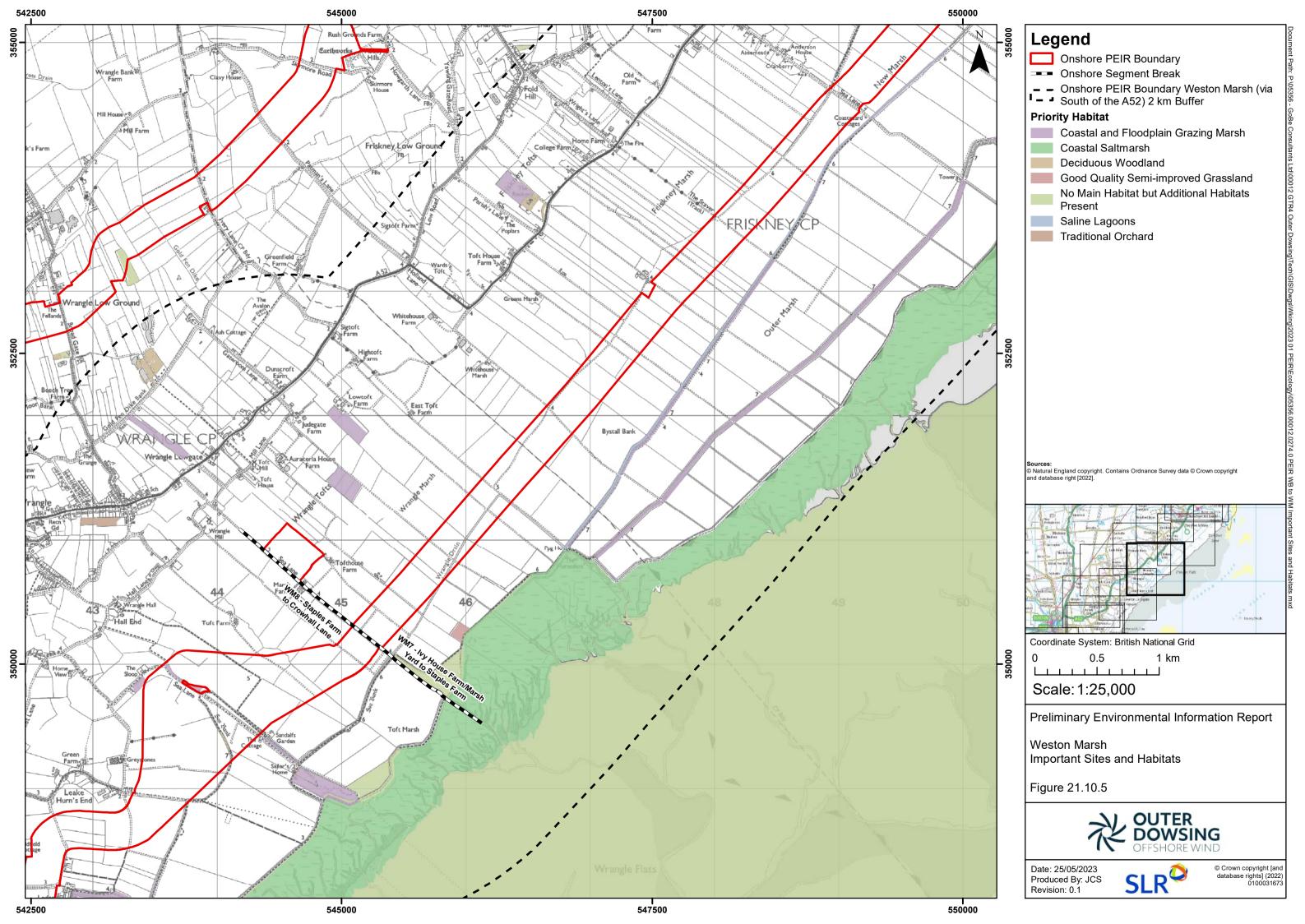


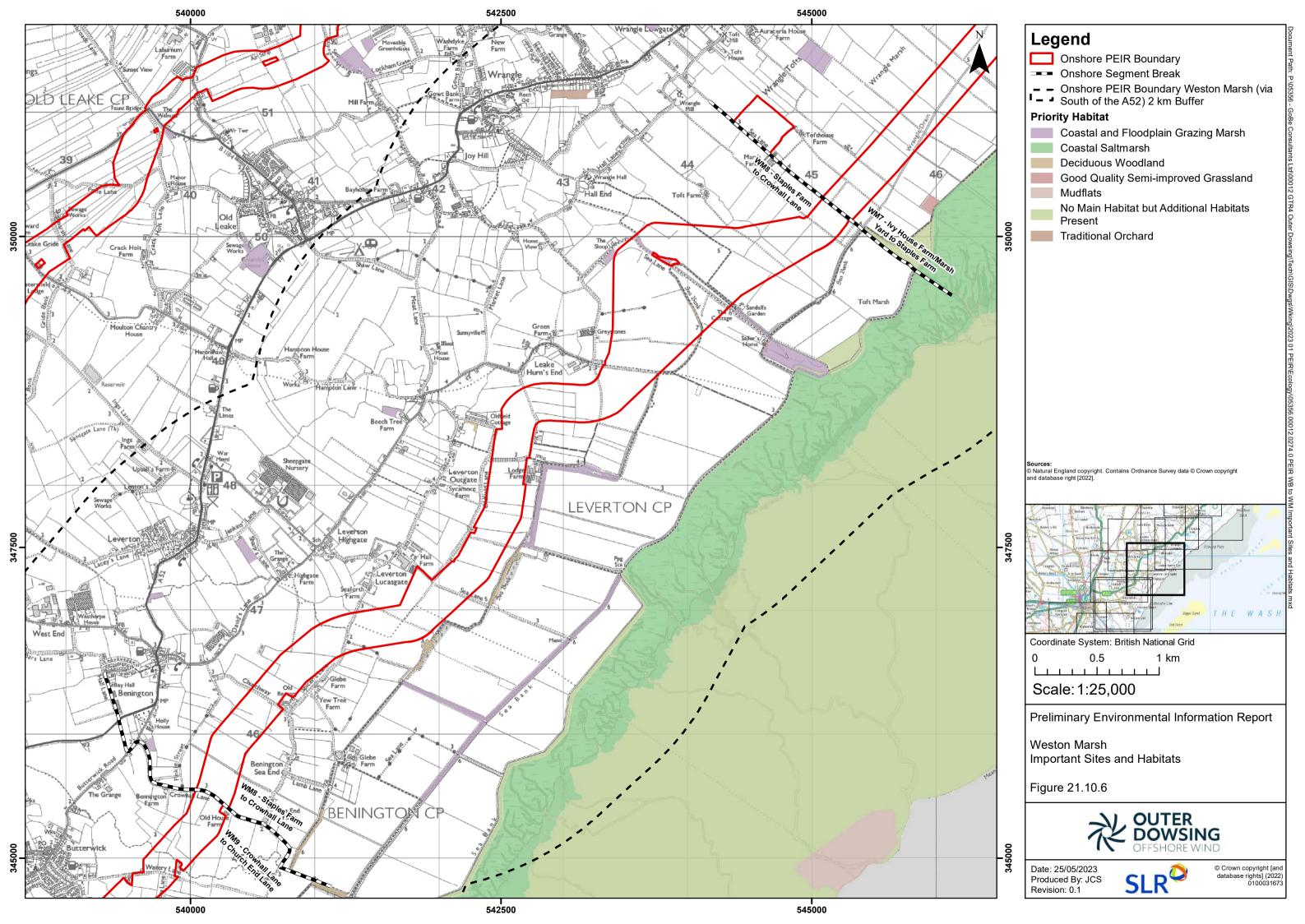


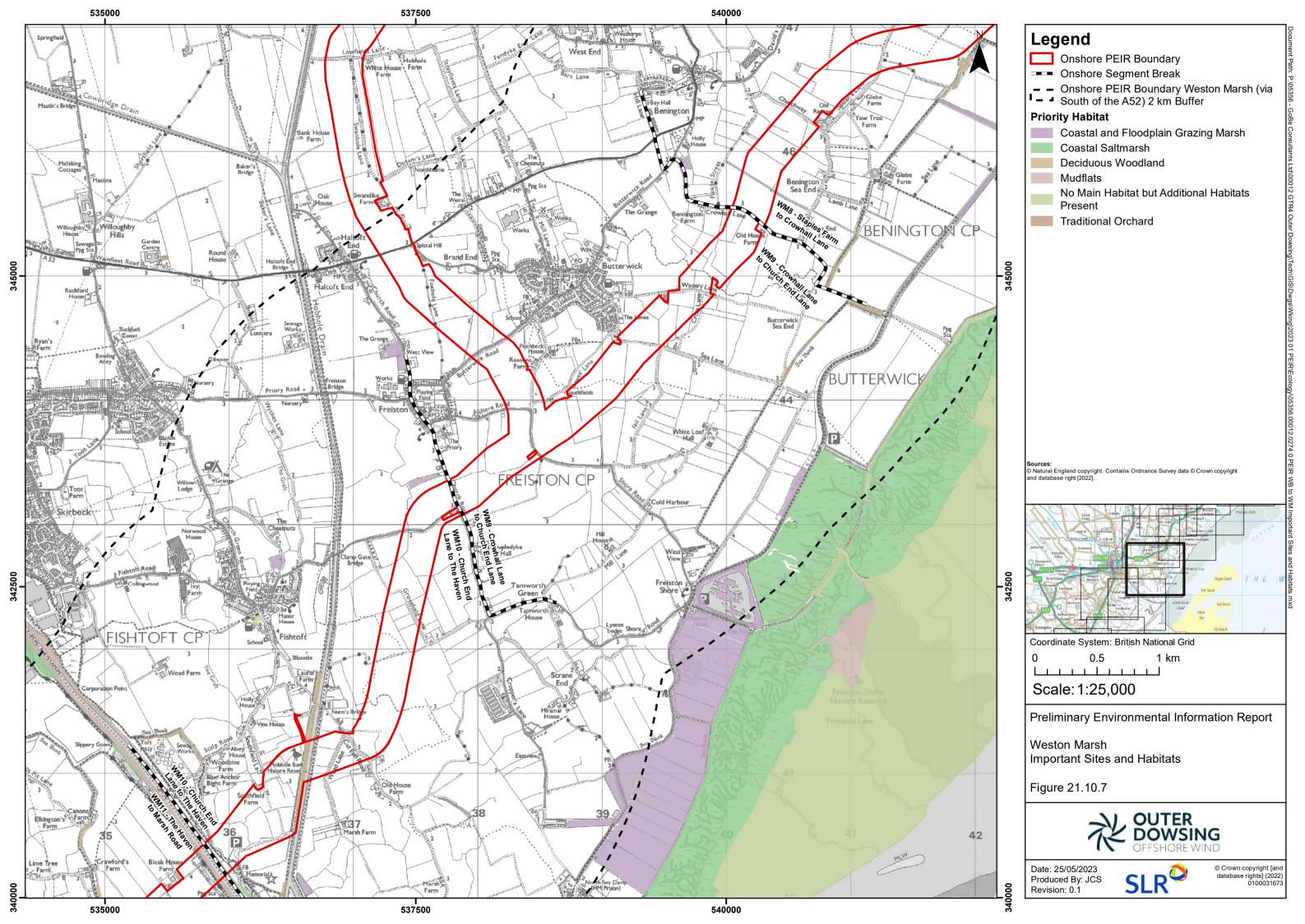


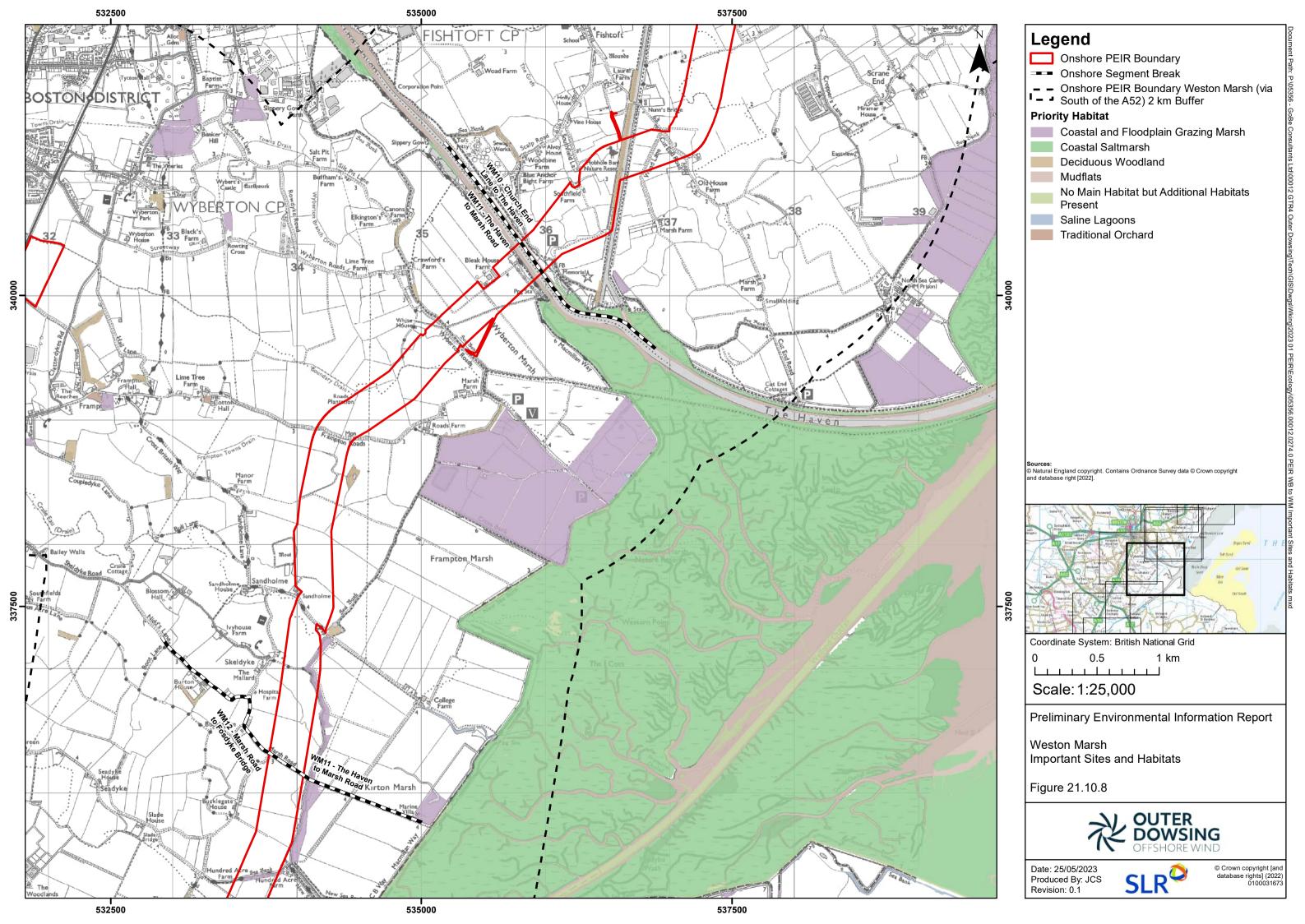


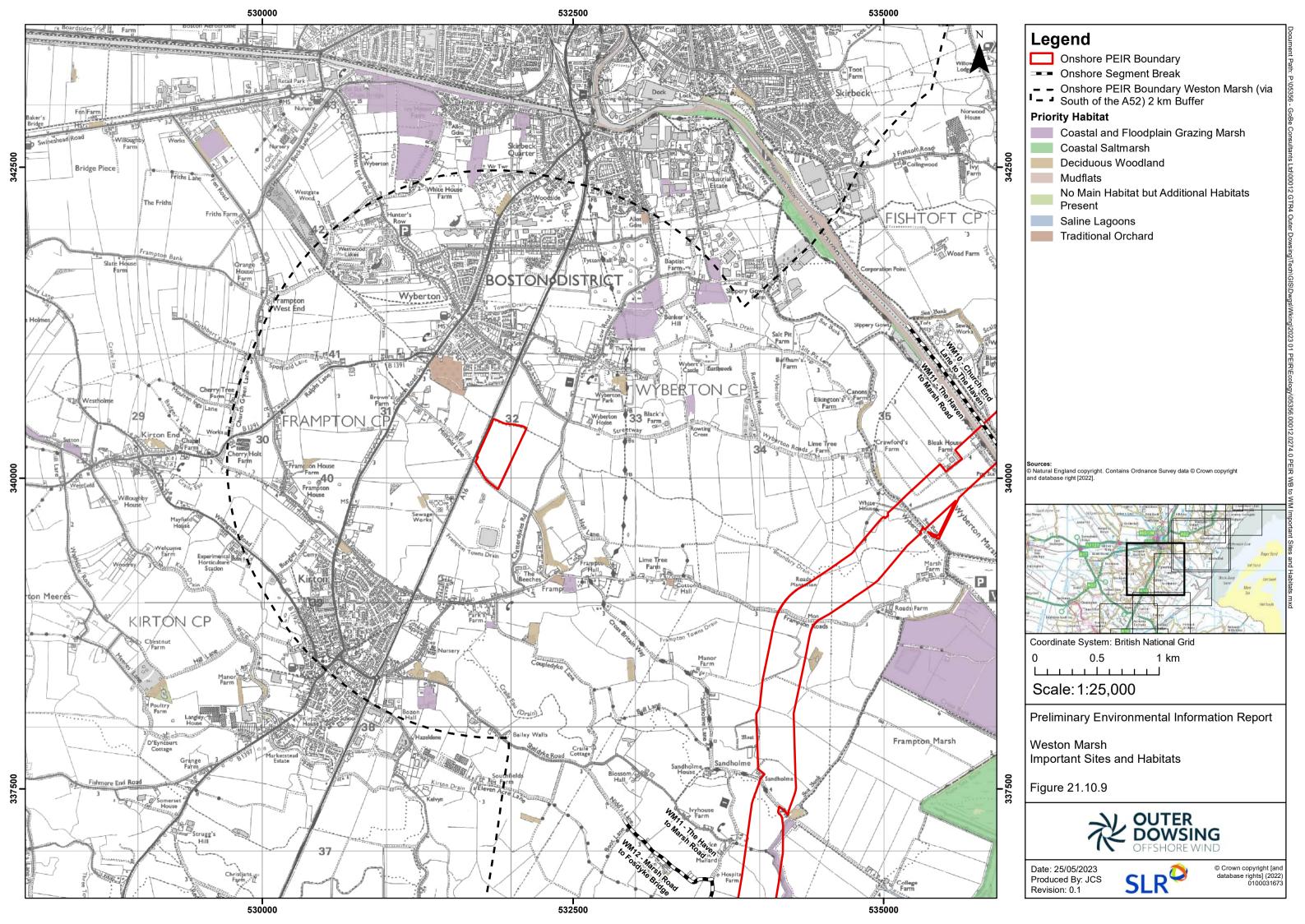


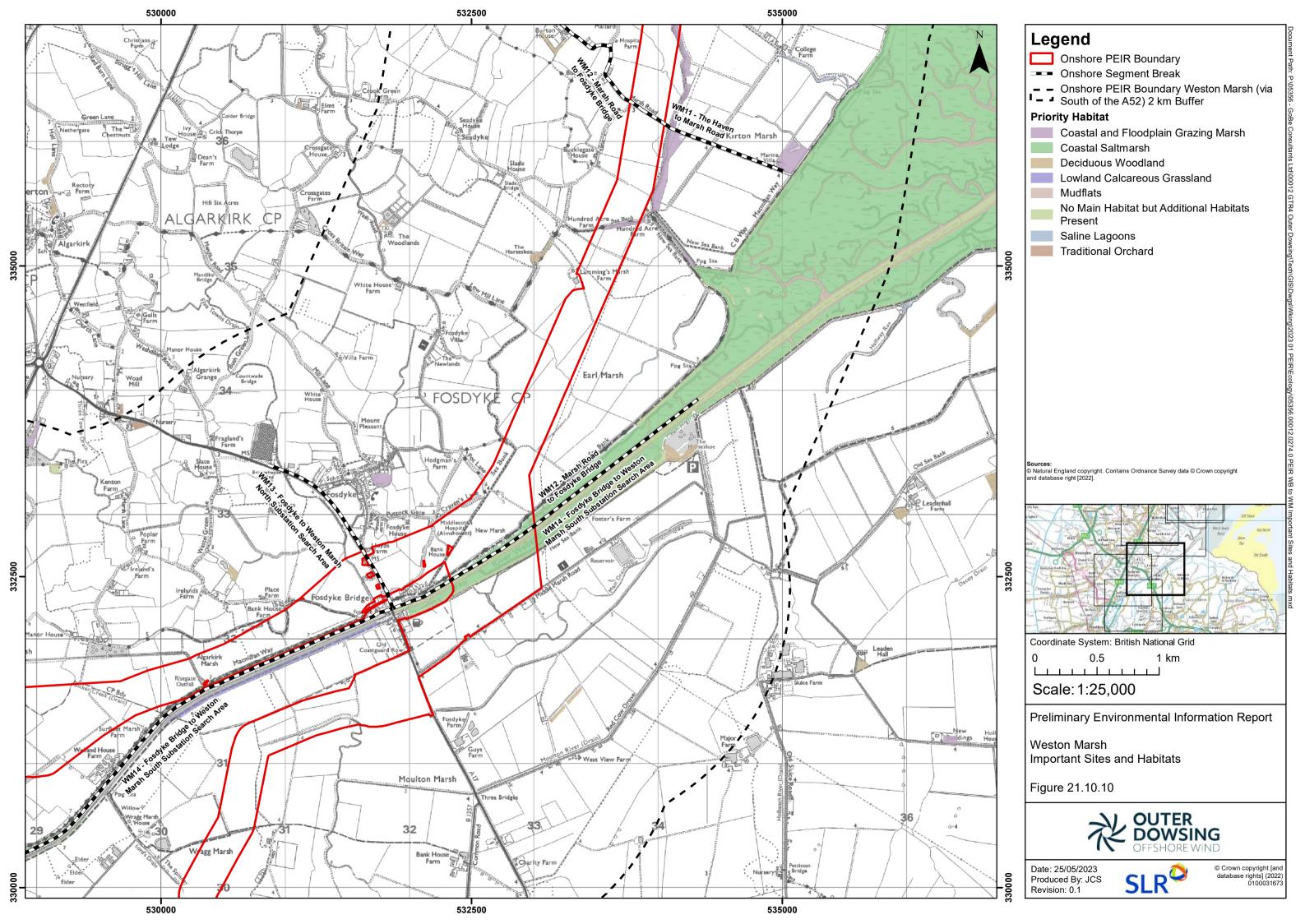


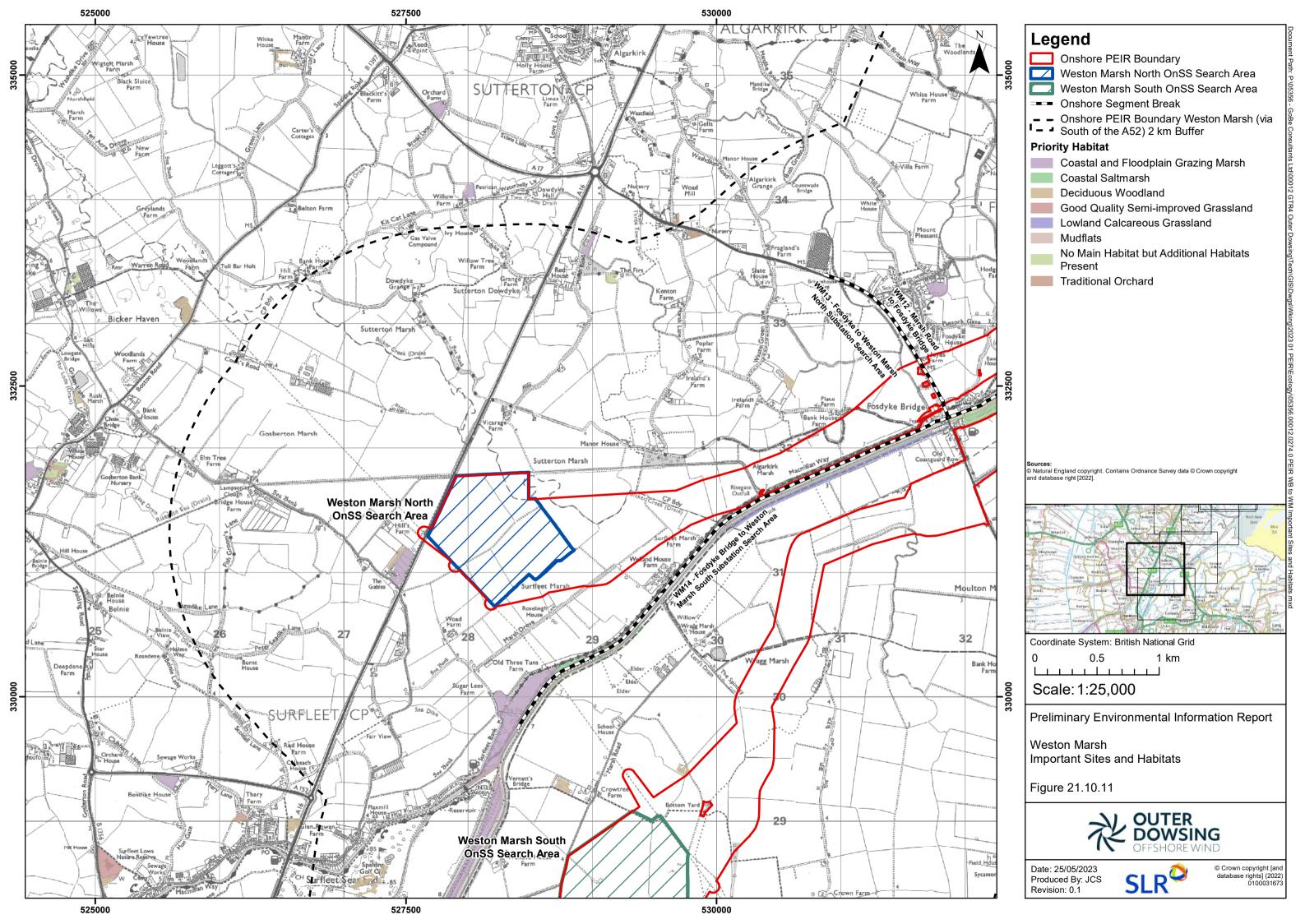


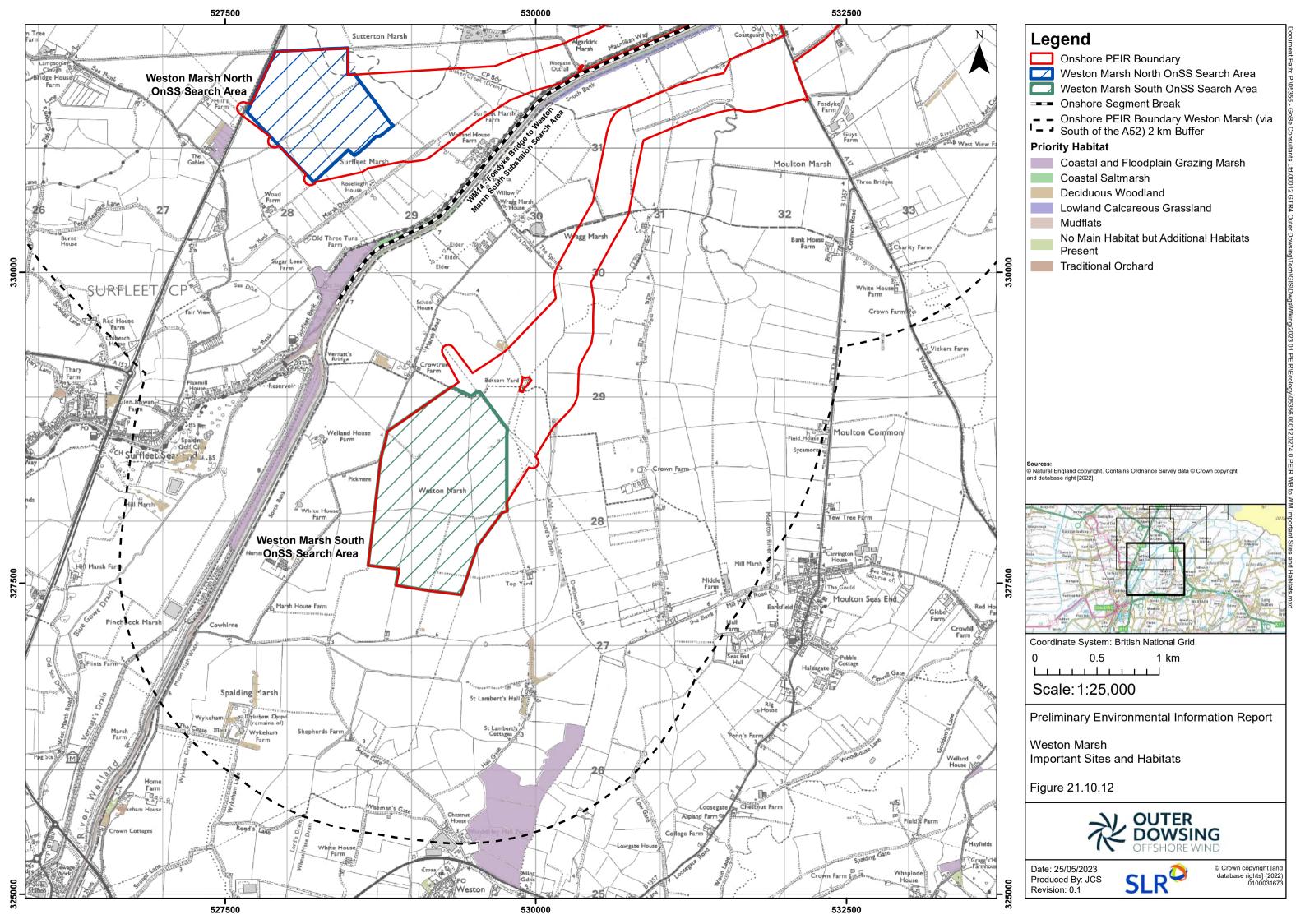


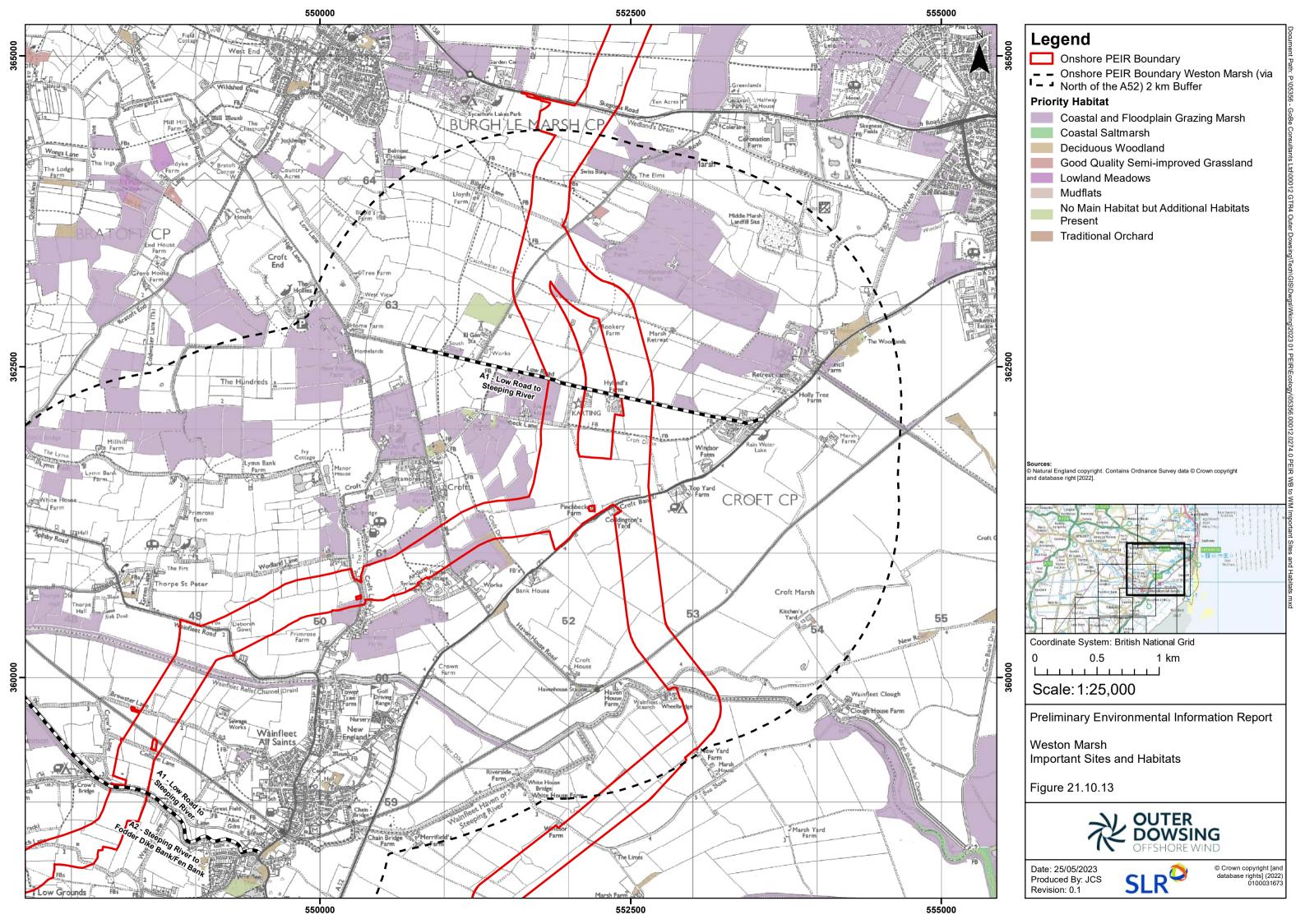


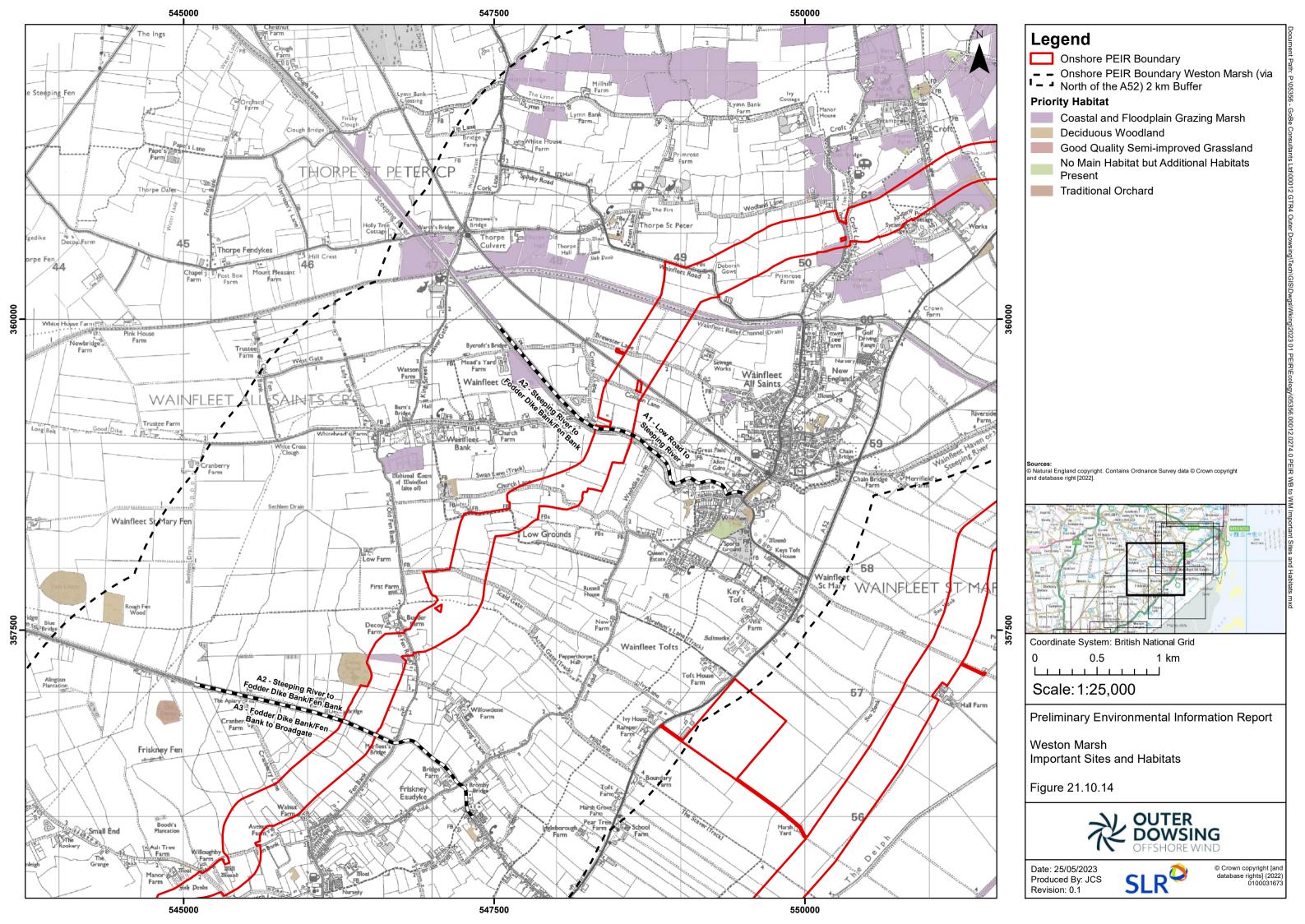


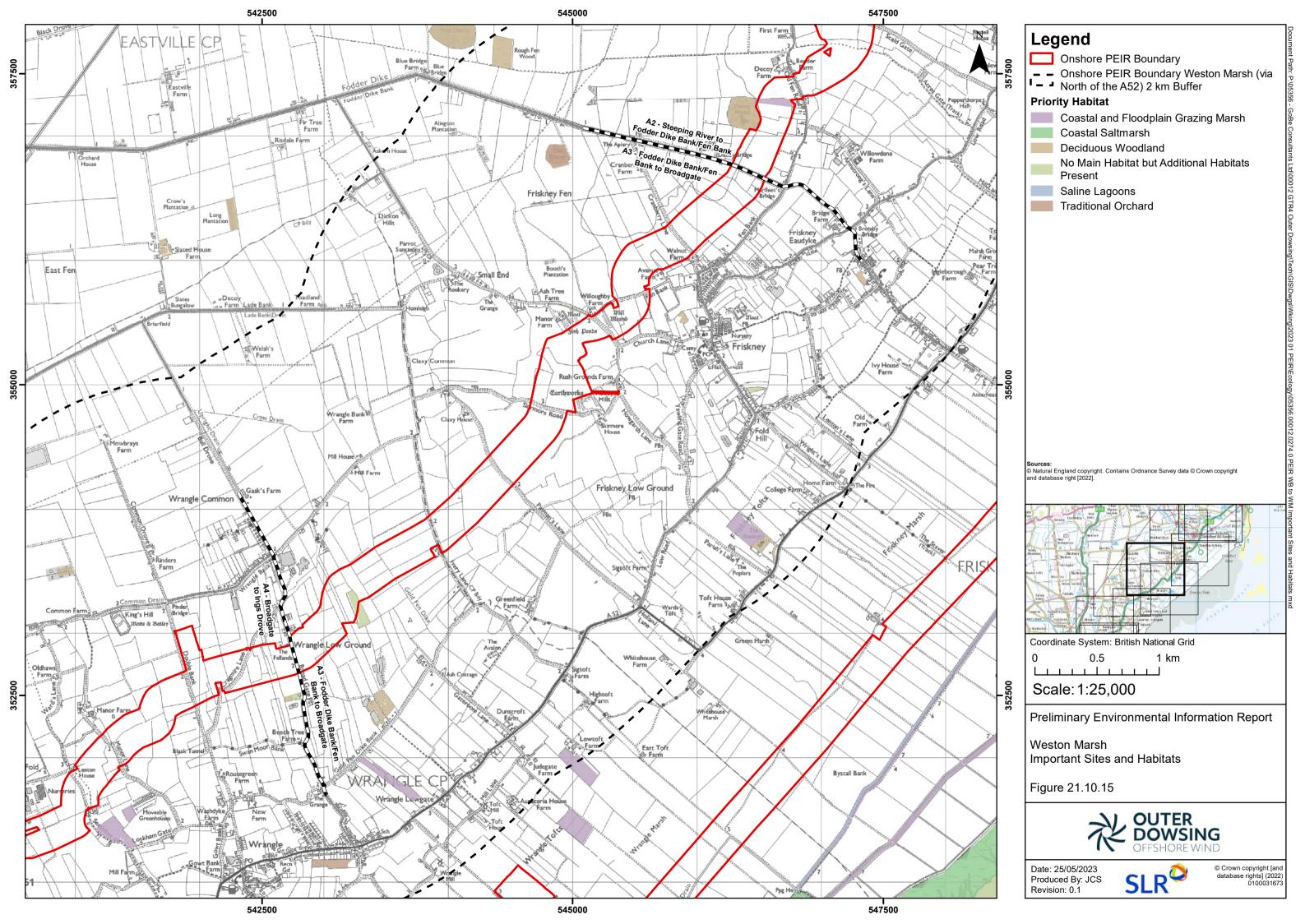


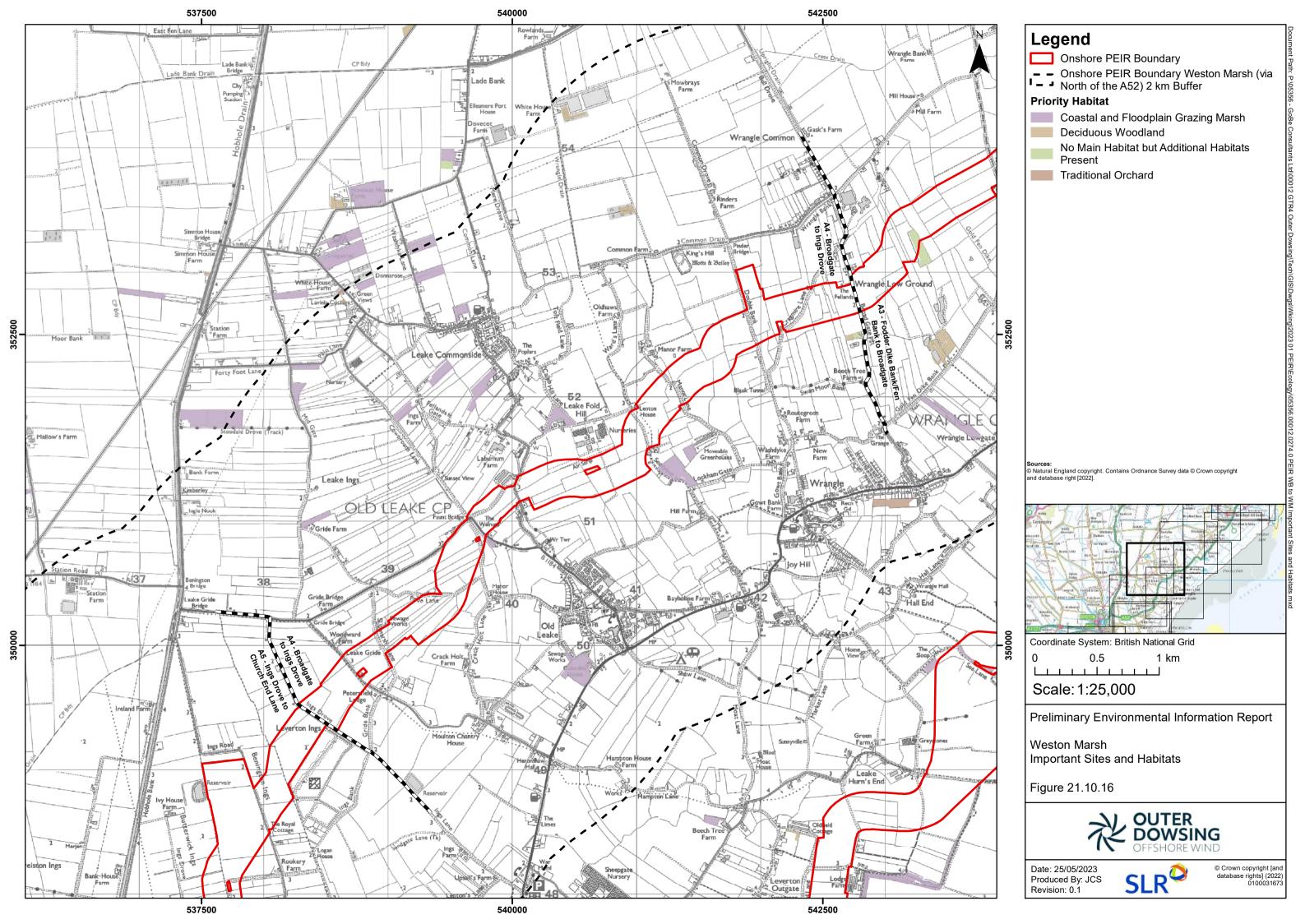


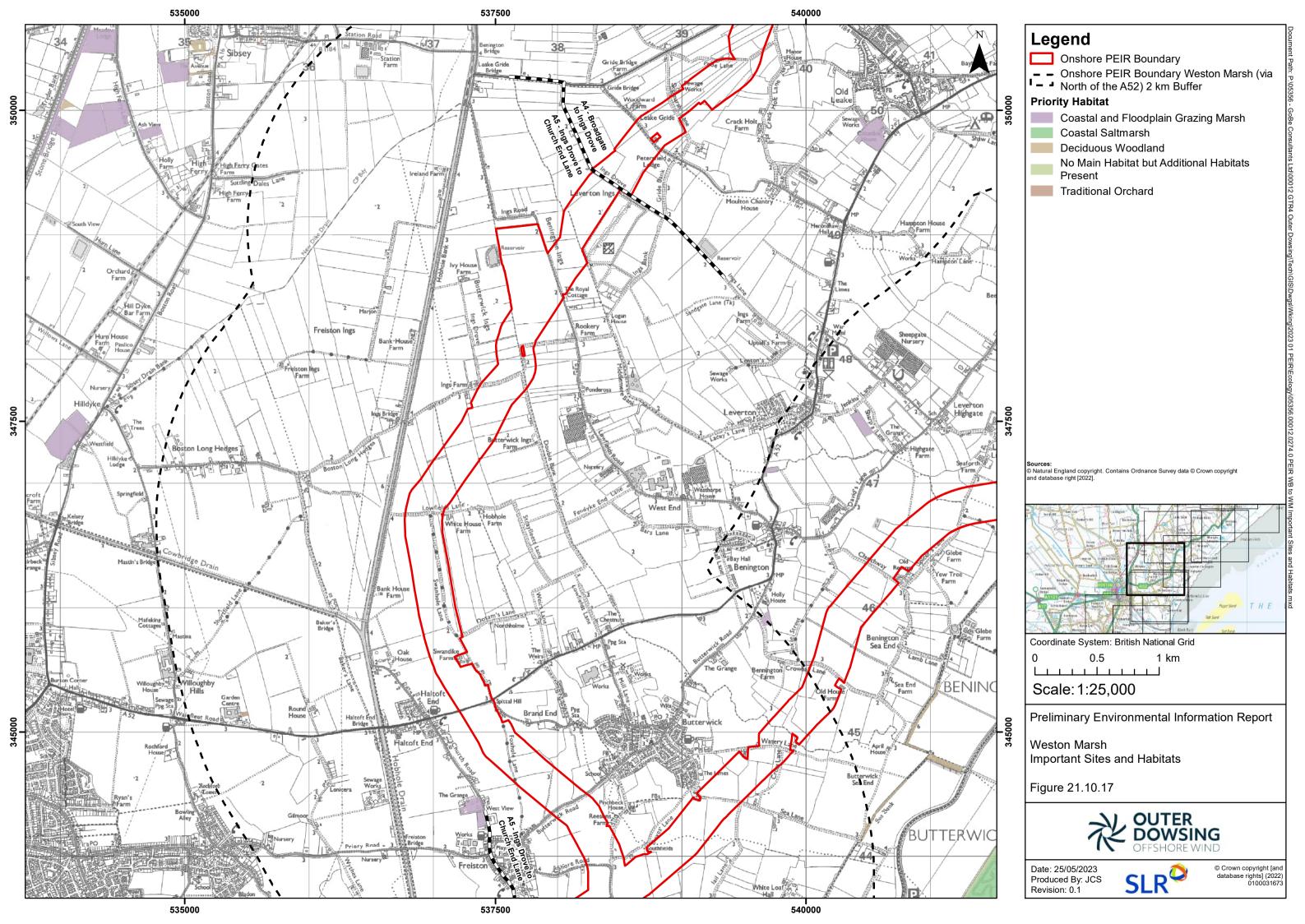


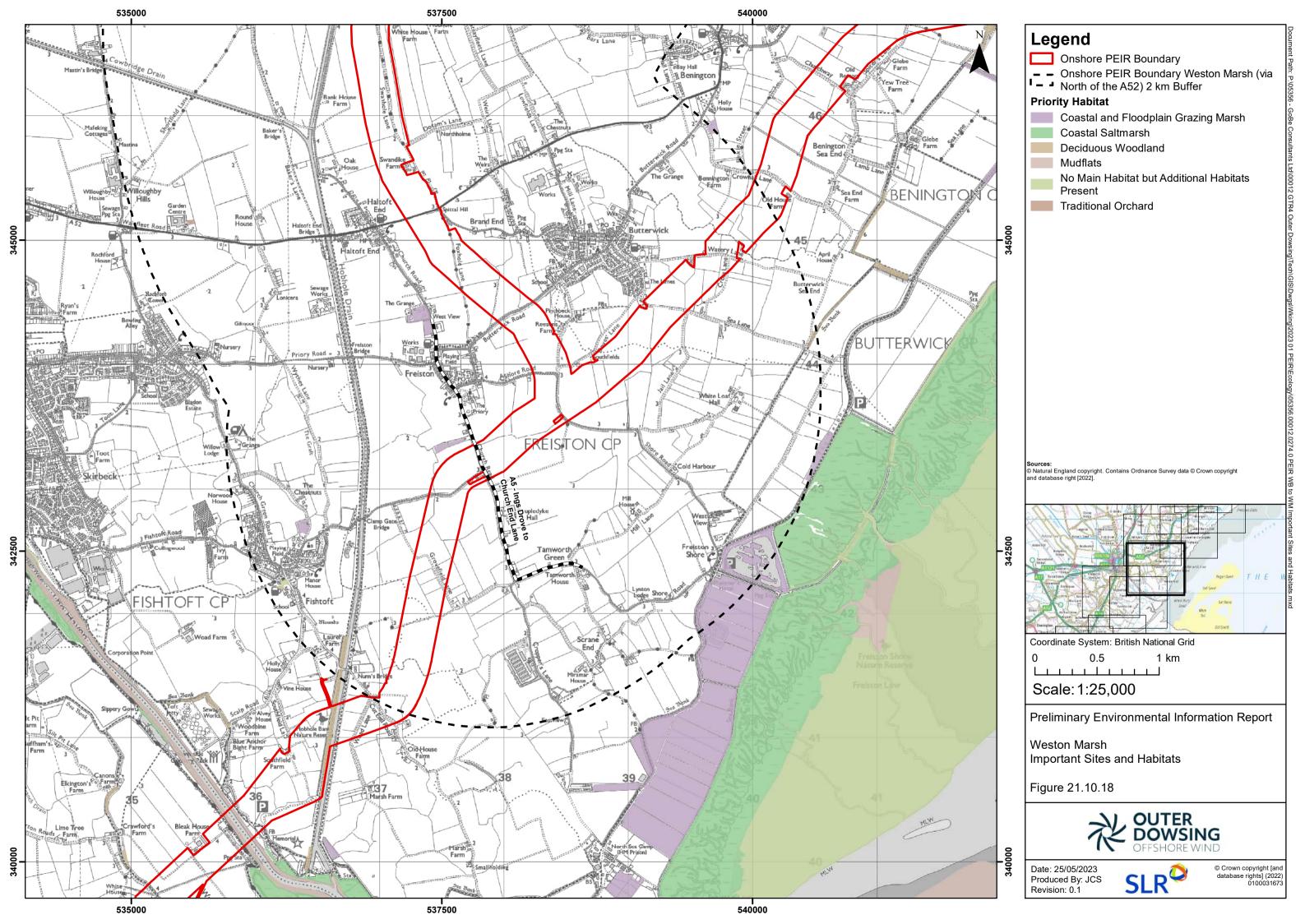


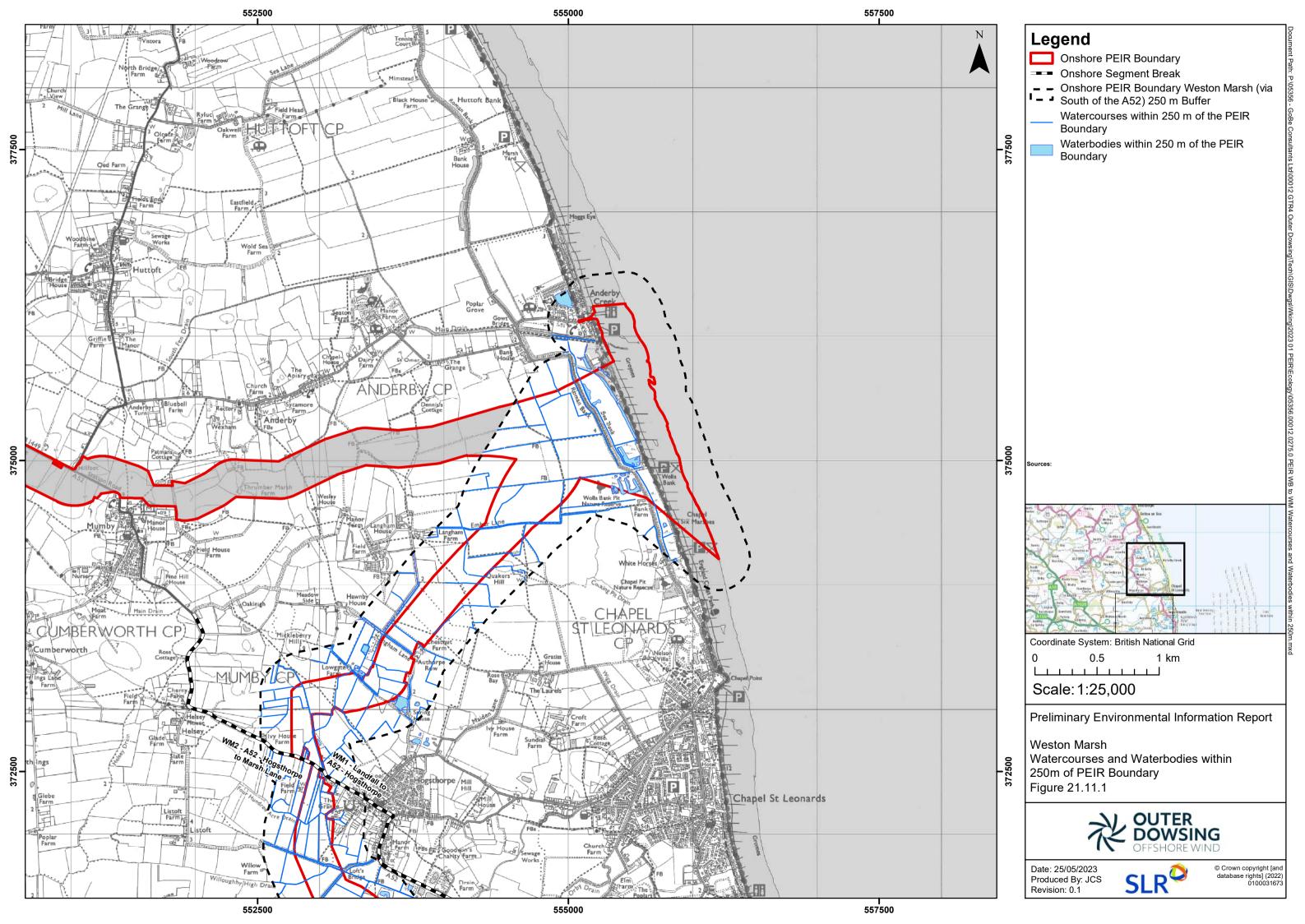


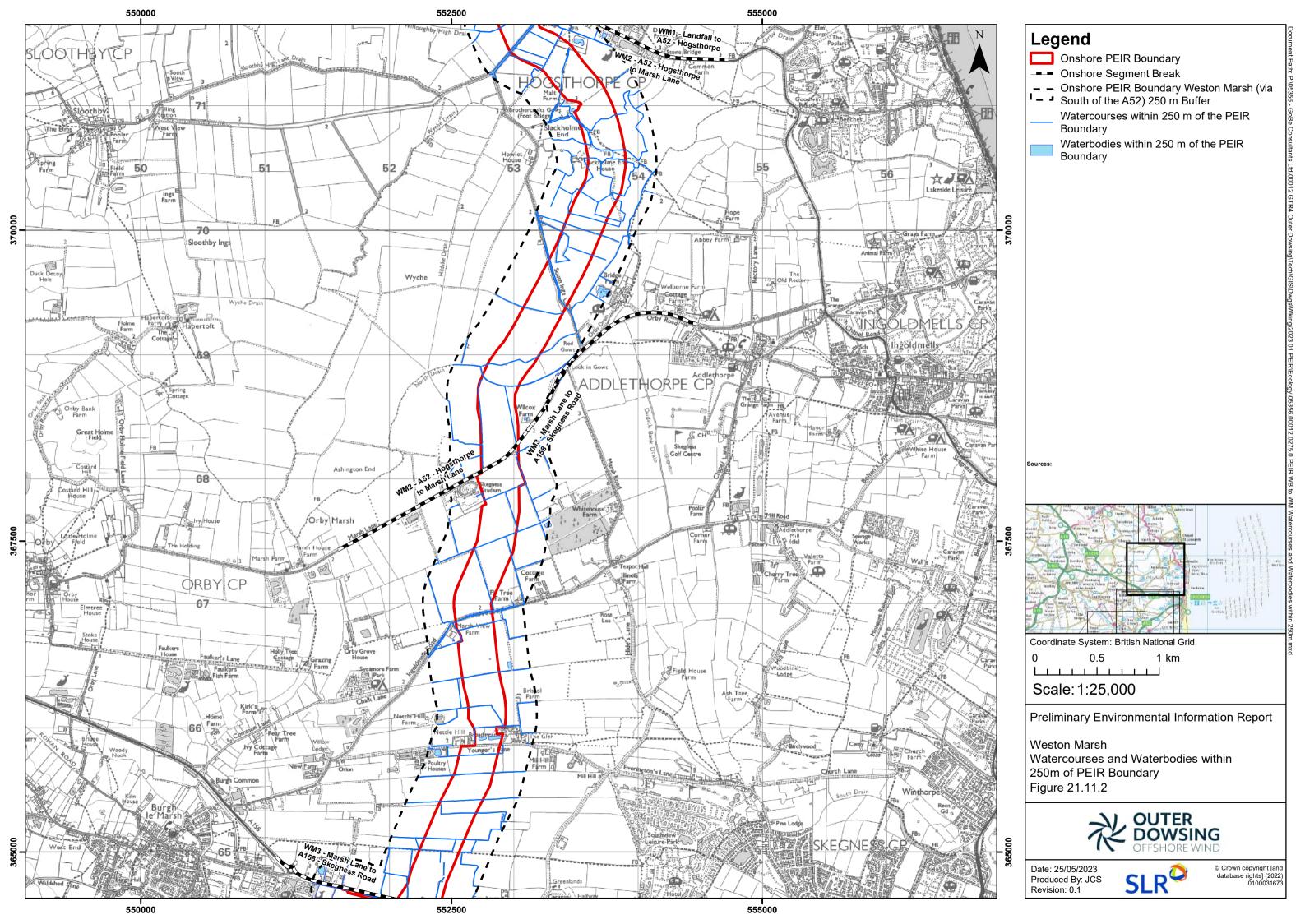


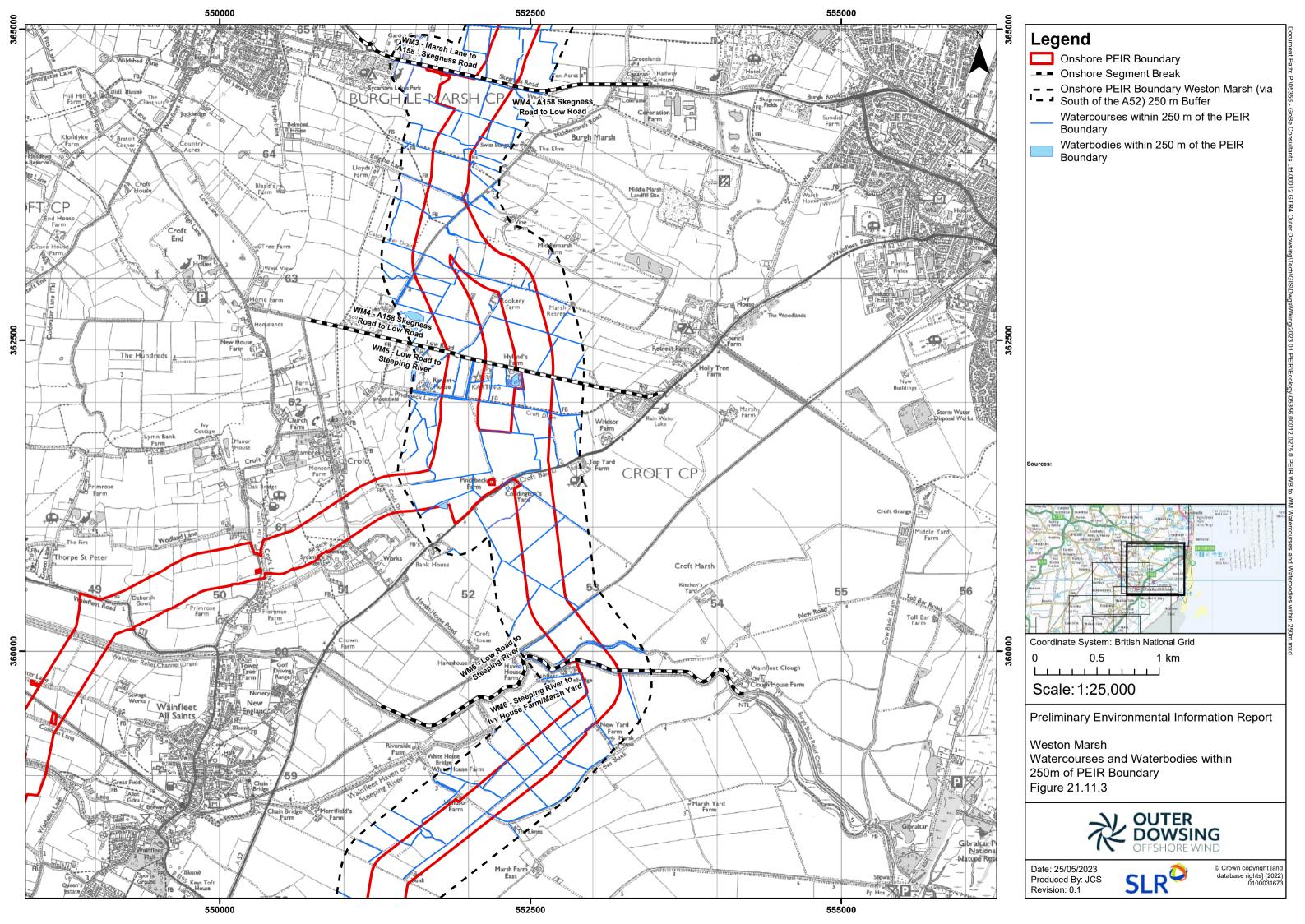


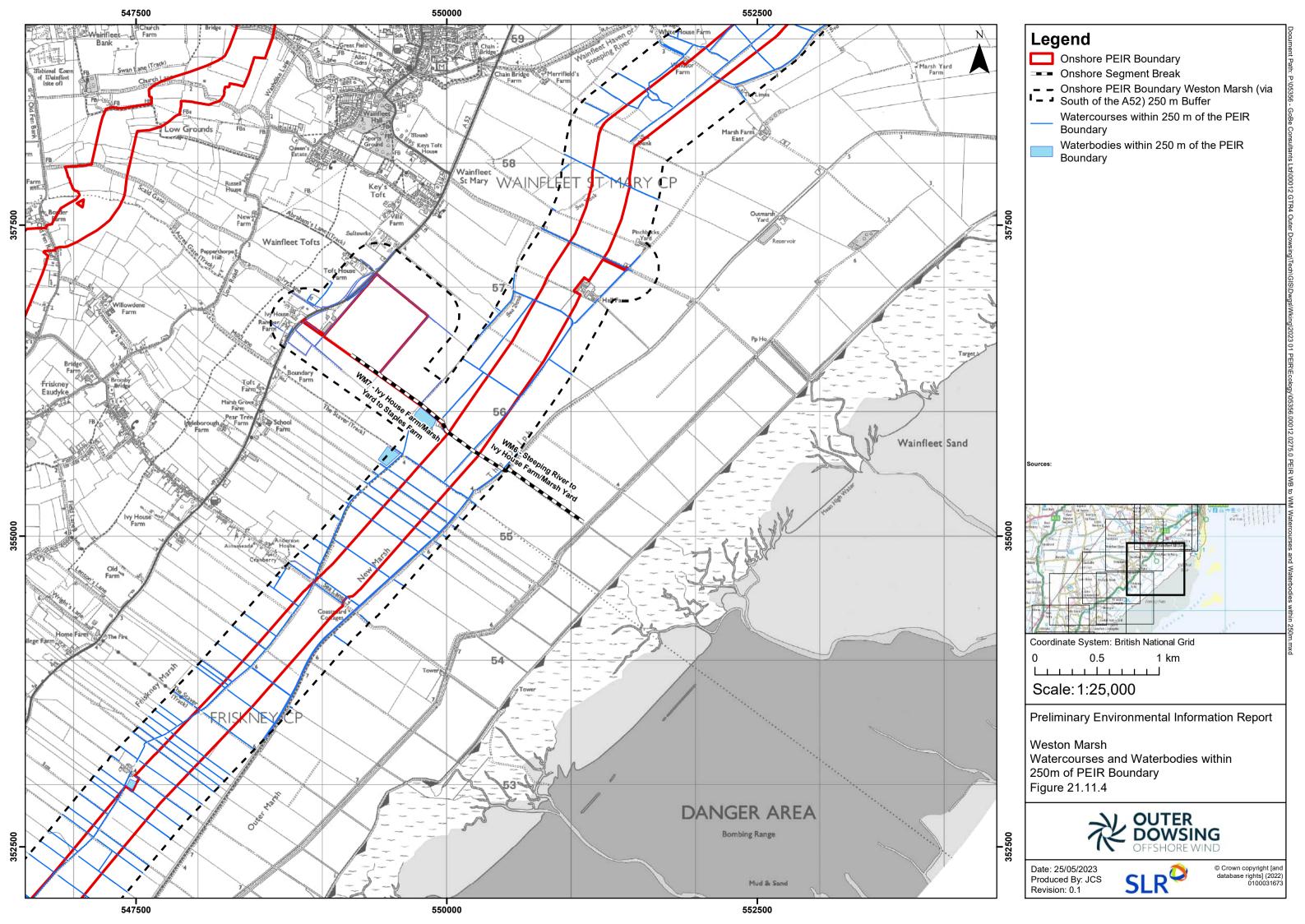


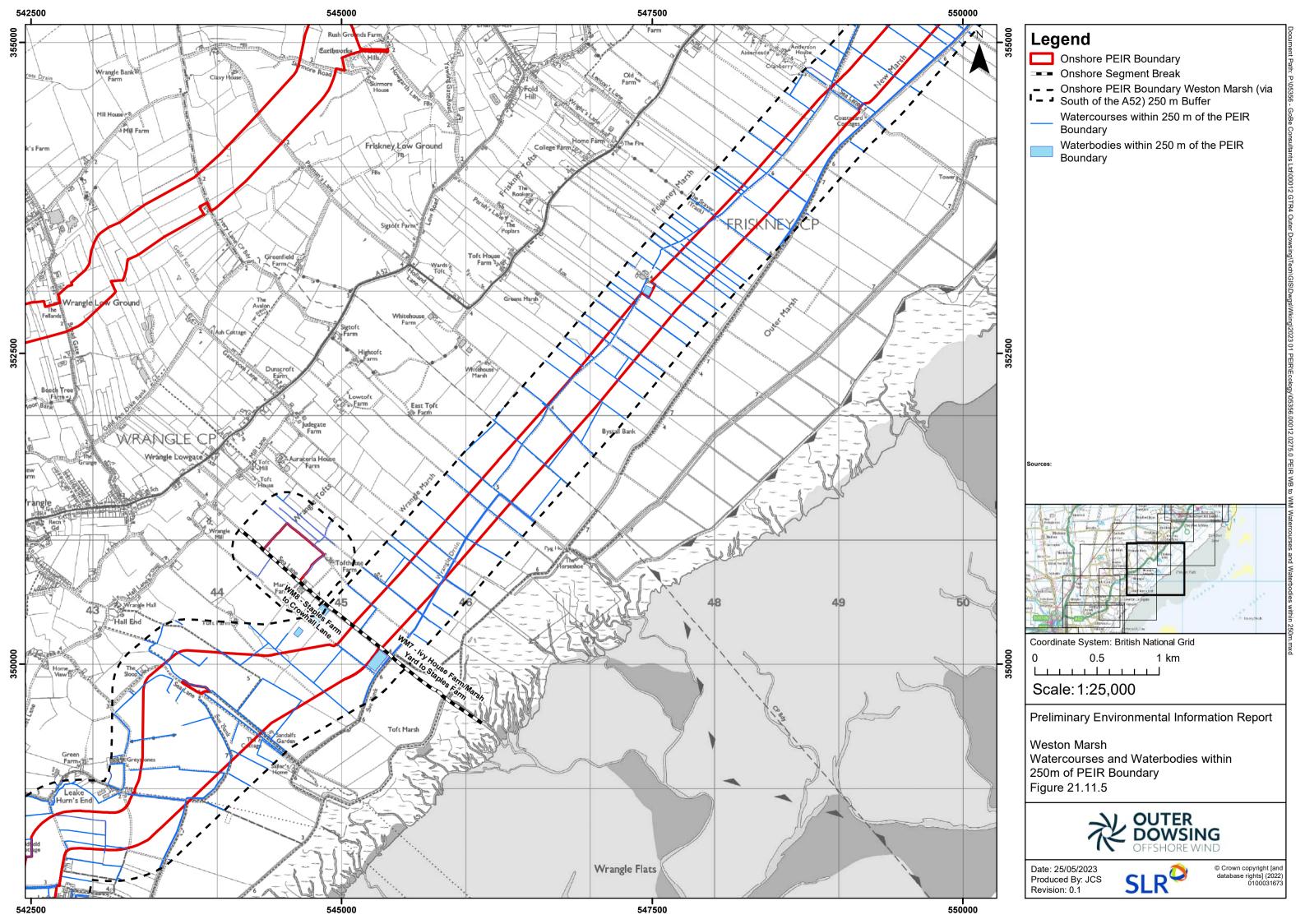


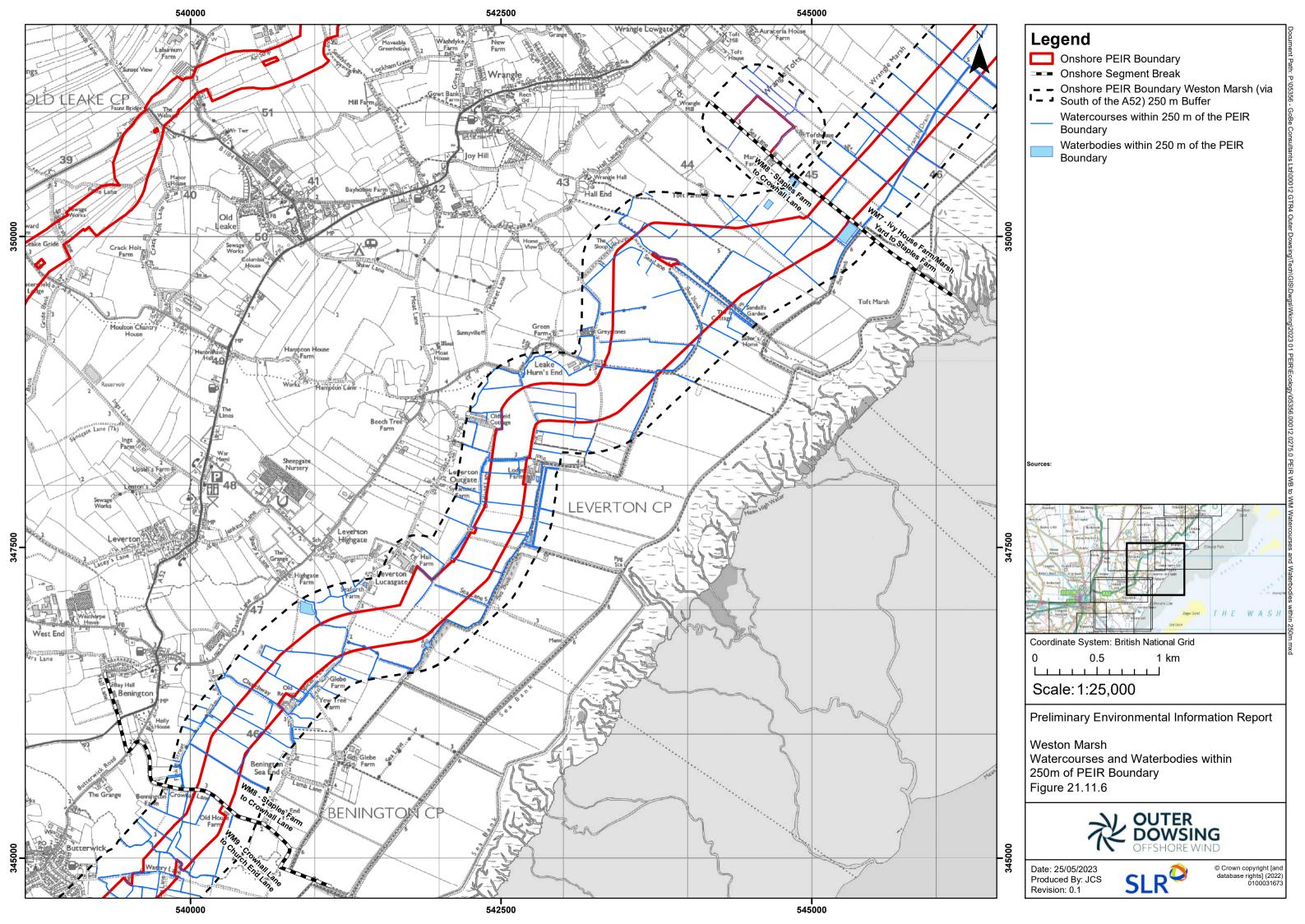


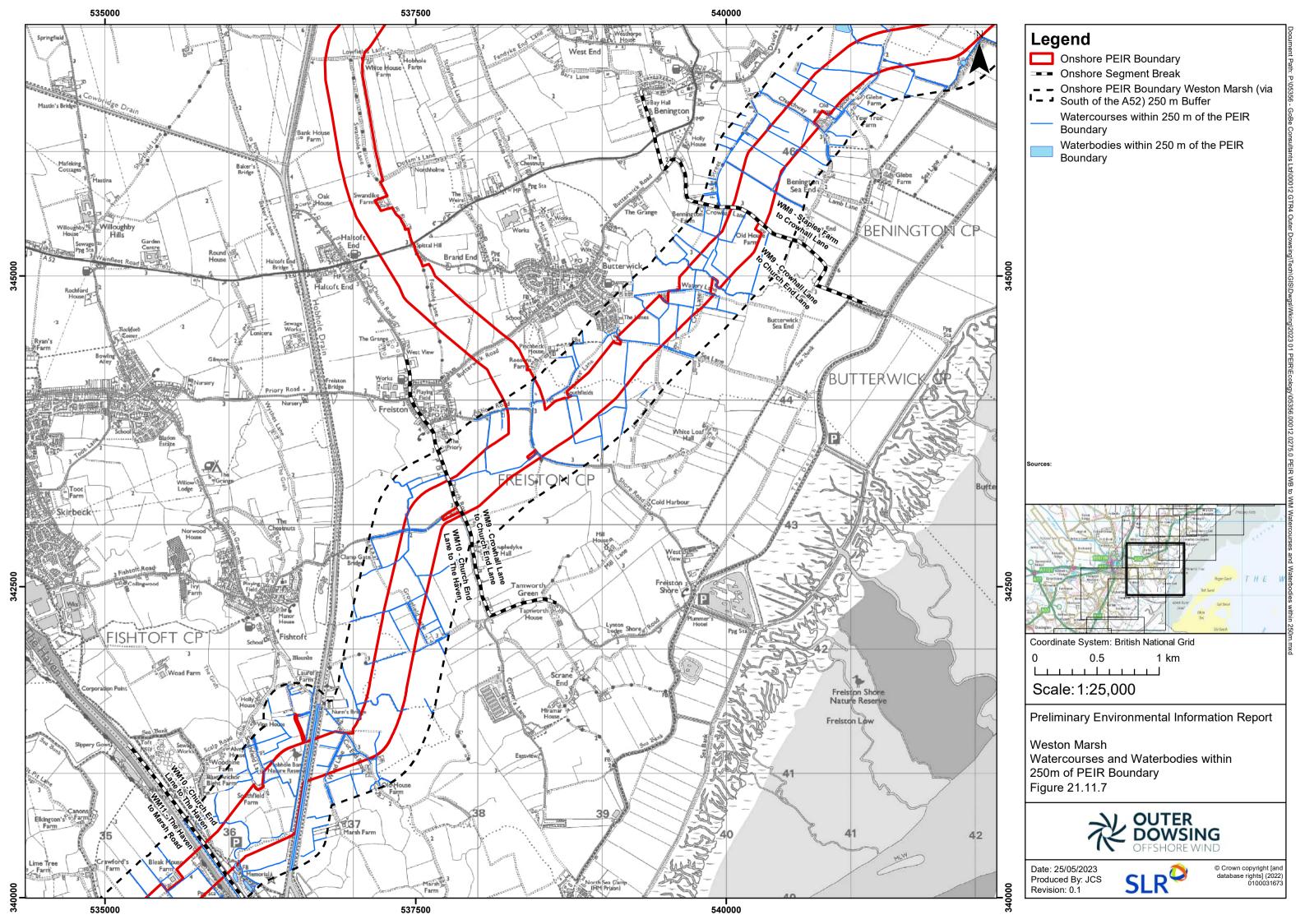


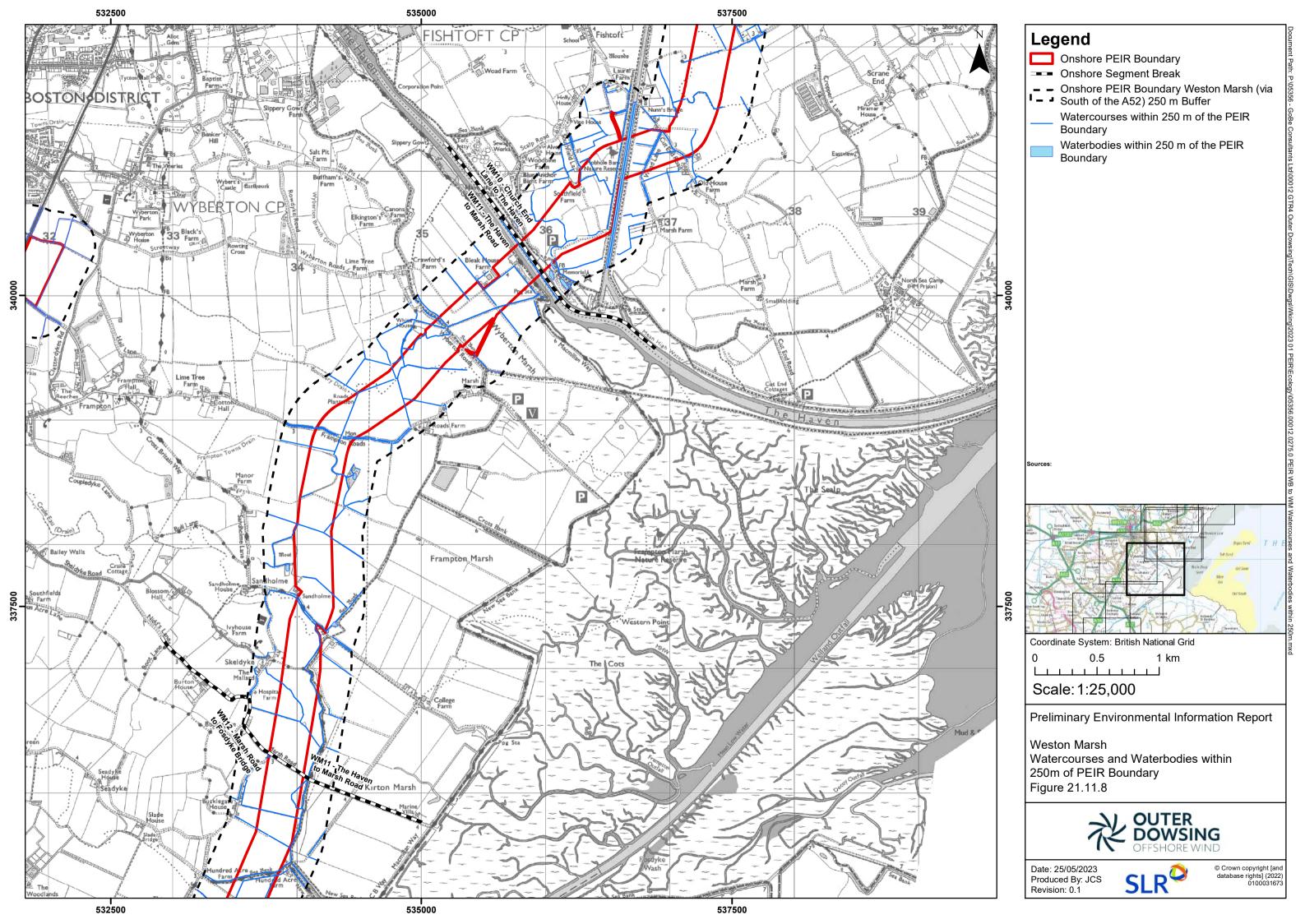


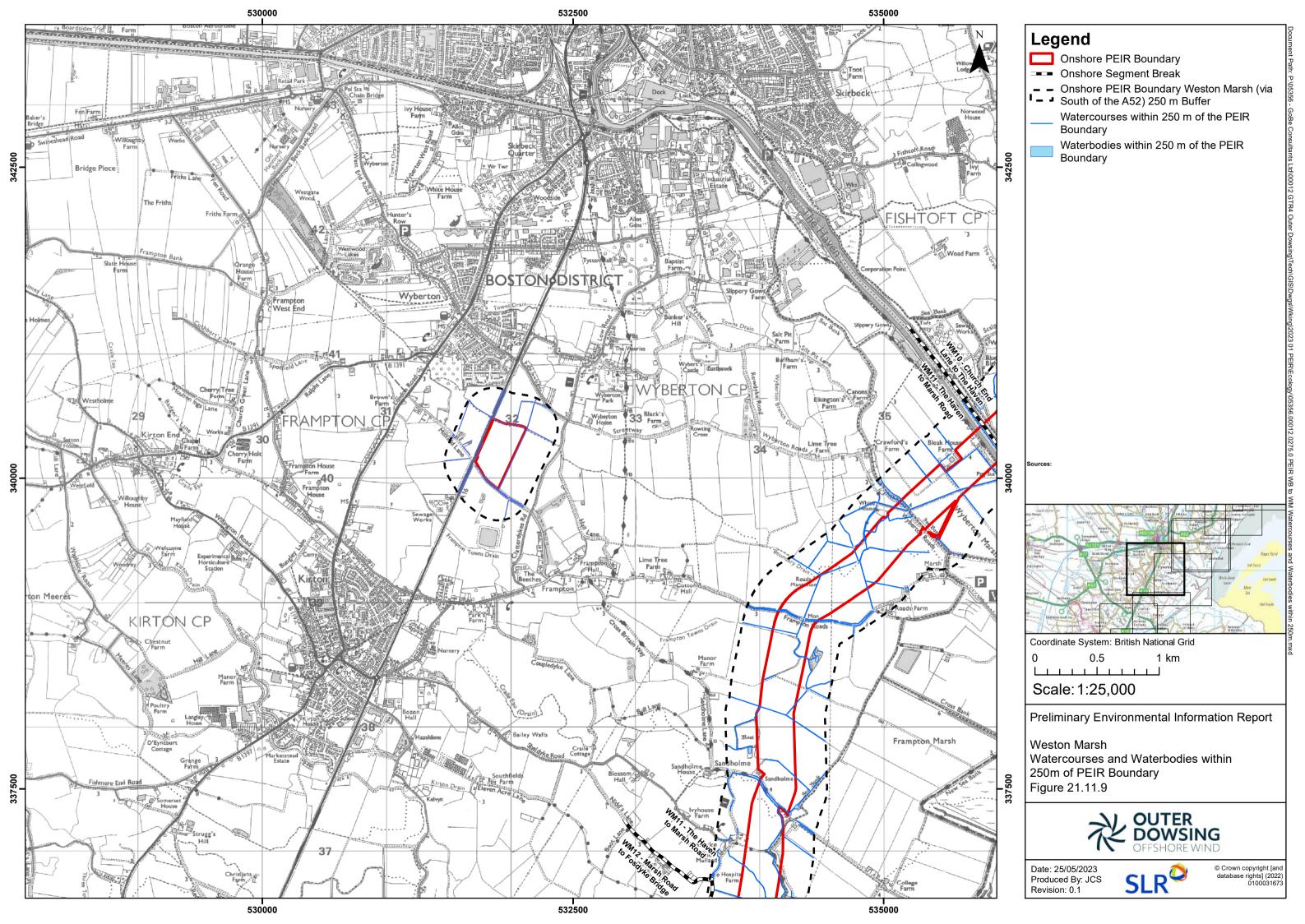


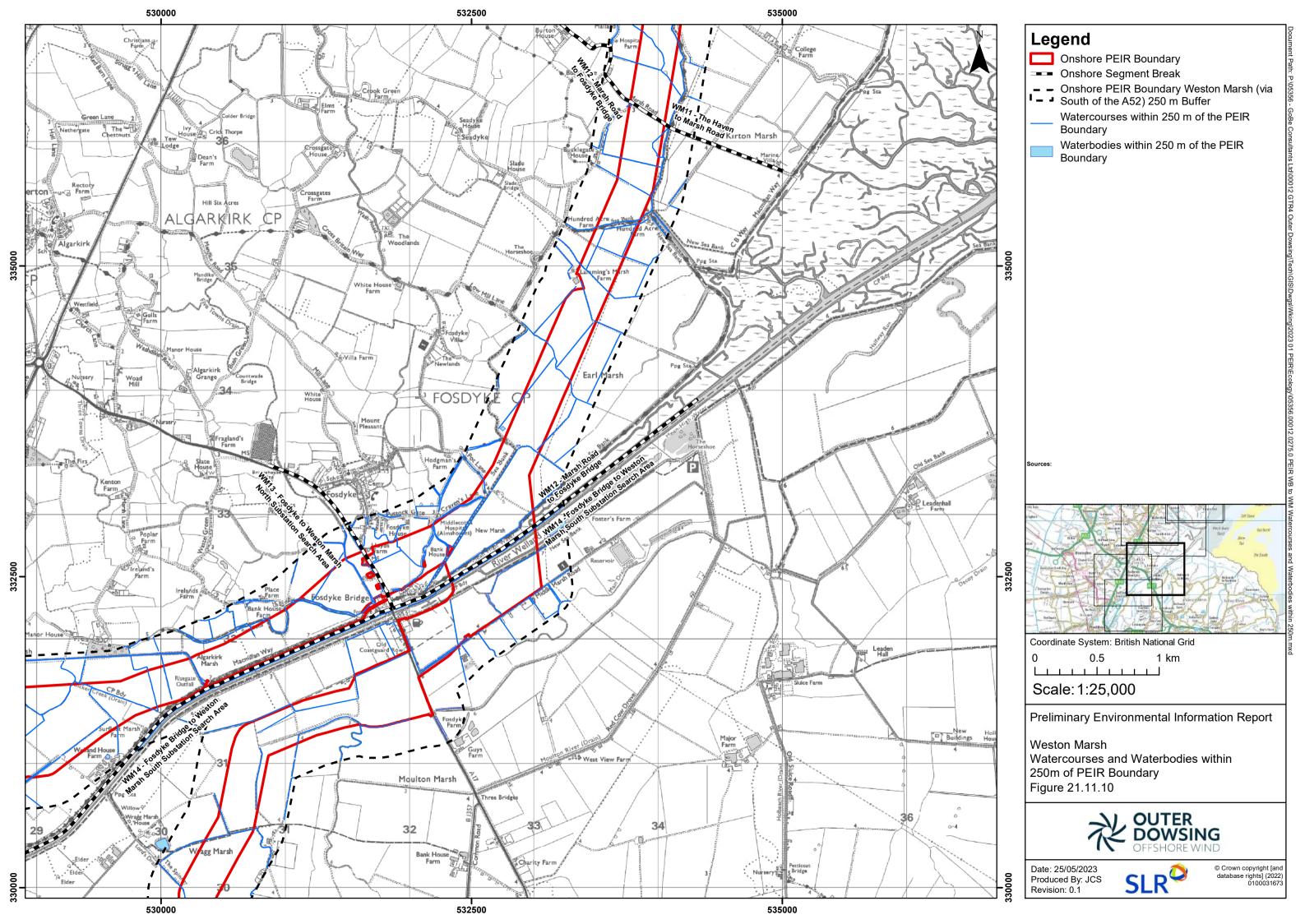


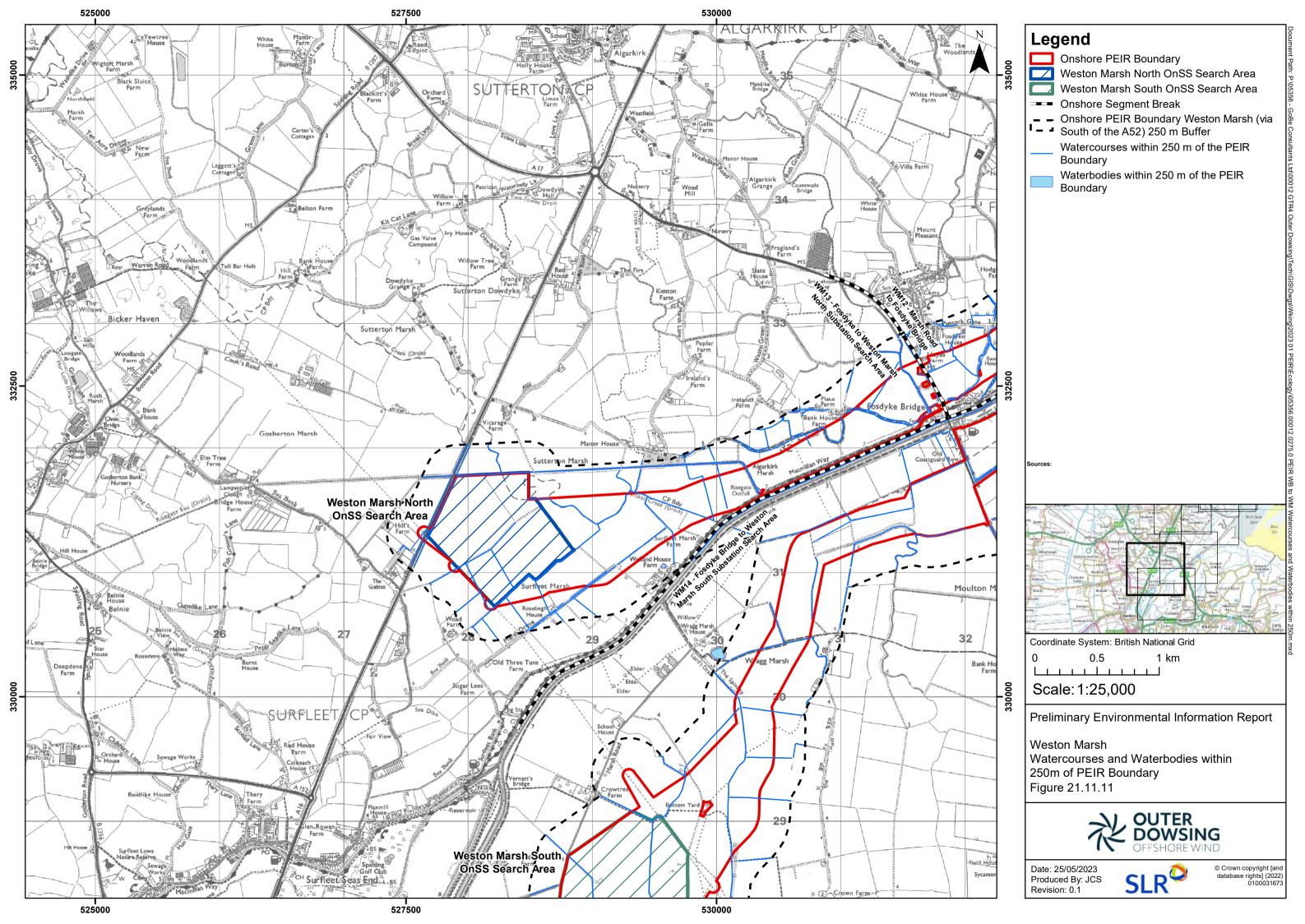


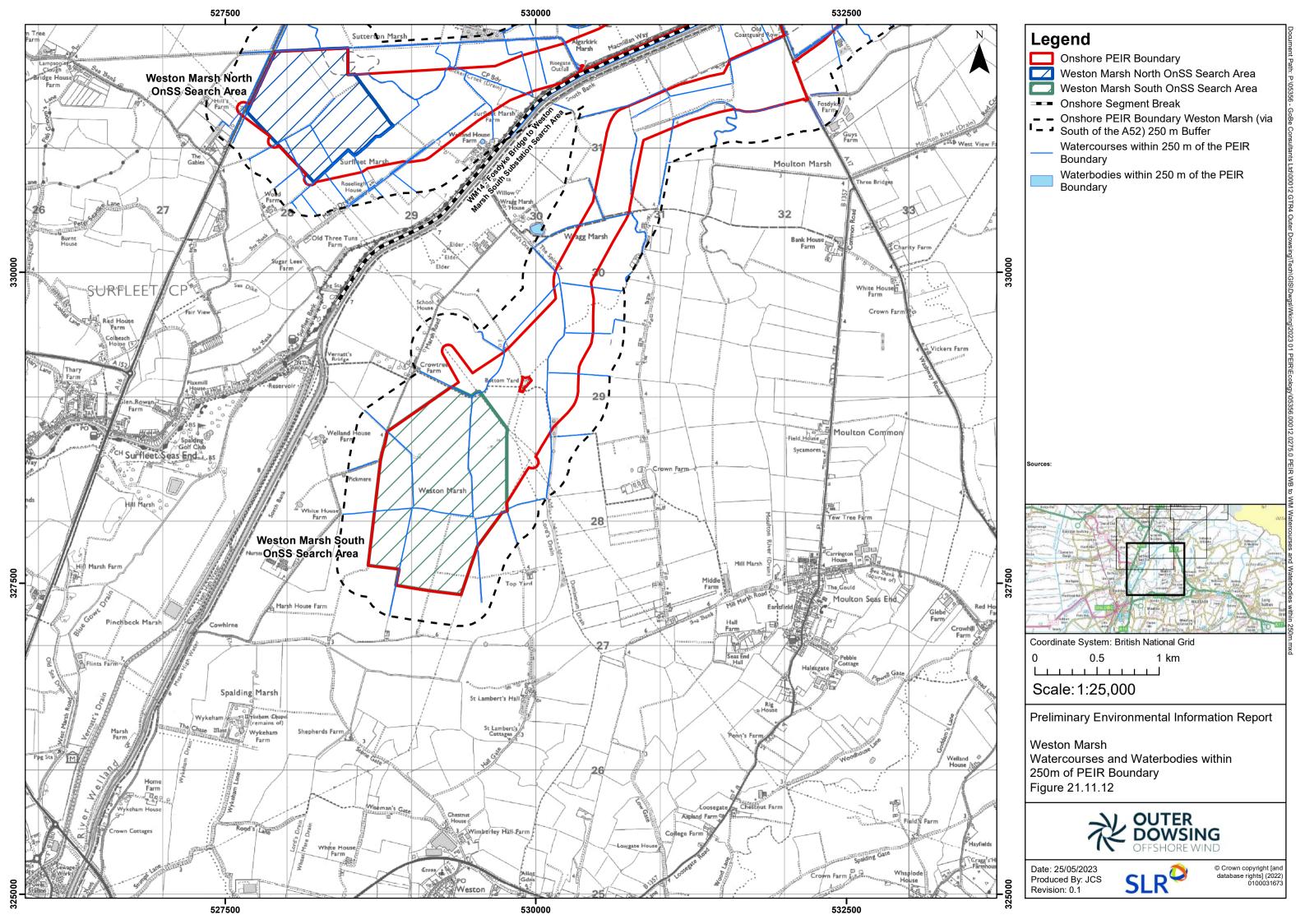


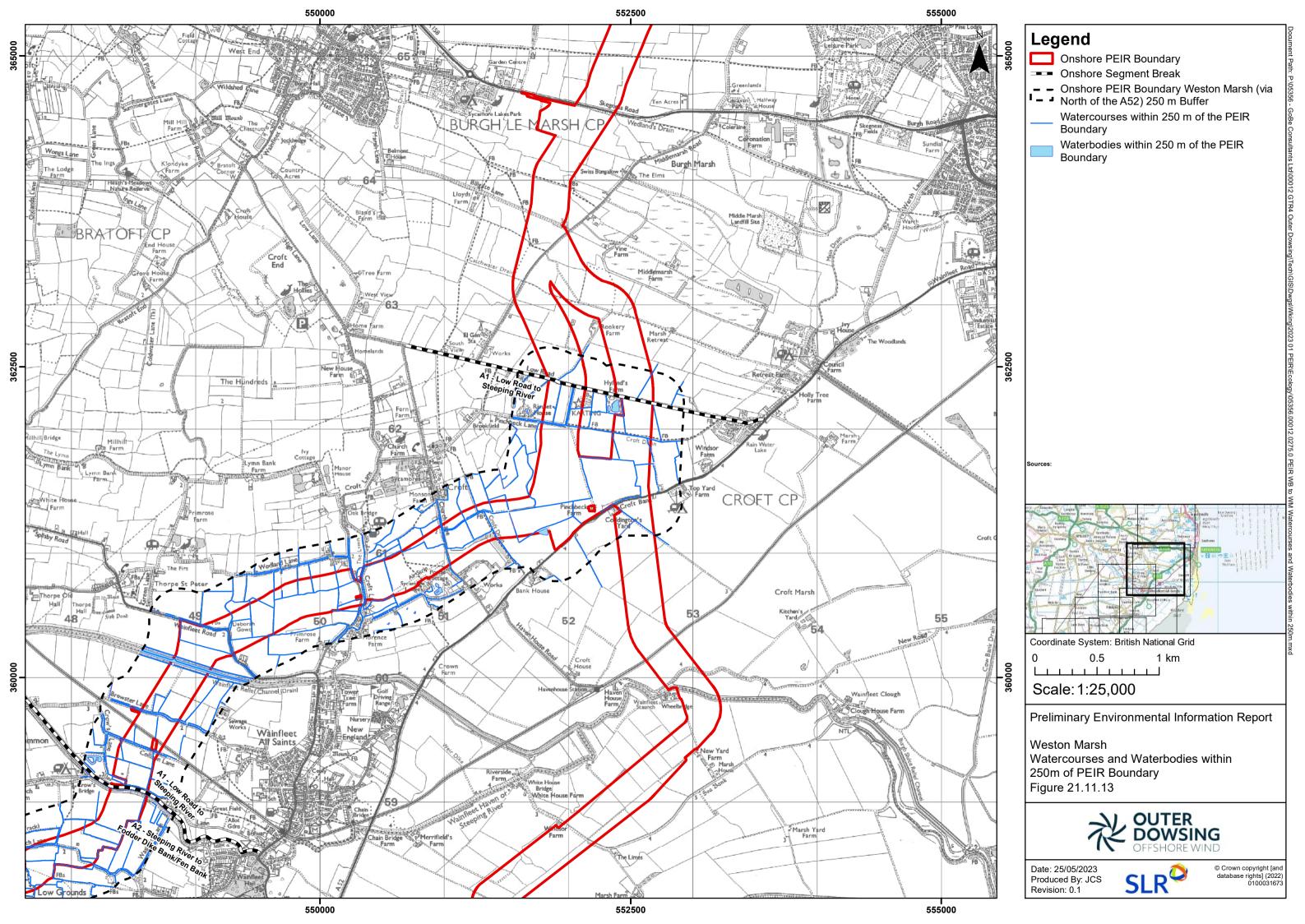


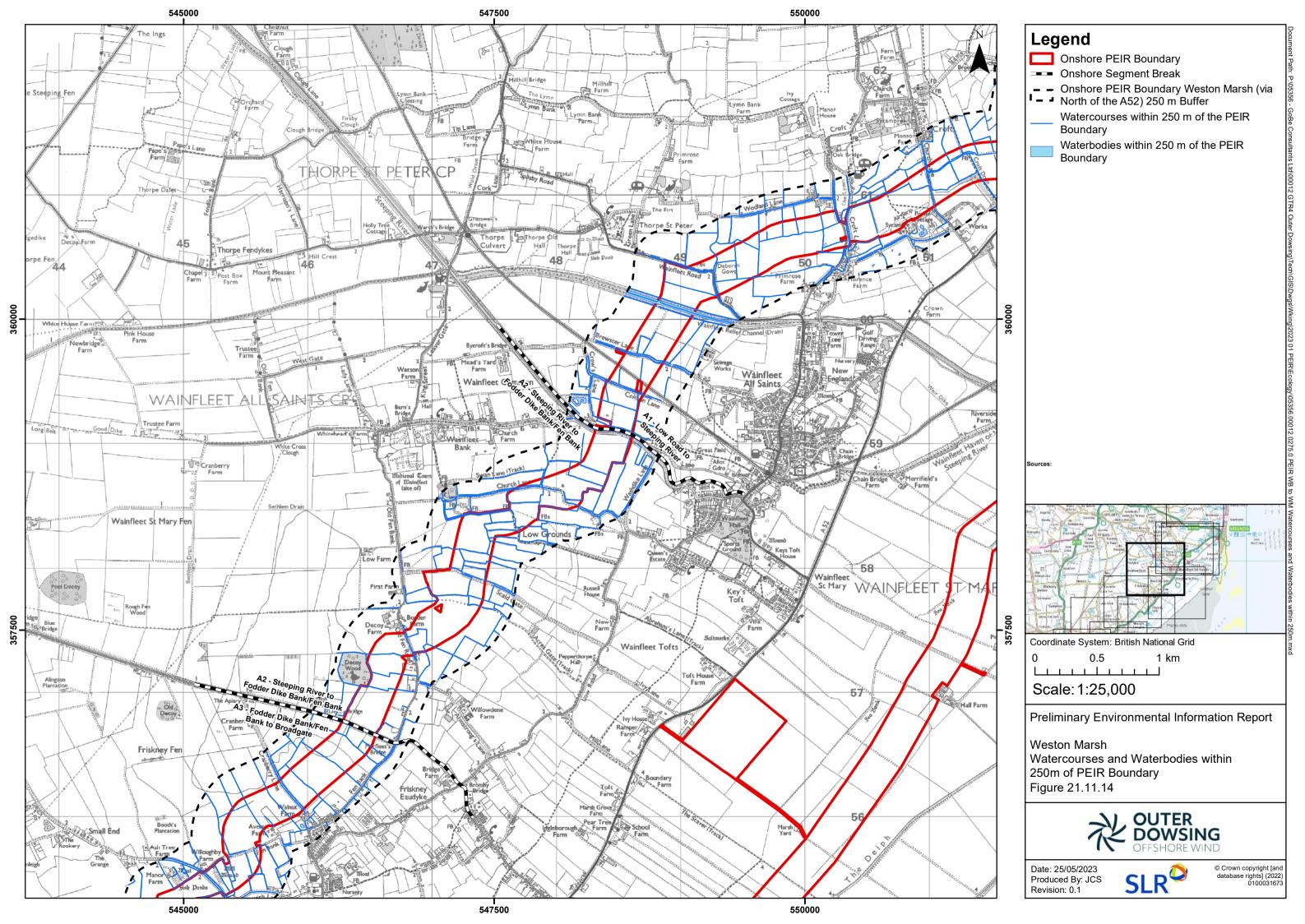


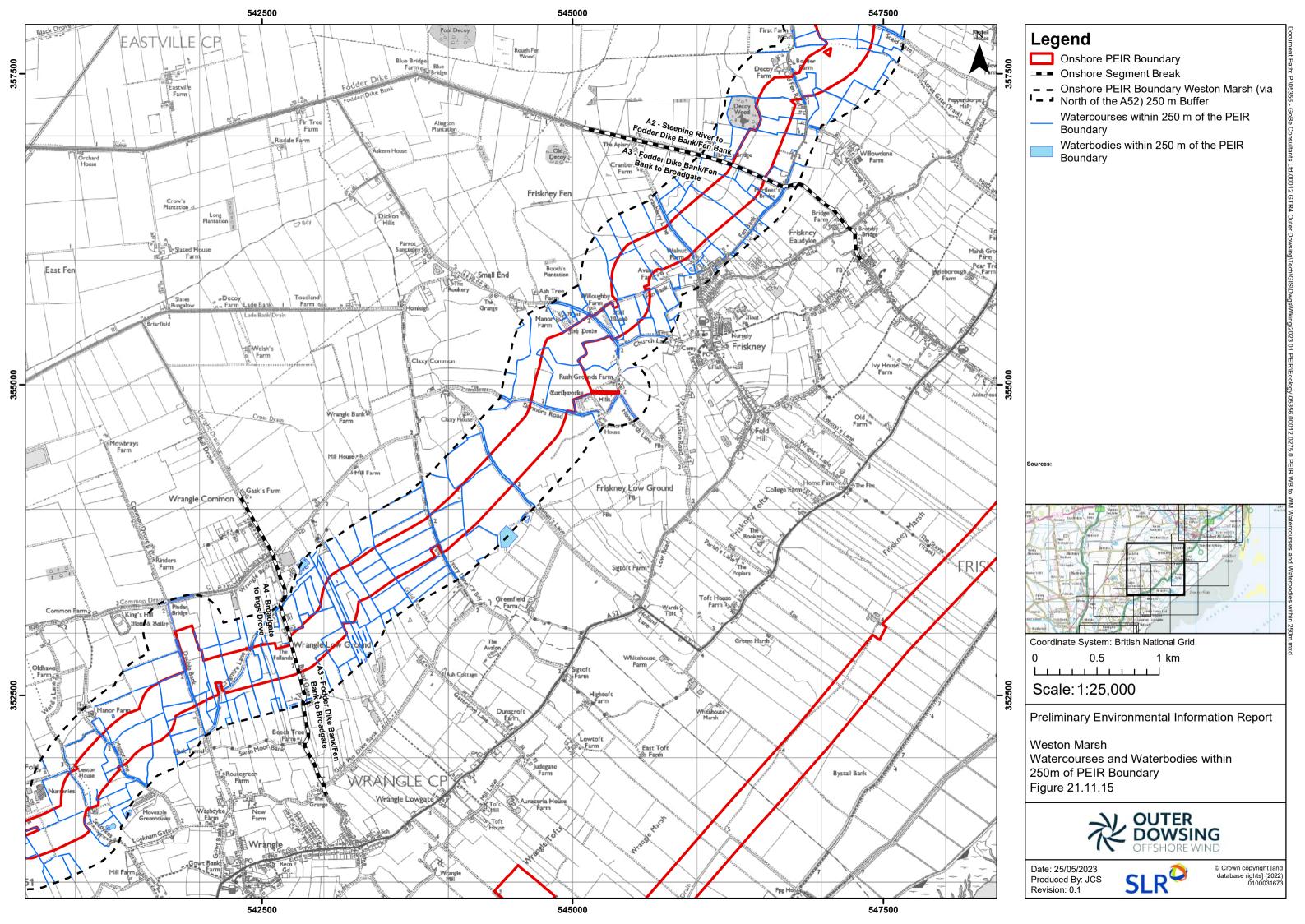


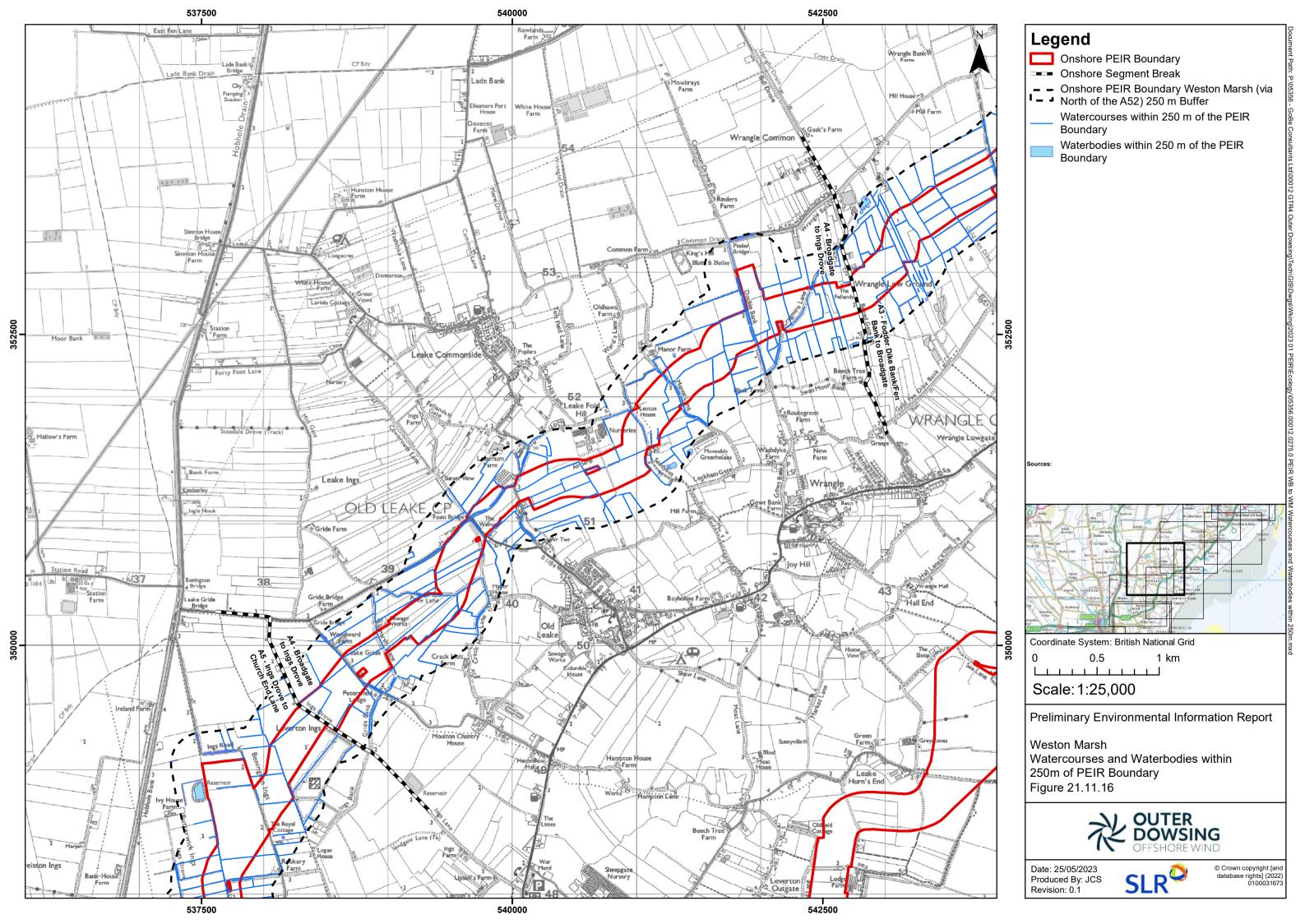


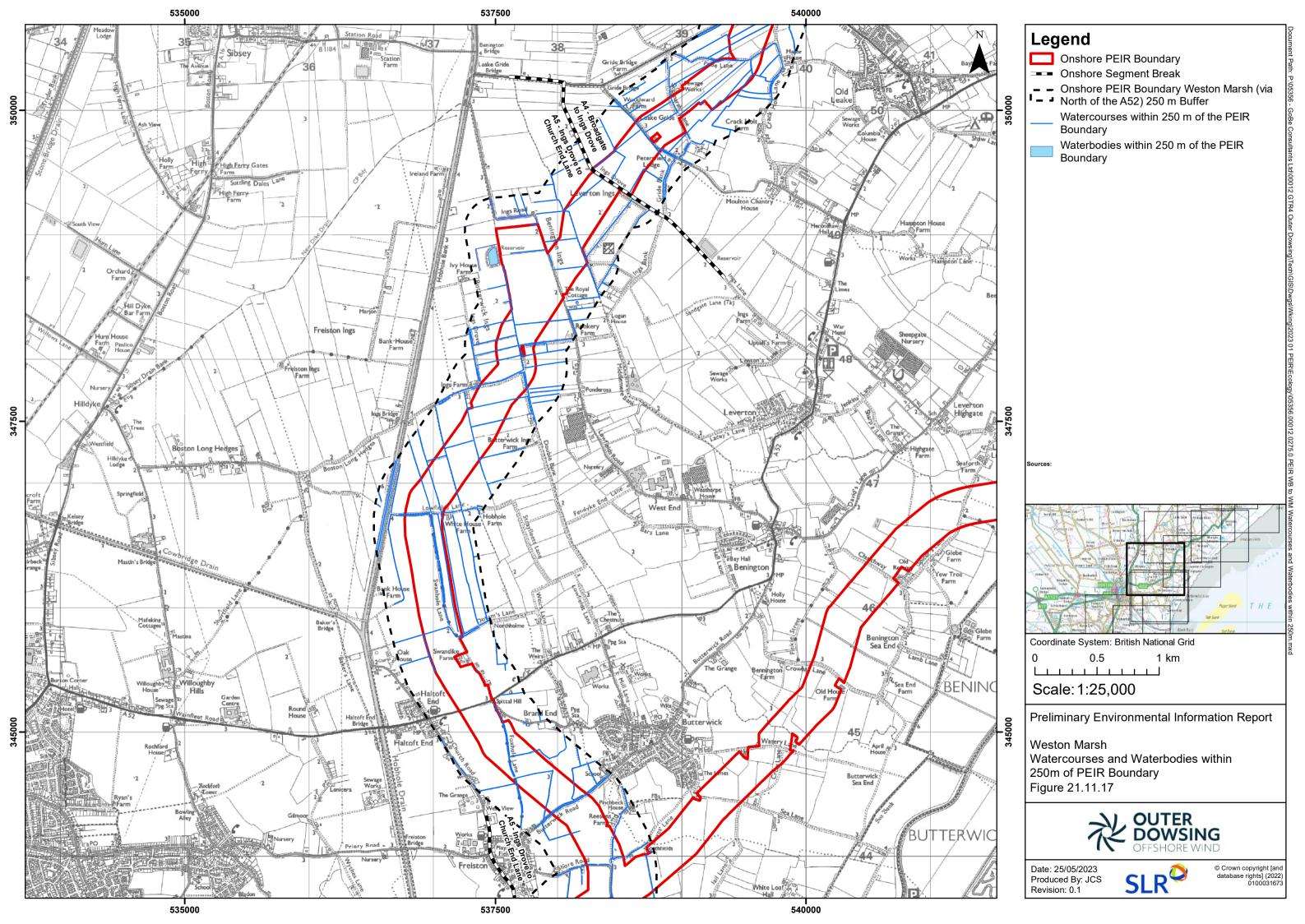


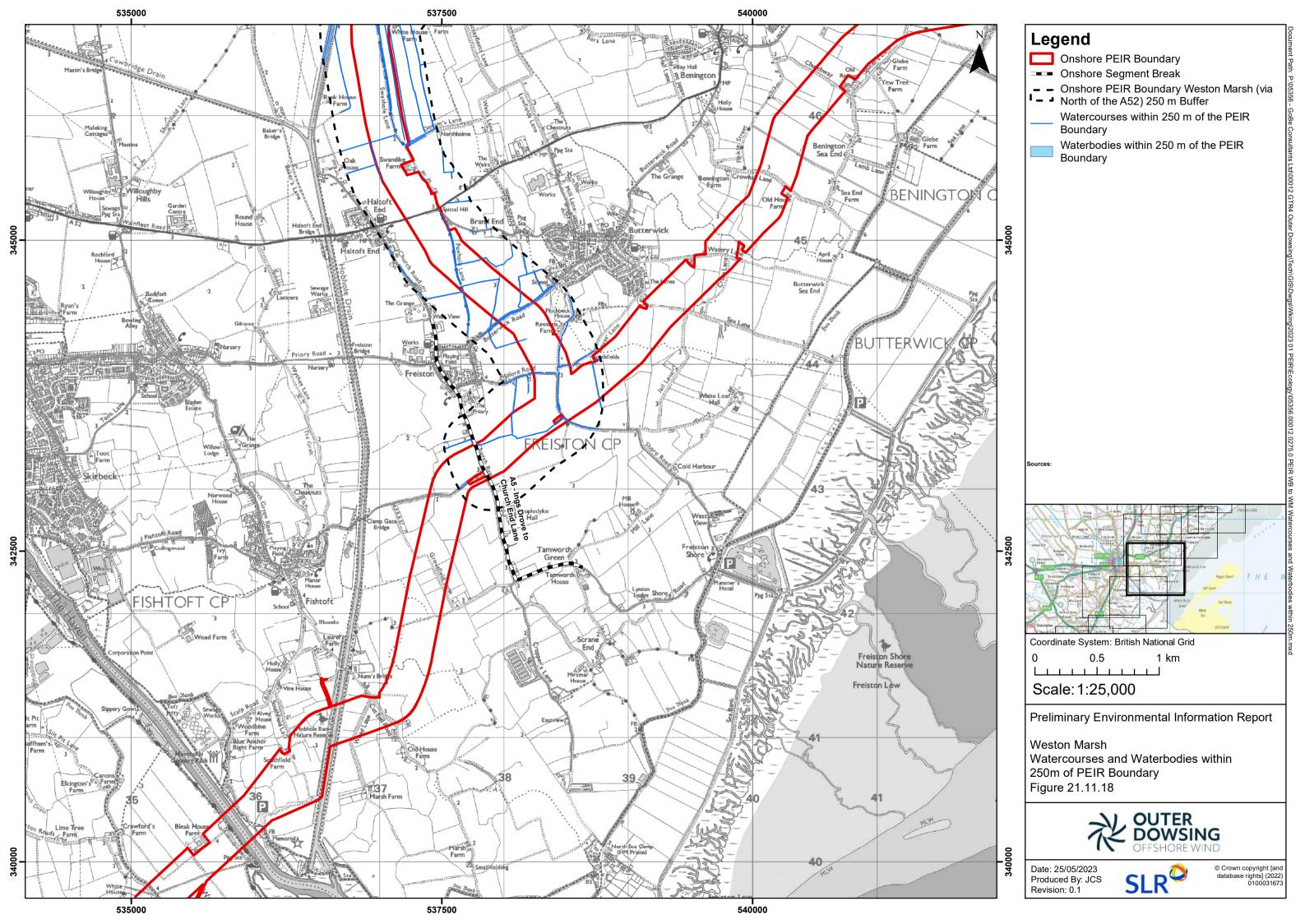


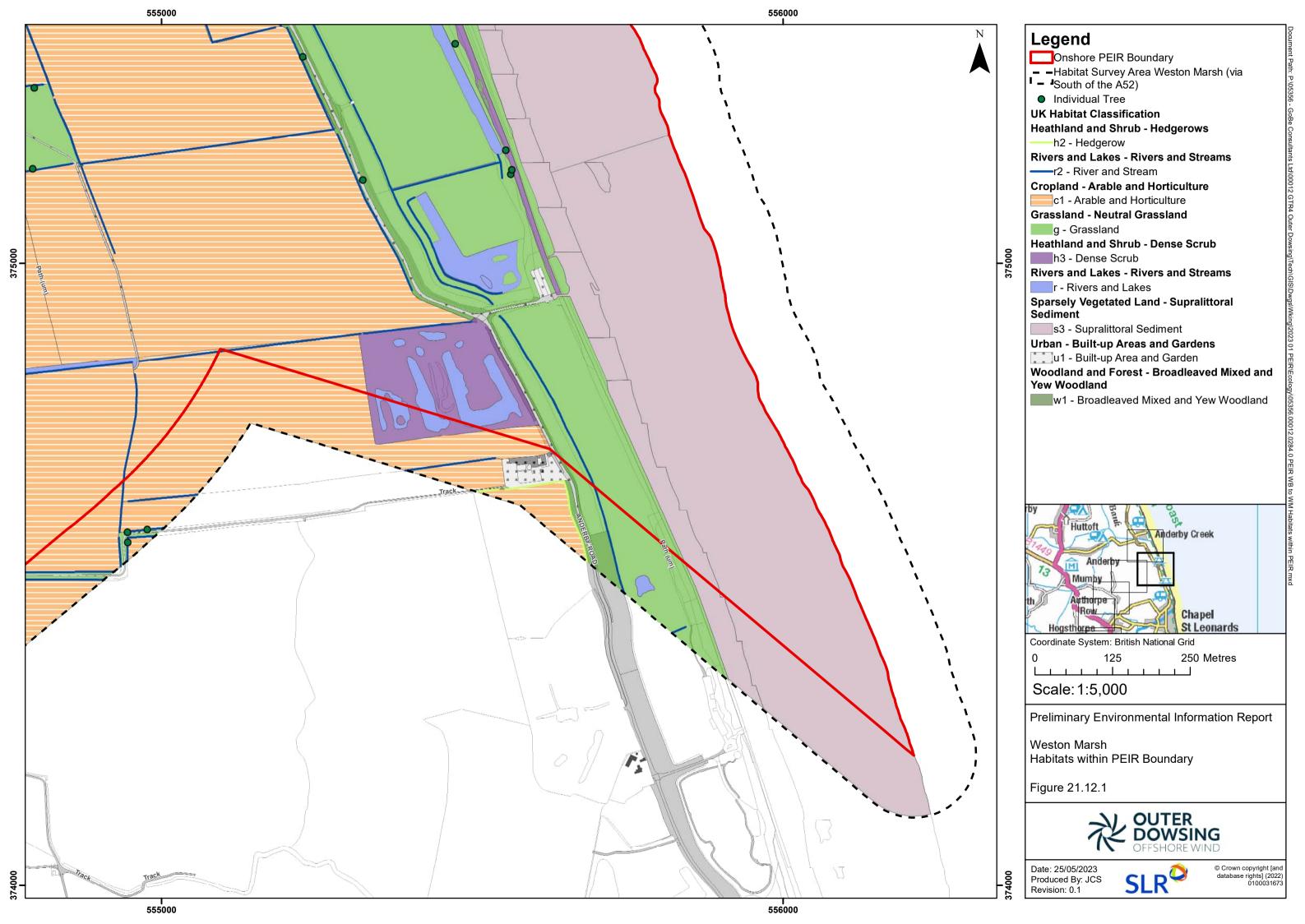


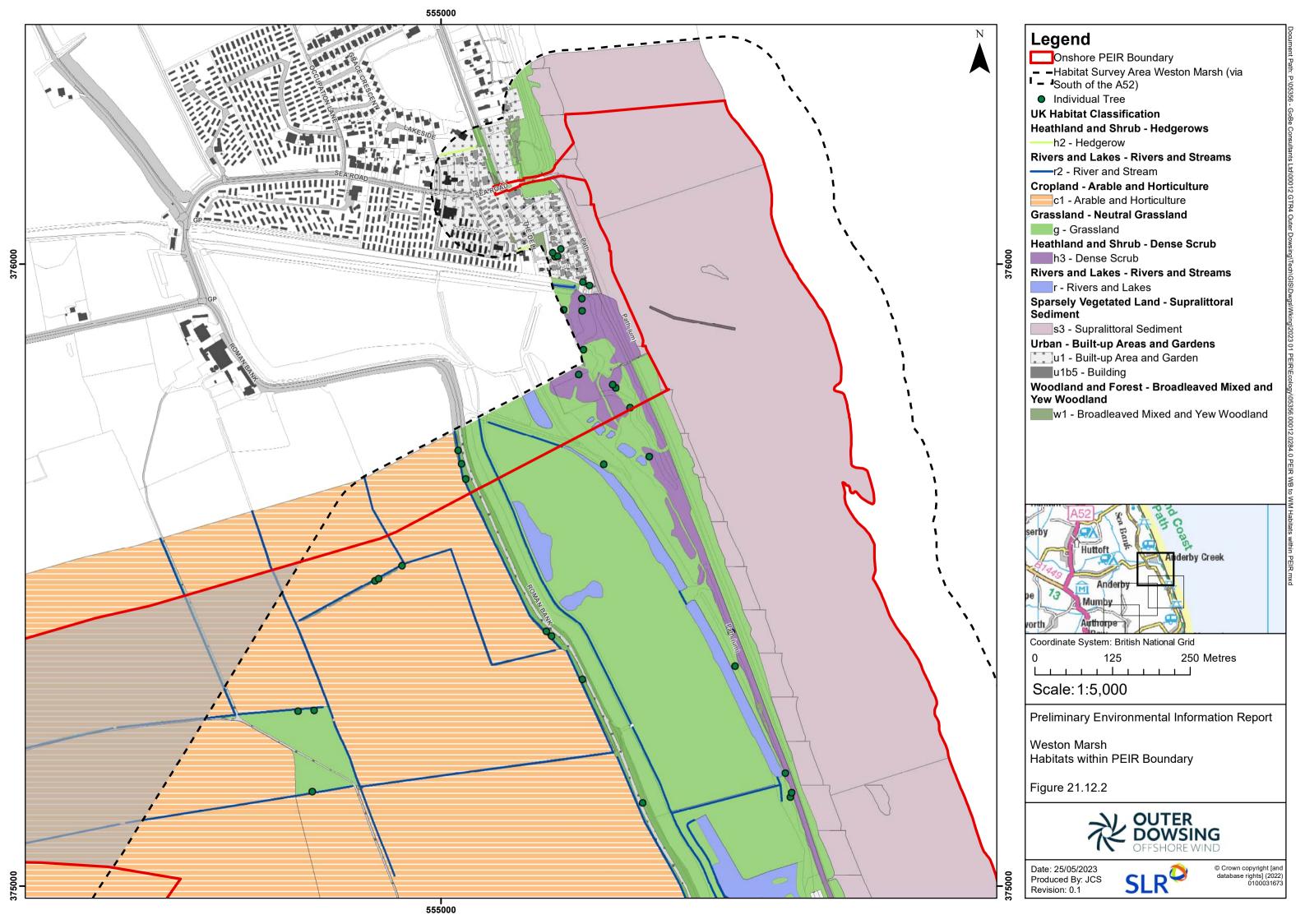


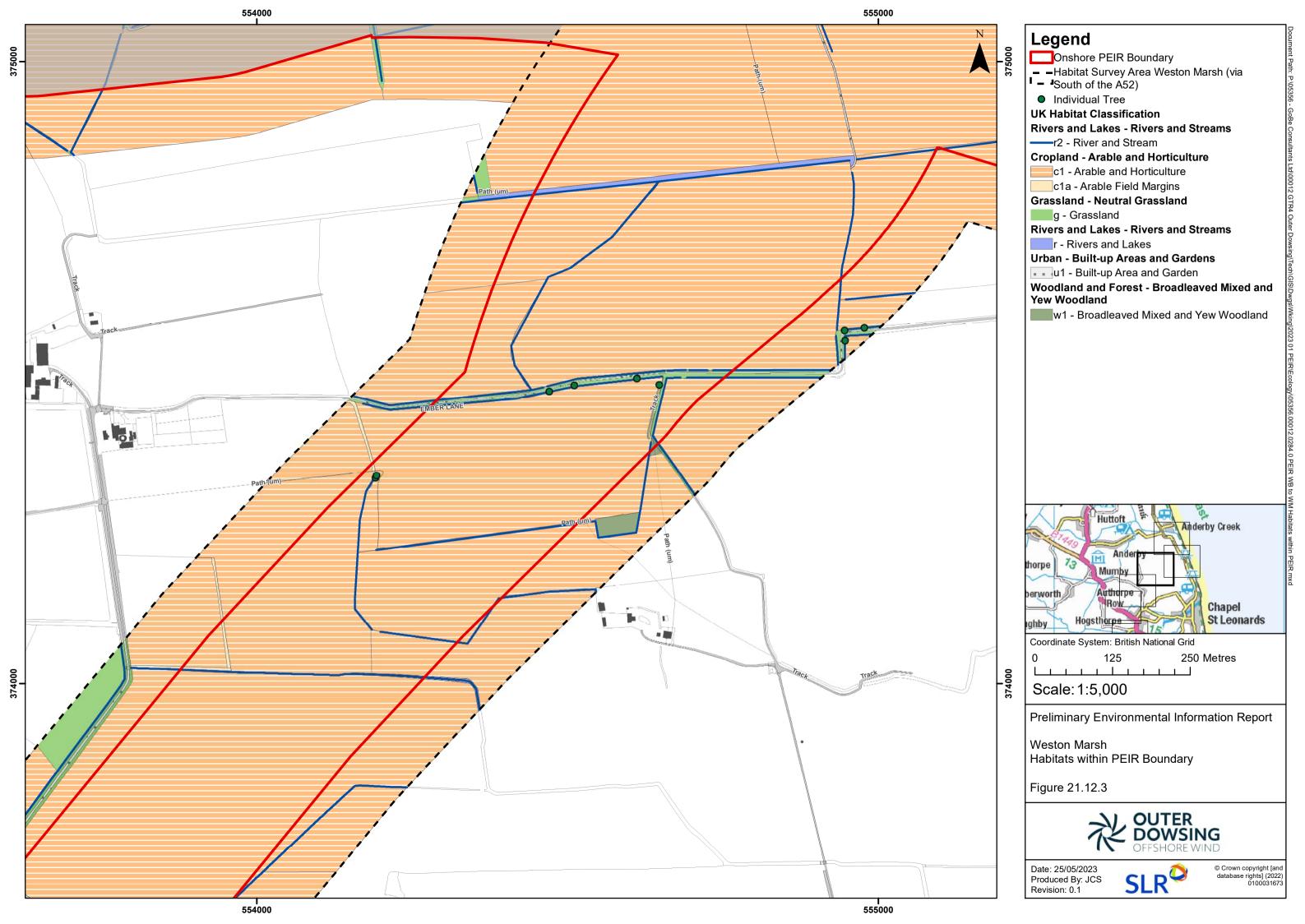


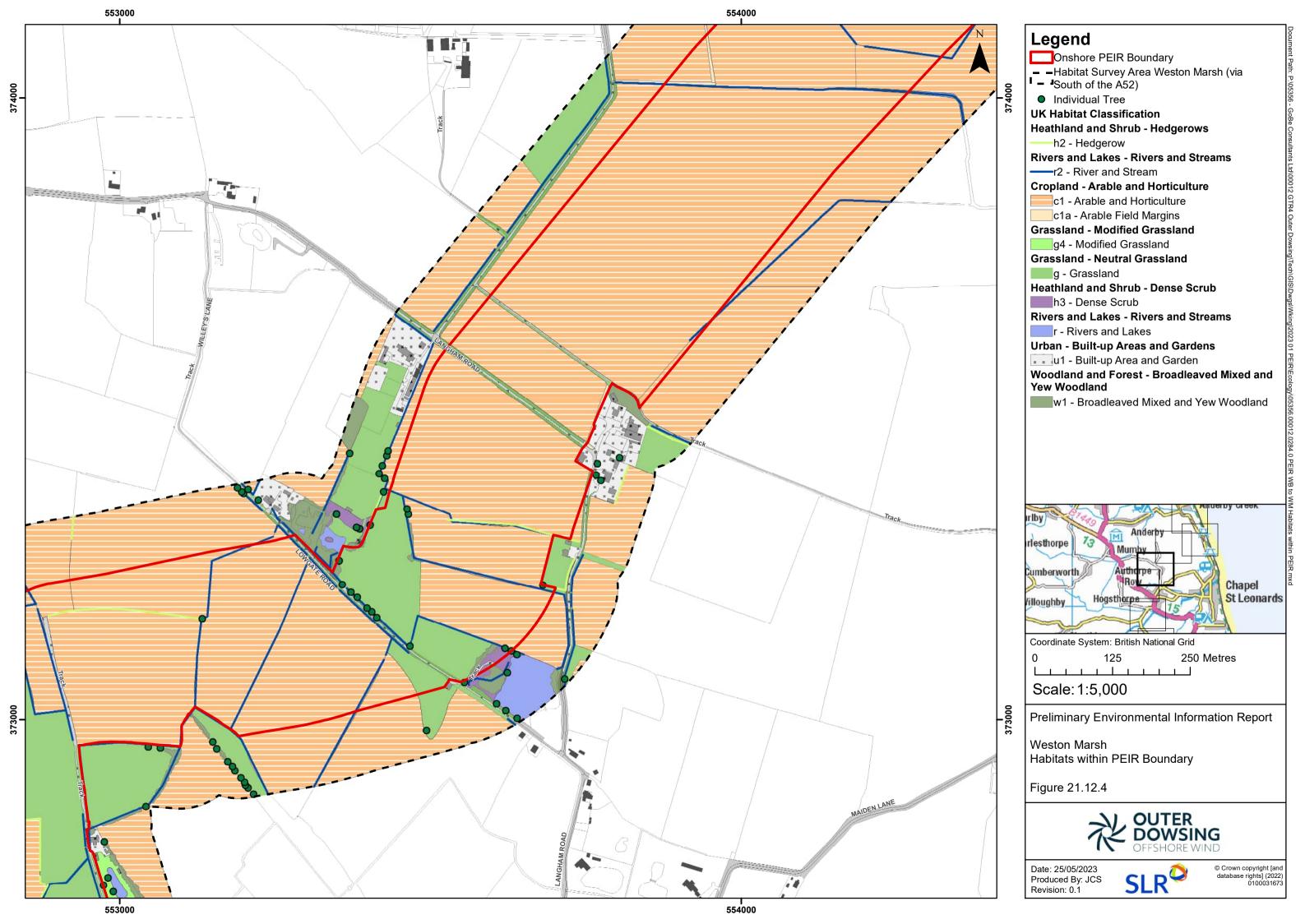


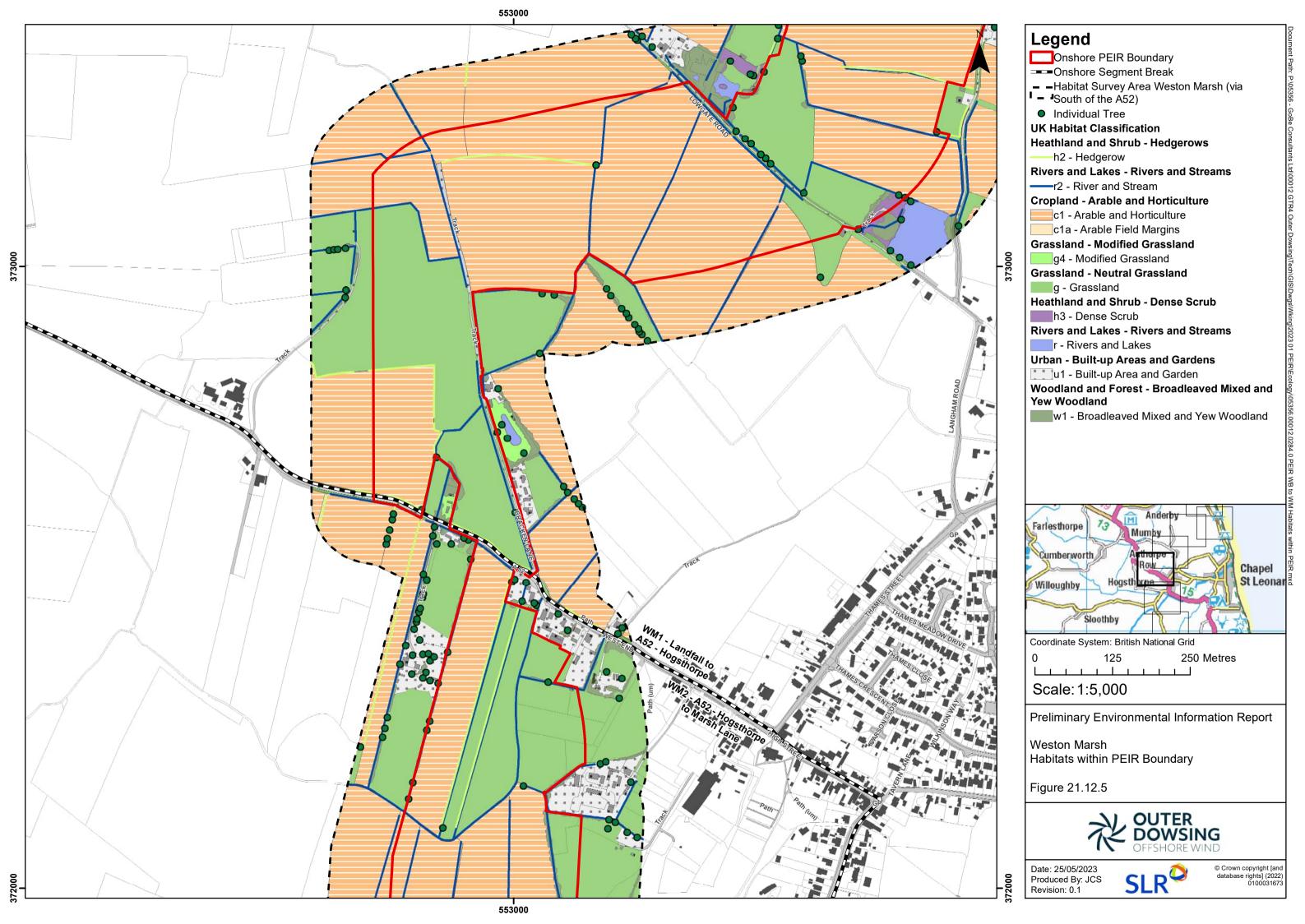


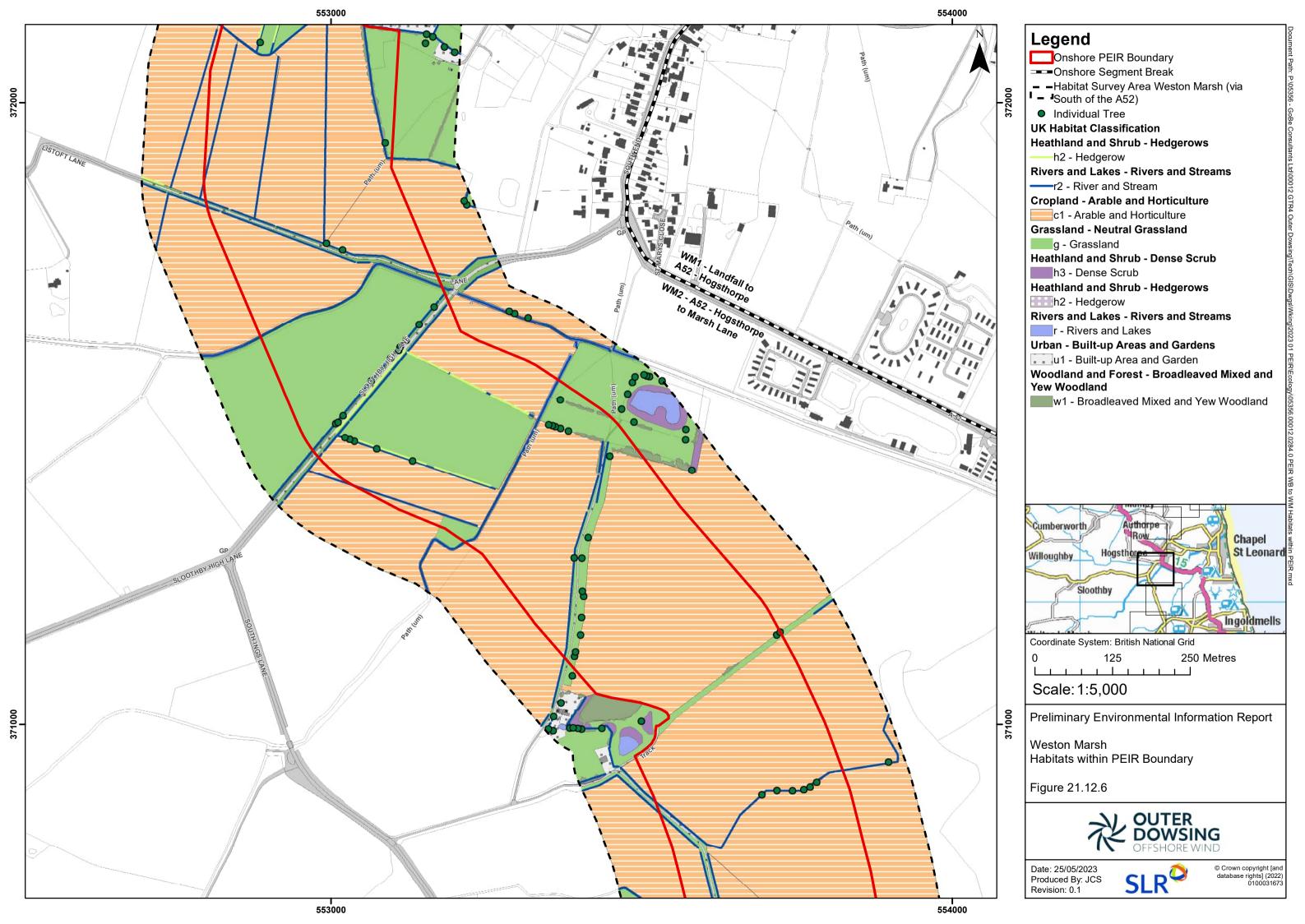


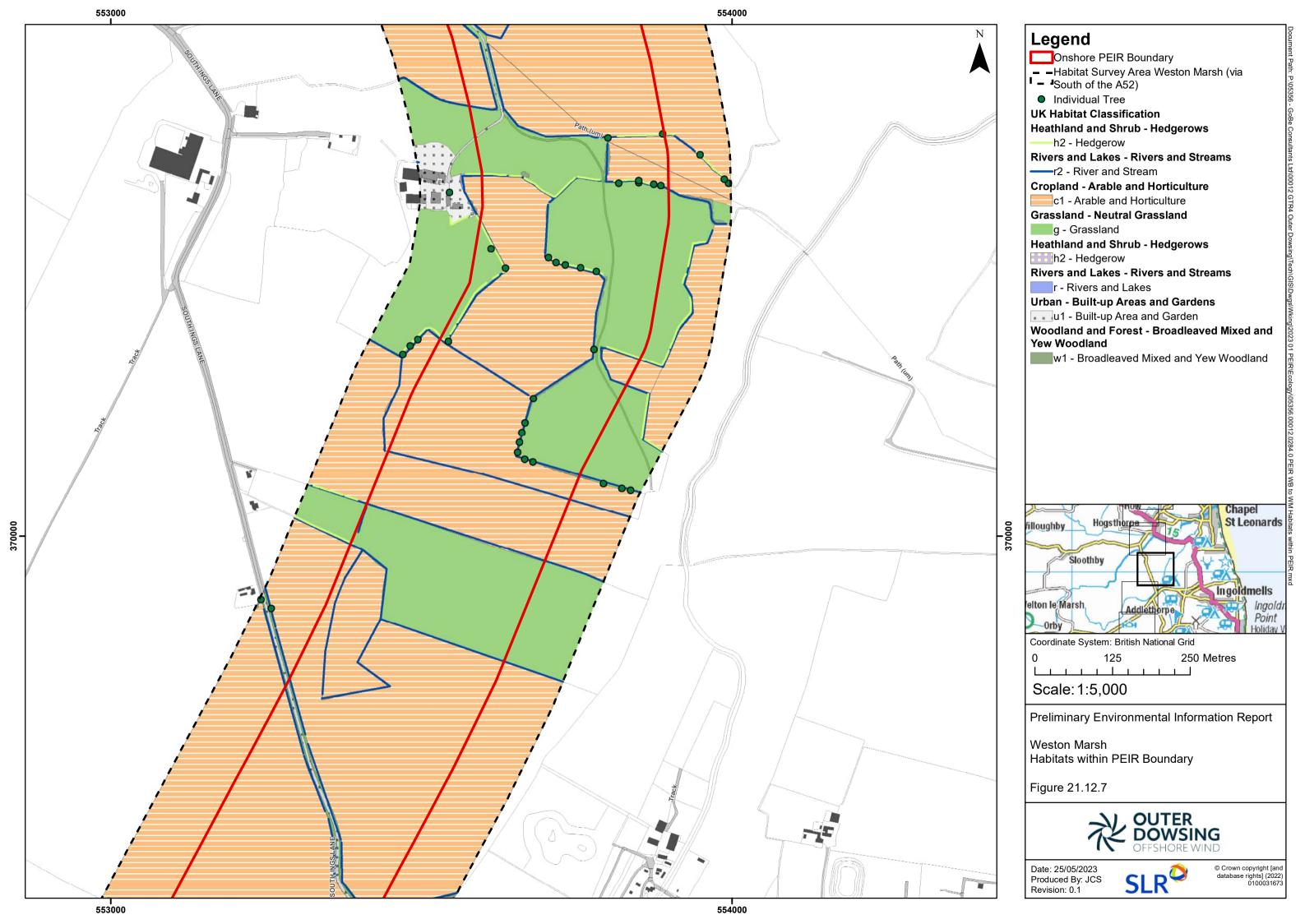


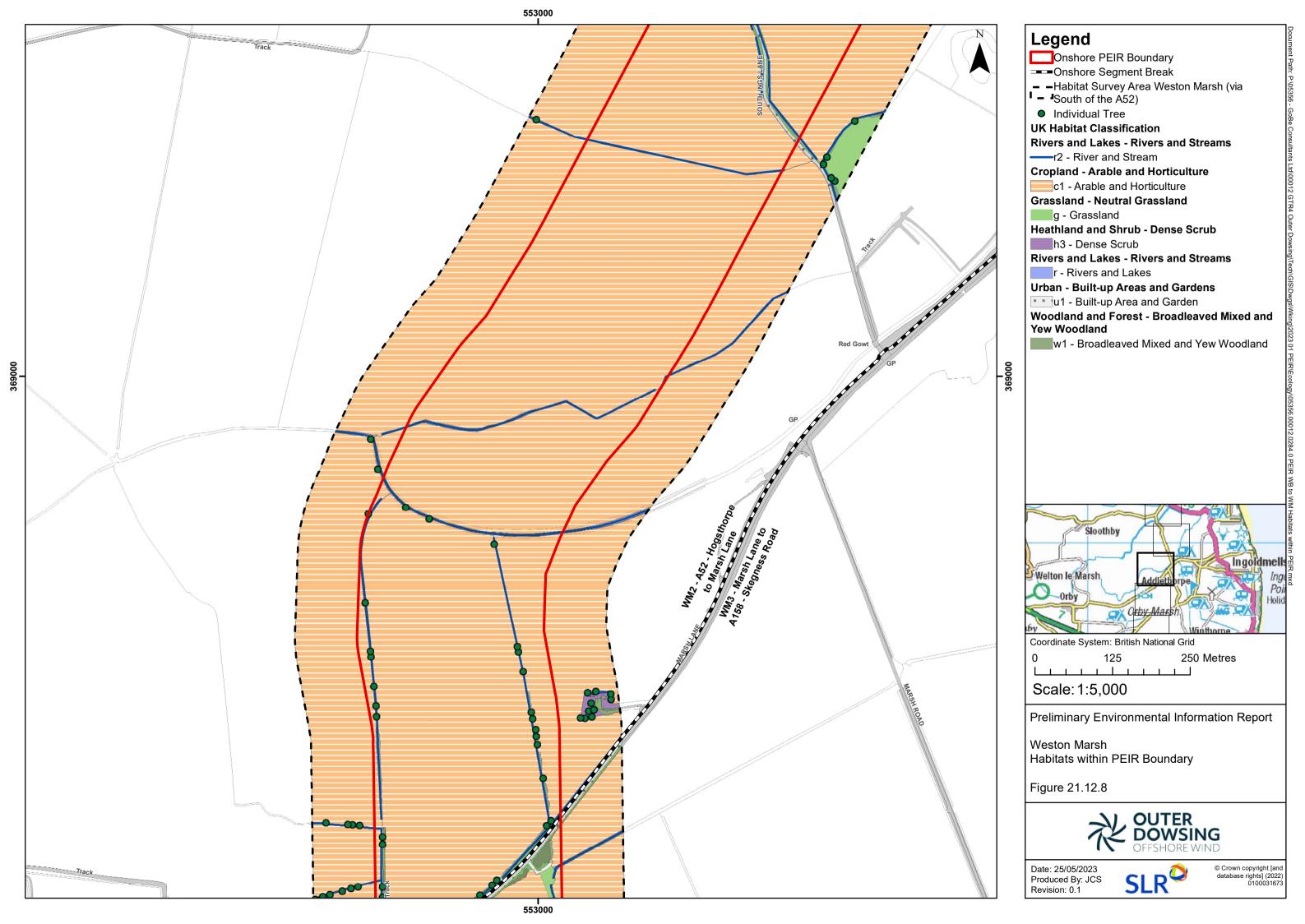


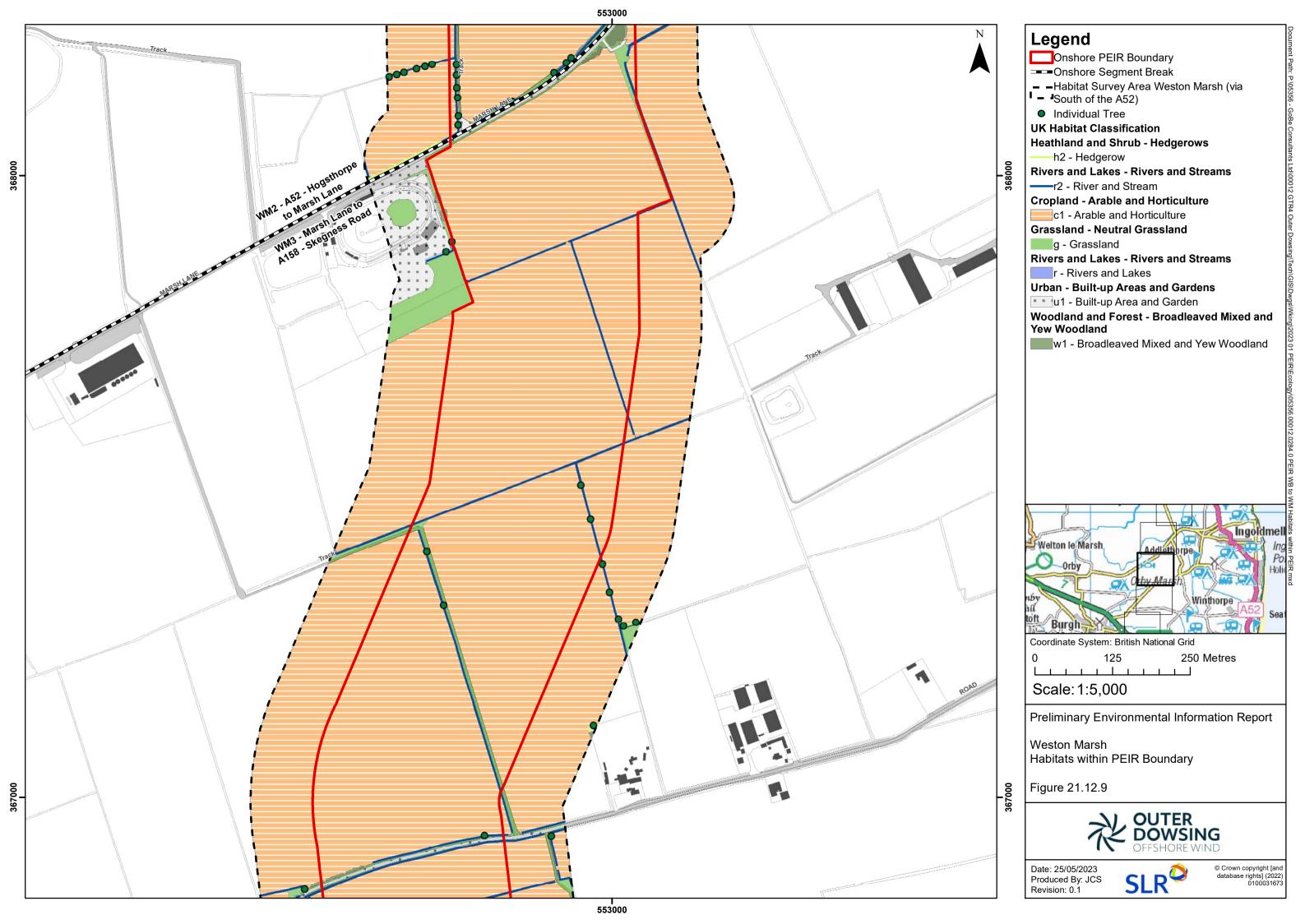


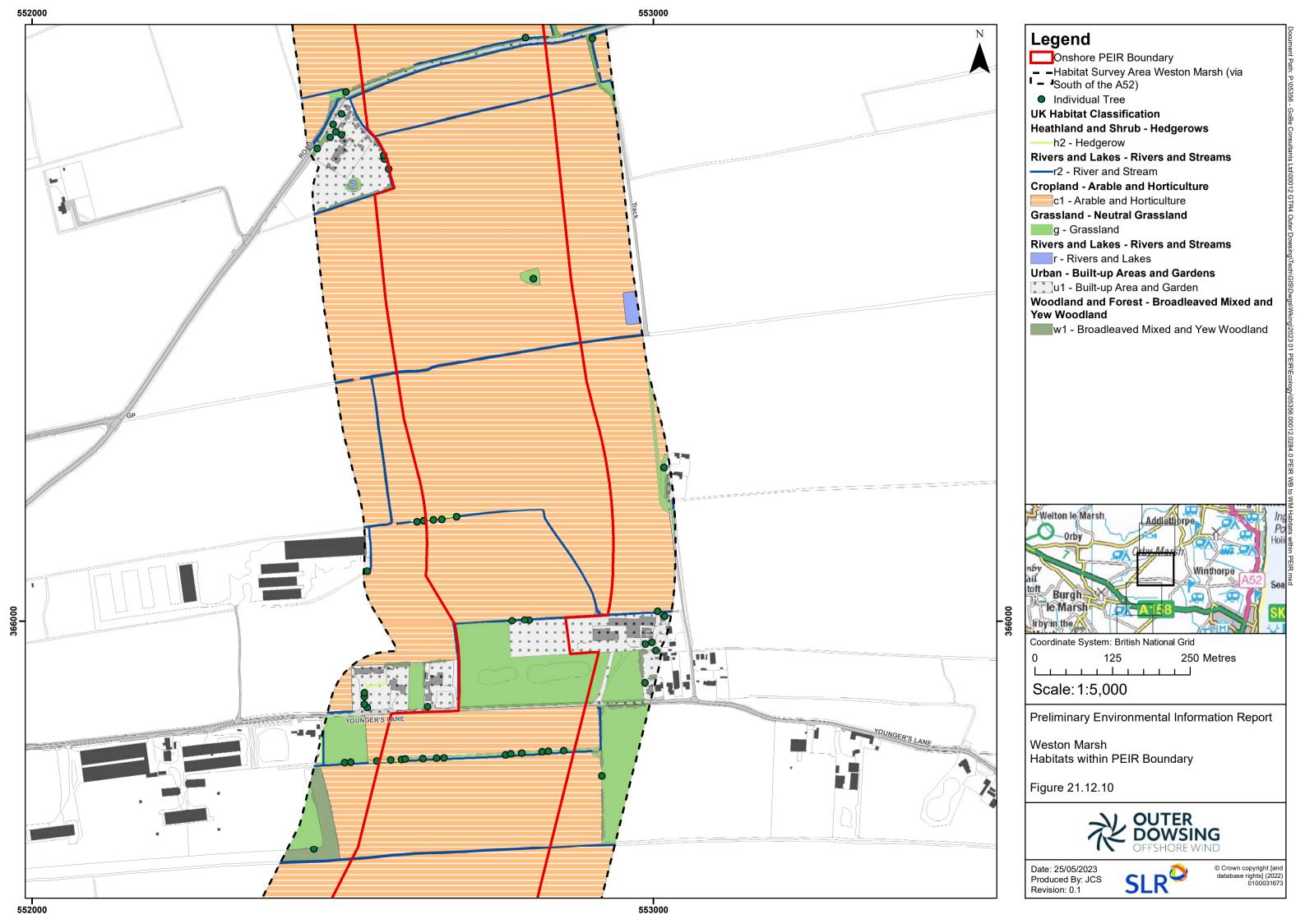


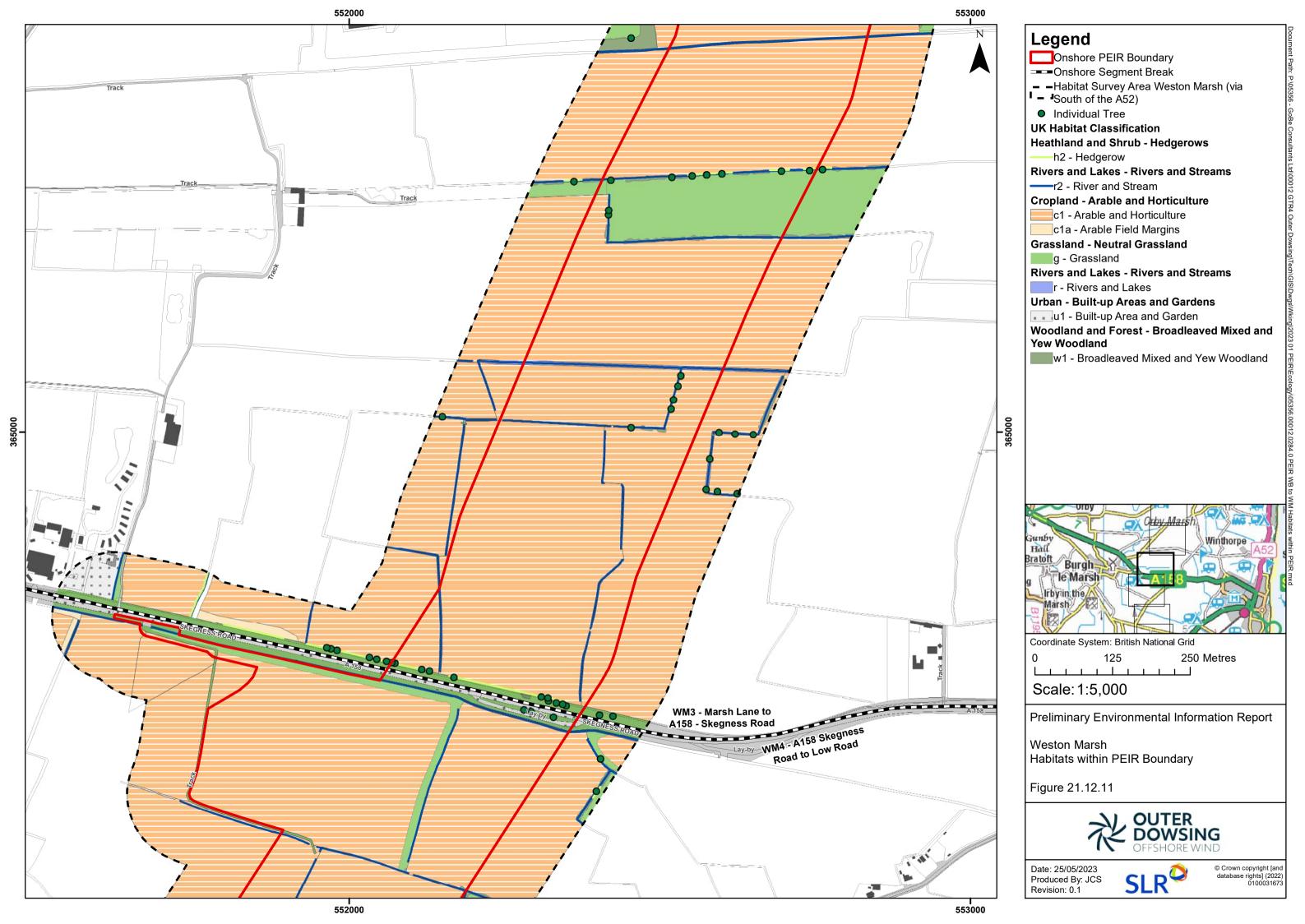


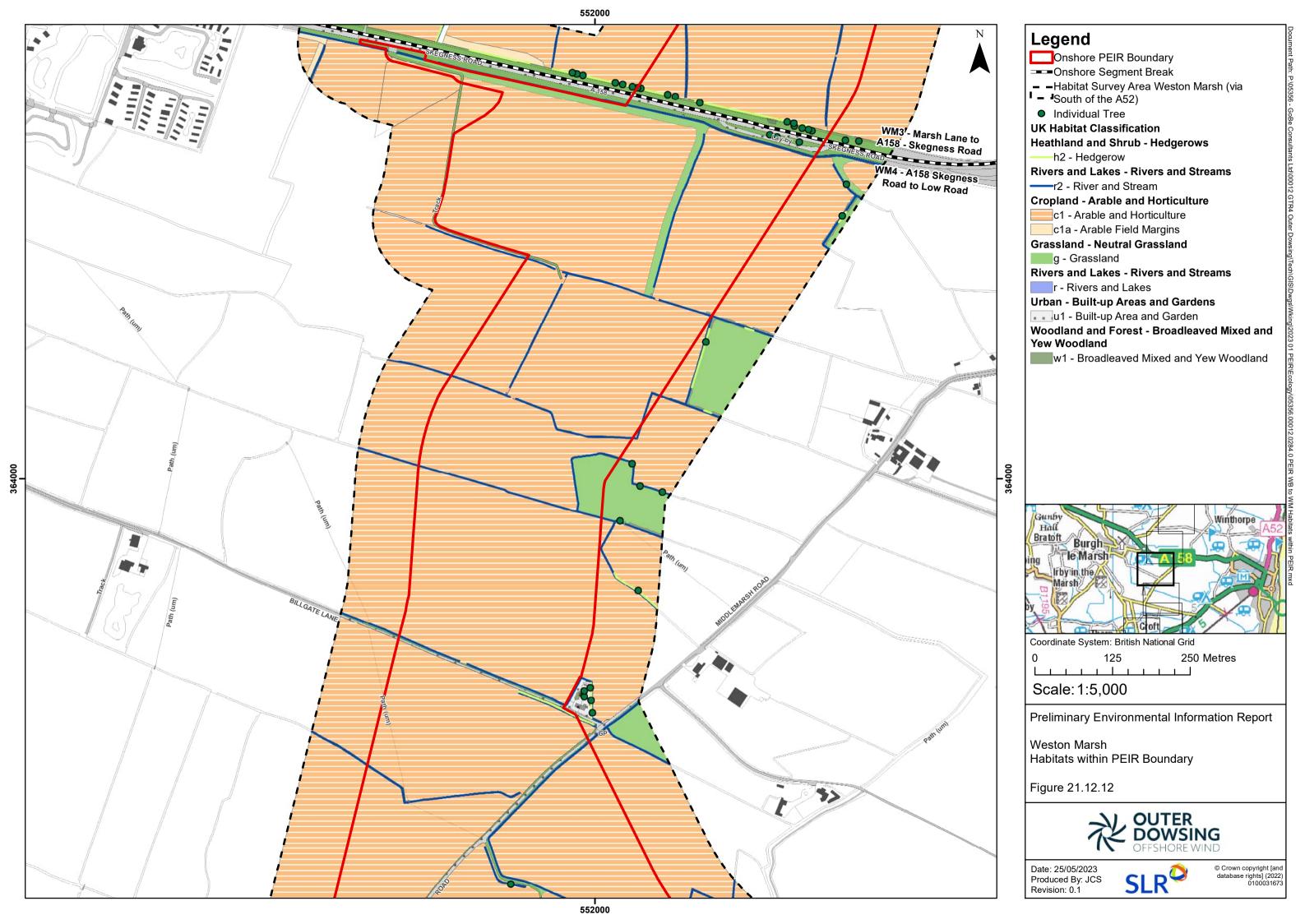


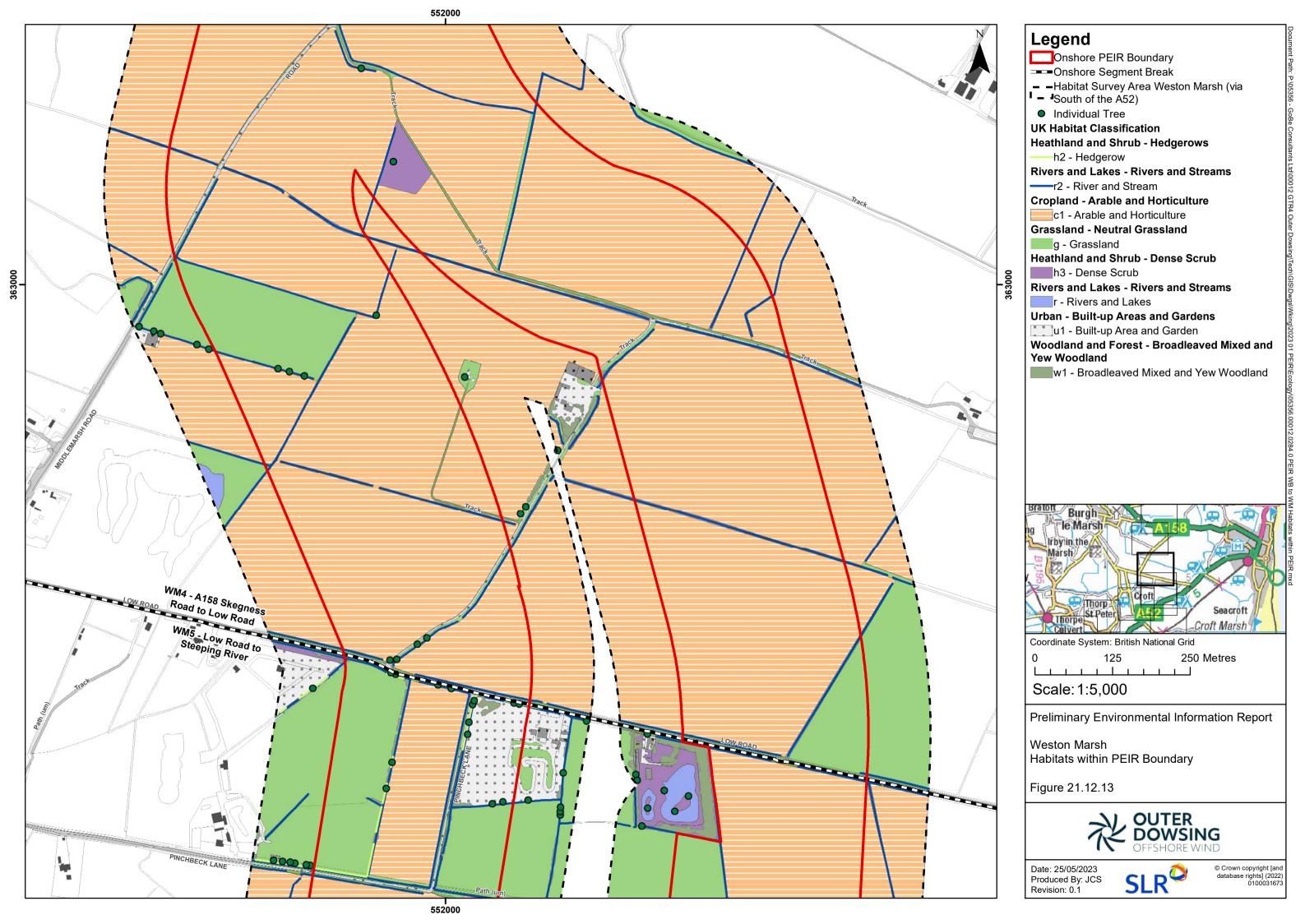


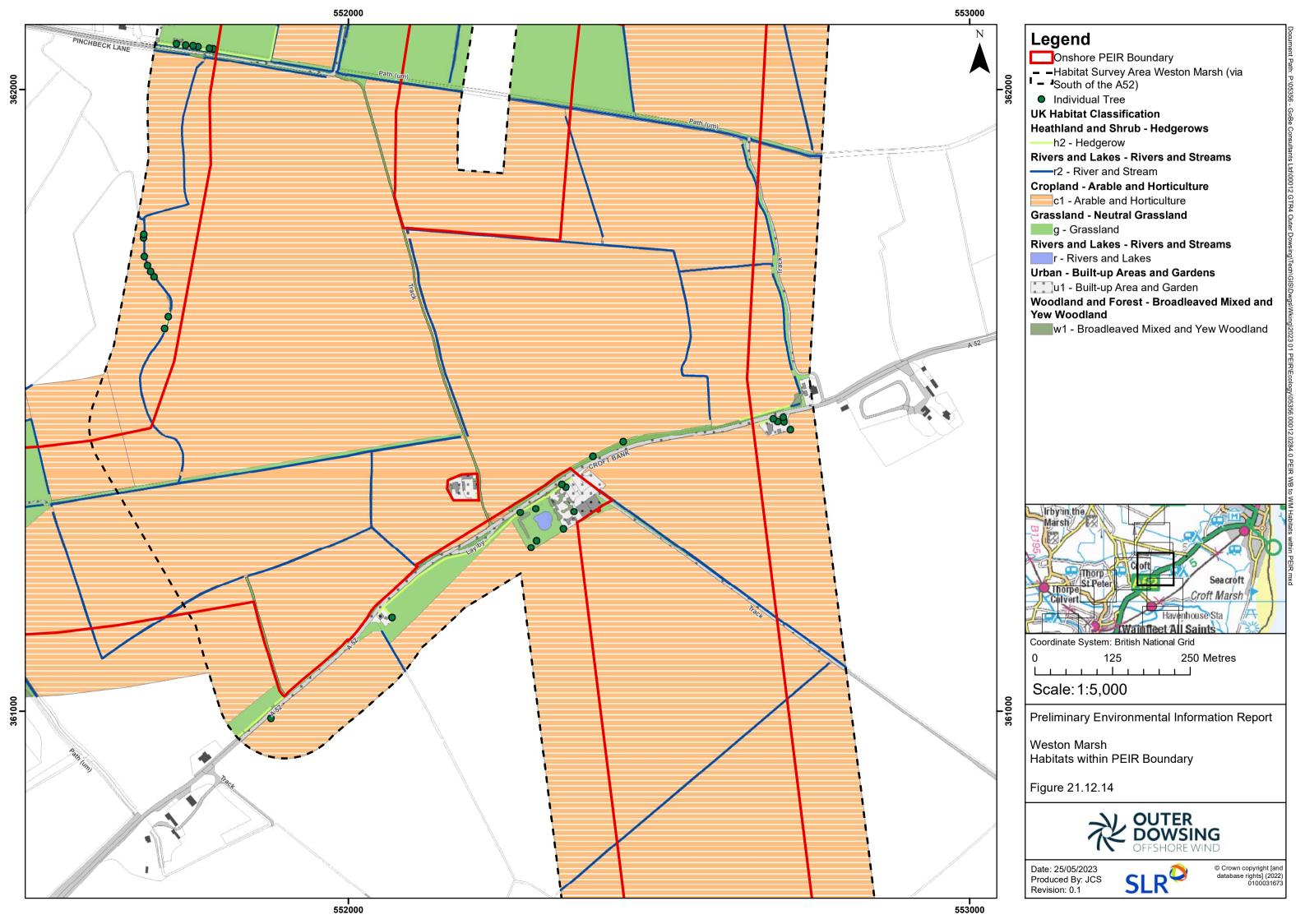


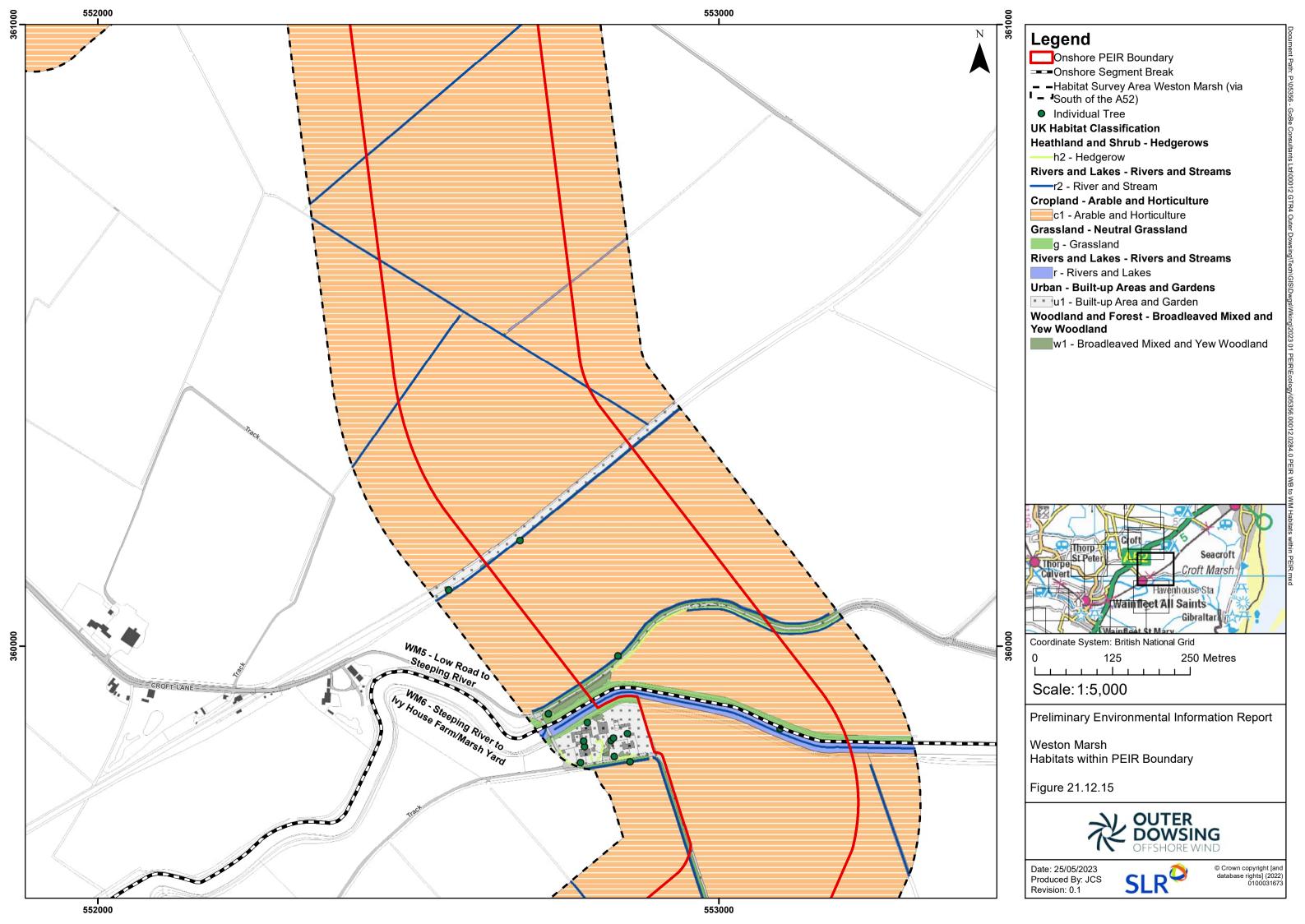


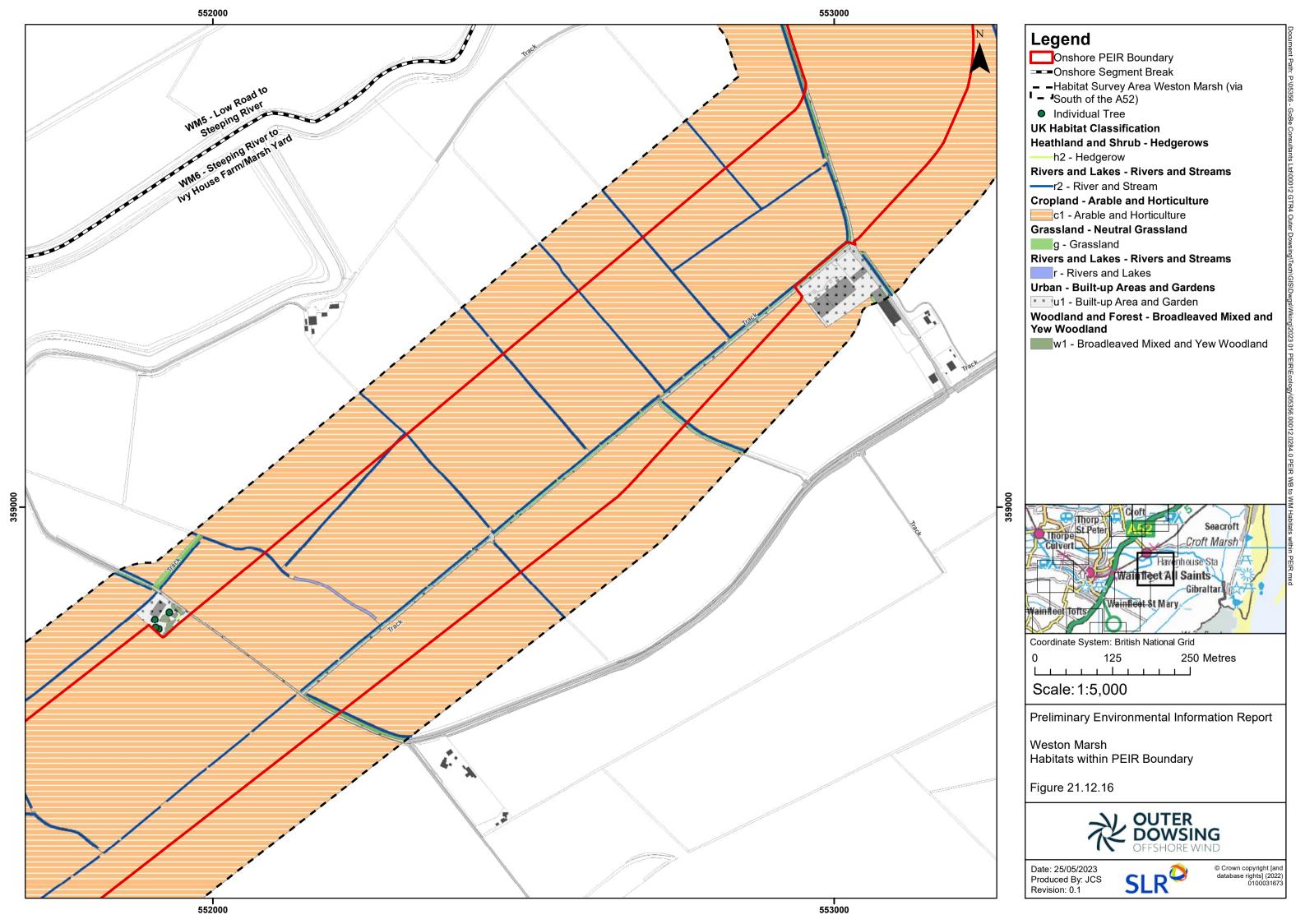


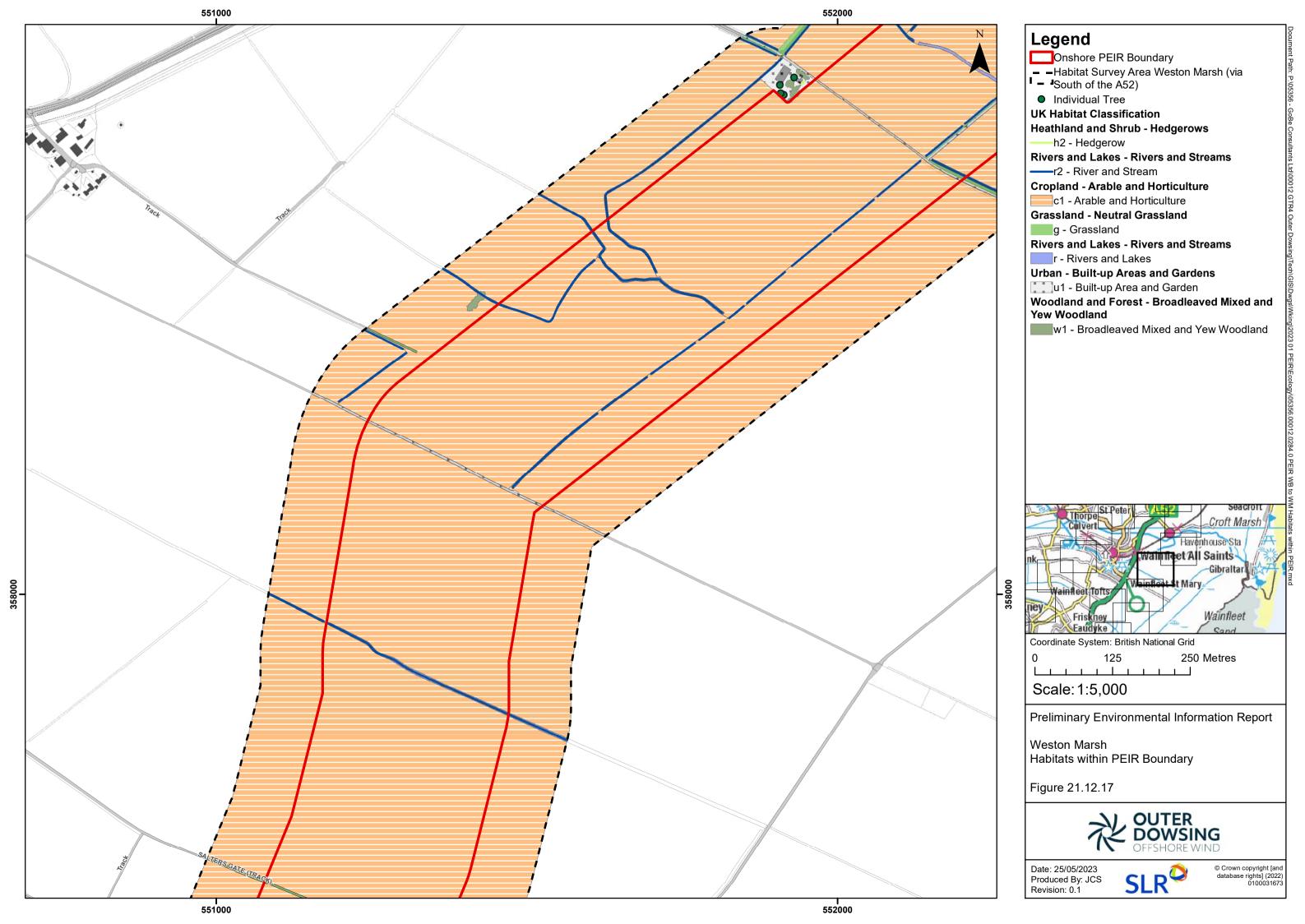


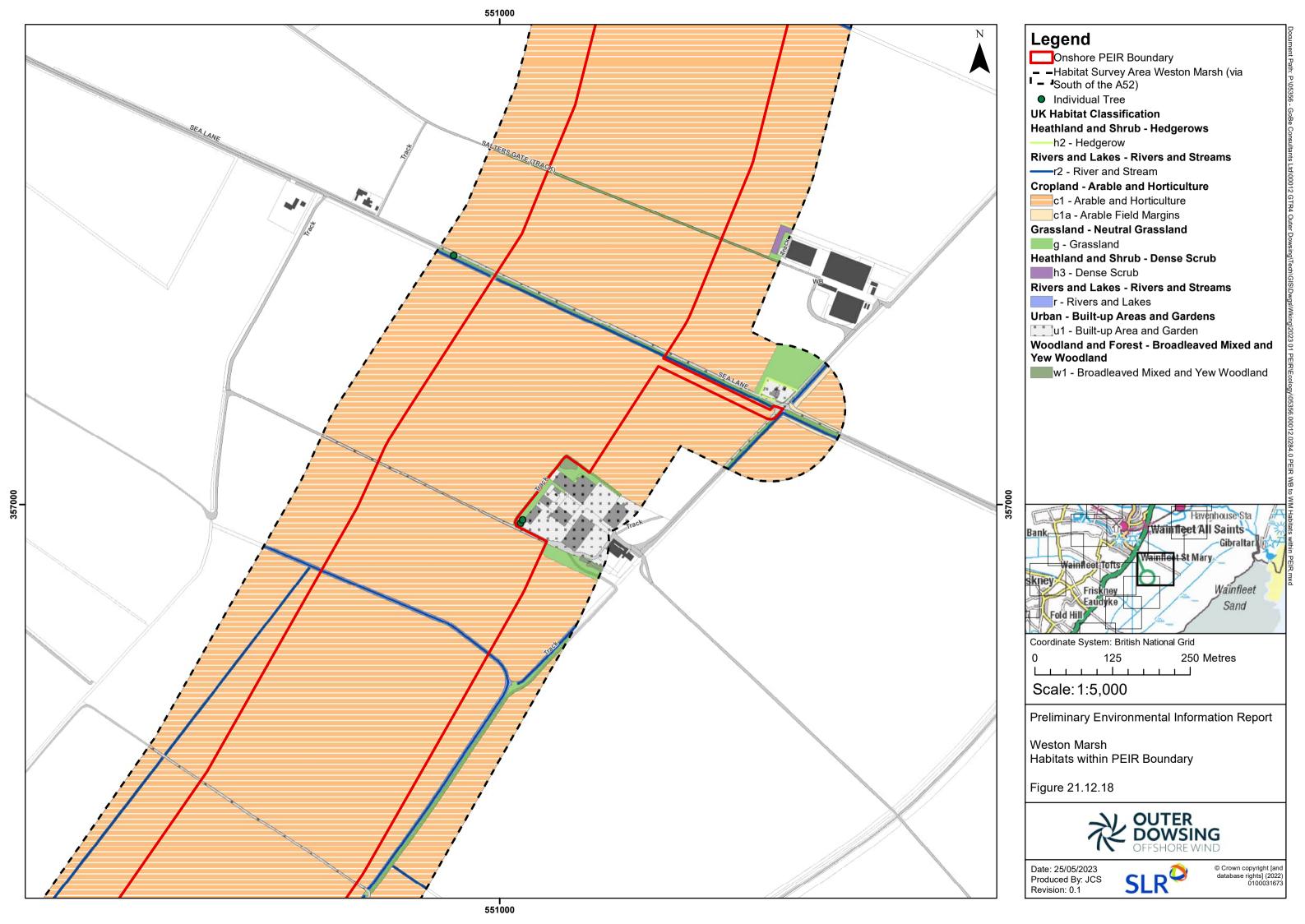


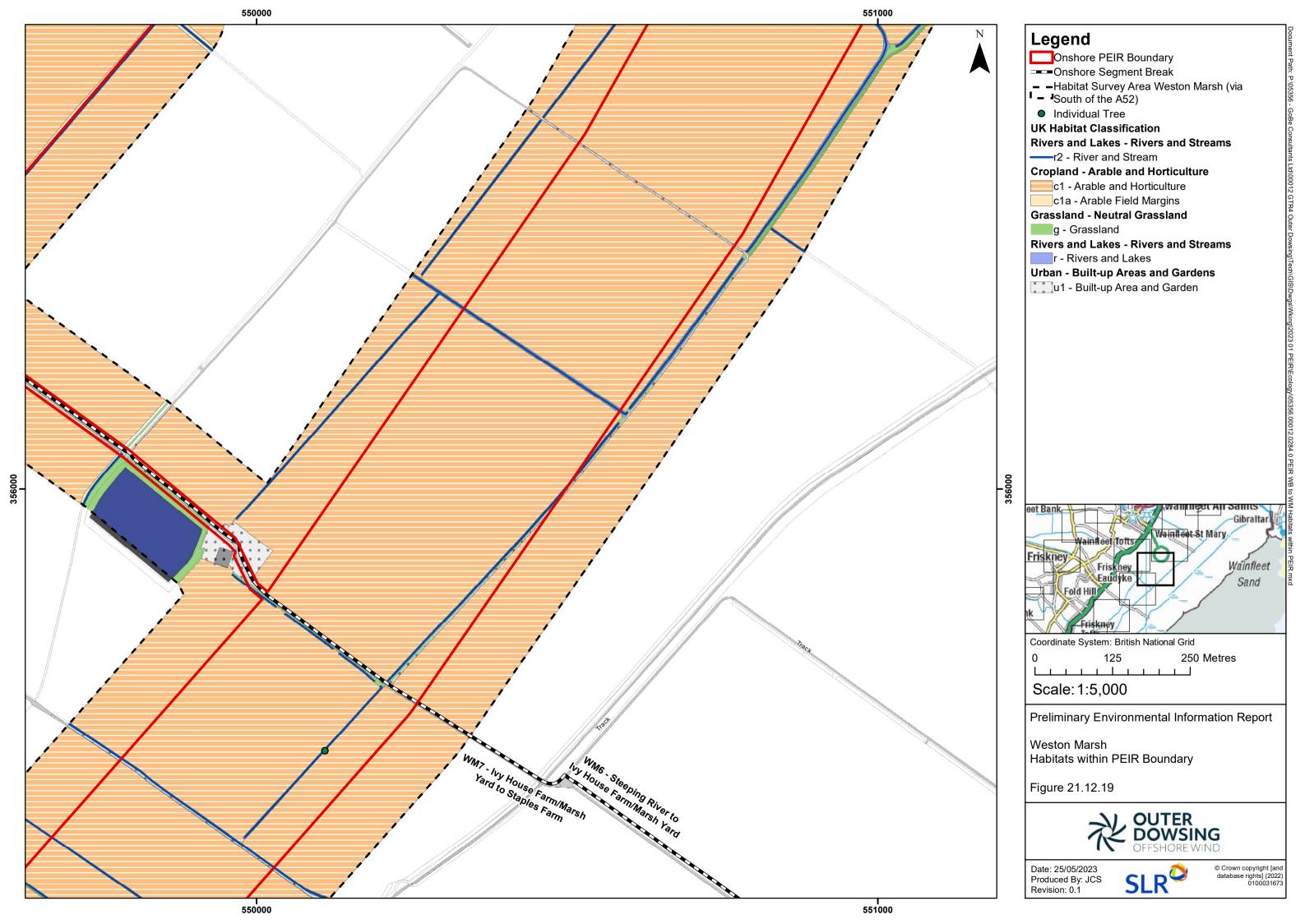


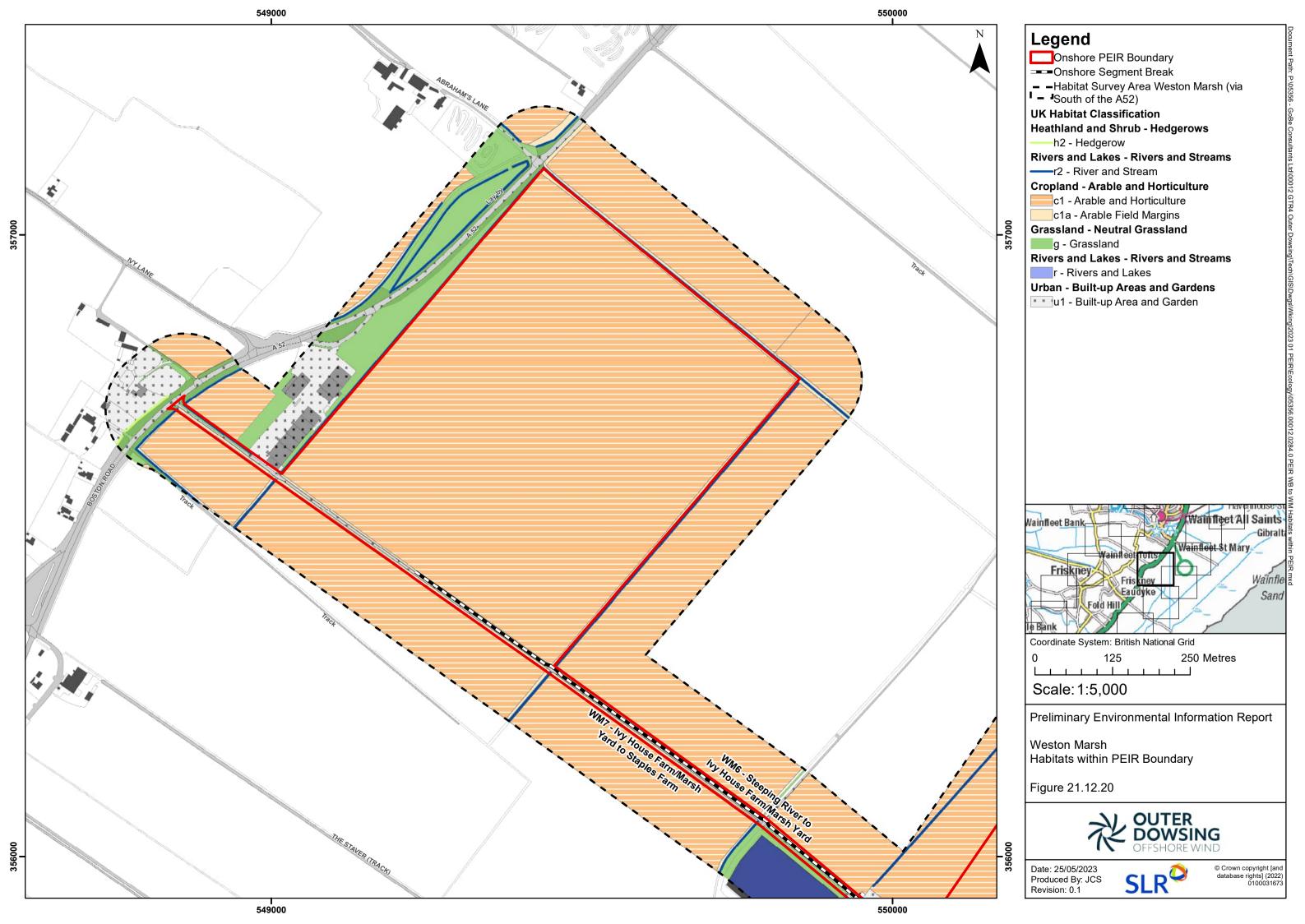


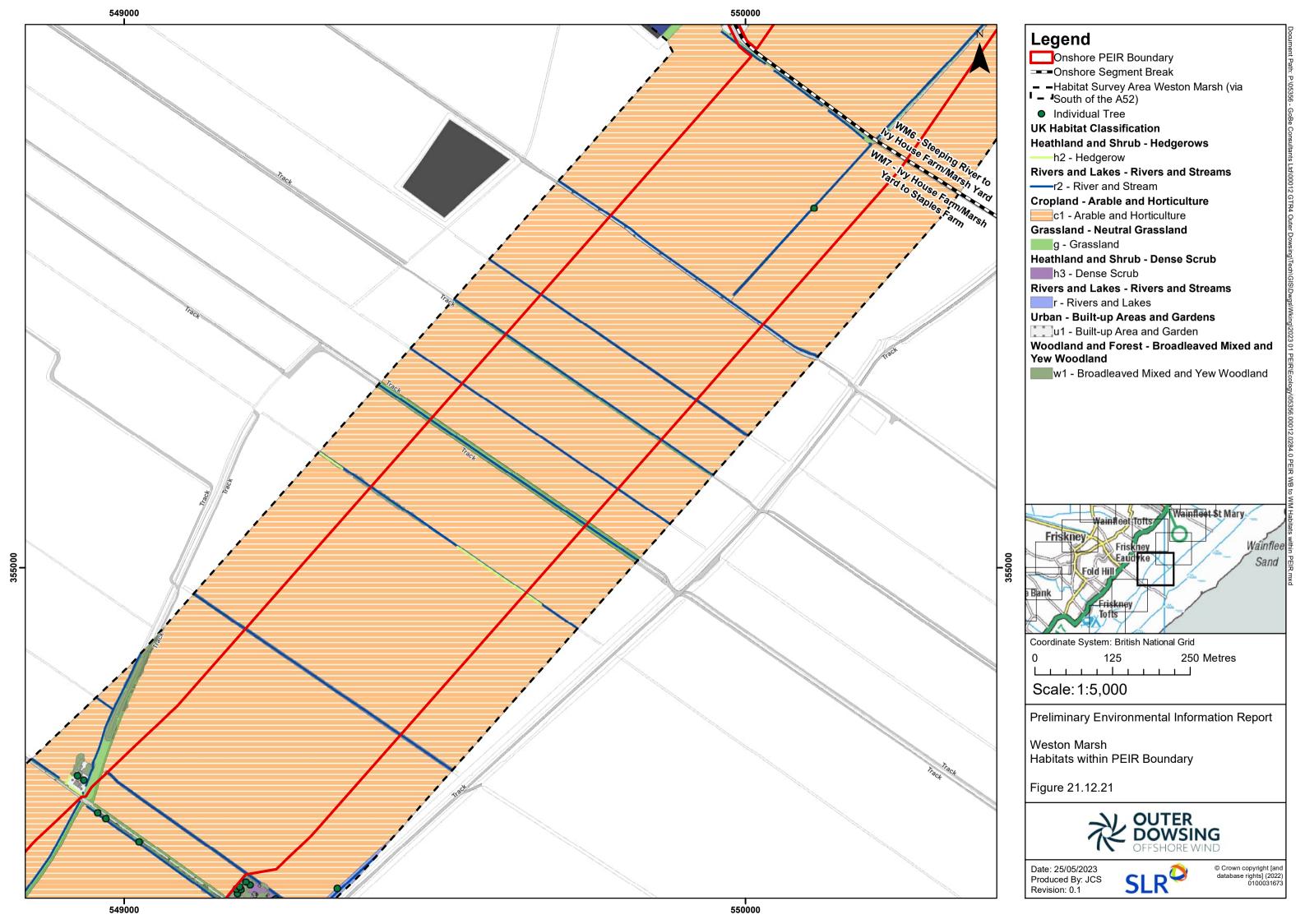


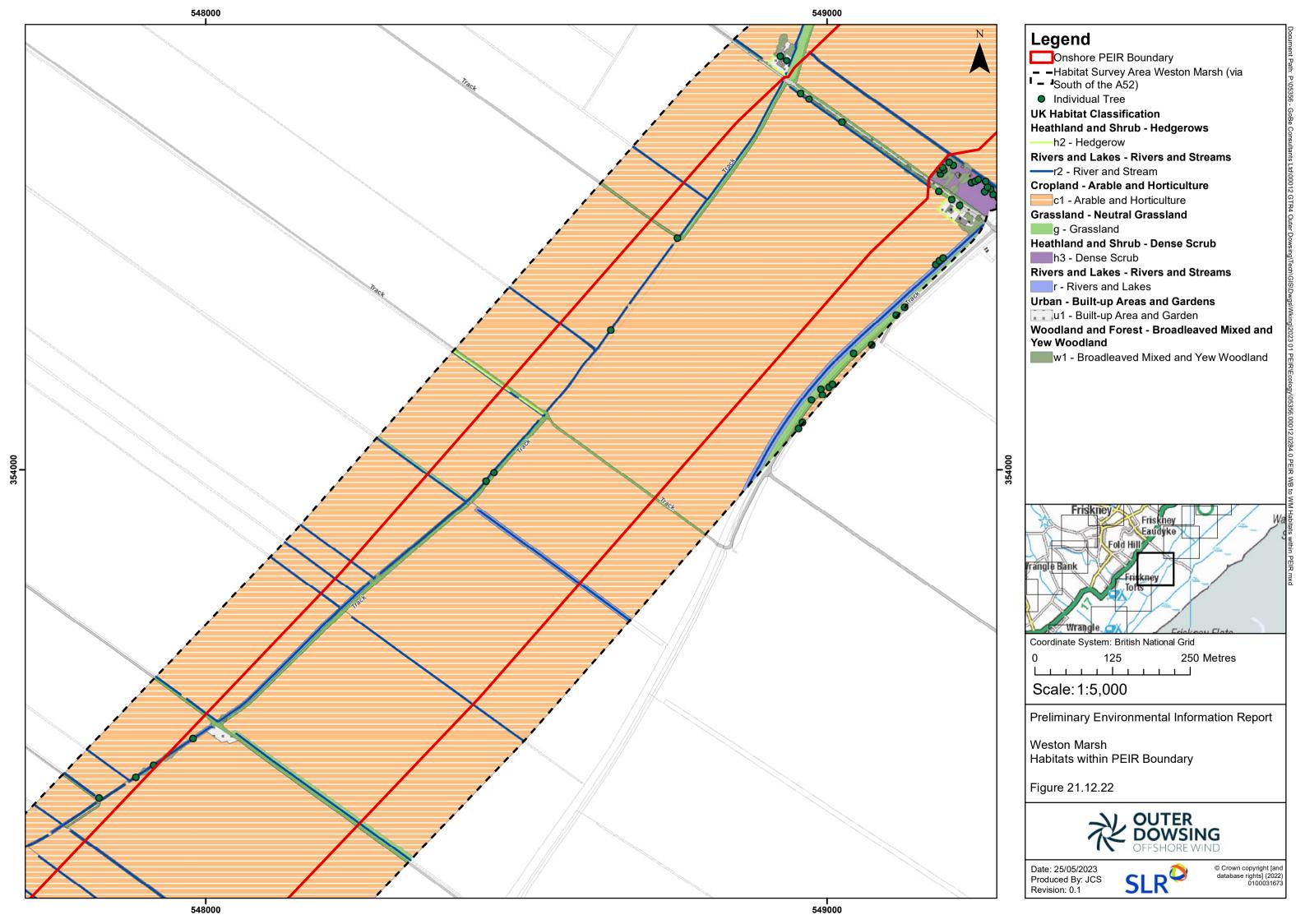


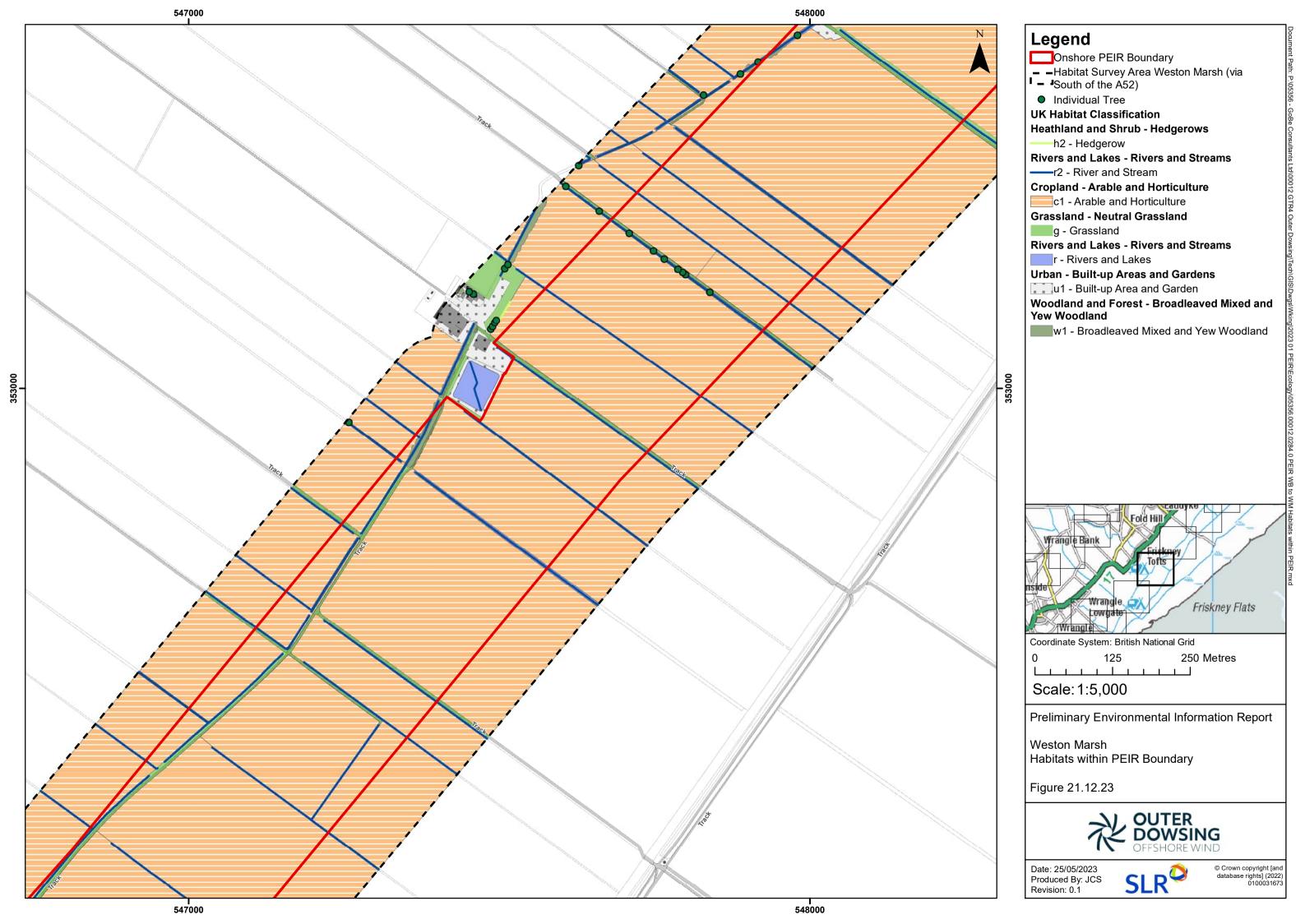


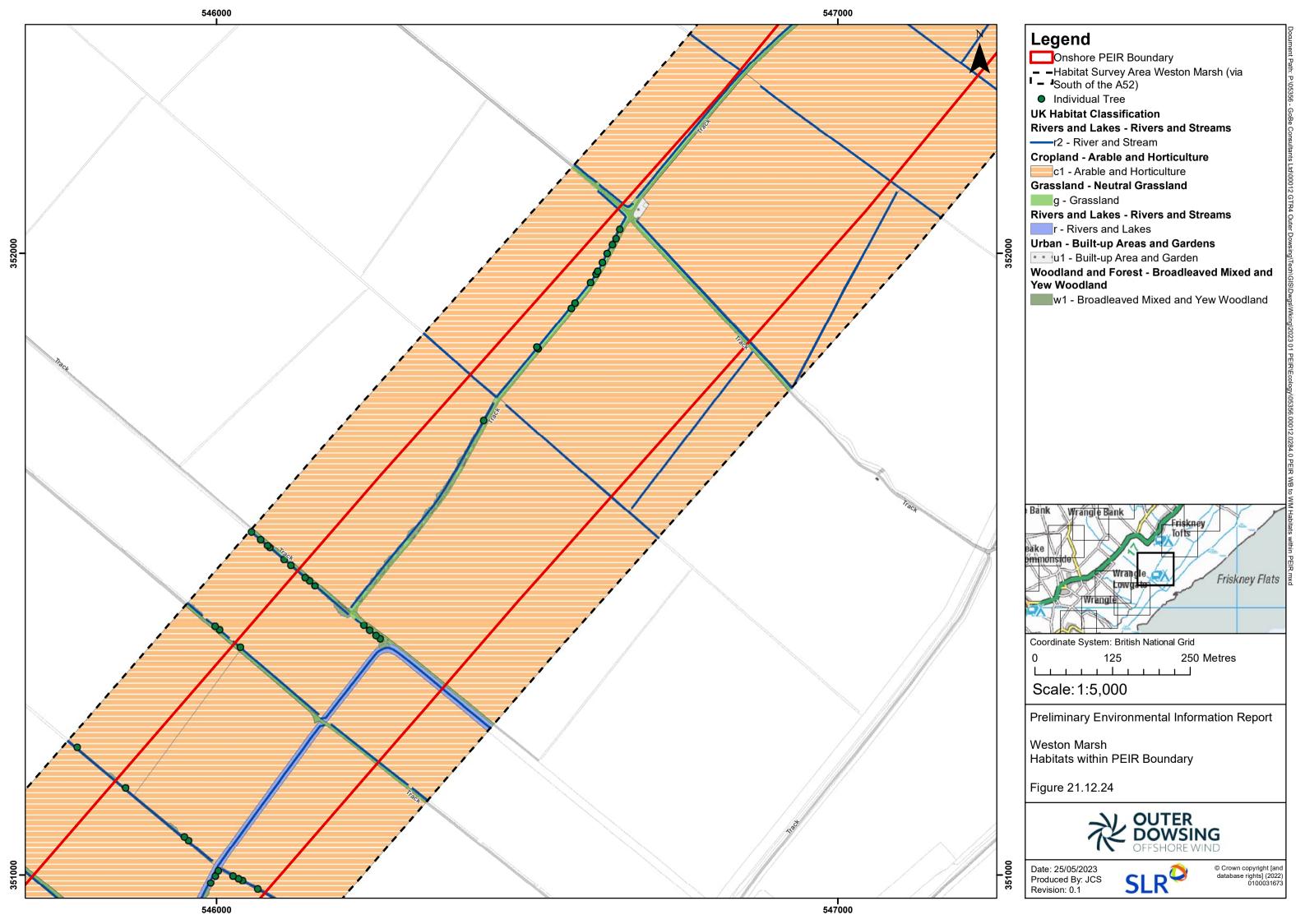


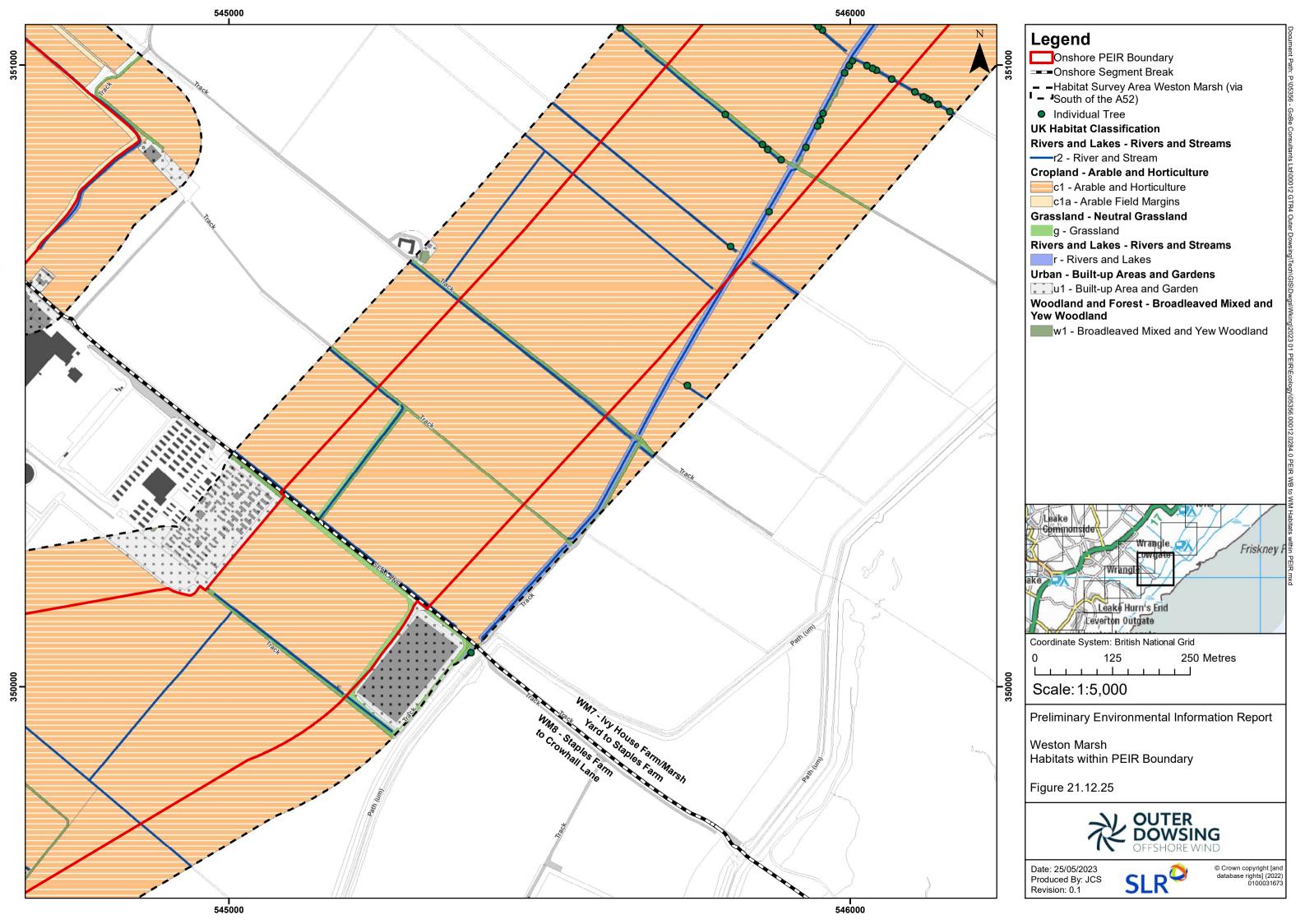


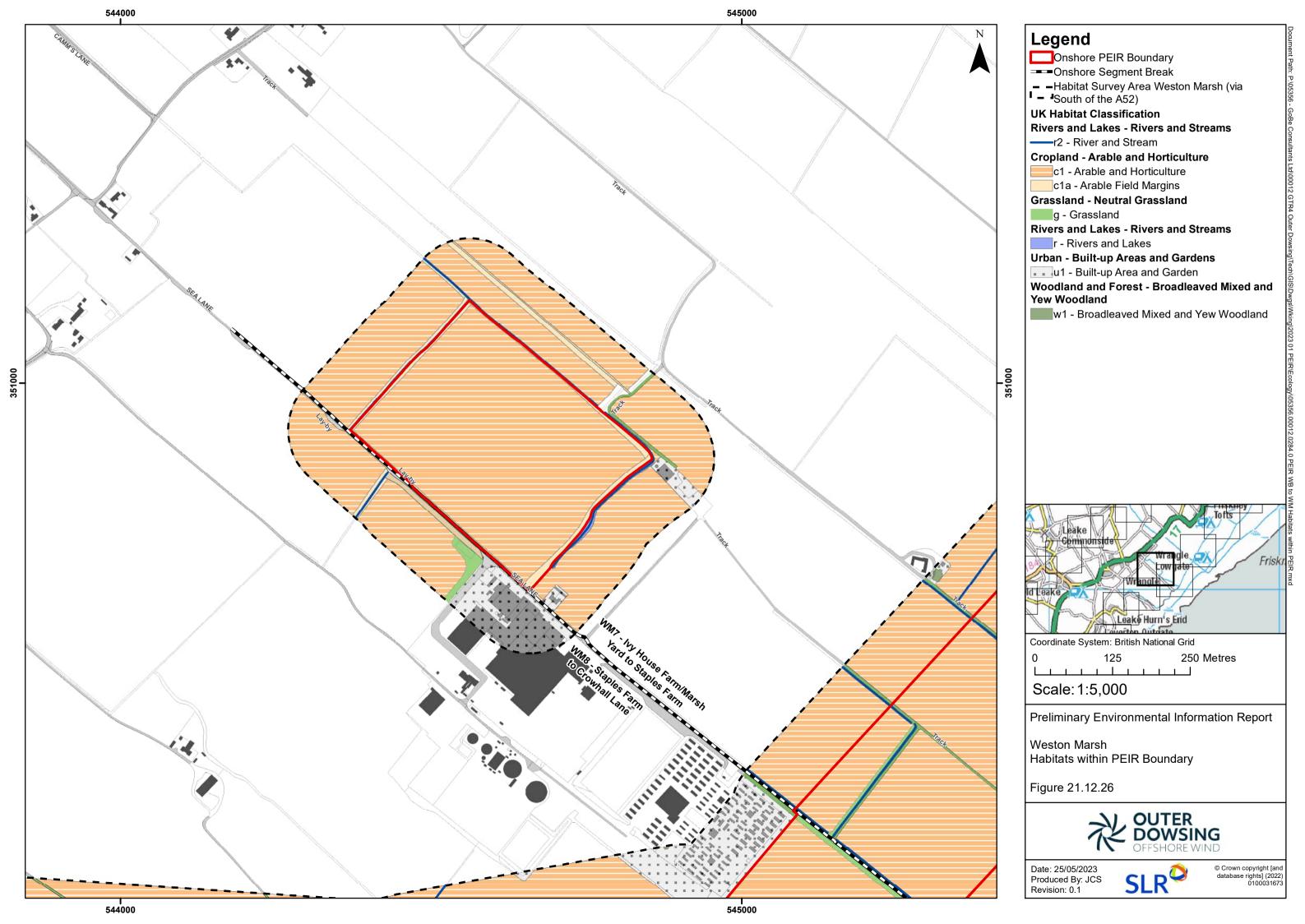


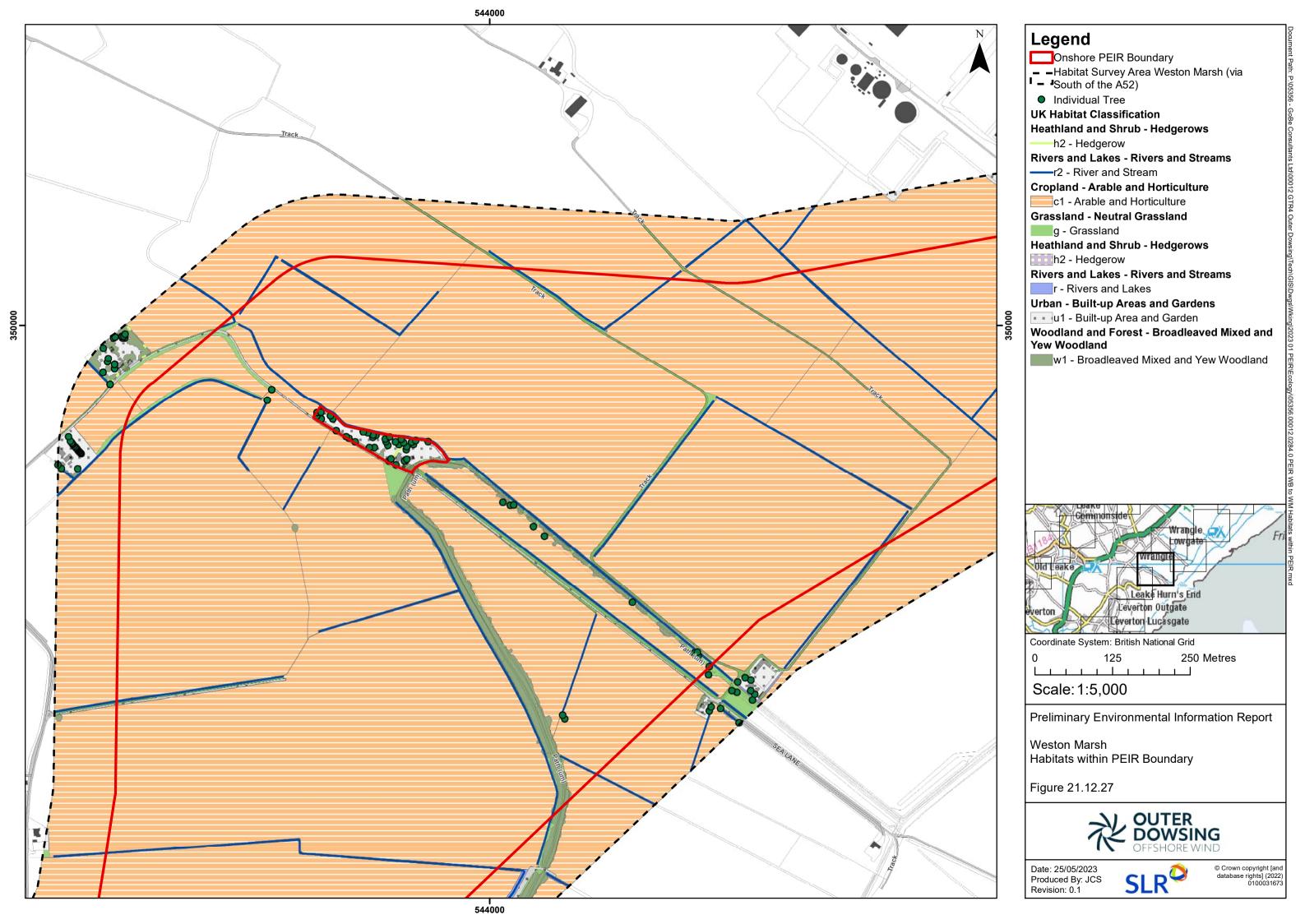


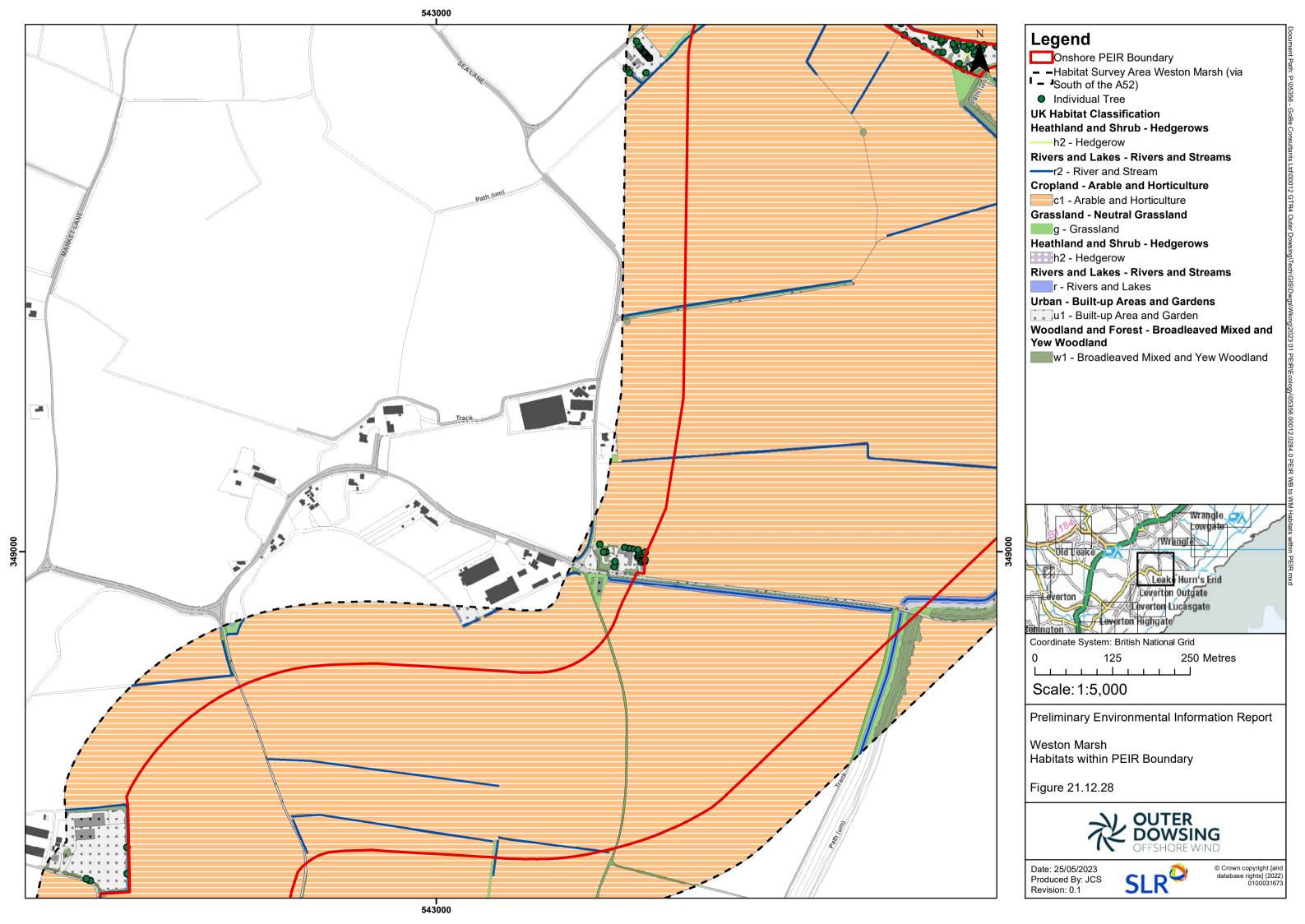


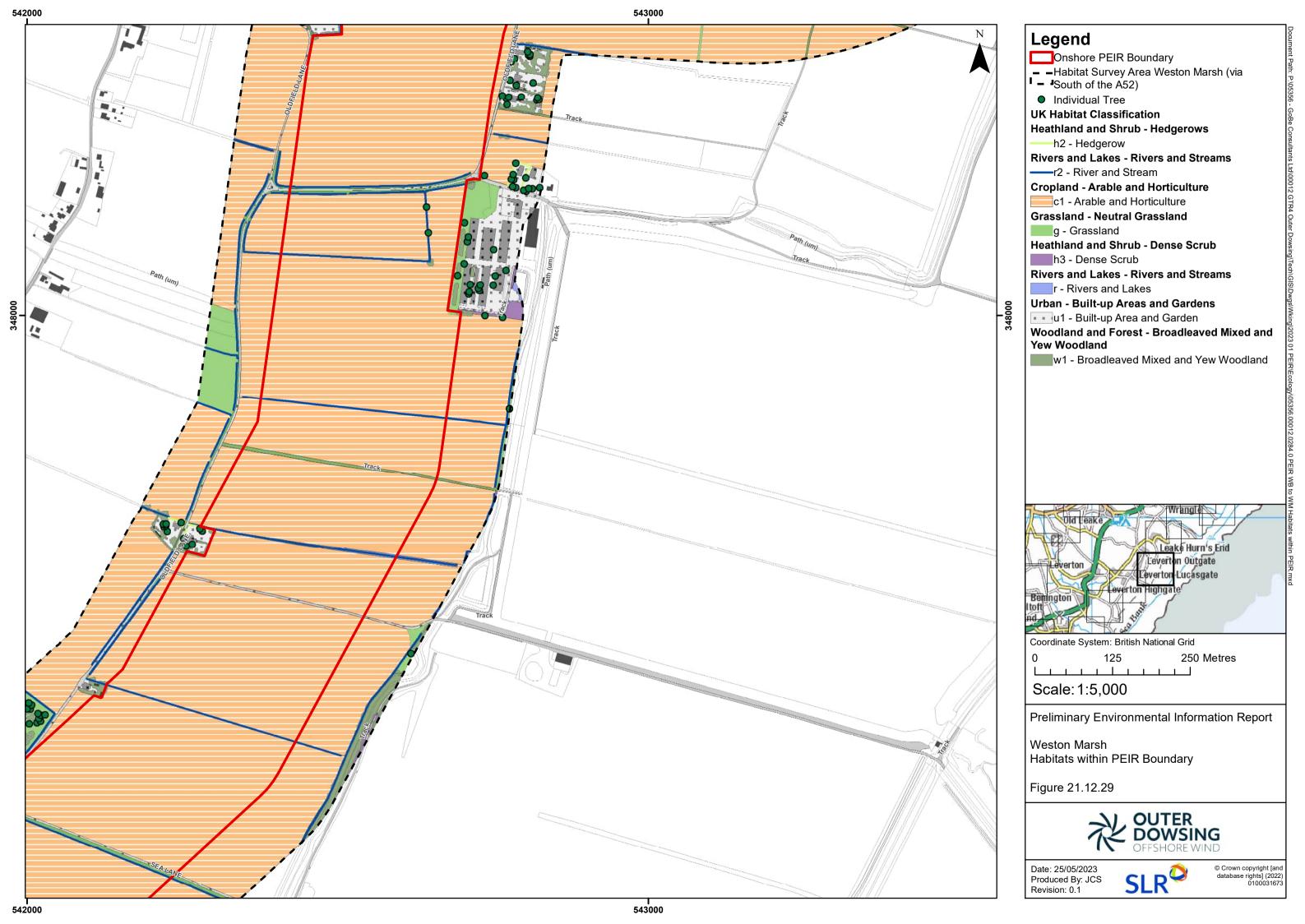


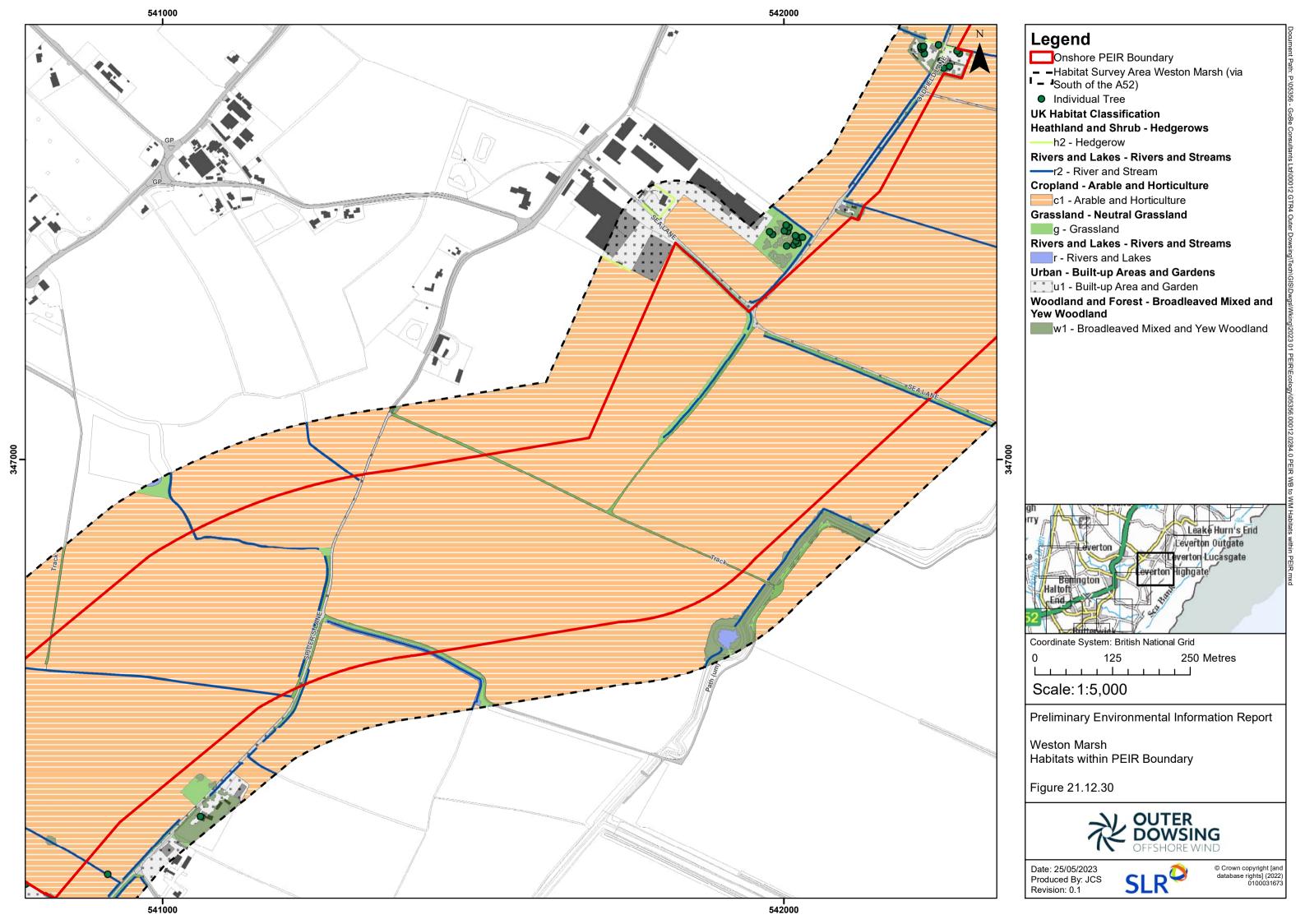


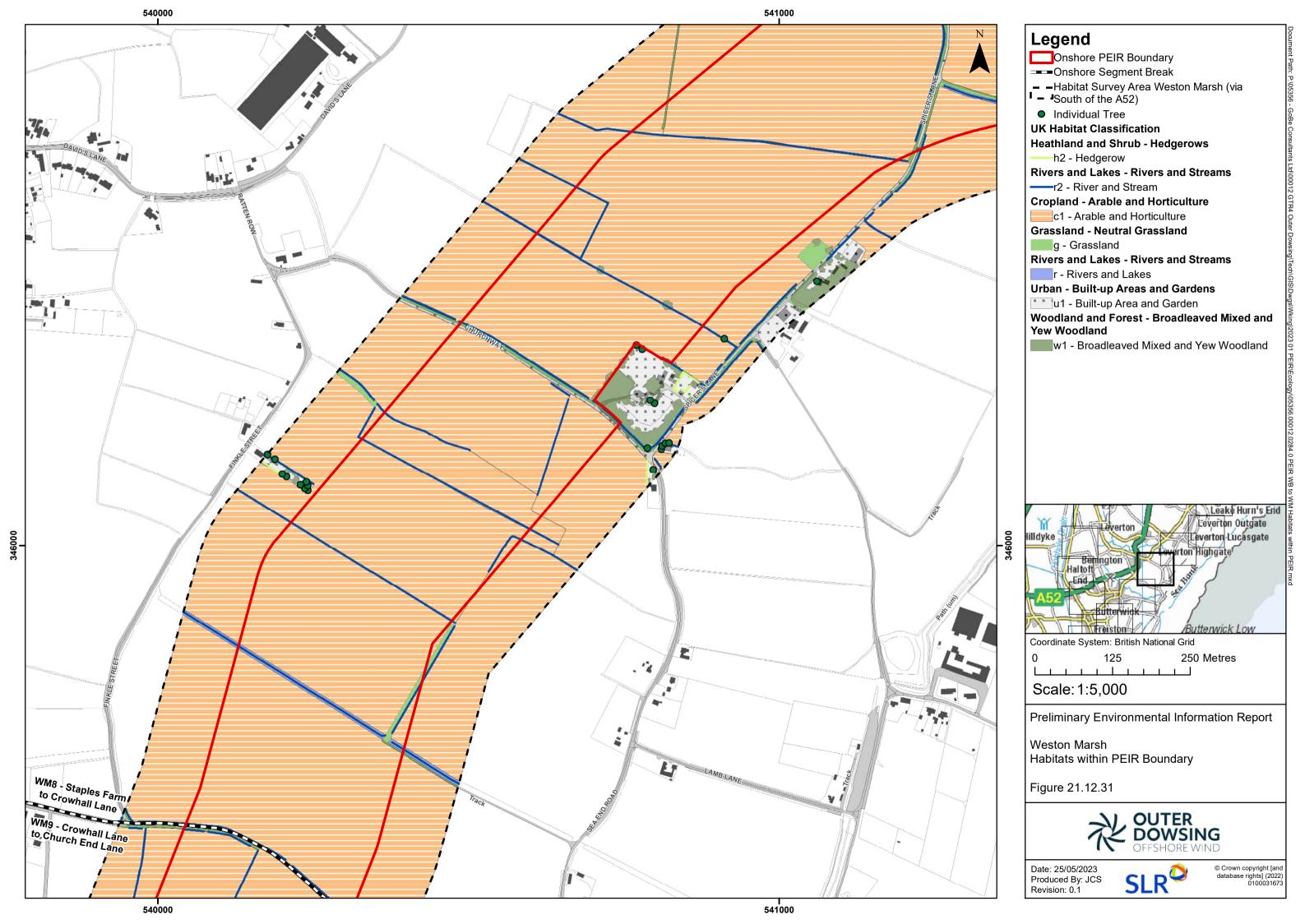


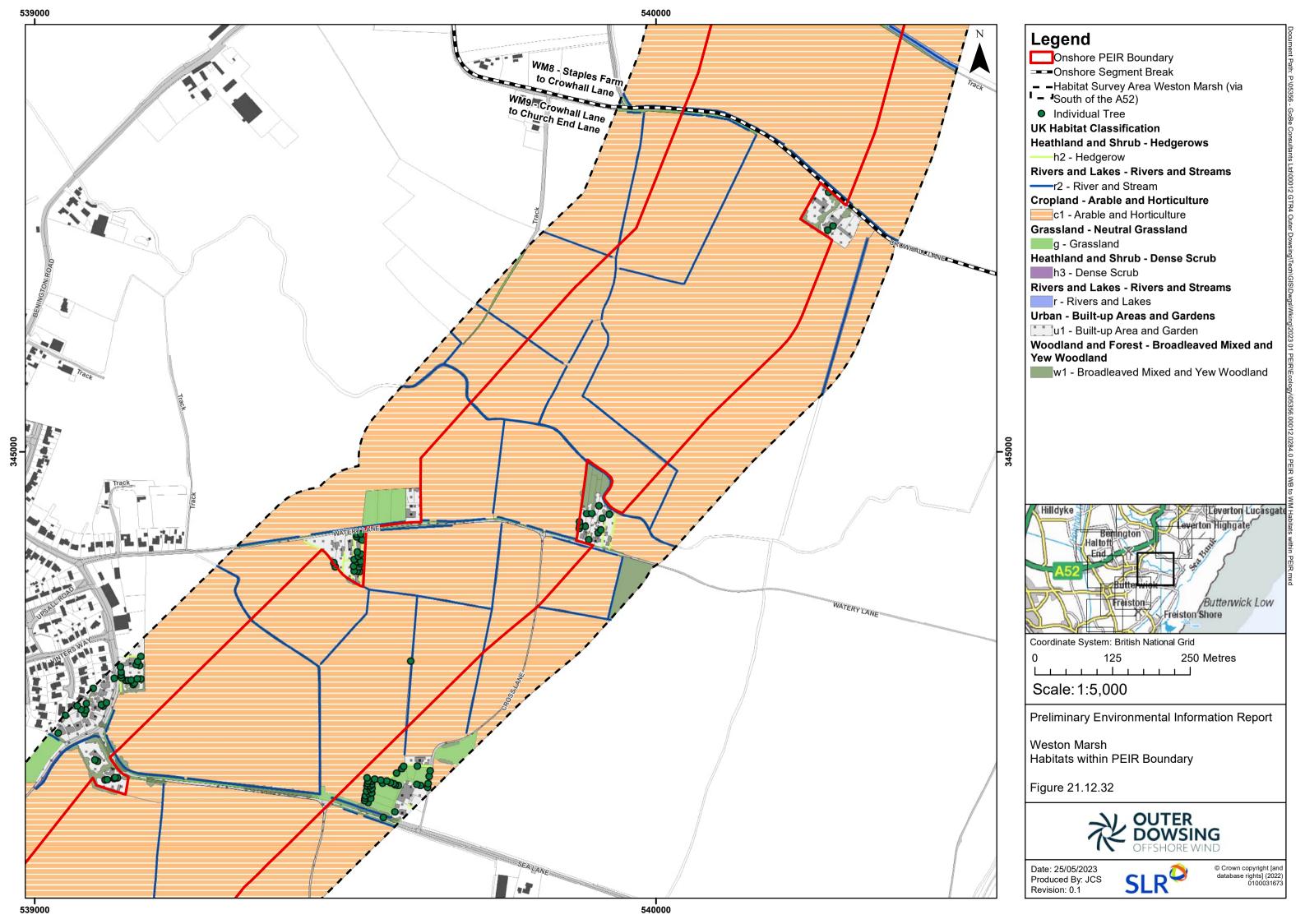


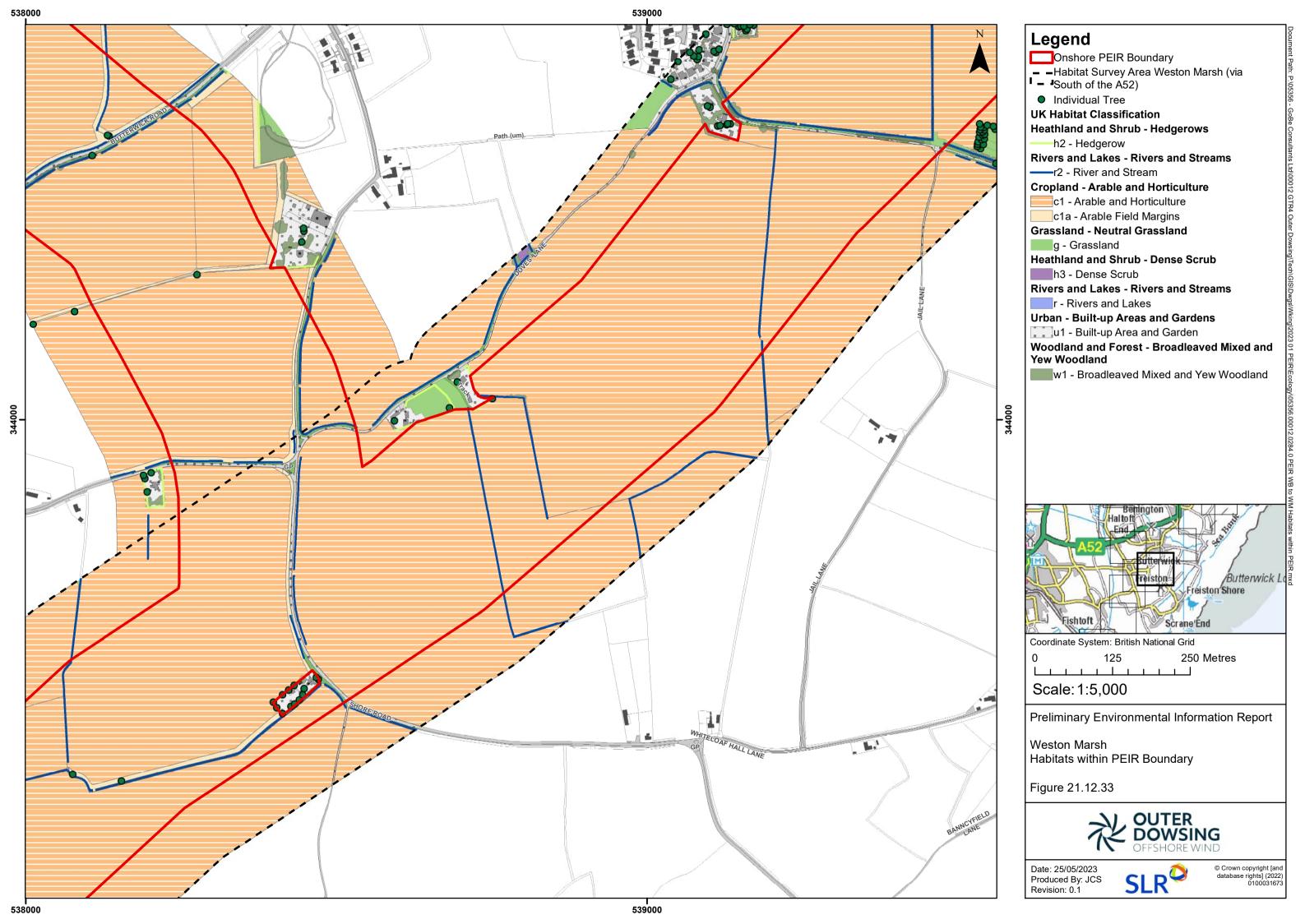


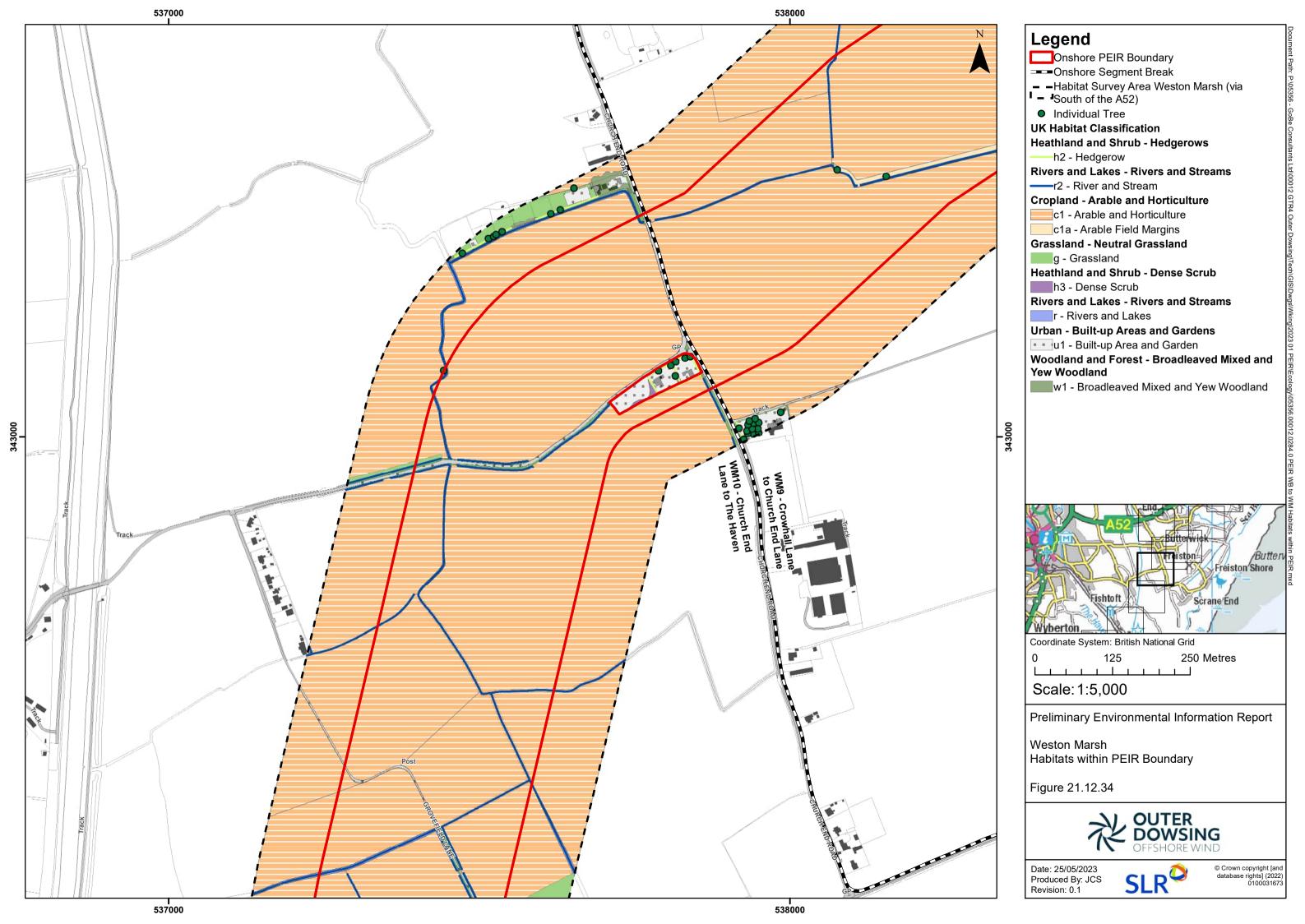


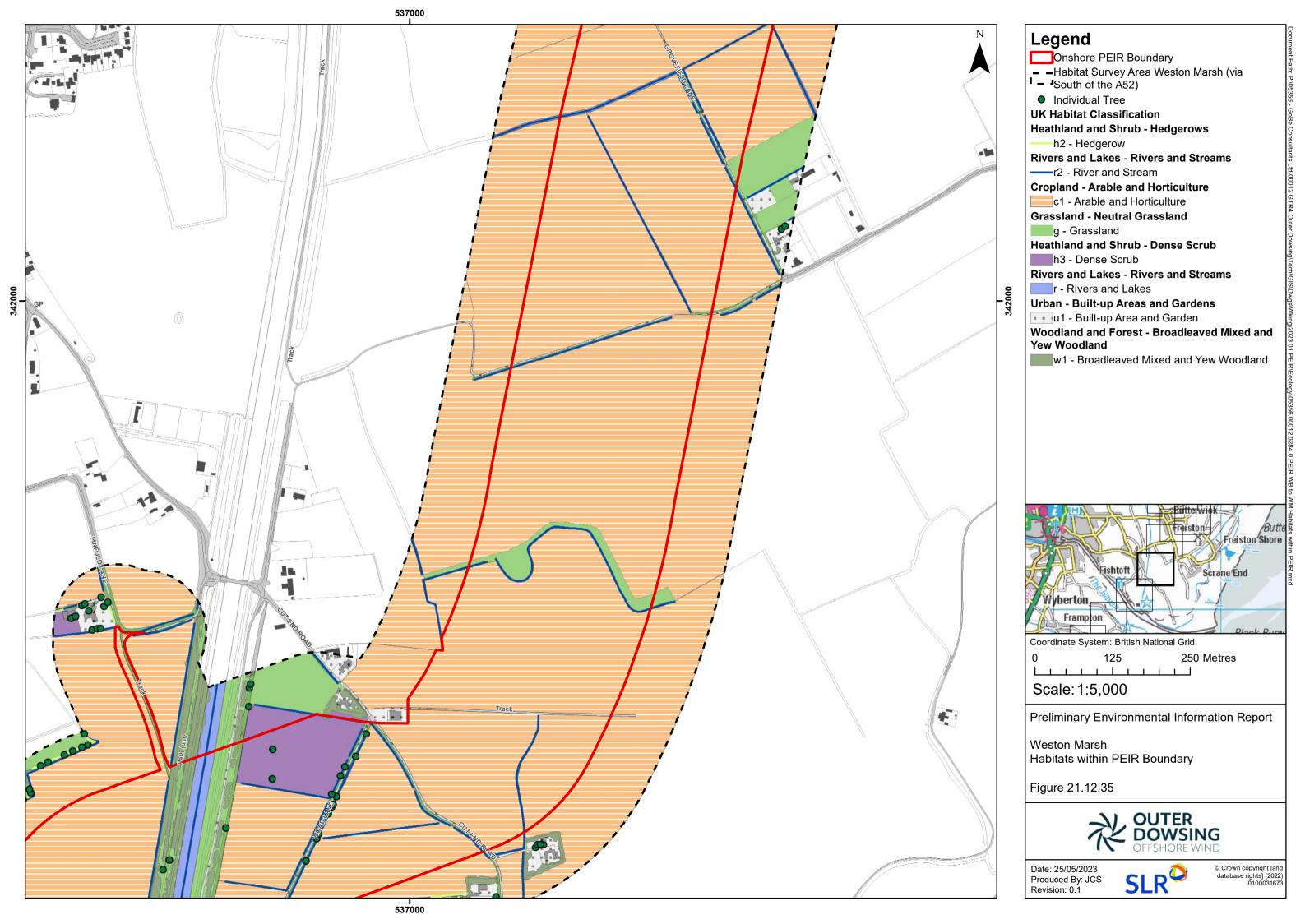


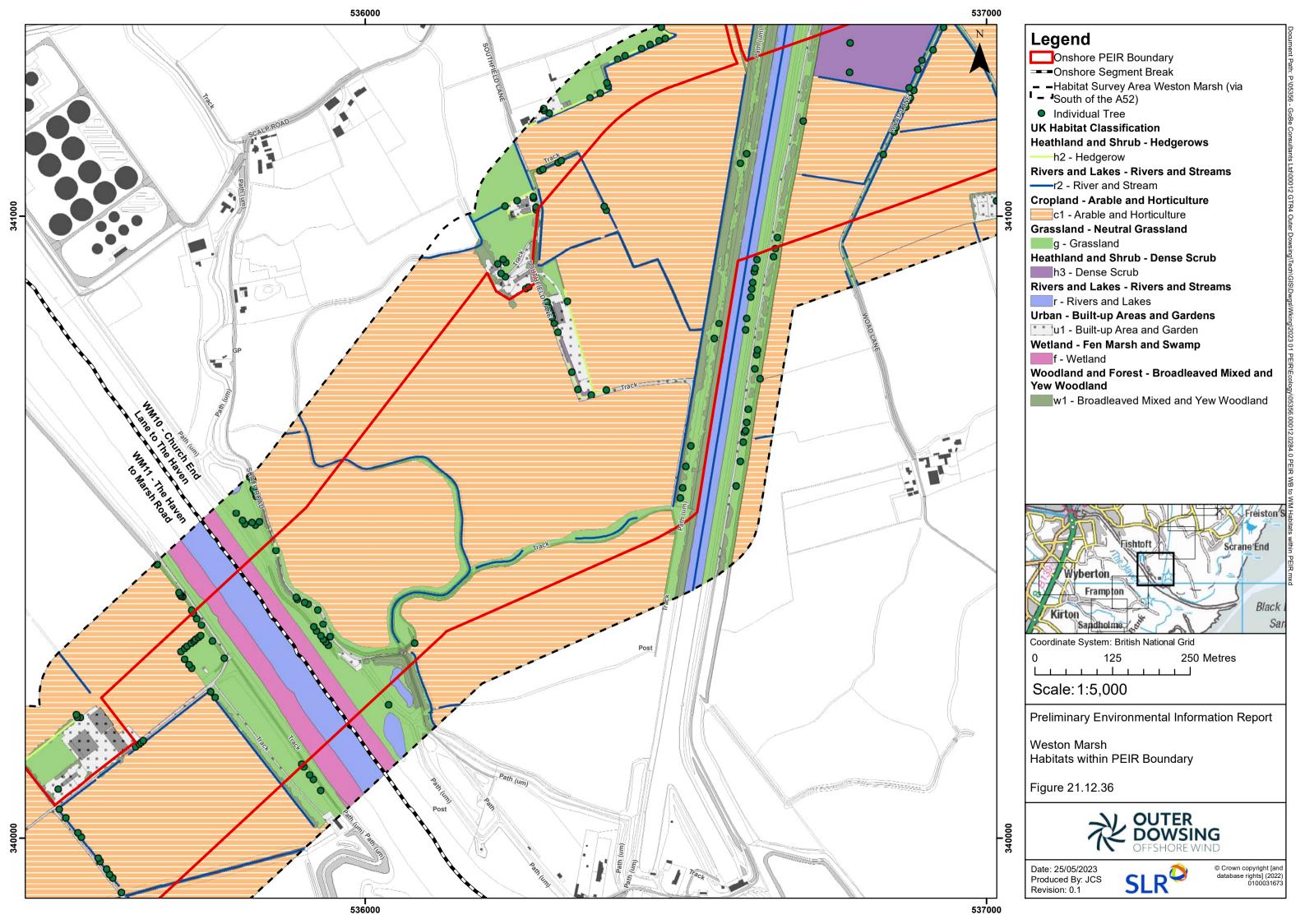


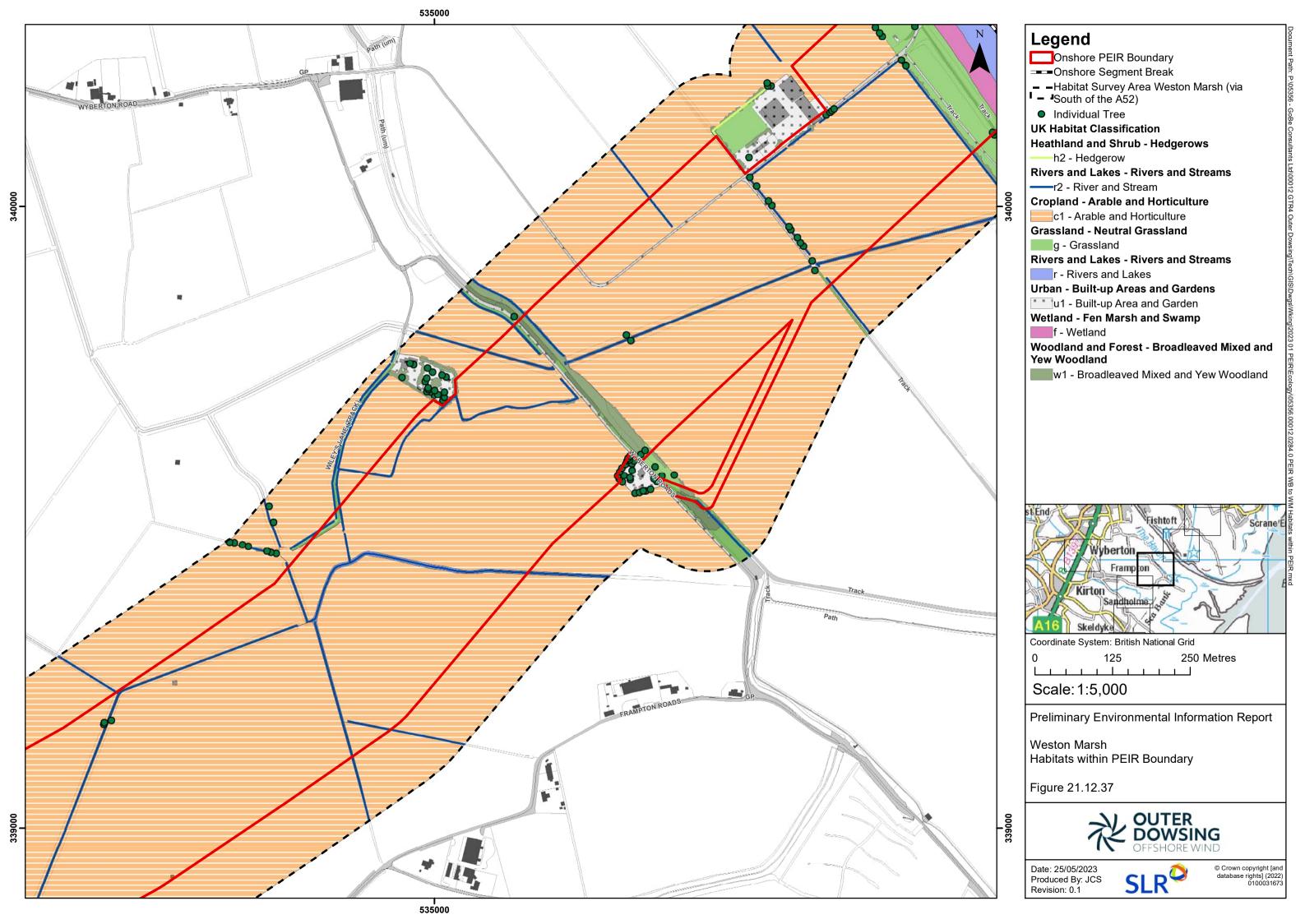


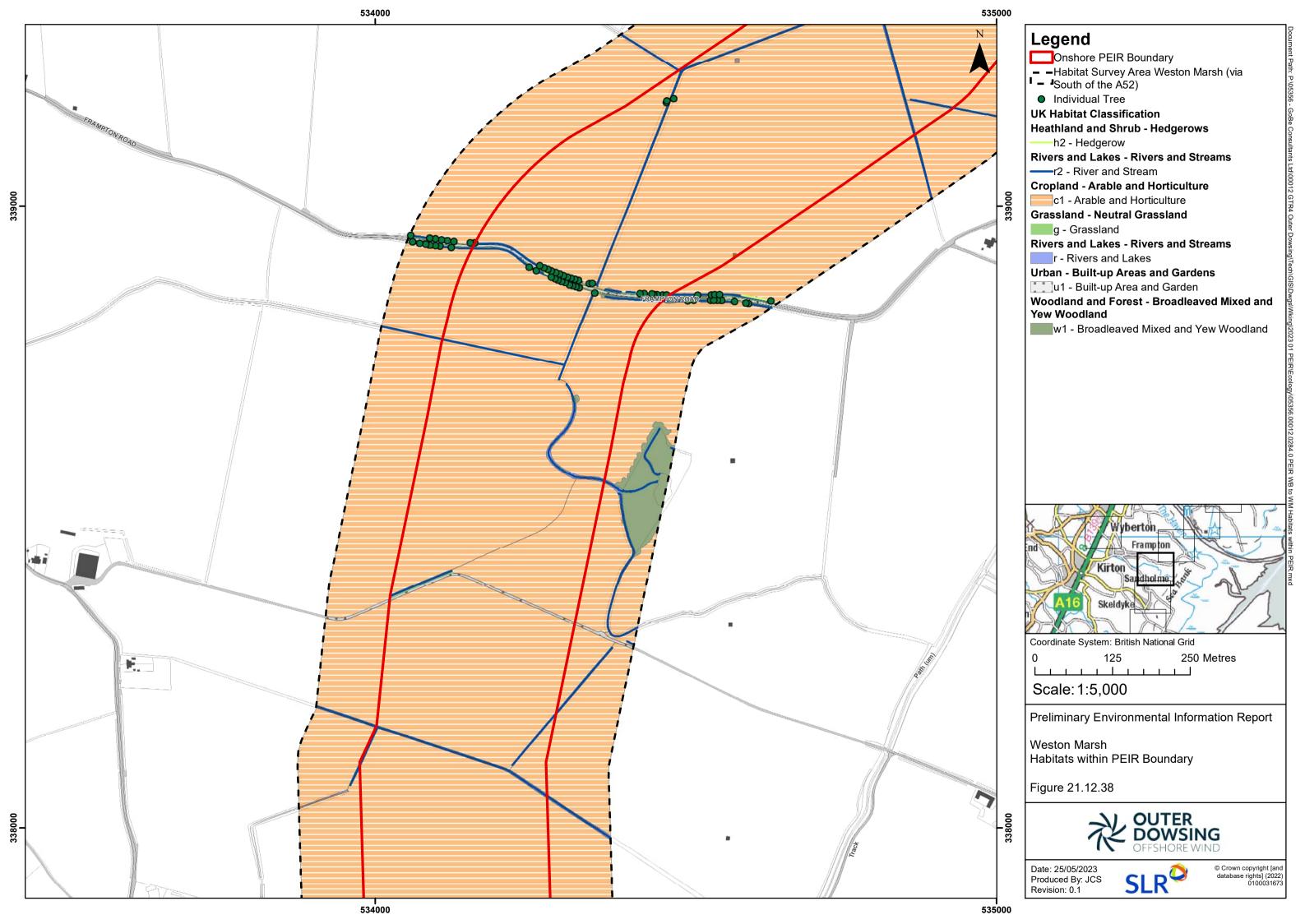


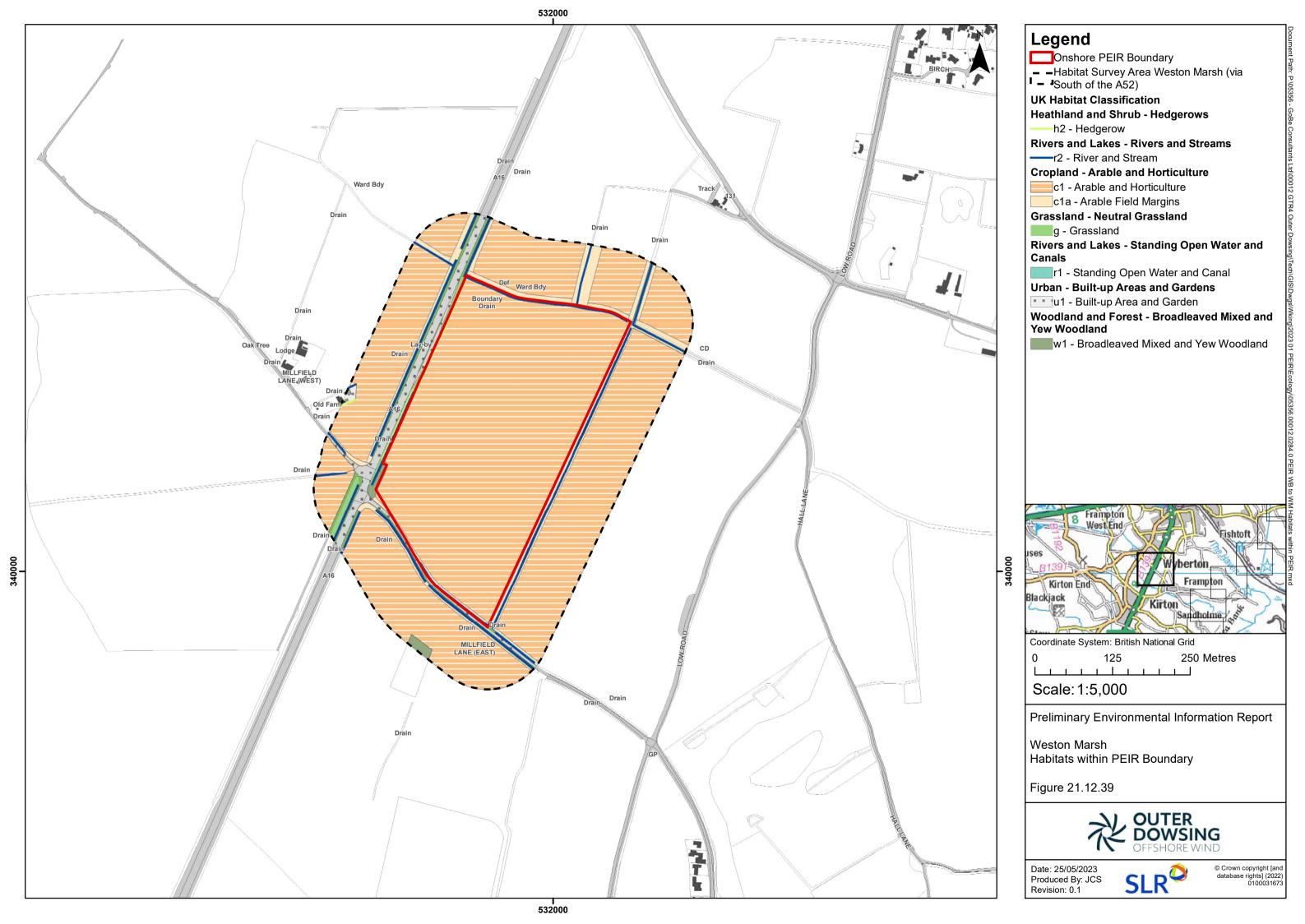


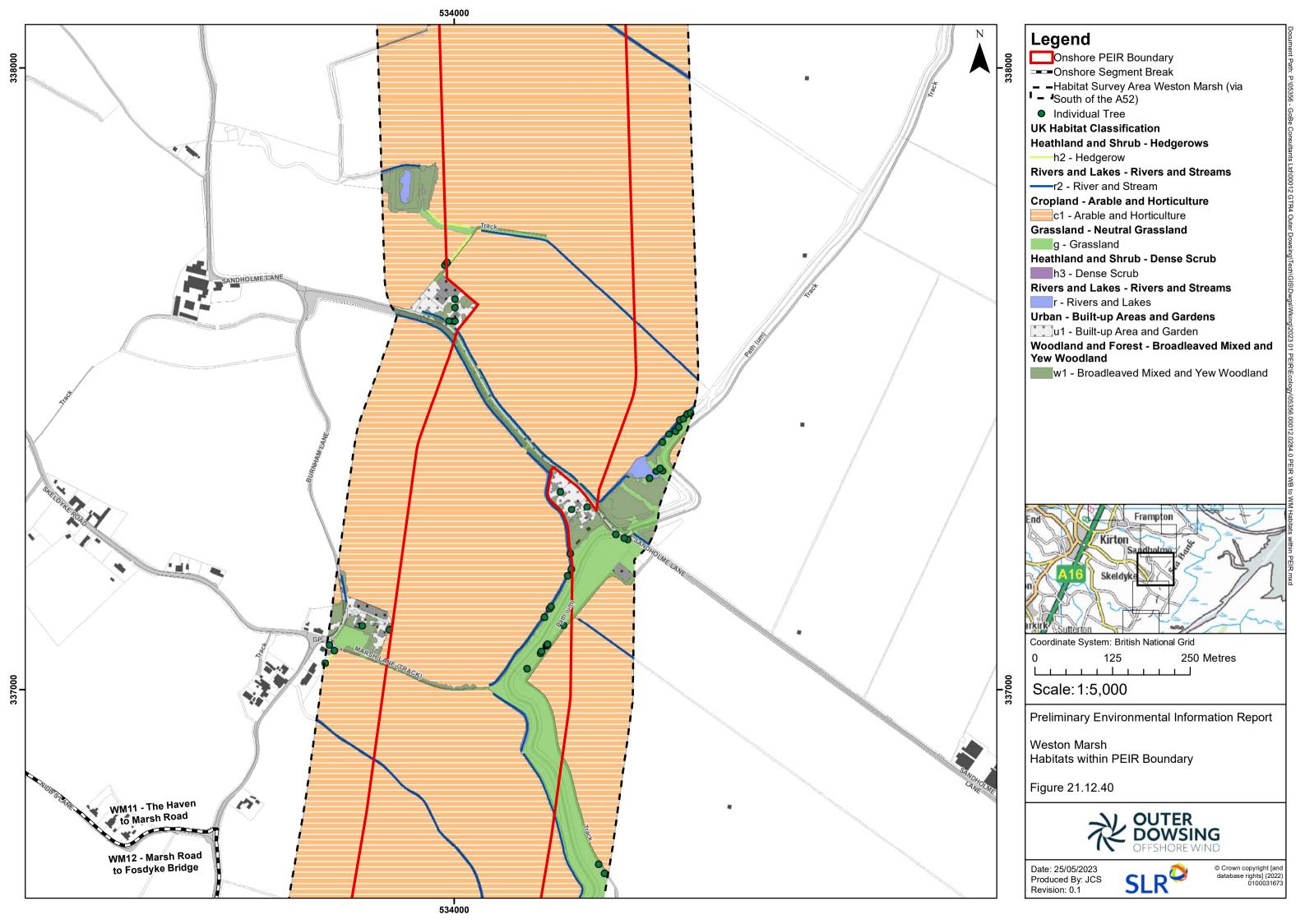


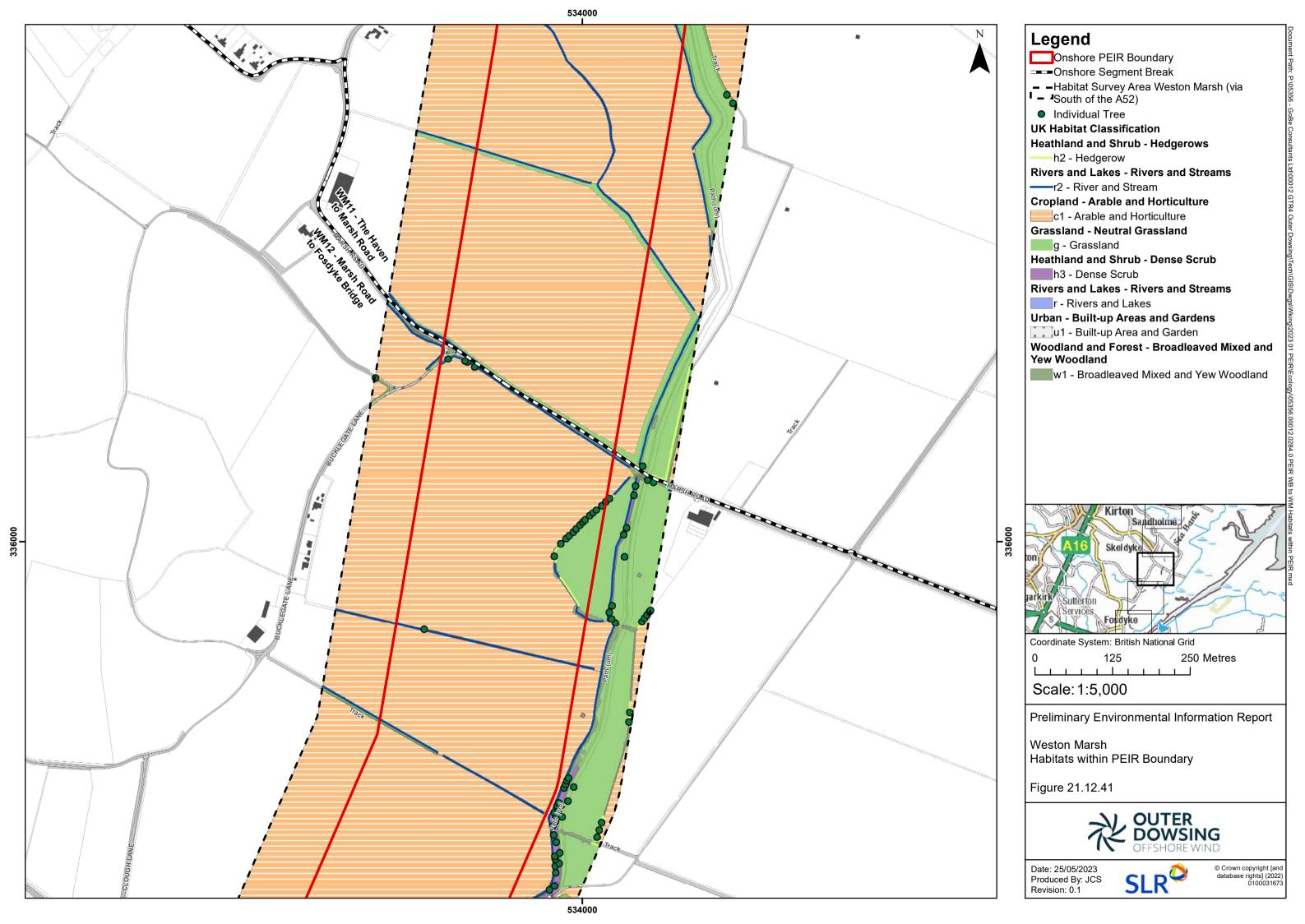


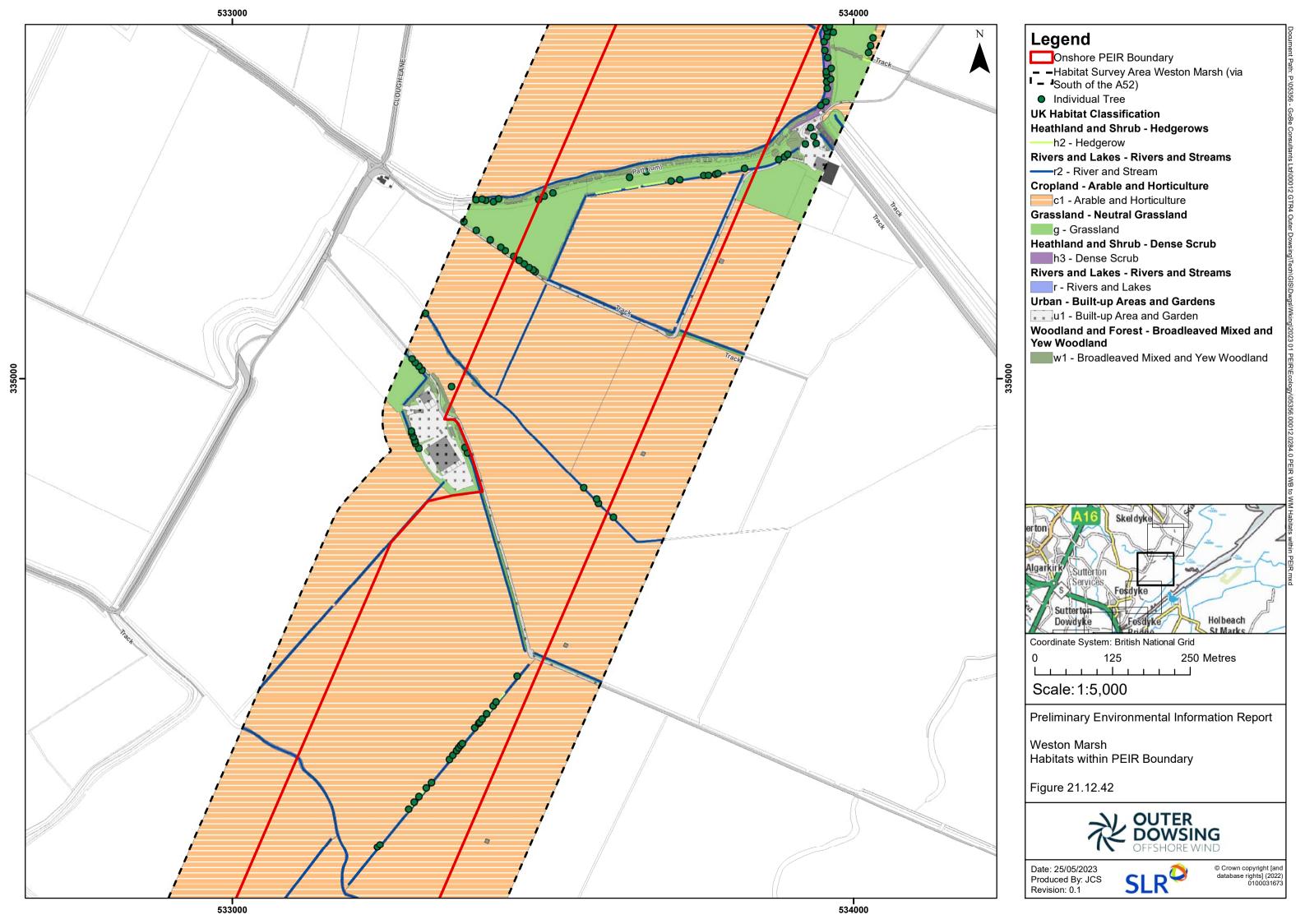


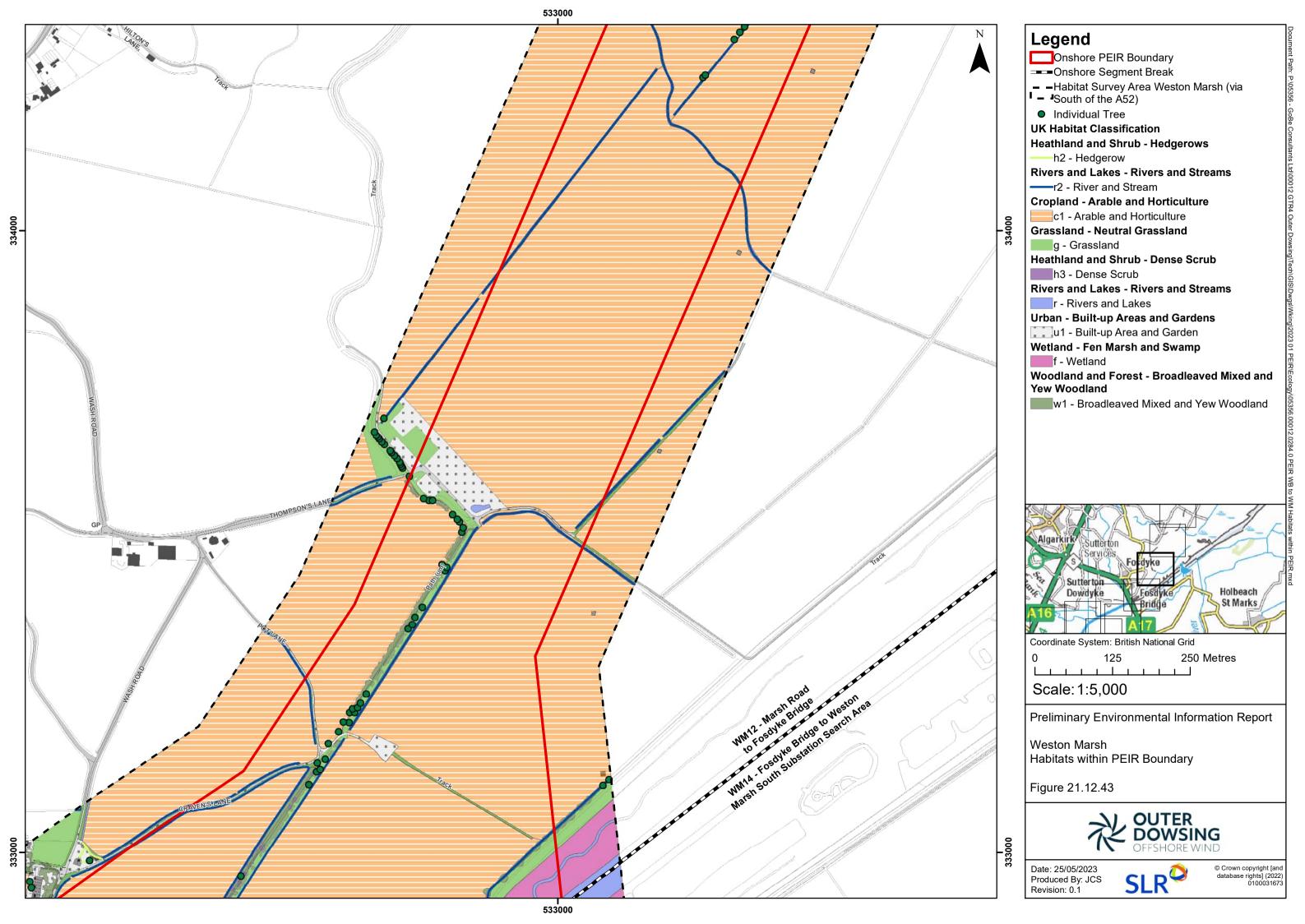


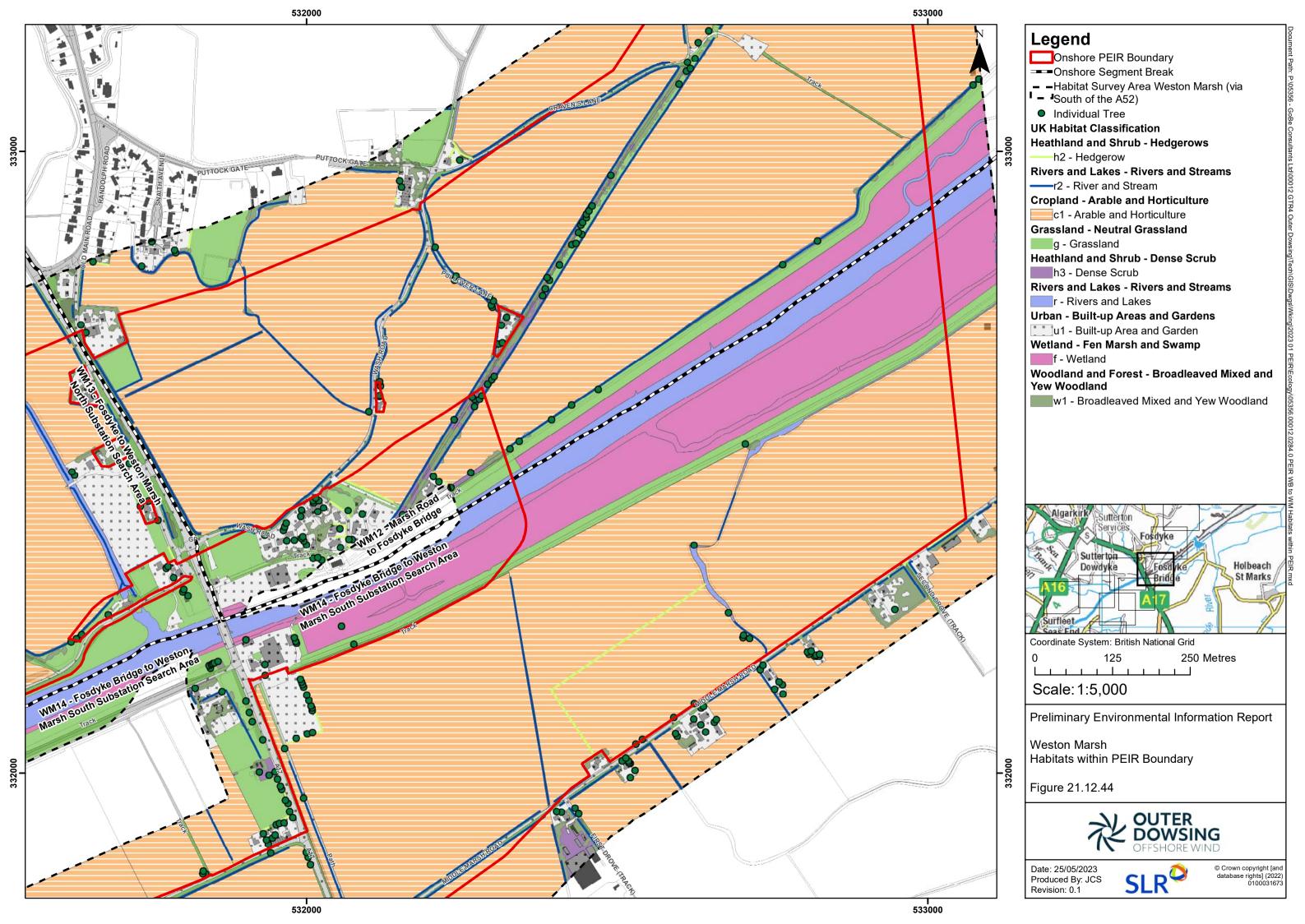


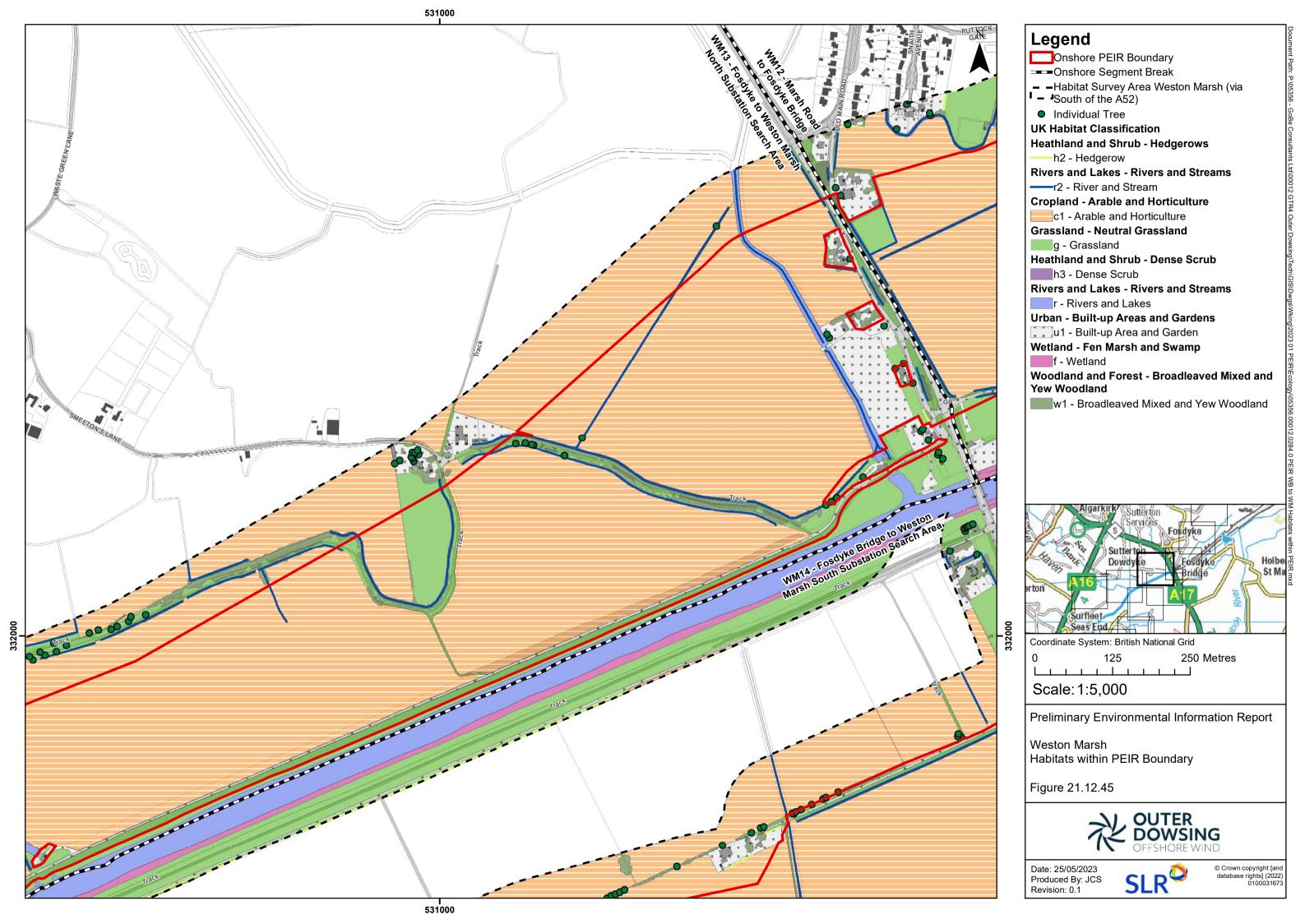


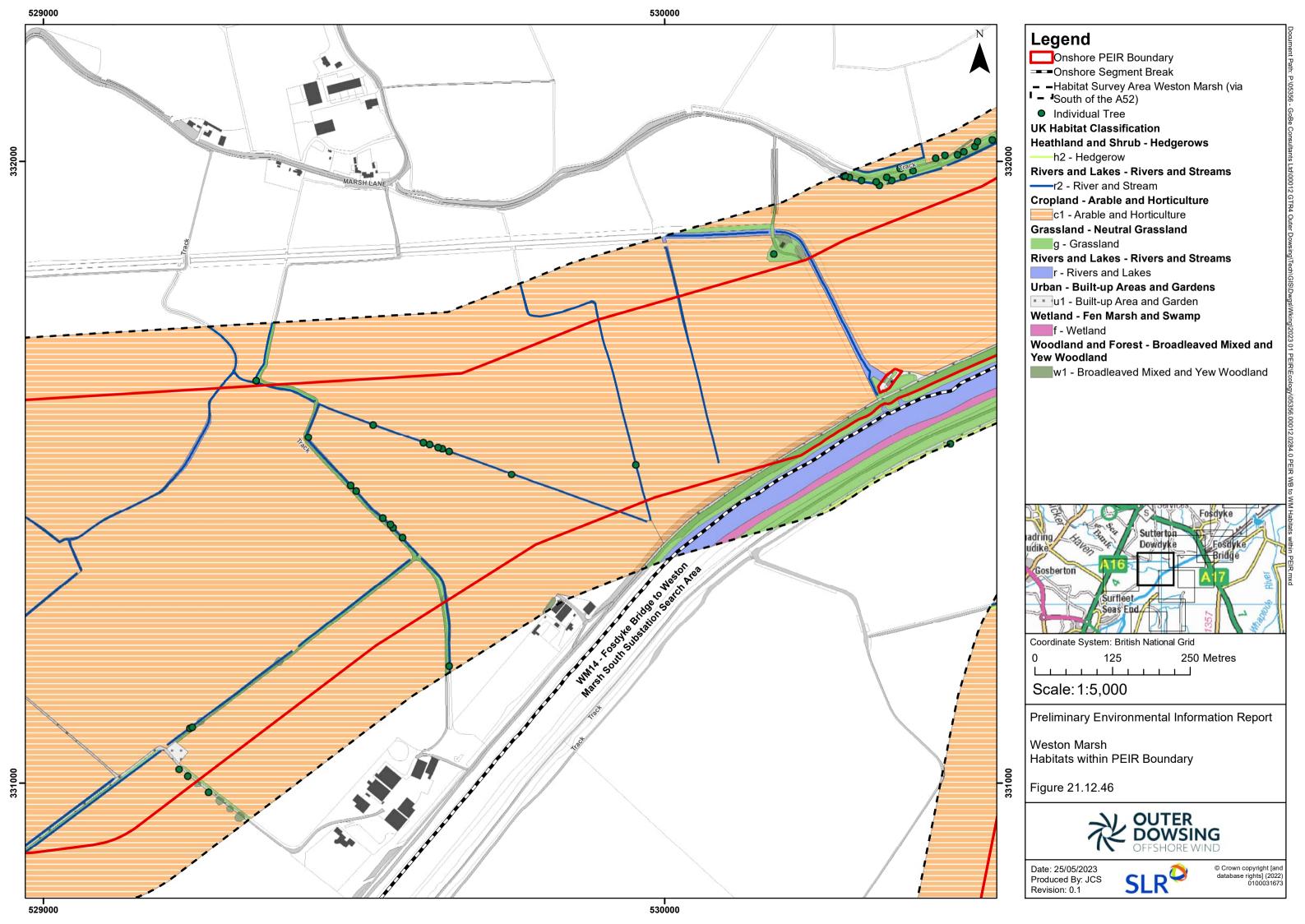


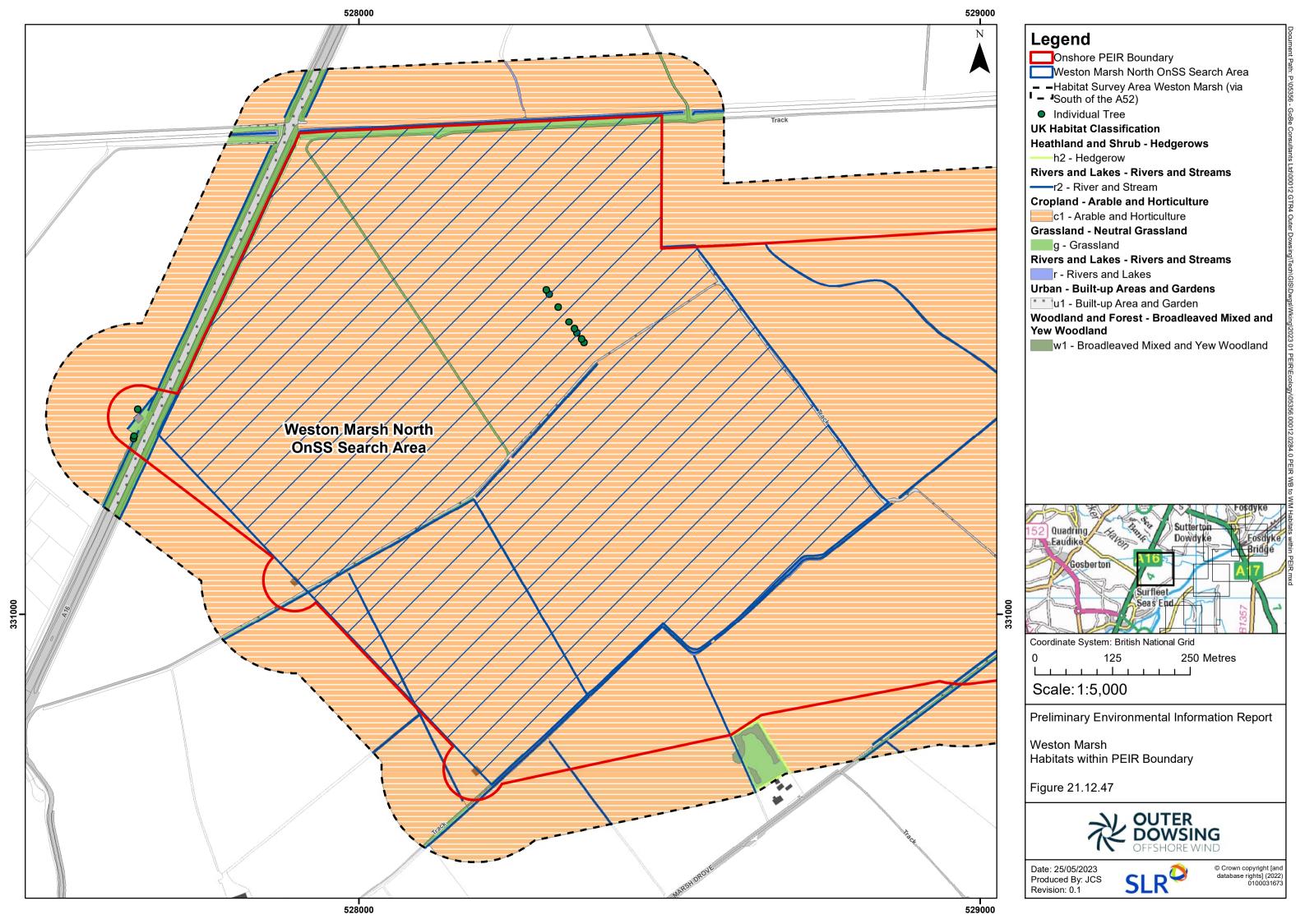


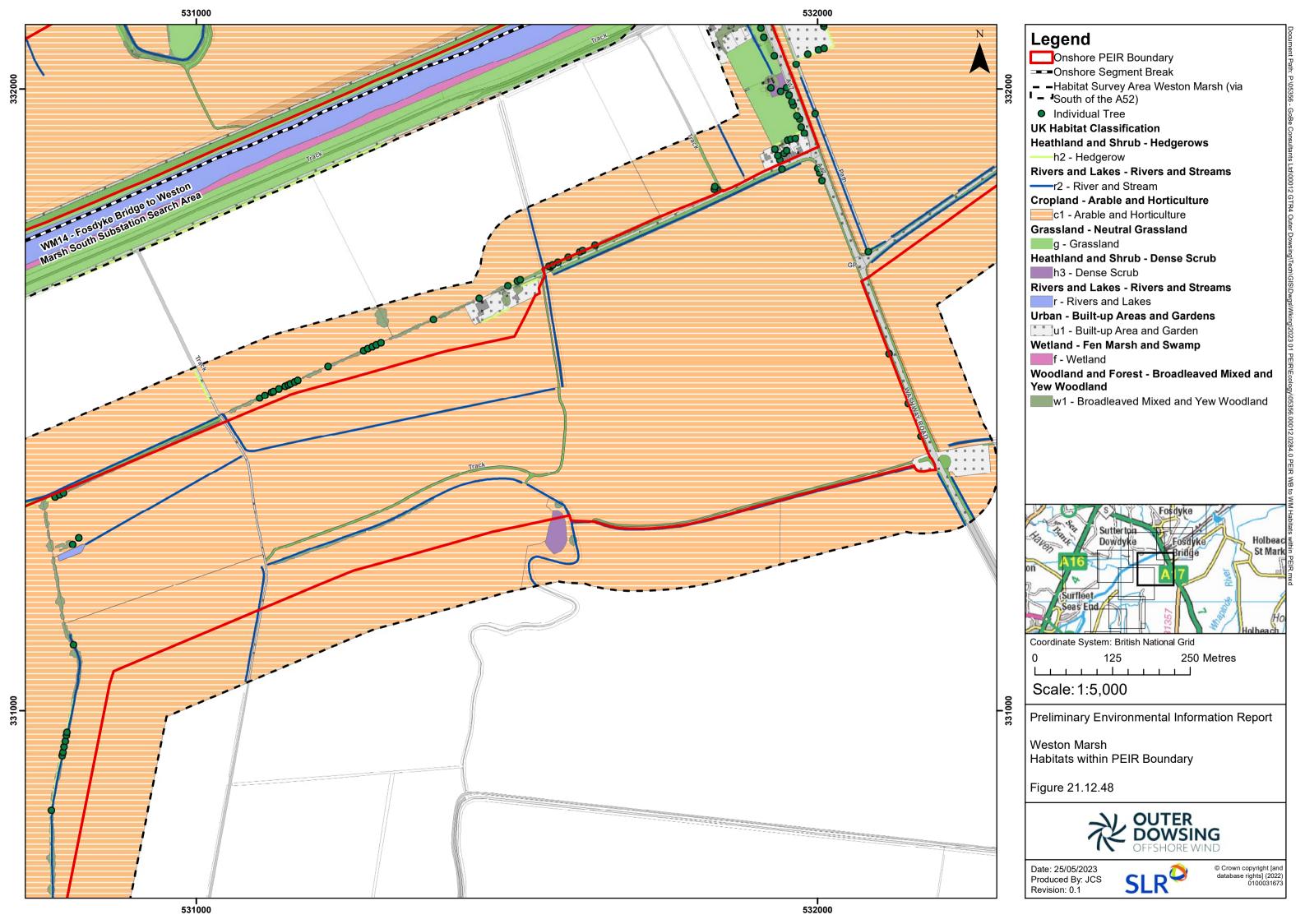


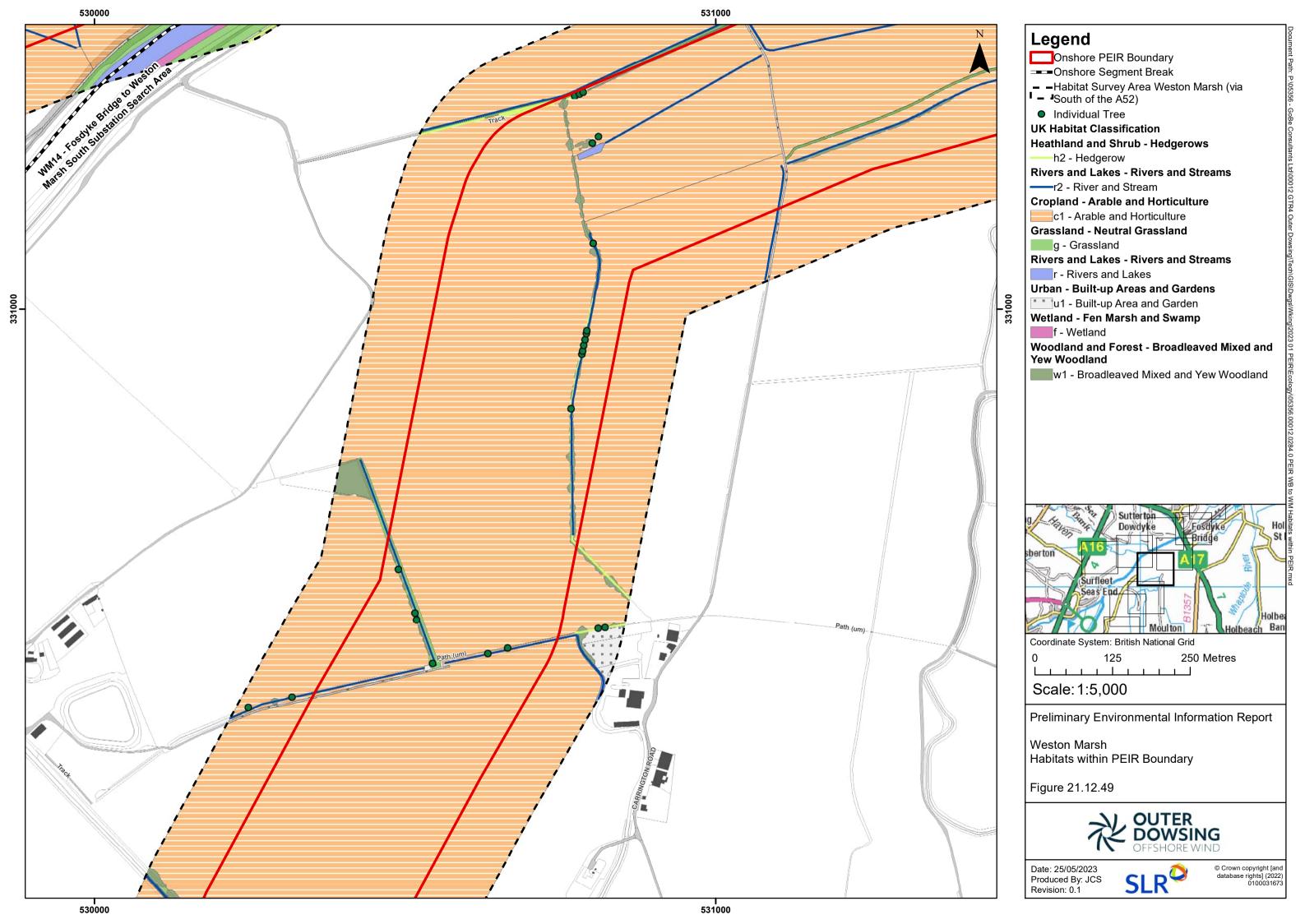


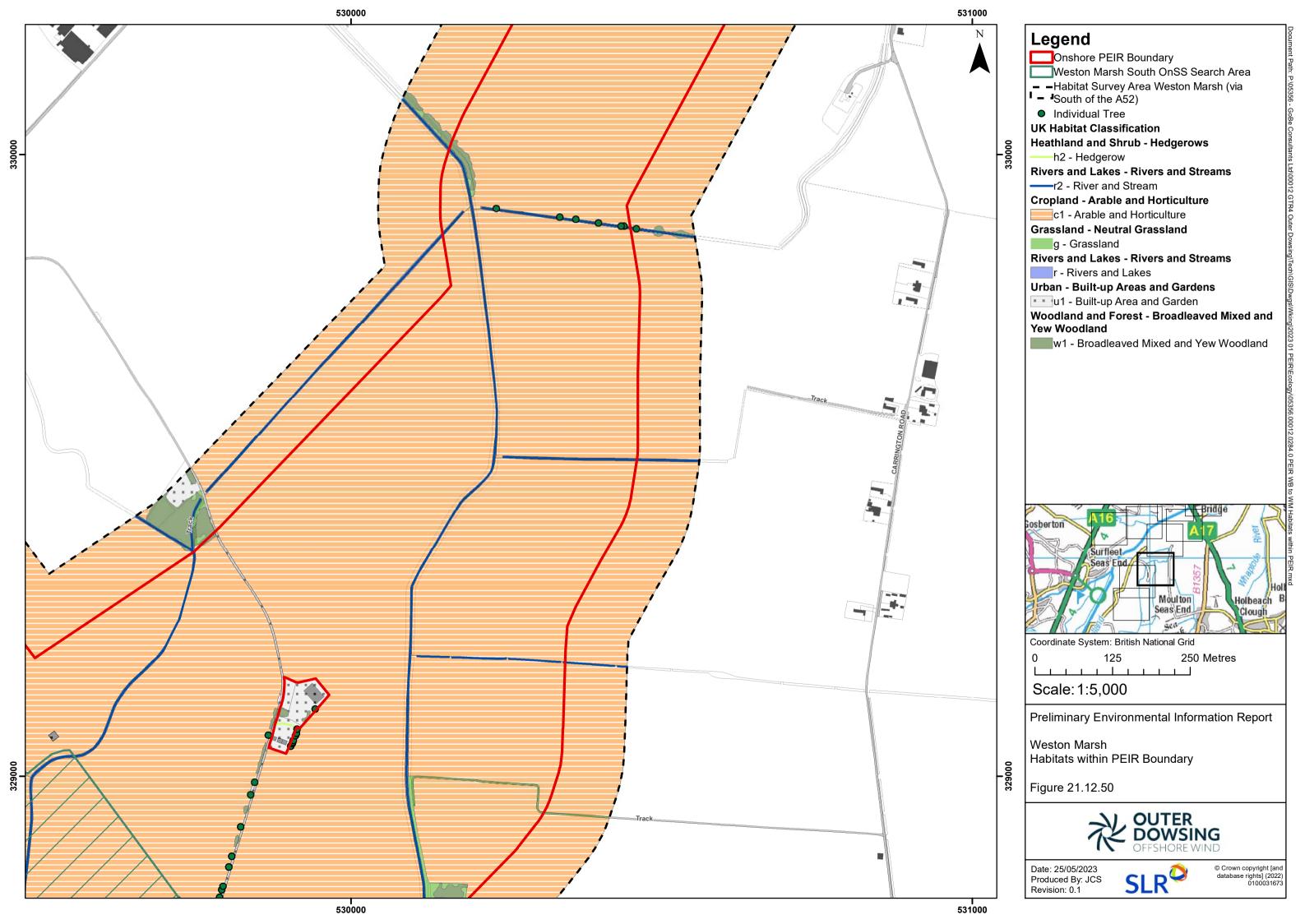


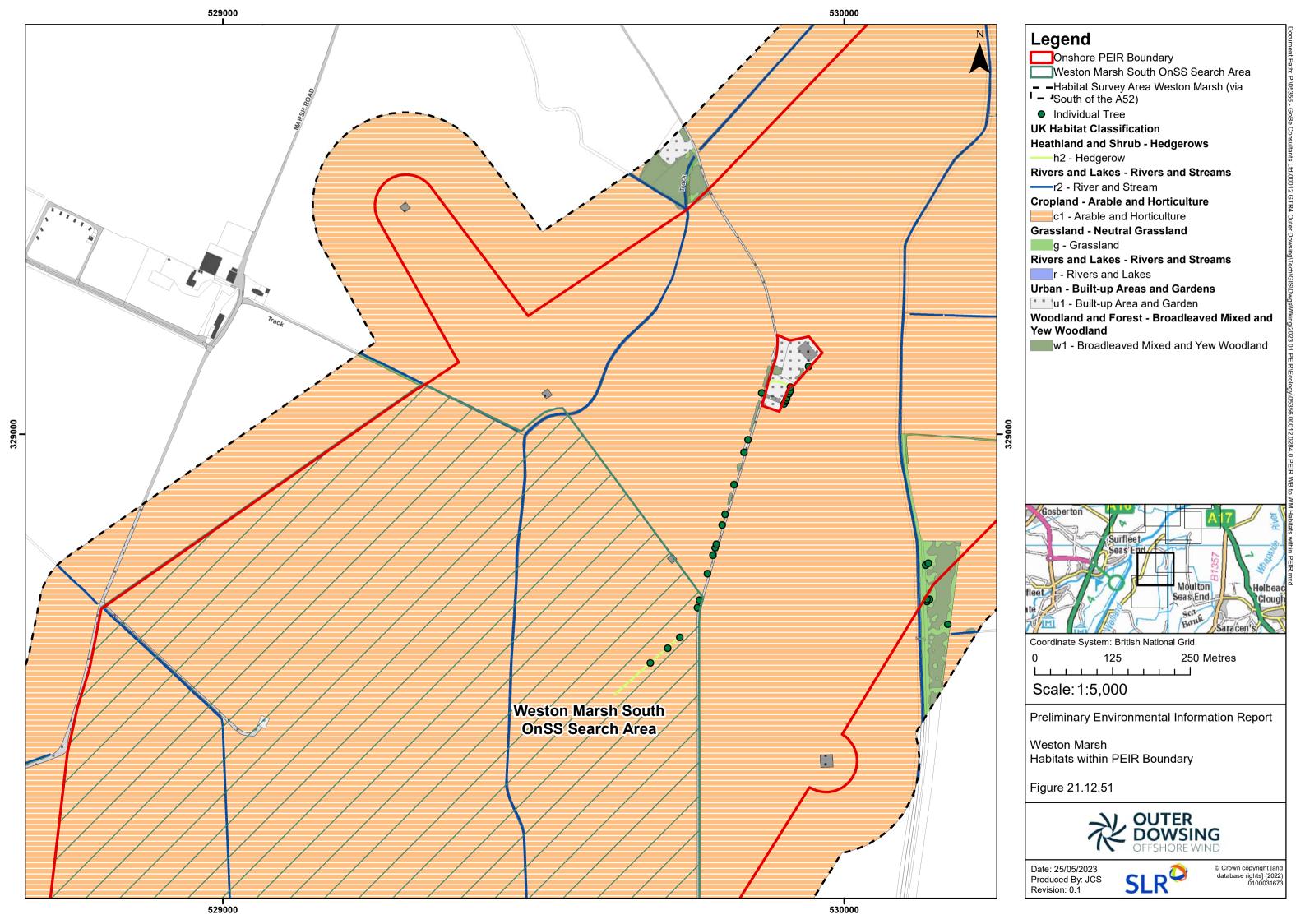


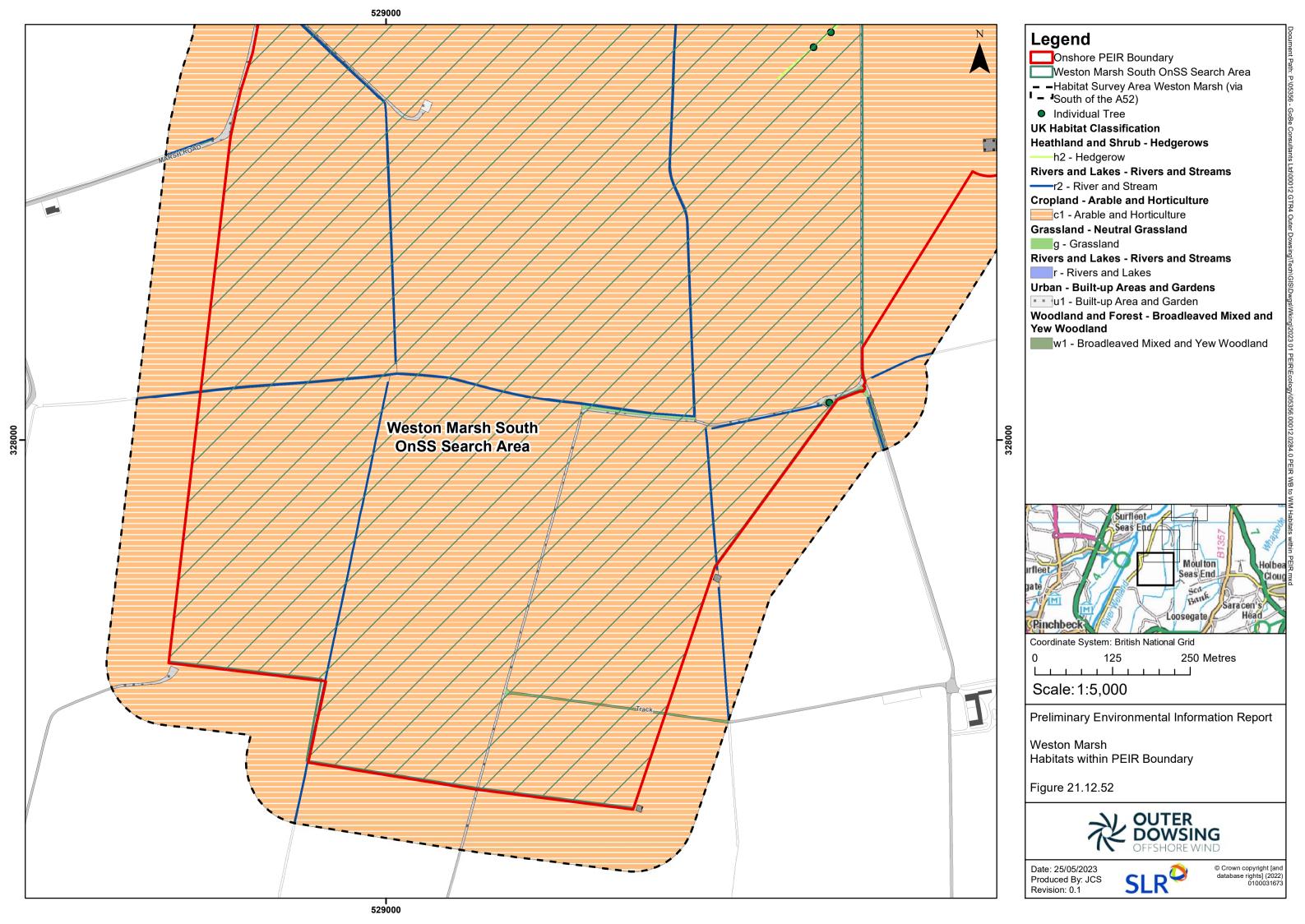


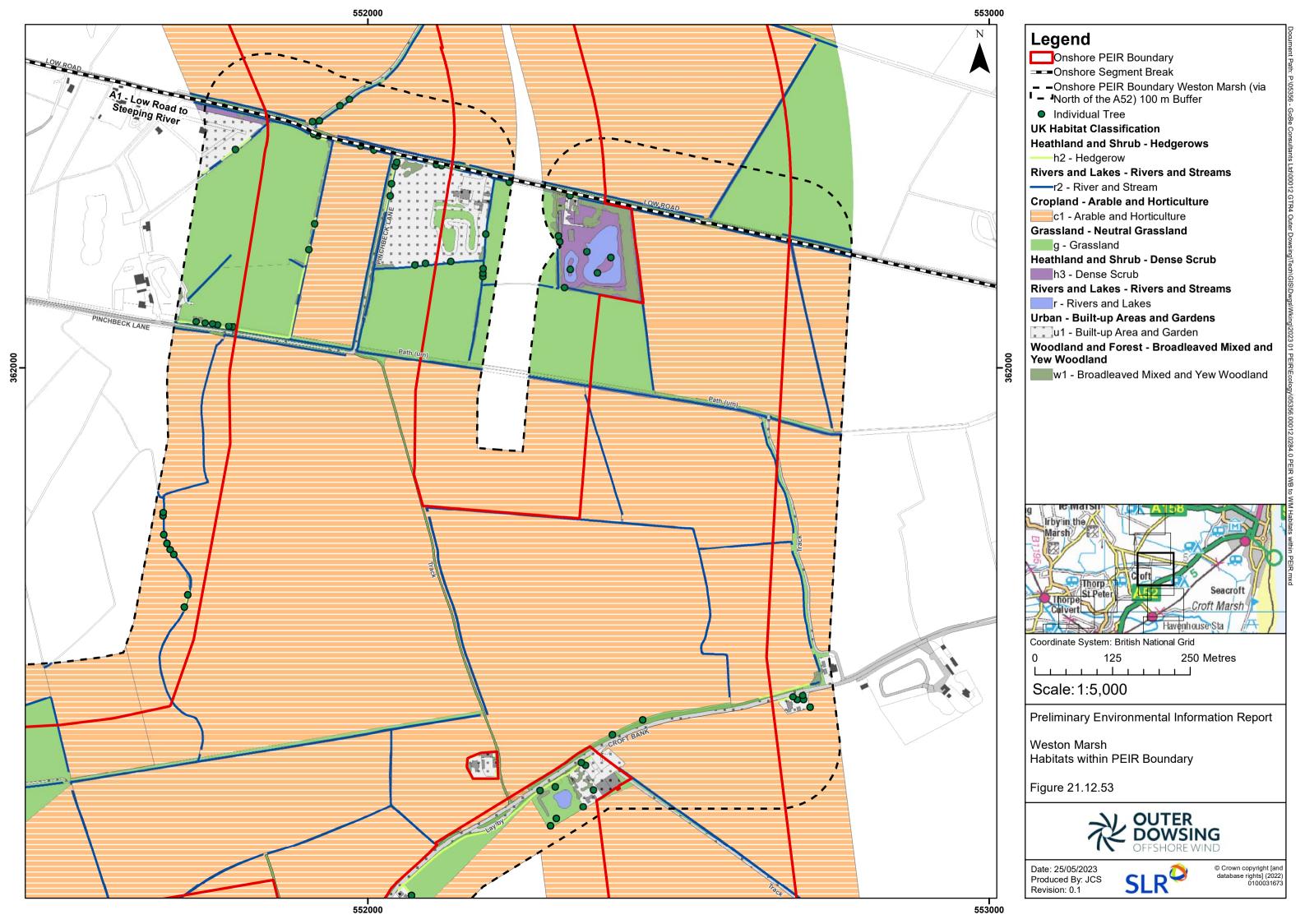


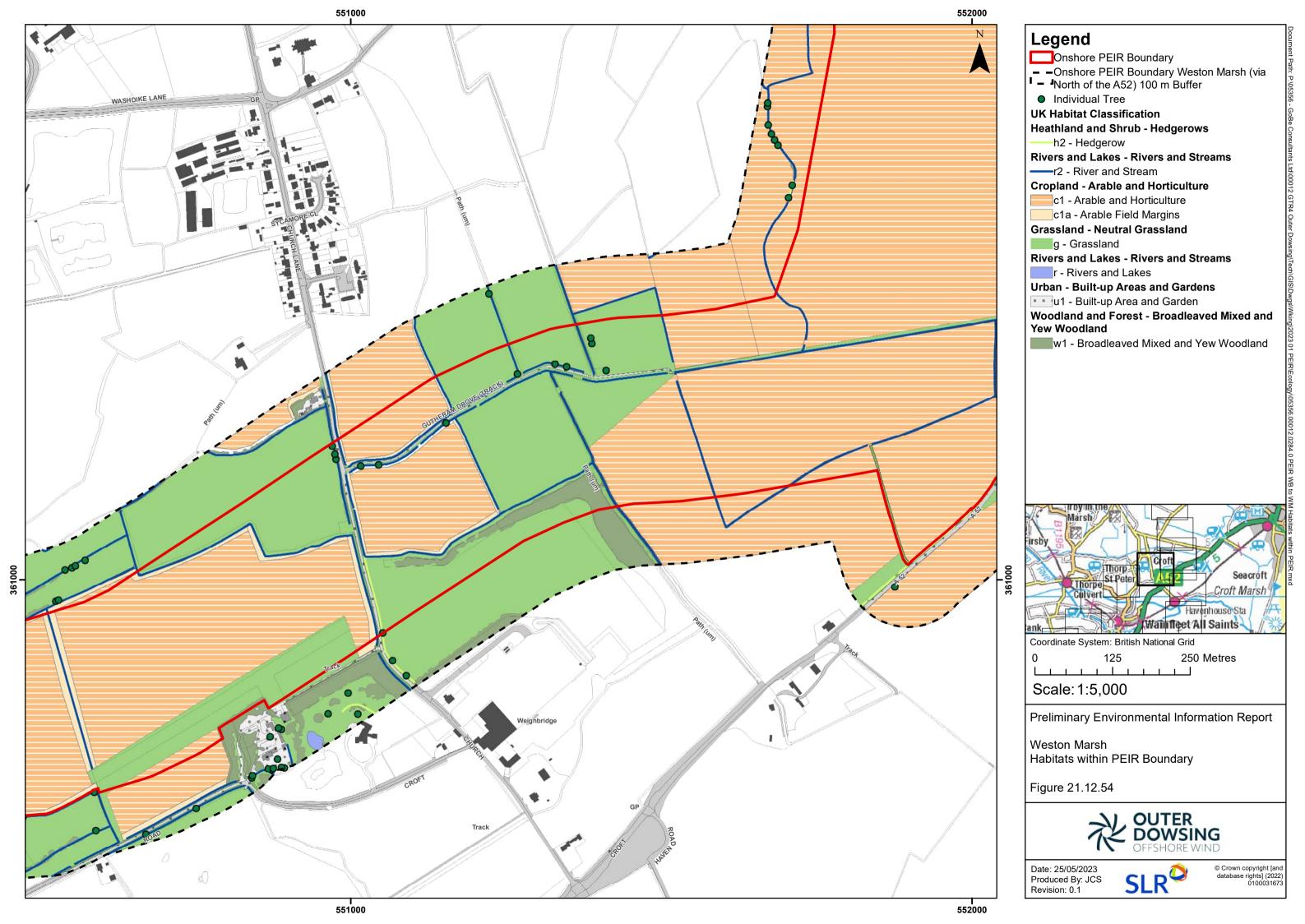


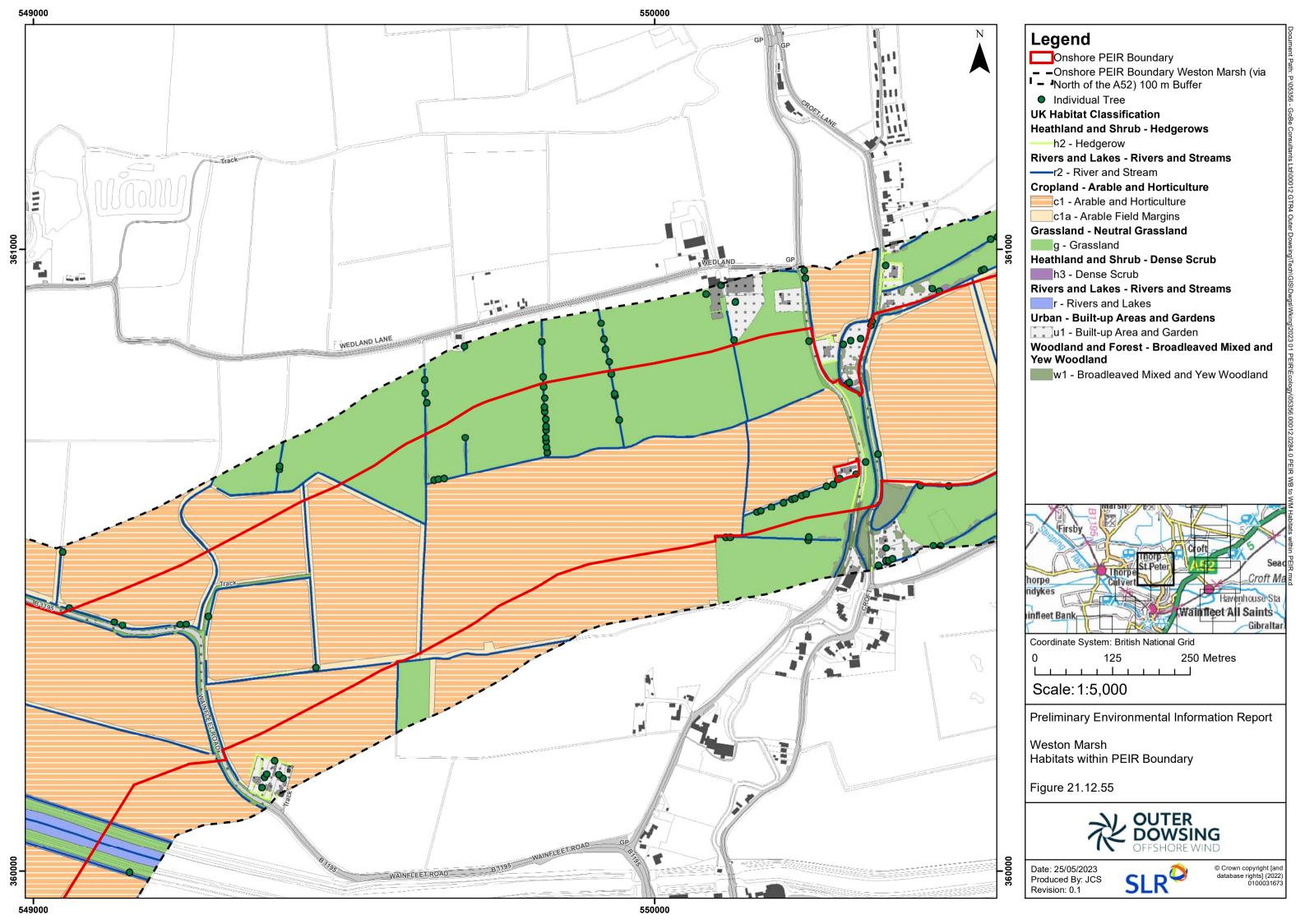


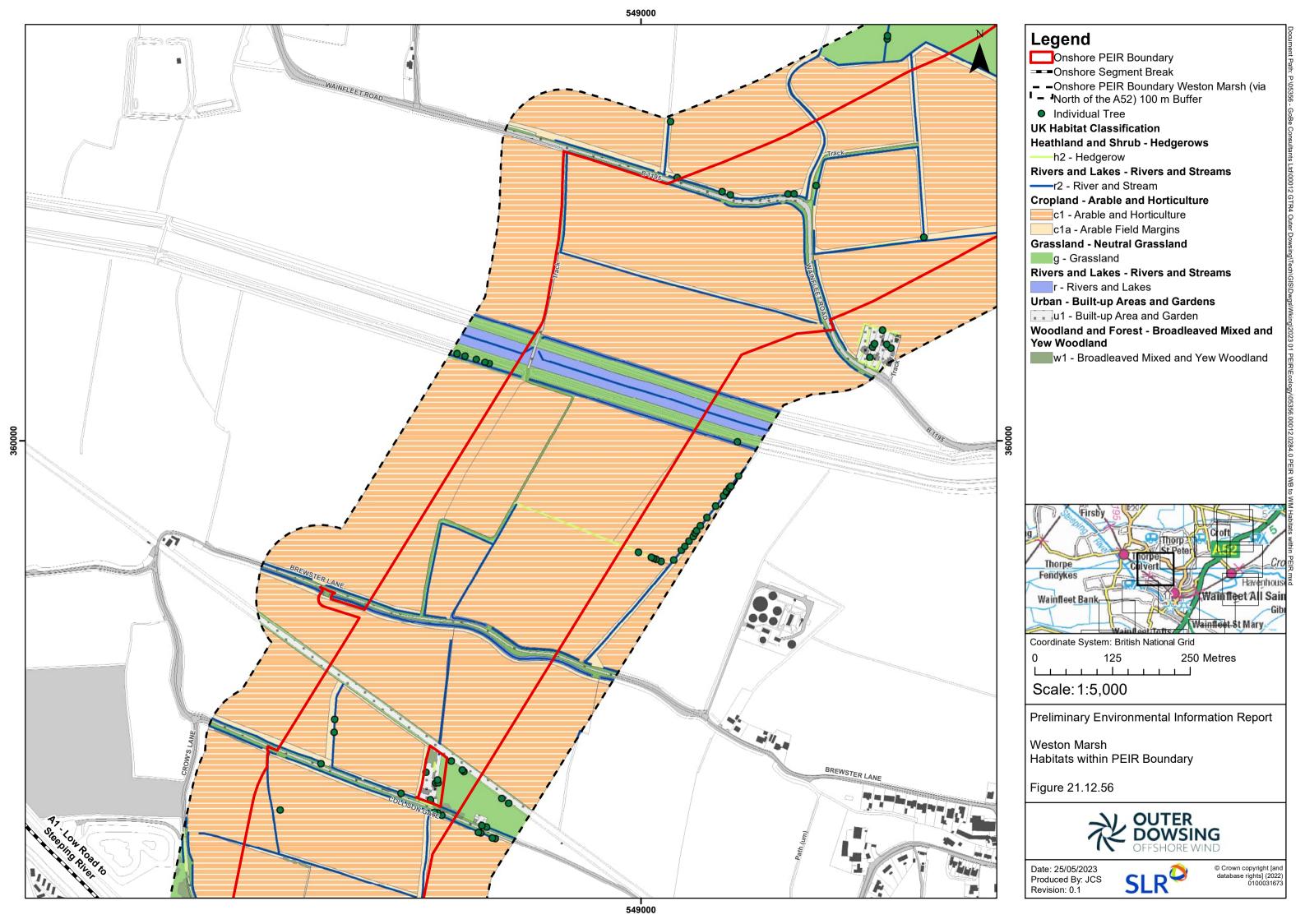


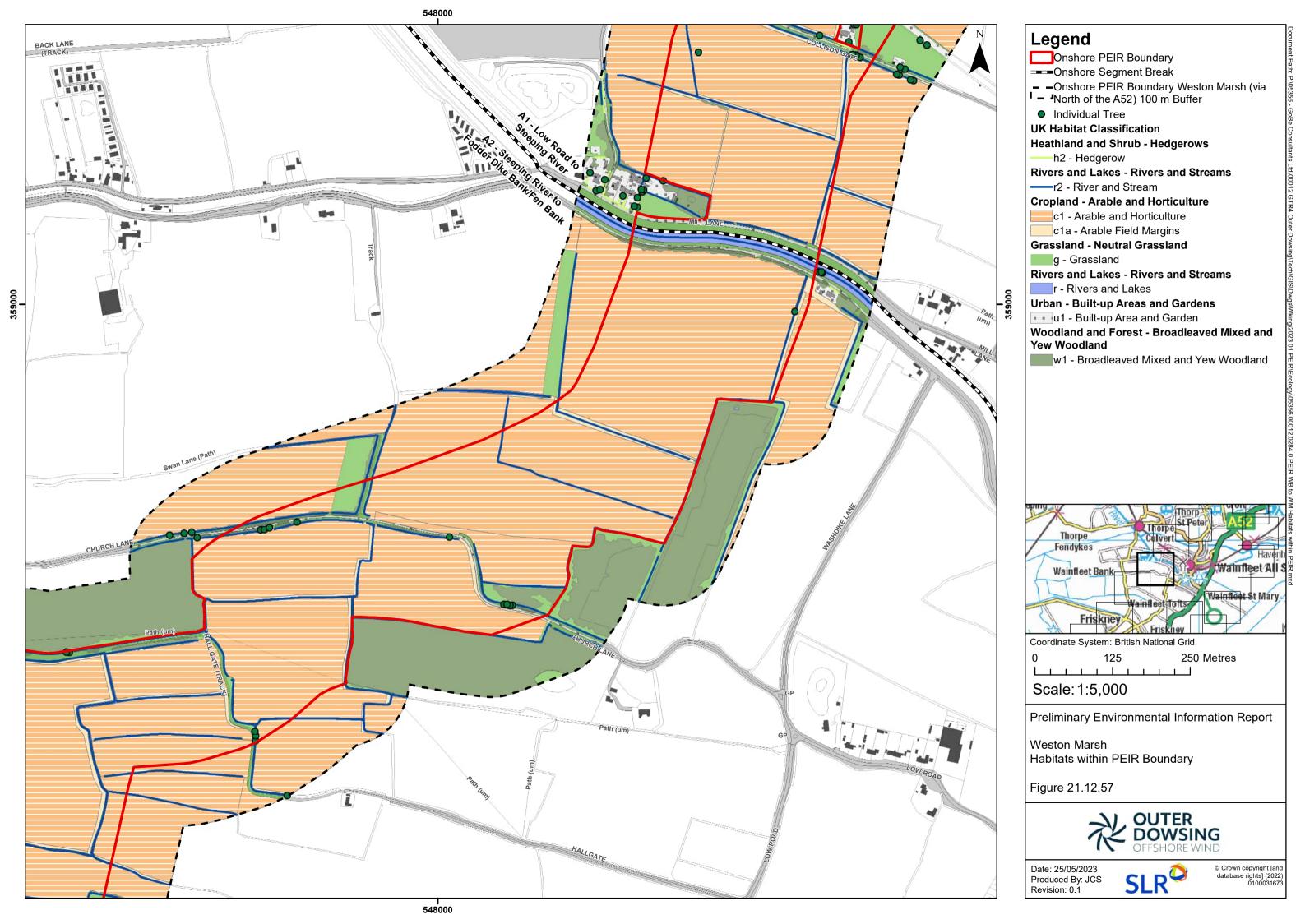


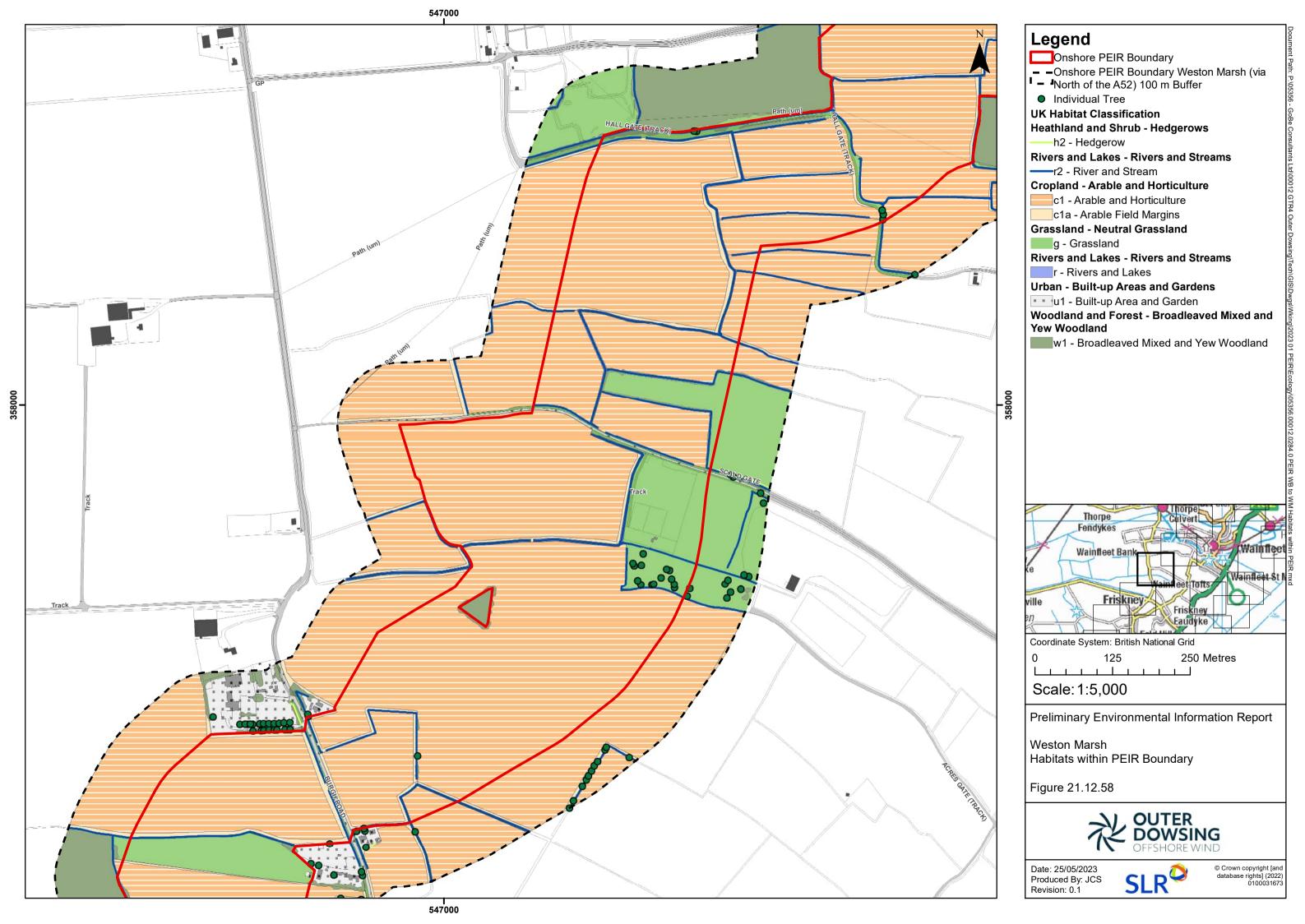


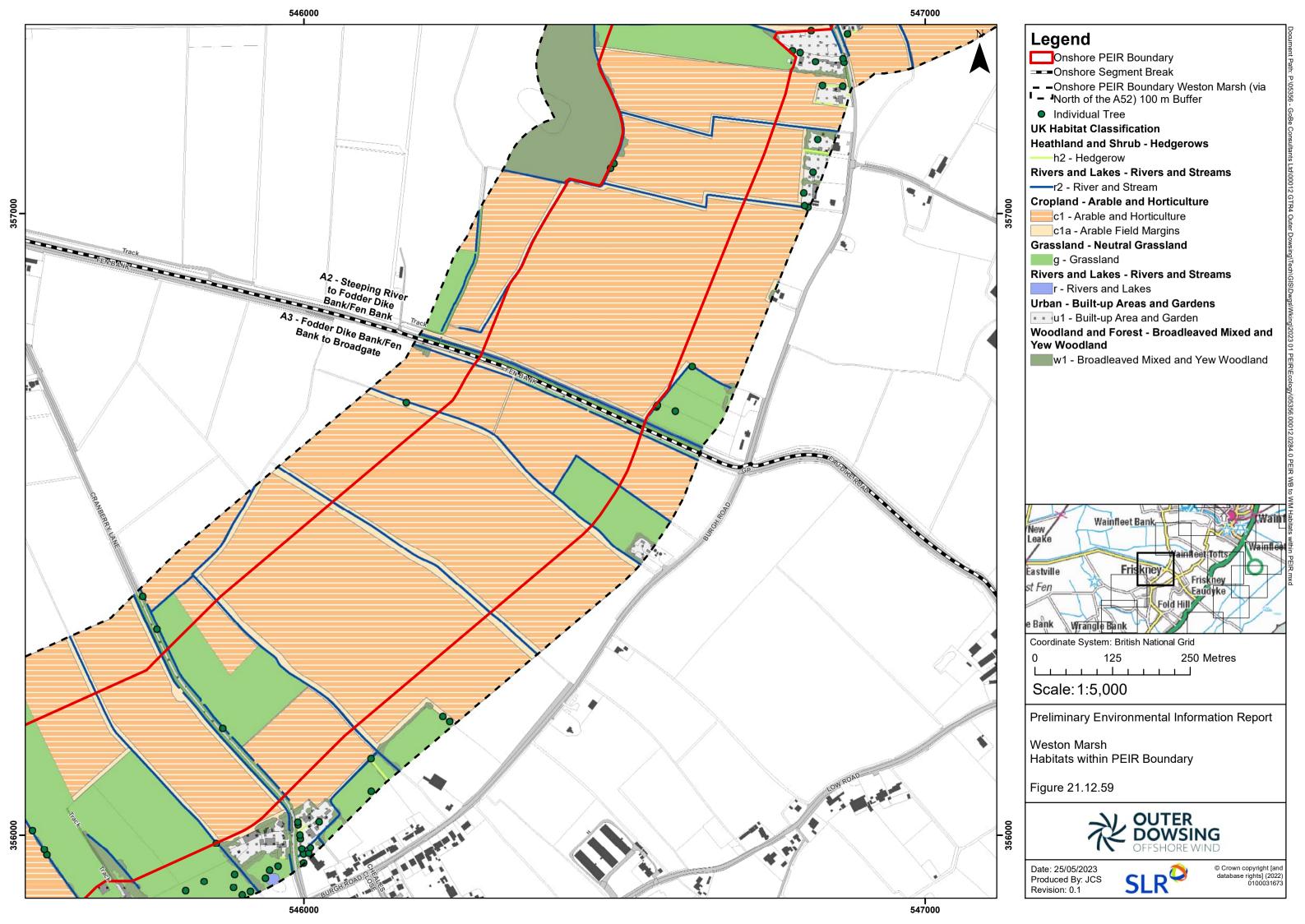


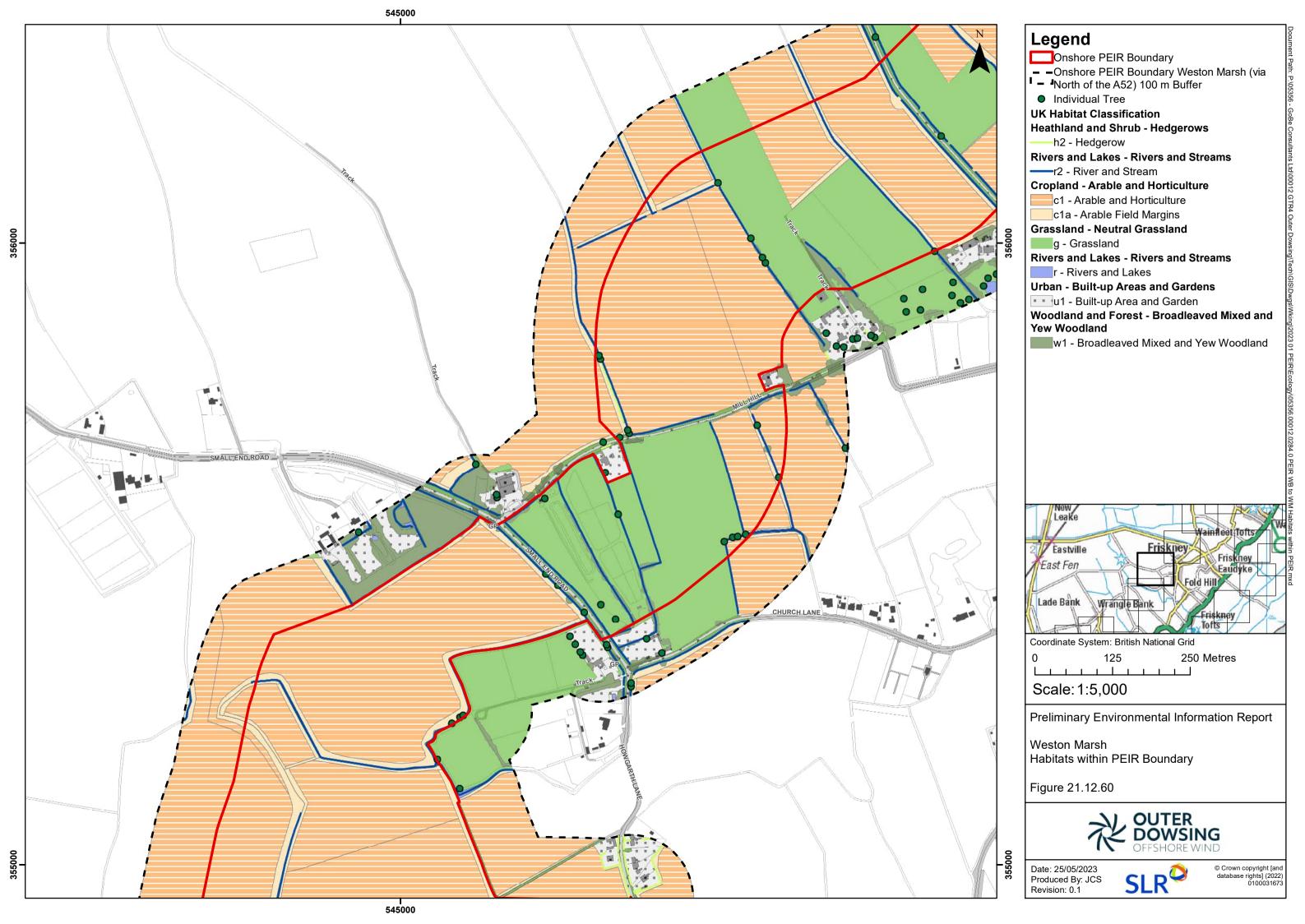


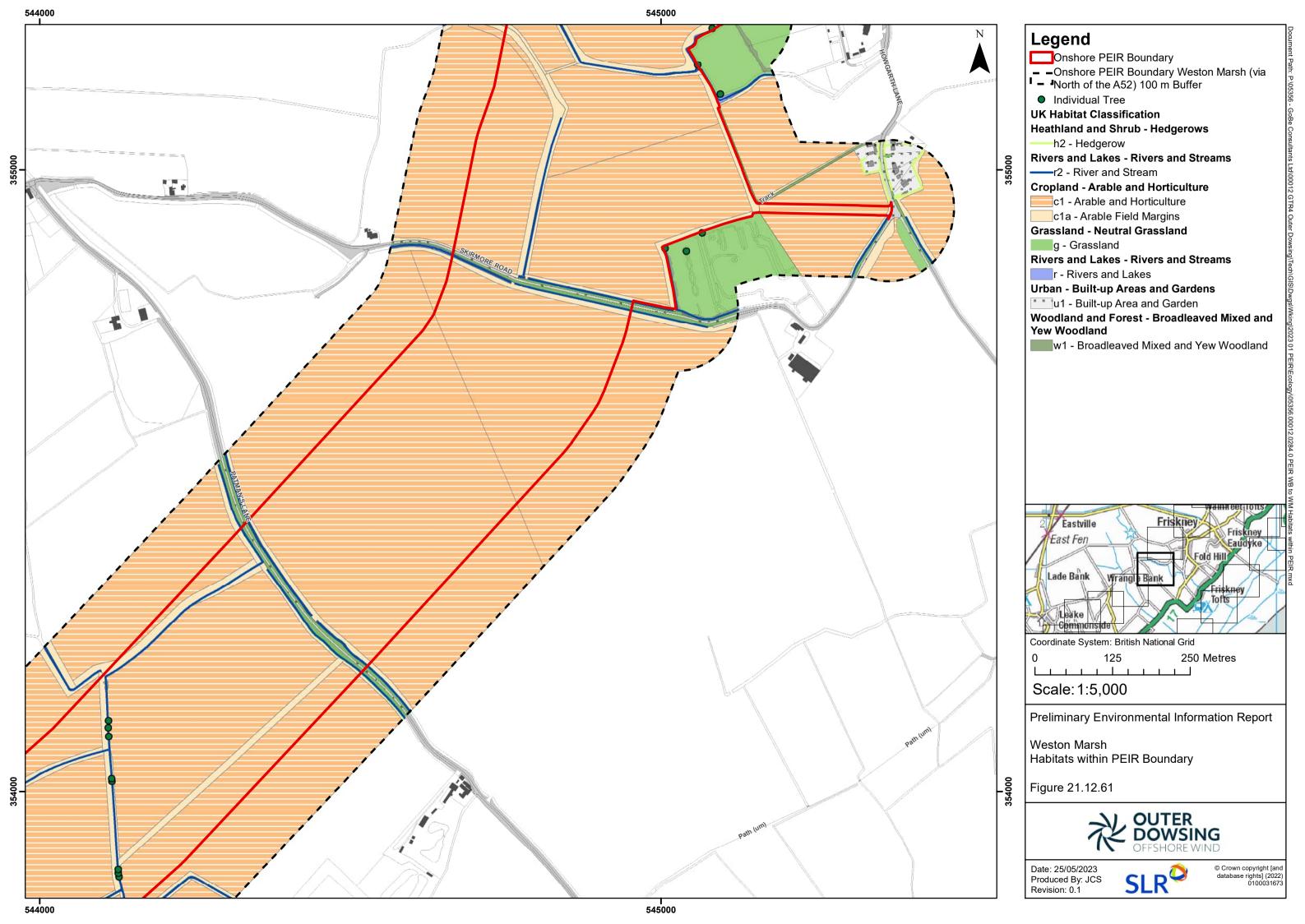


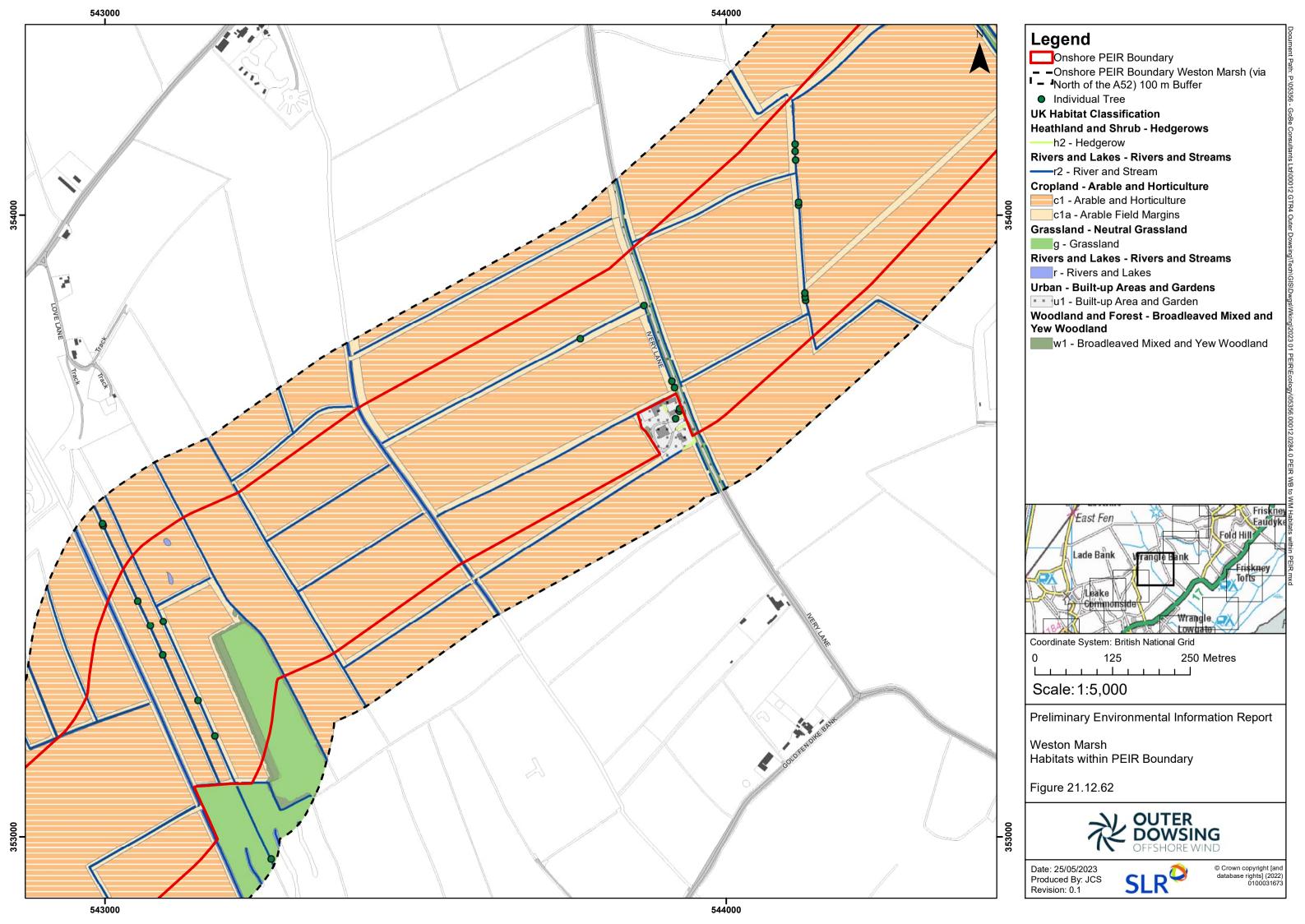


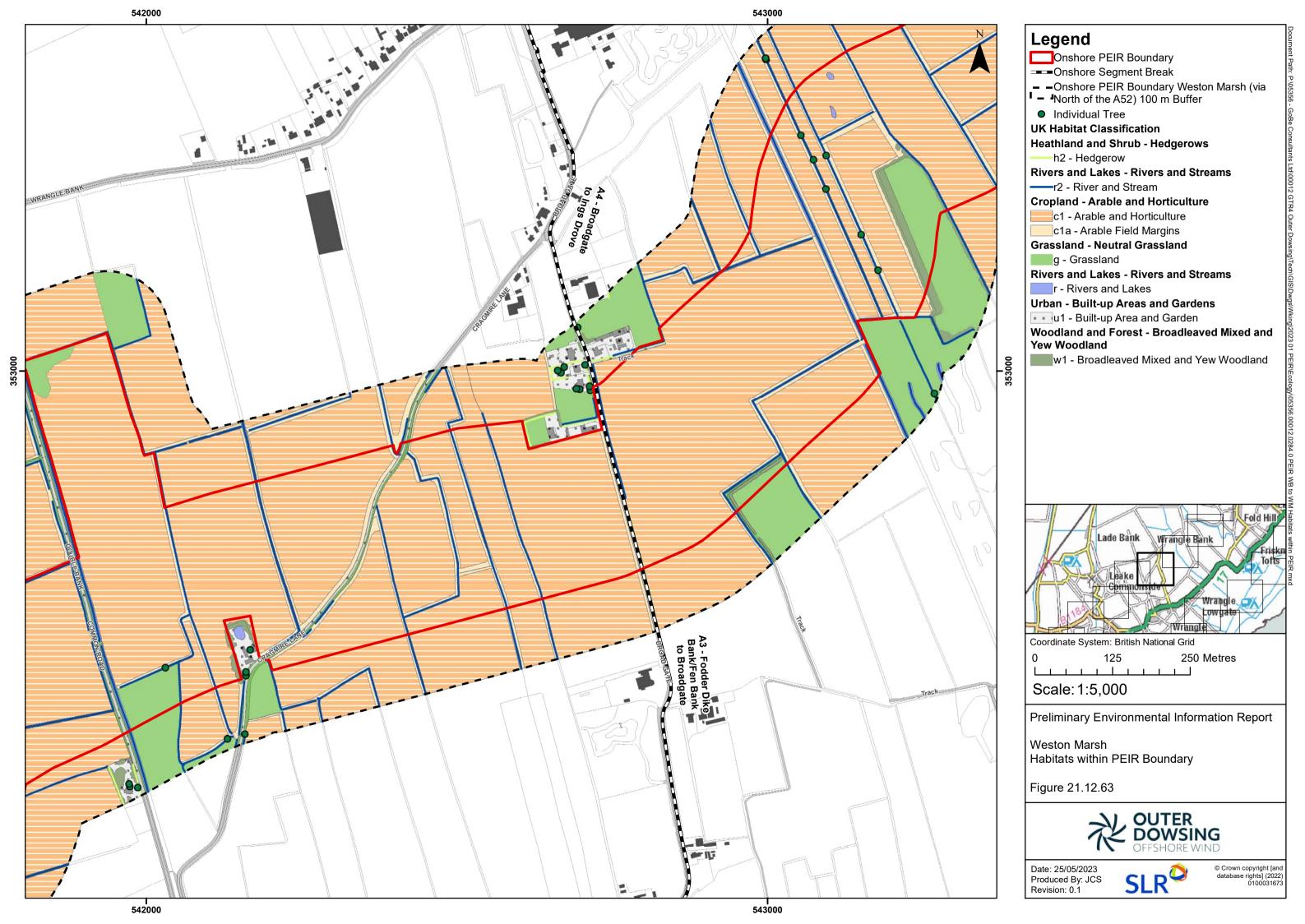


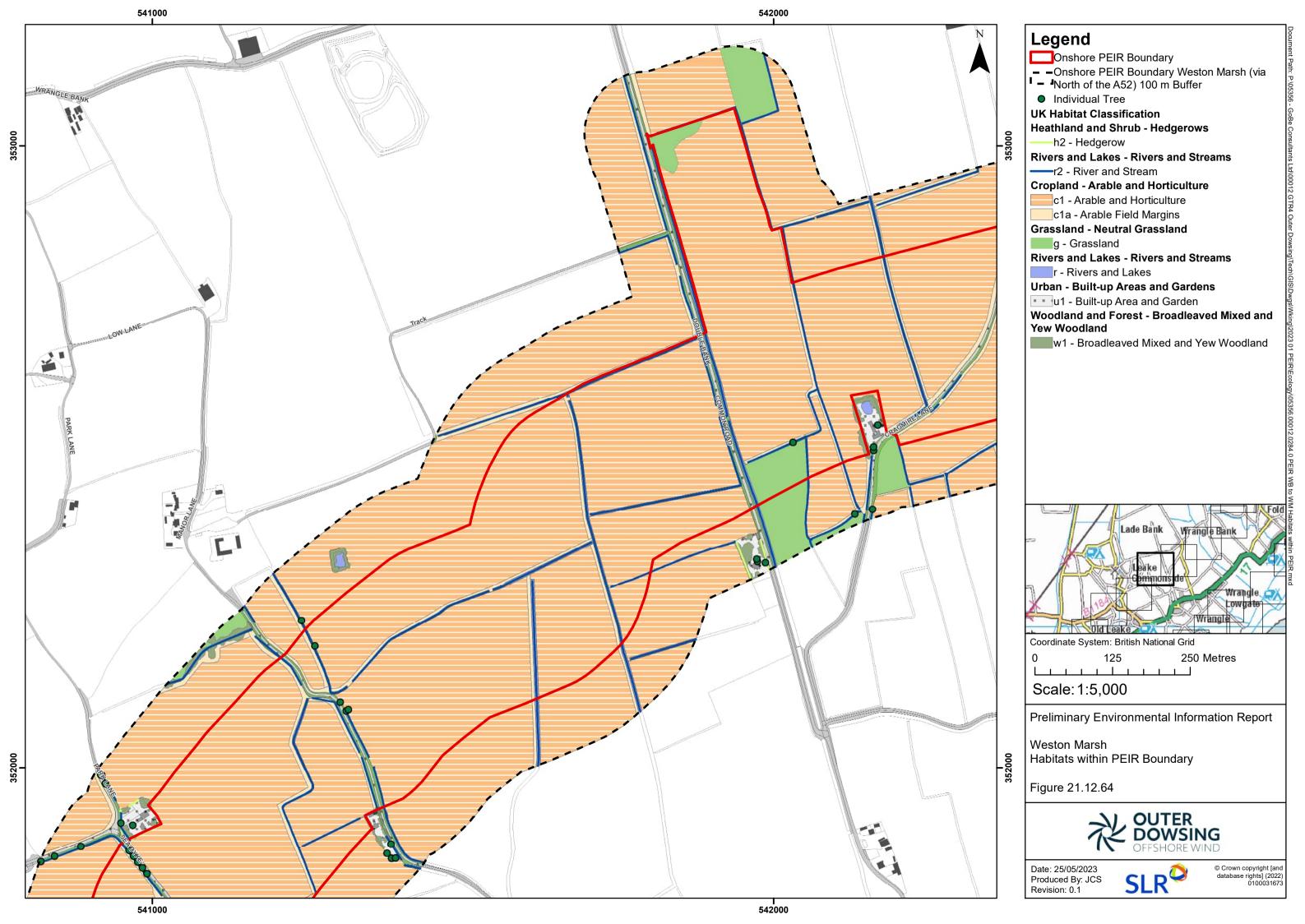


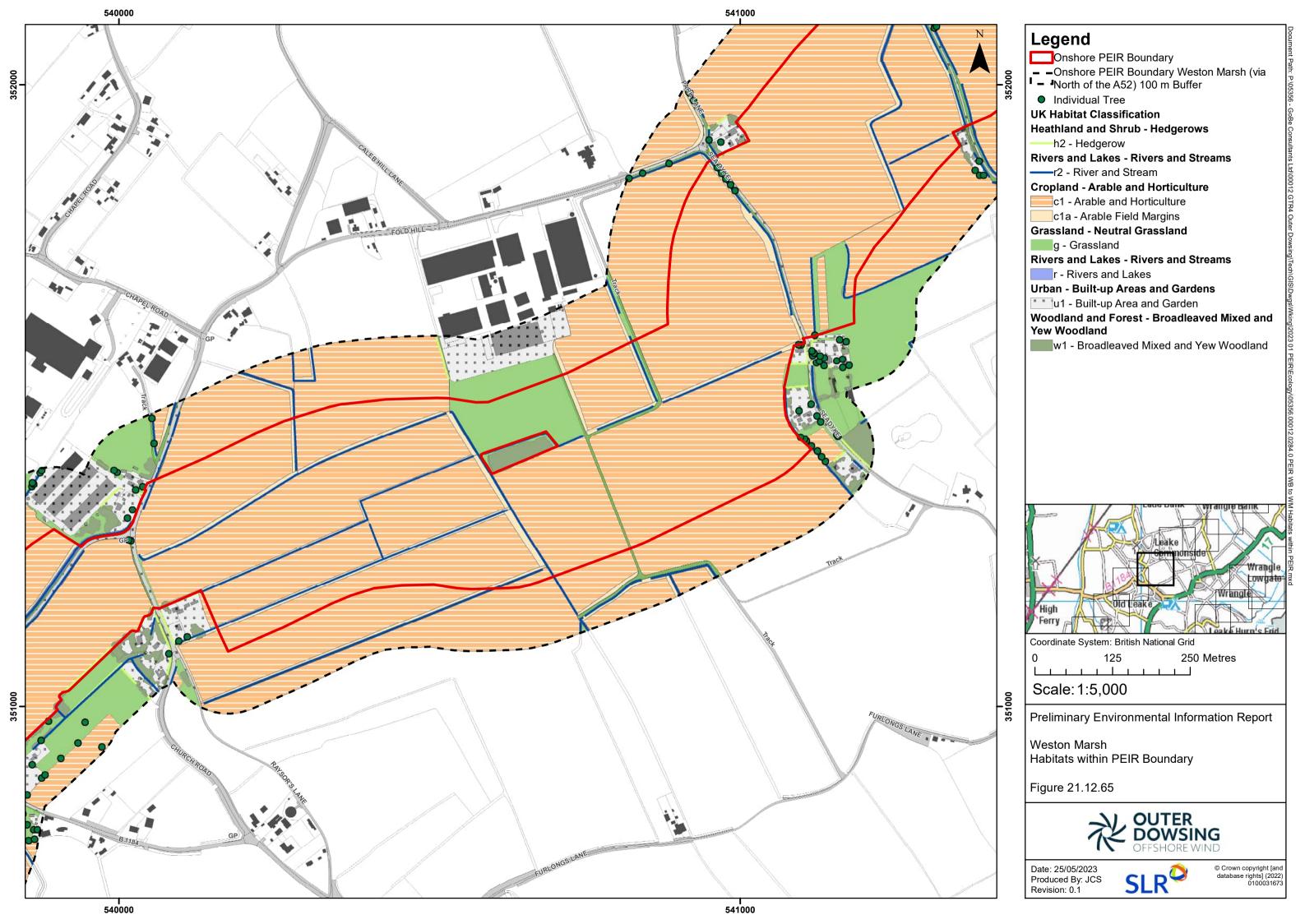


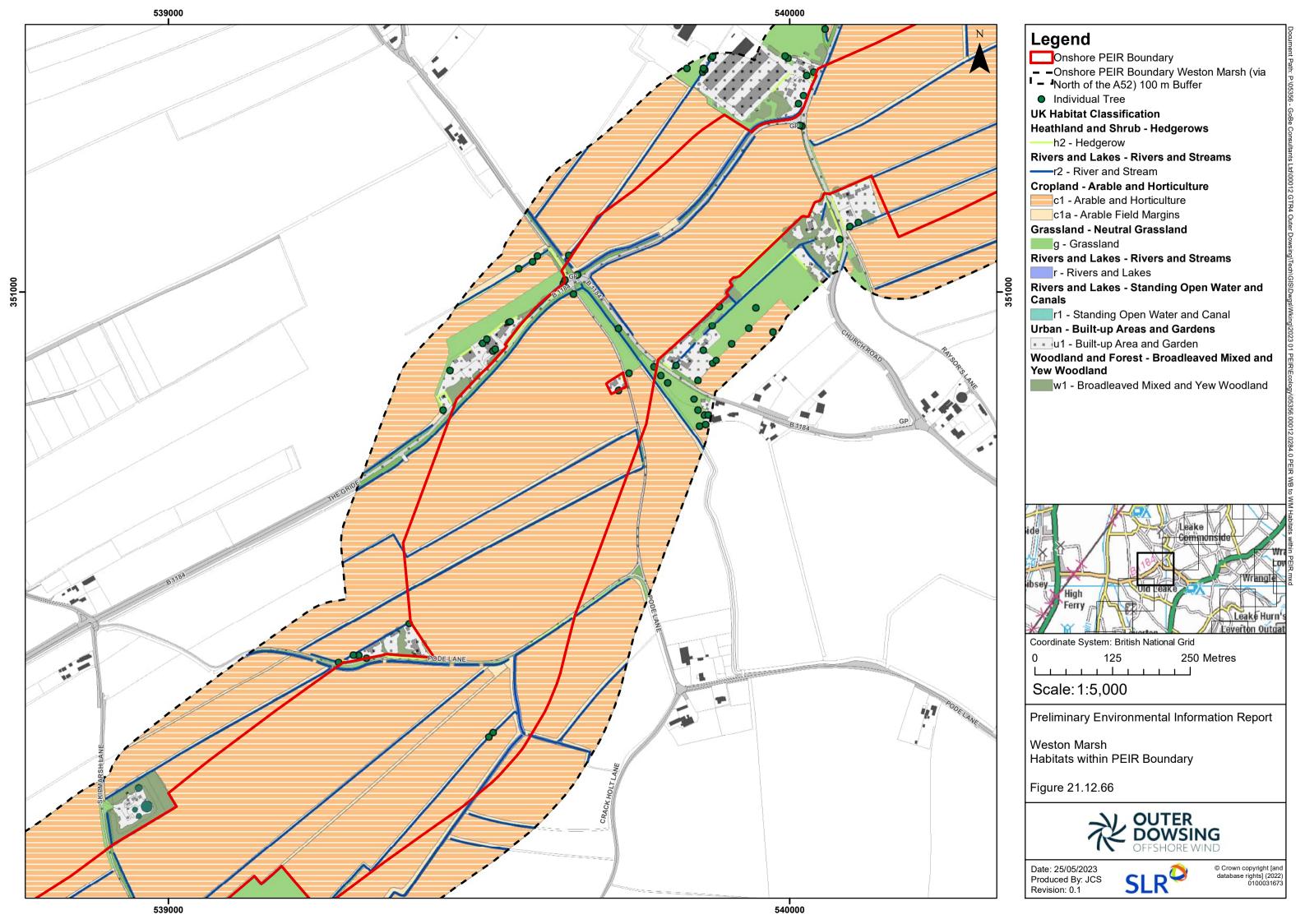


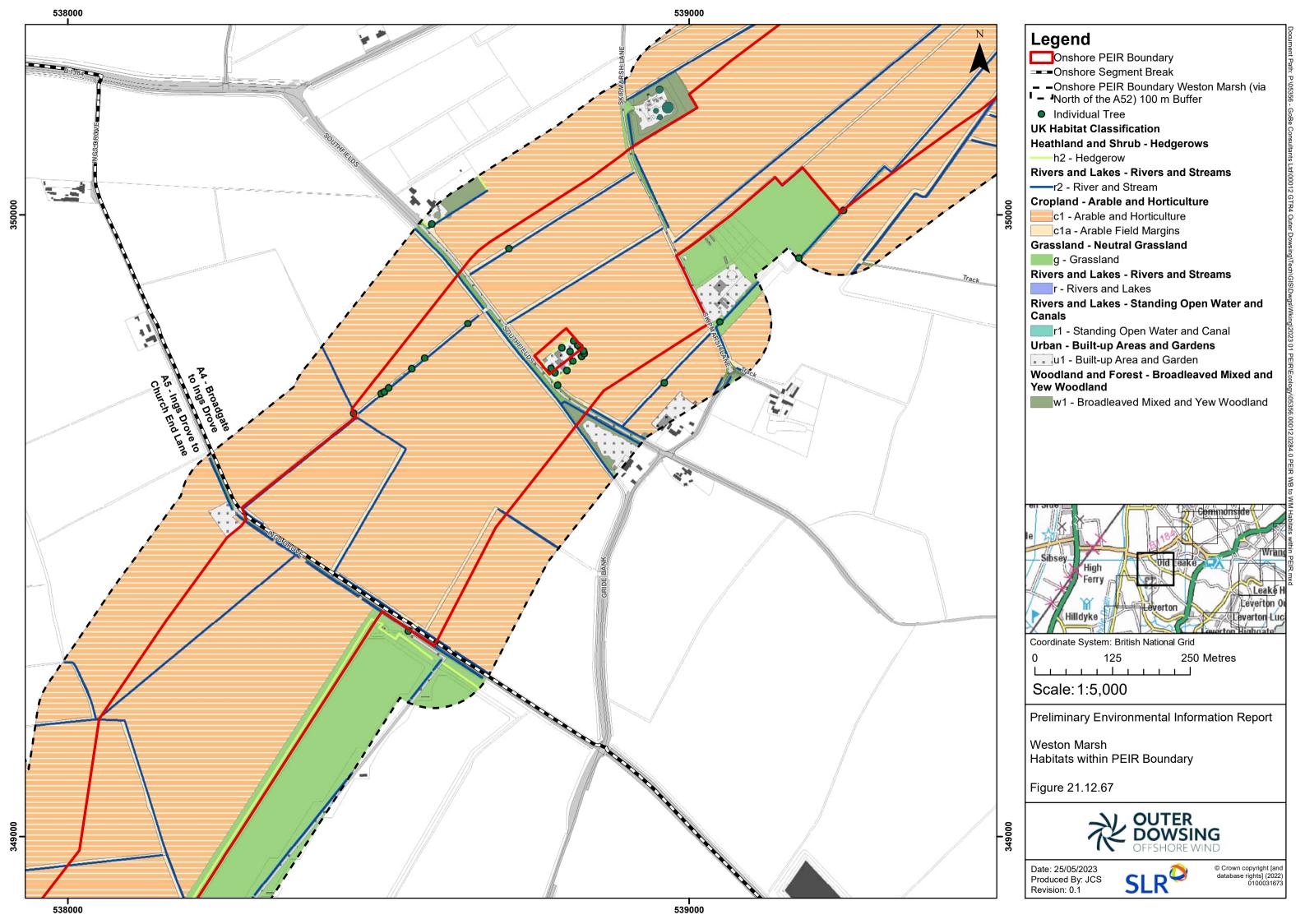


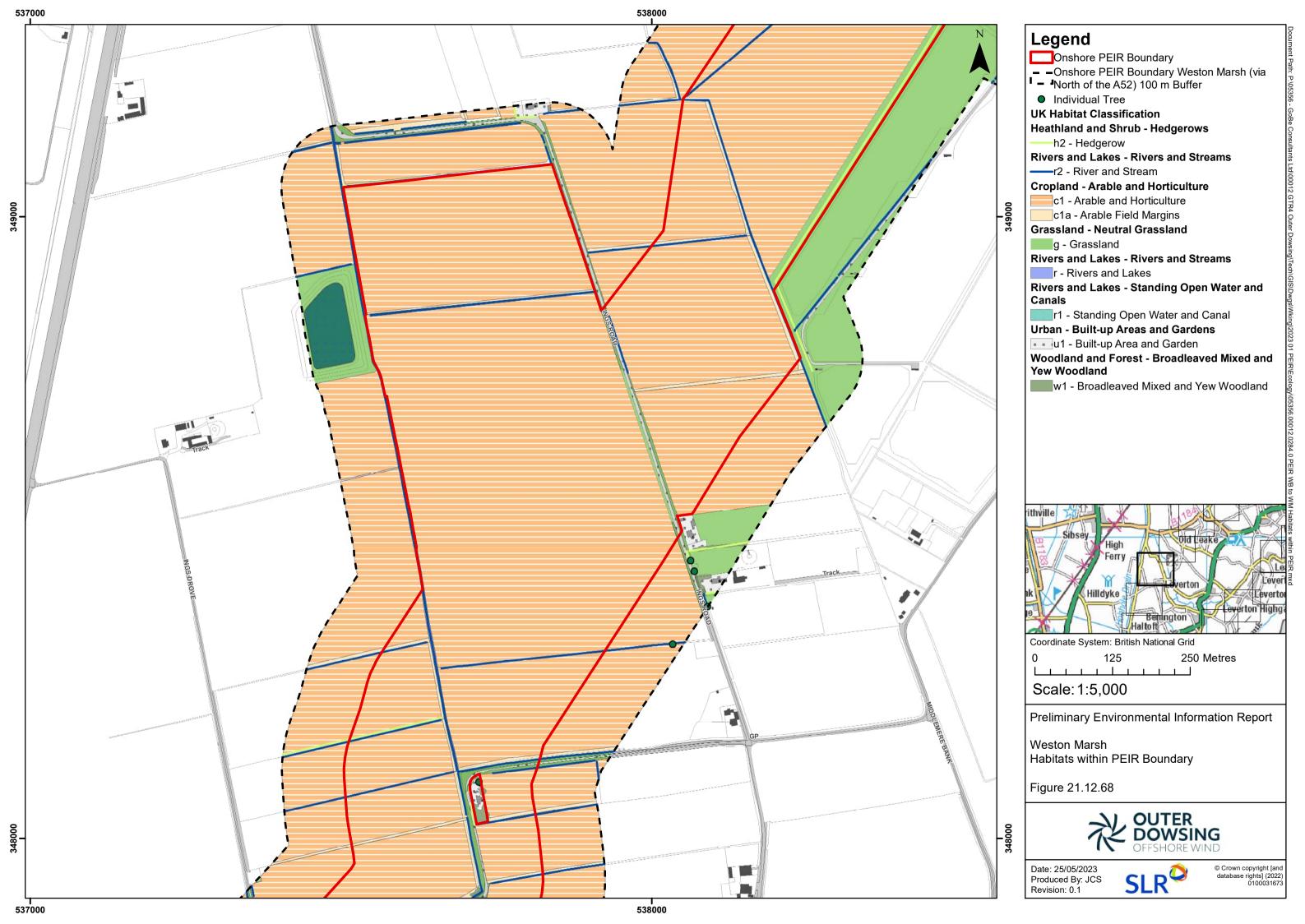


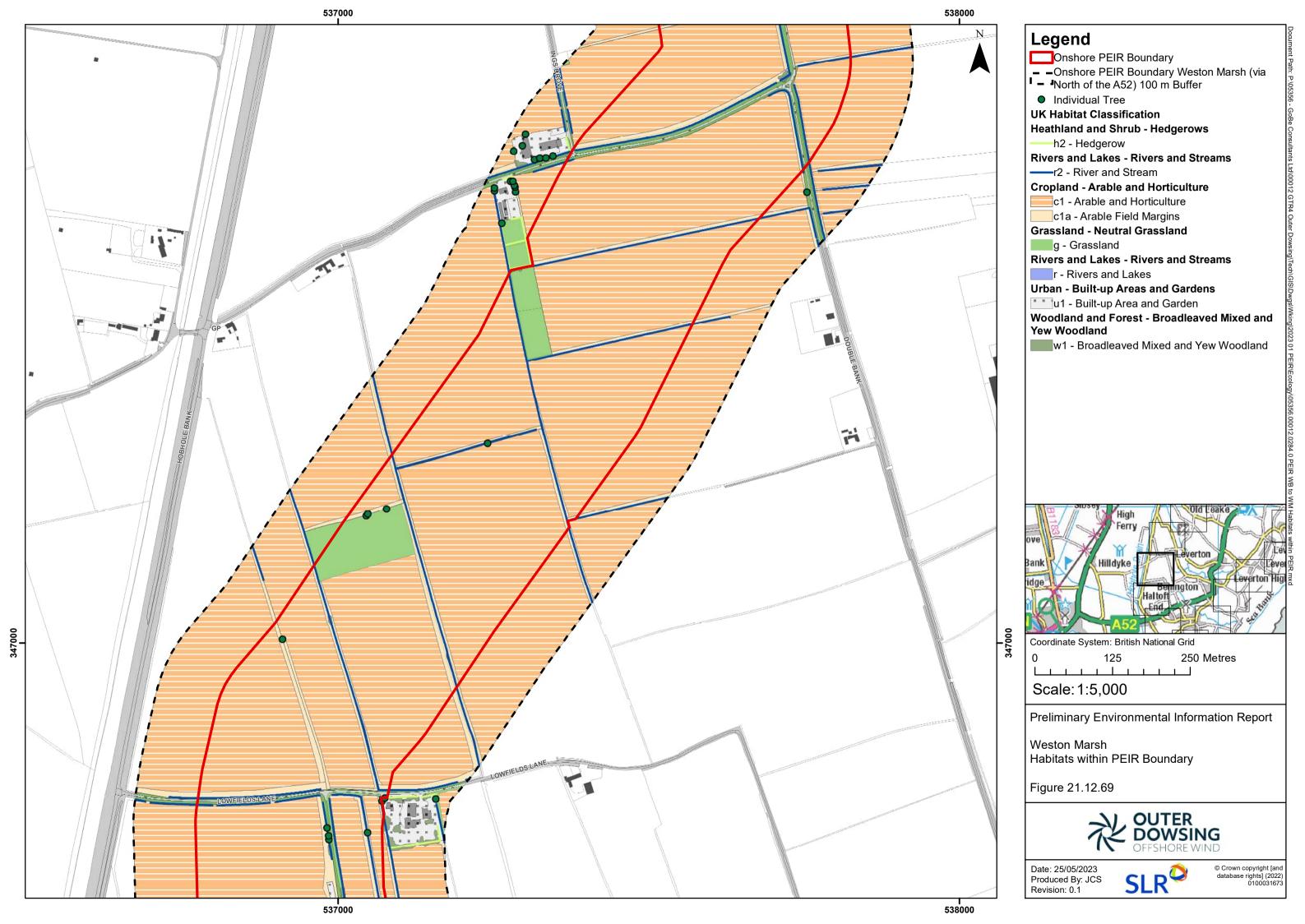


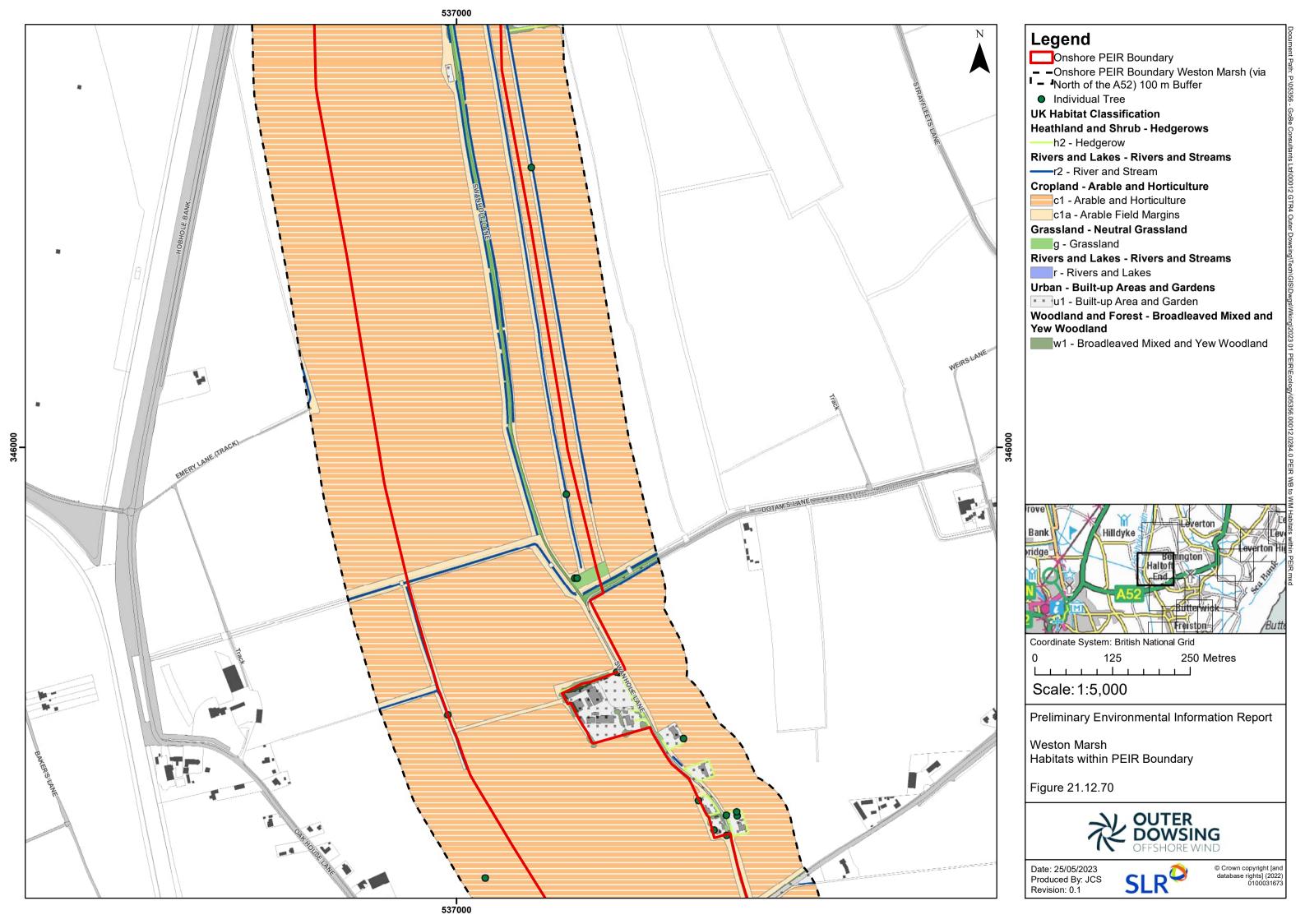


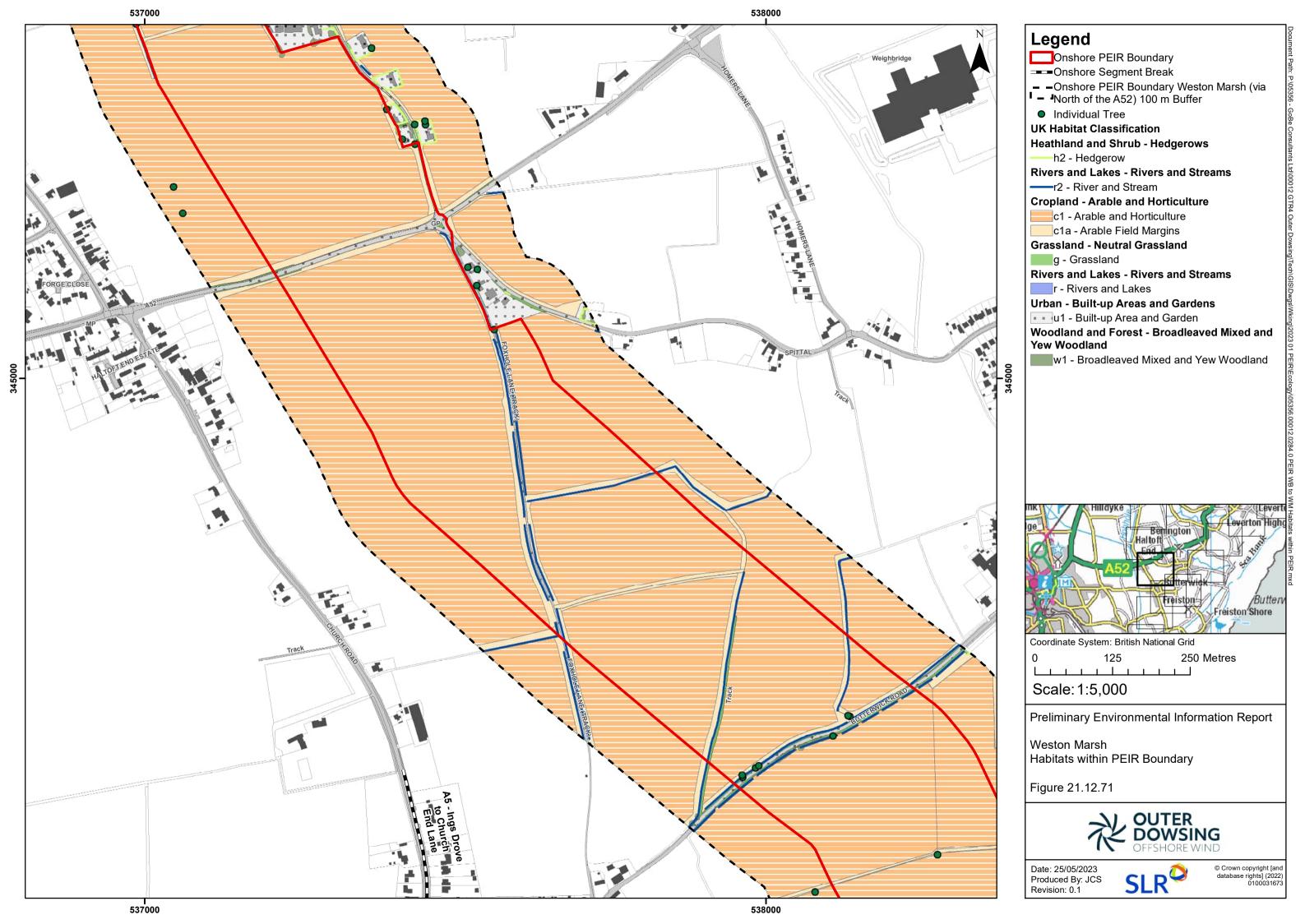


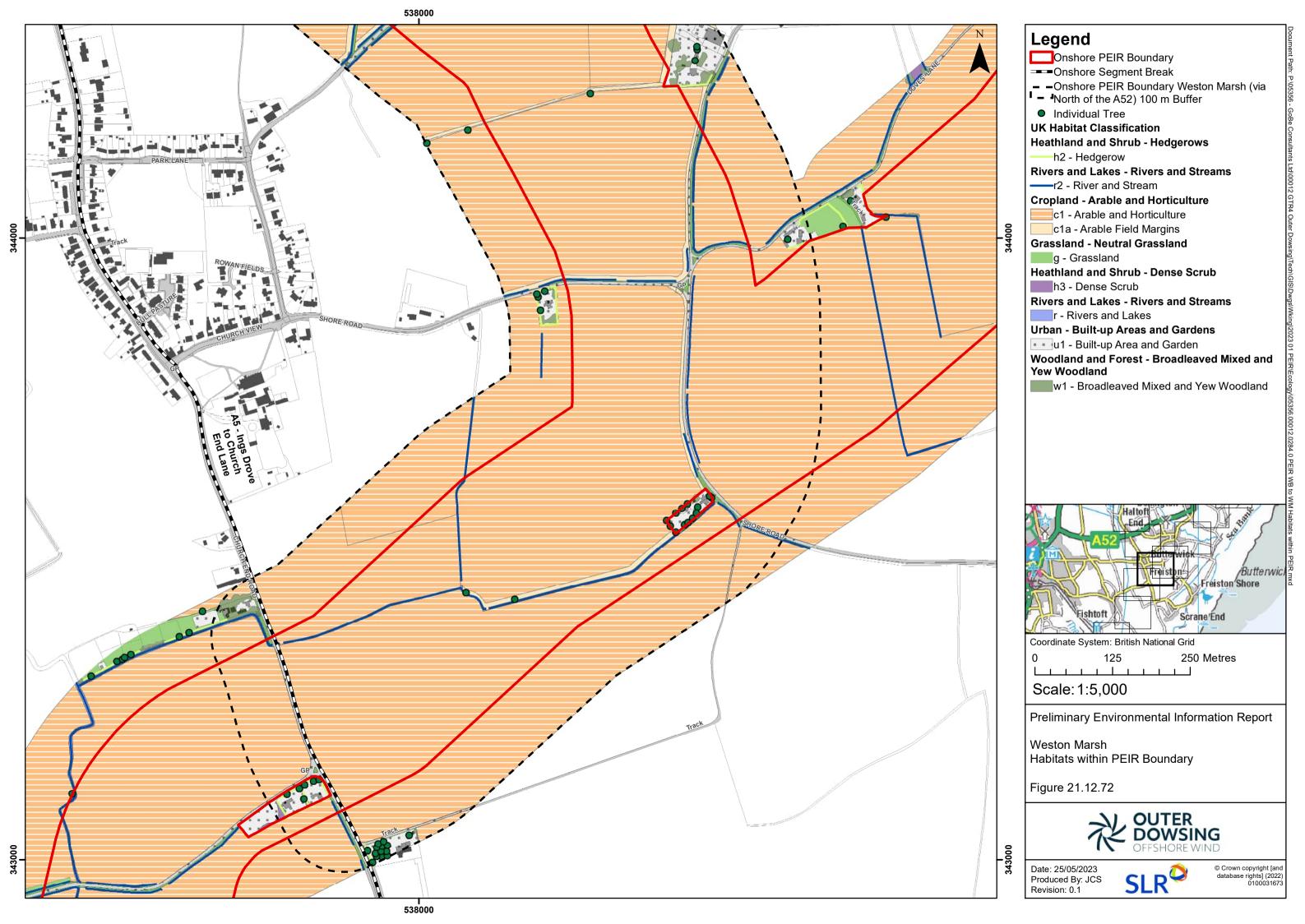


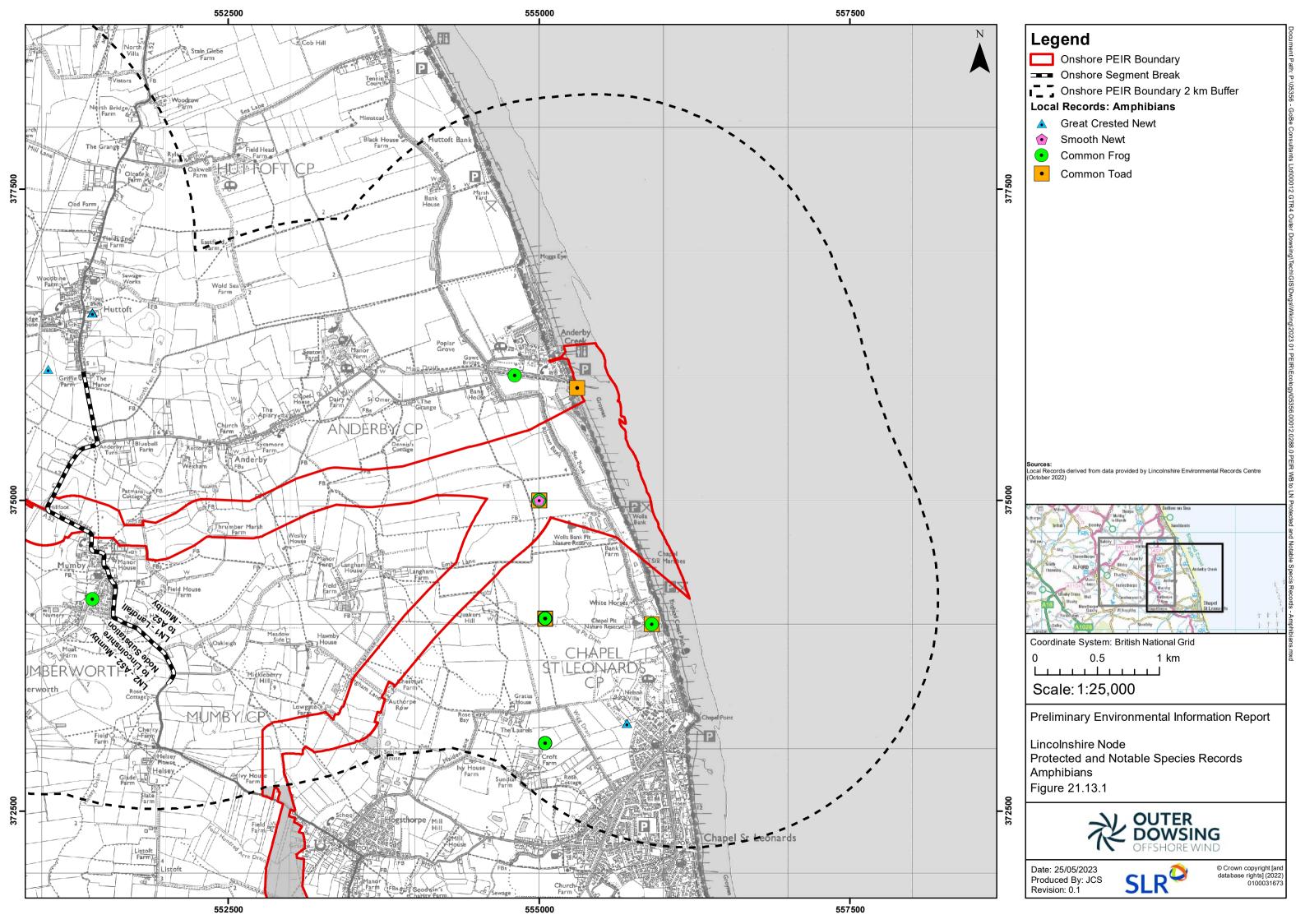


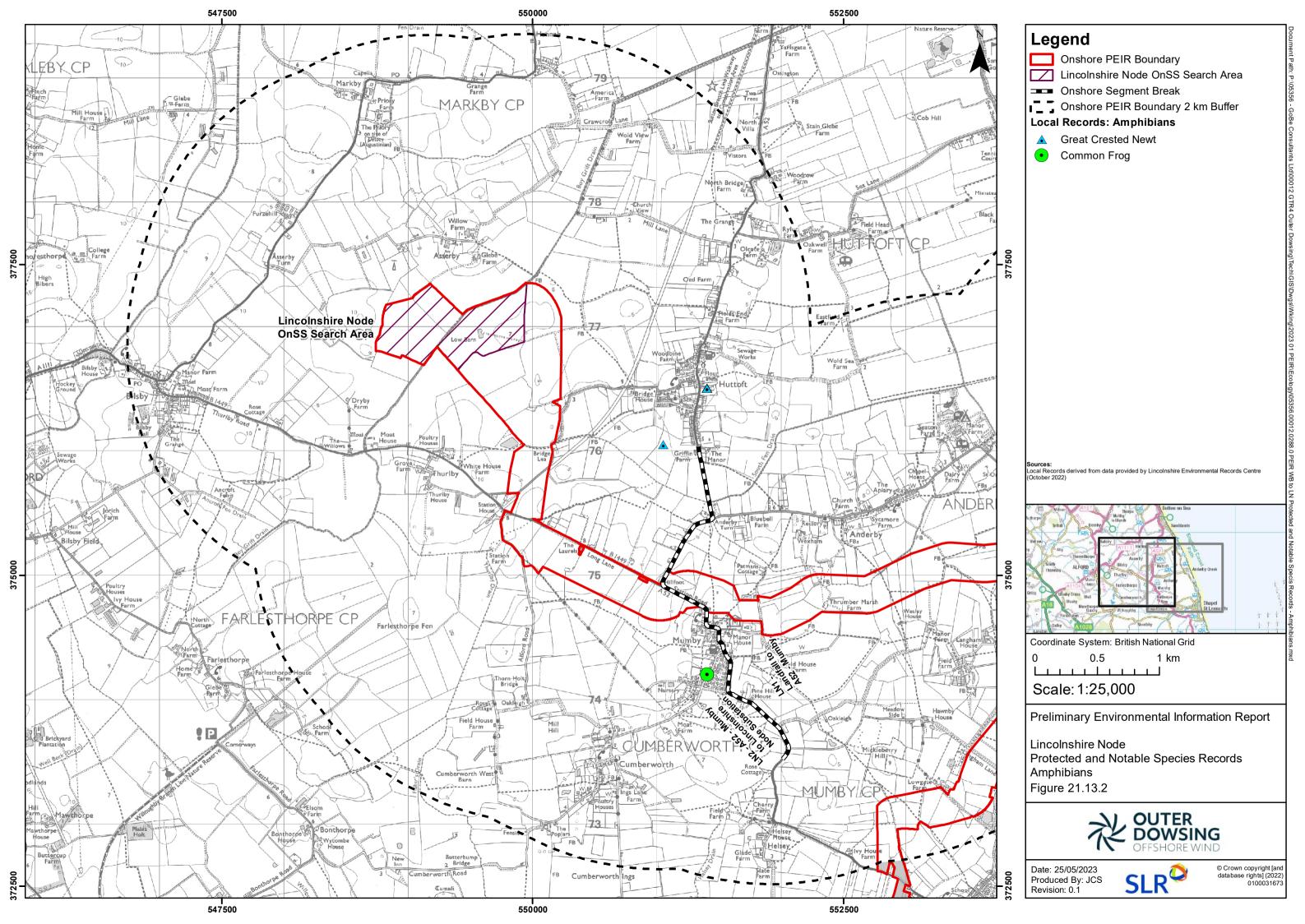


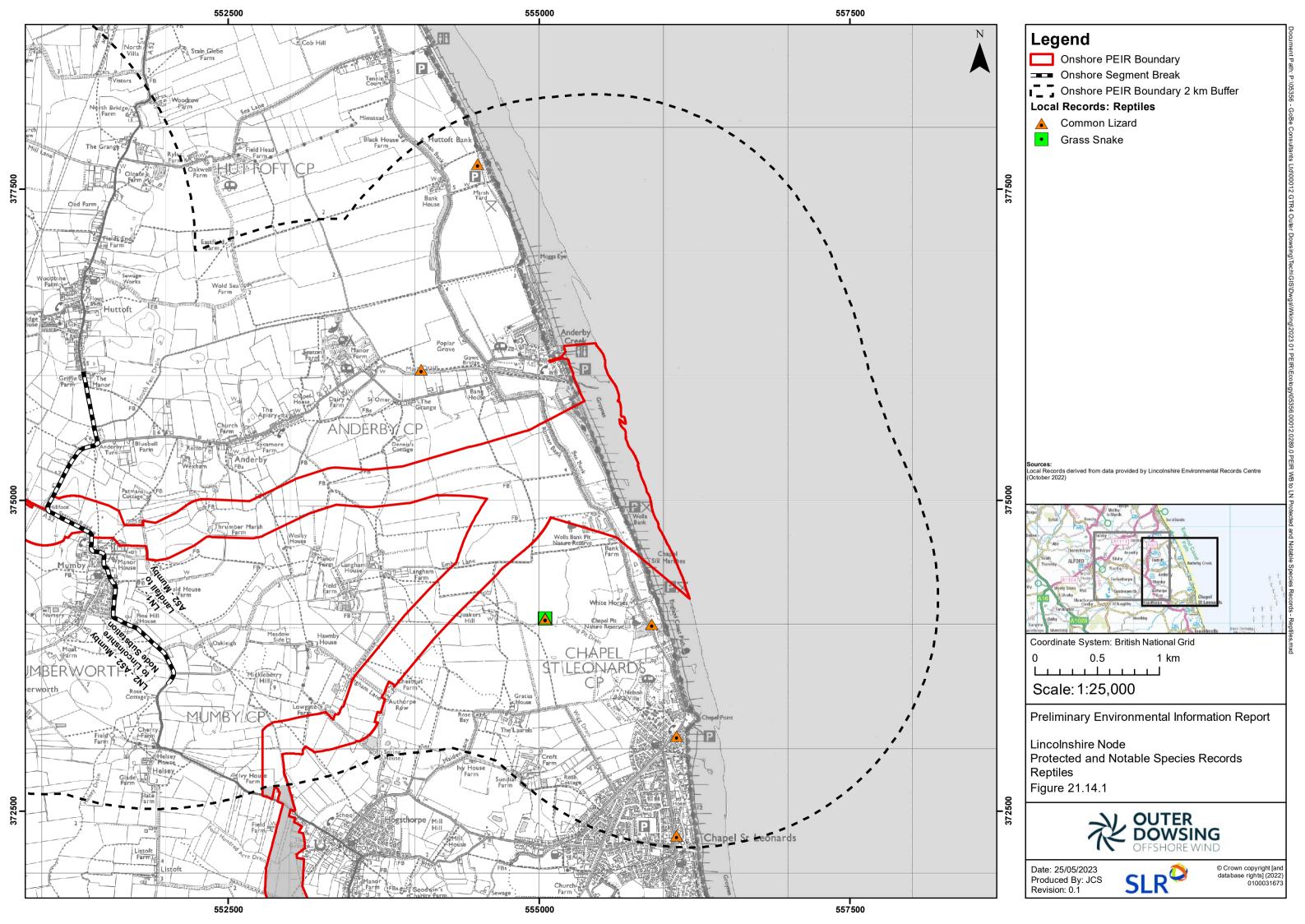


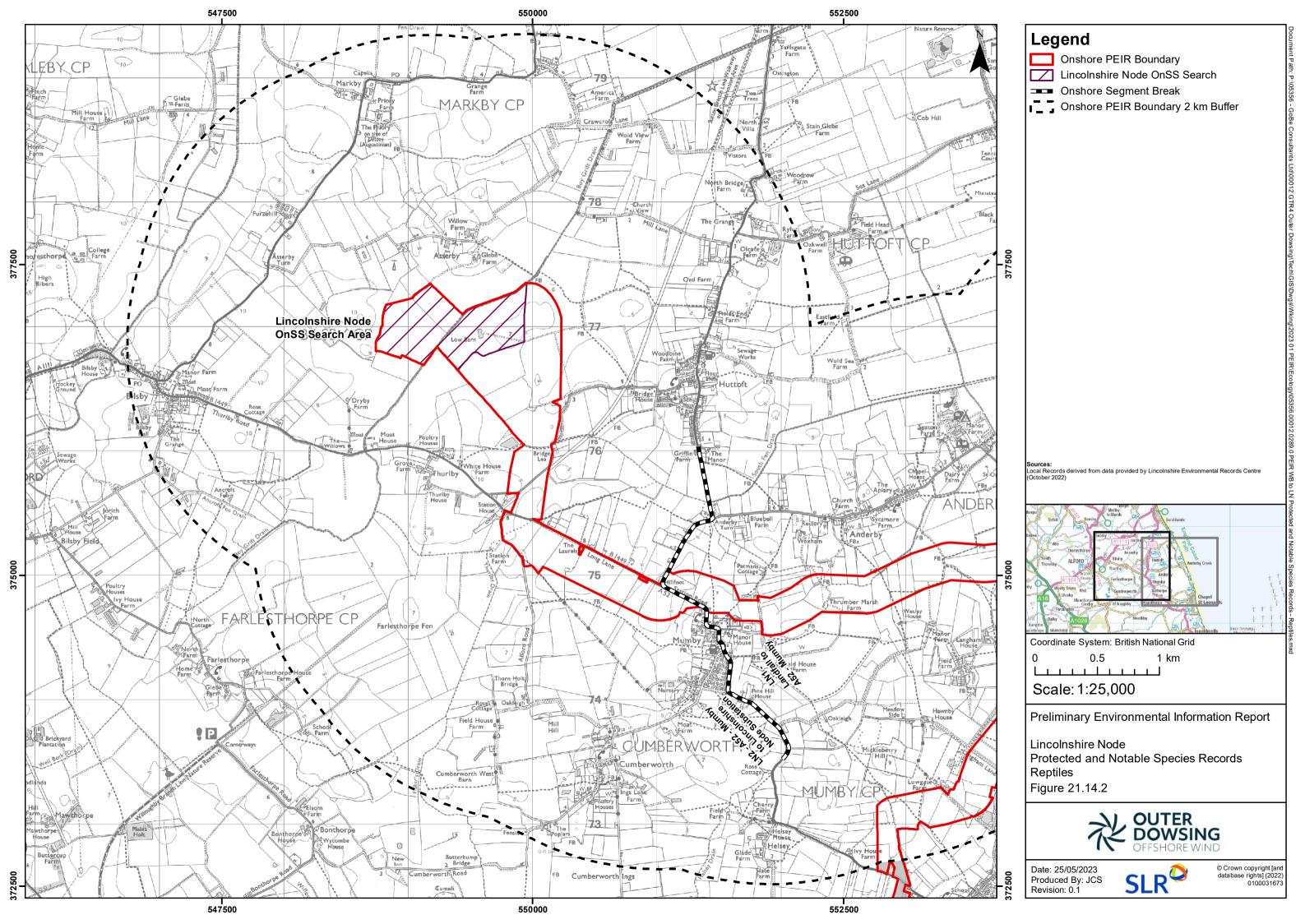


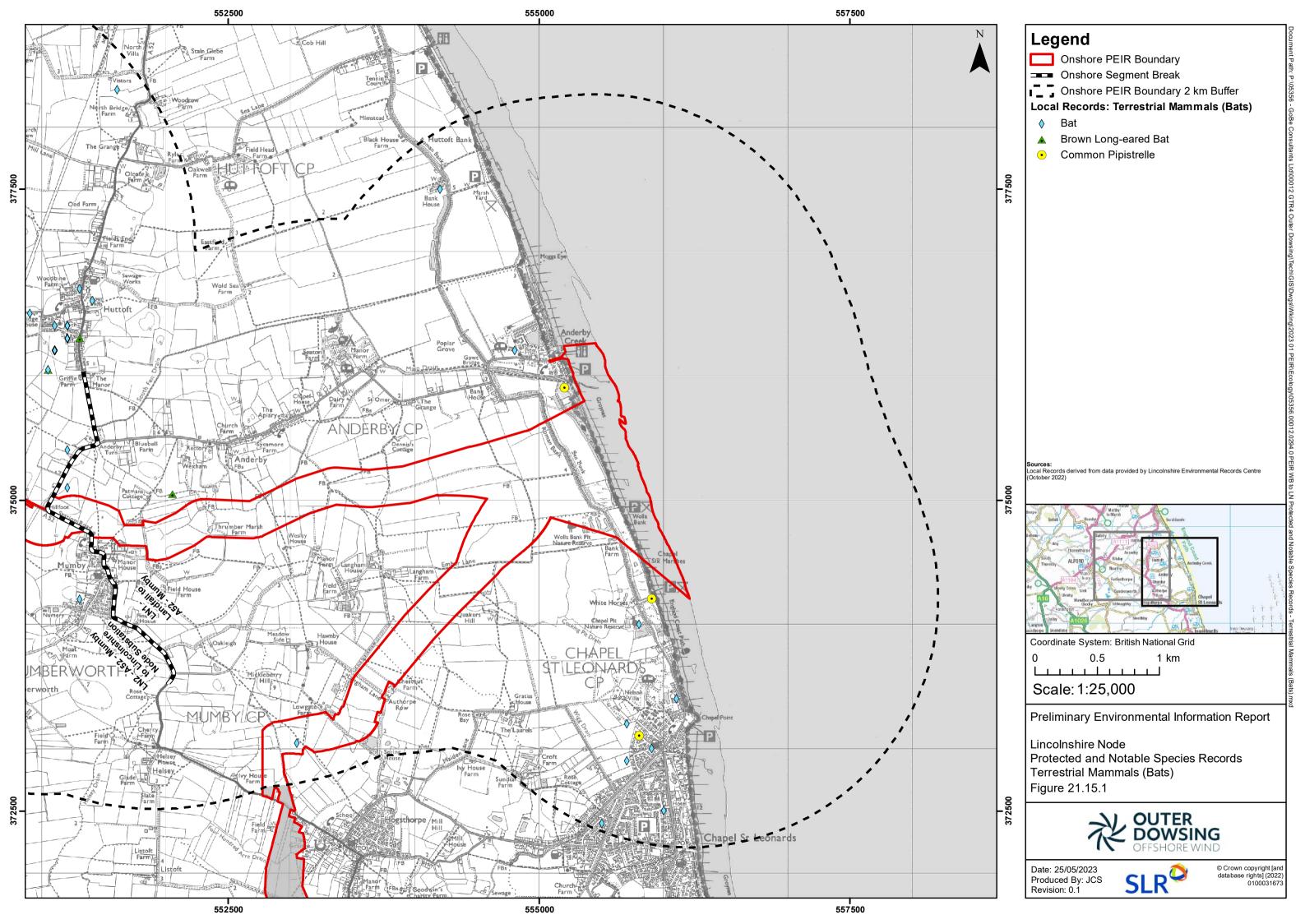


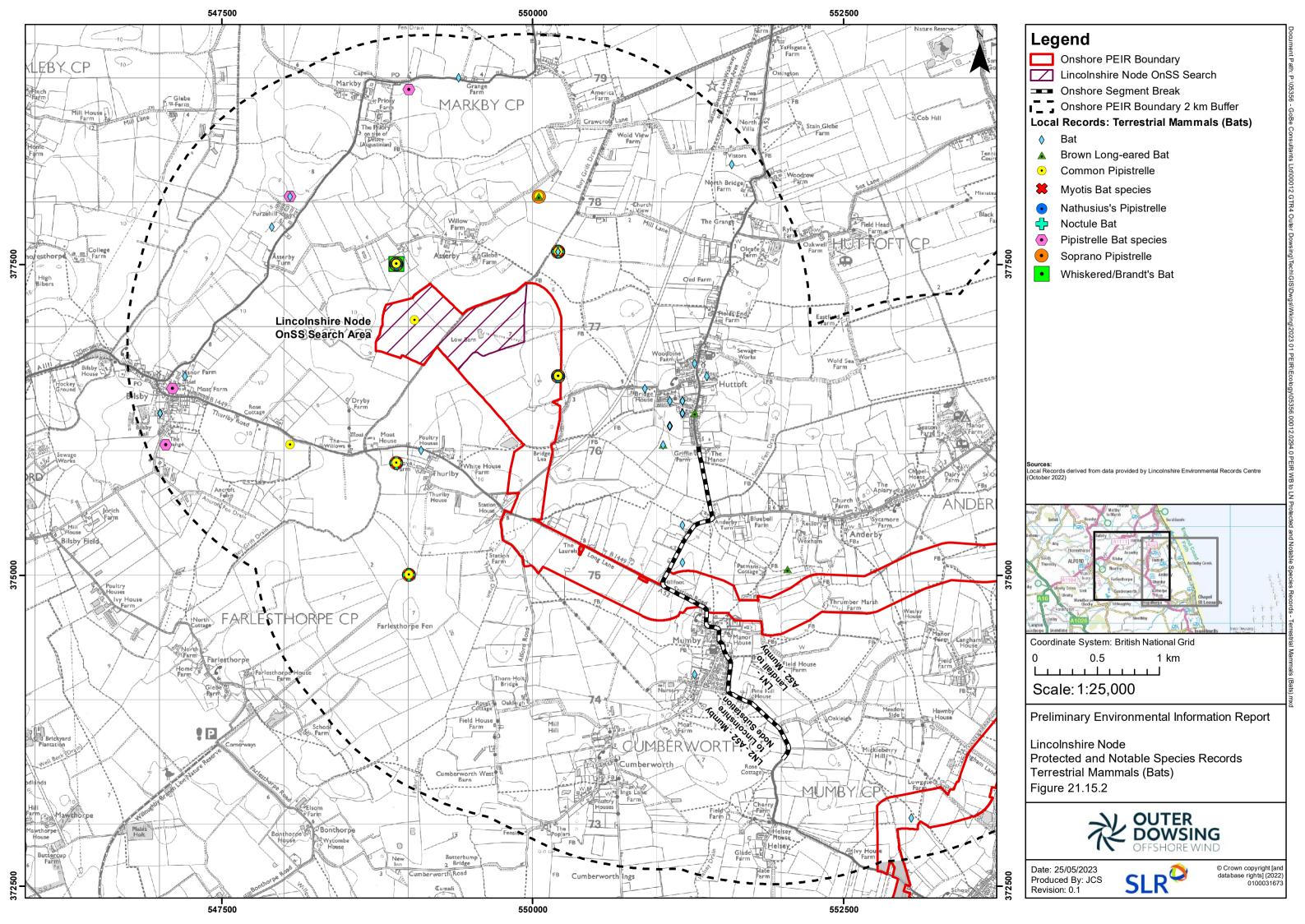


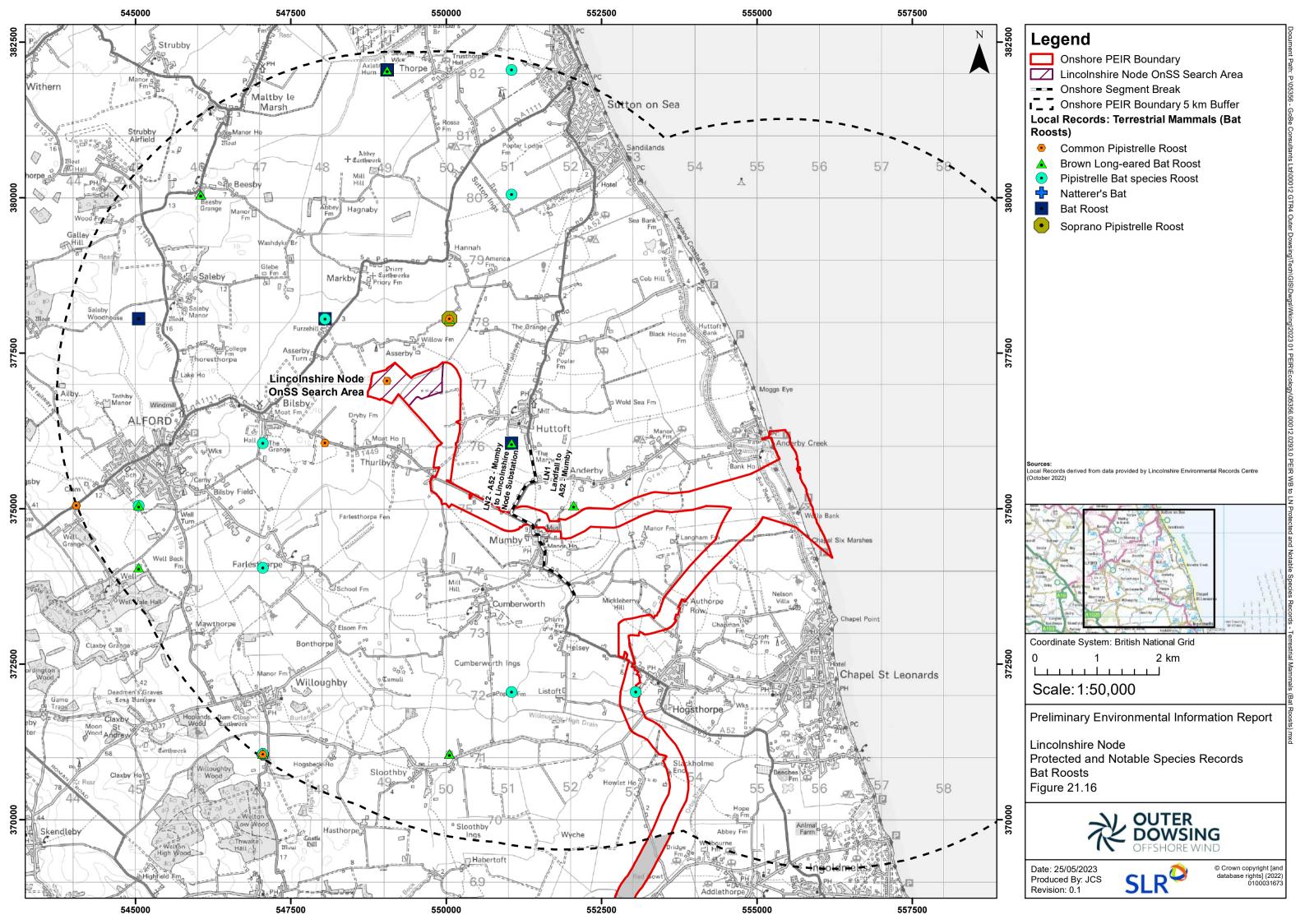


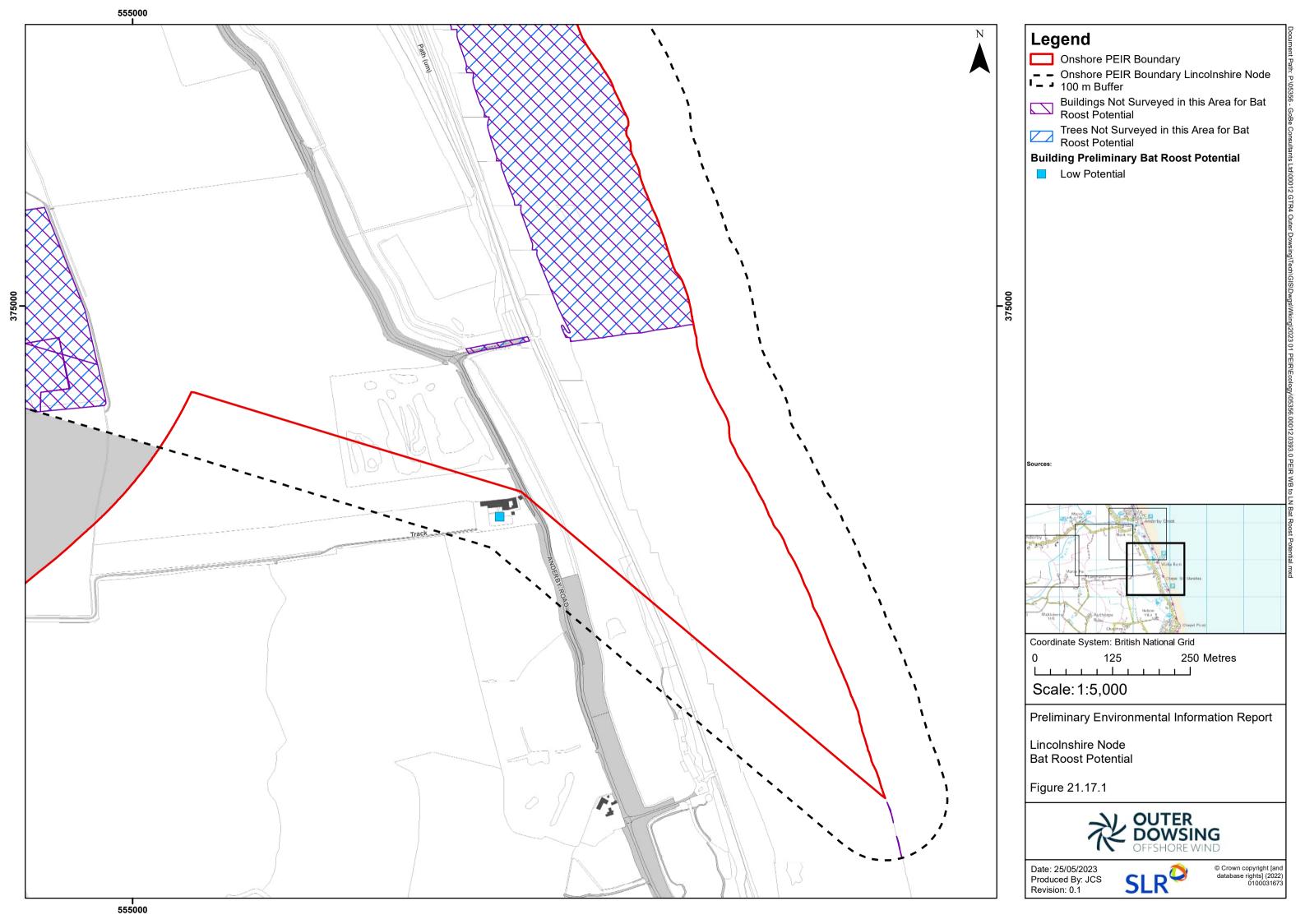


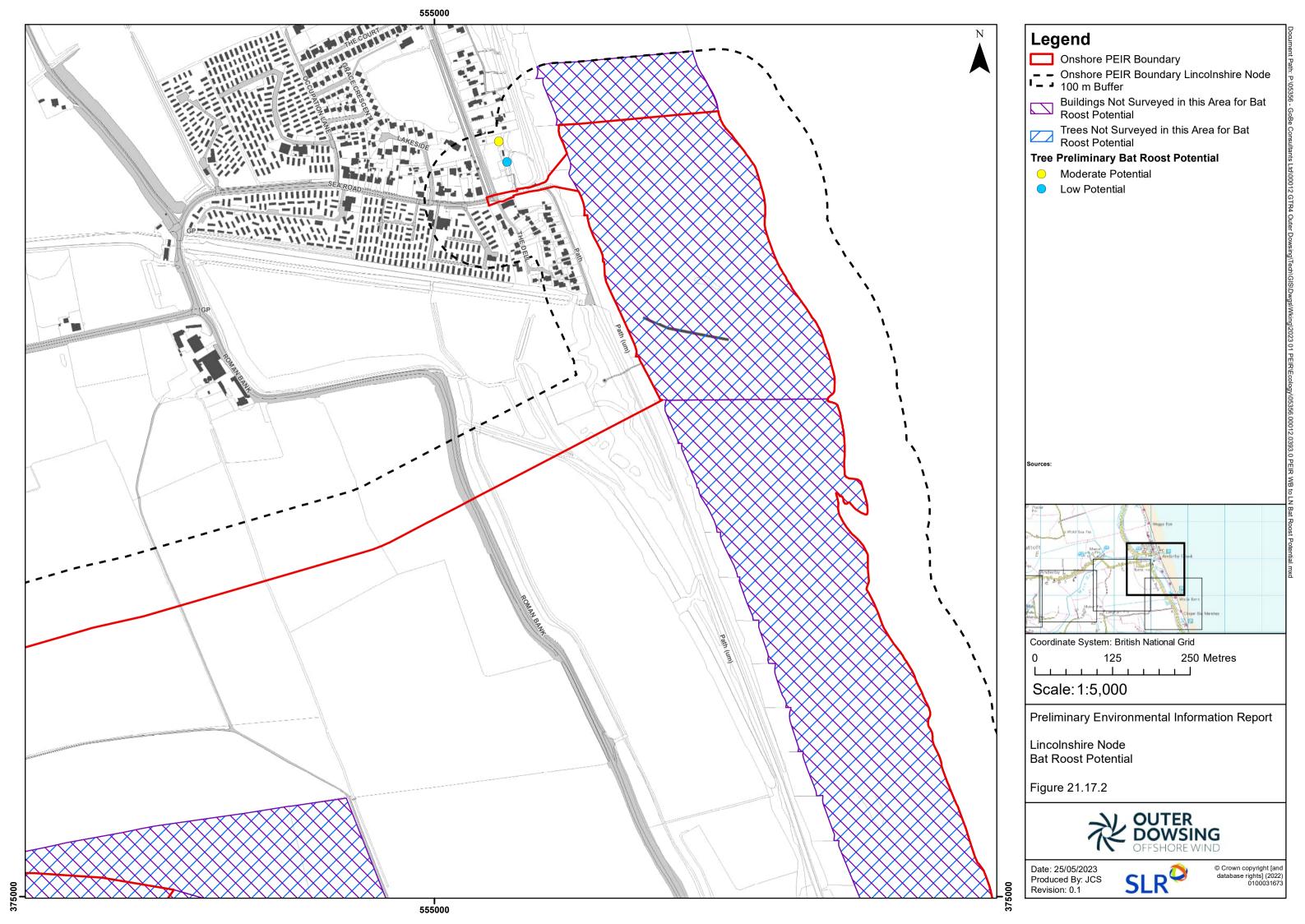


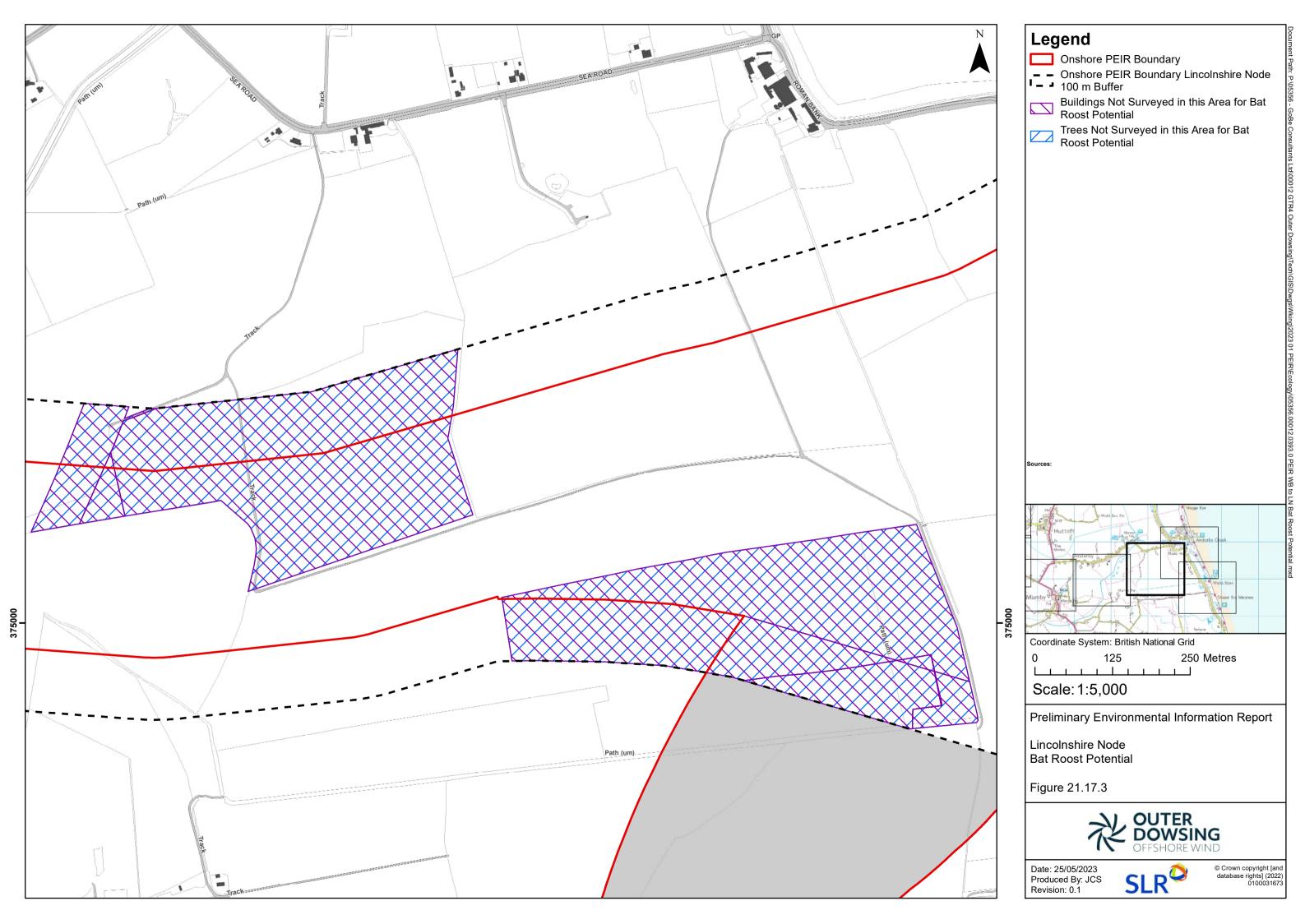


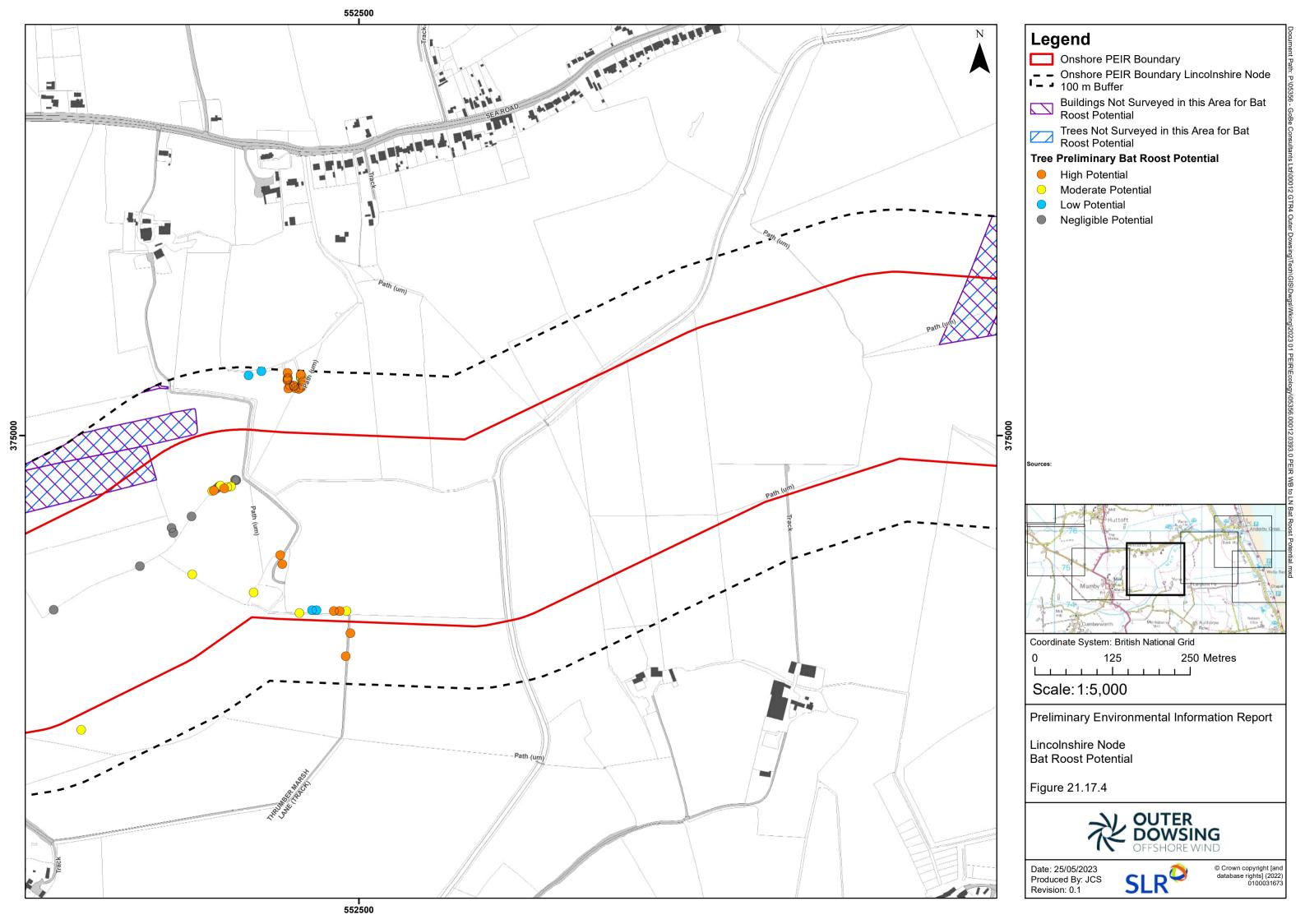


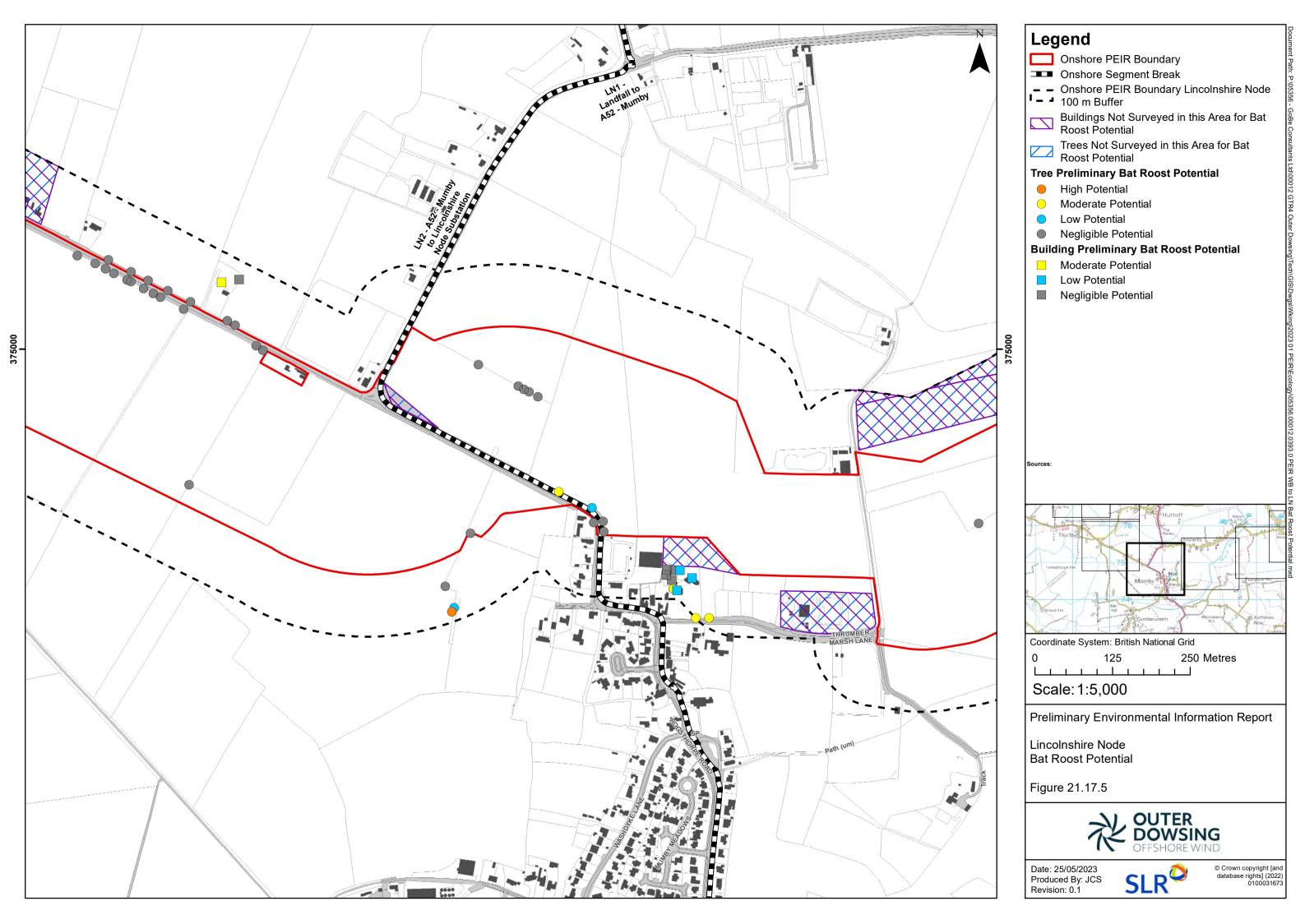


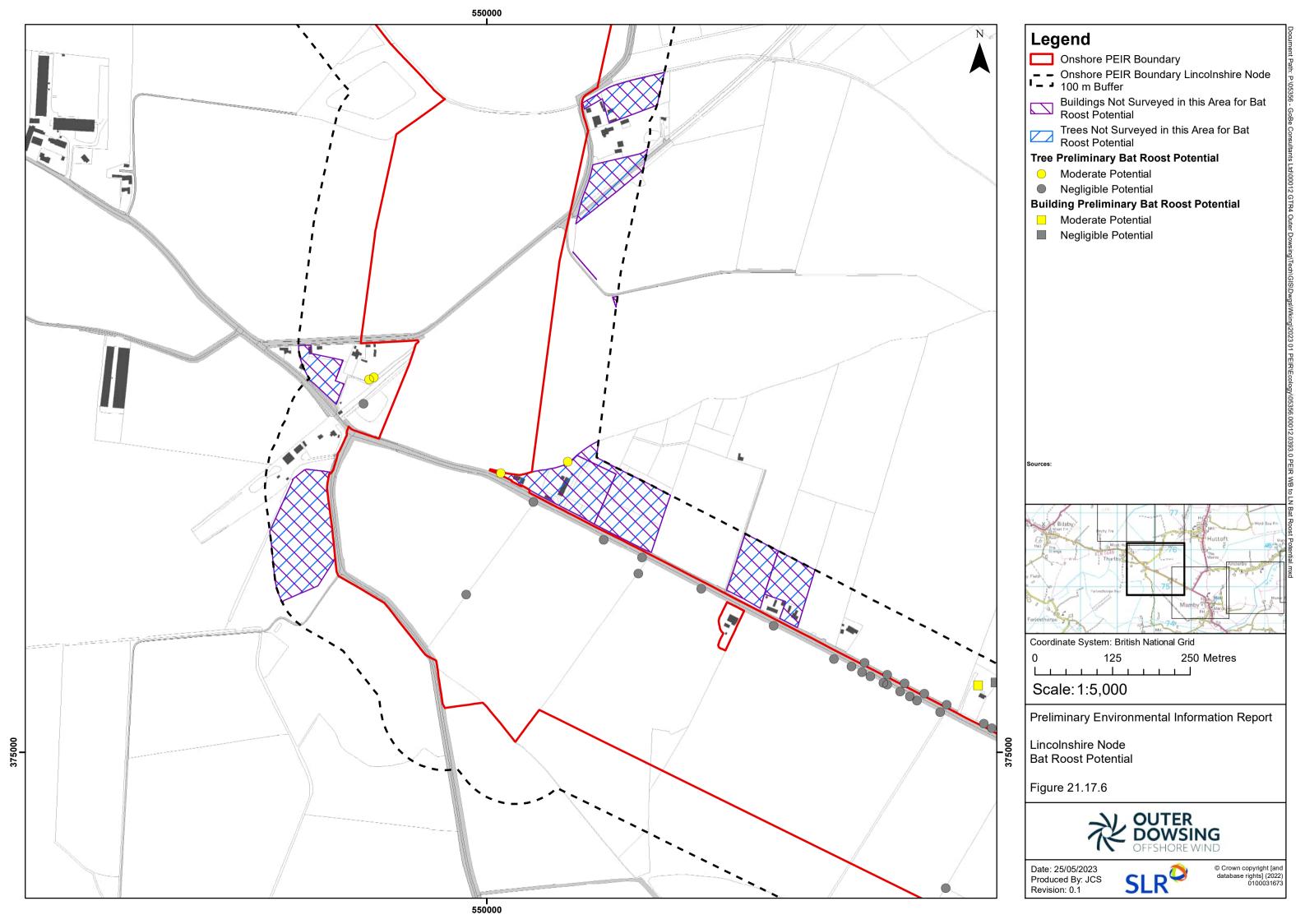


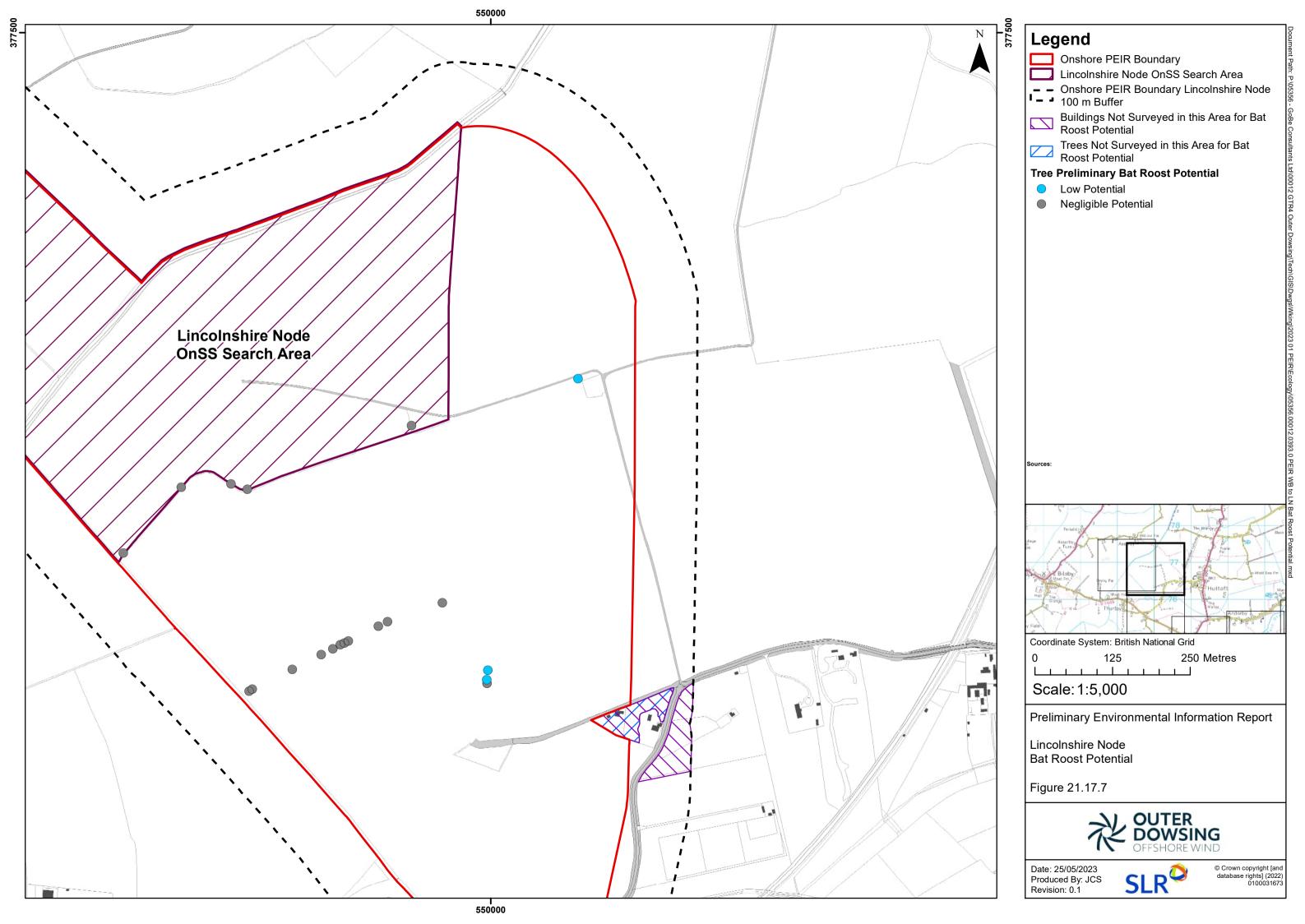


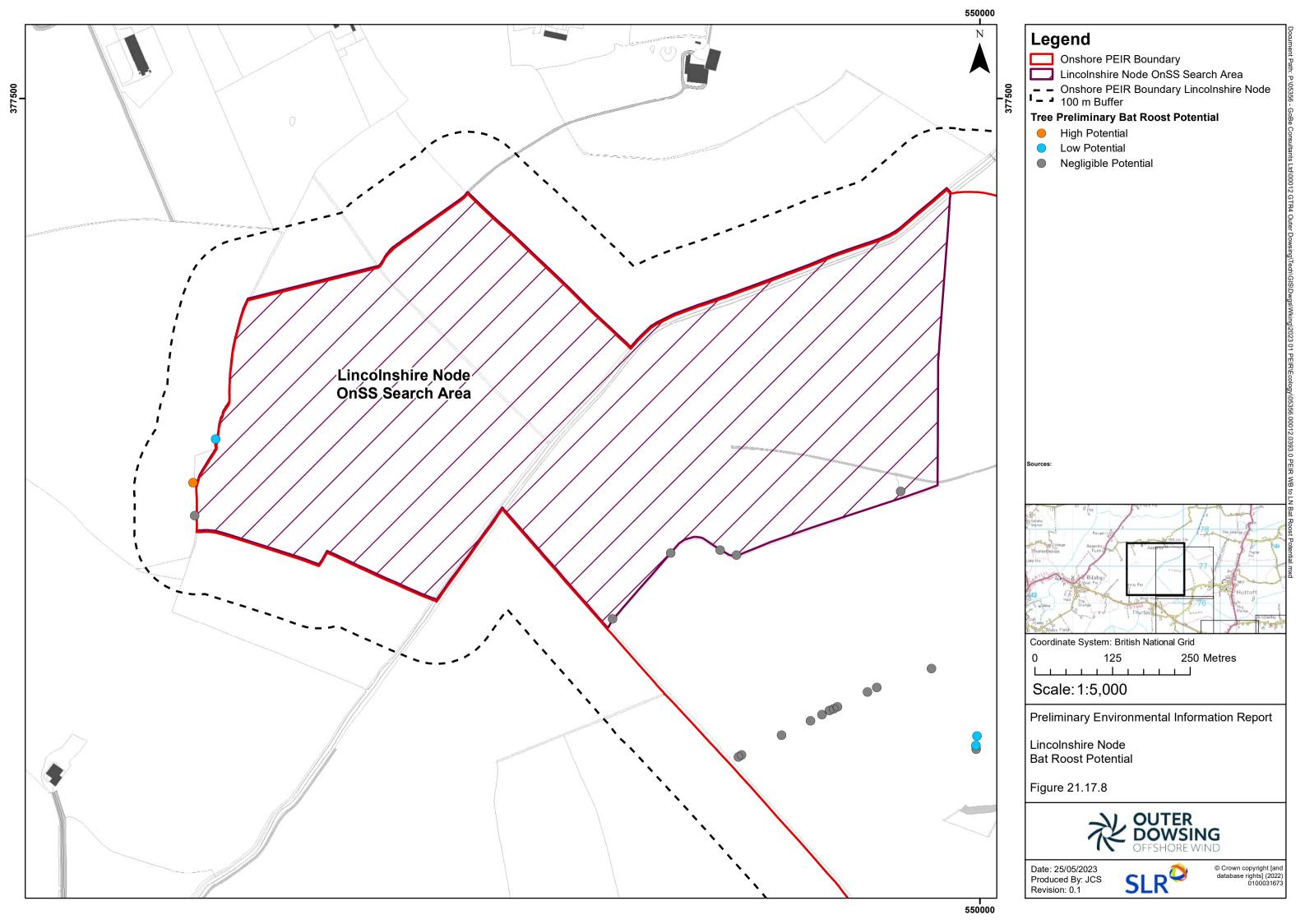


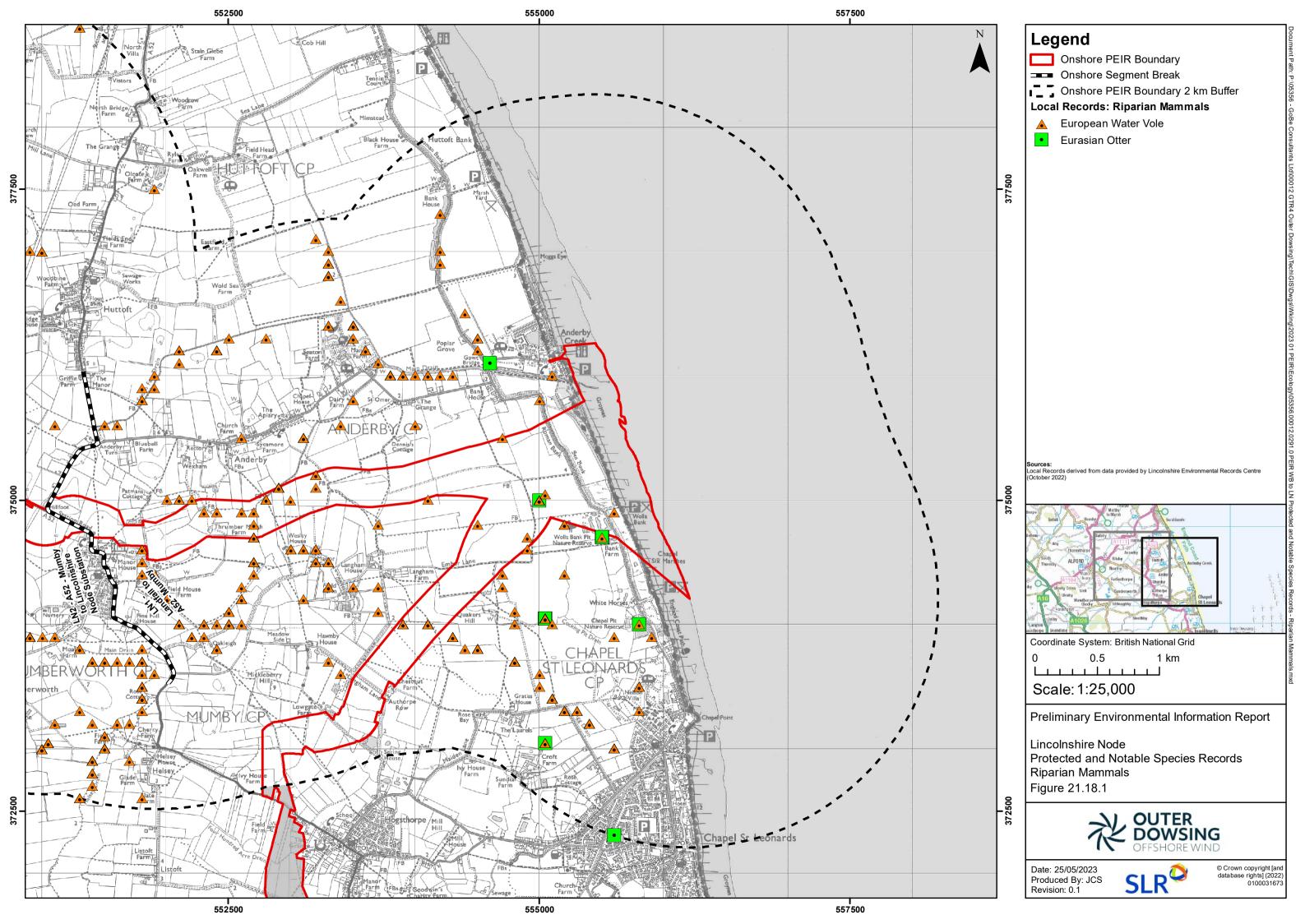


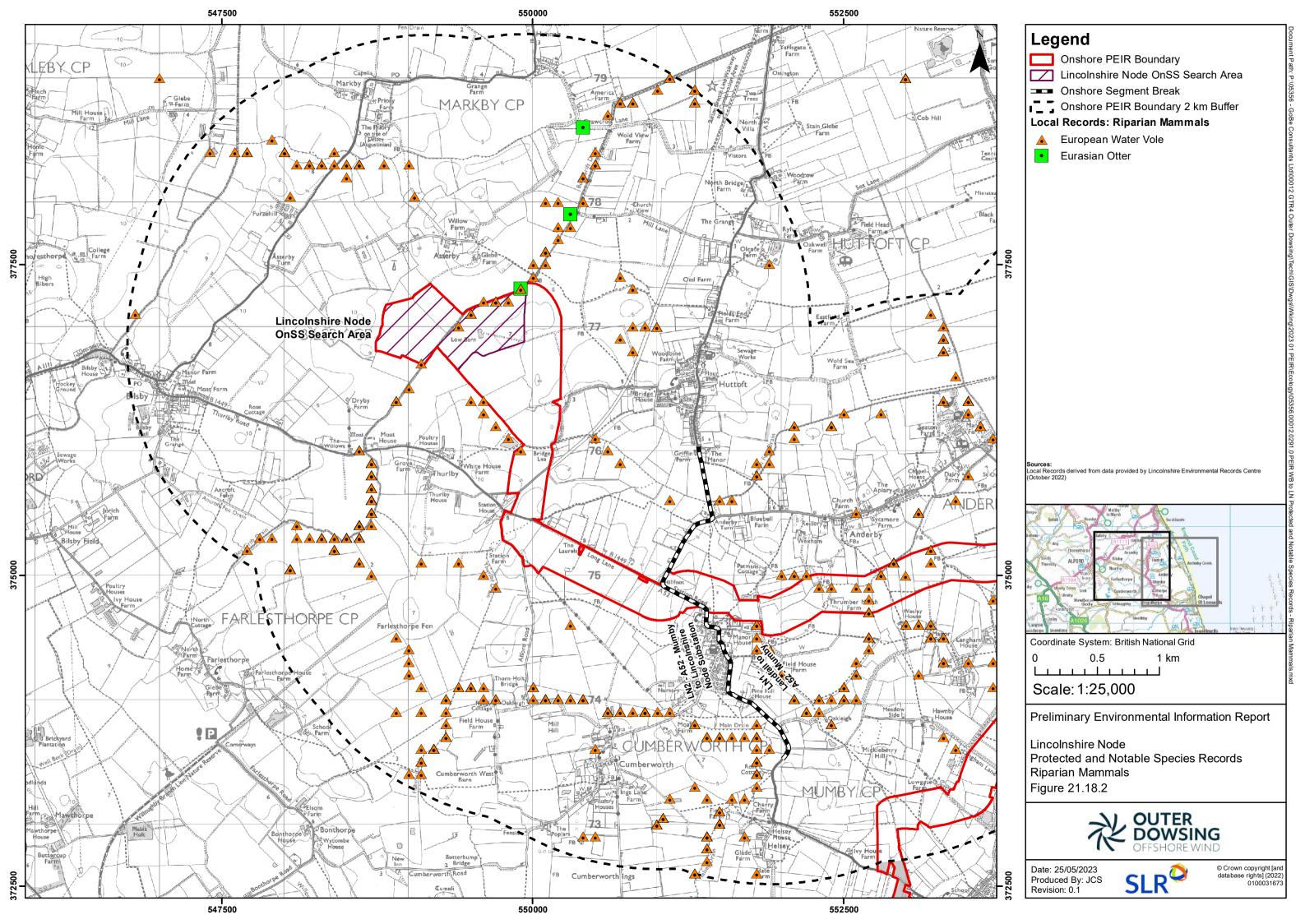


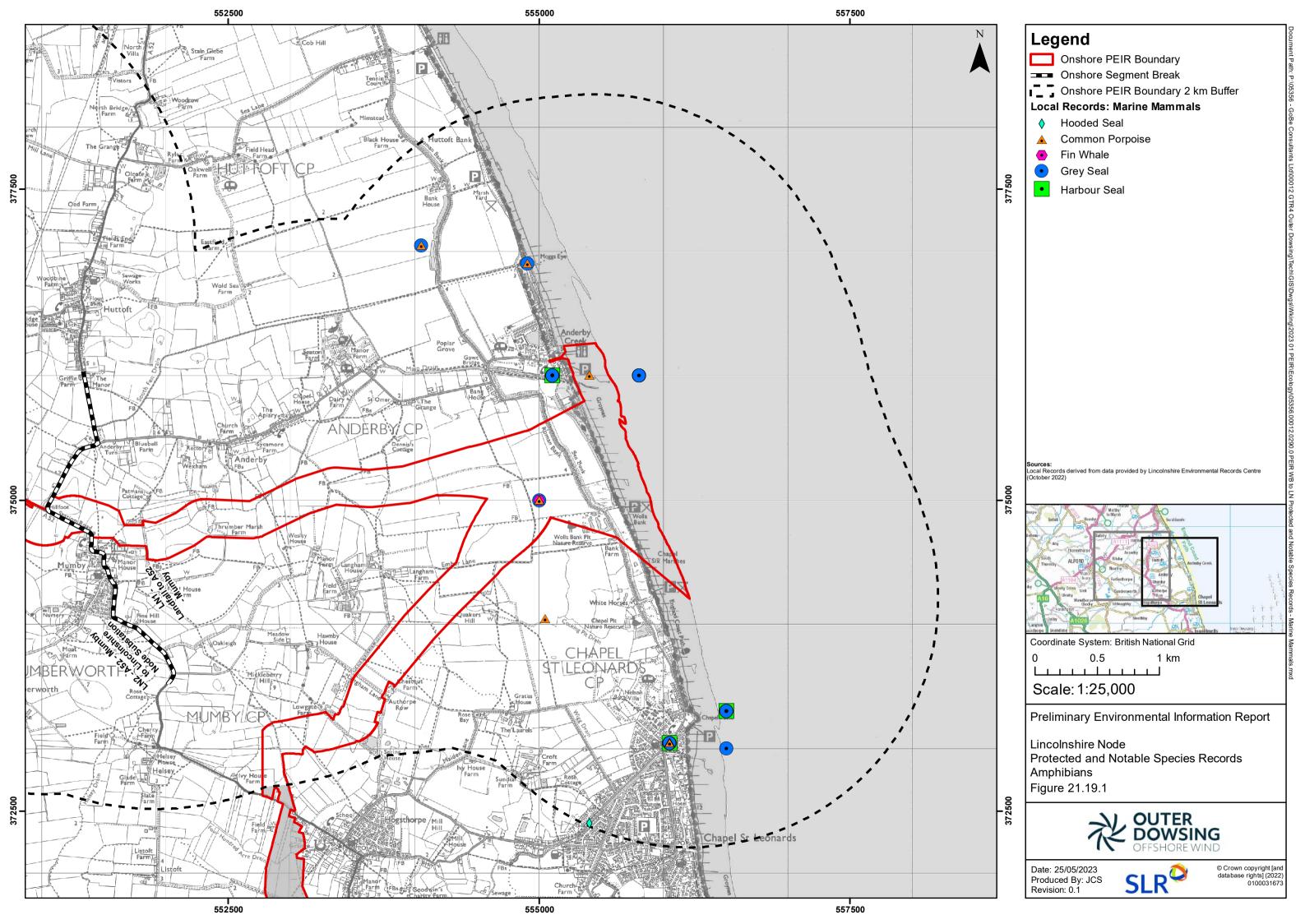


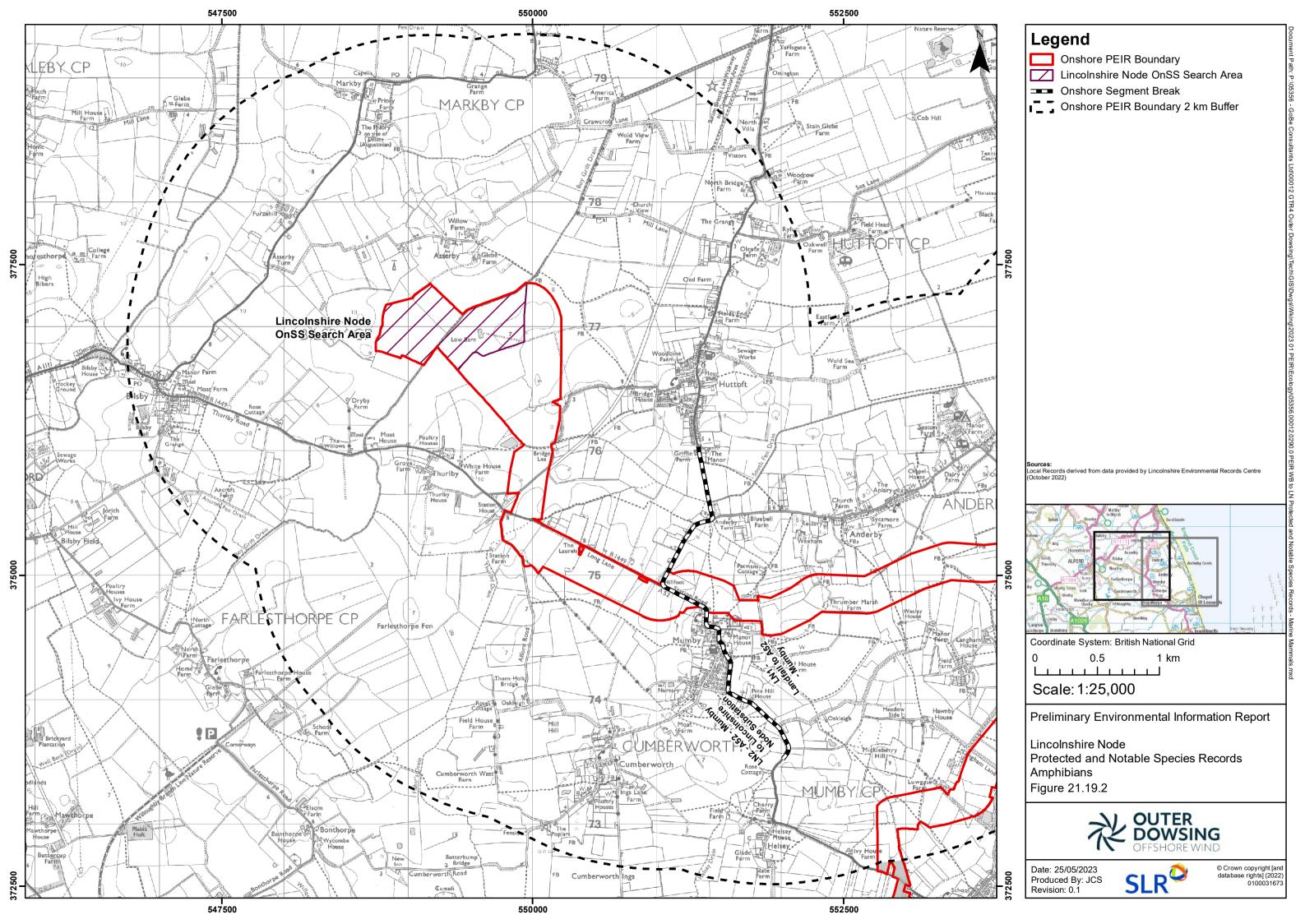


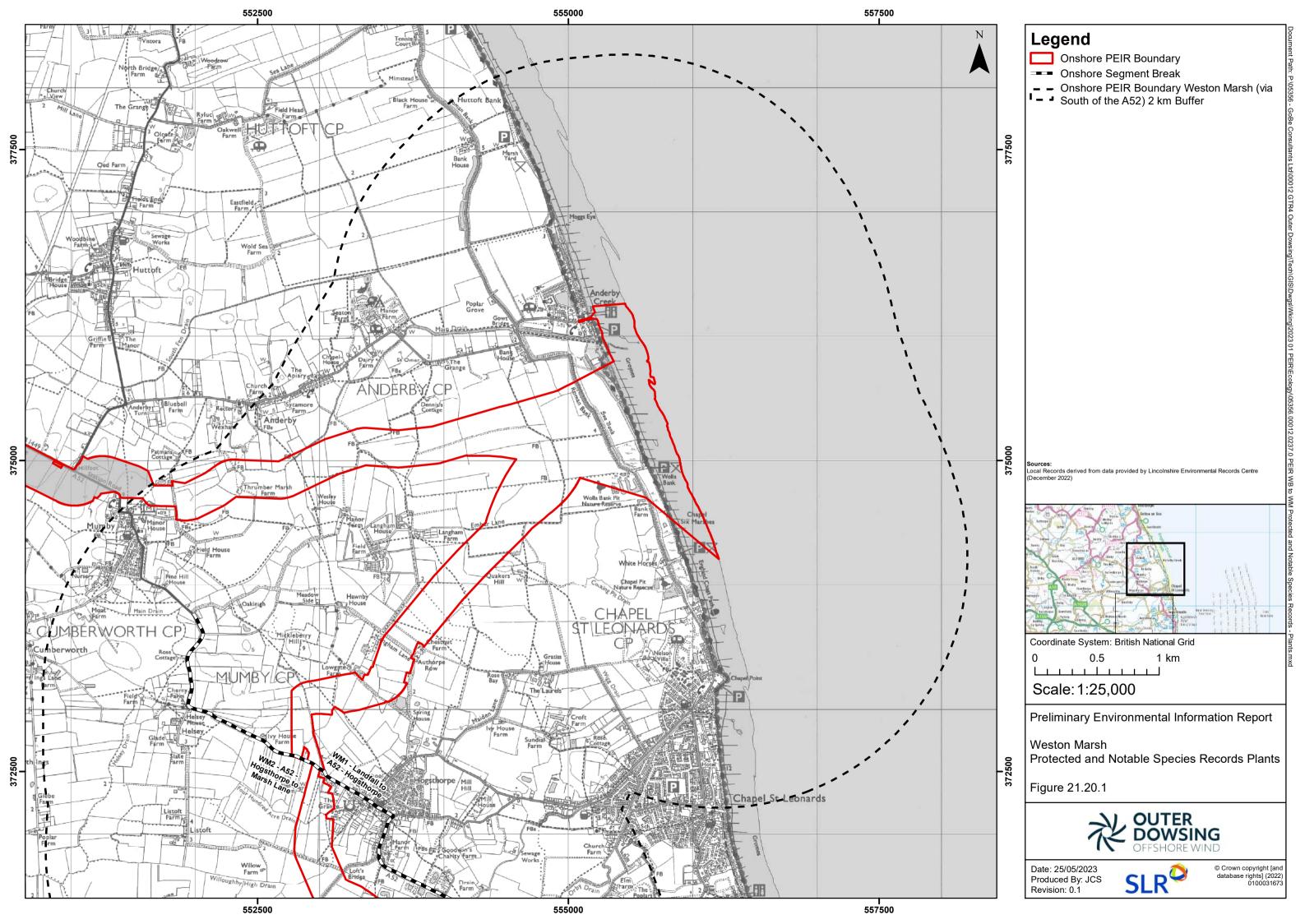


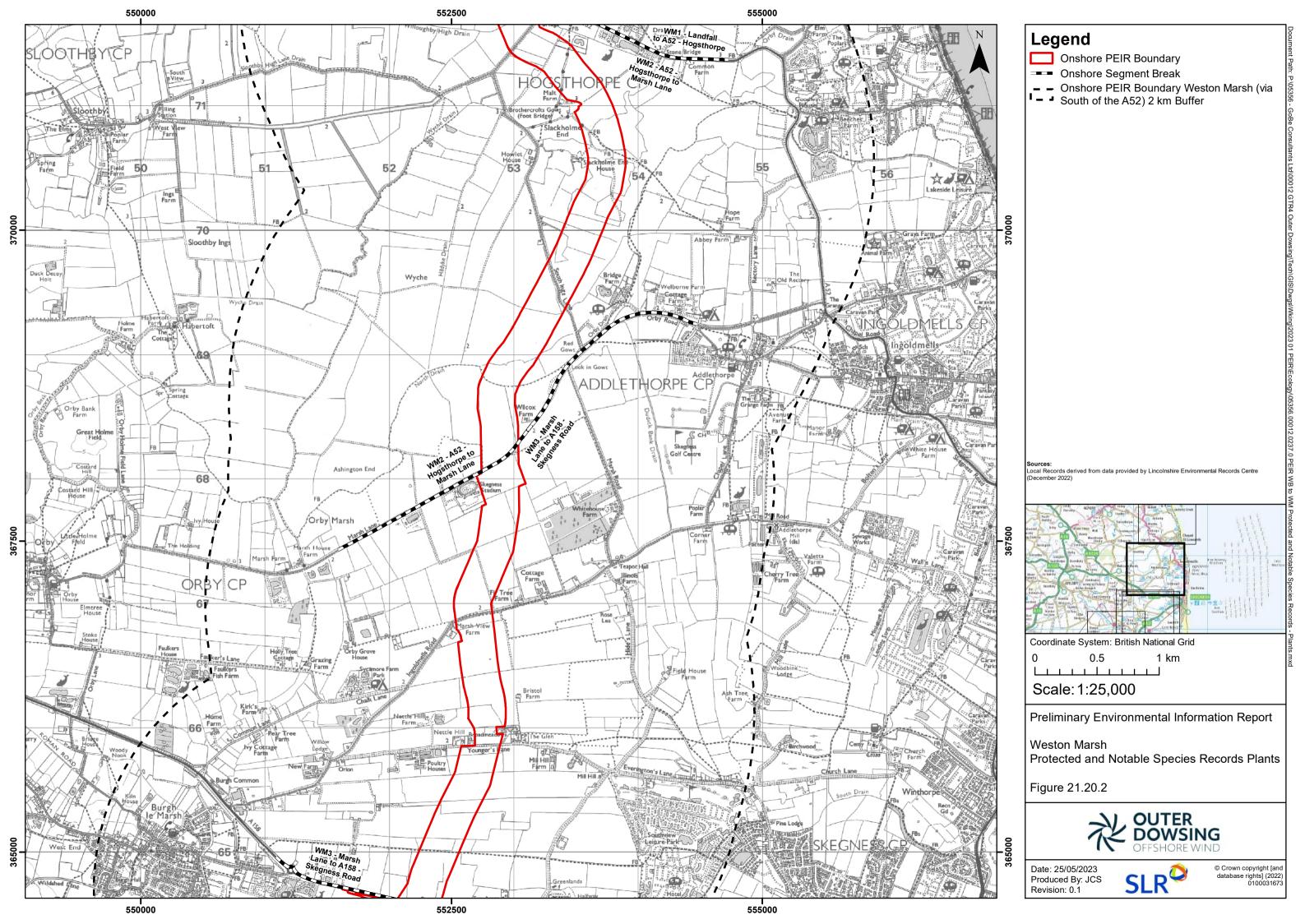


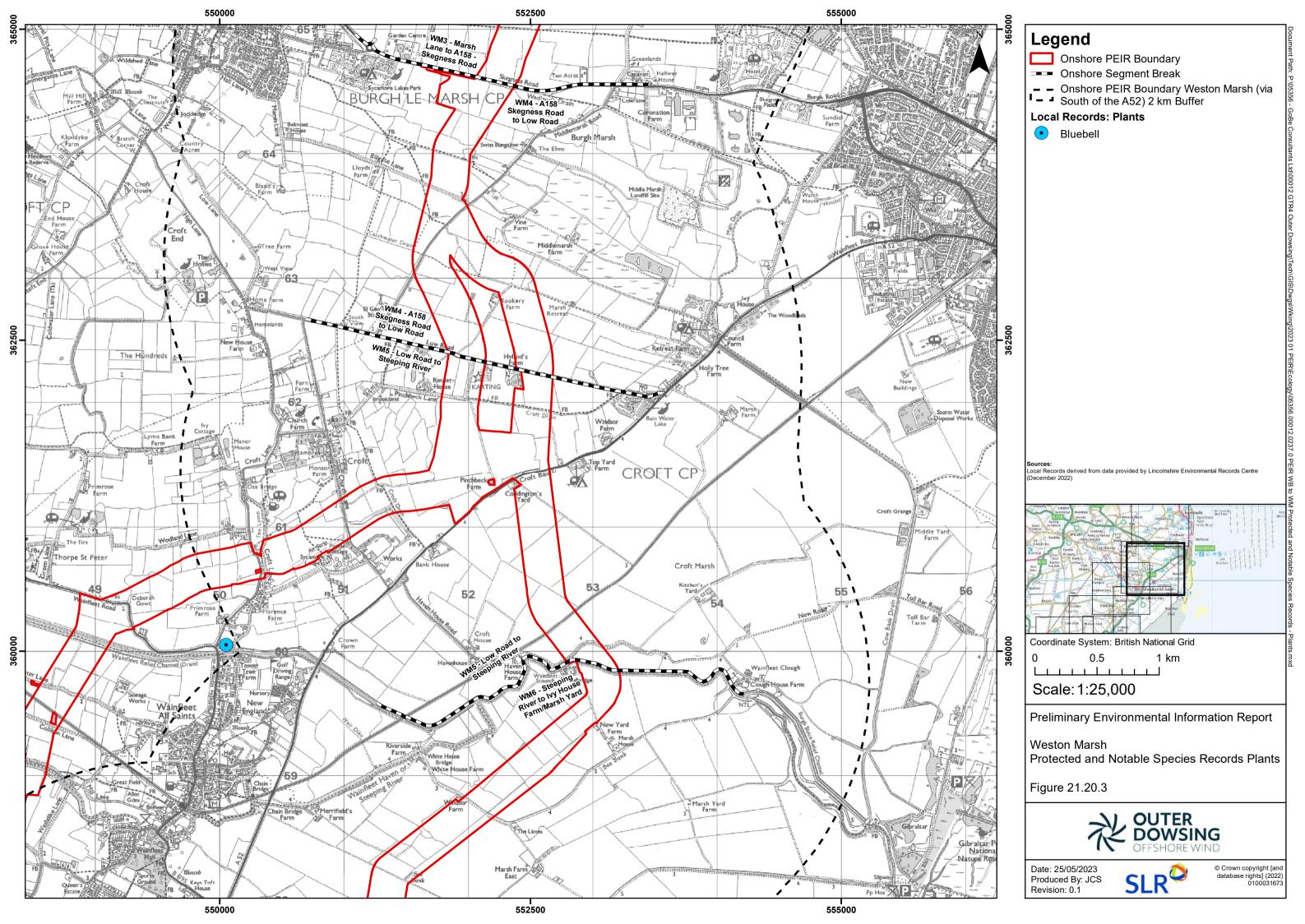


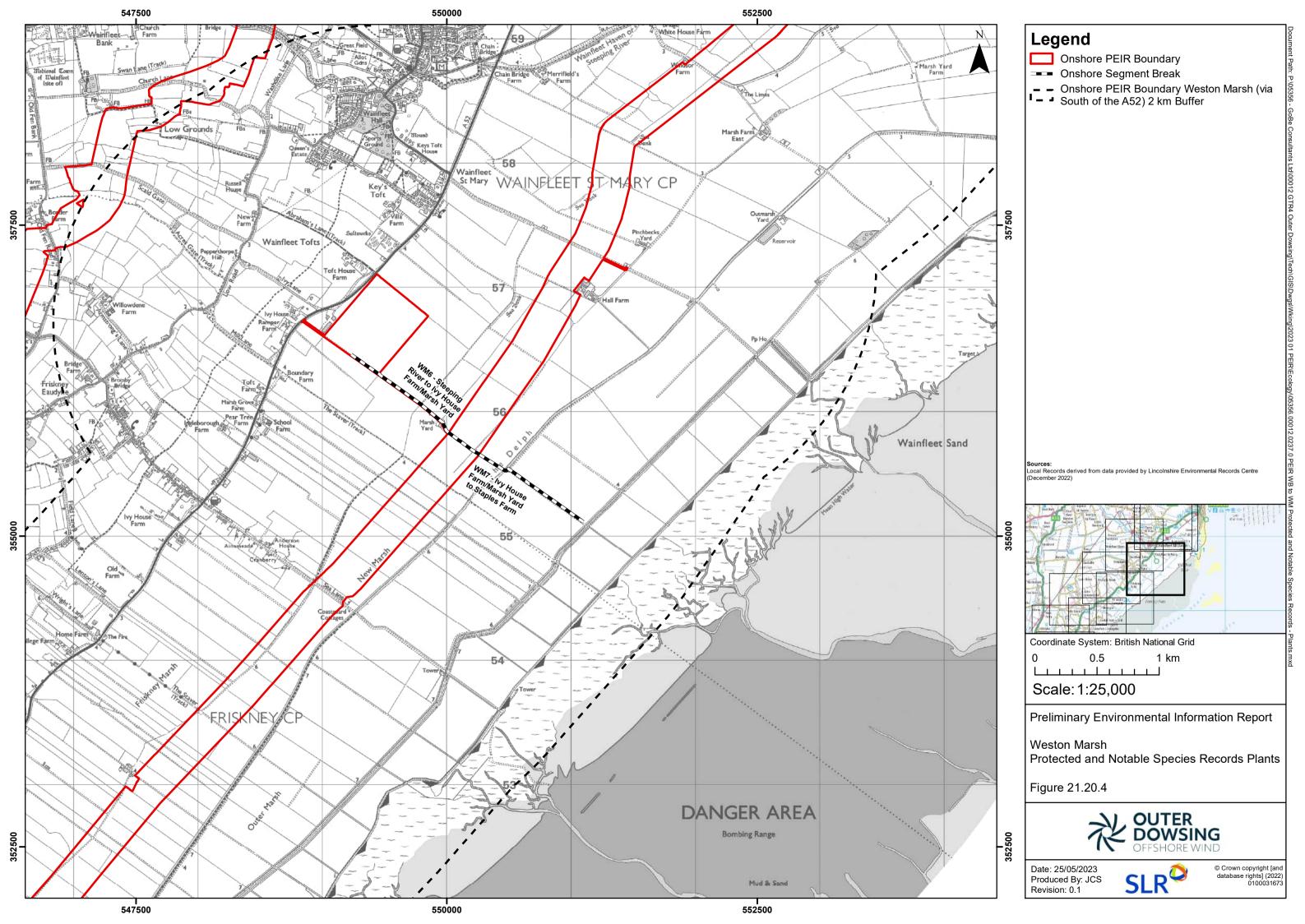


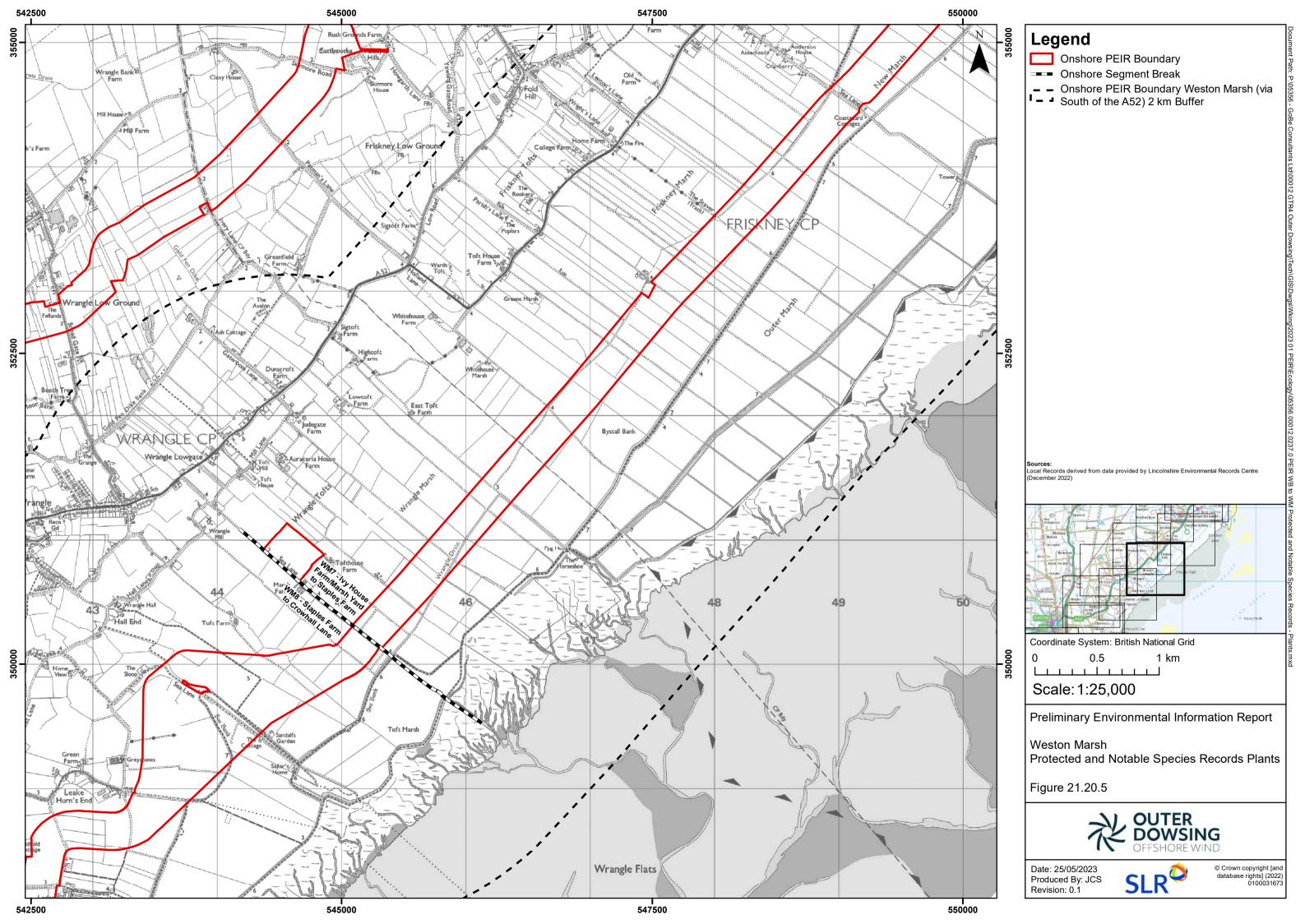


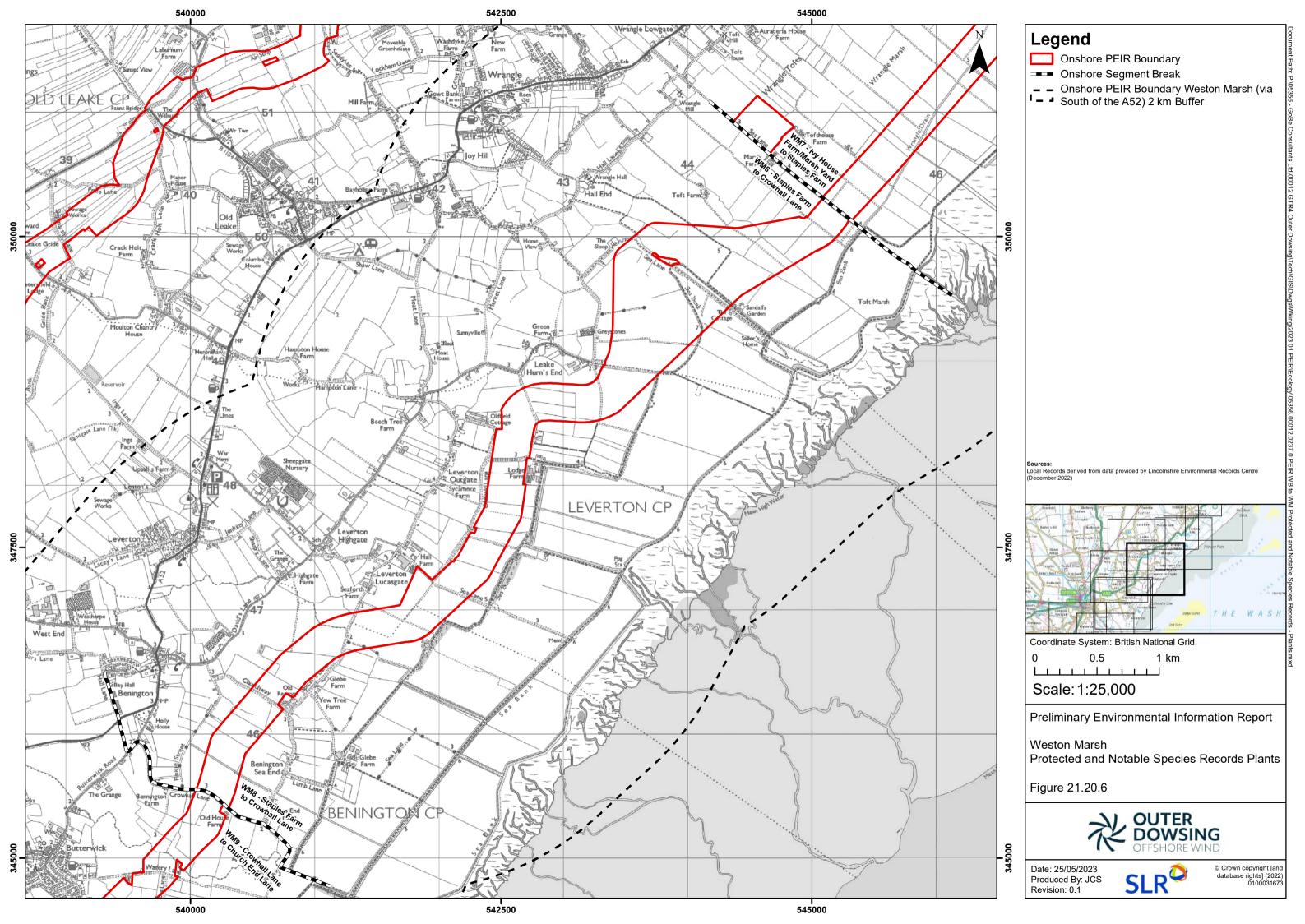


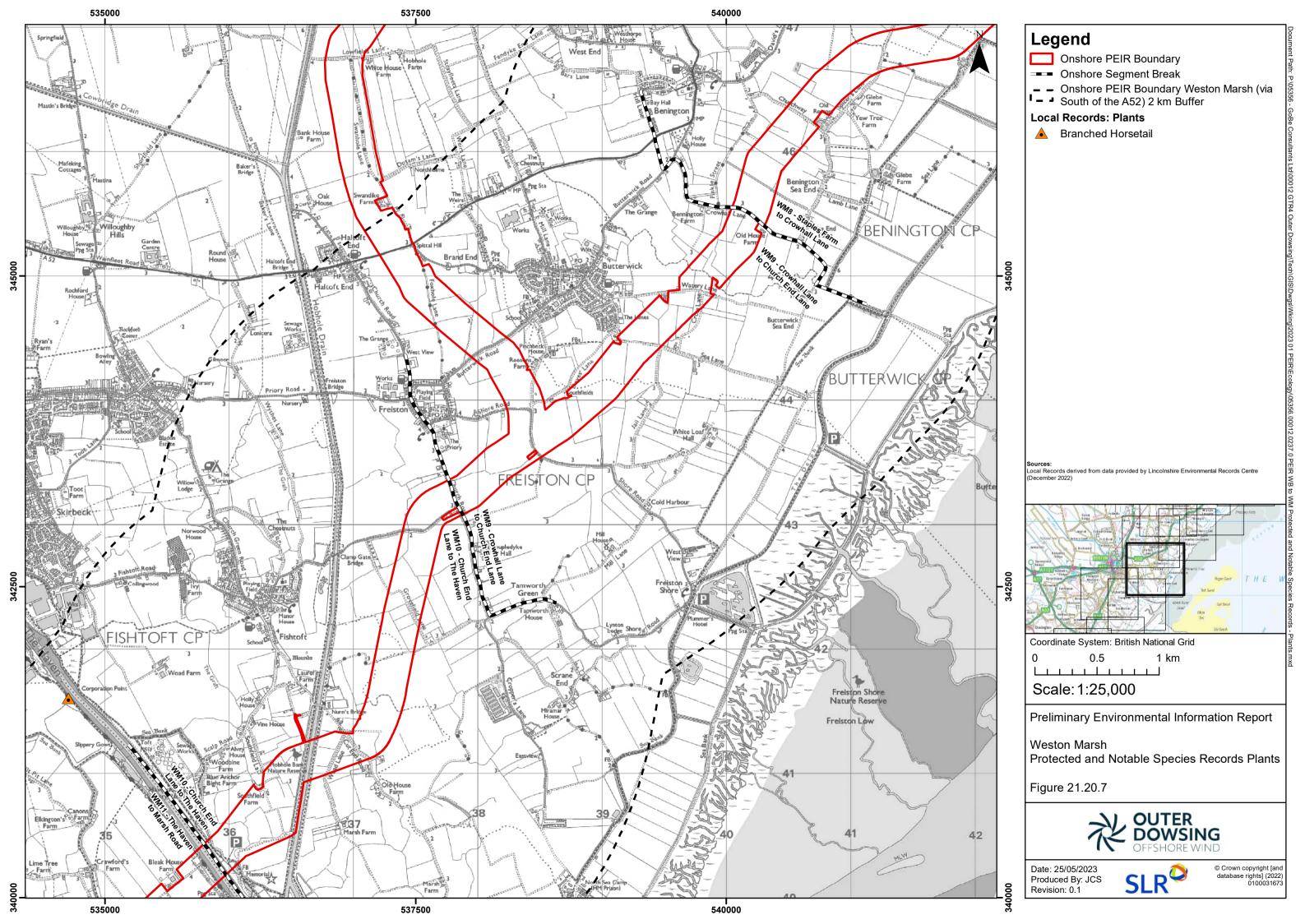


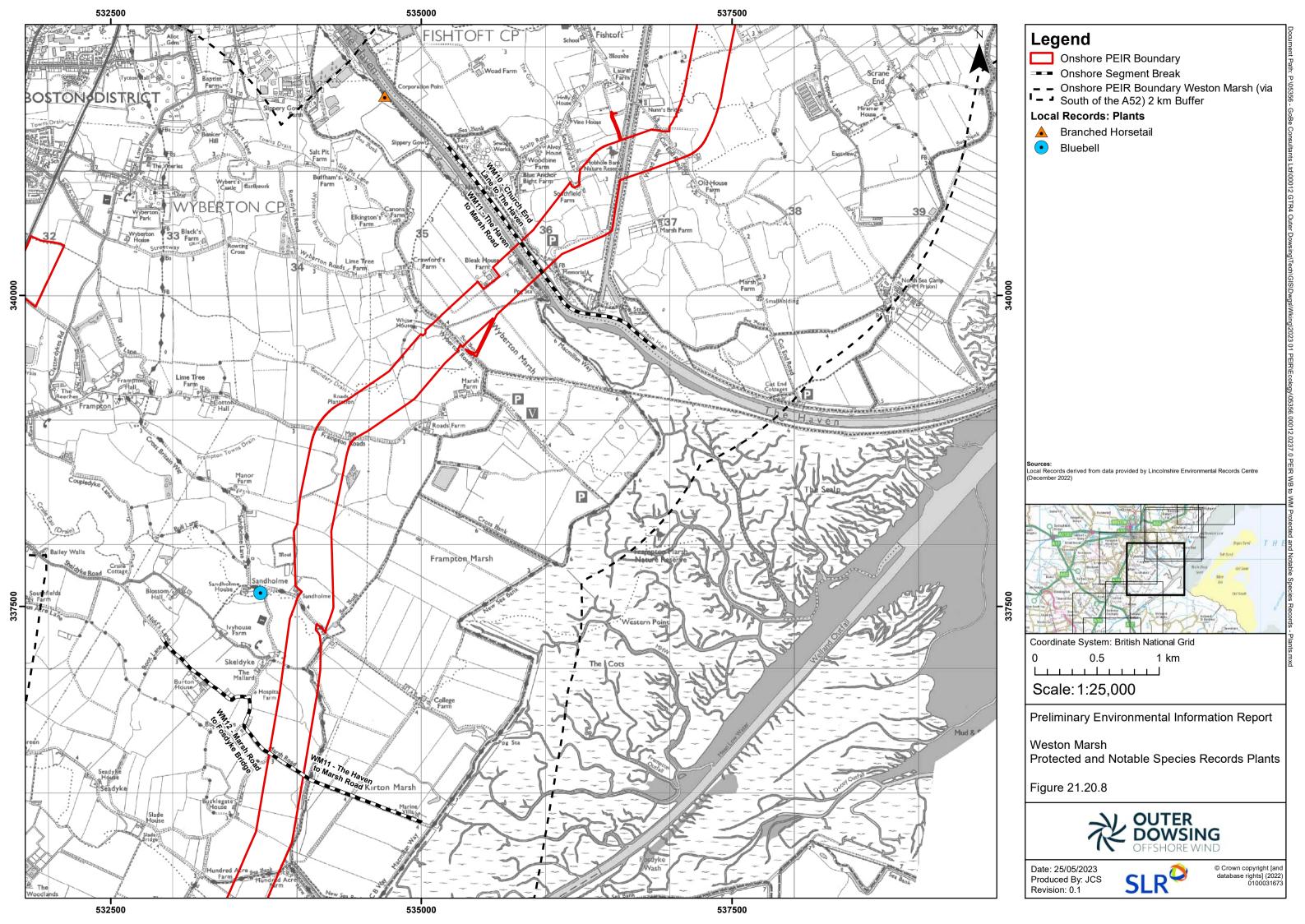


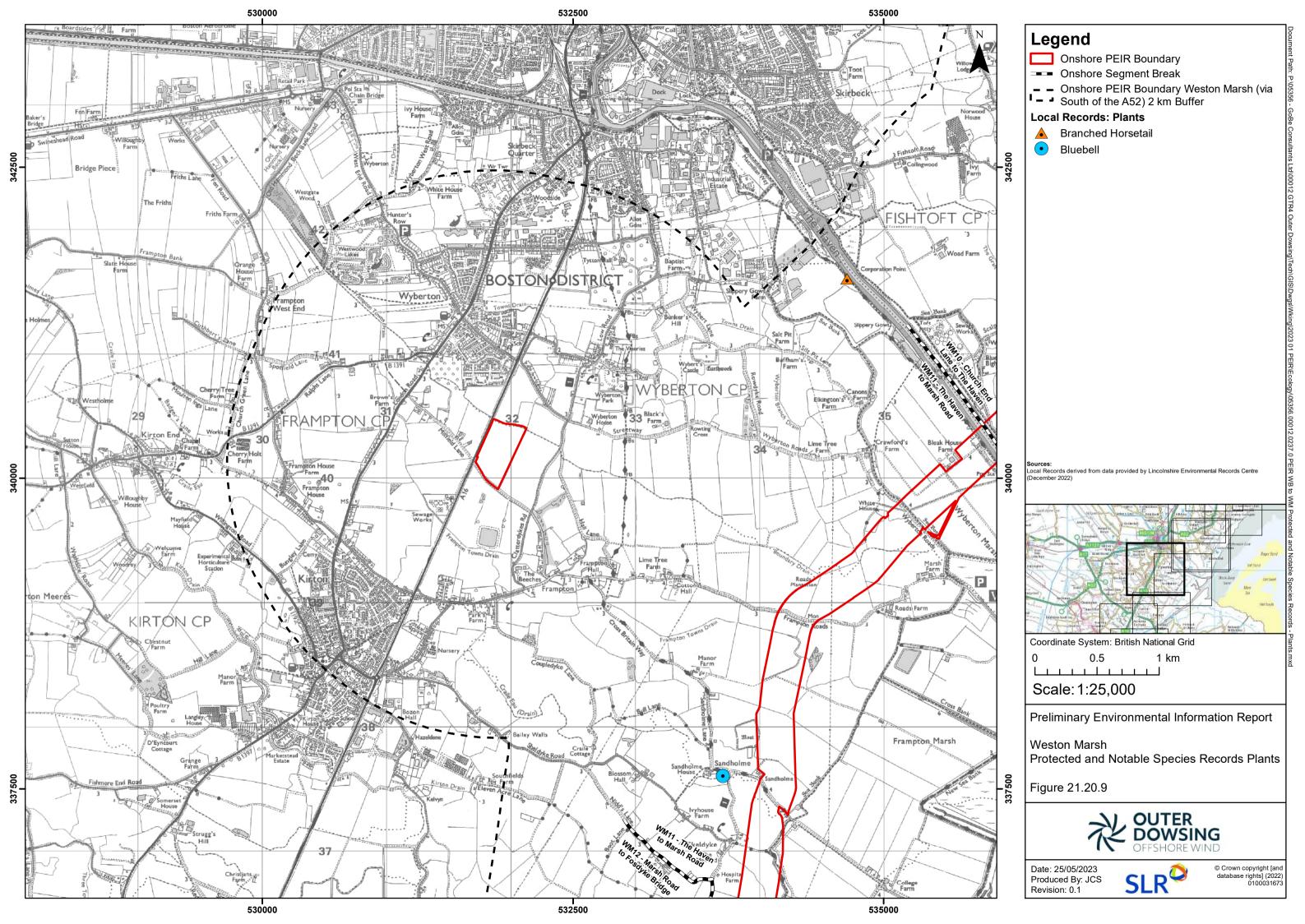


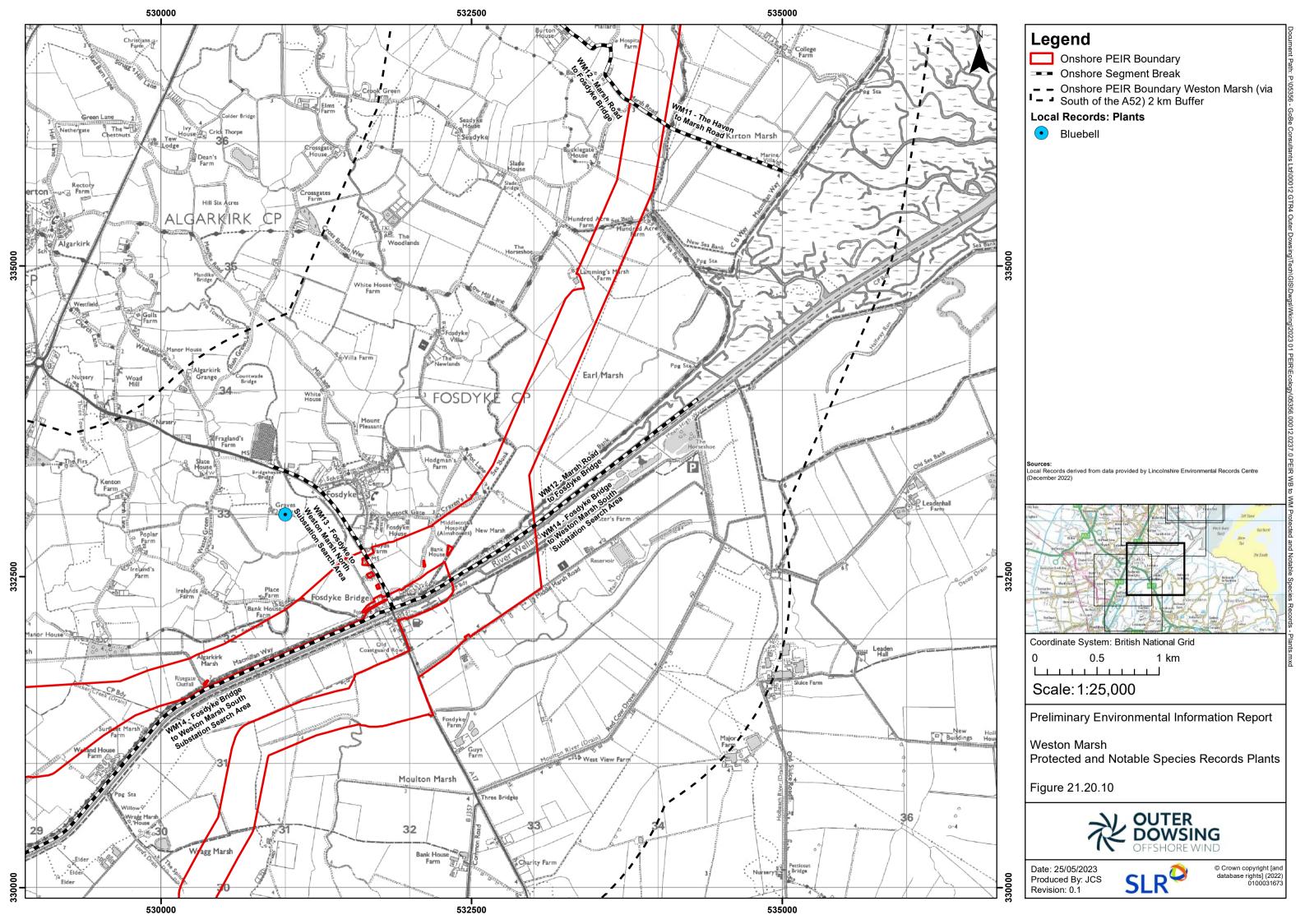


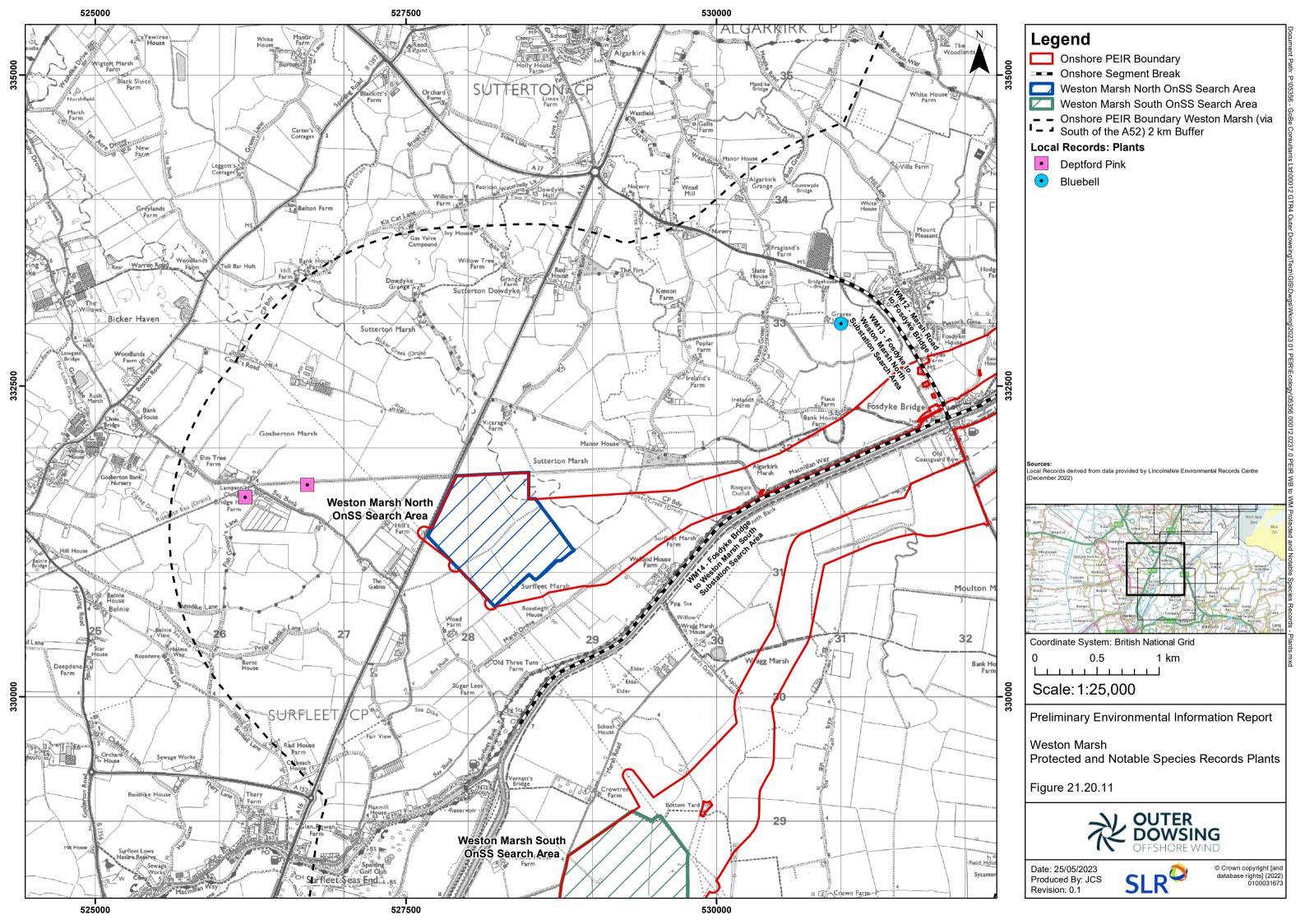


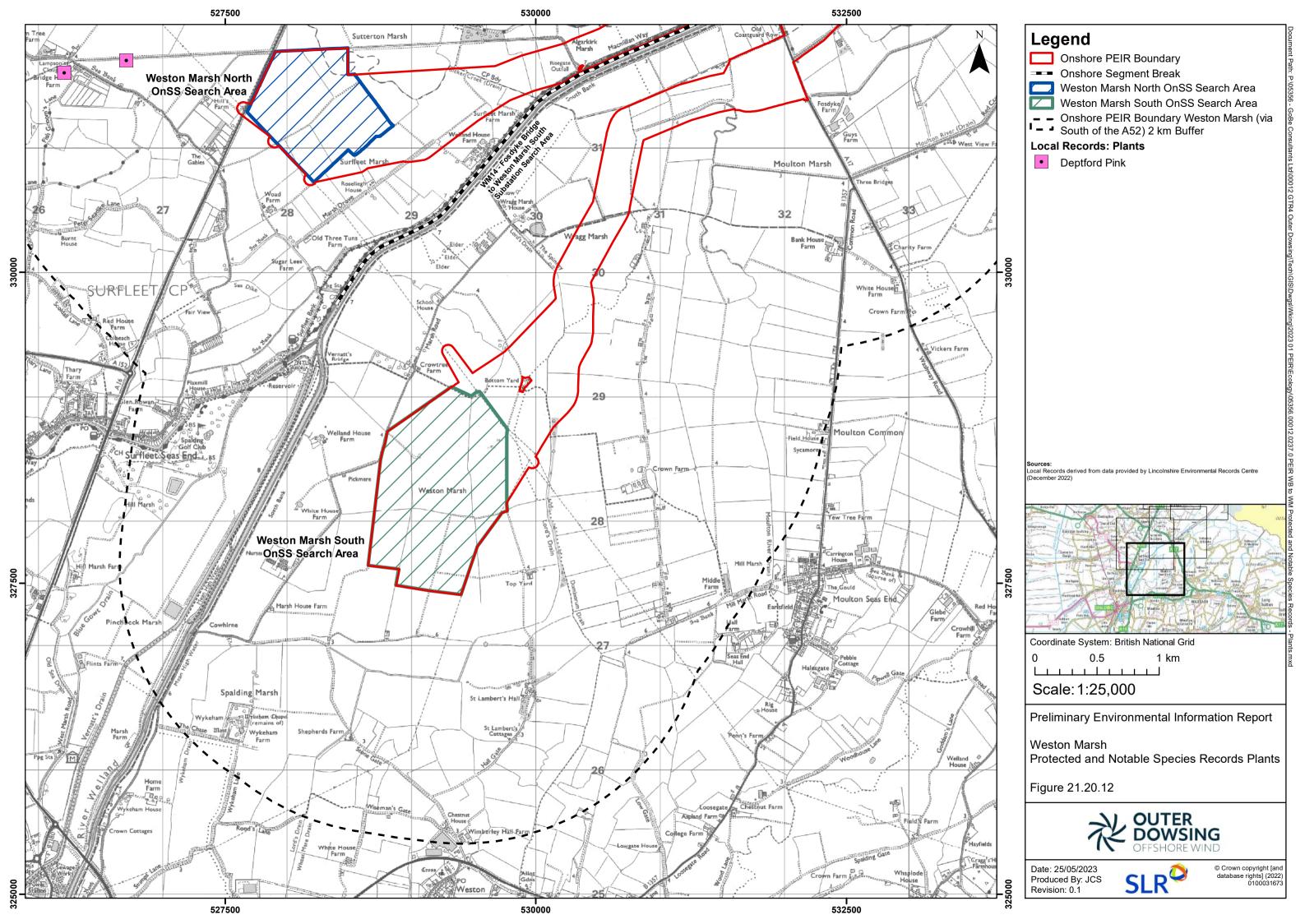


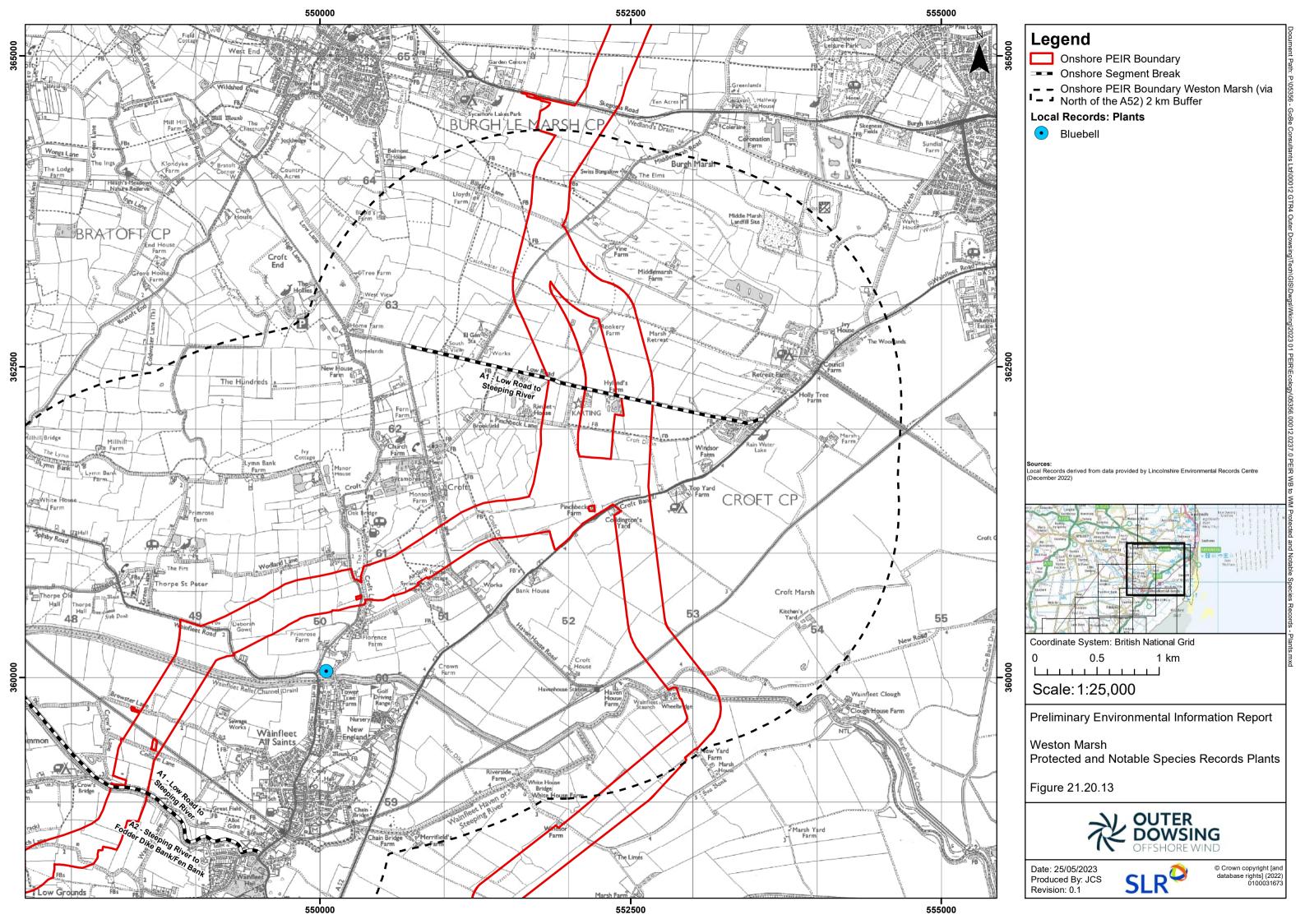


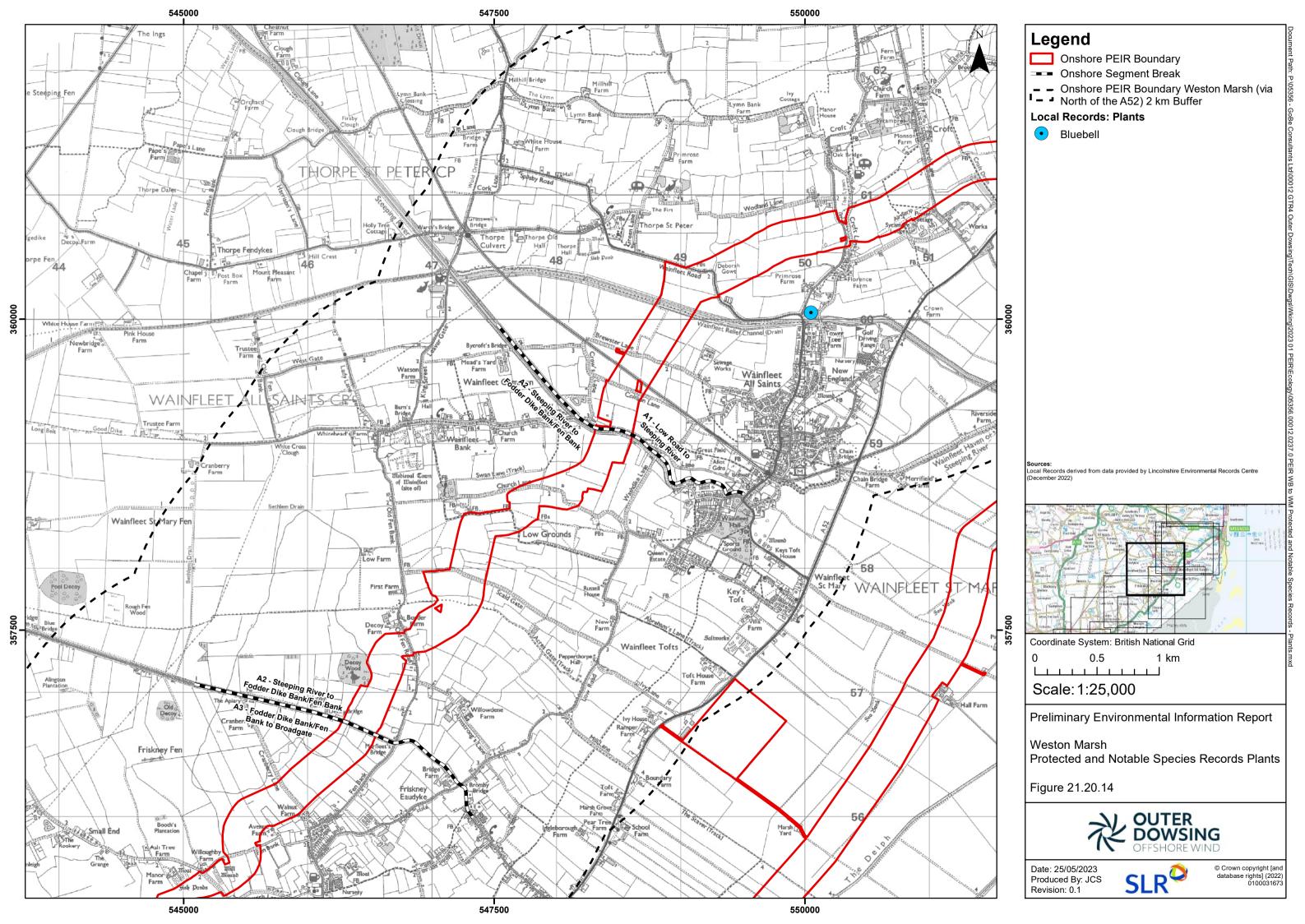


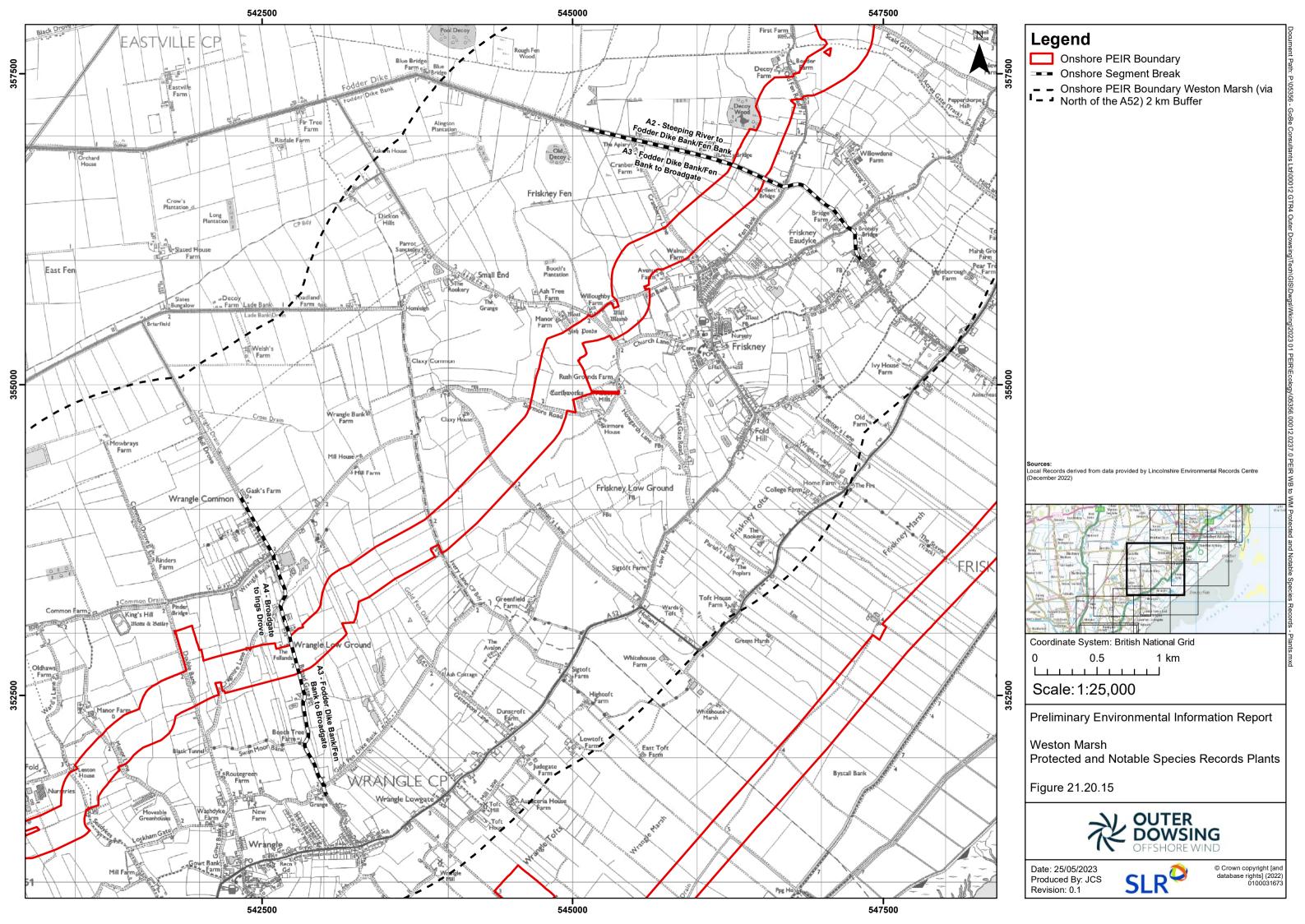


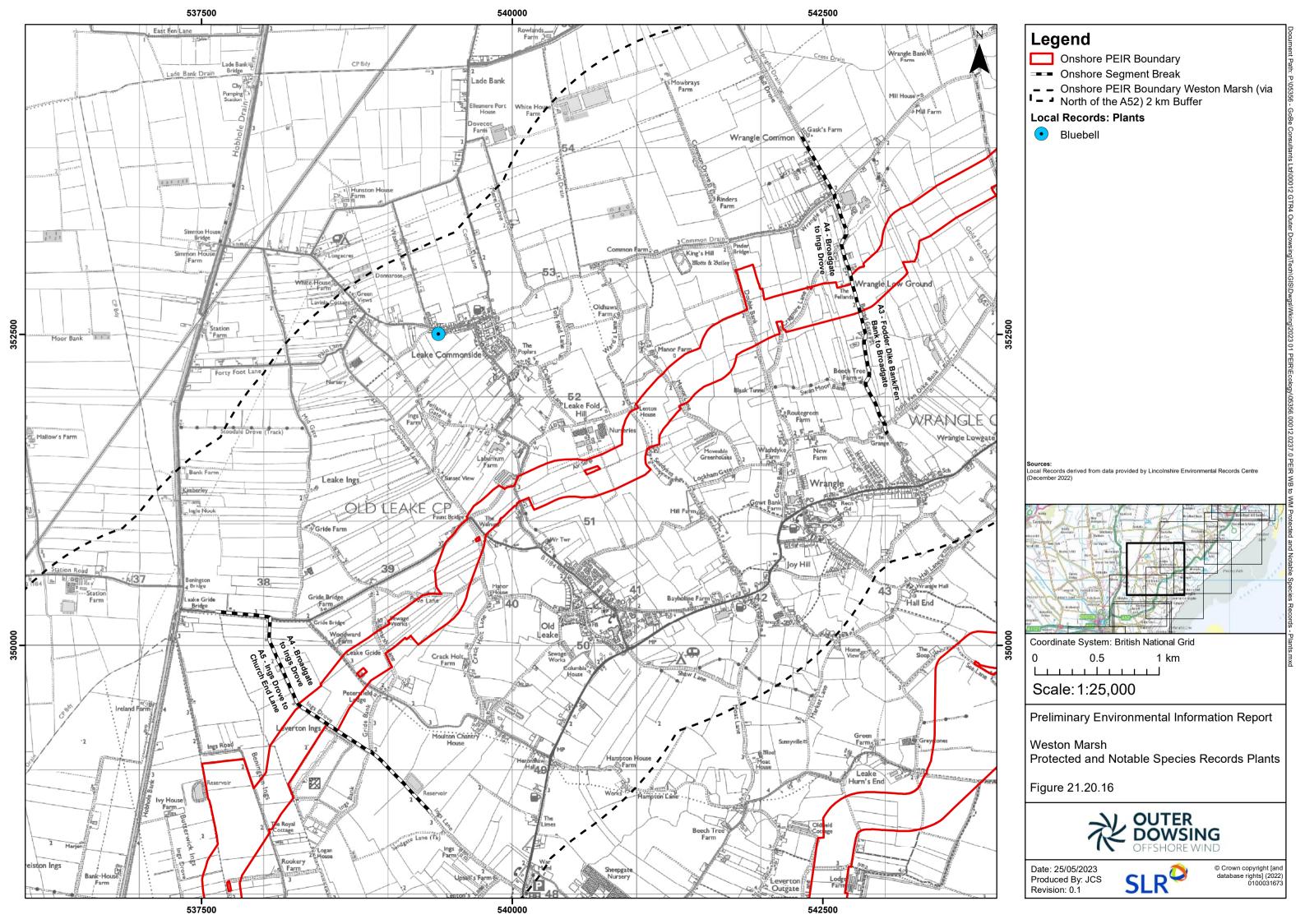


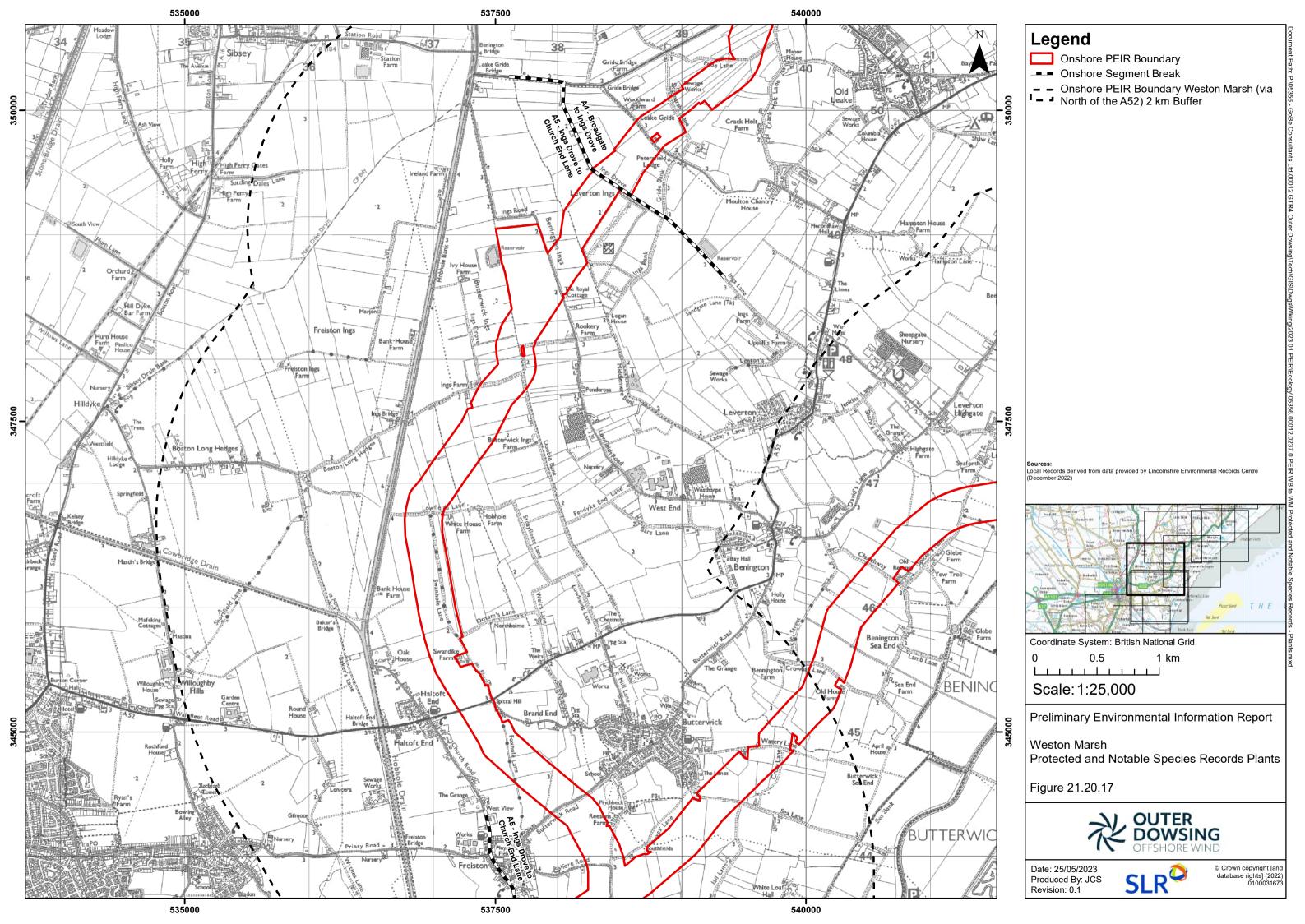


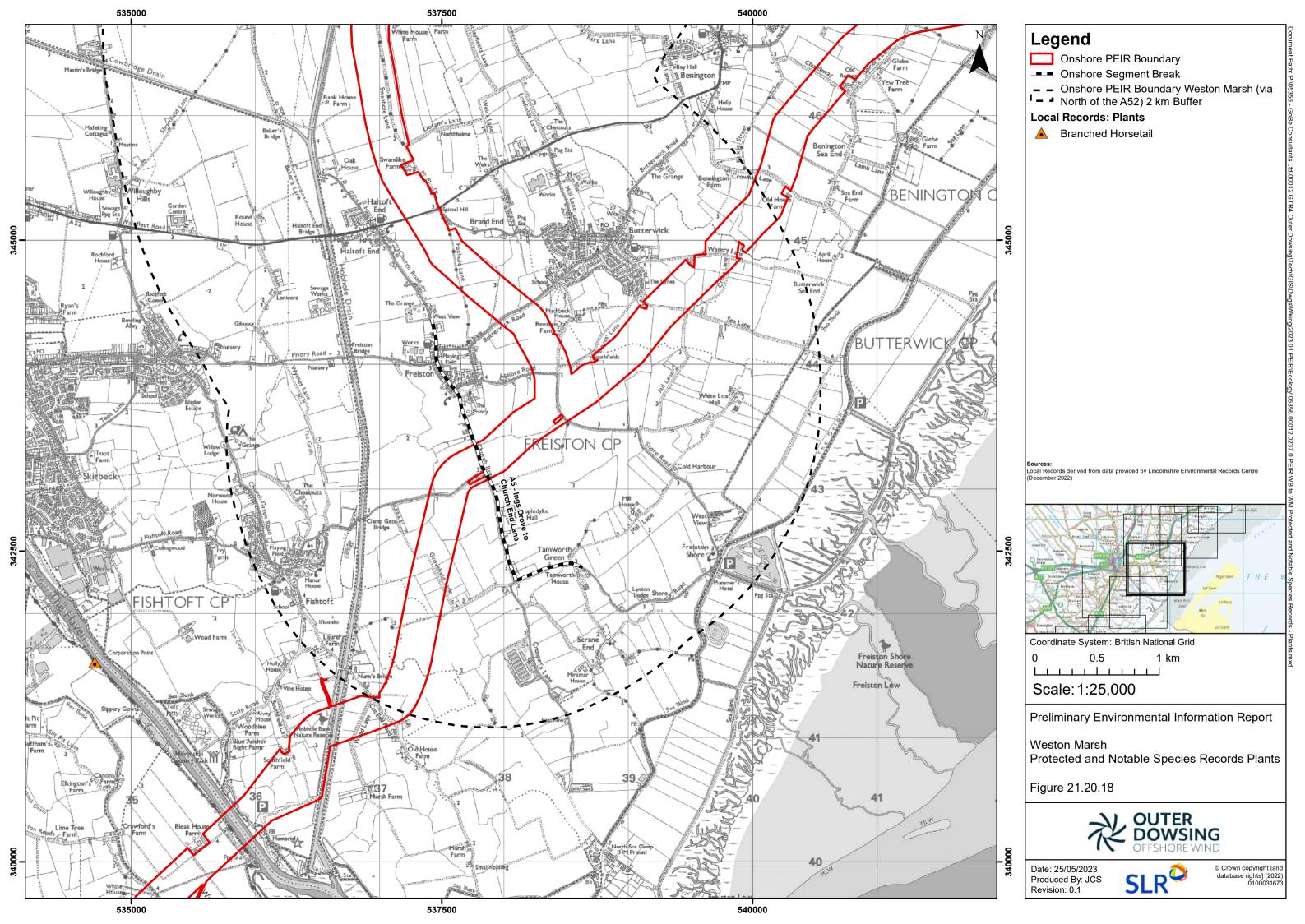


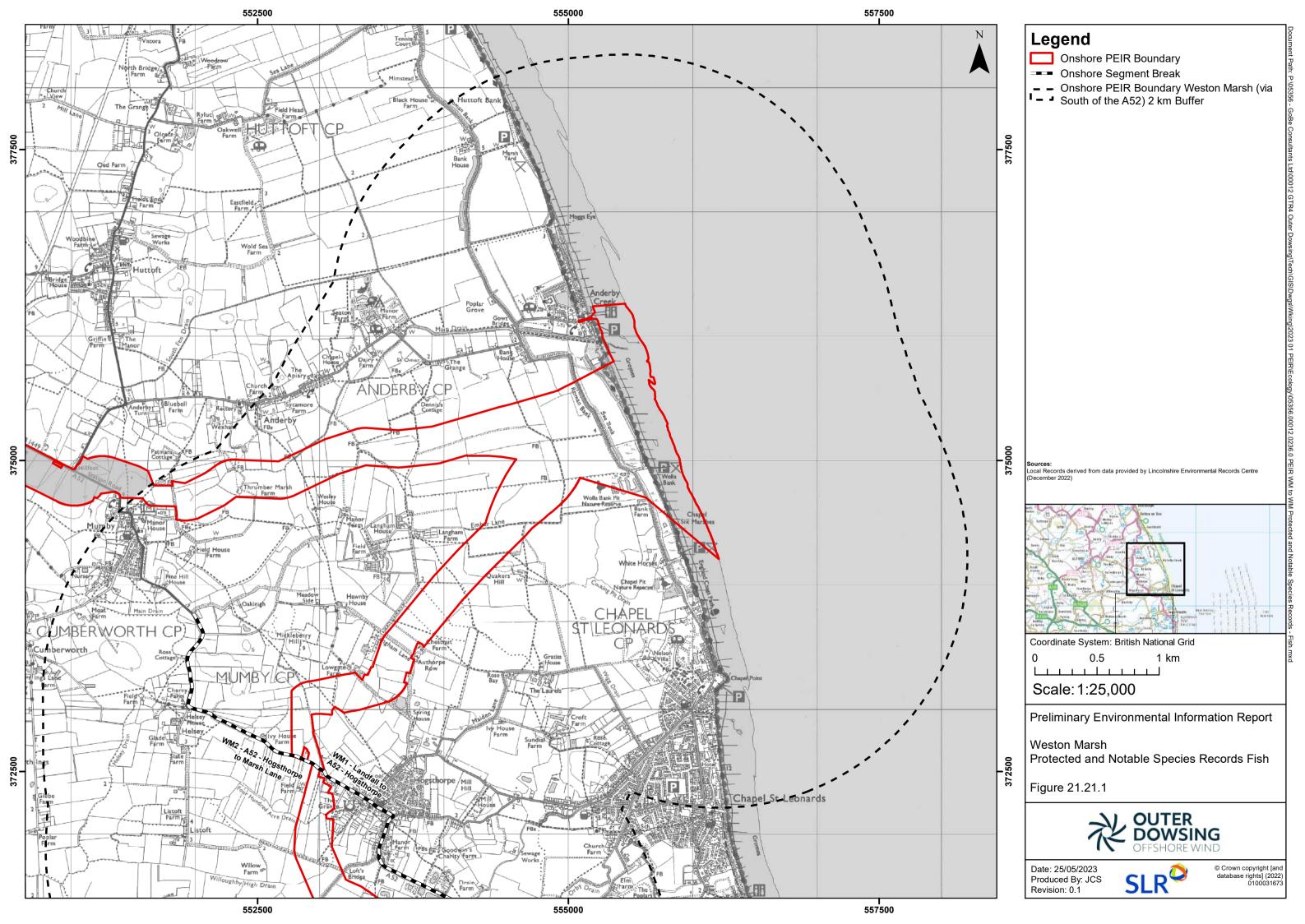


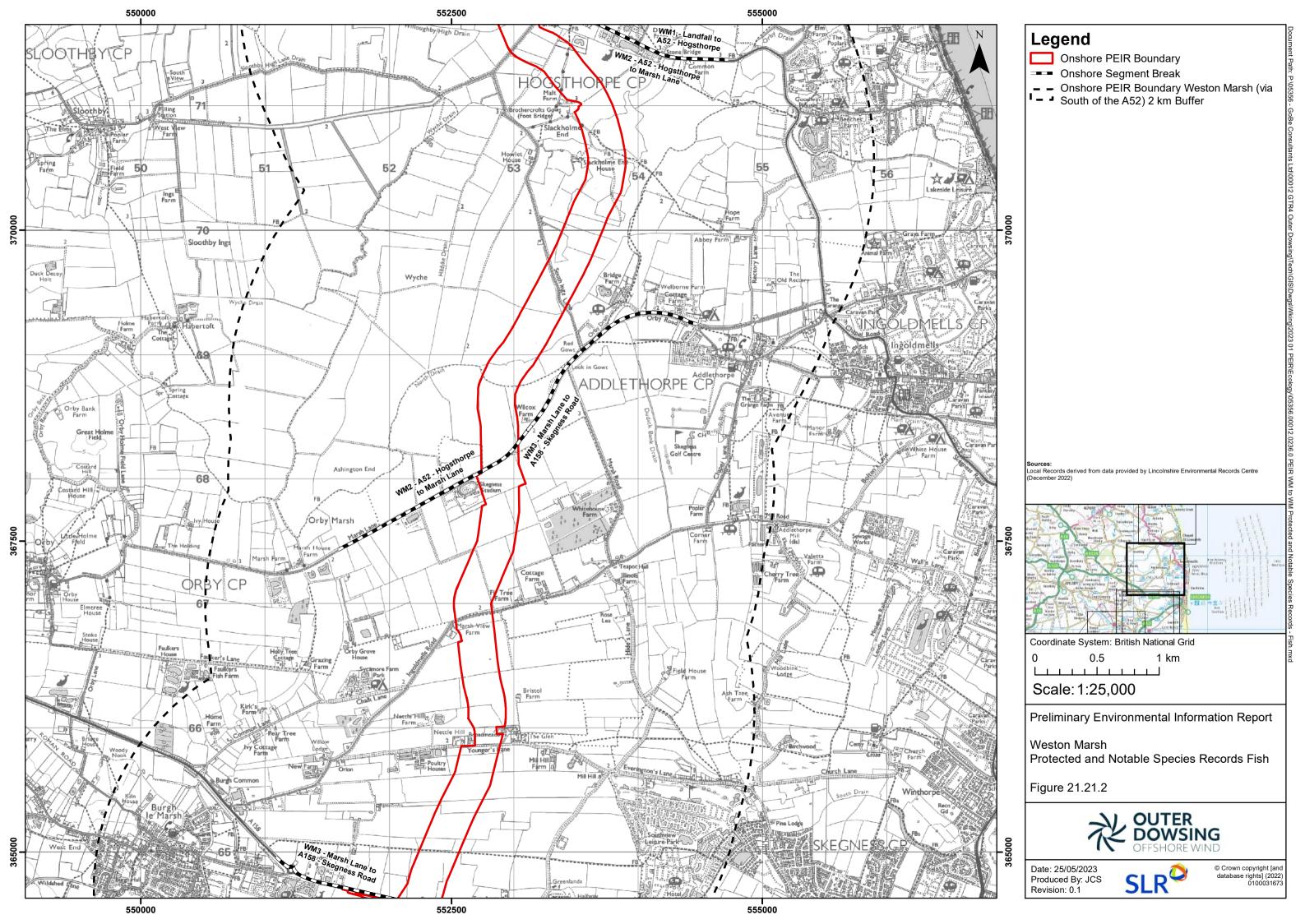


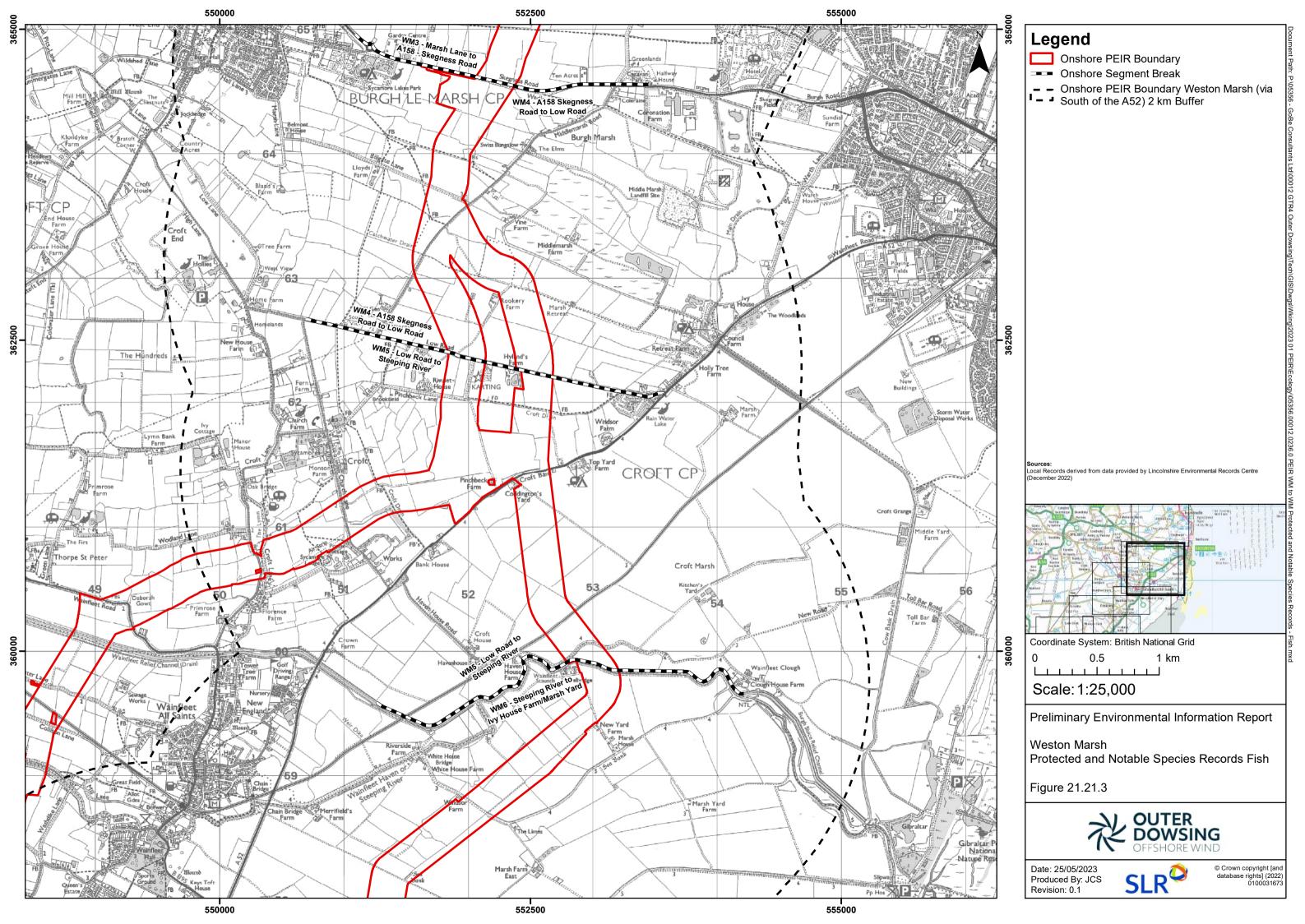


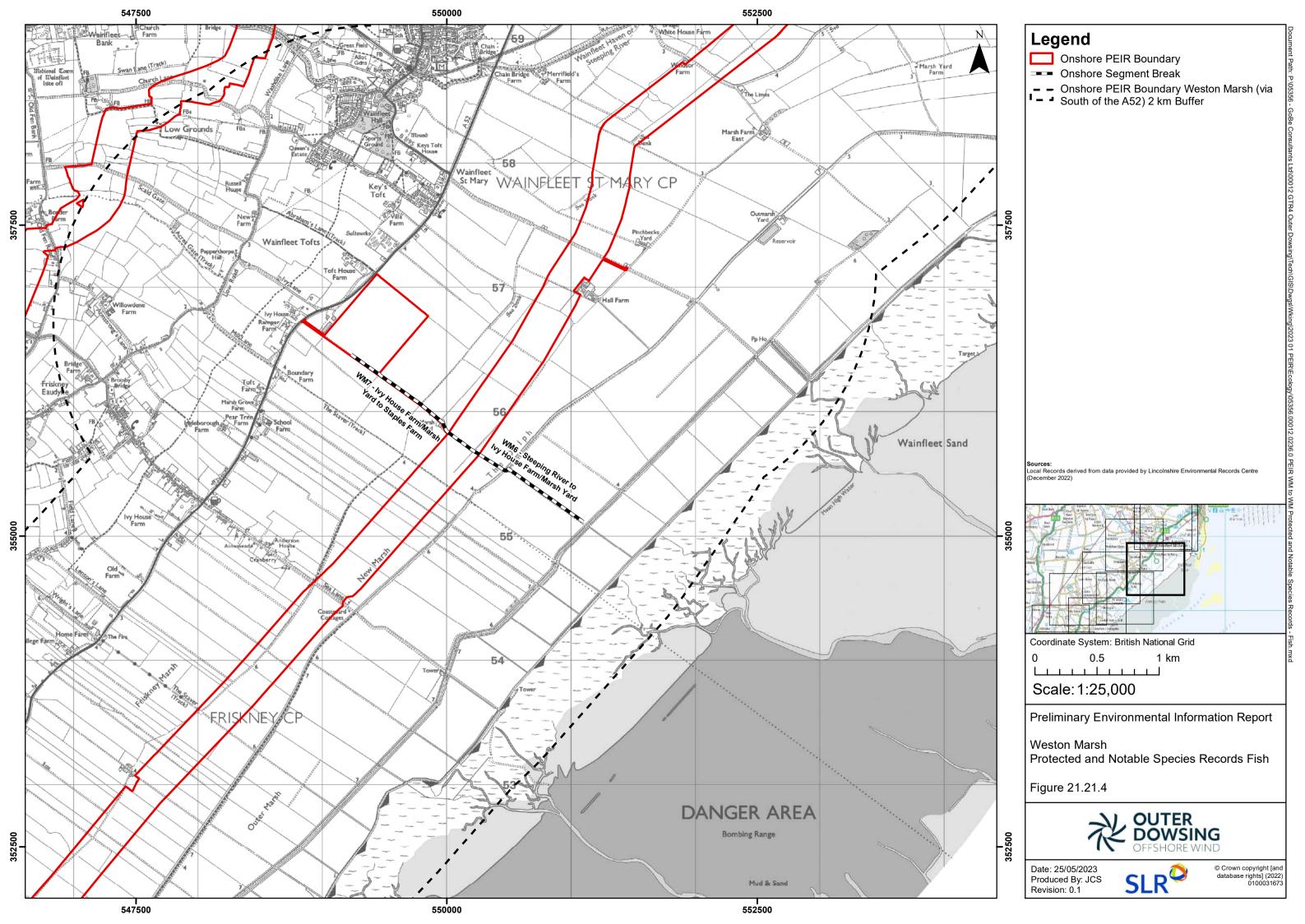


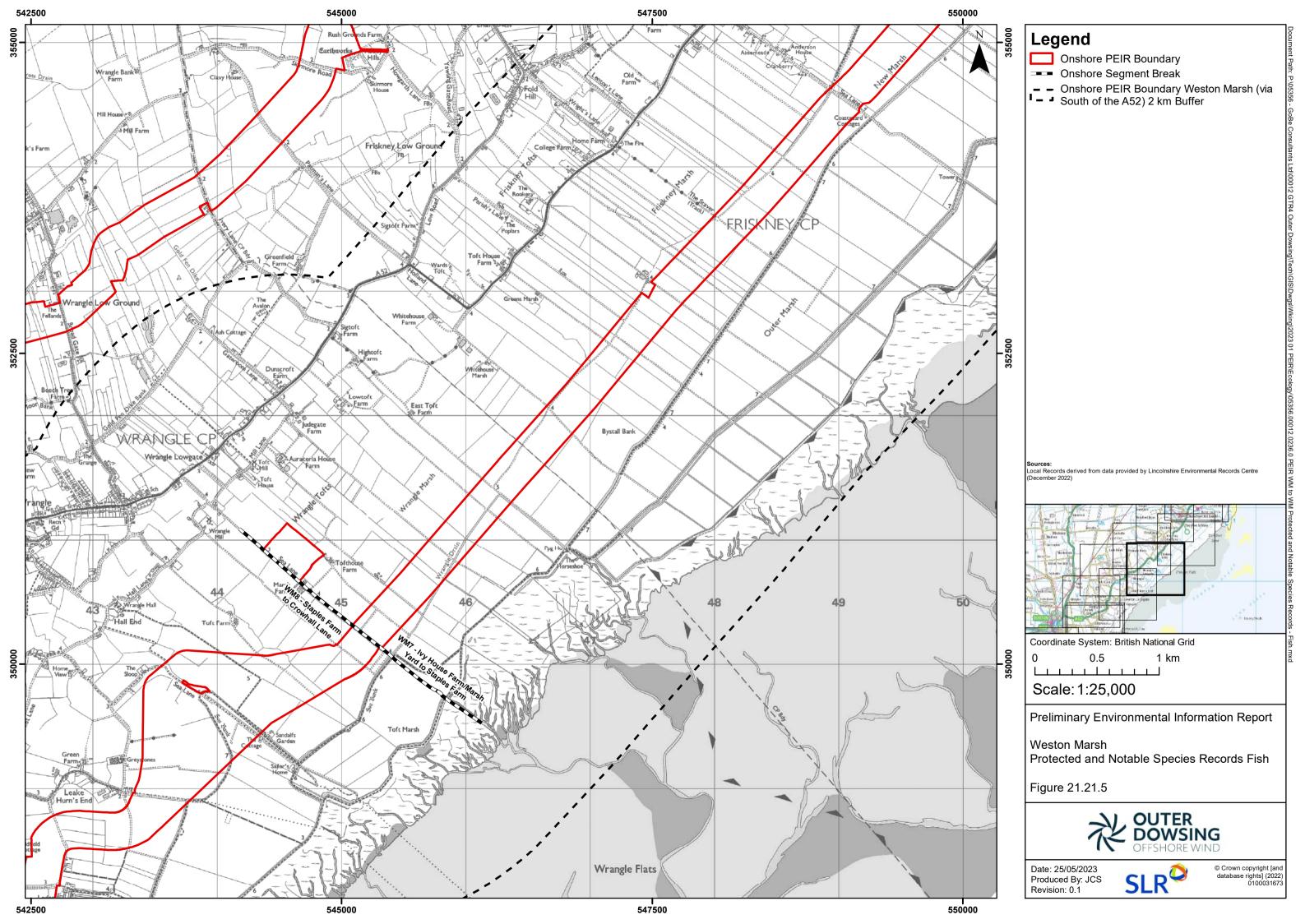


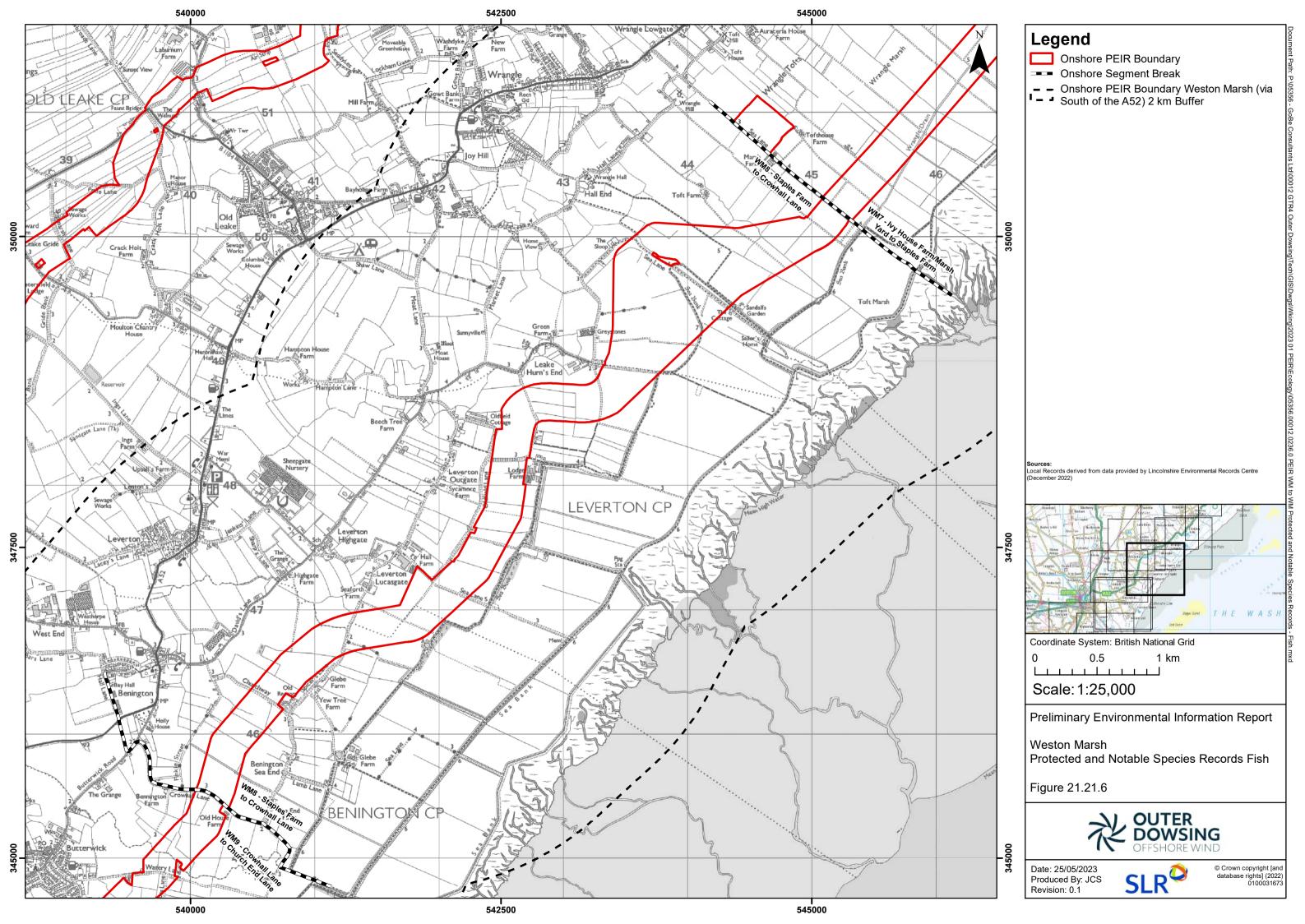


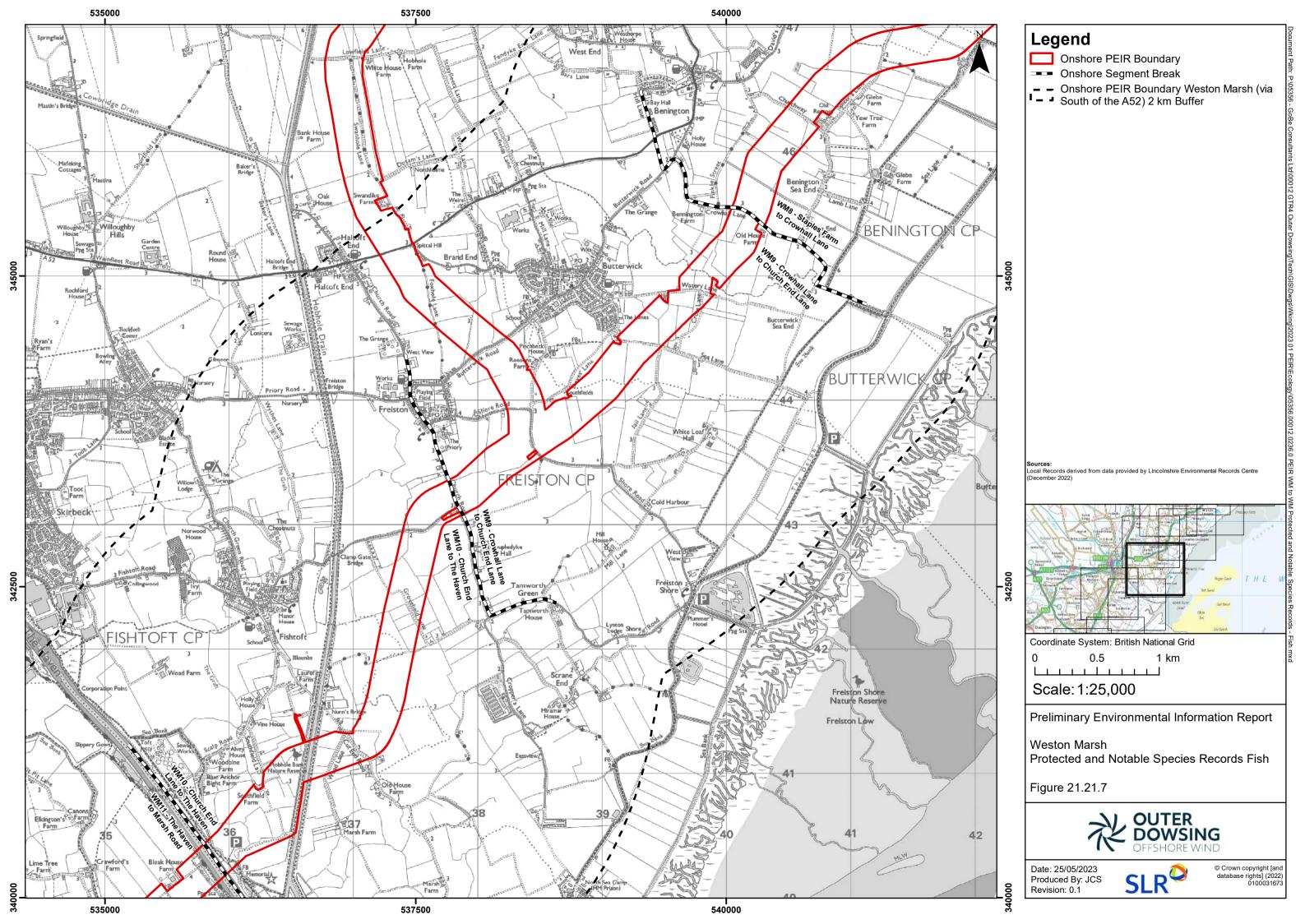


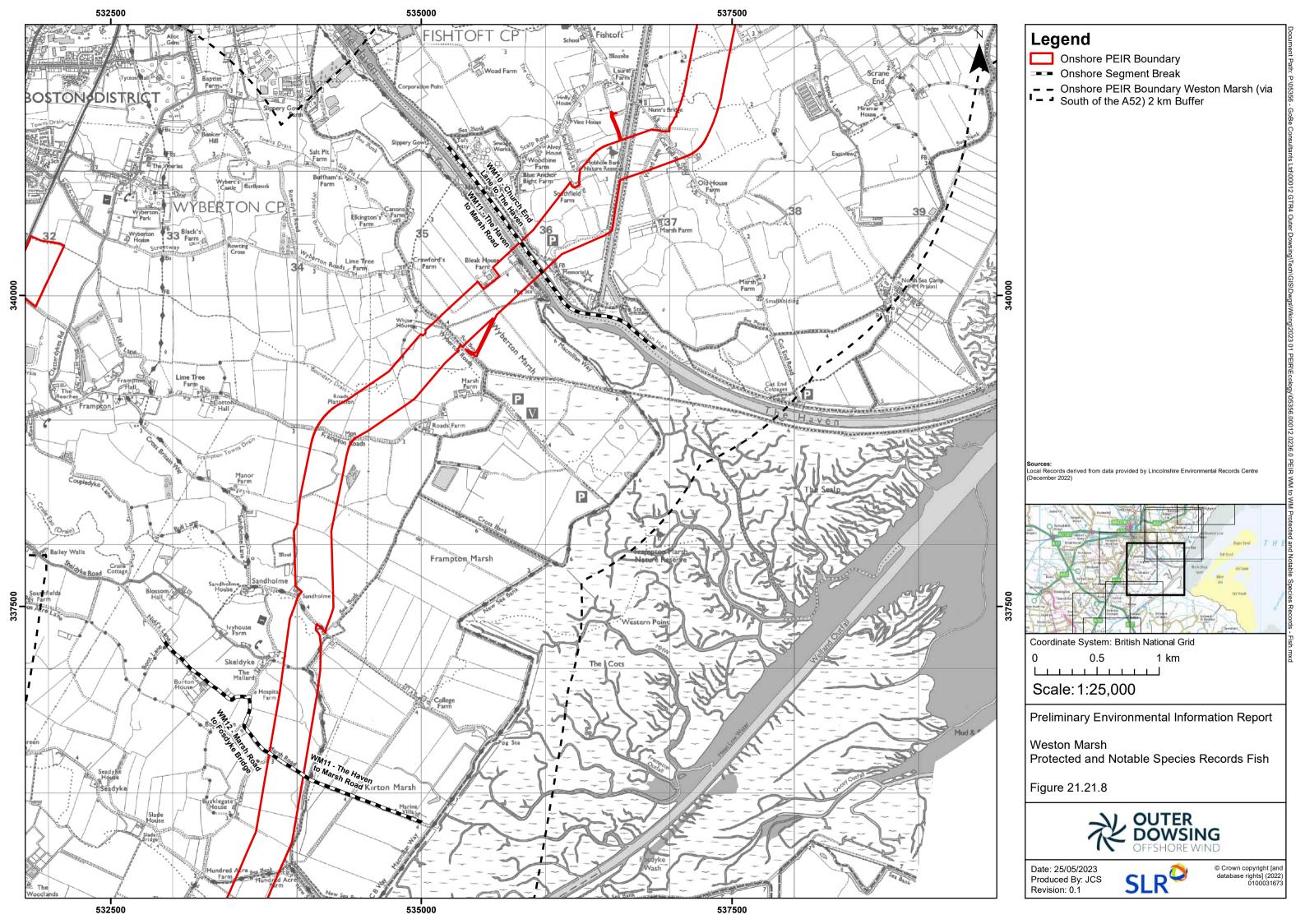


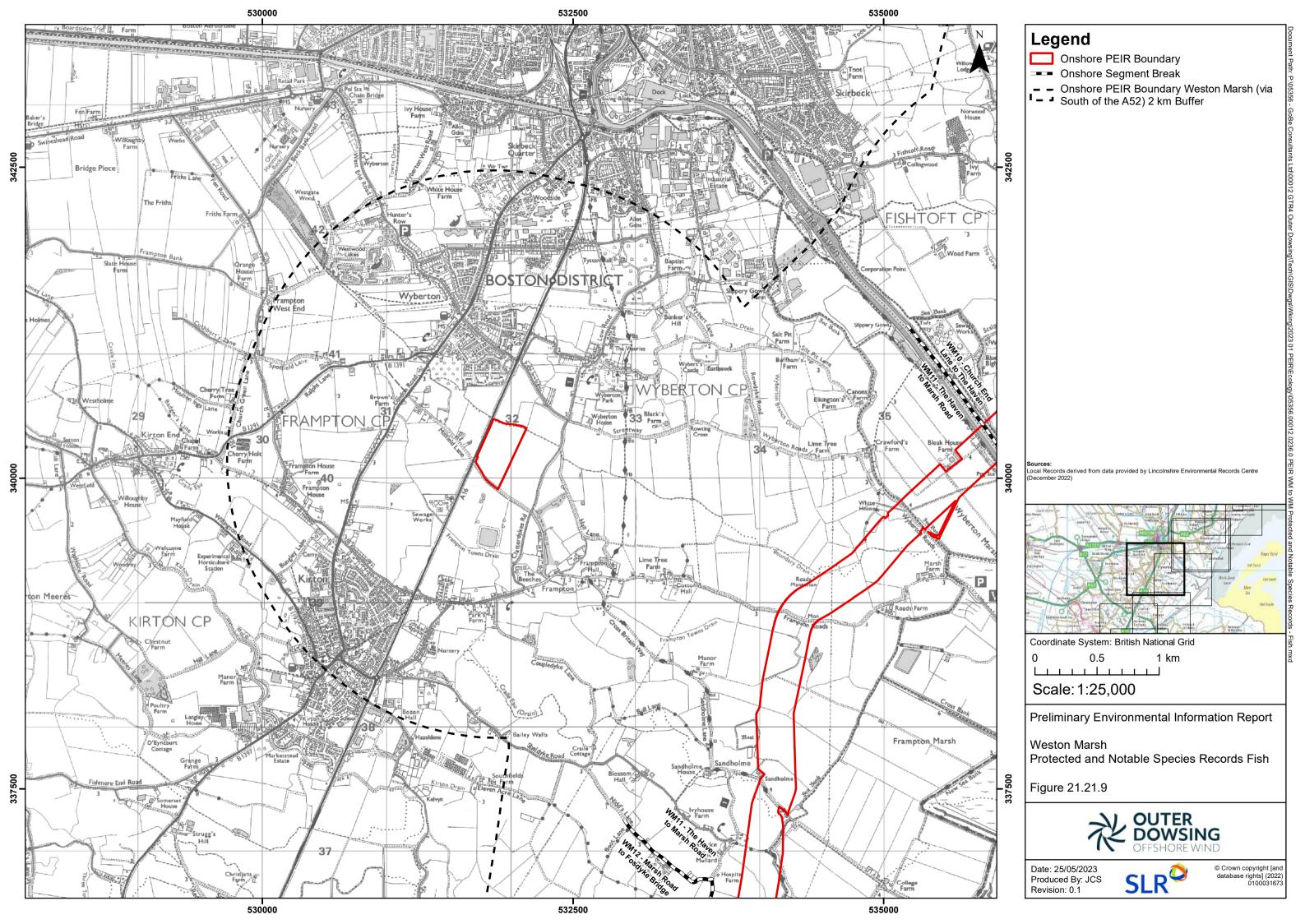


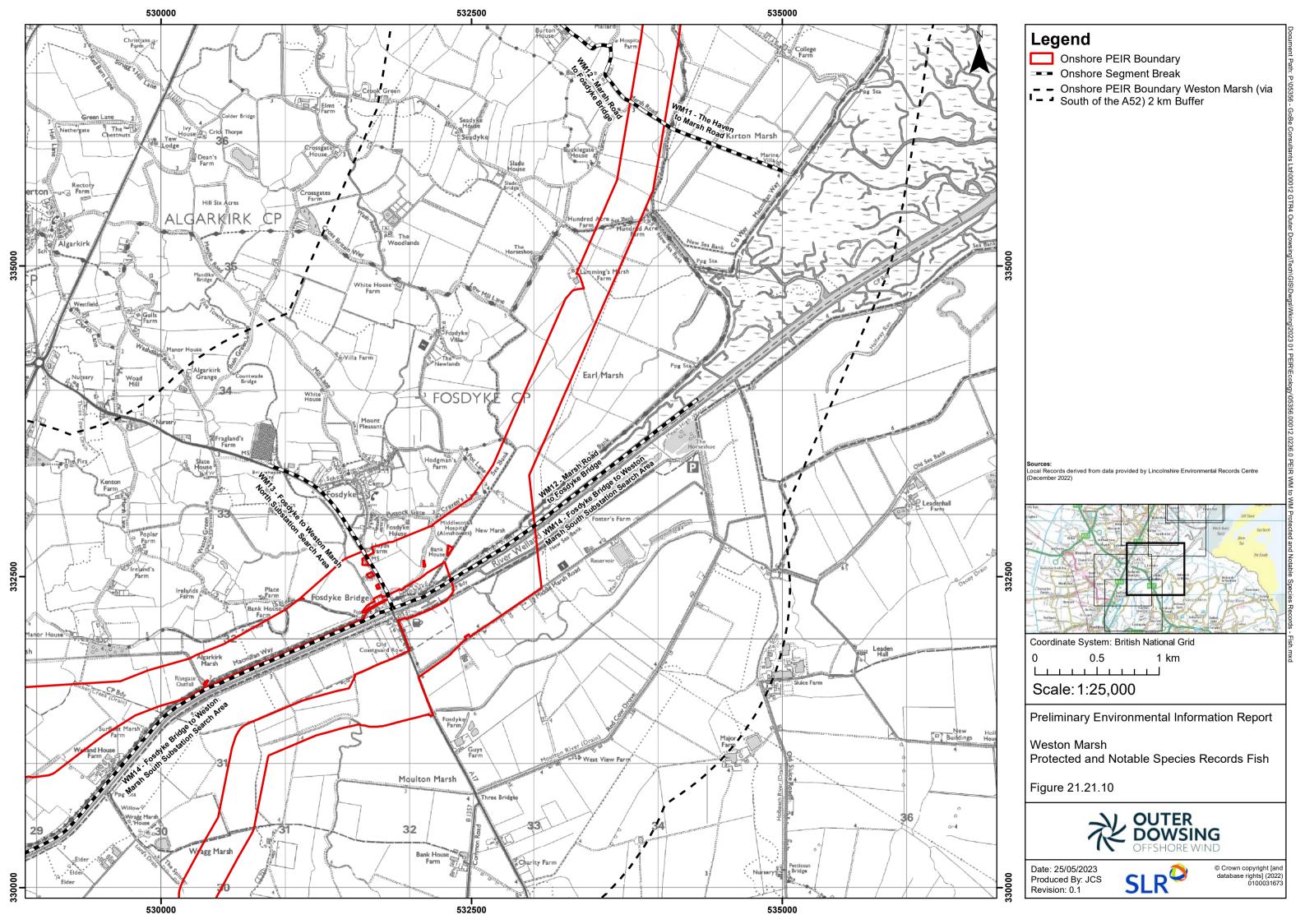


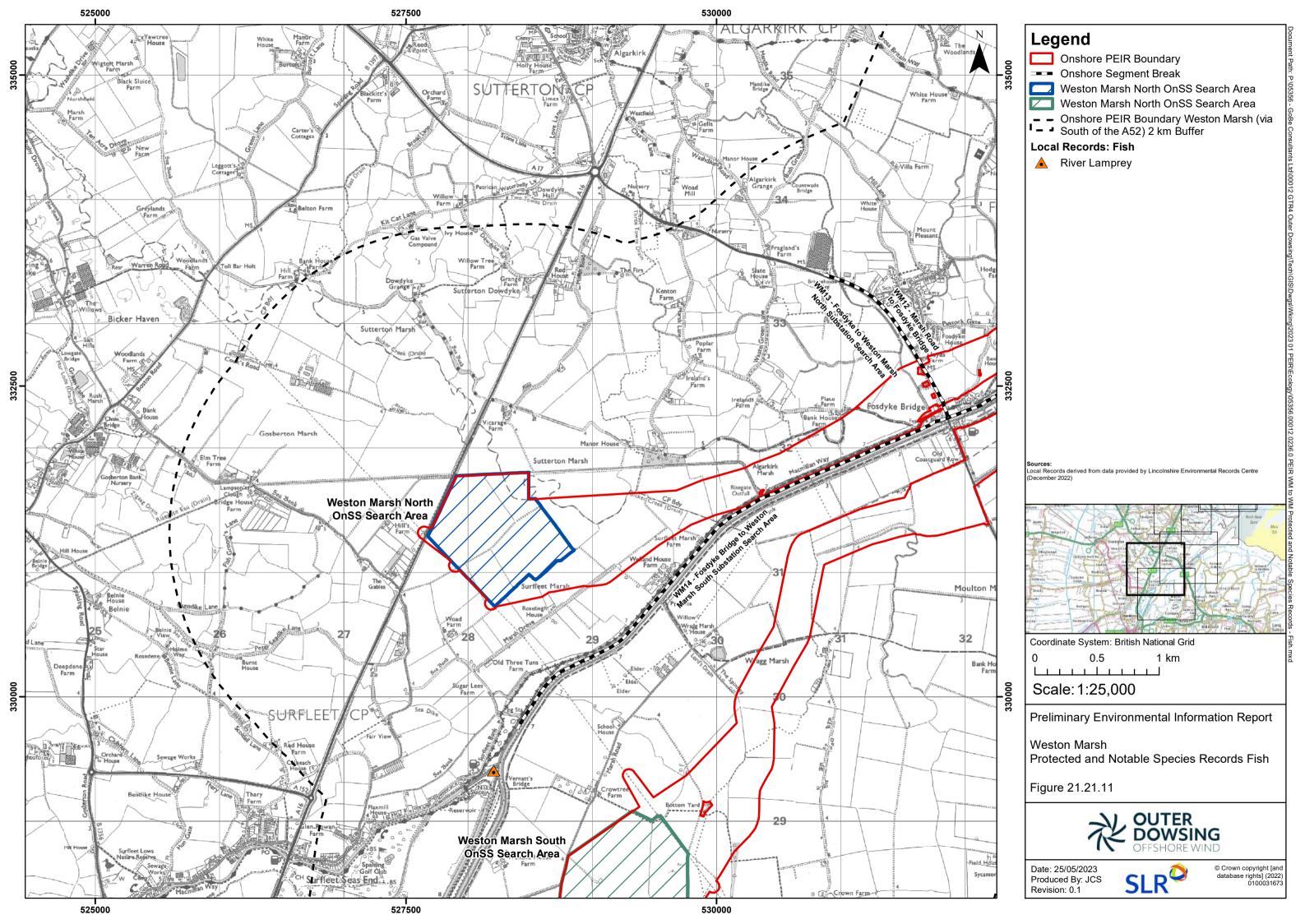


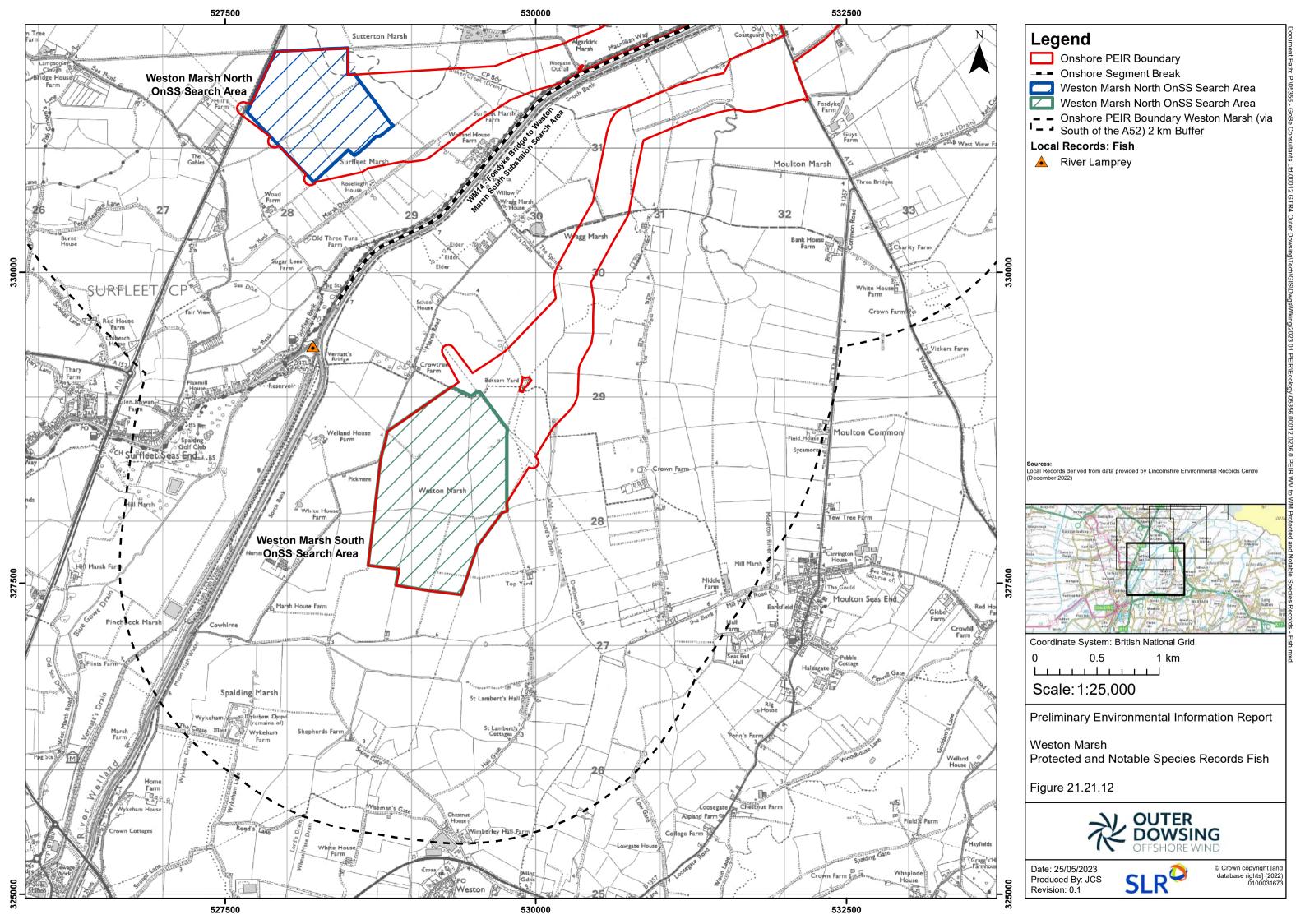


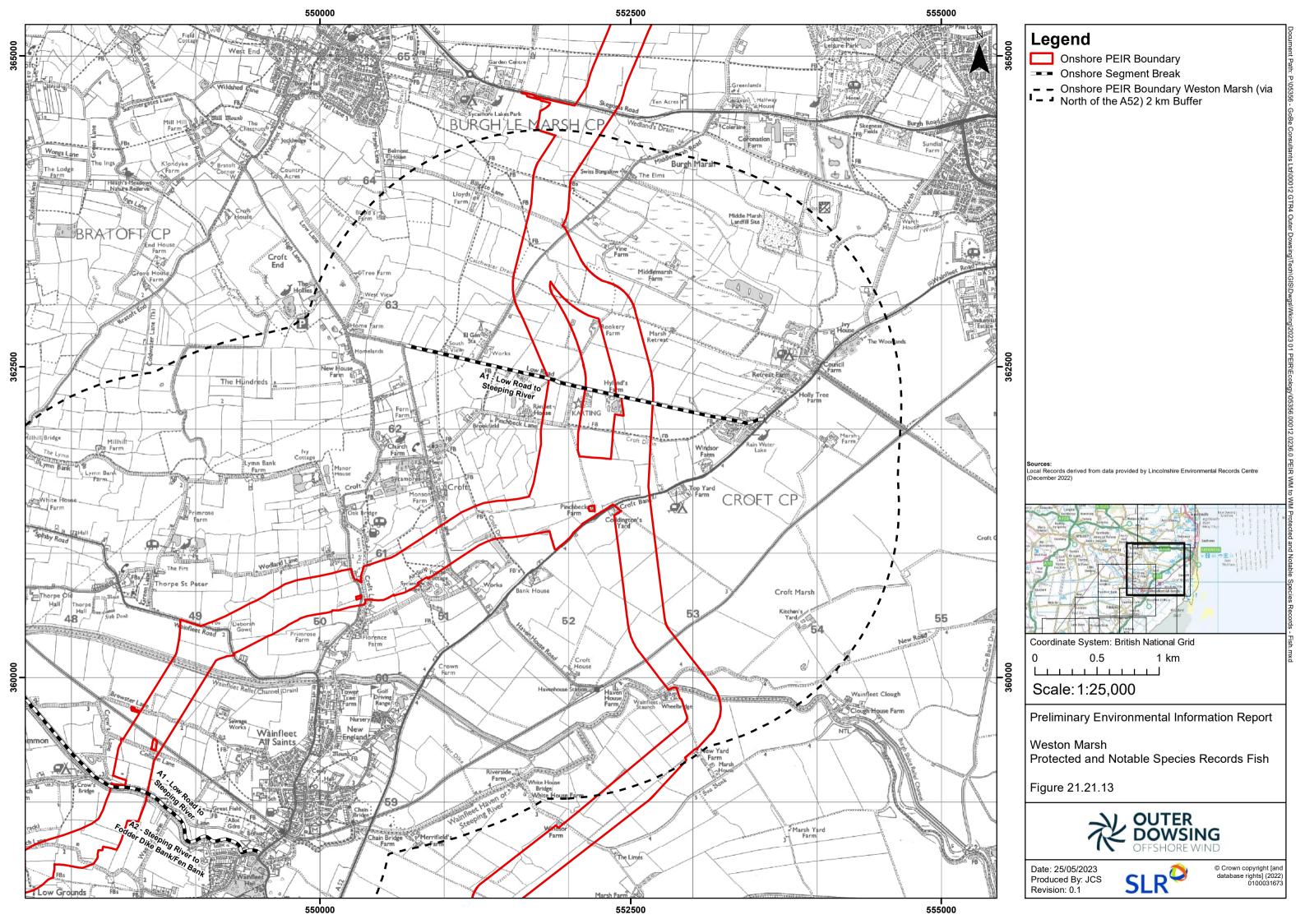


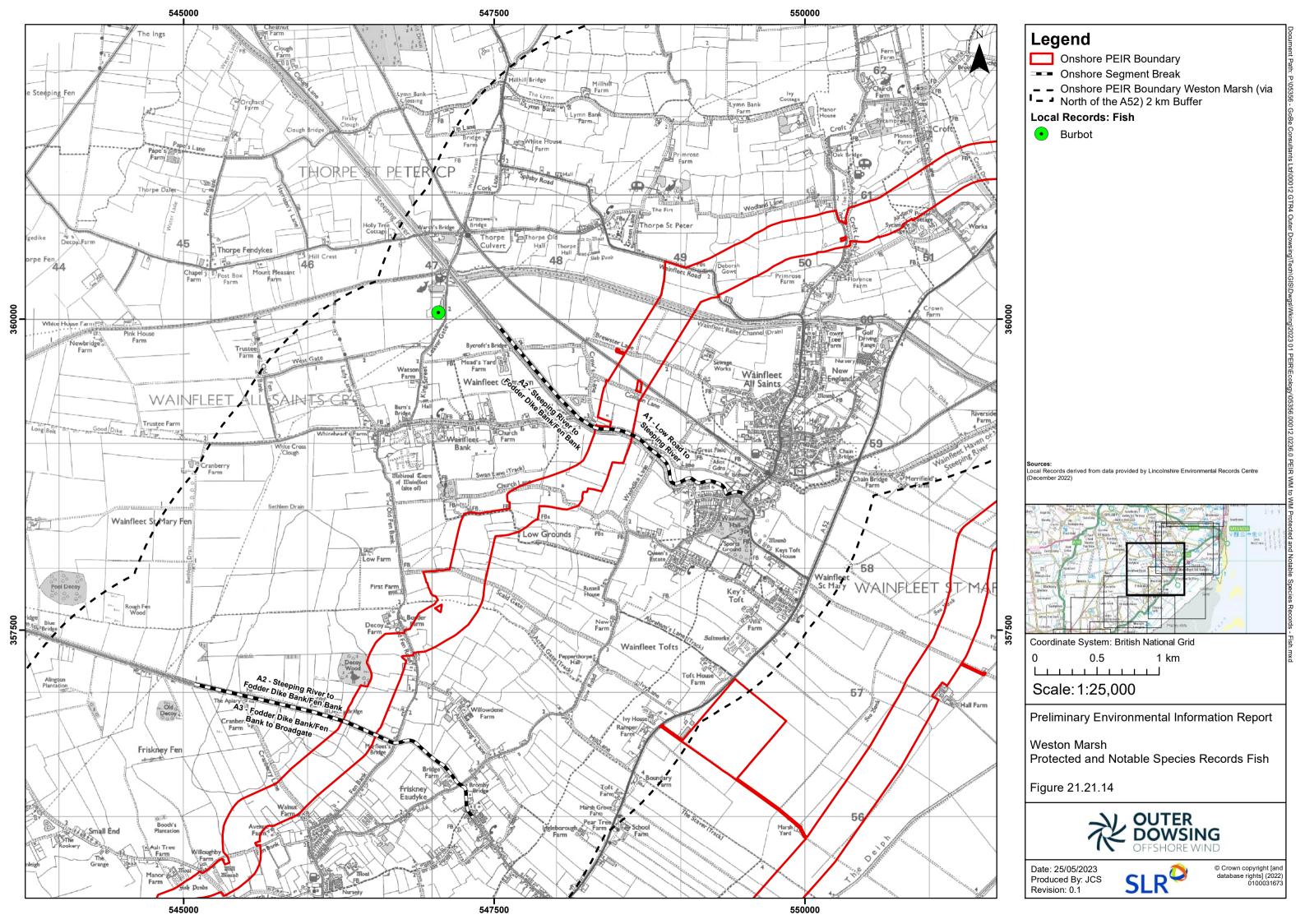


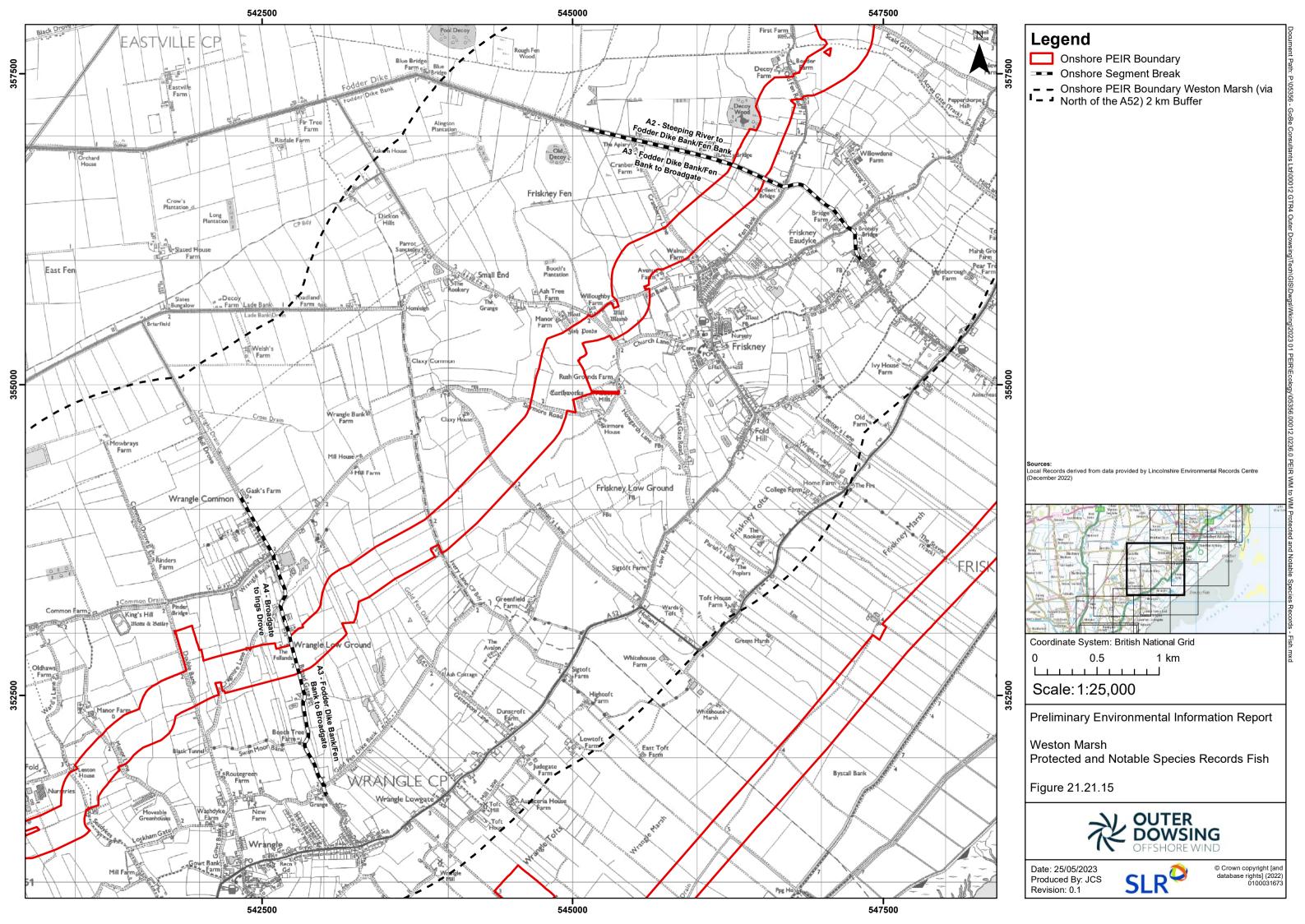


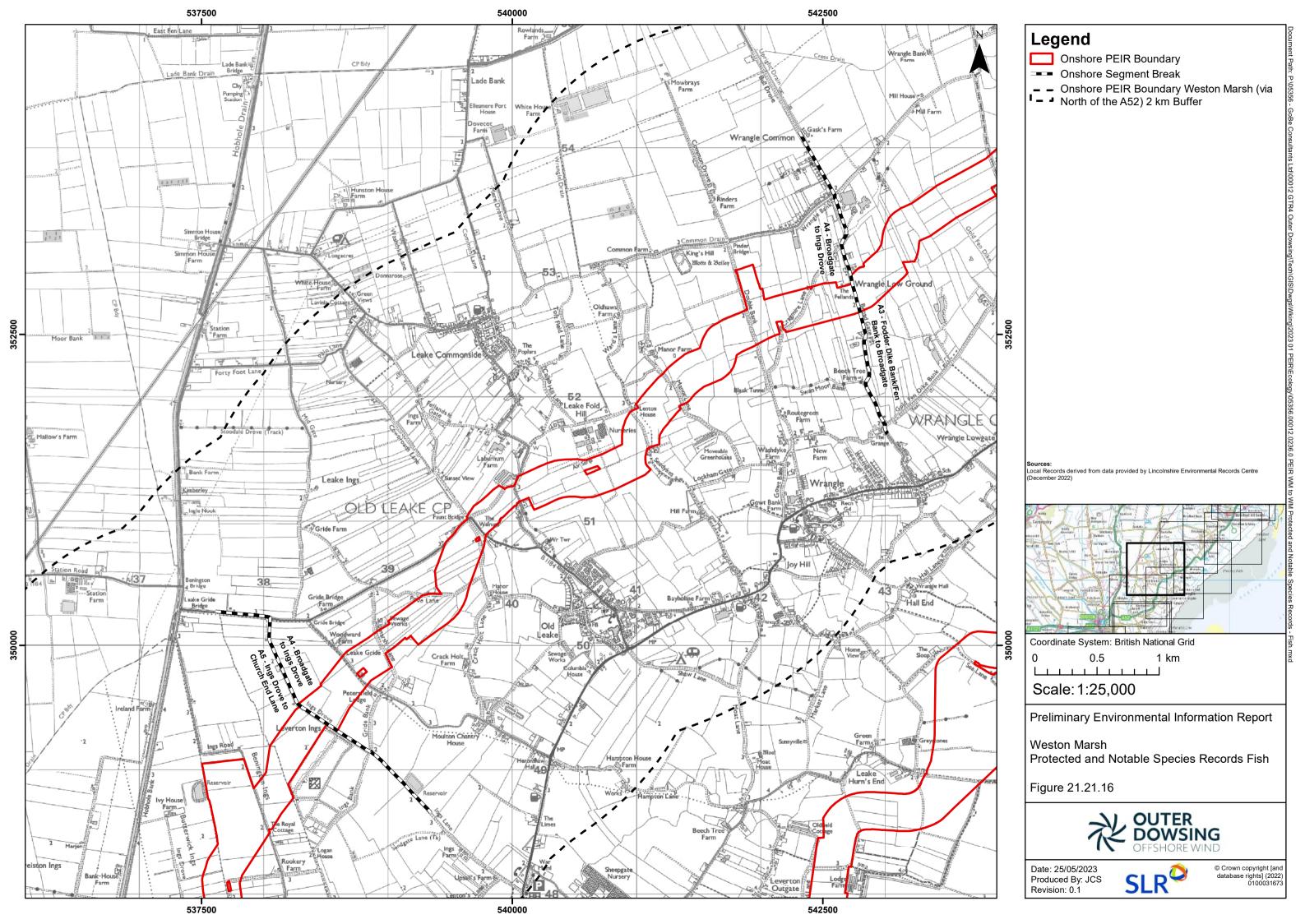


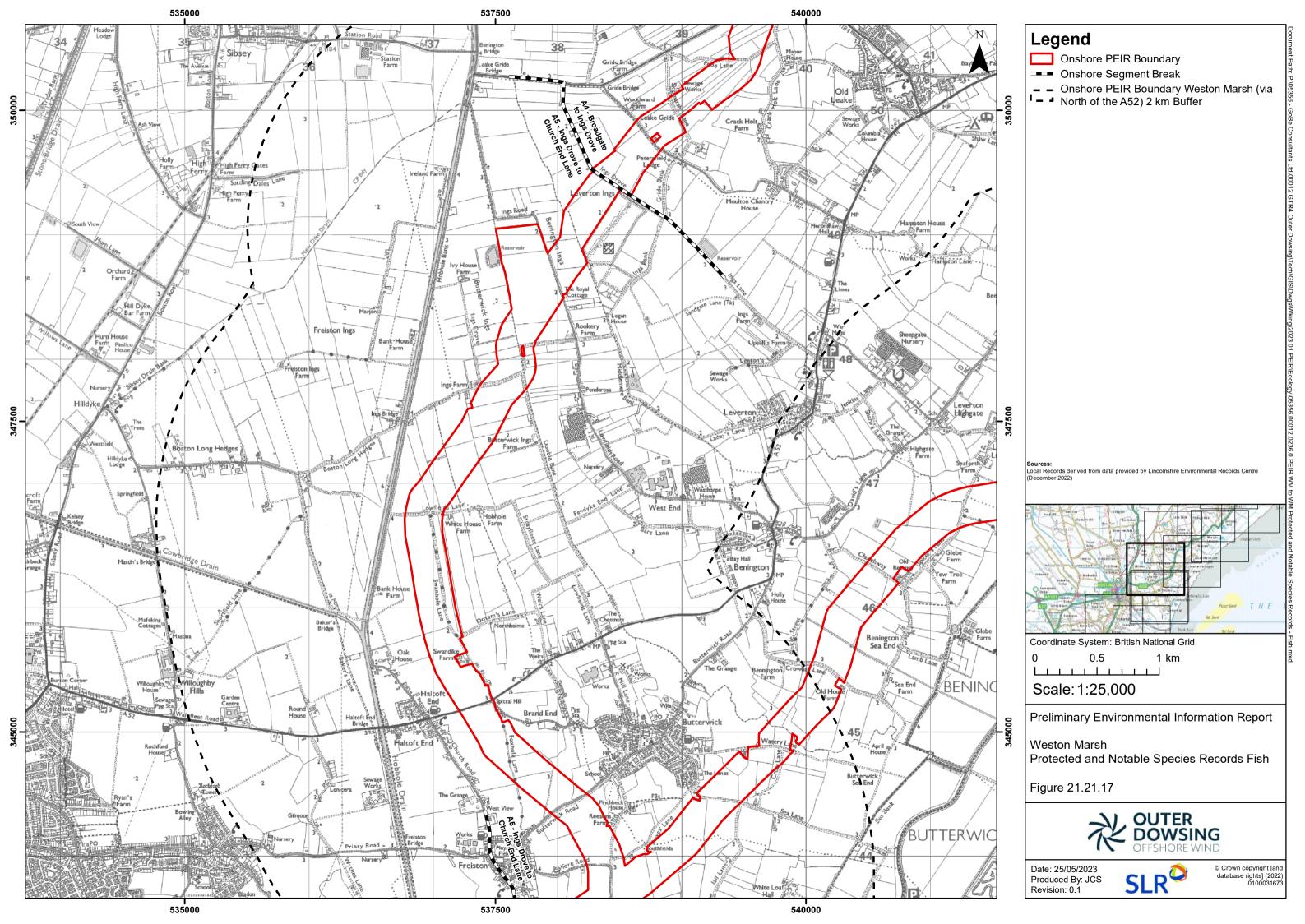


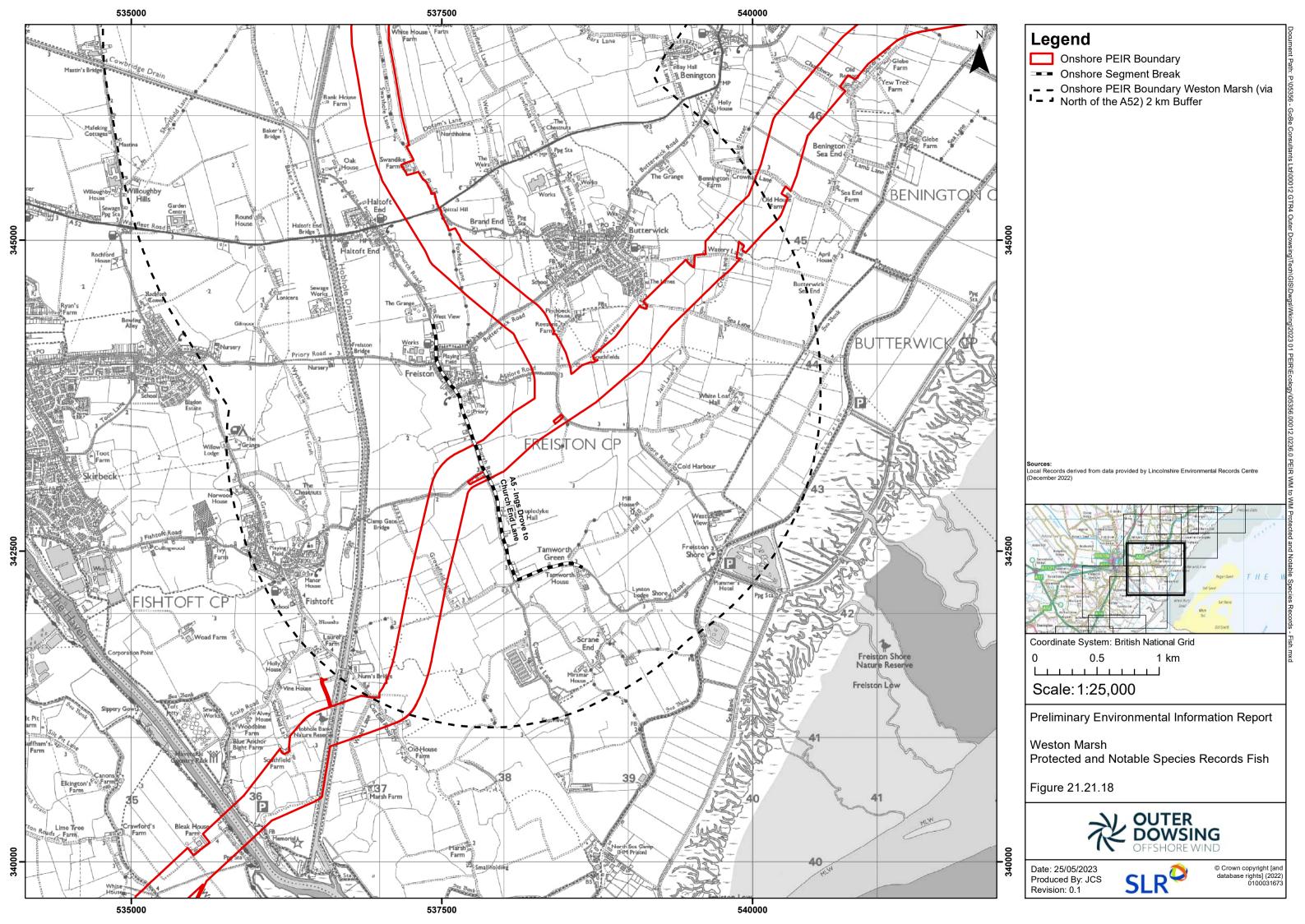


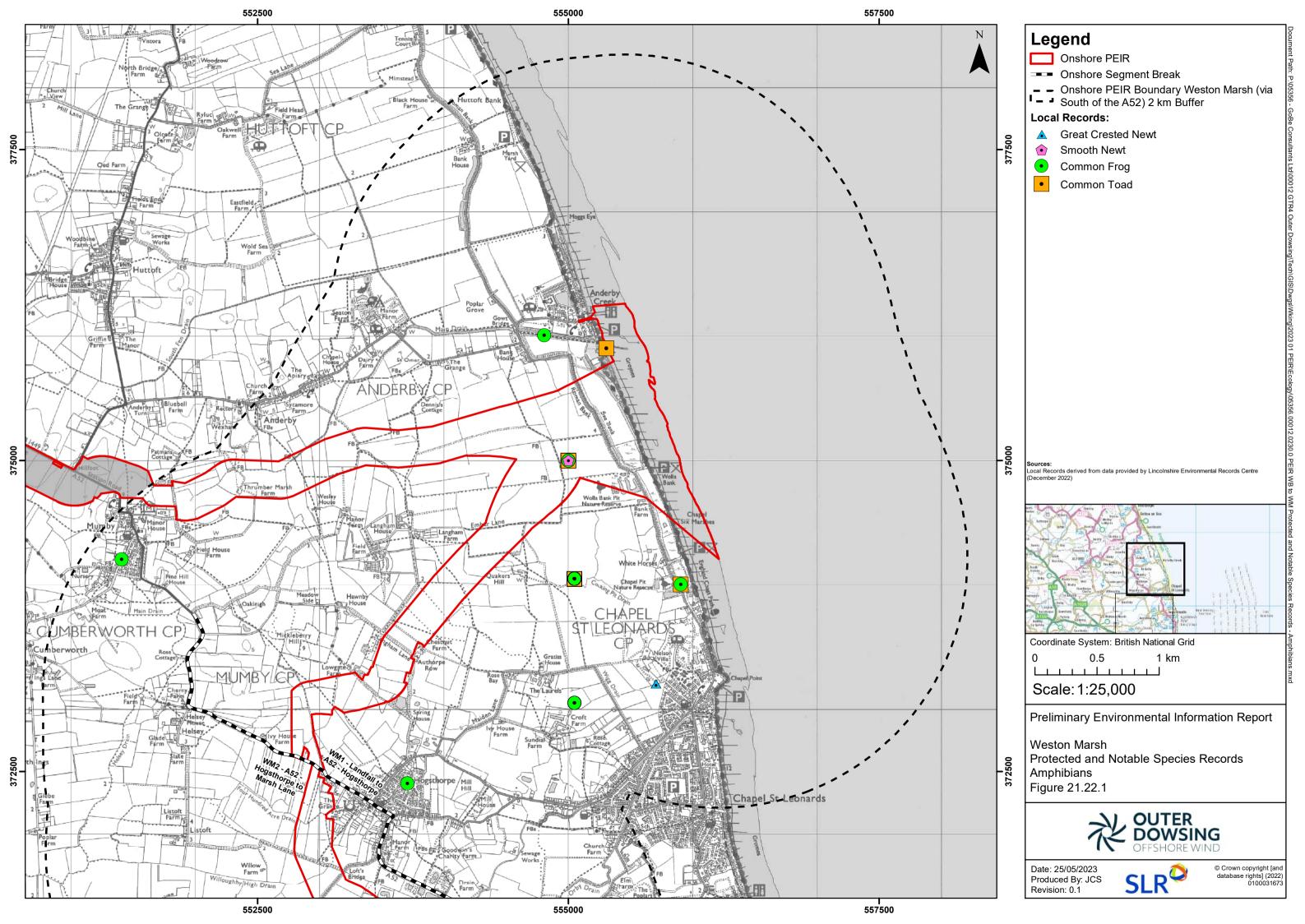


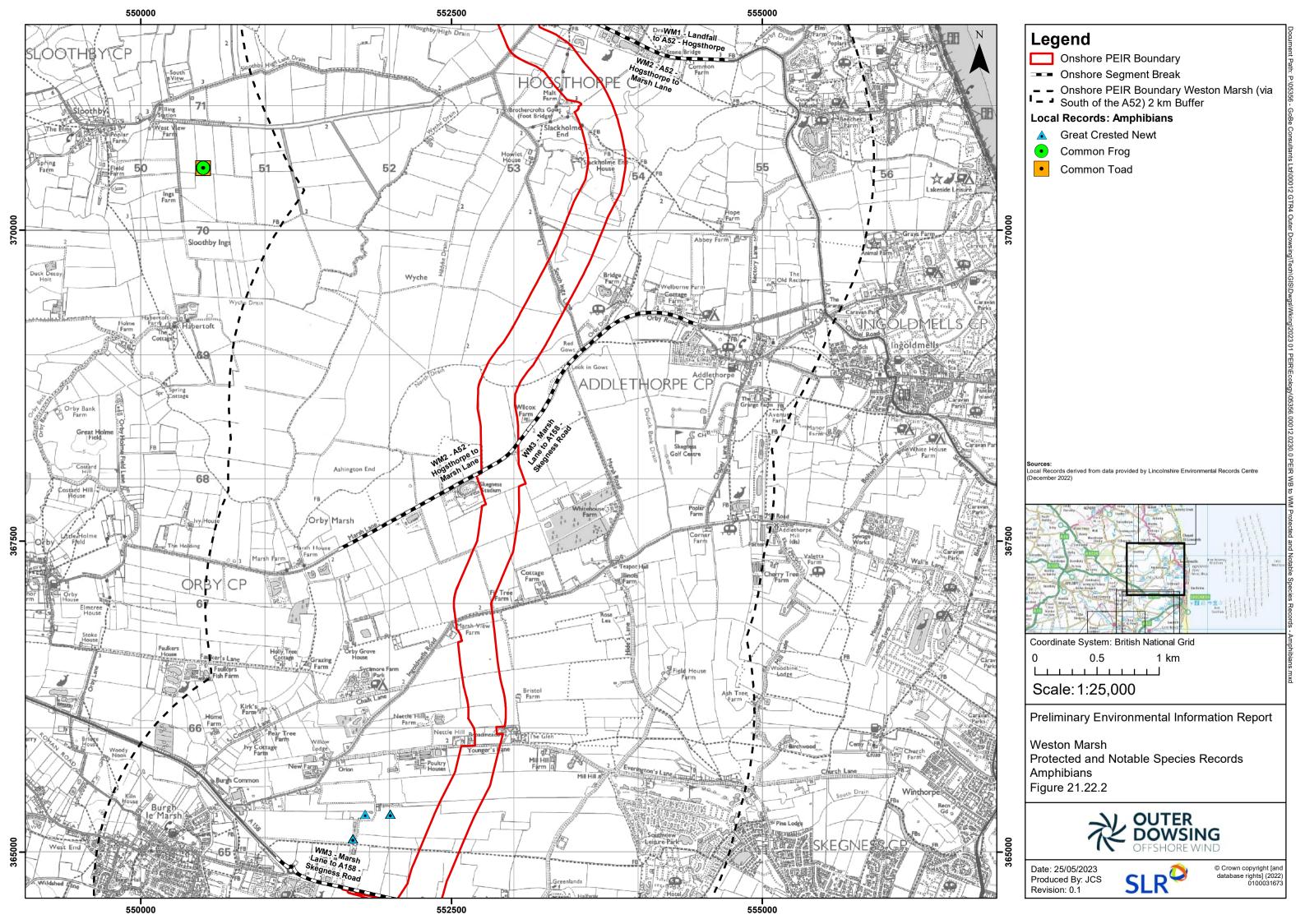


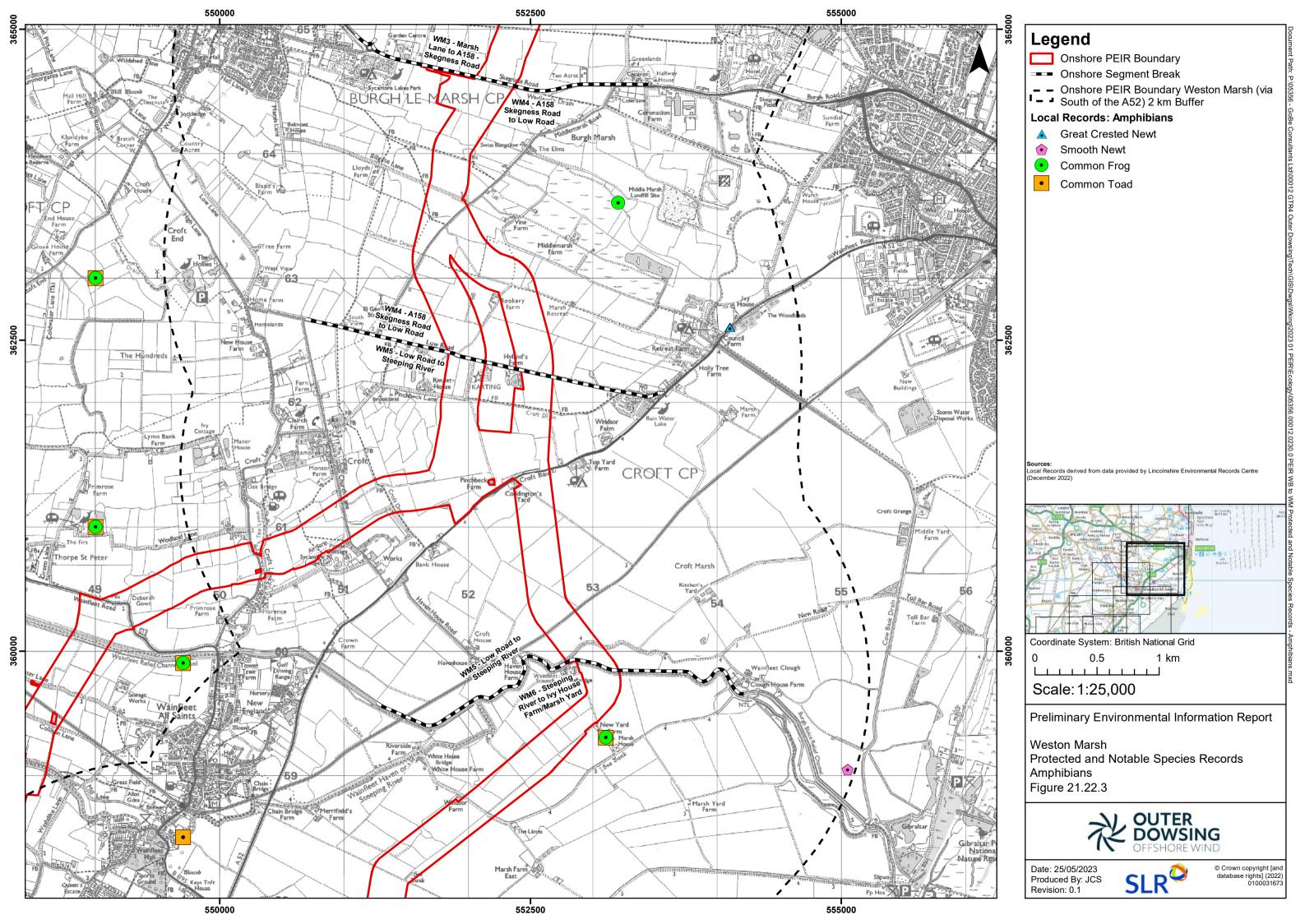


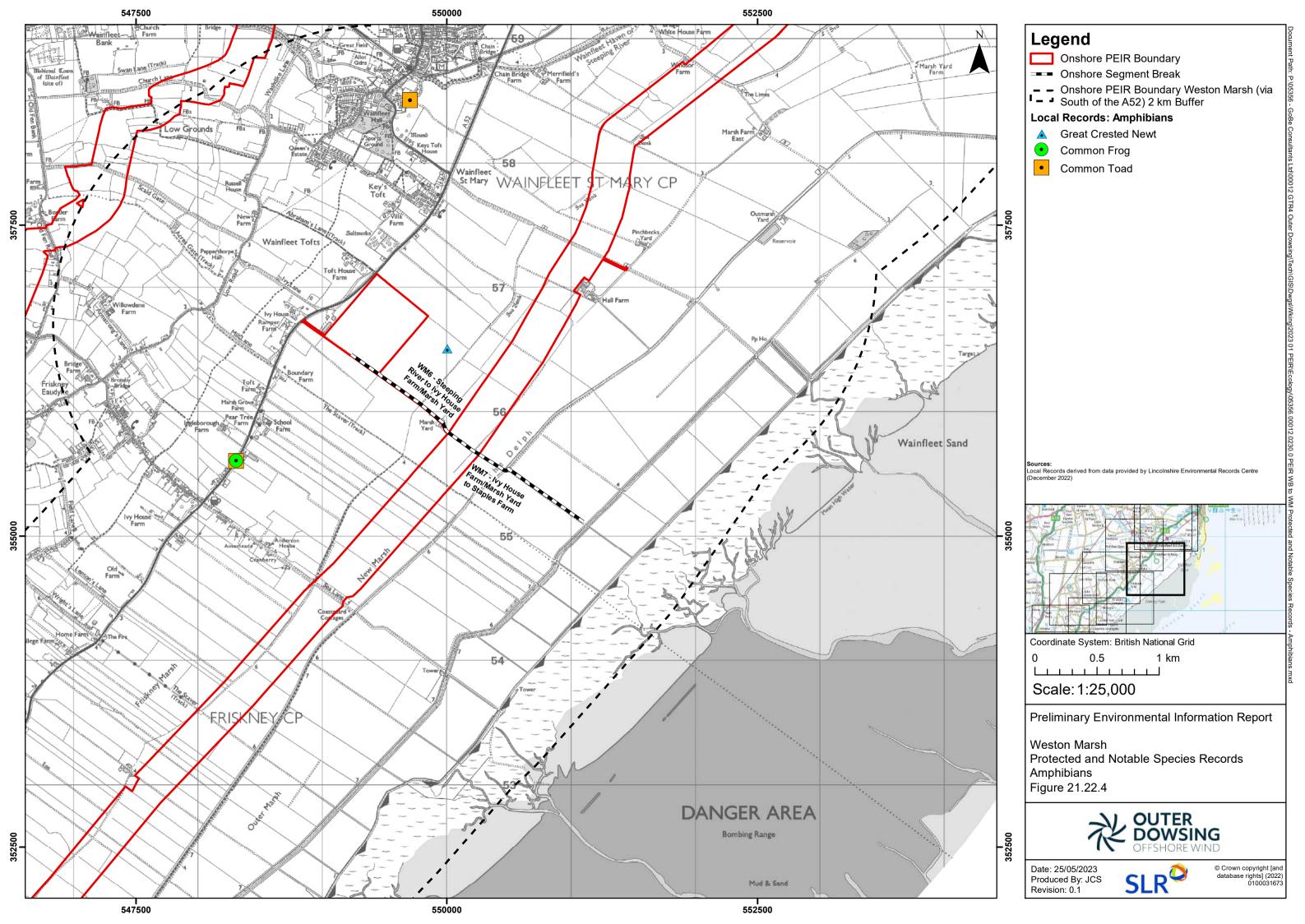


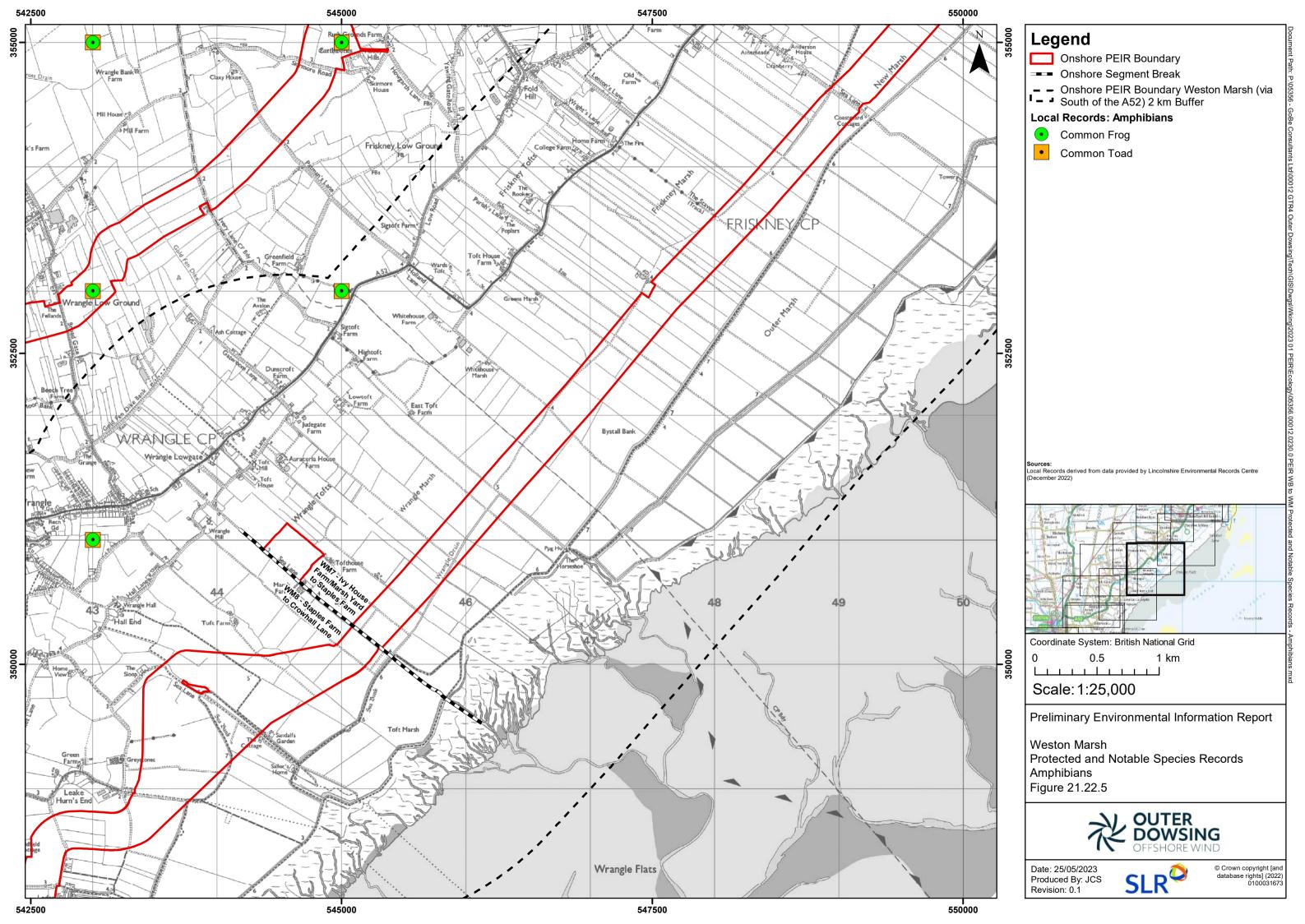


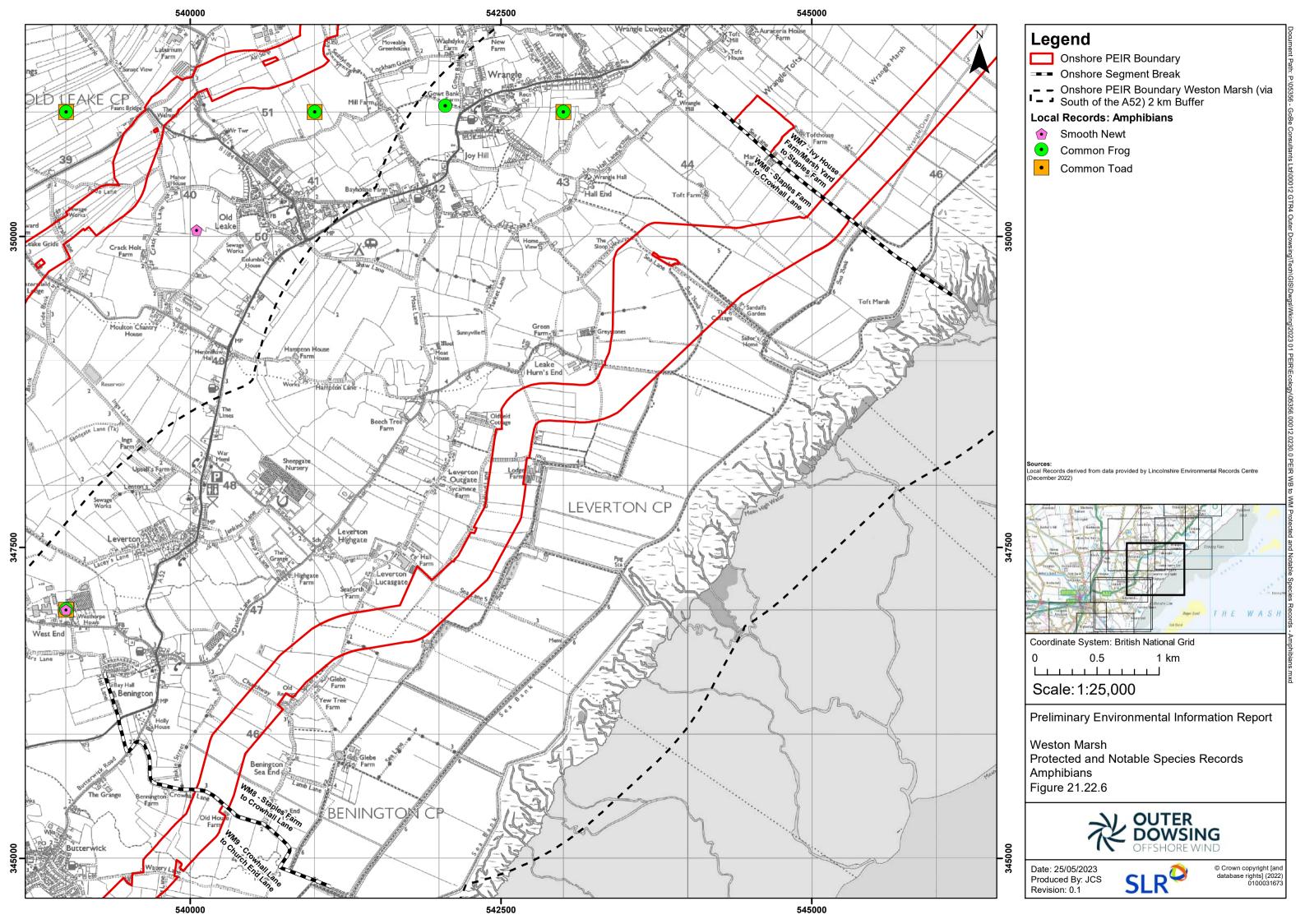


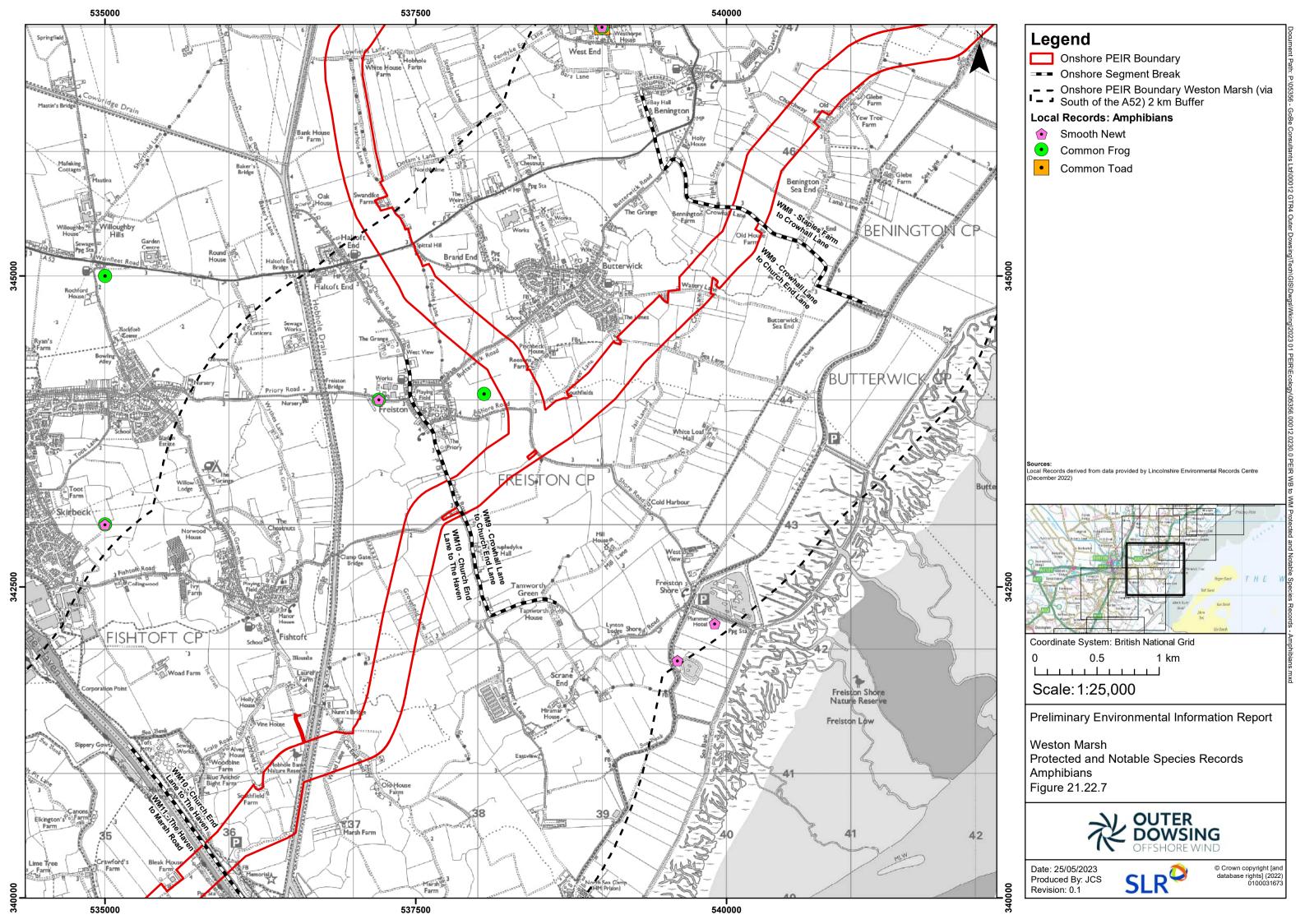


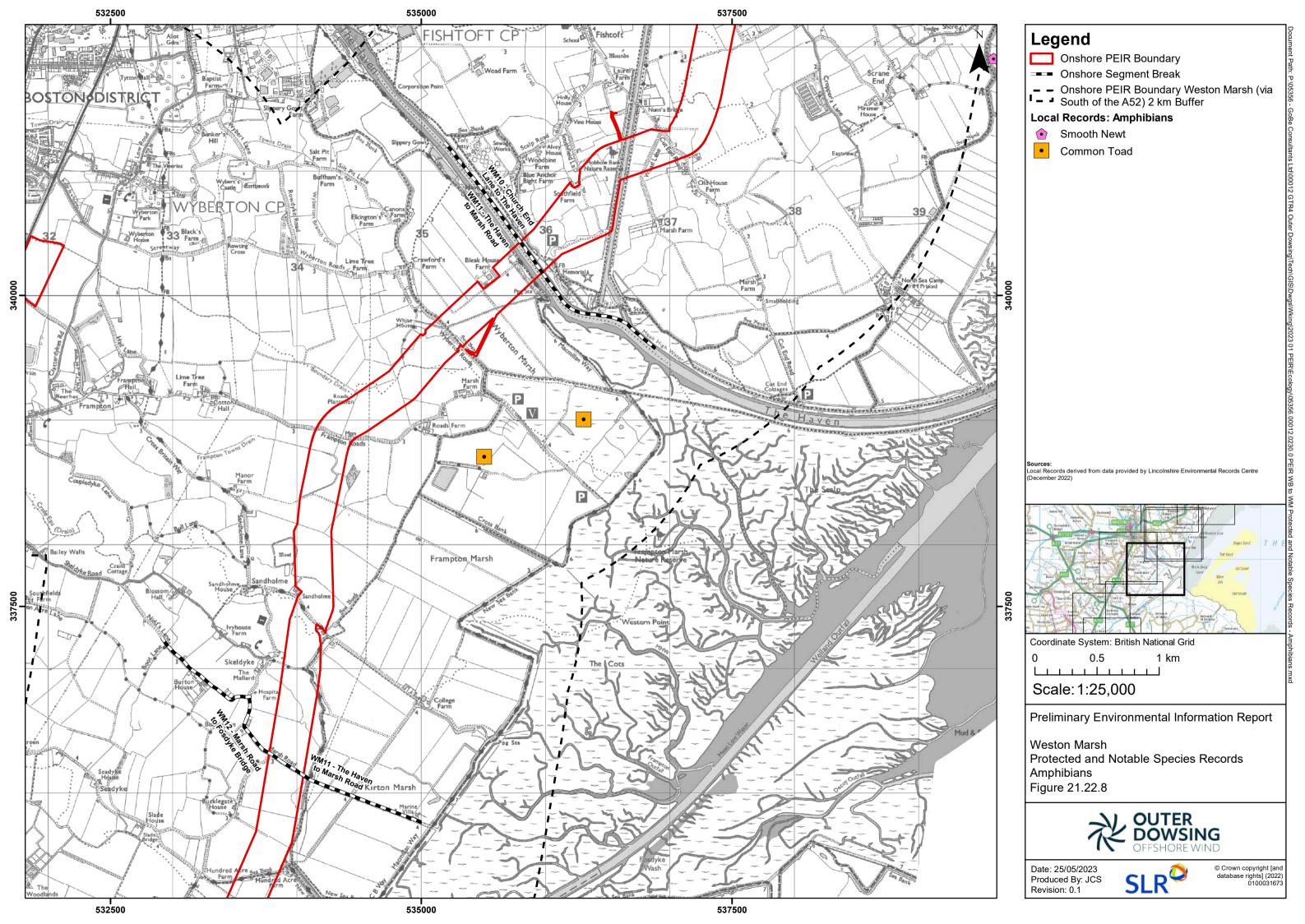


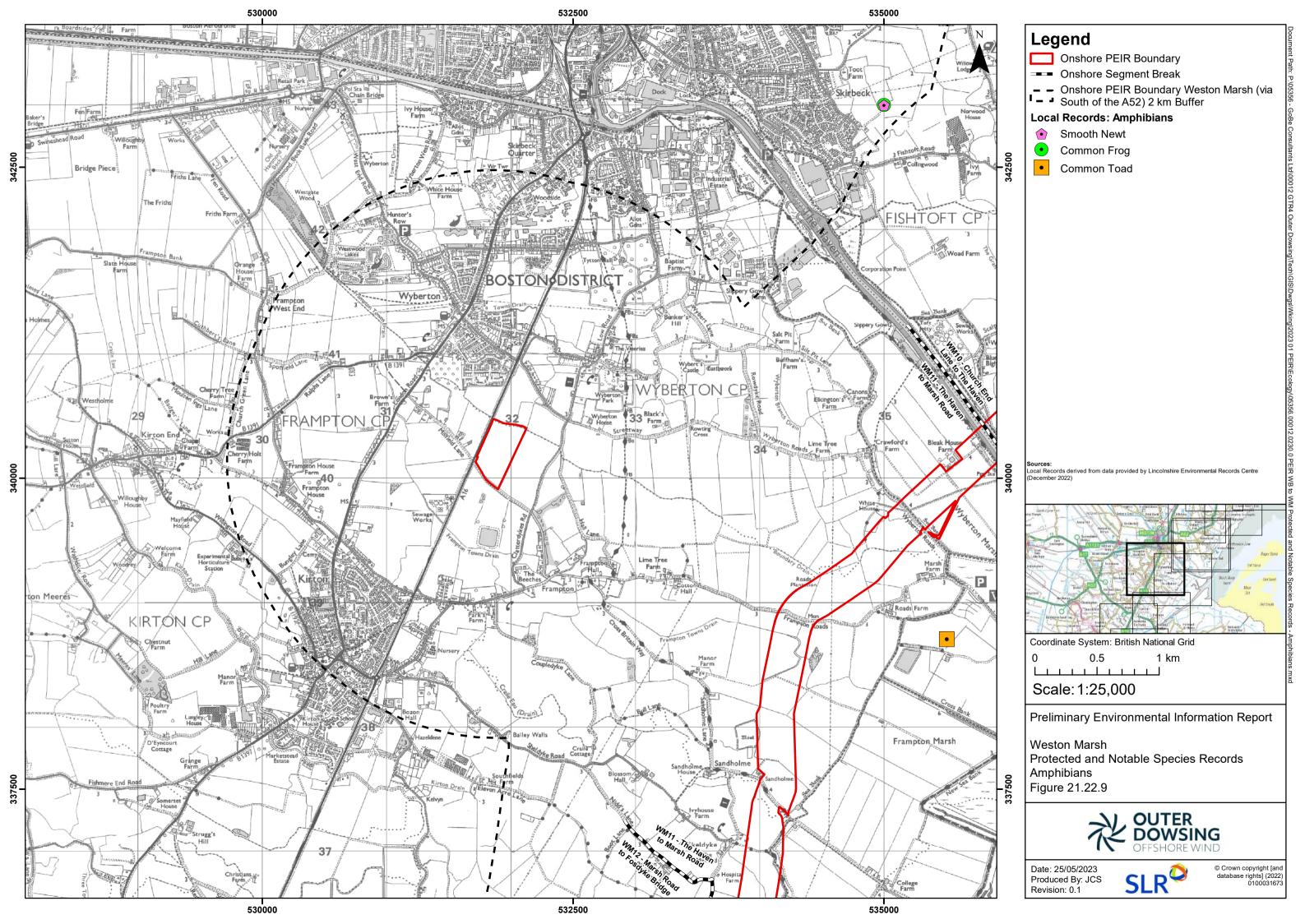


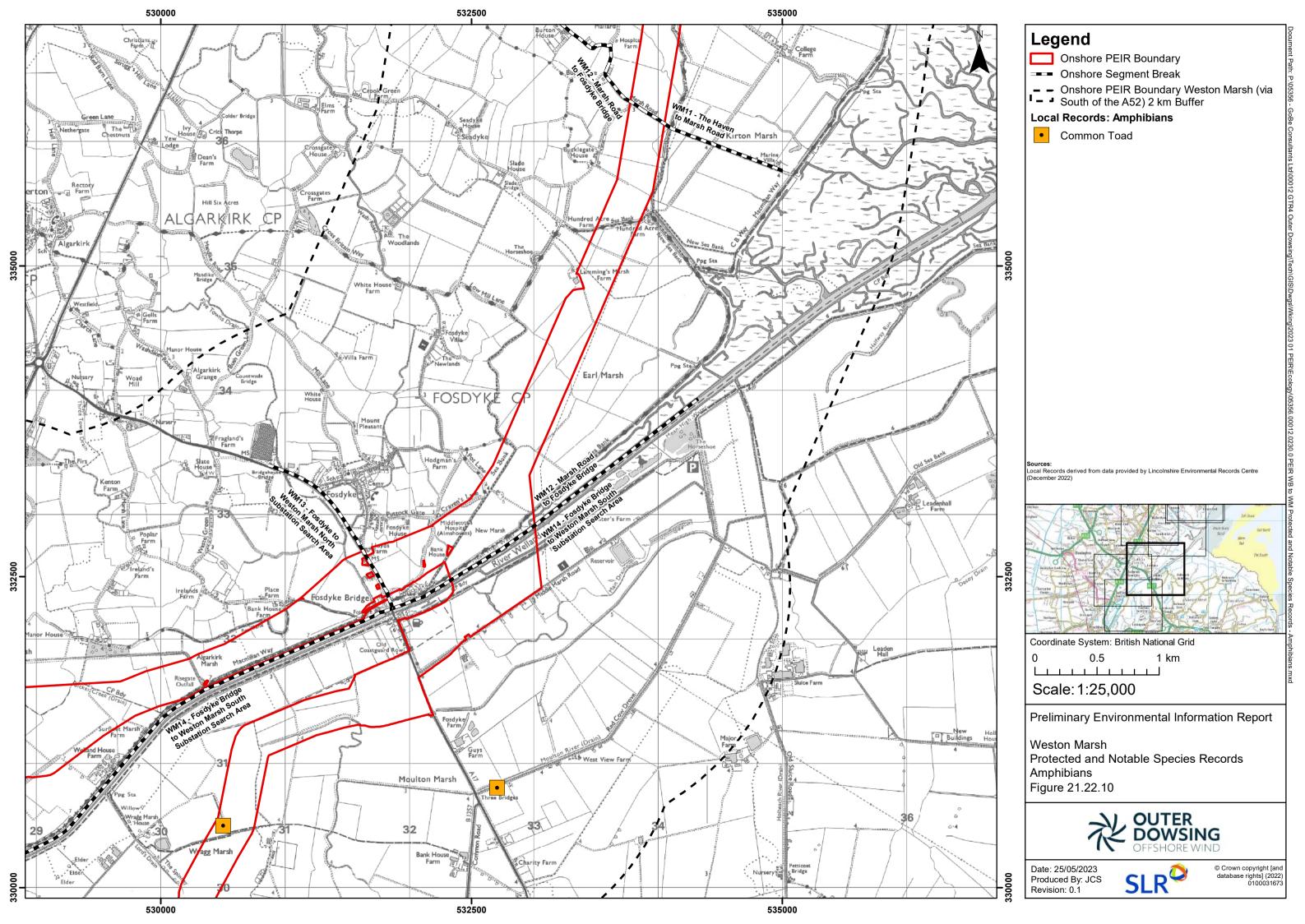


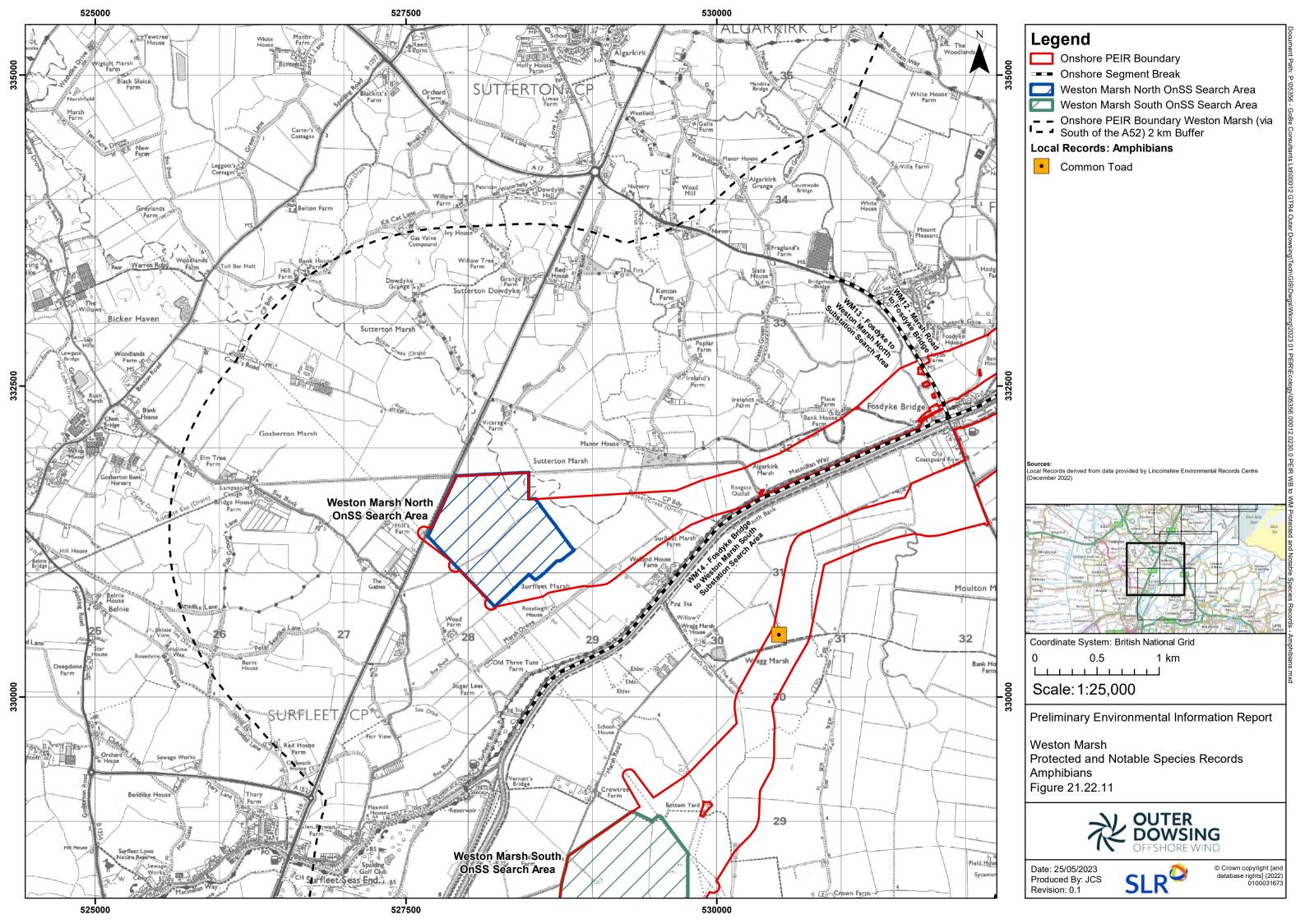


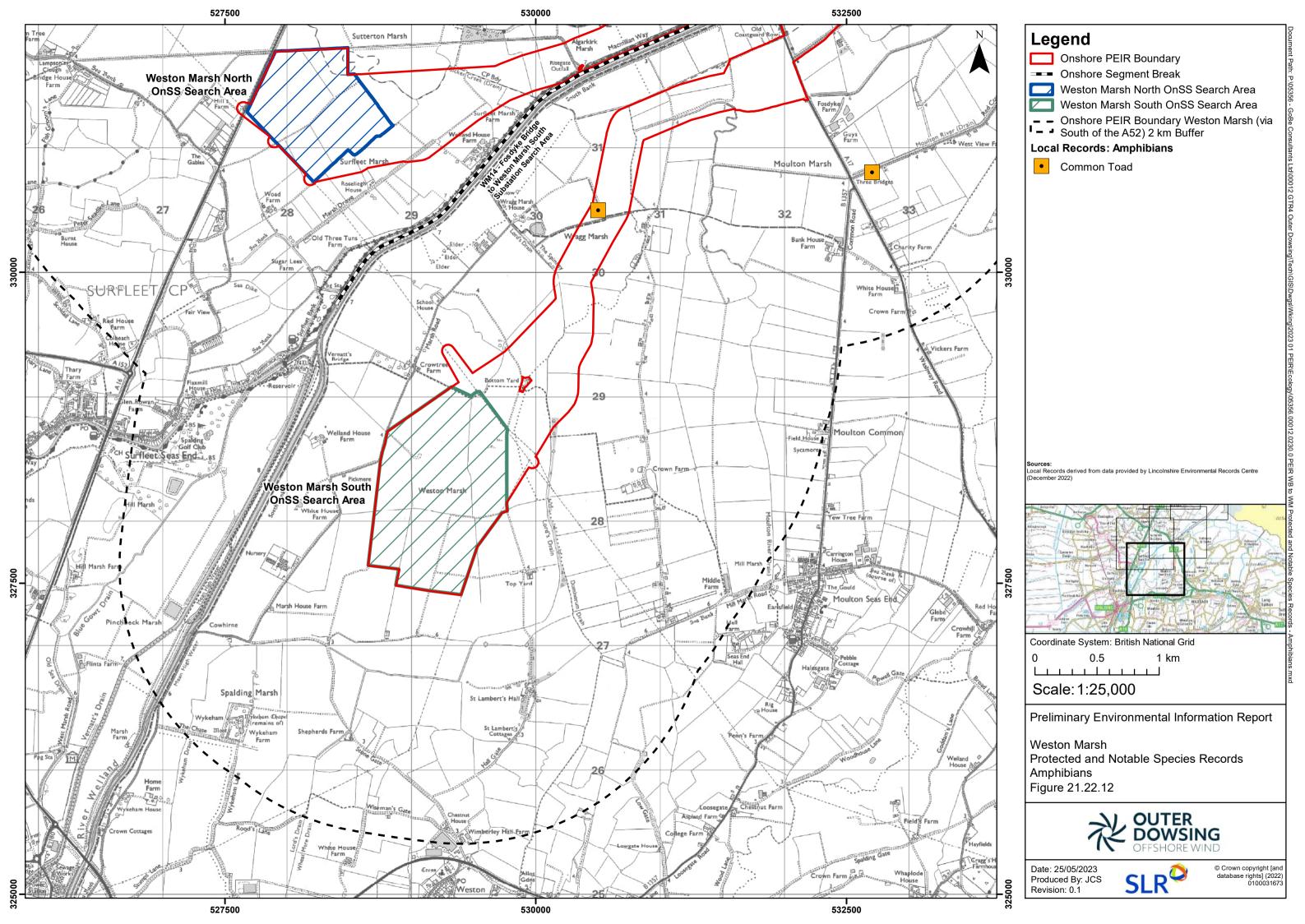


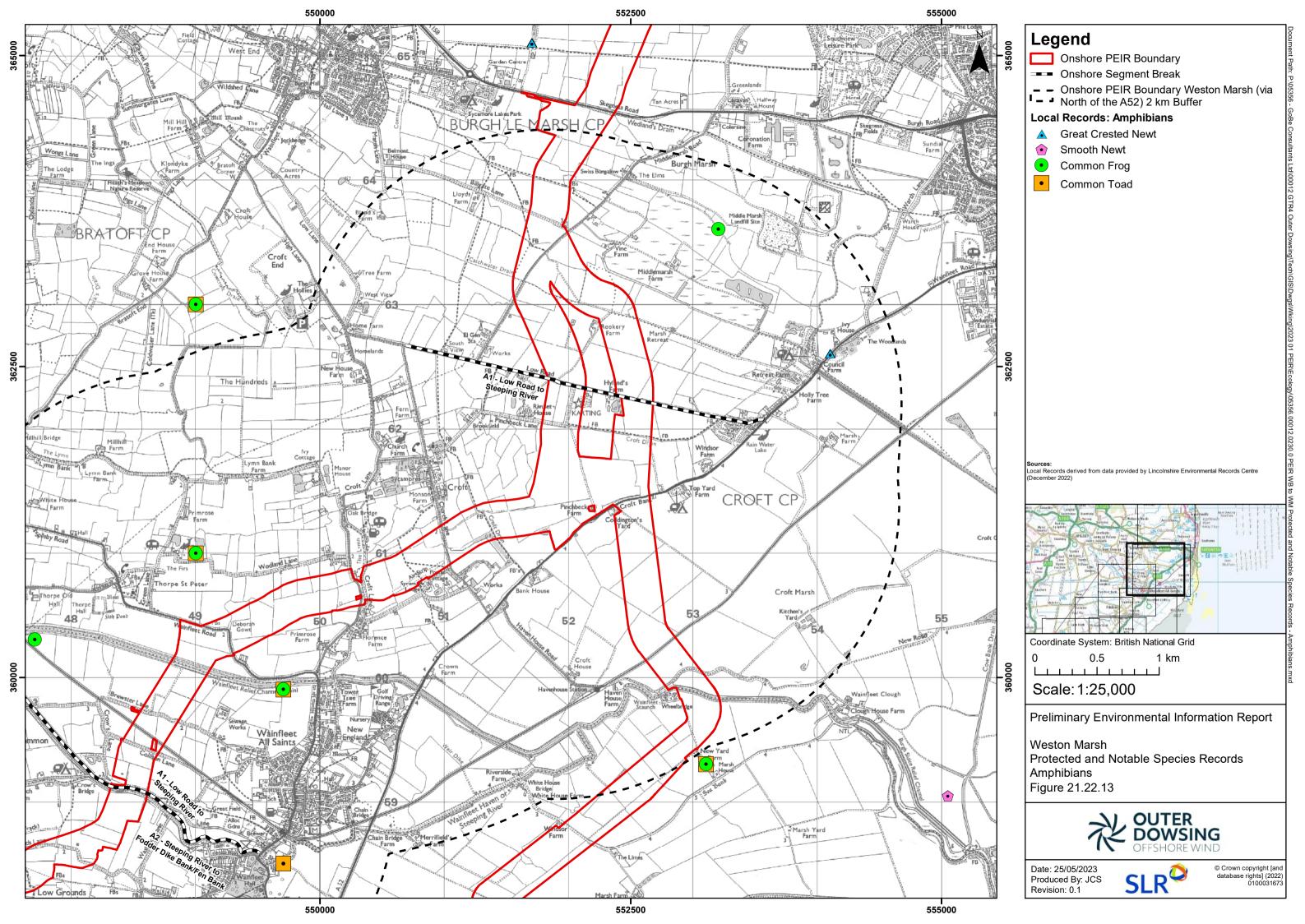


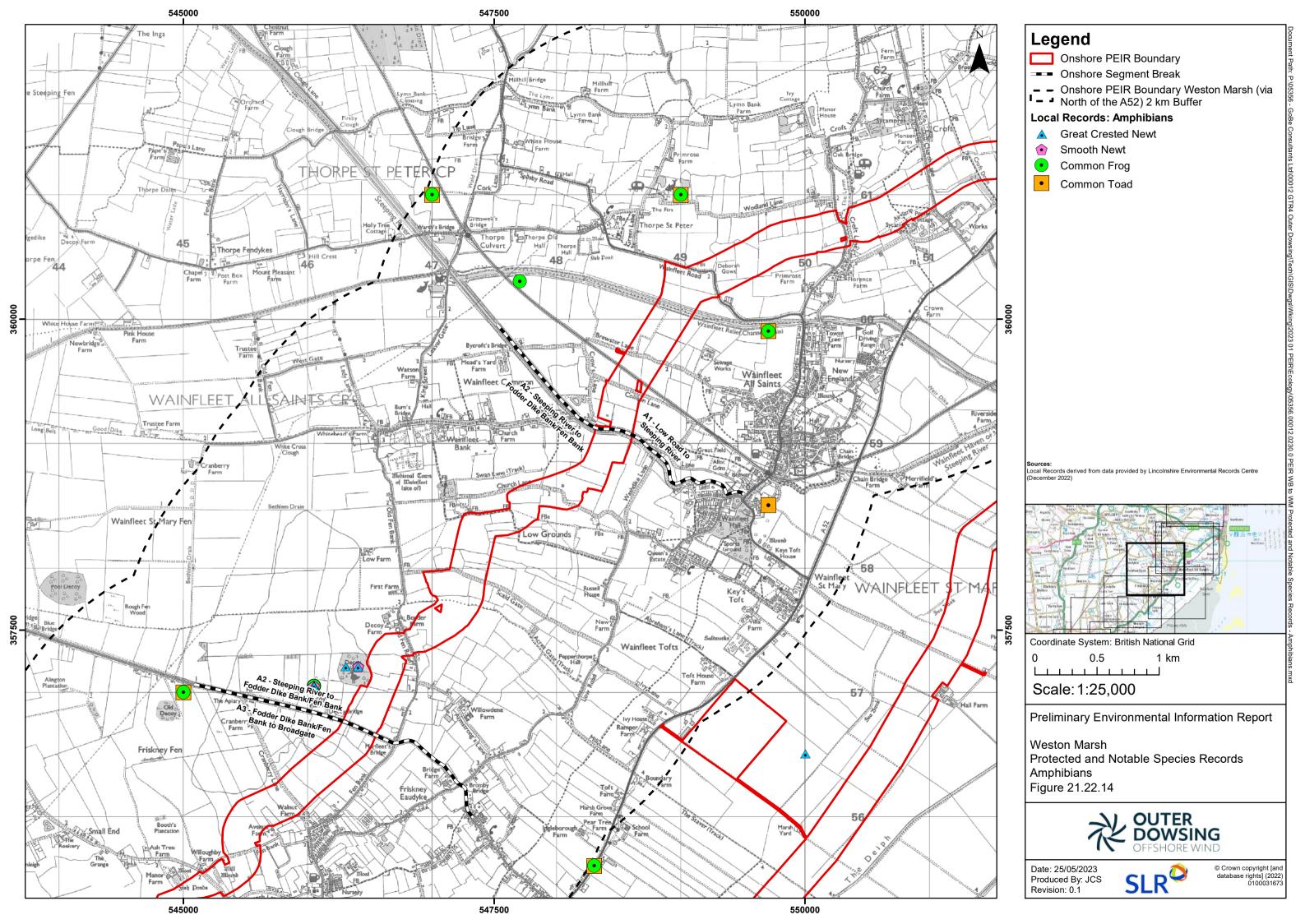


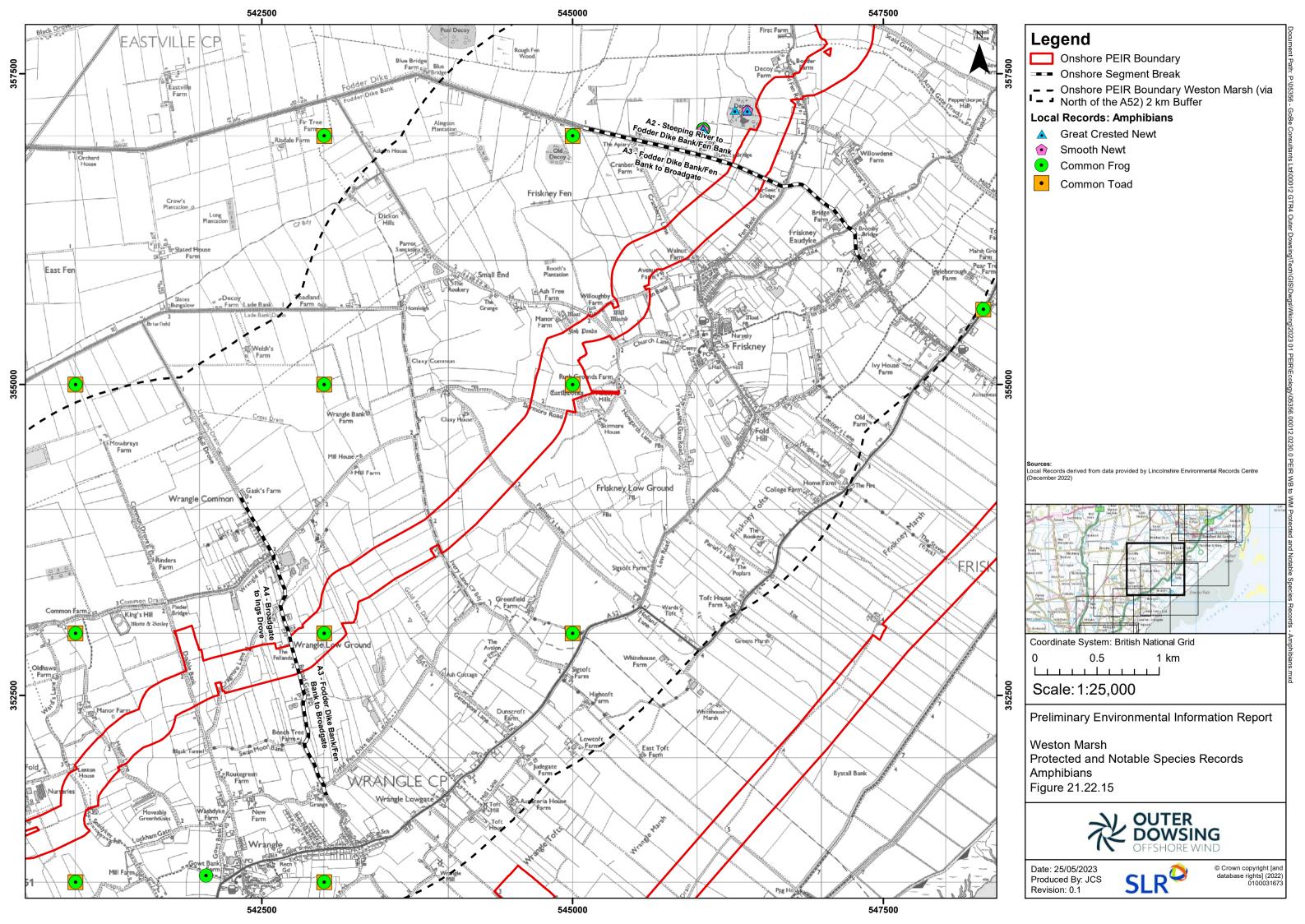


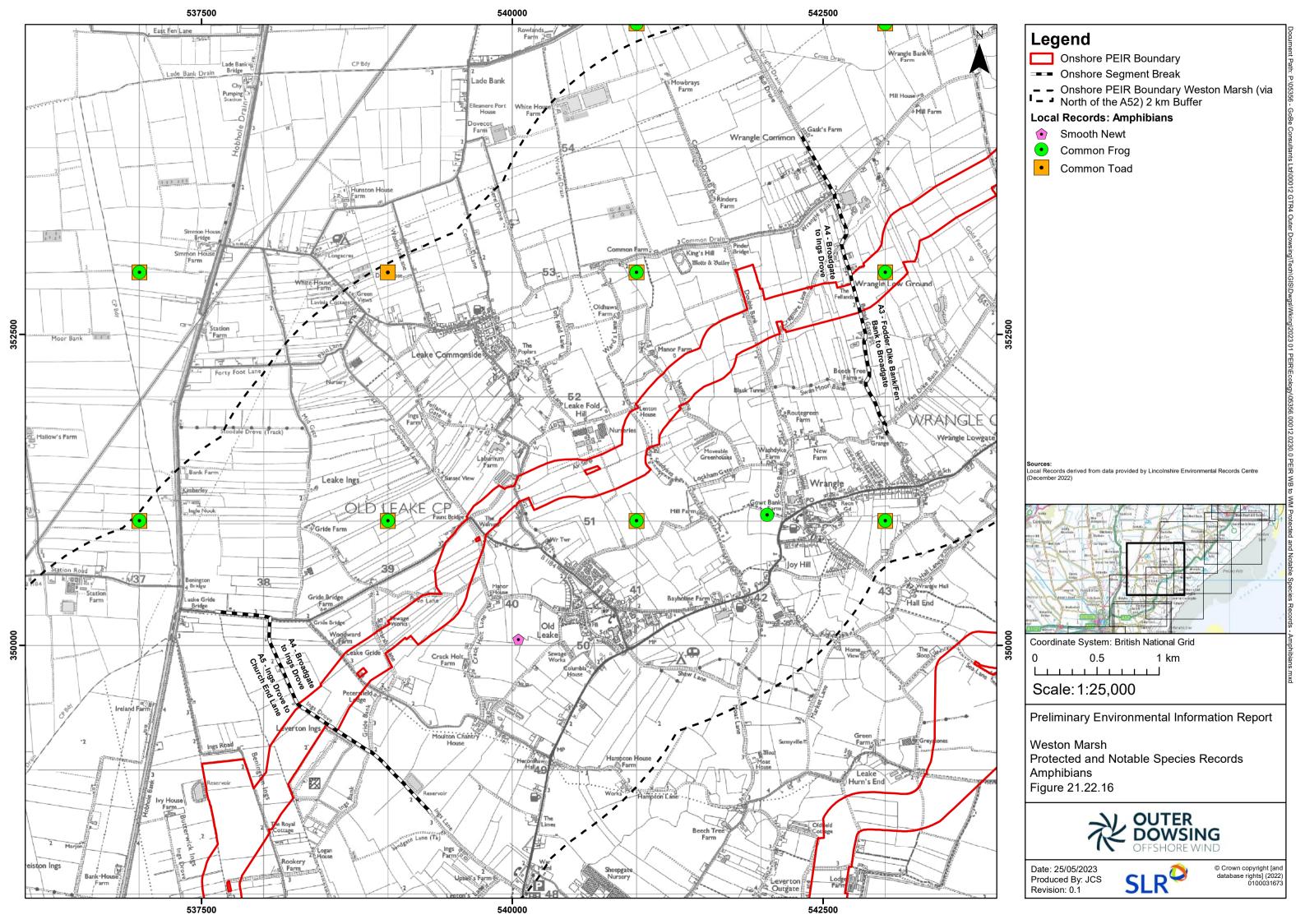


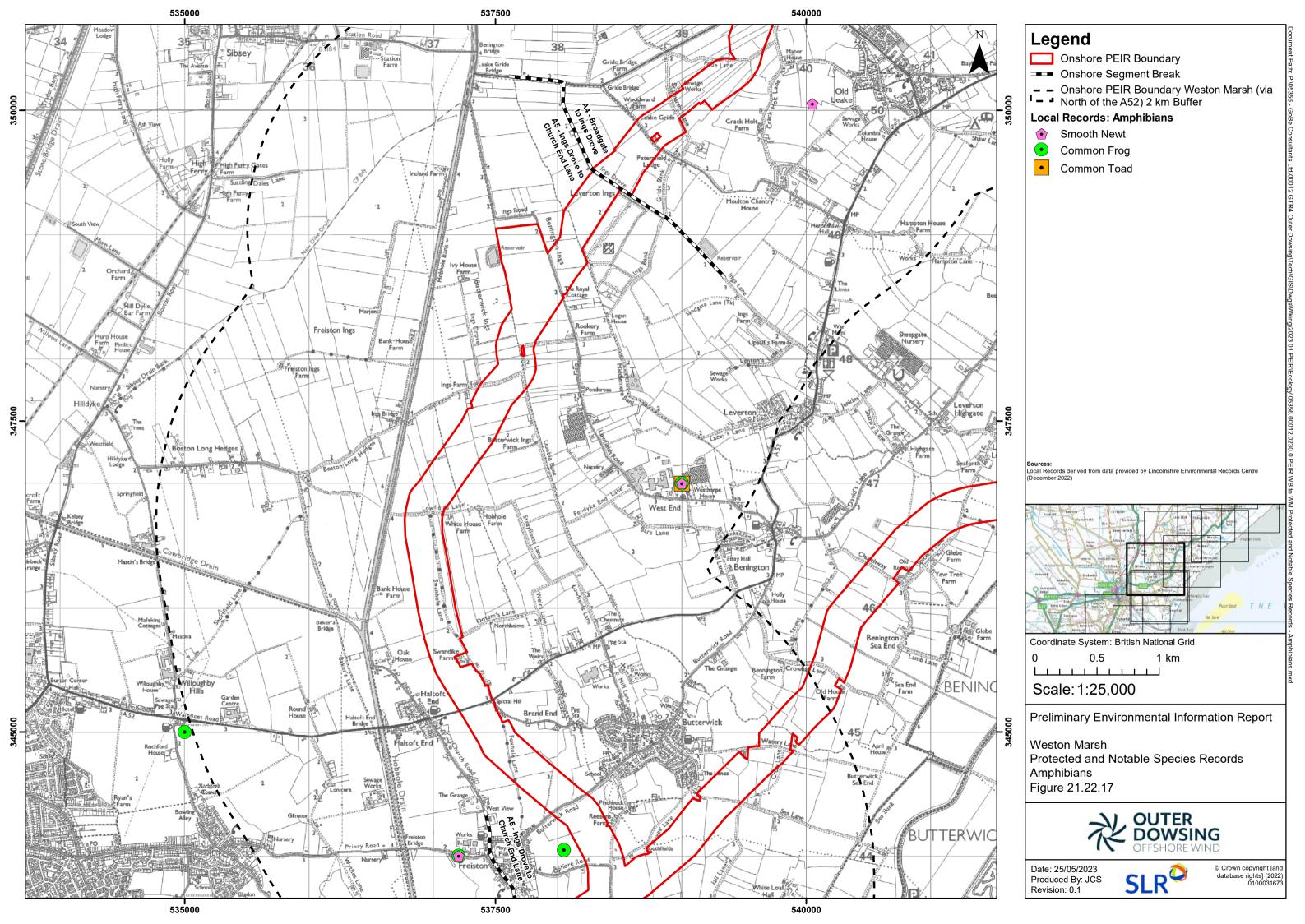


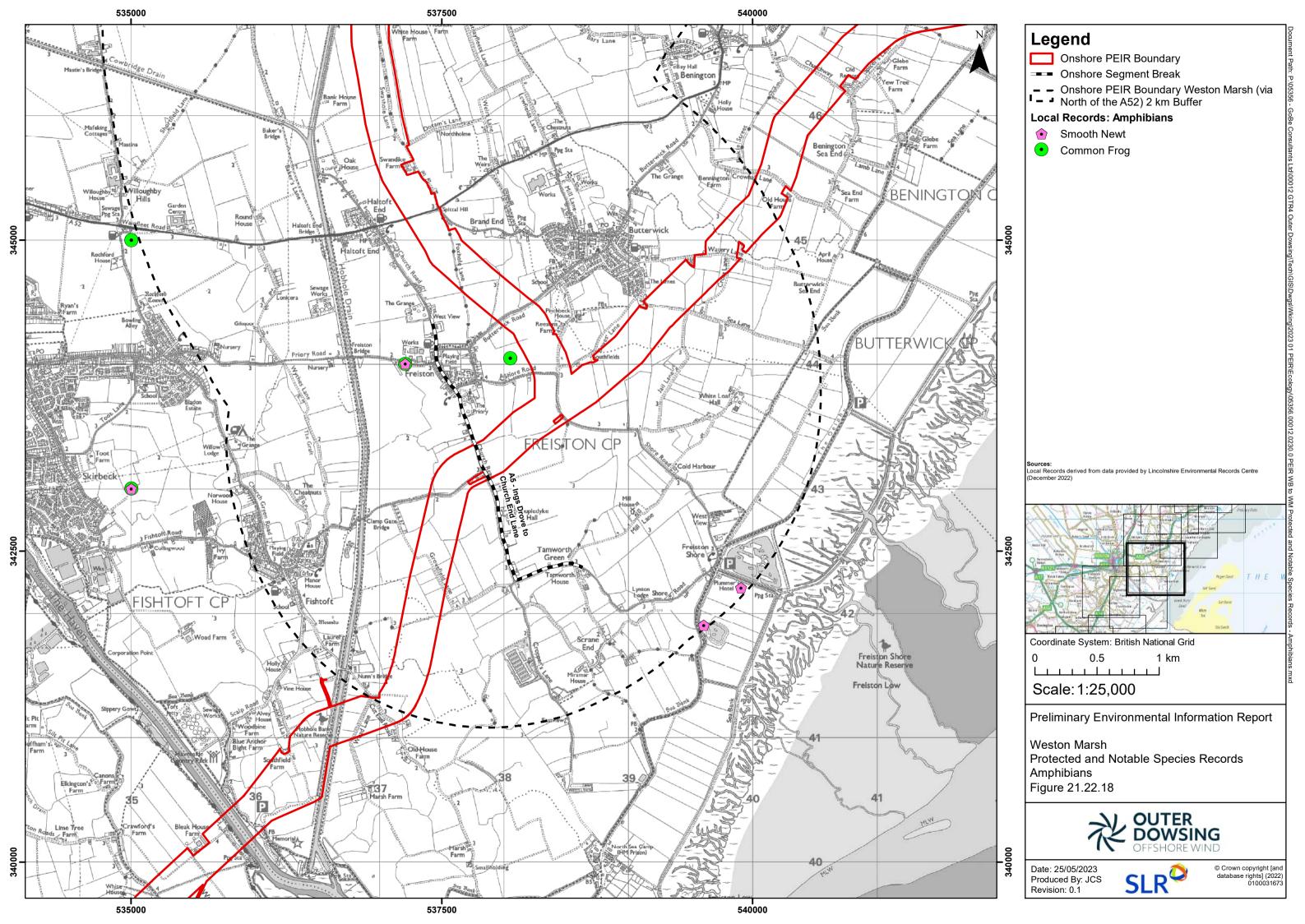


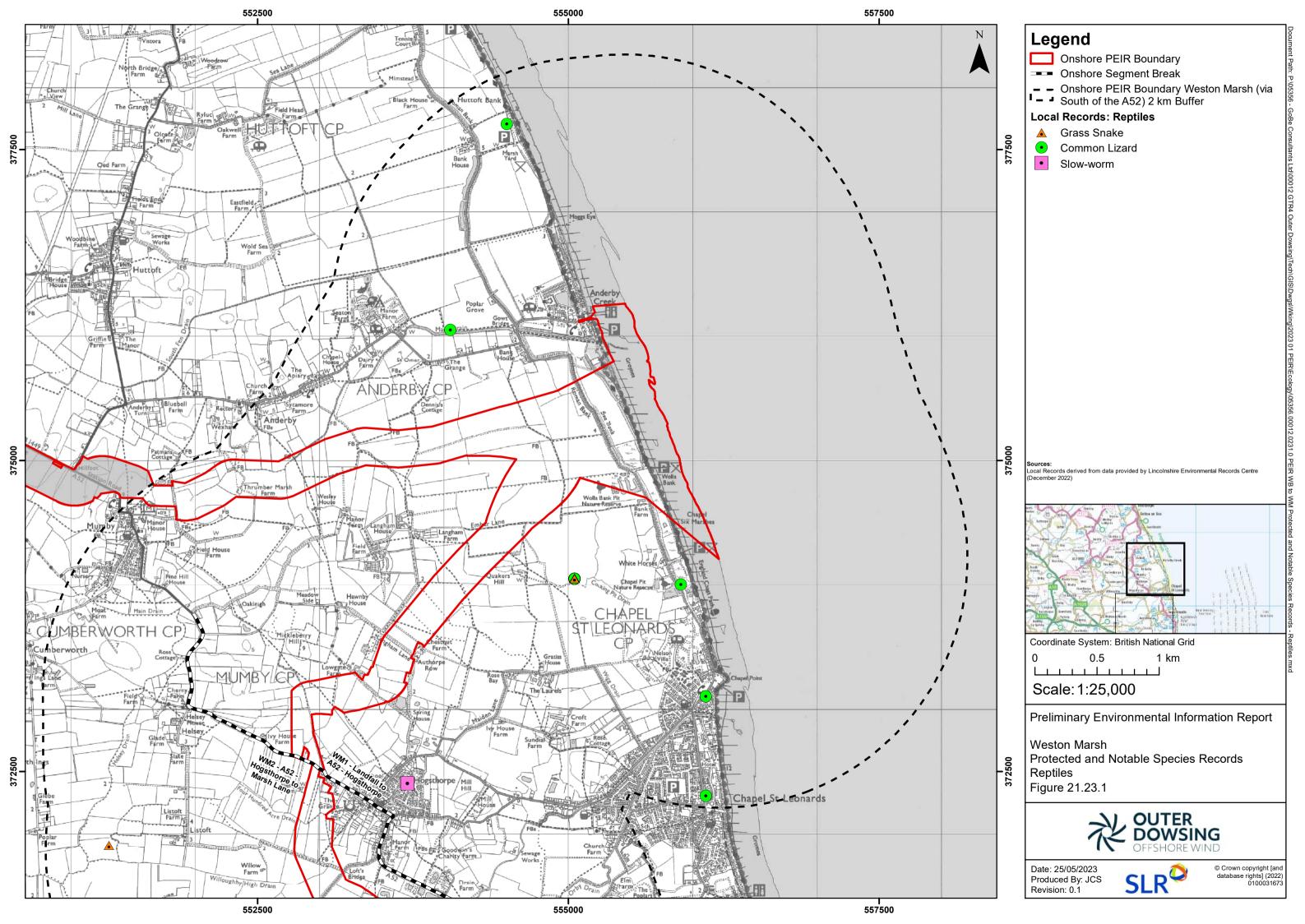


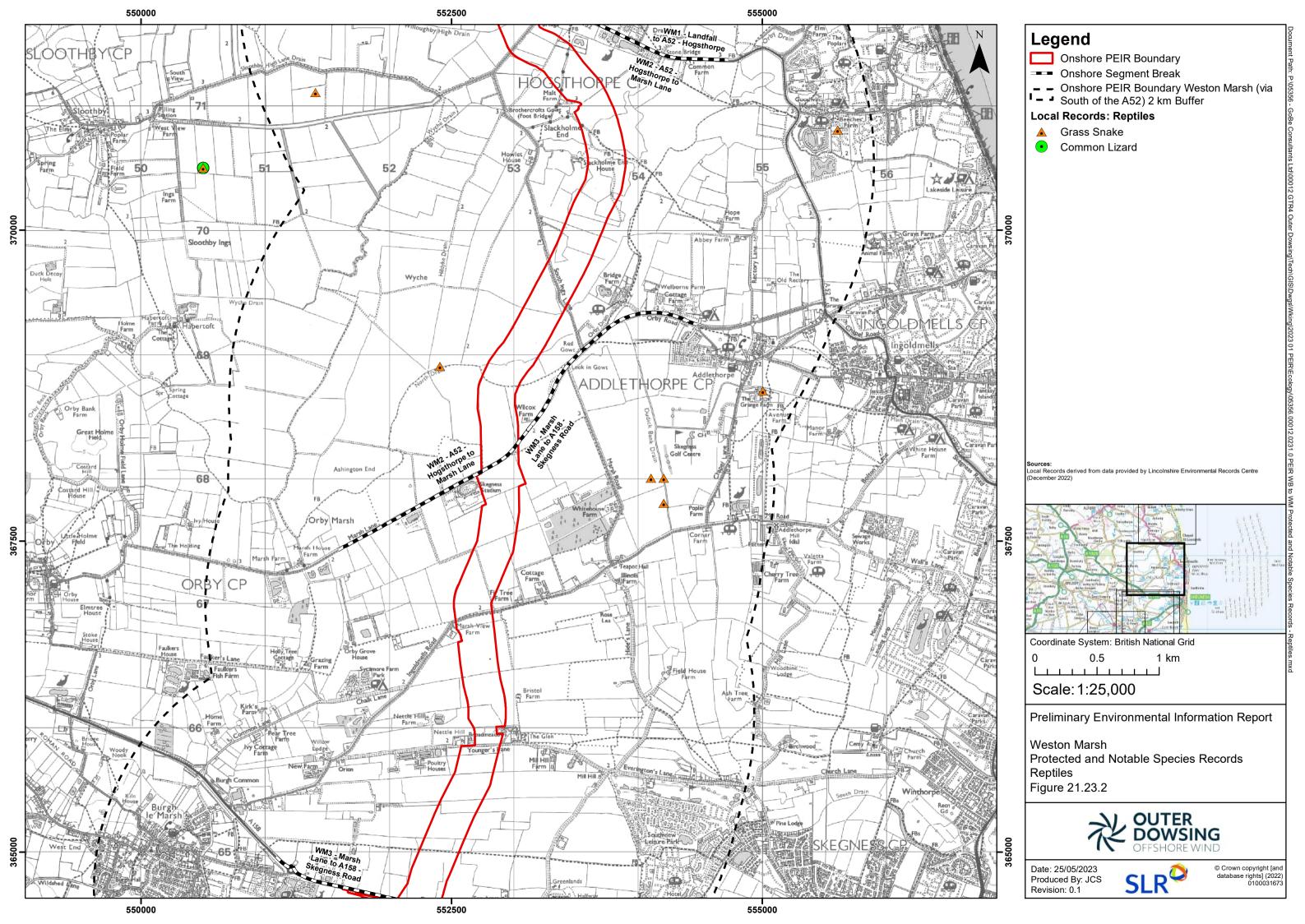


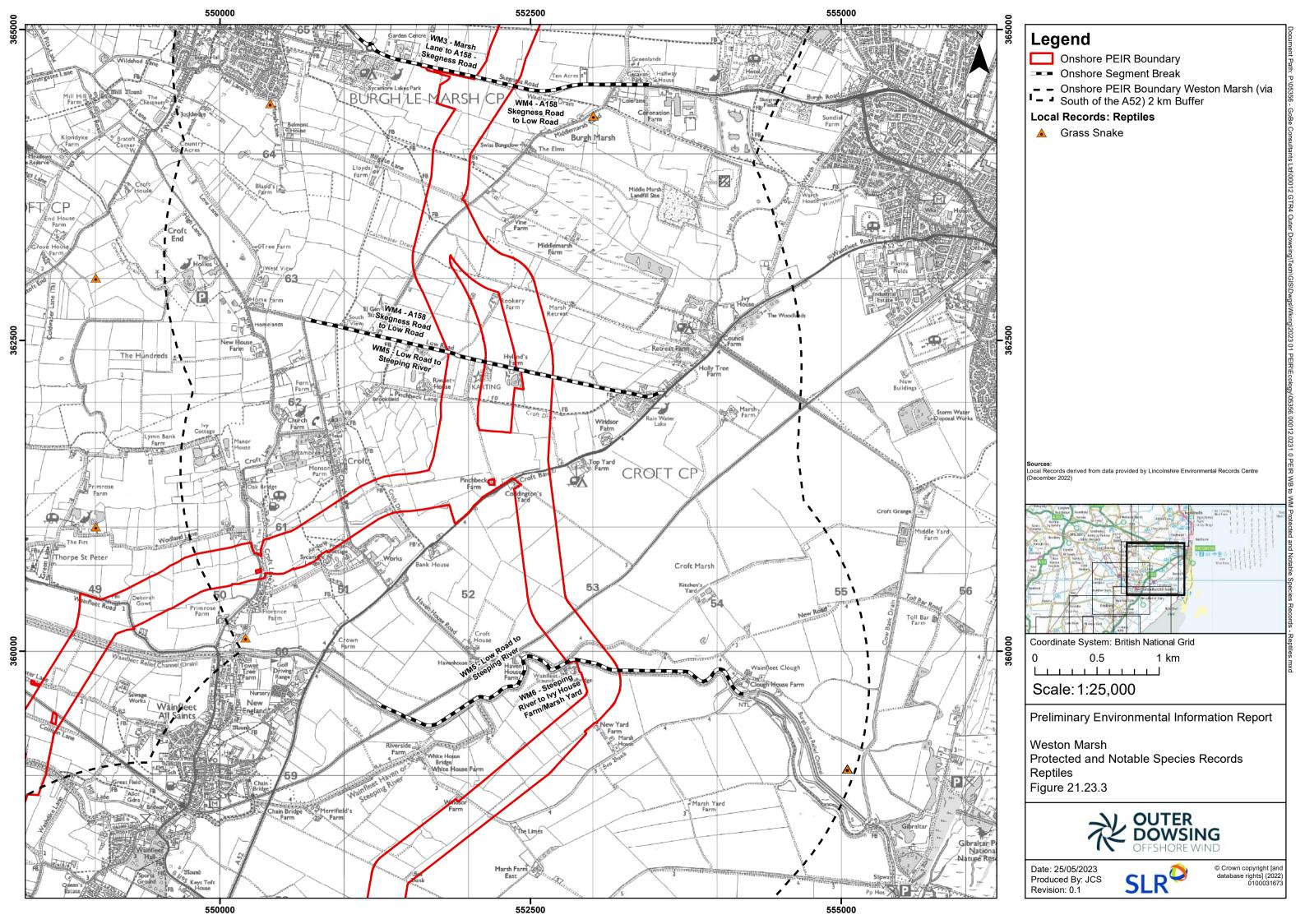


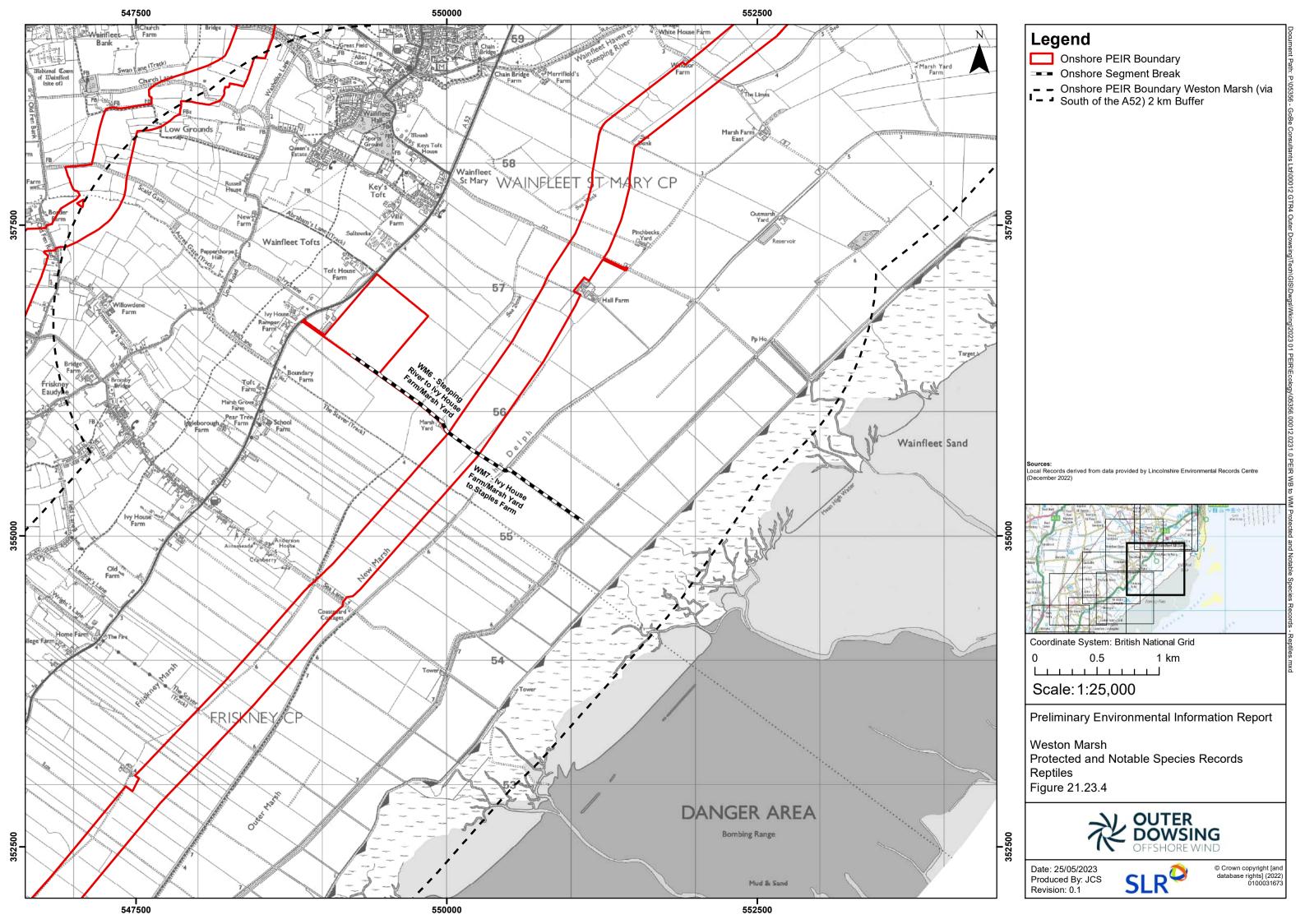


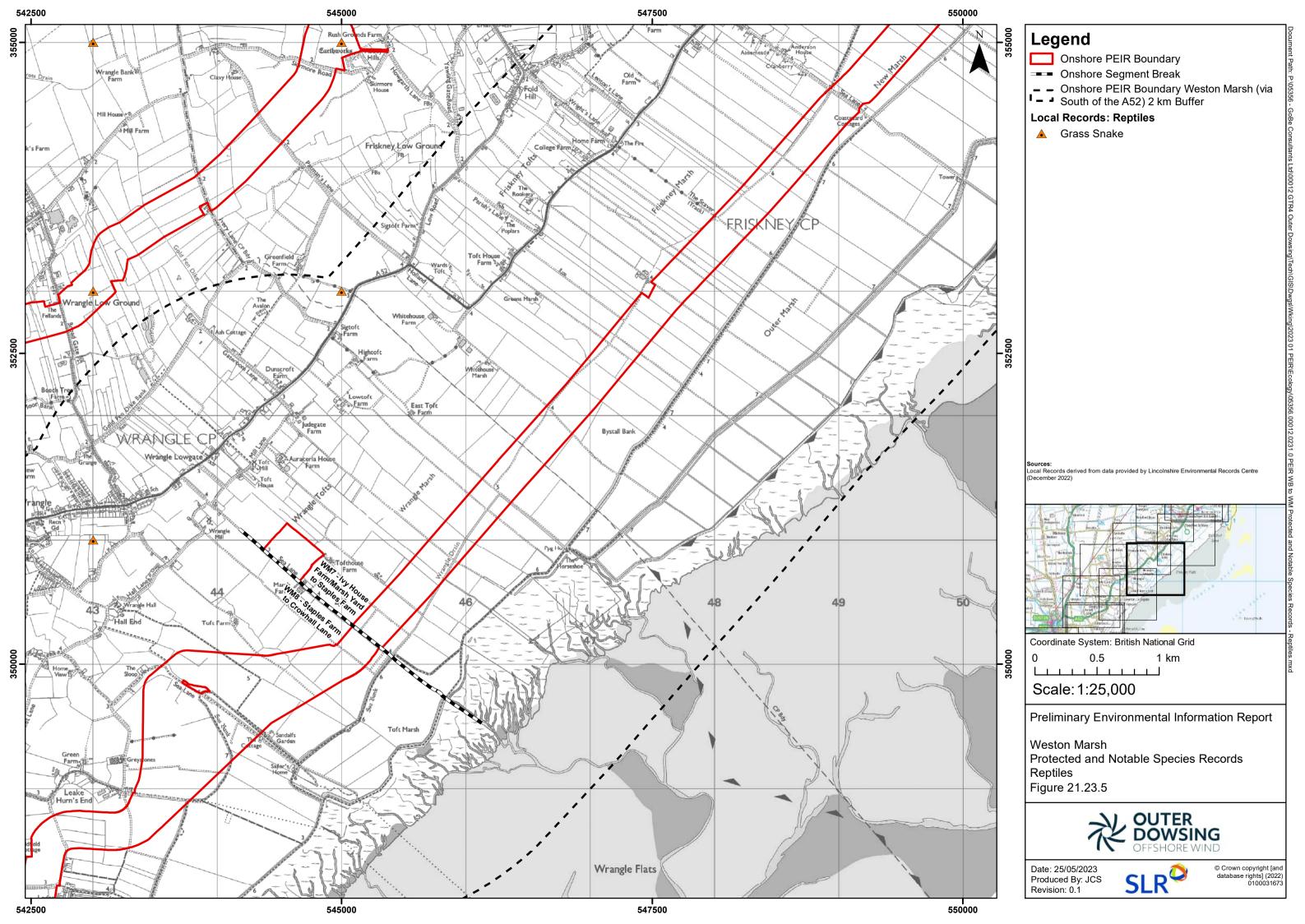


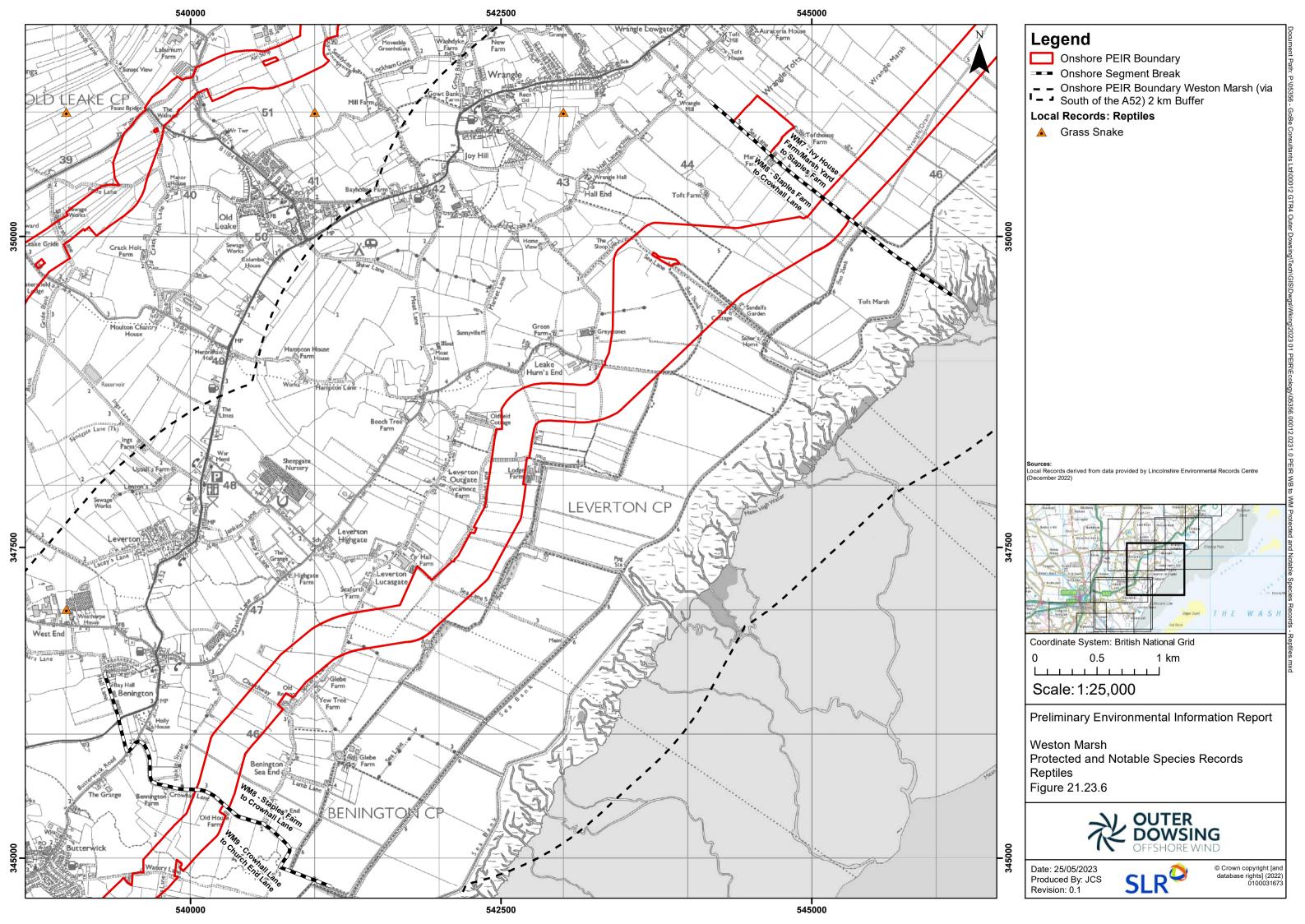


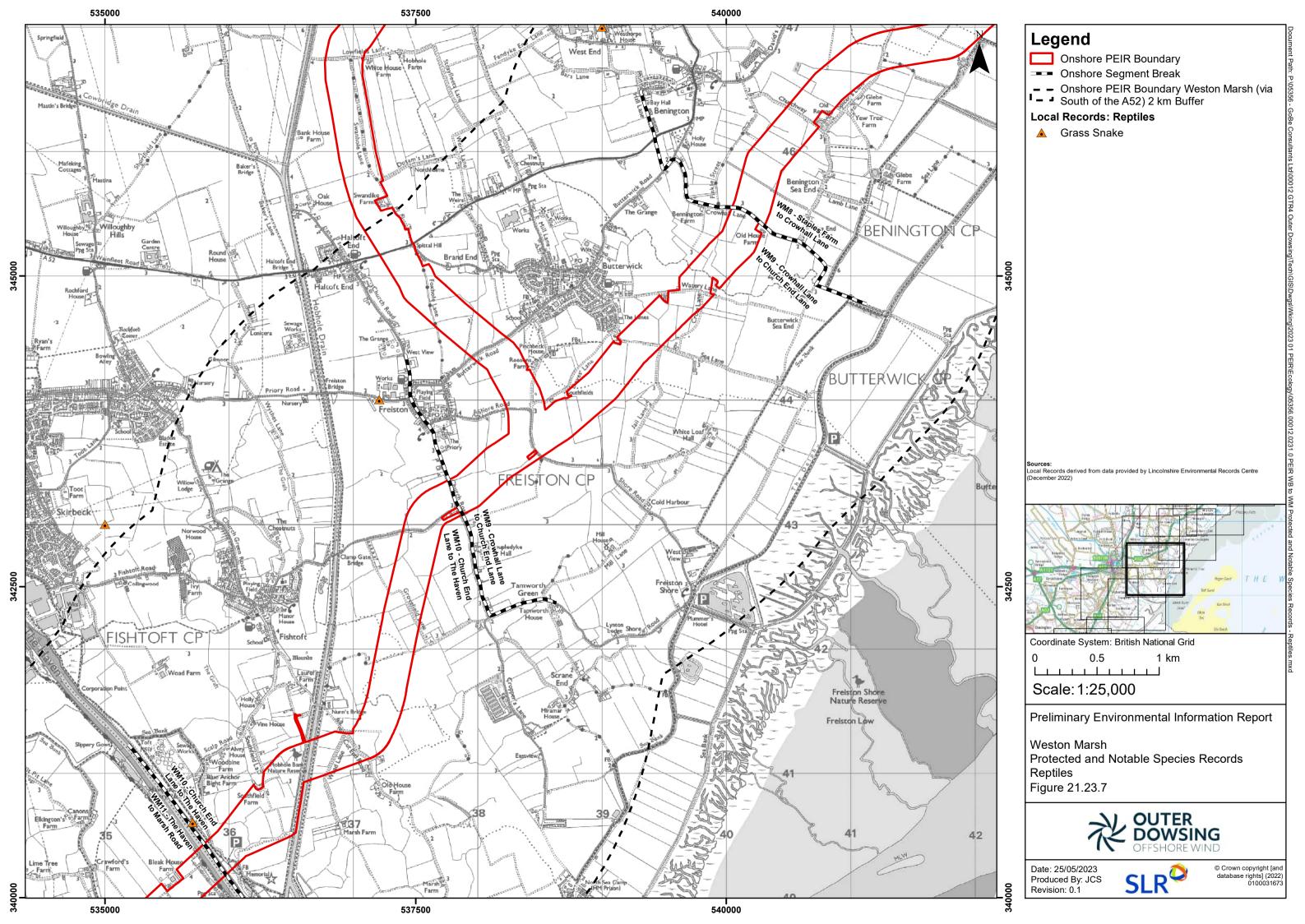


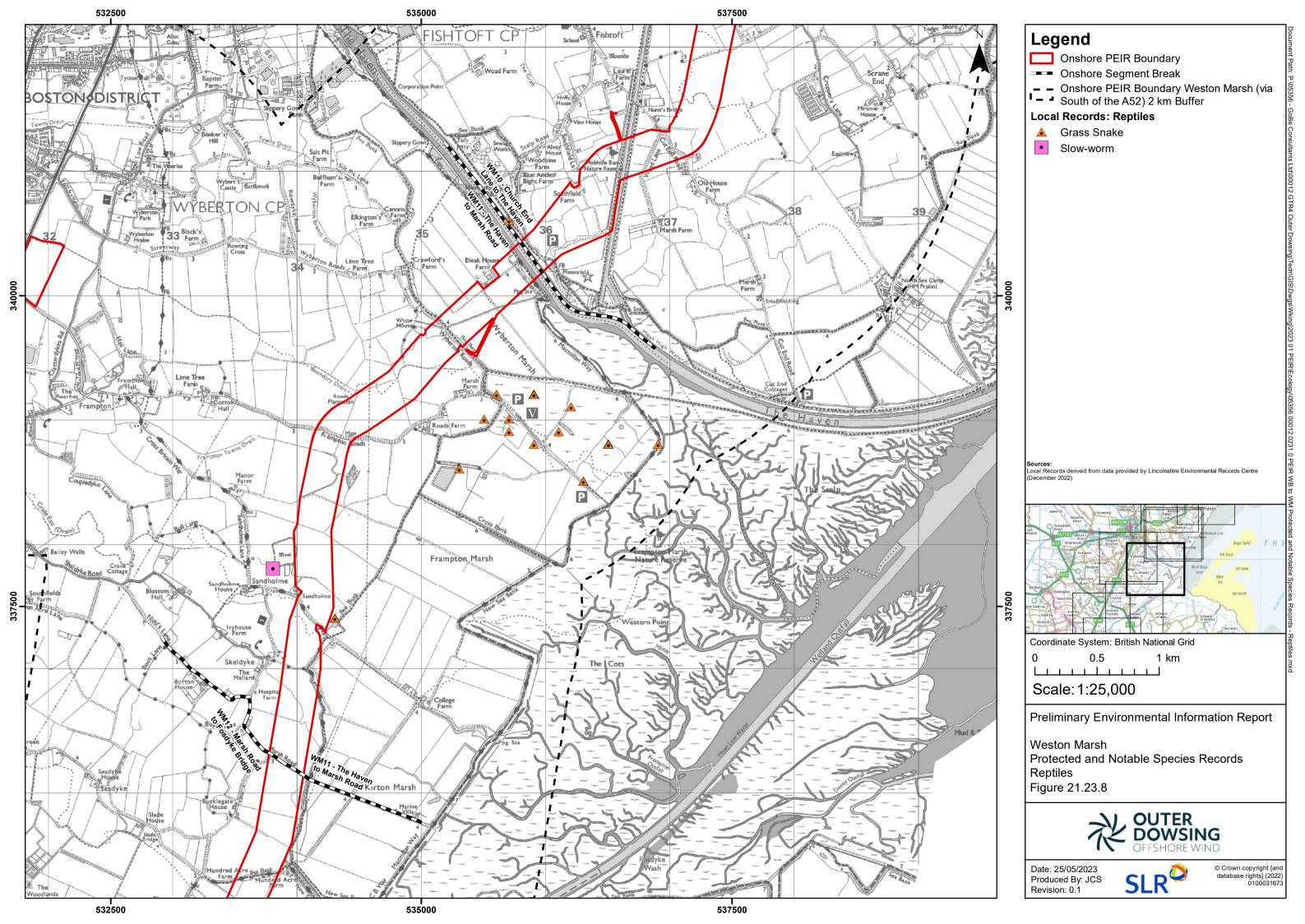


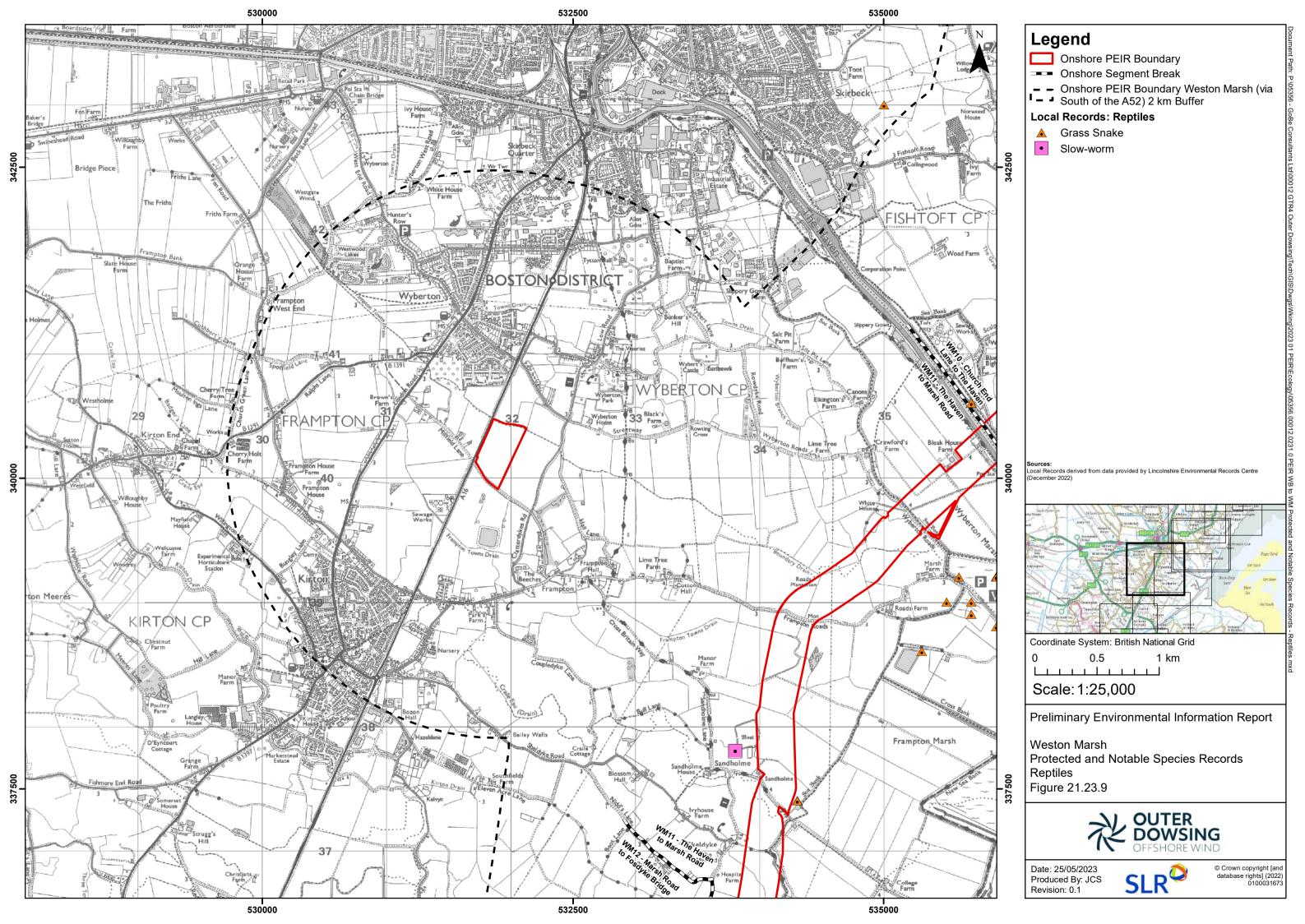


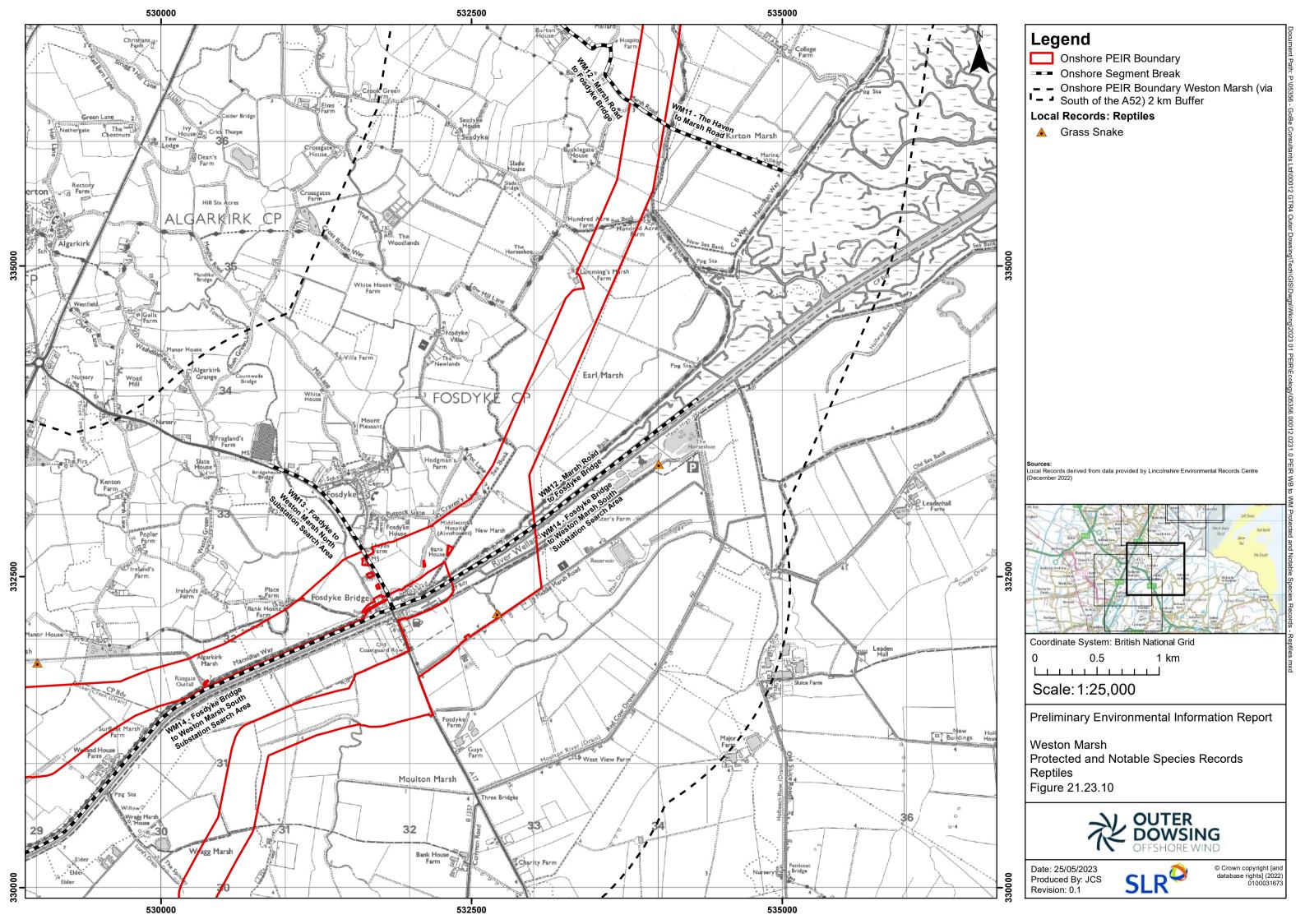


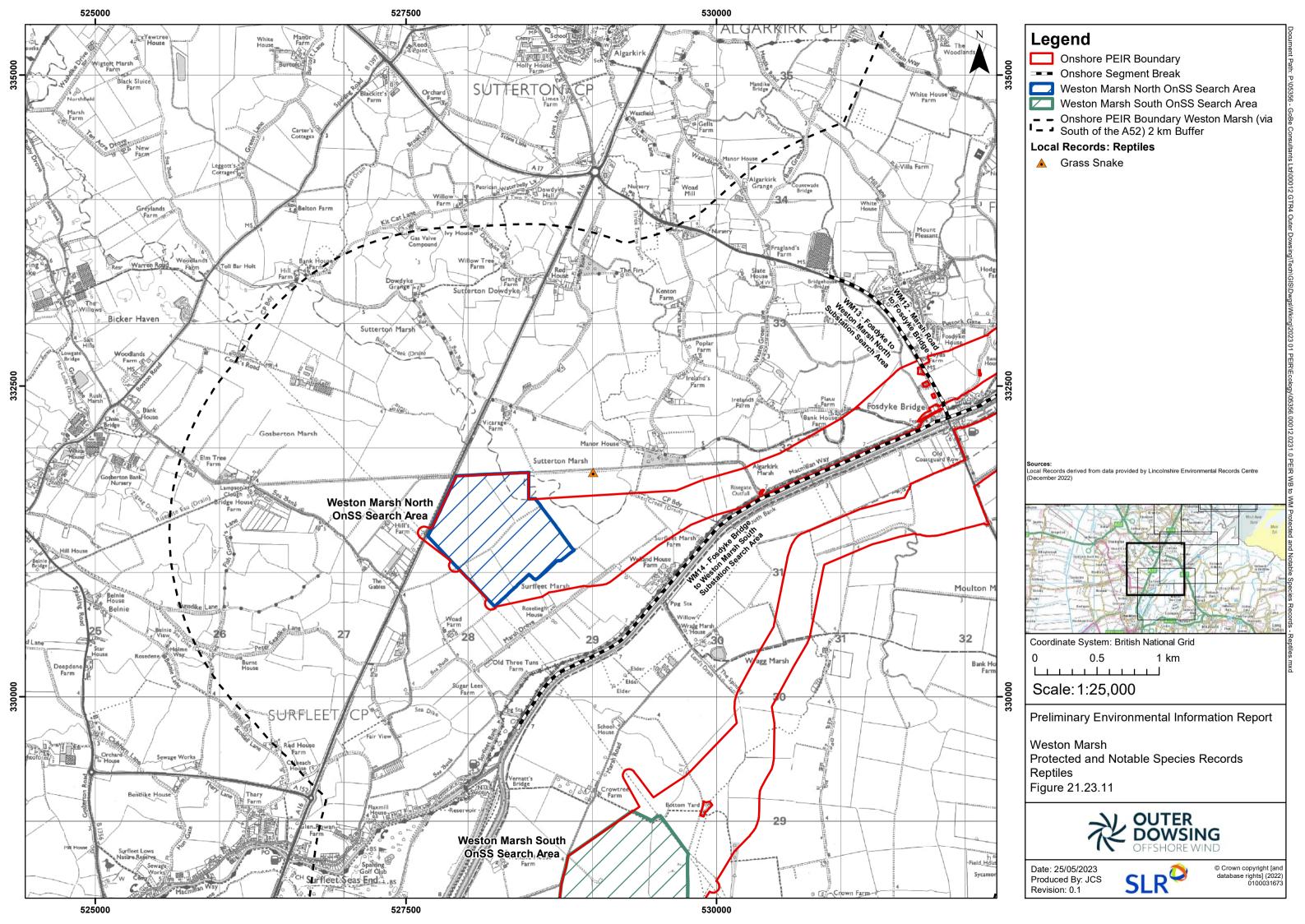


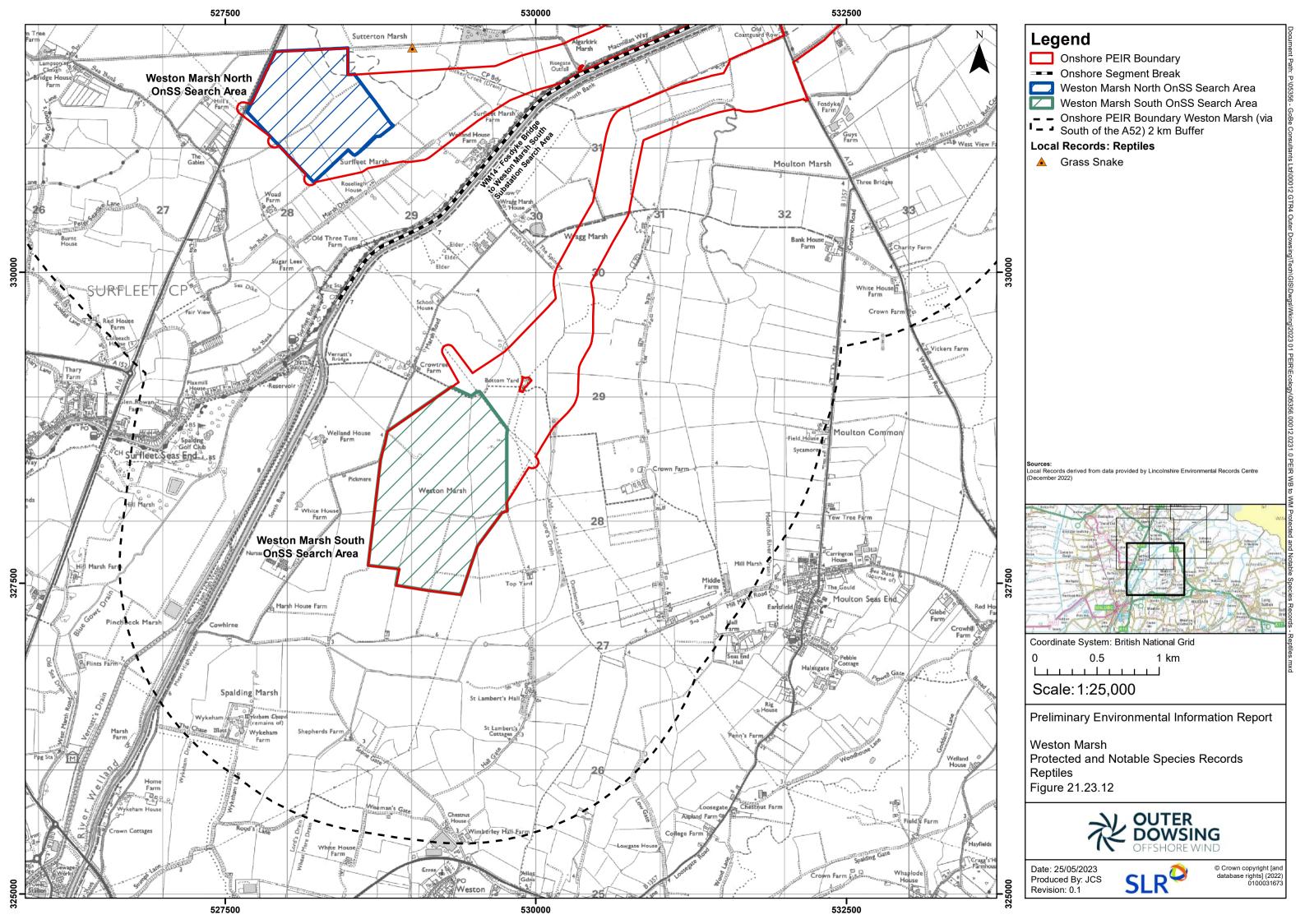


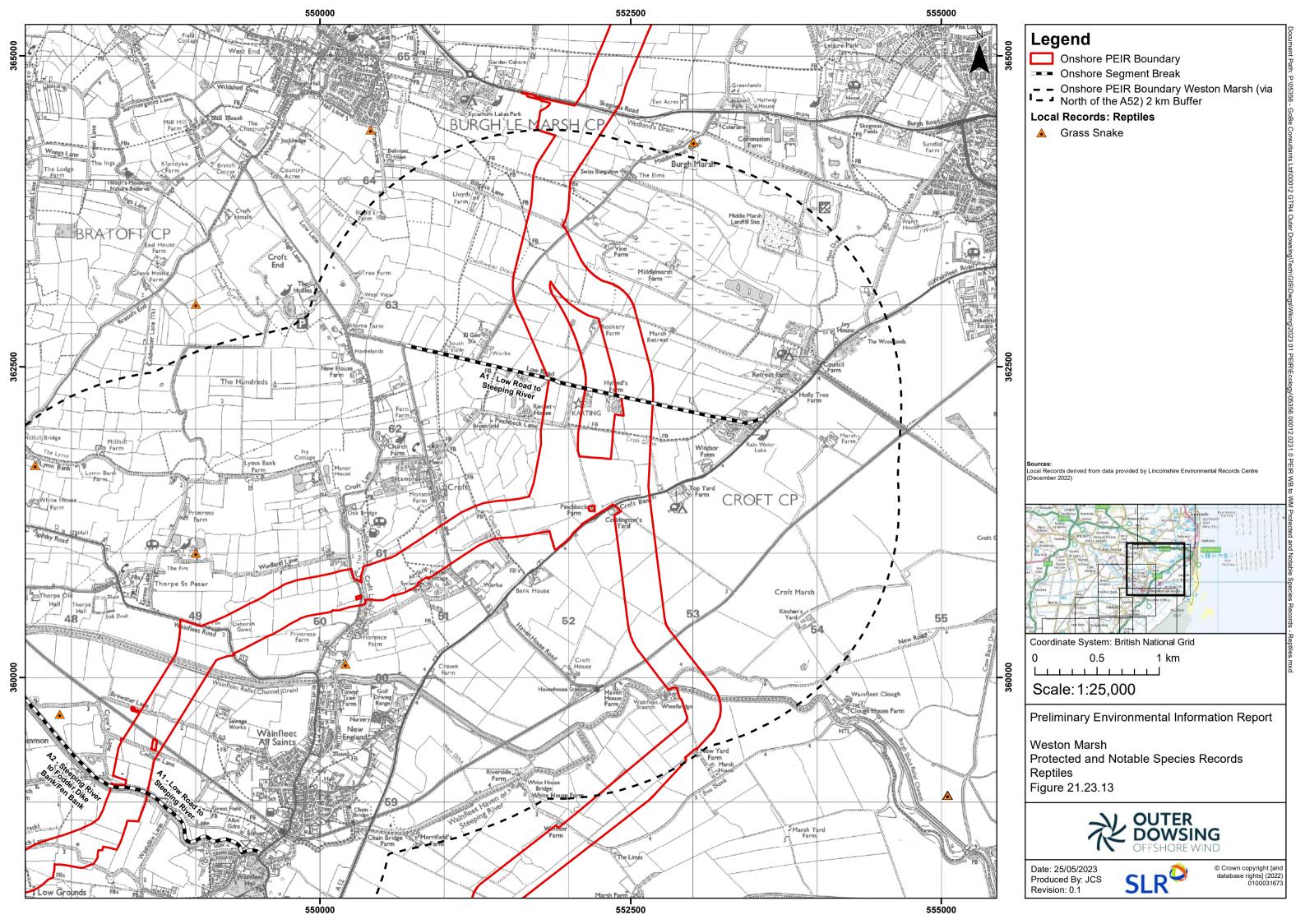


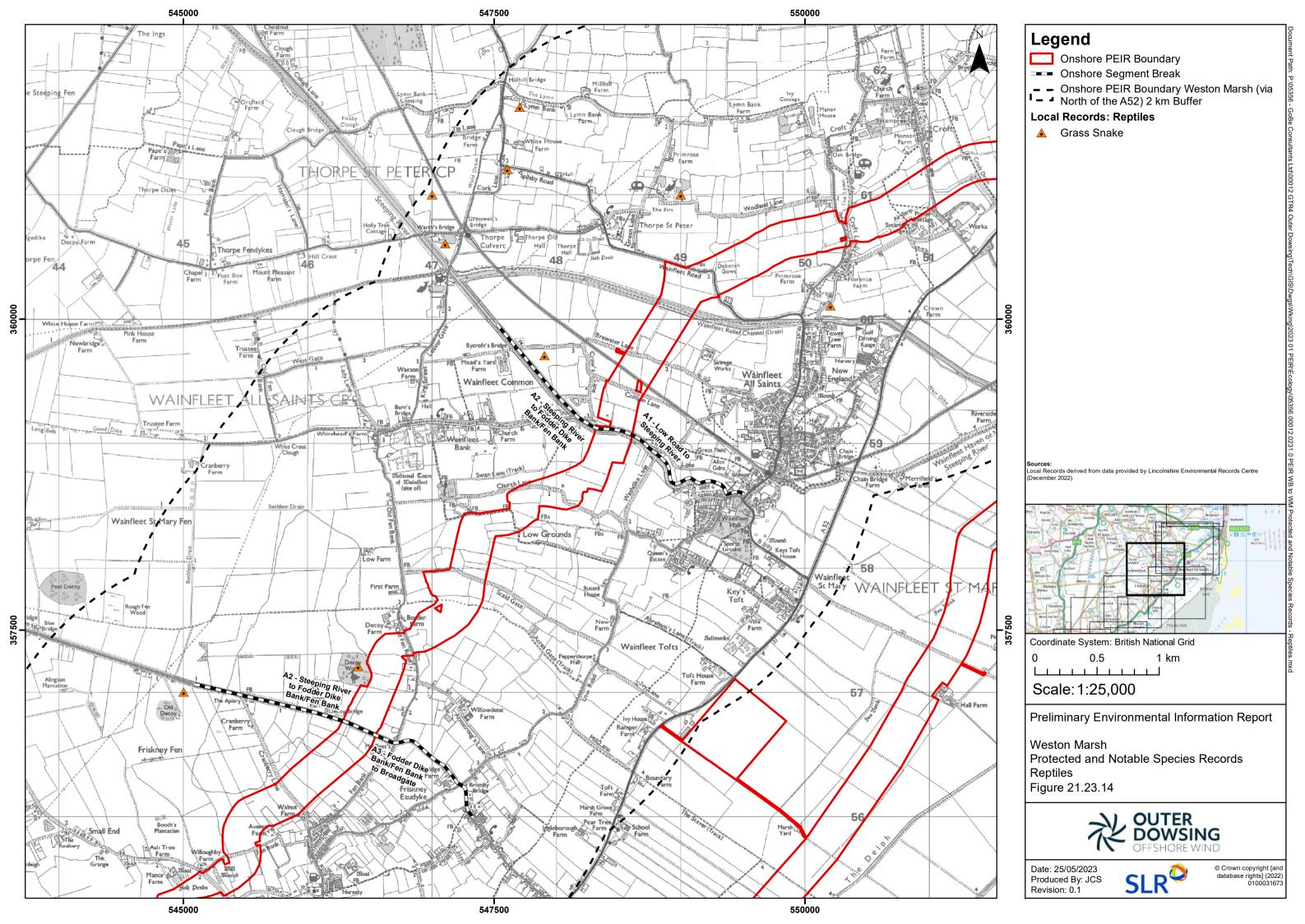


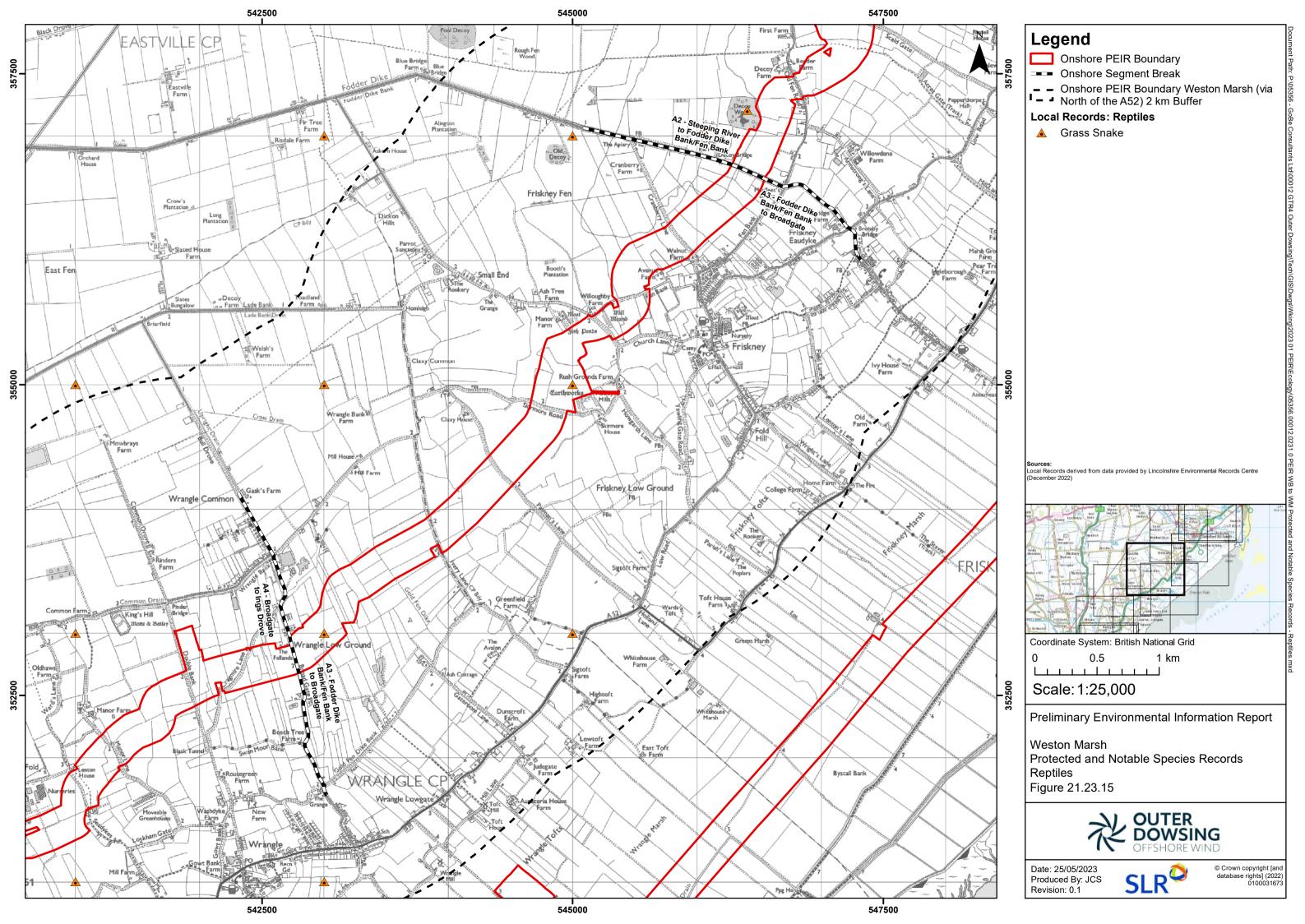


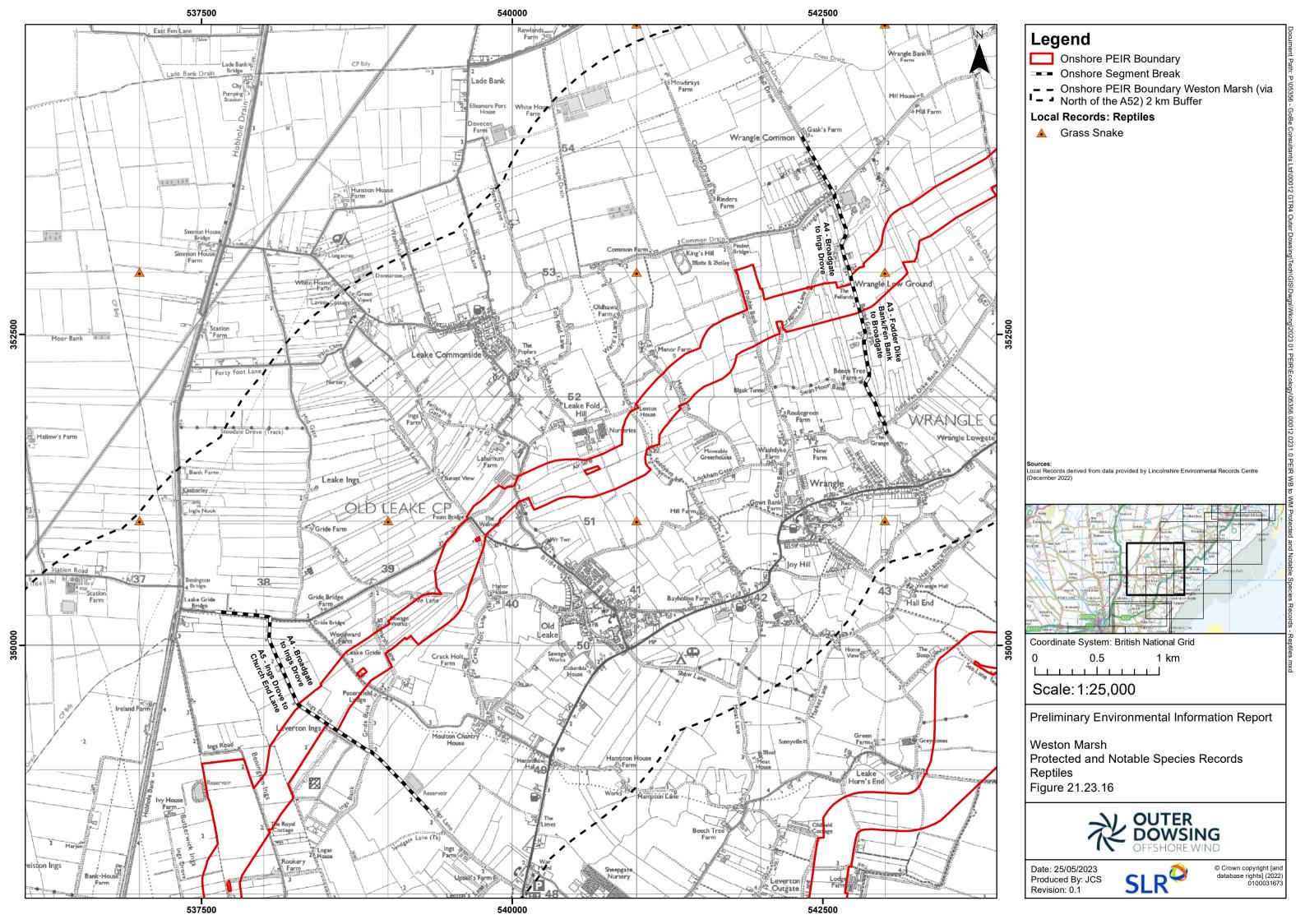


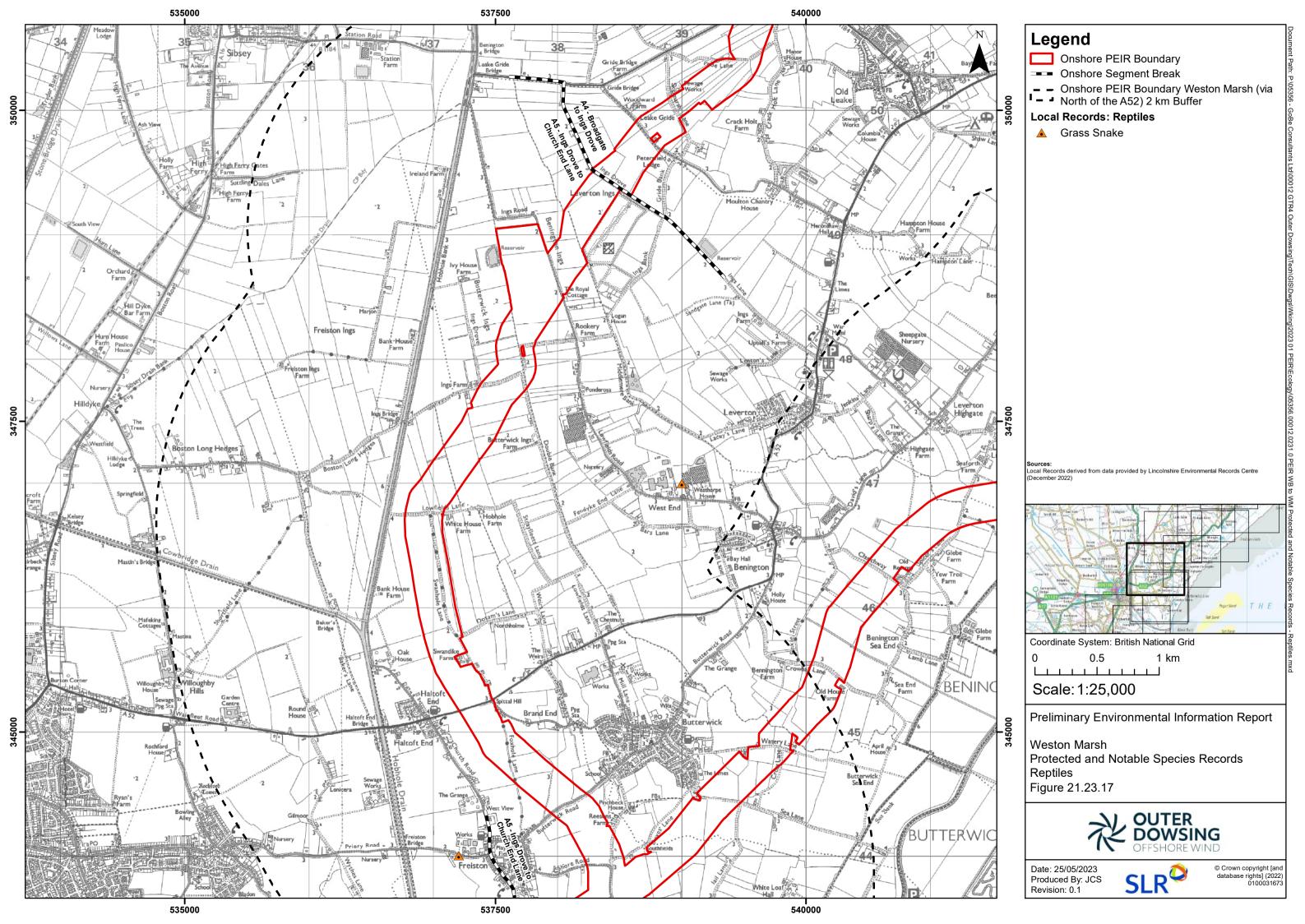


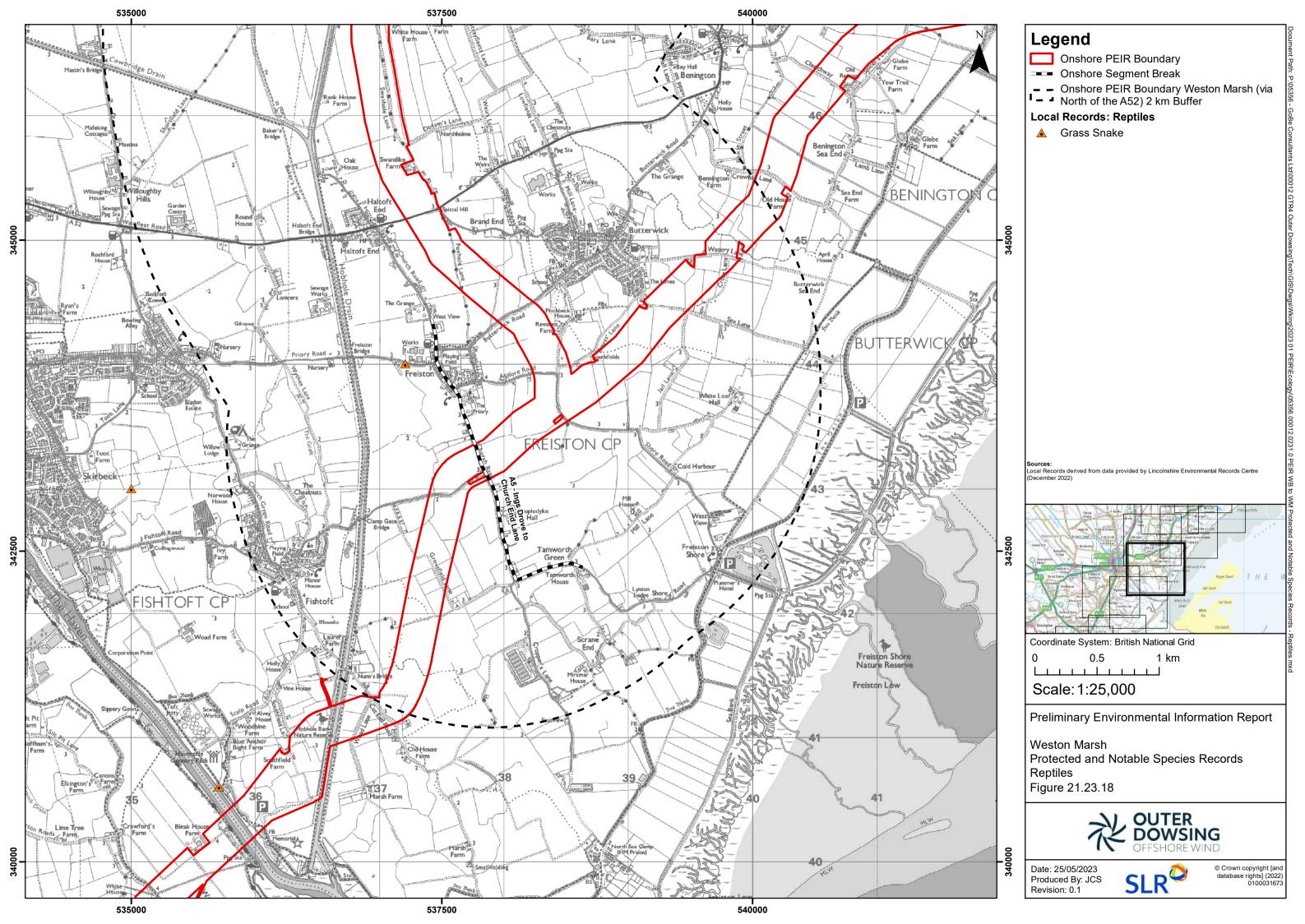


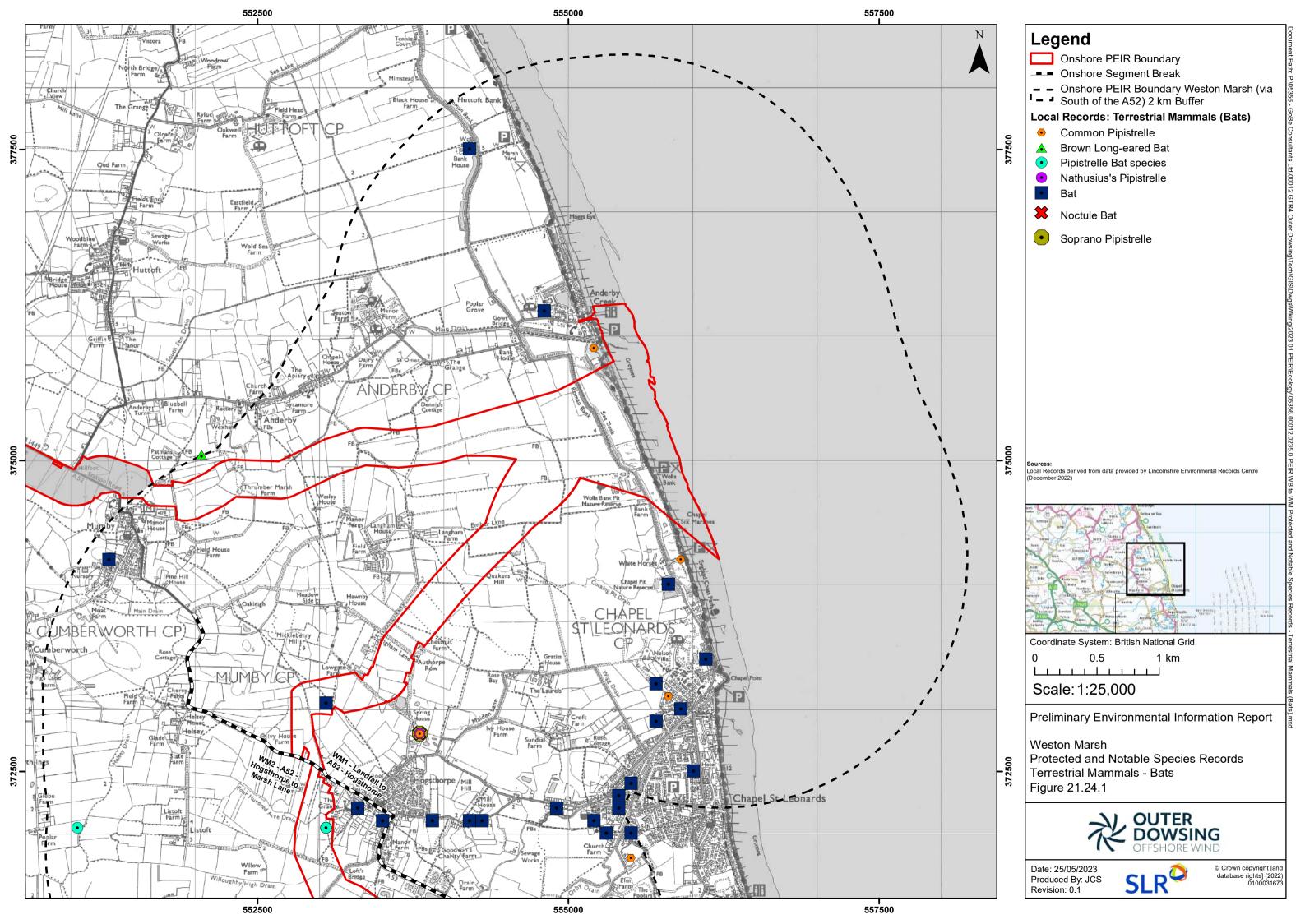


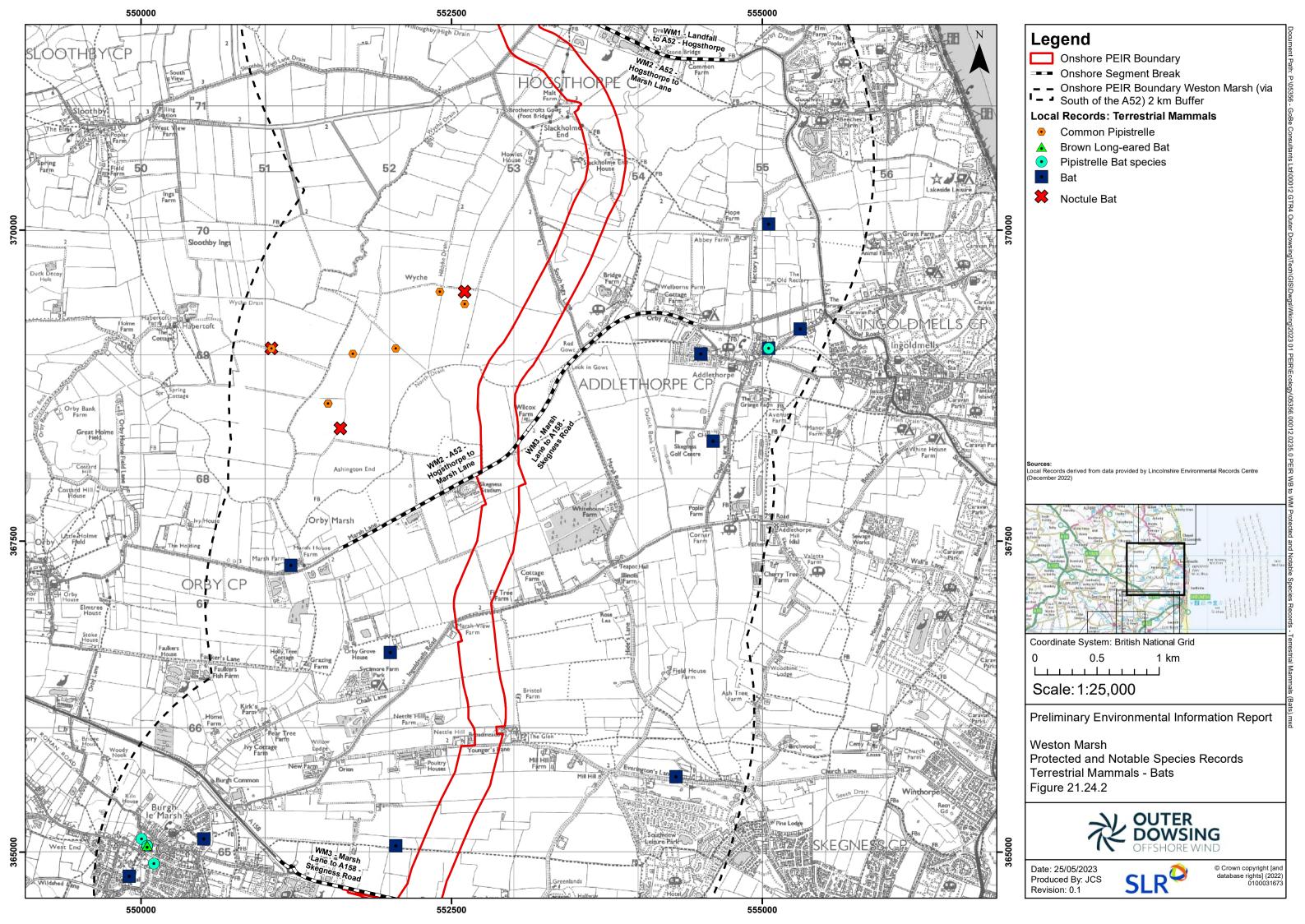


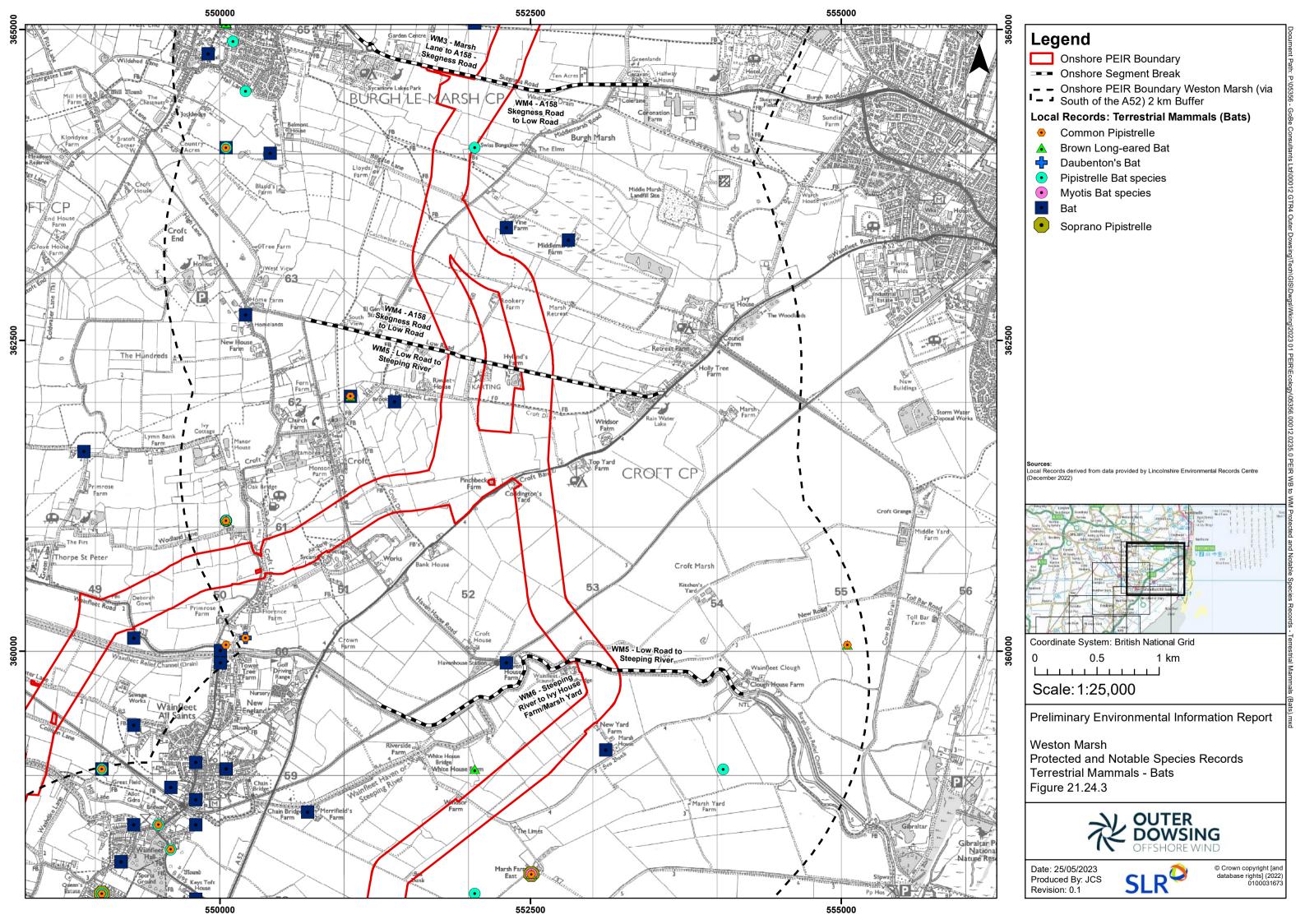


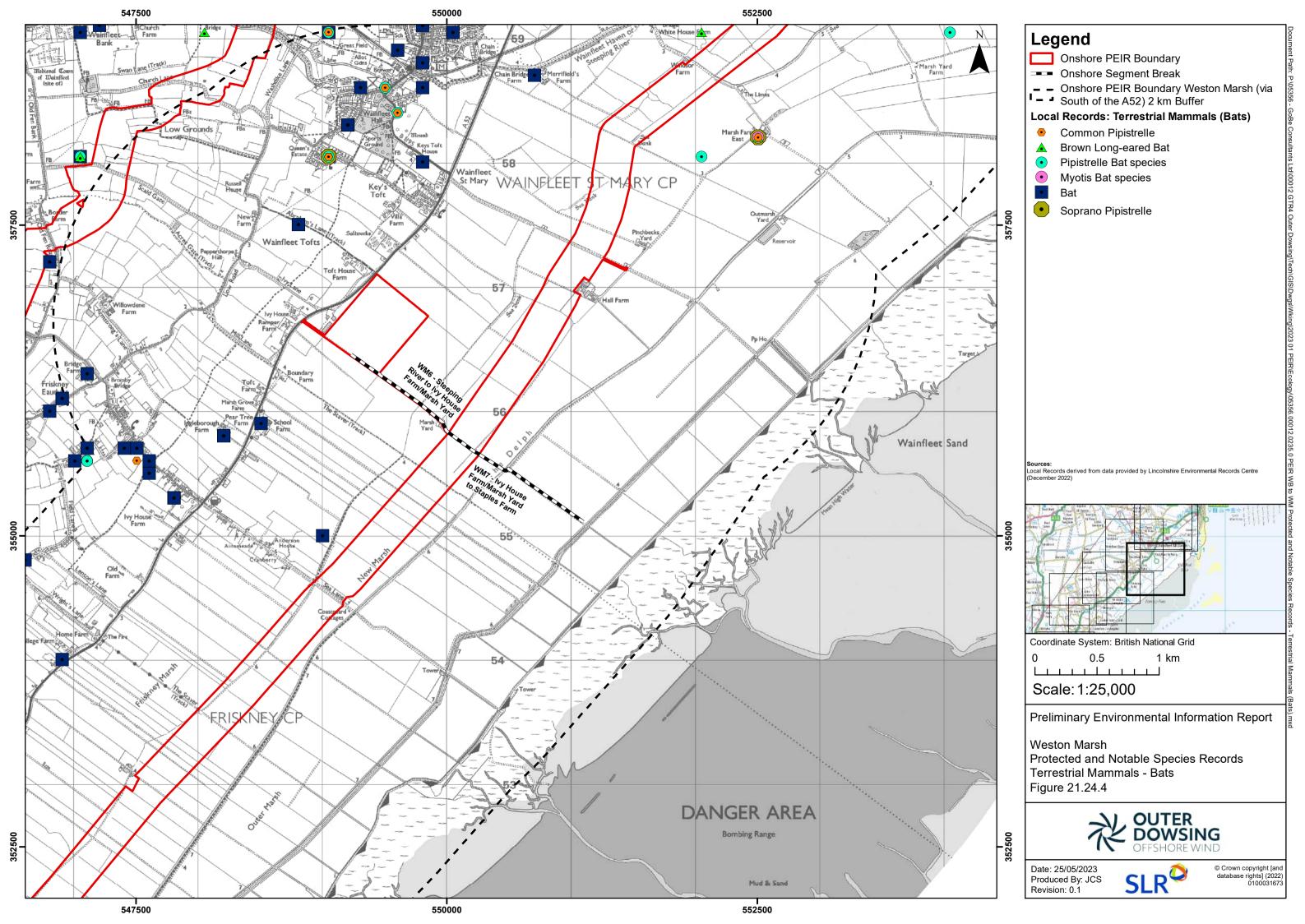


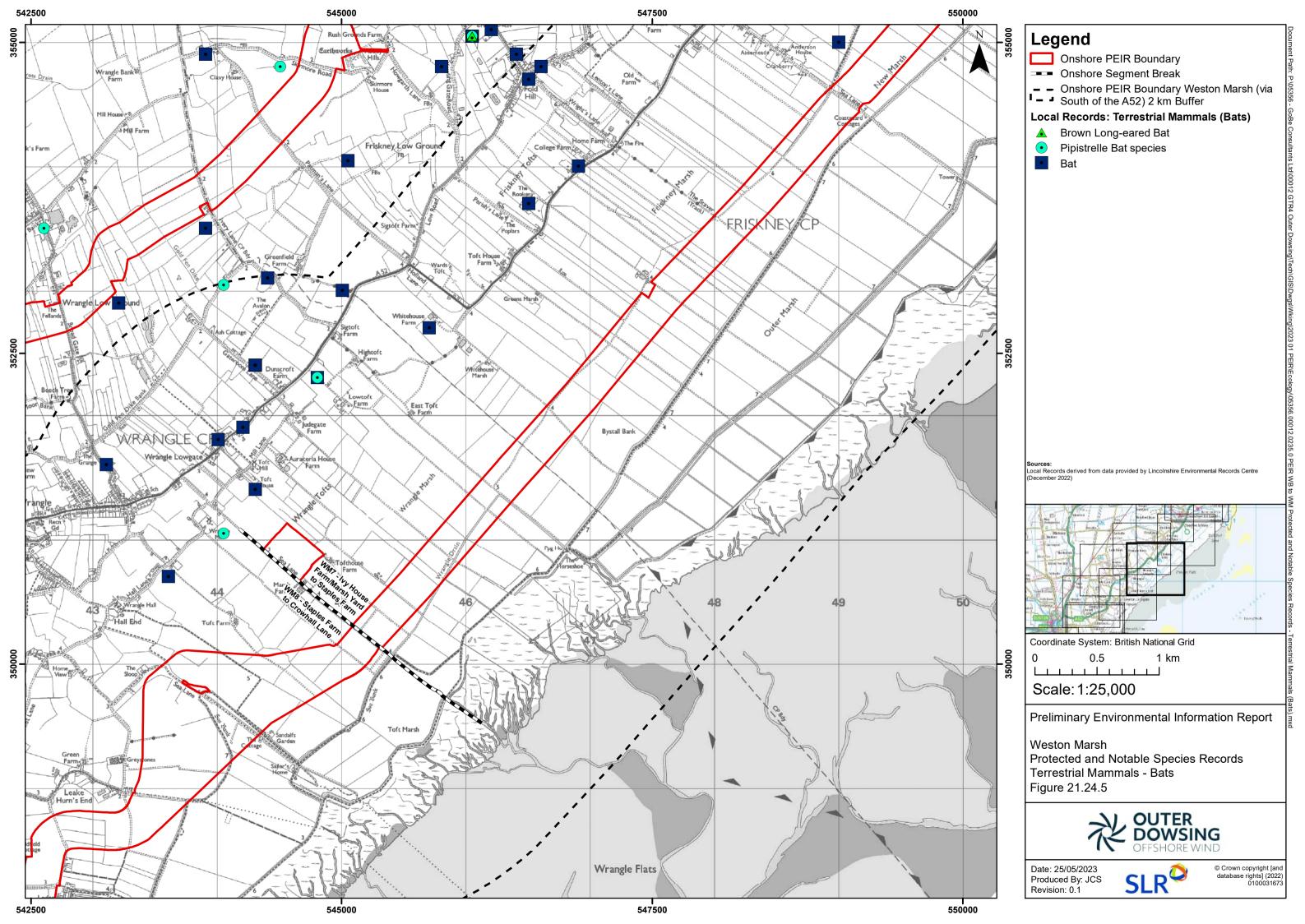


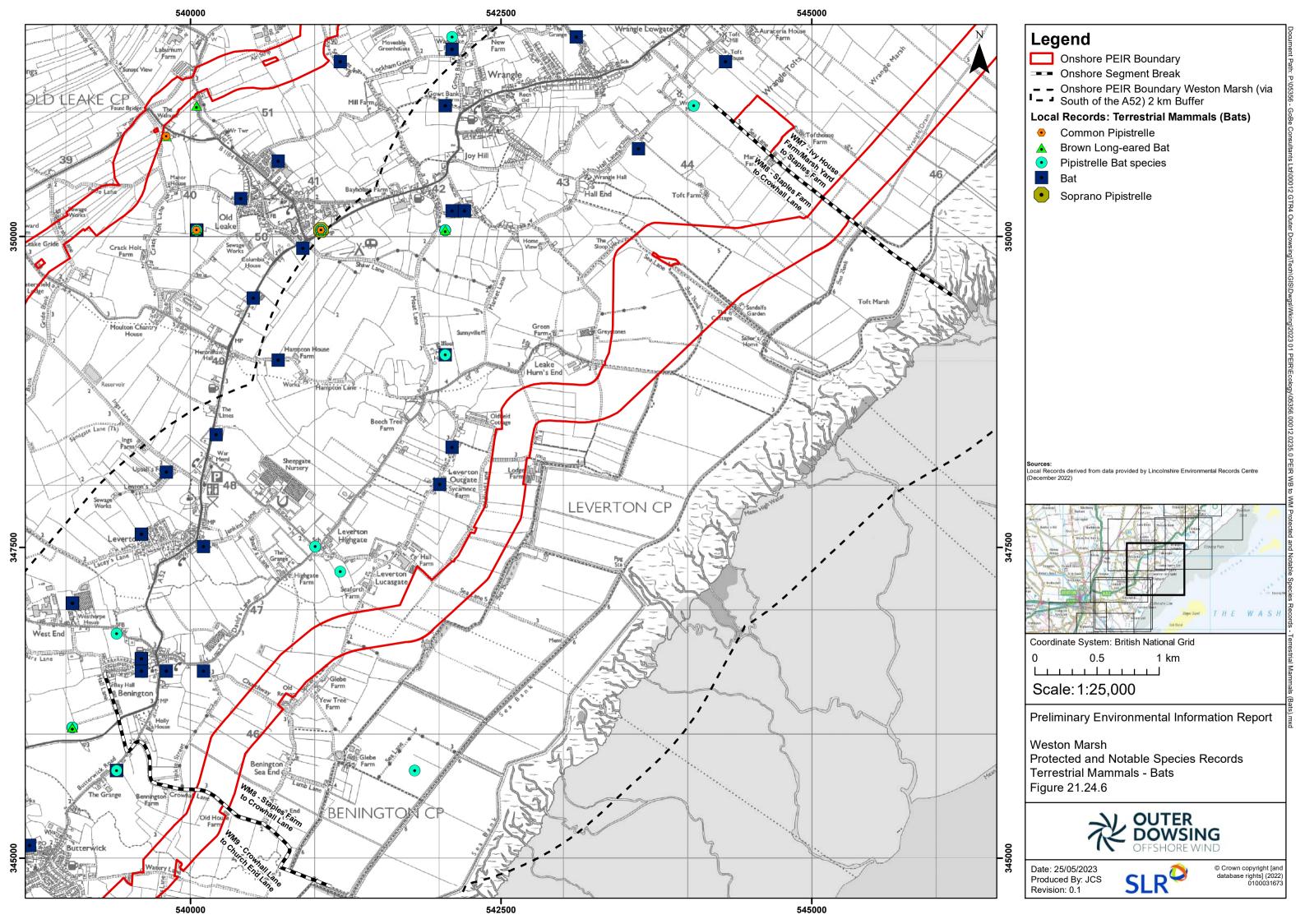


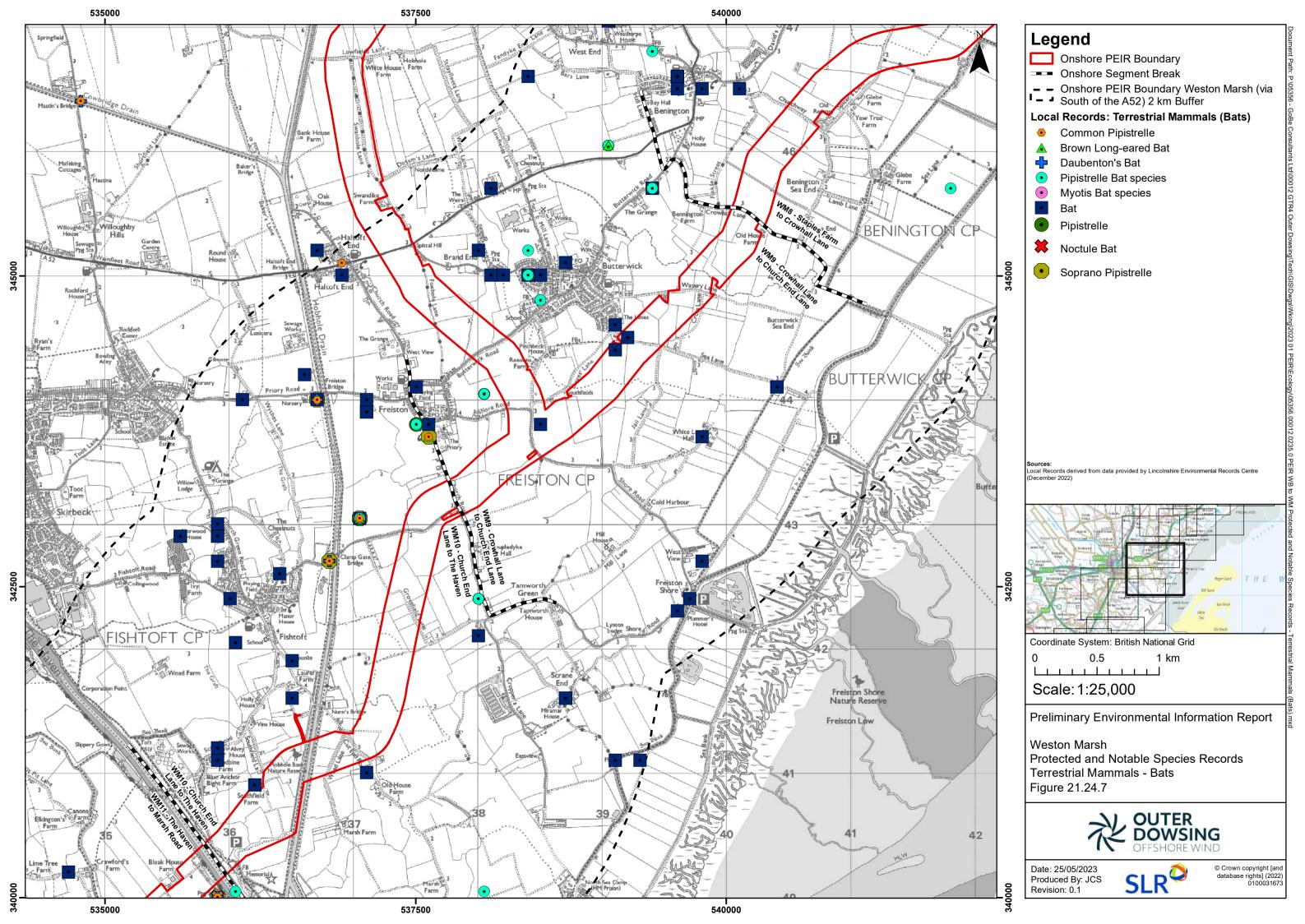


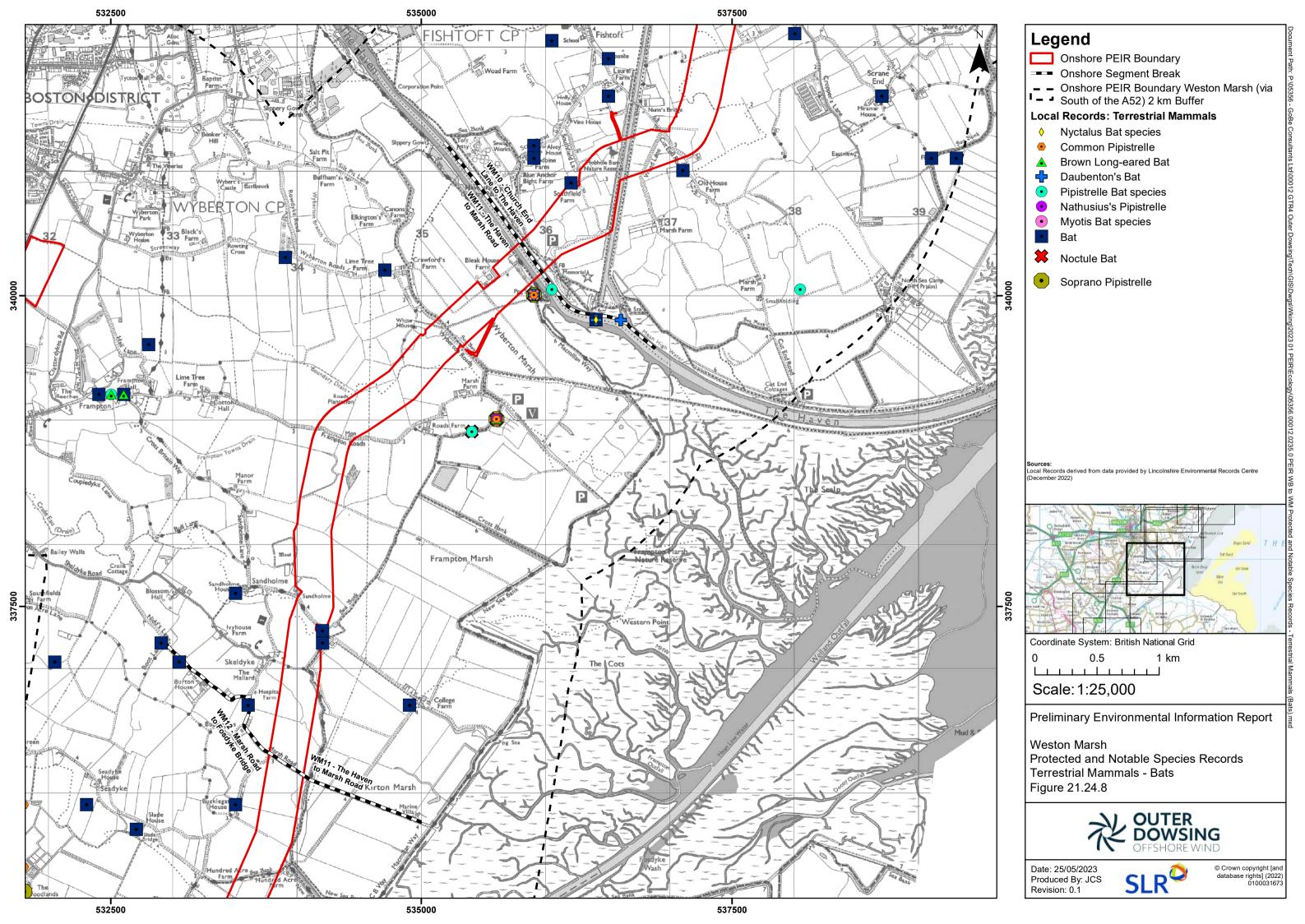


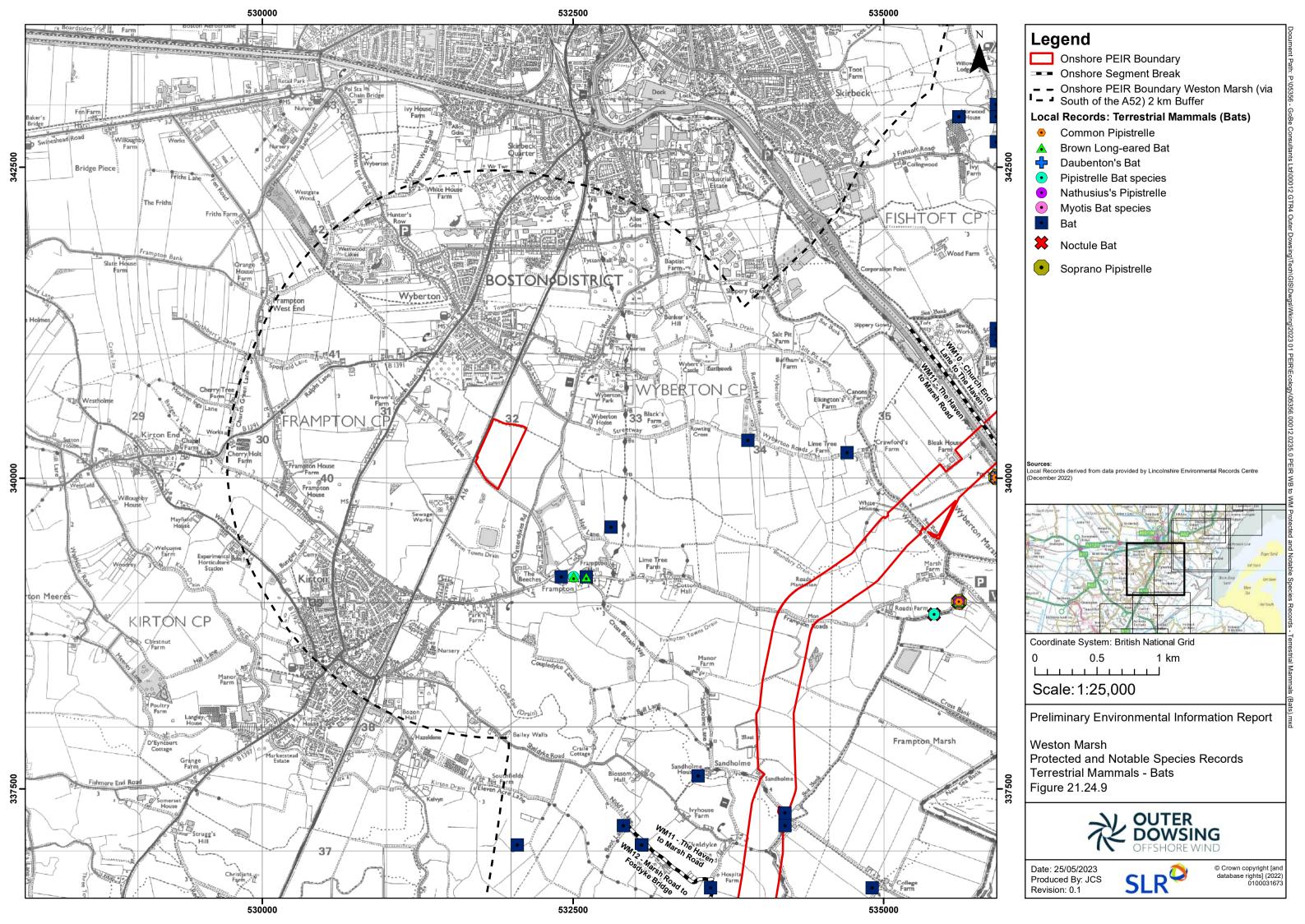


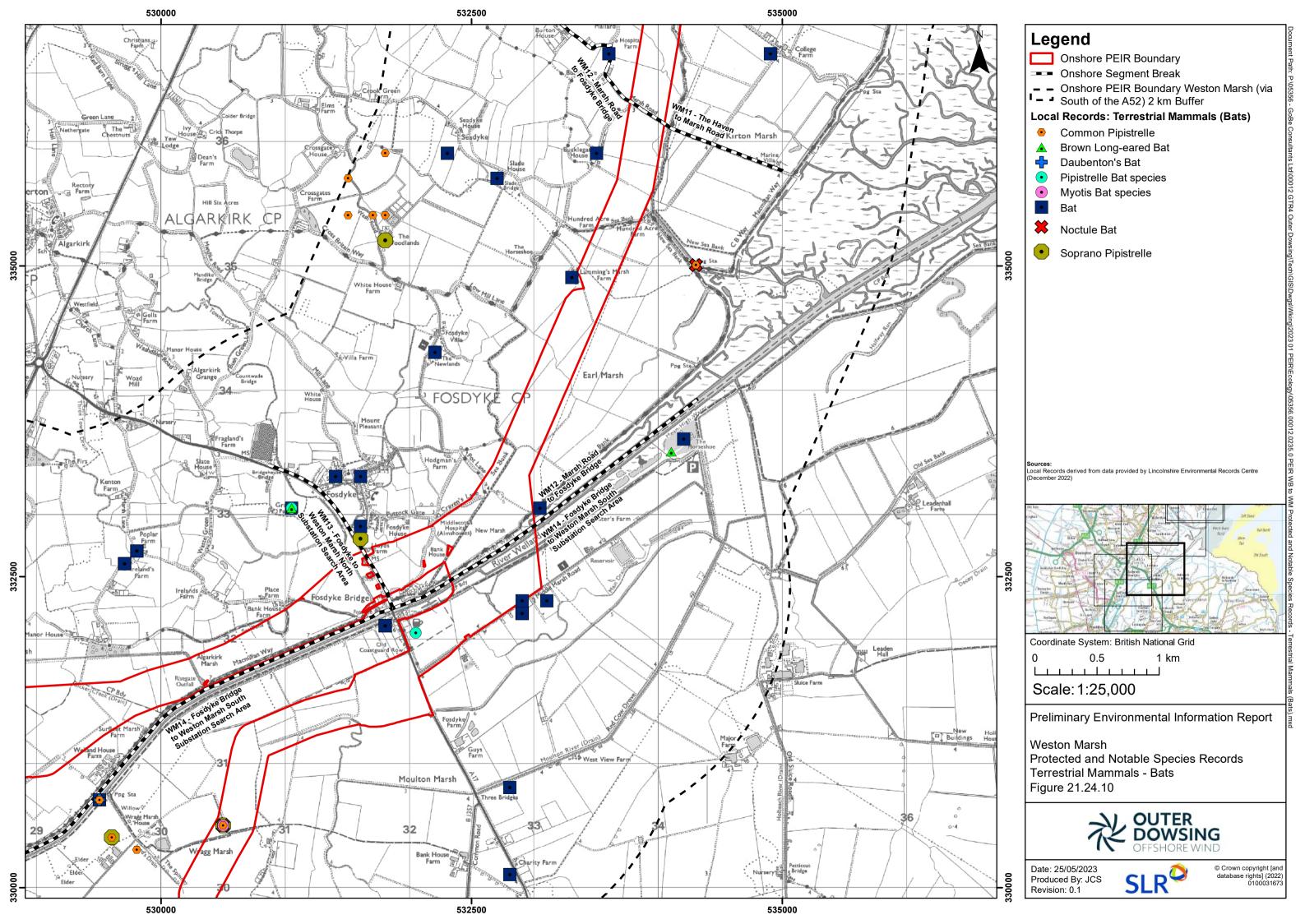


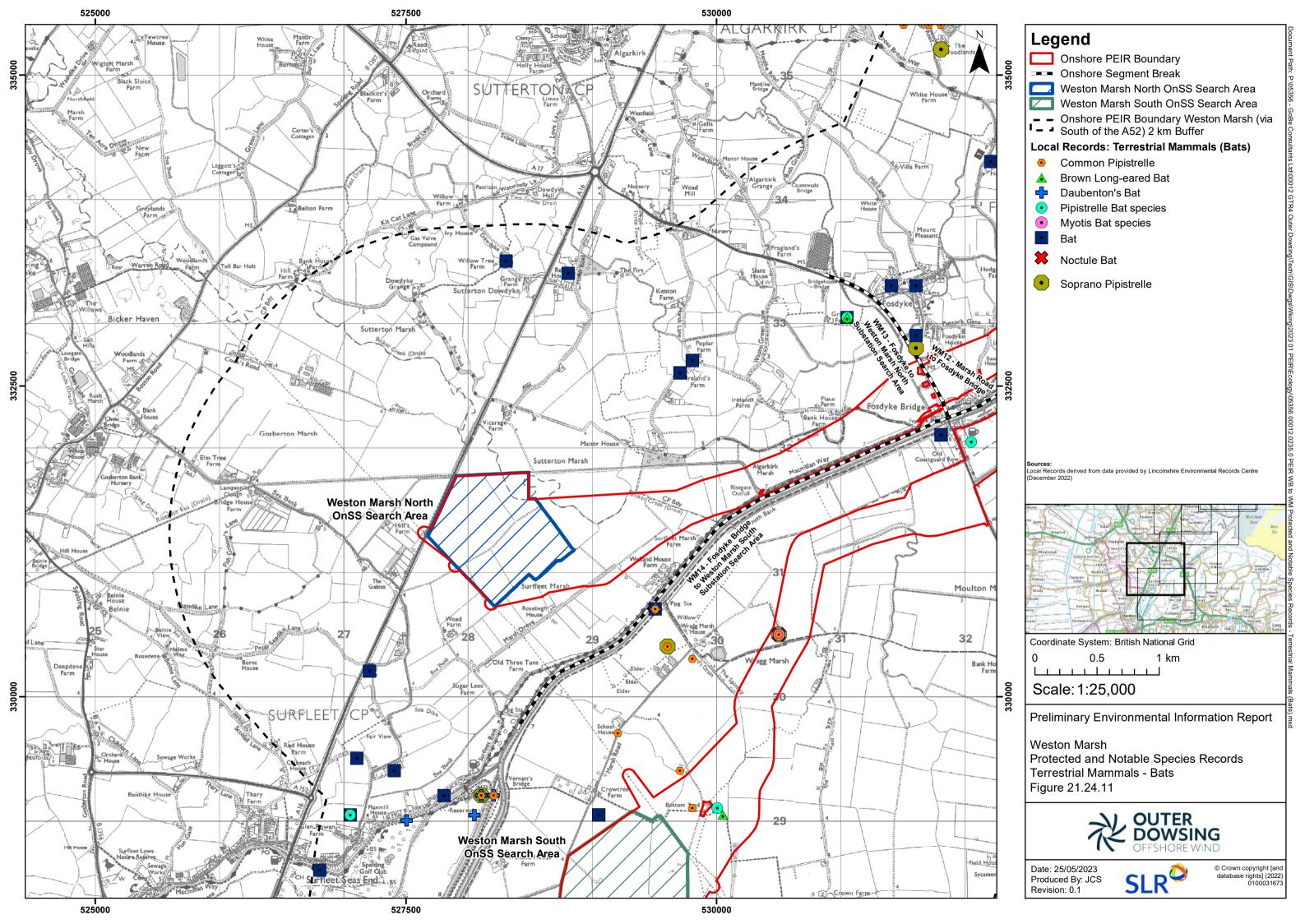


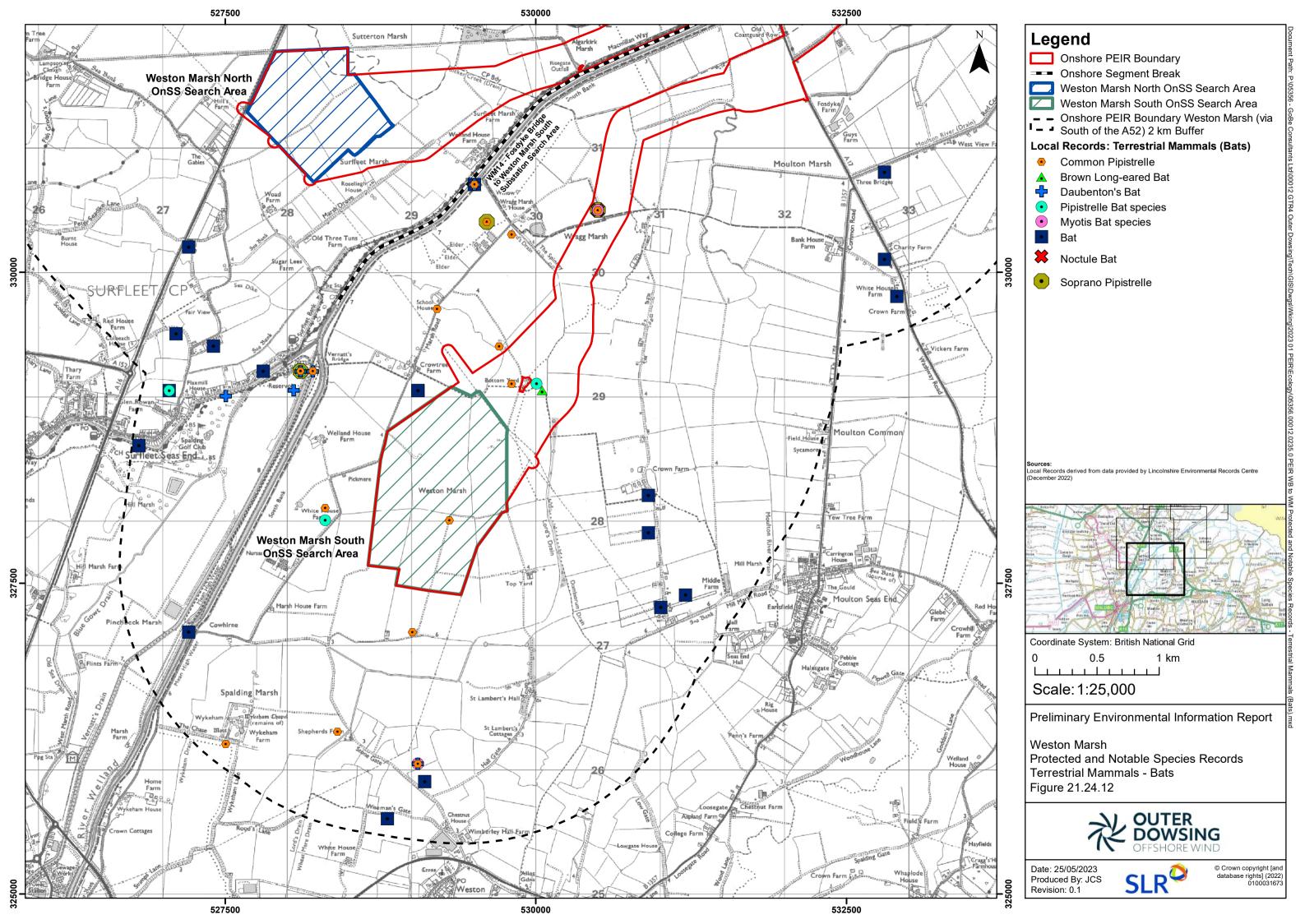


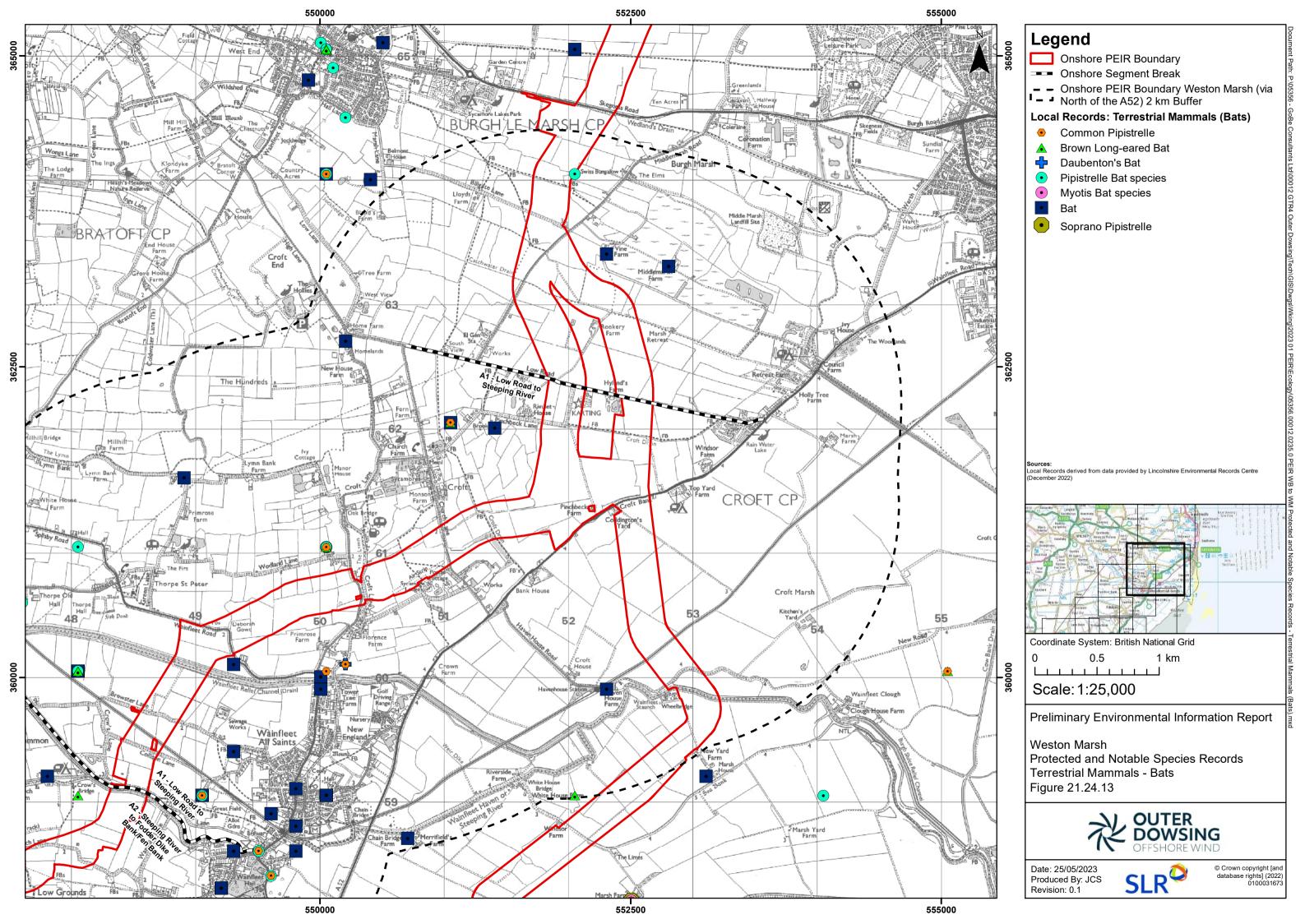


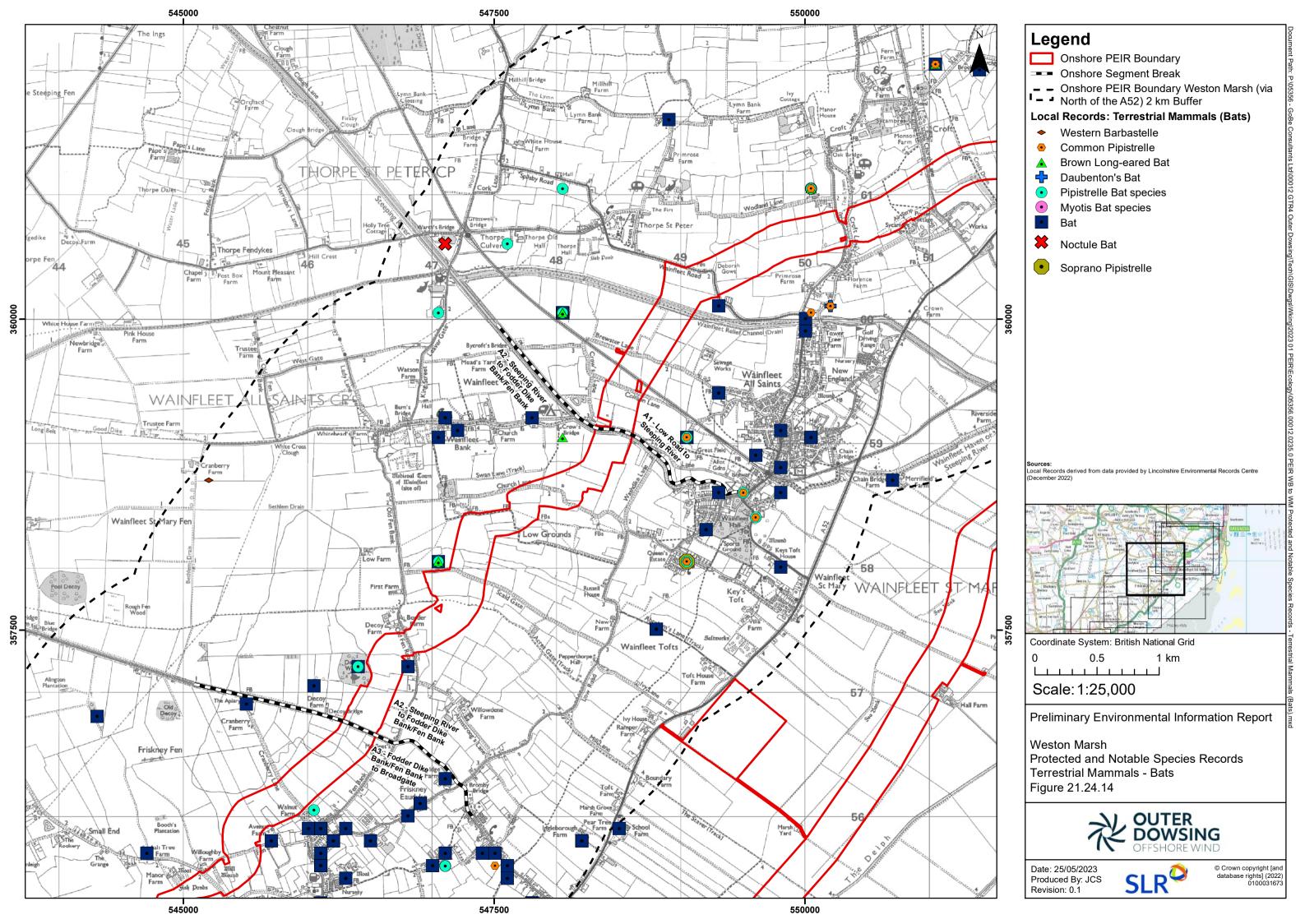


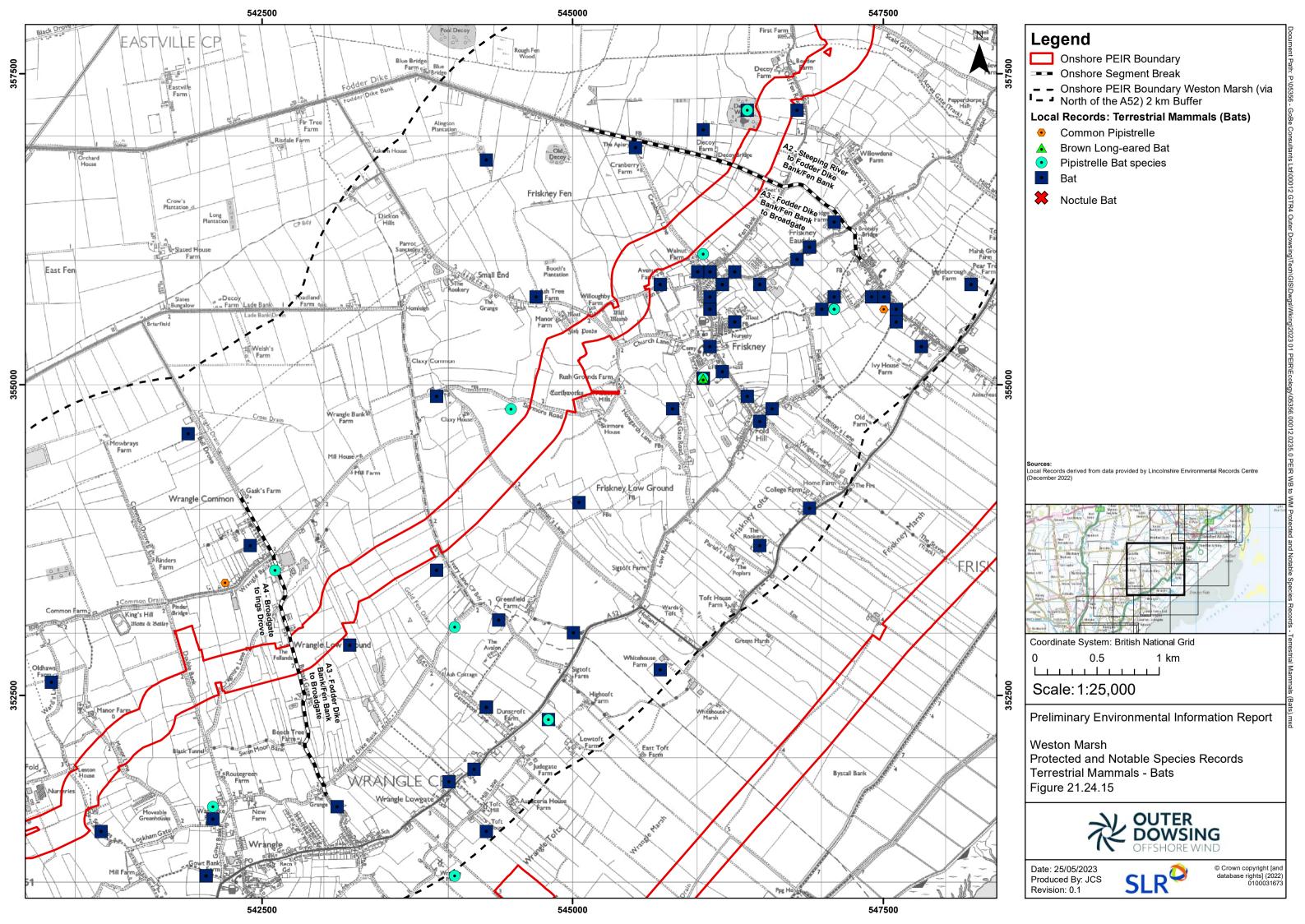


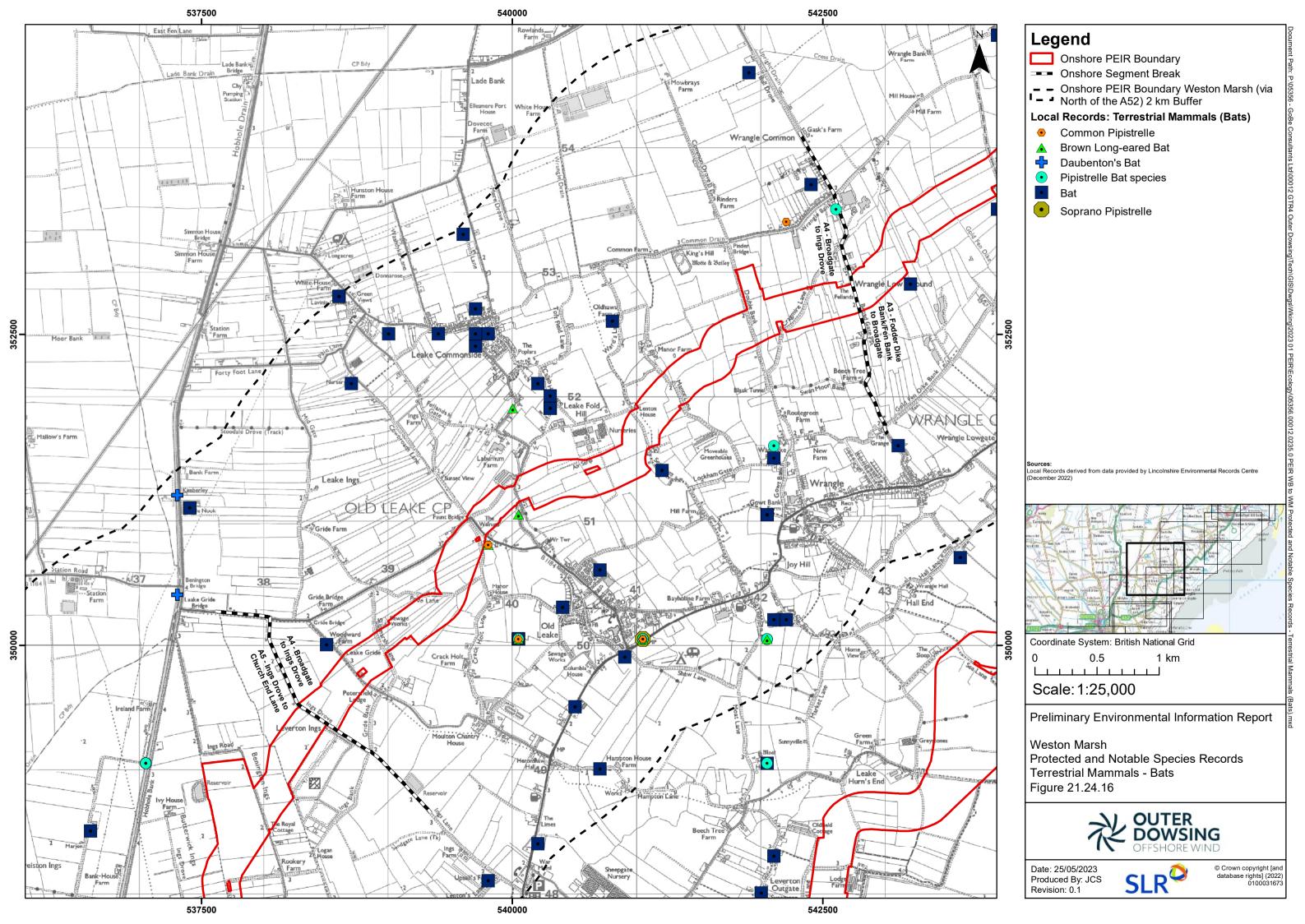


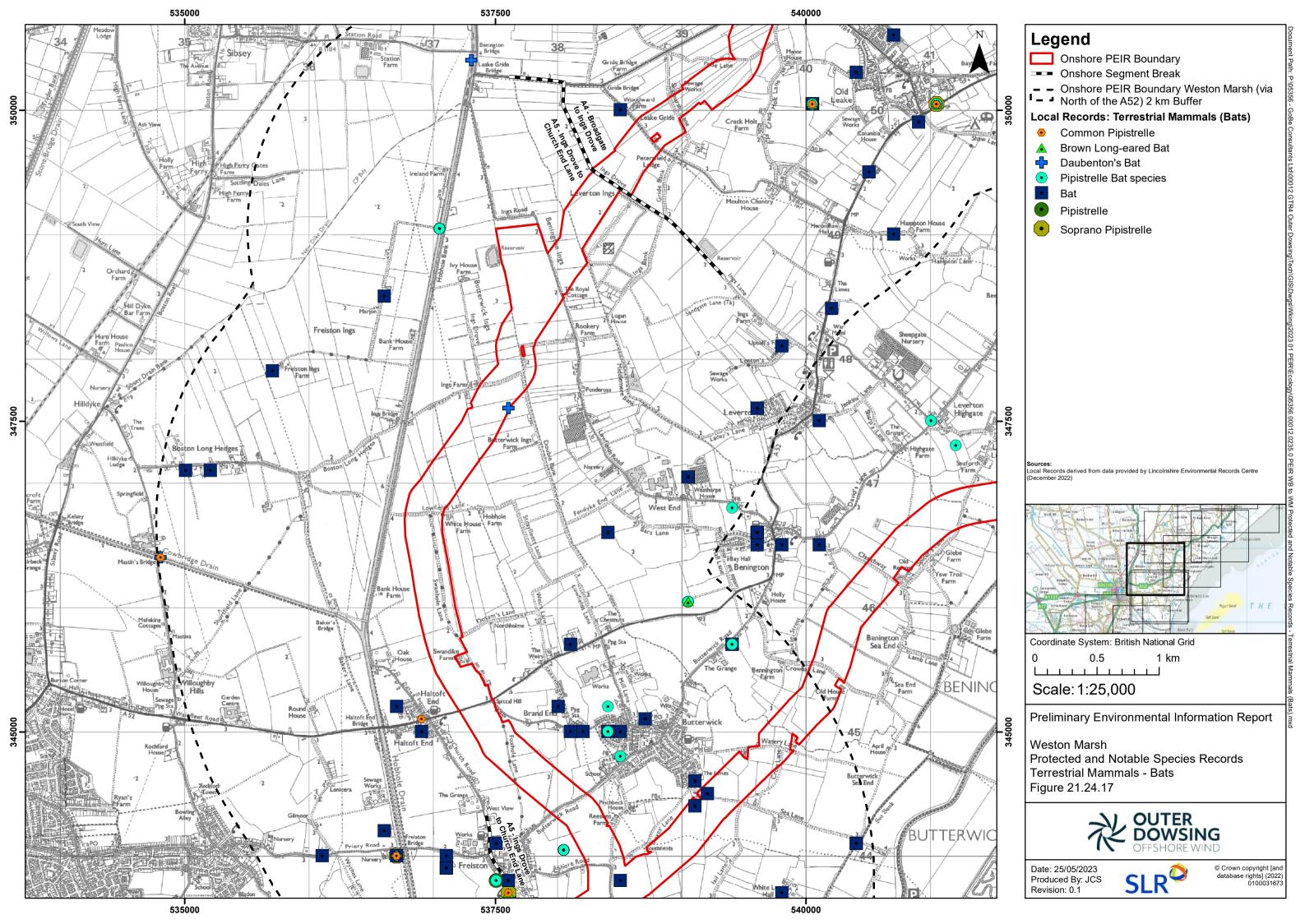


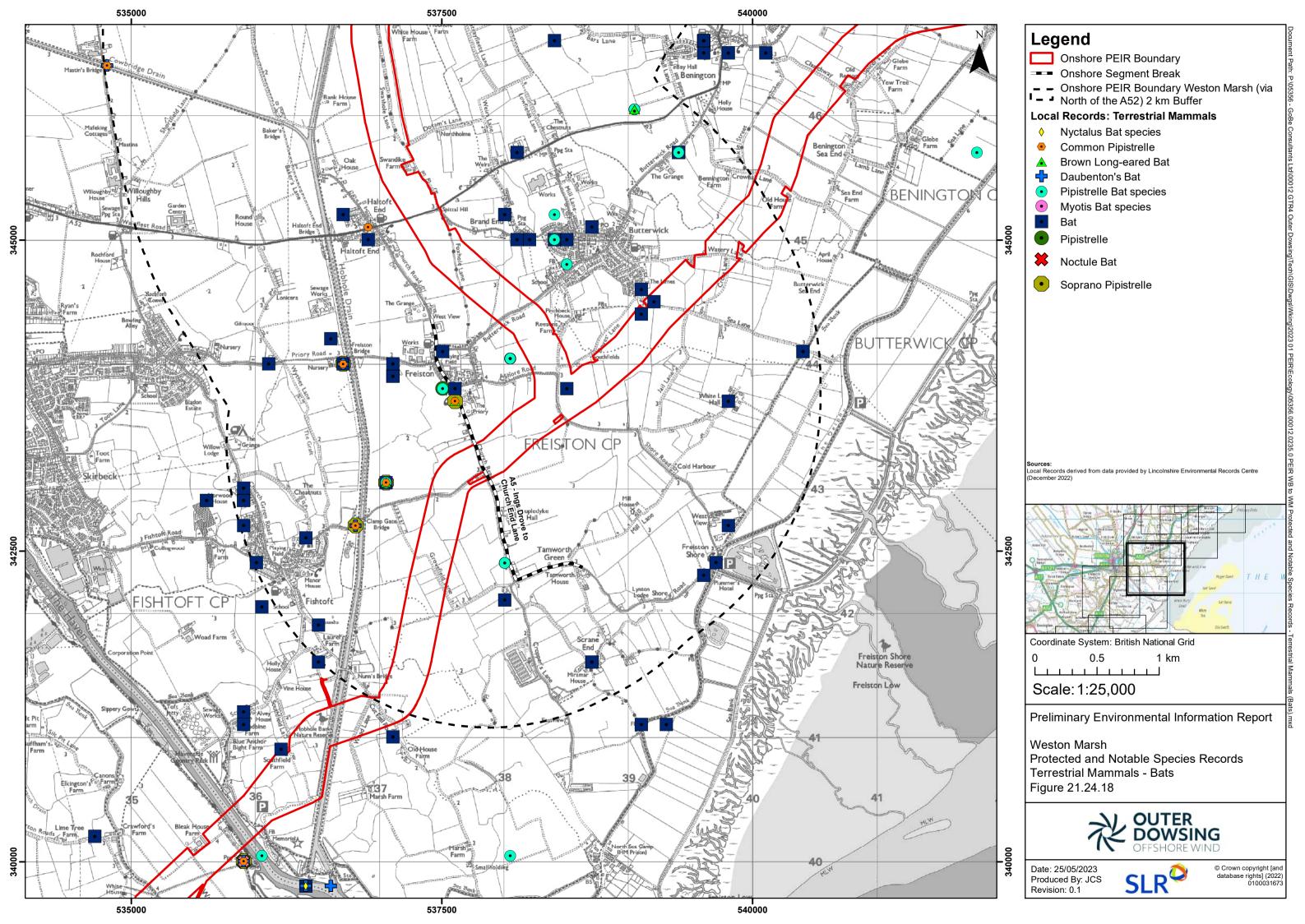


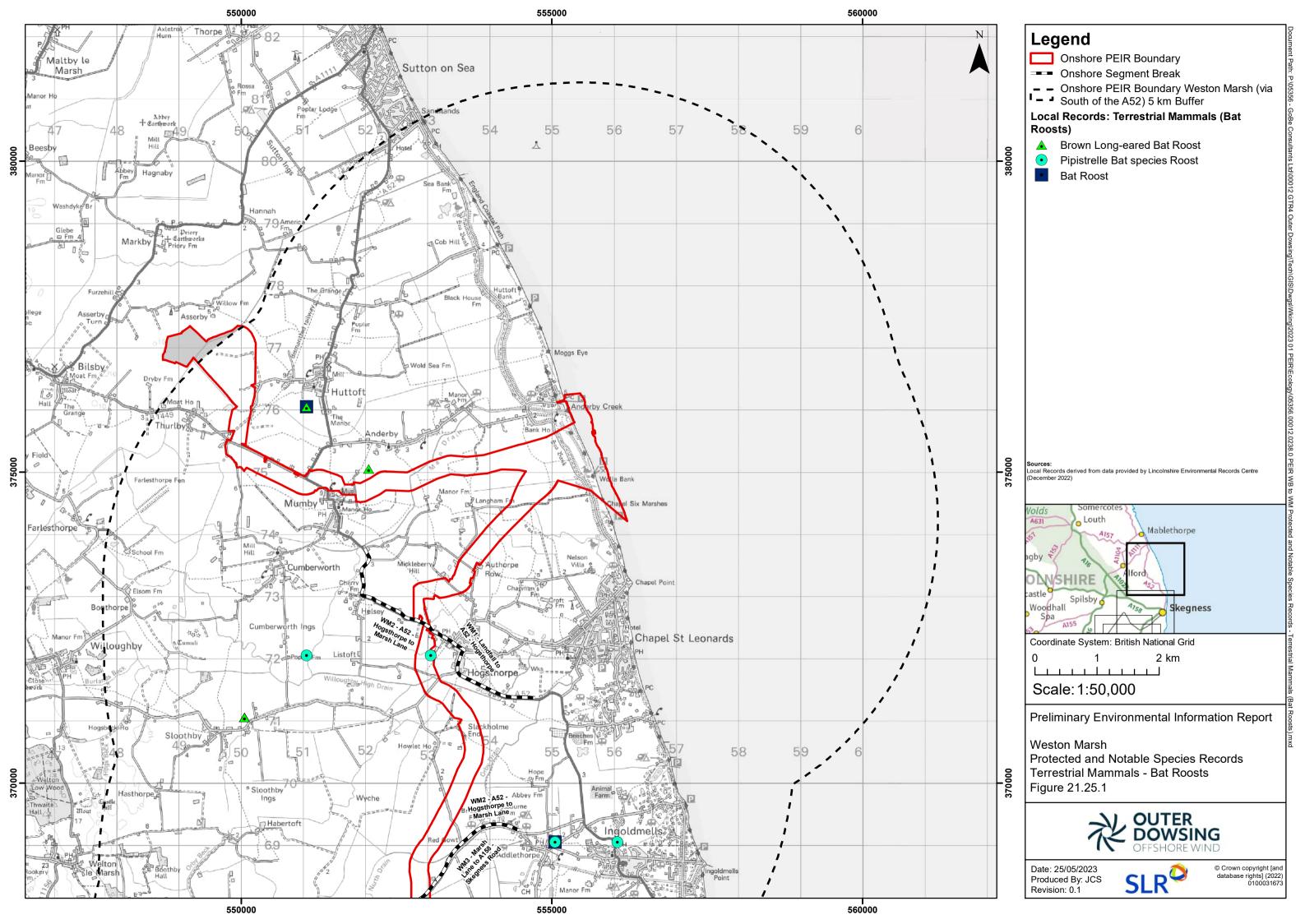


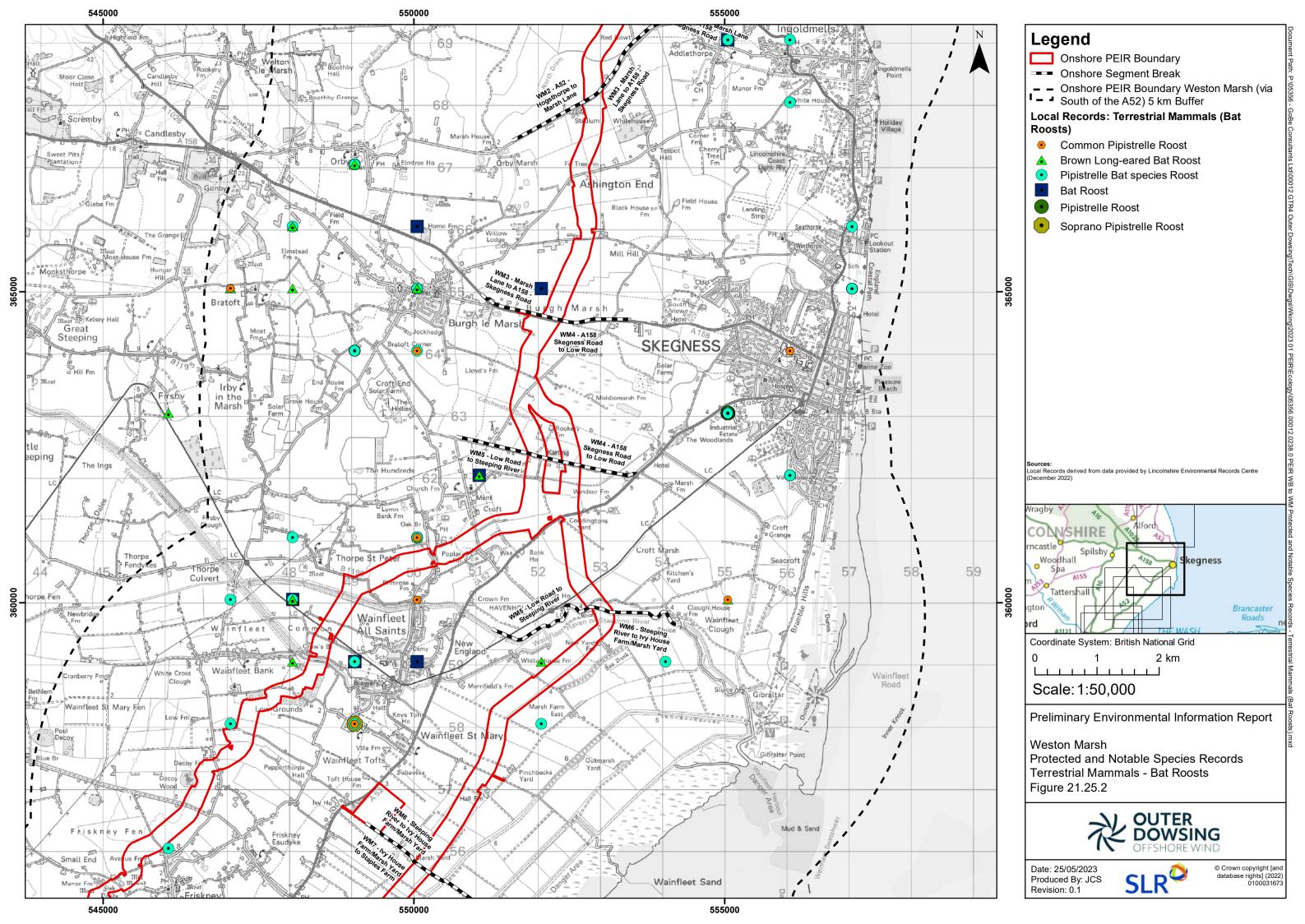


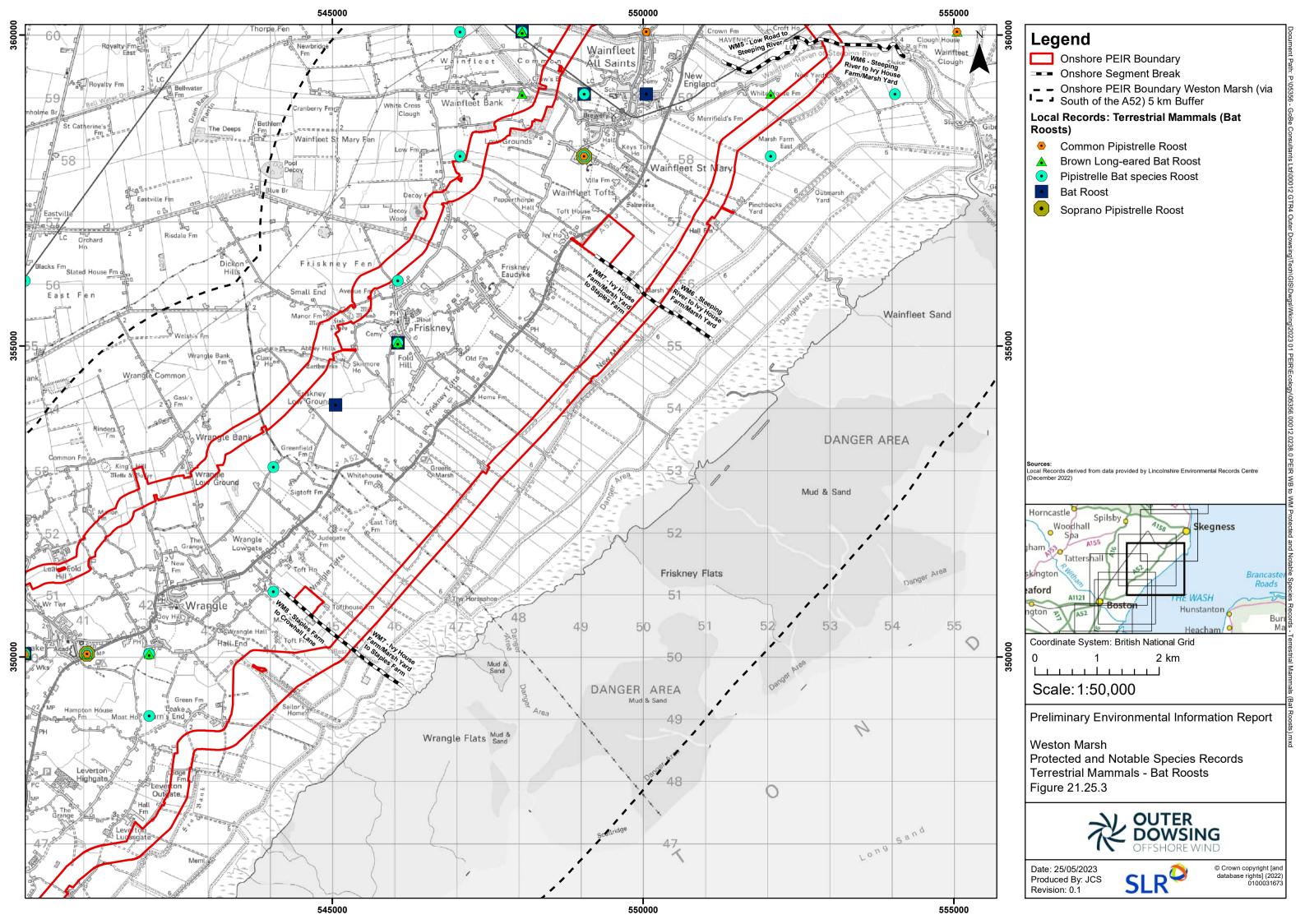


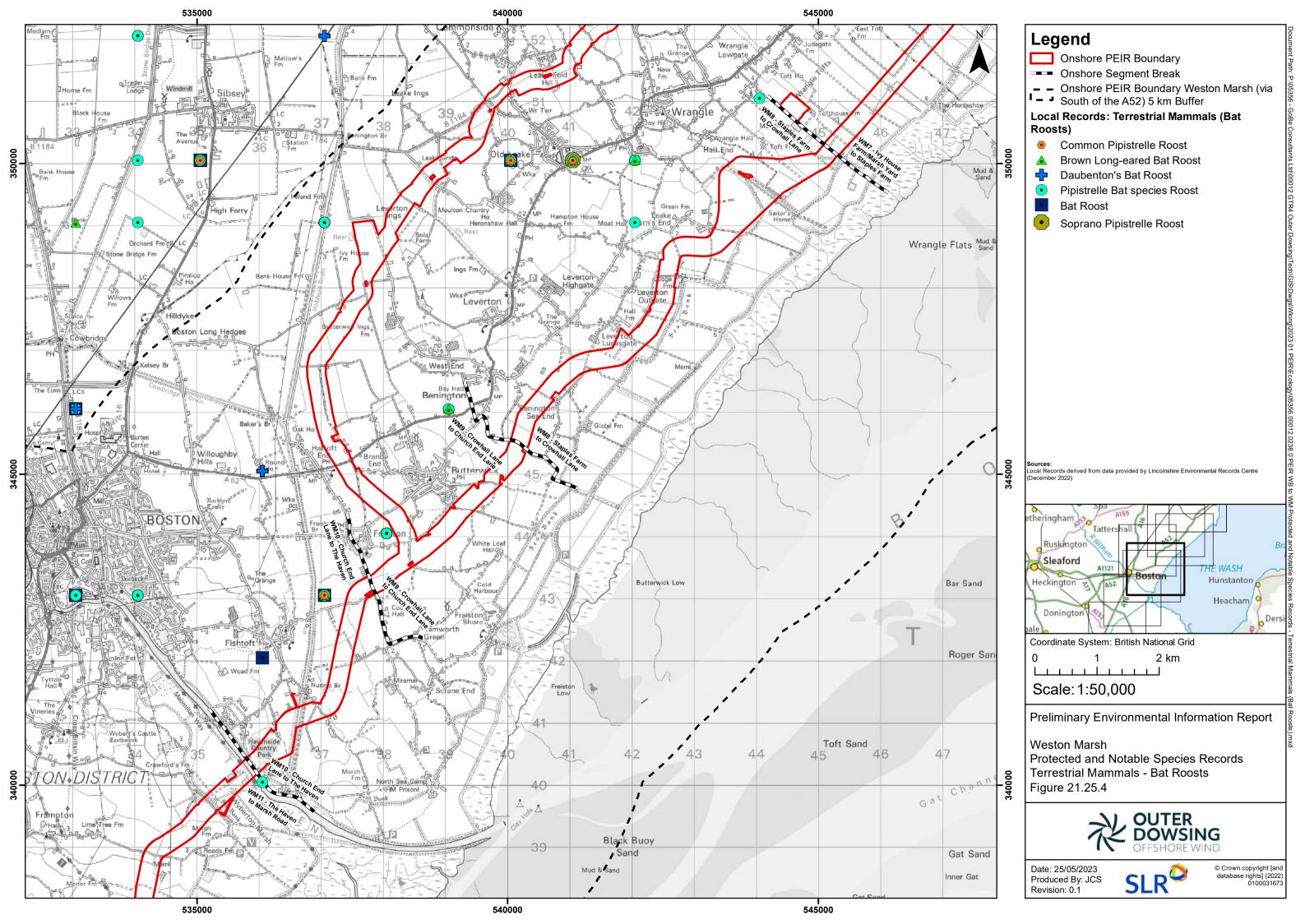


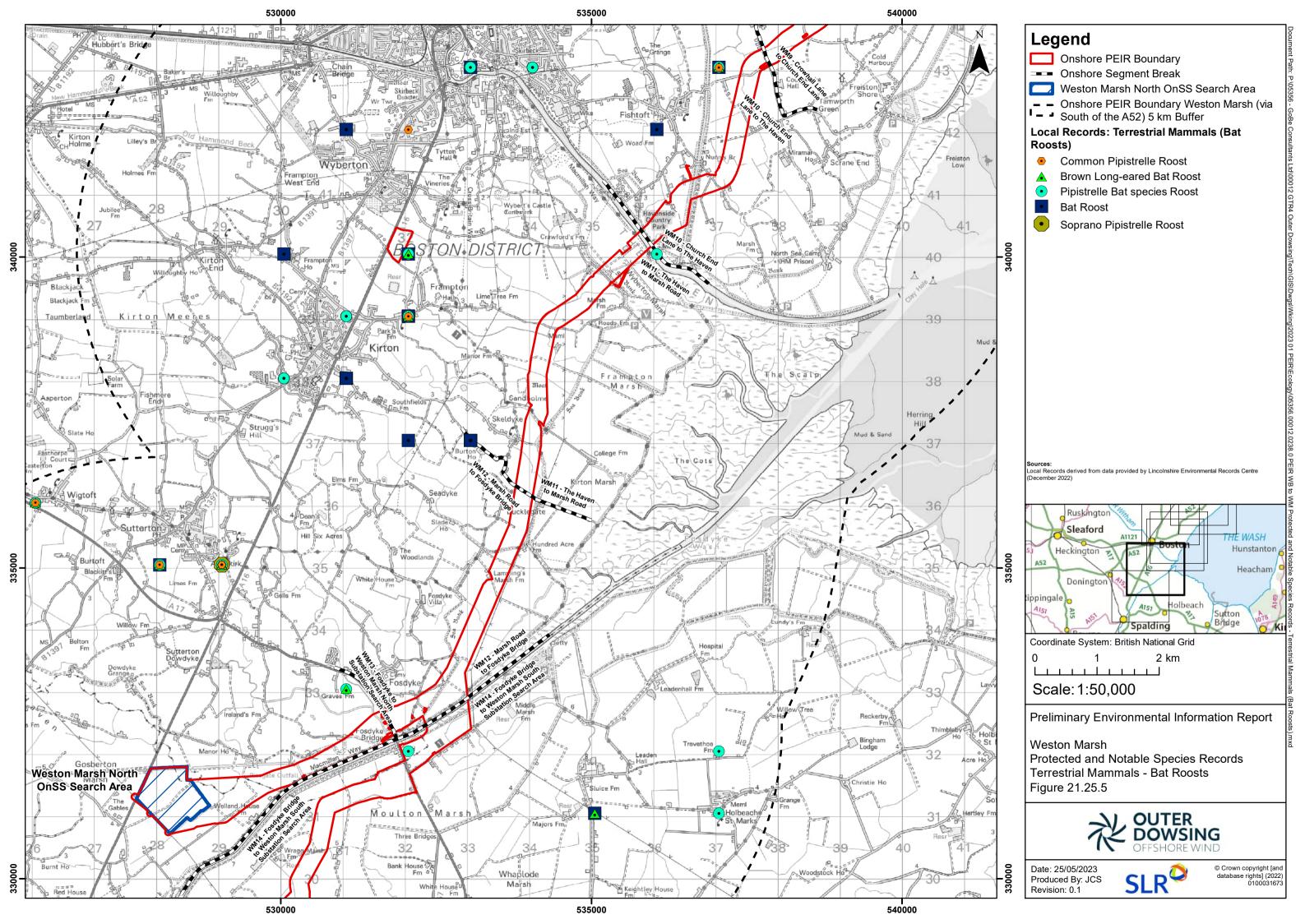


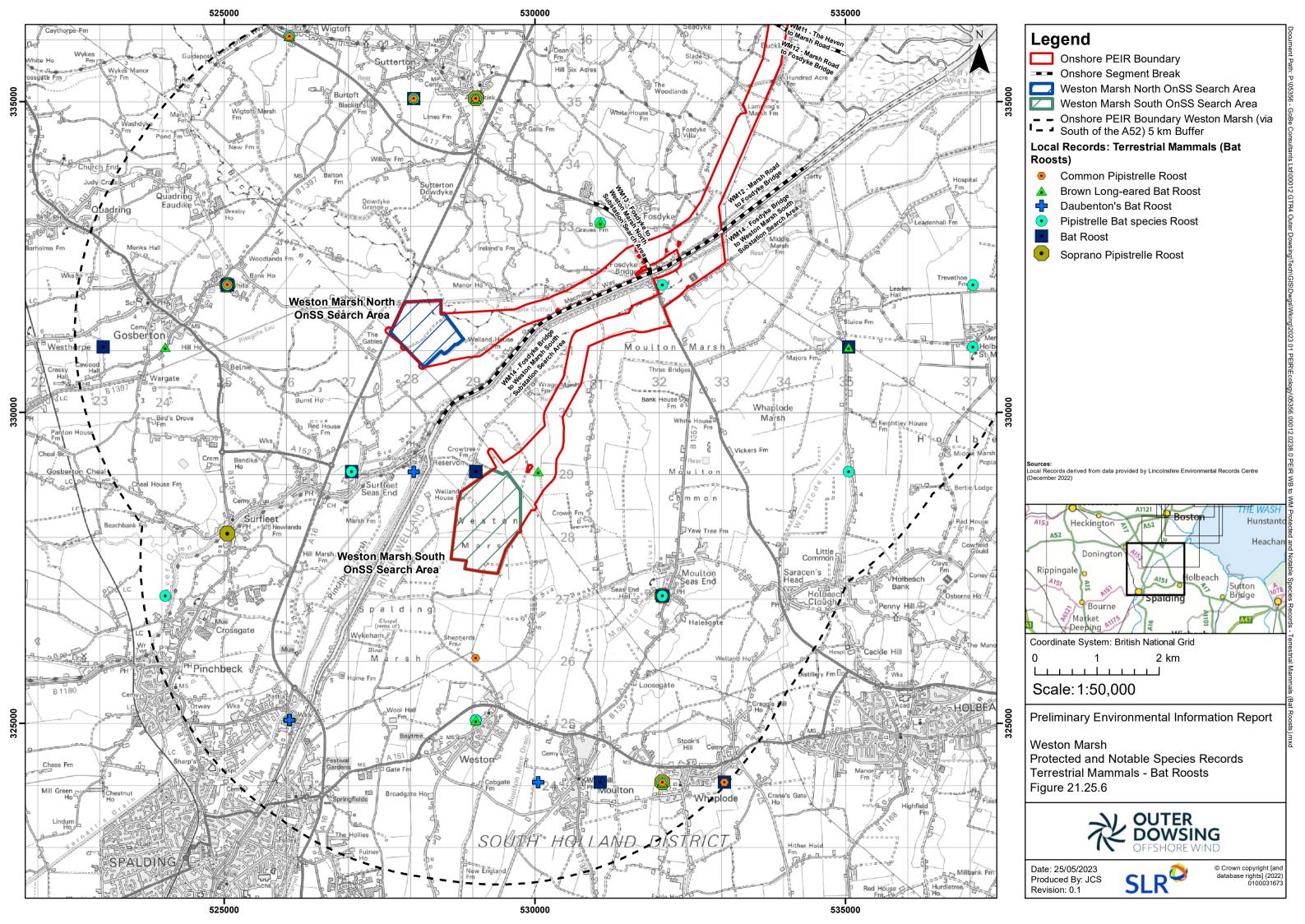


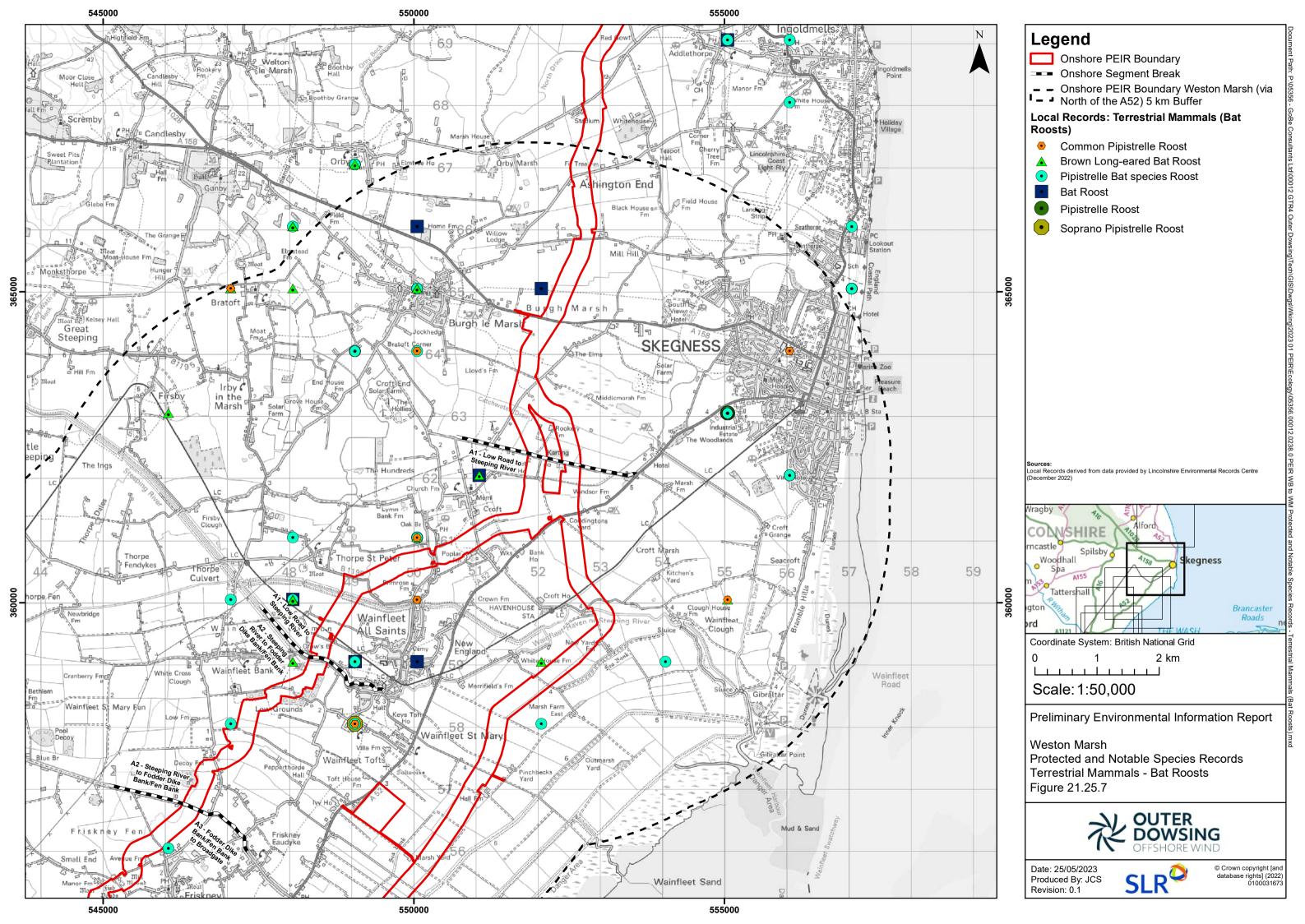


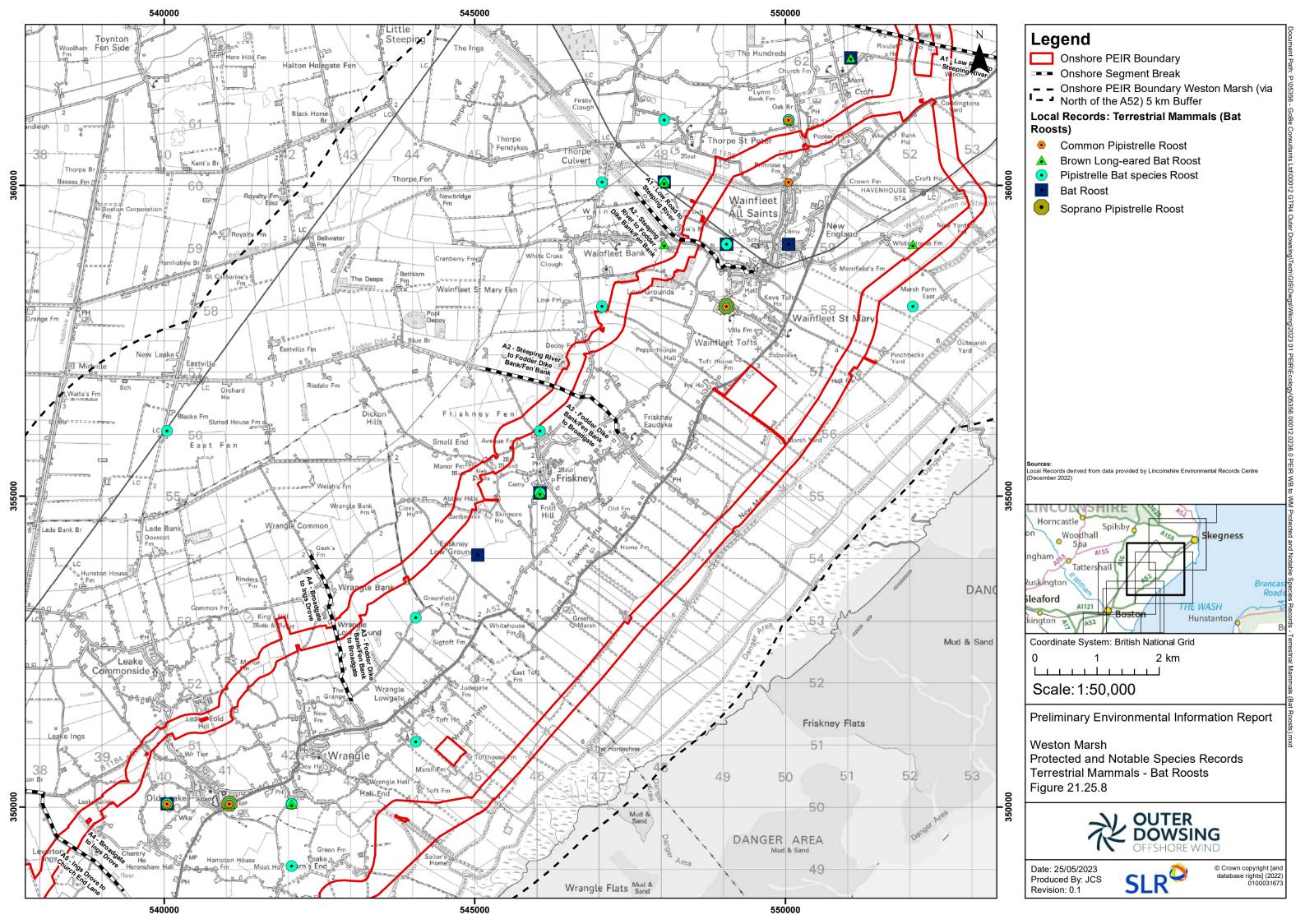


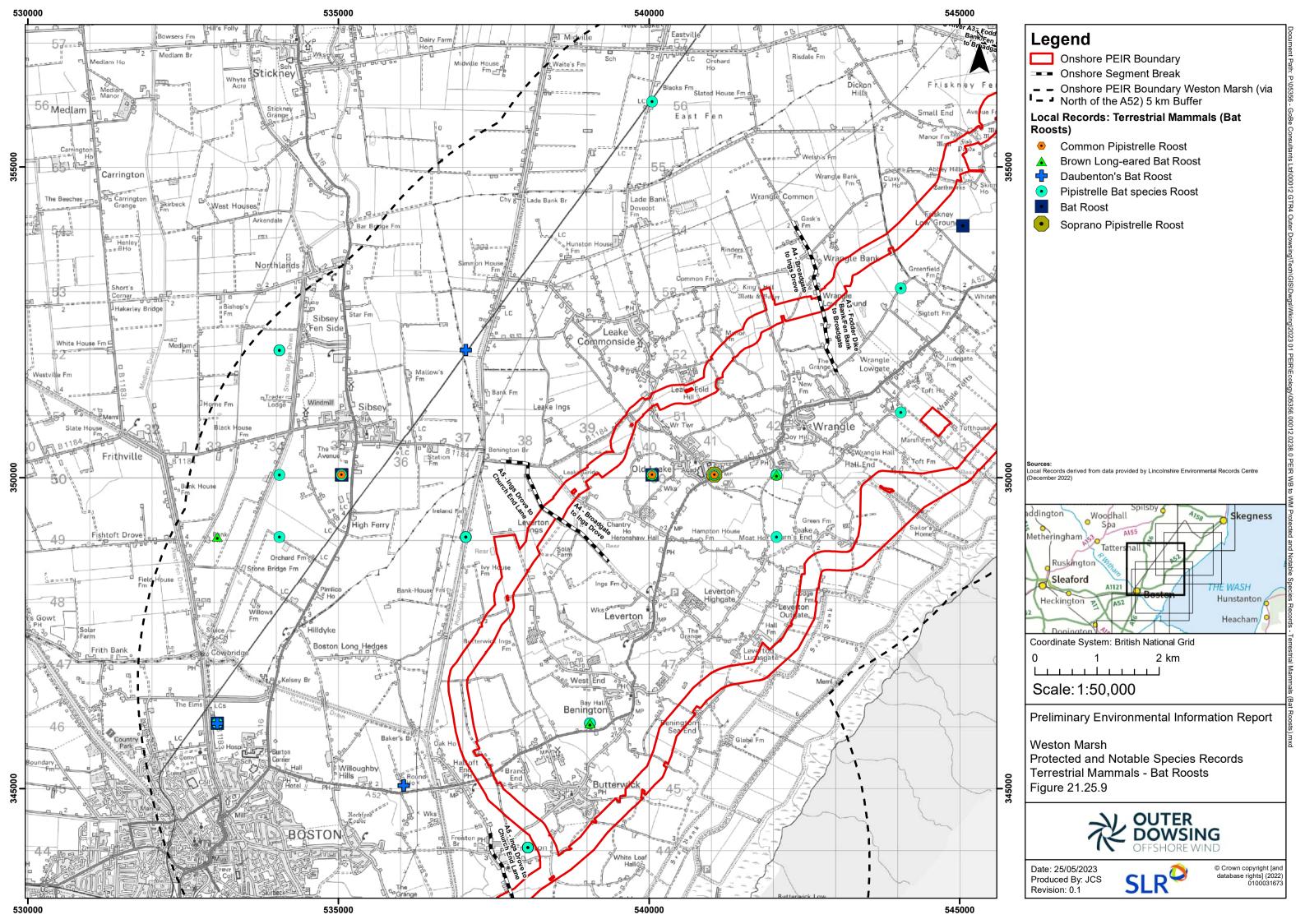


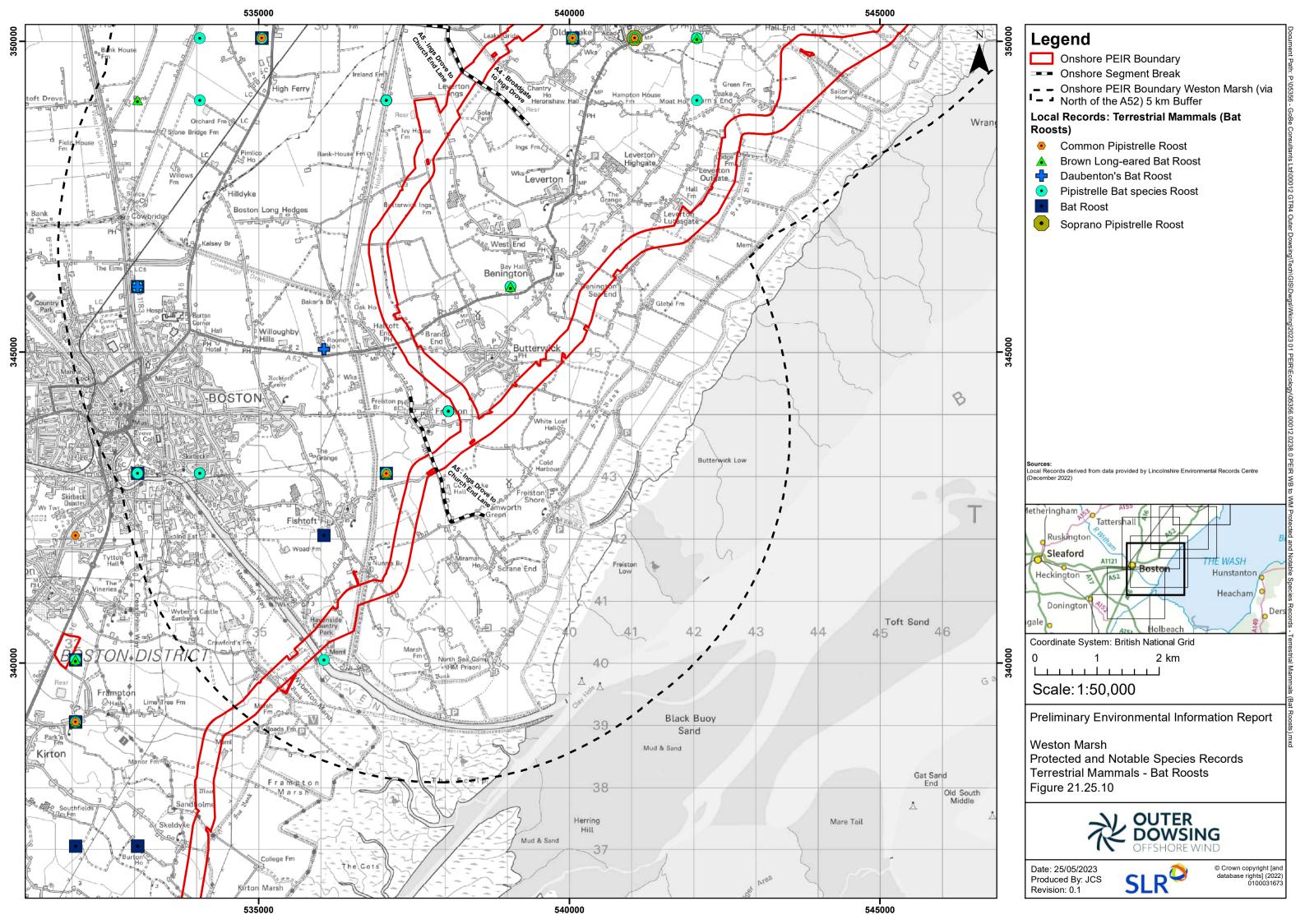


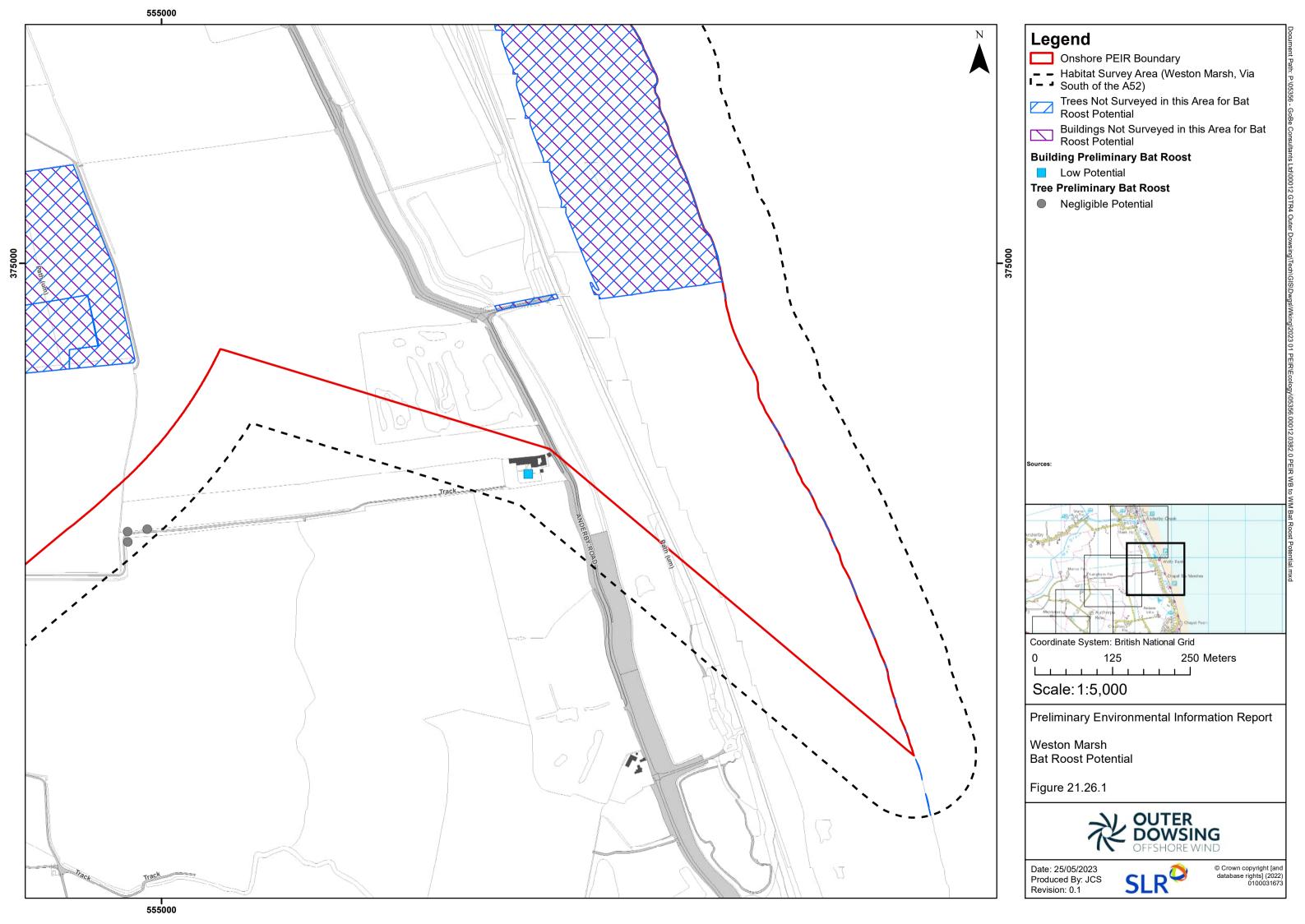


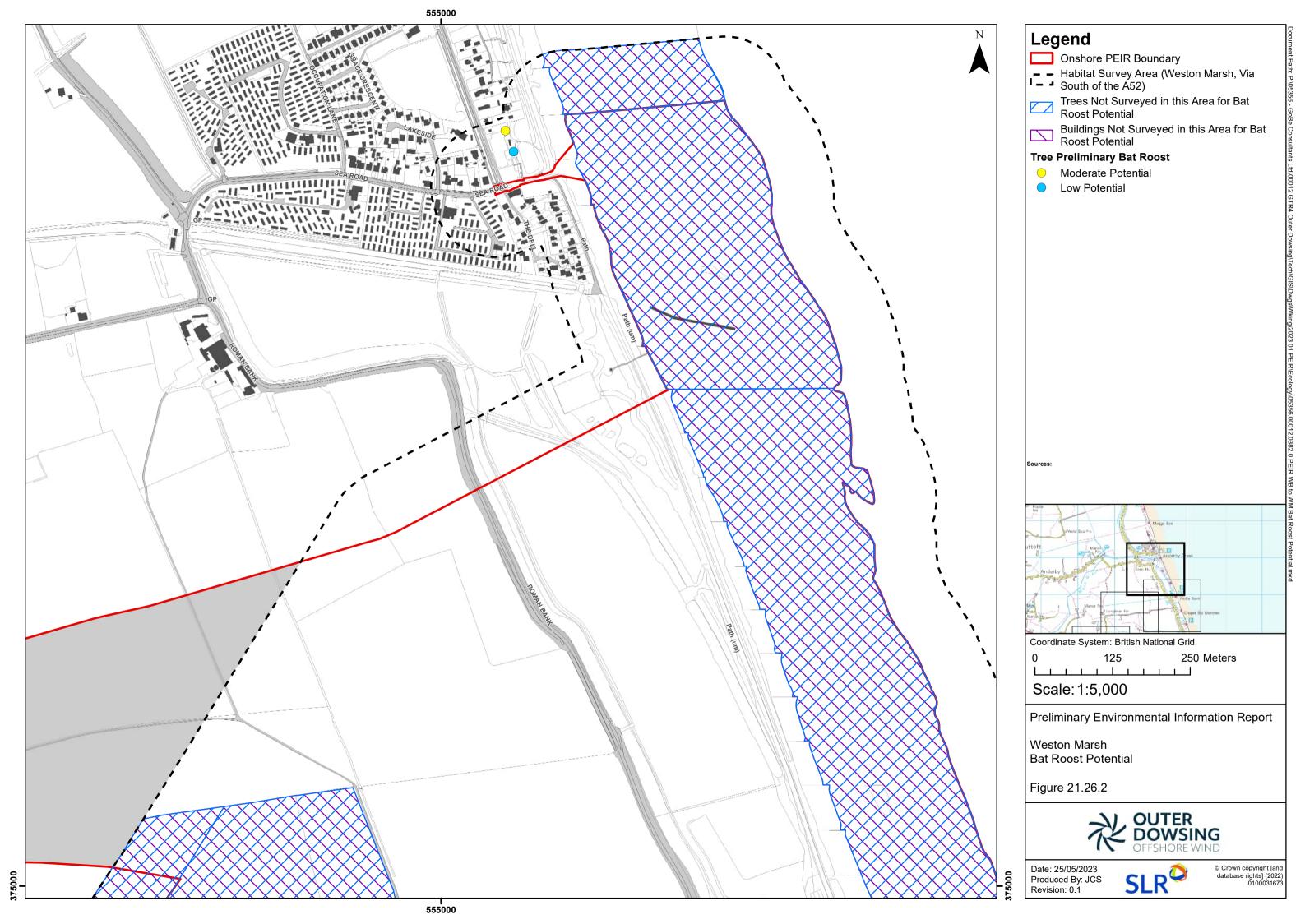


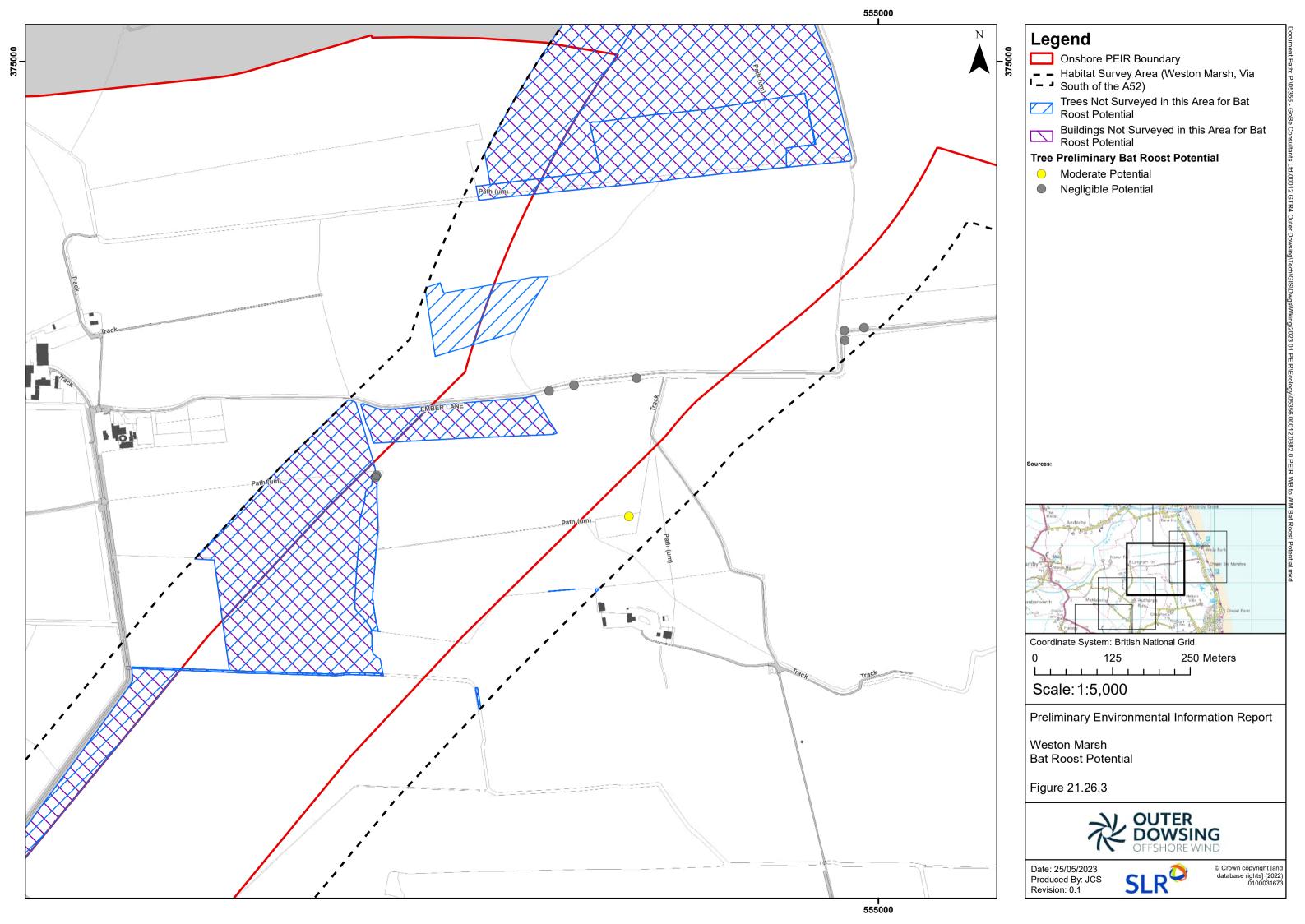


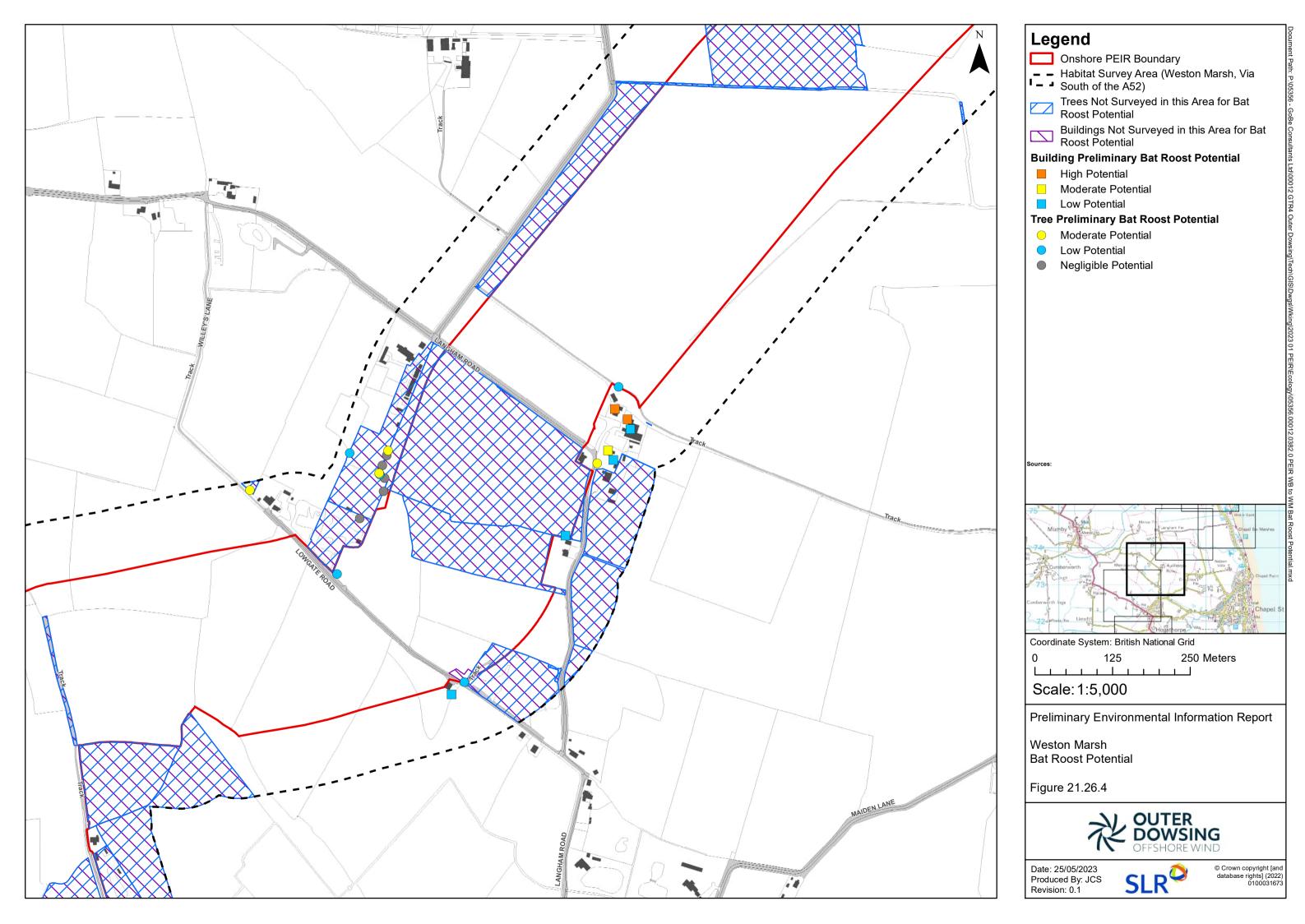


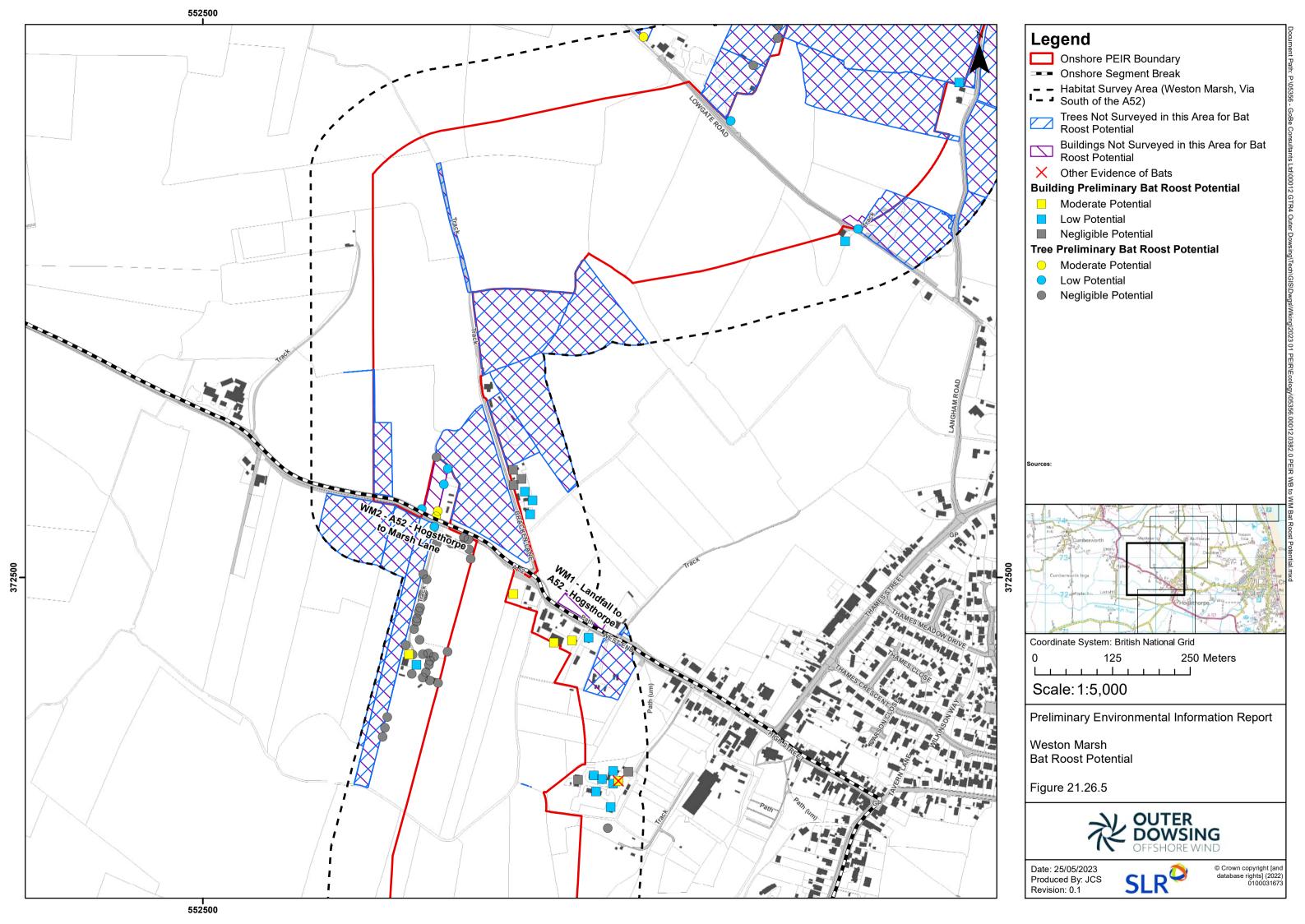


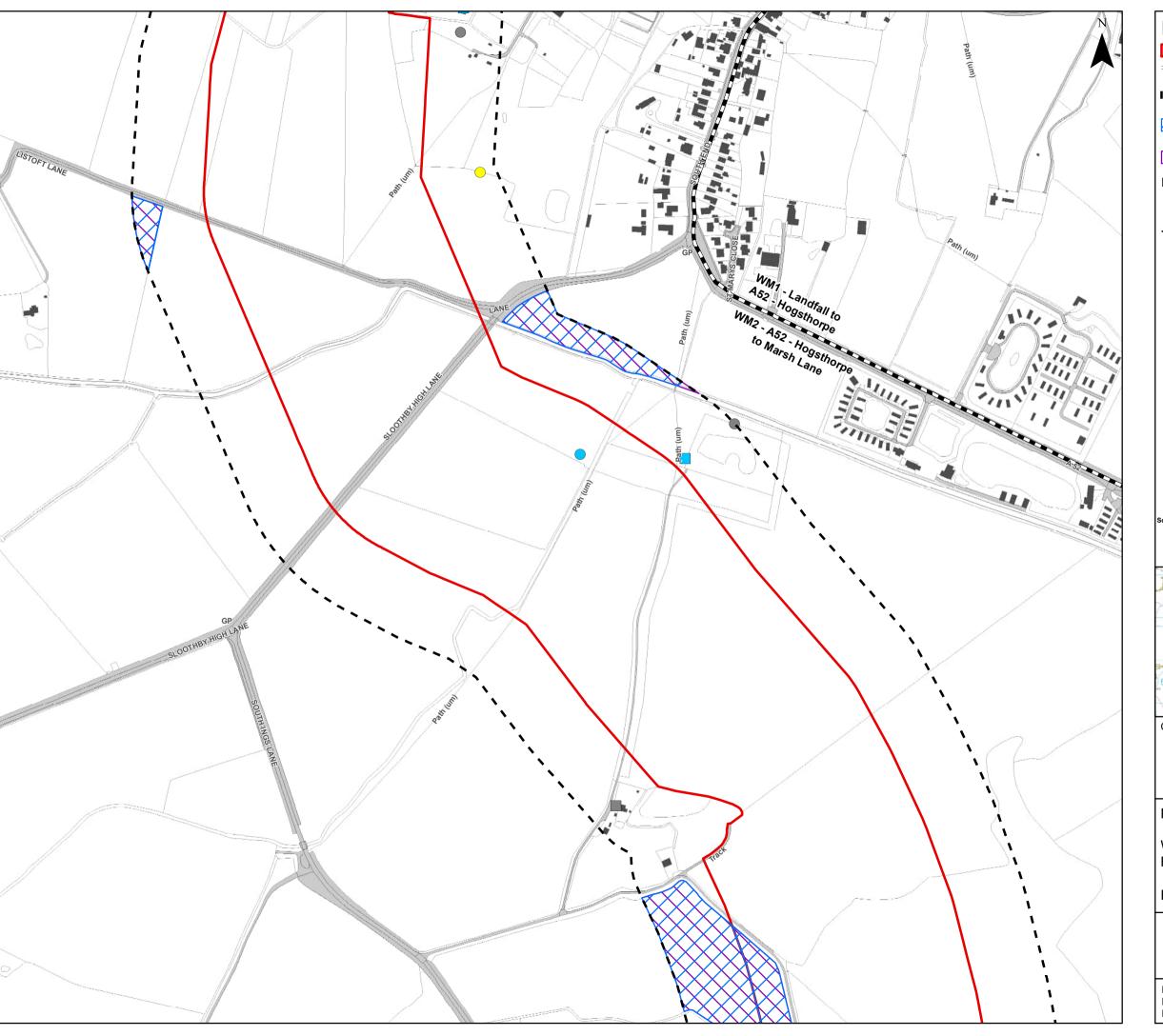












## Legend

- Onshore PEIR Boundary
- Onshore Segment Break
- Habitat Survey Area (Weston Marsh, ViaSouth of the A52)
- Trees Not Surveyed in this Area for Bat Roost Potential
- Buildings Not Surveyed in this Area for Bat Roost Potential

## **Building Preliminary Bat Roost Potential**

- Low Potential
- Negligible Potential

## **Tree Preliminary Bat Roost Potential**

- Moderate Potential
- Low Potential
- Negligible Potential



Coordinate System: British National Grid

250 Meters

Scale: 1:5,000

Preliminary Environmental Information Report

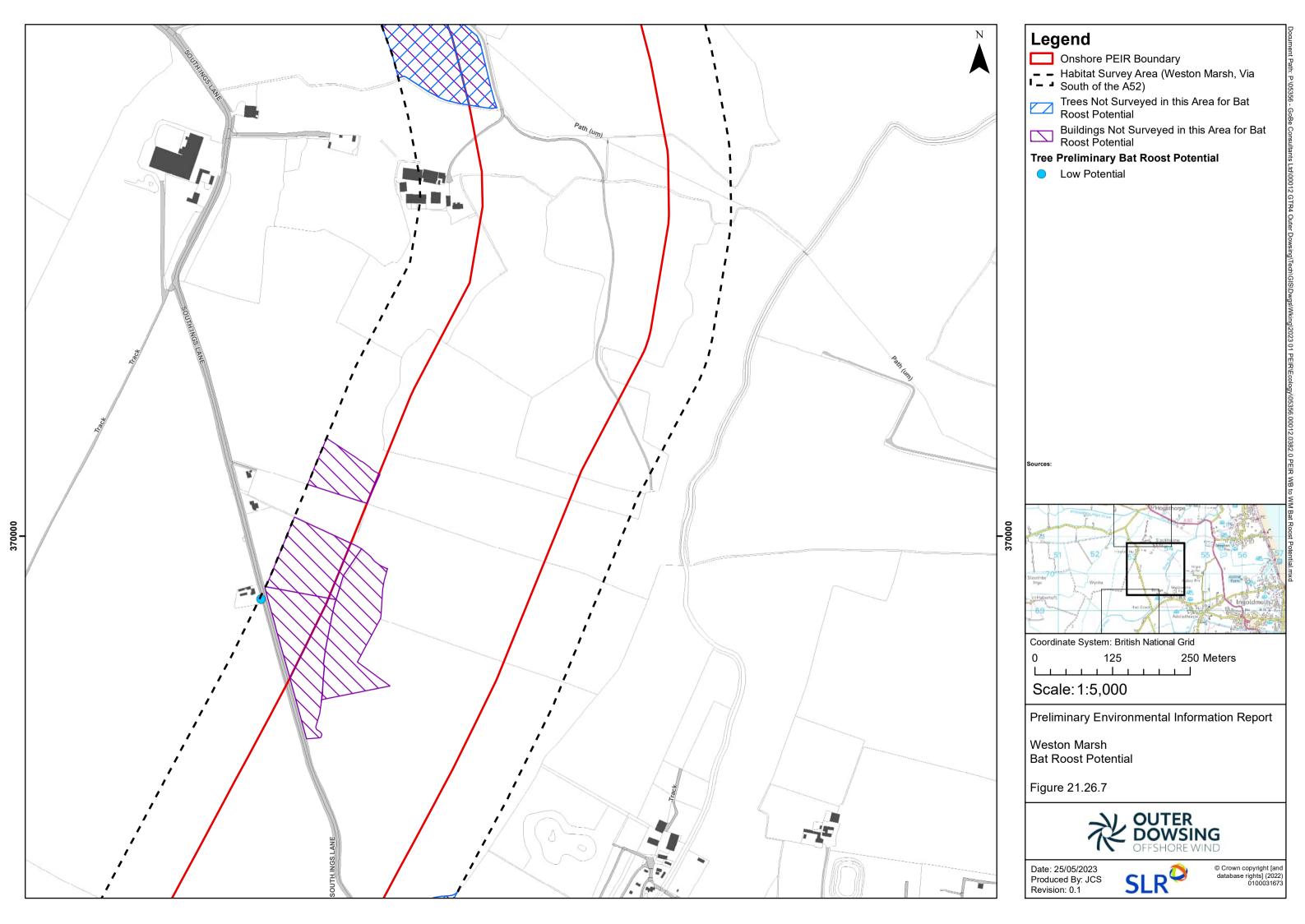
Weston Marsh **Bat Roost Potential** 

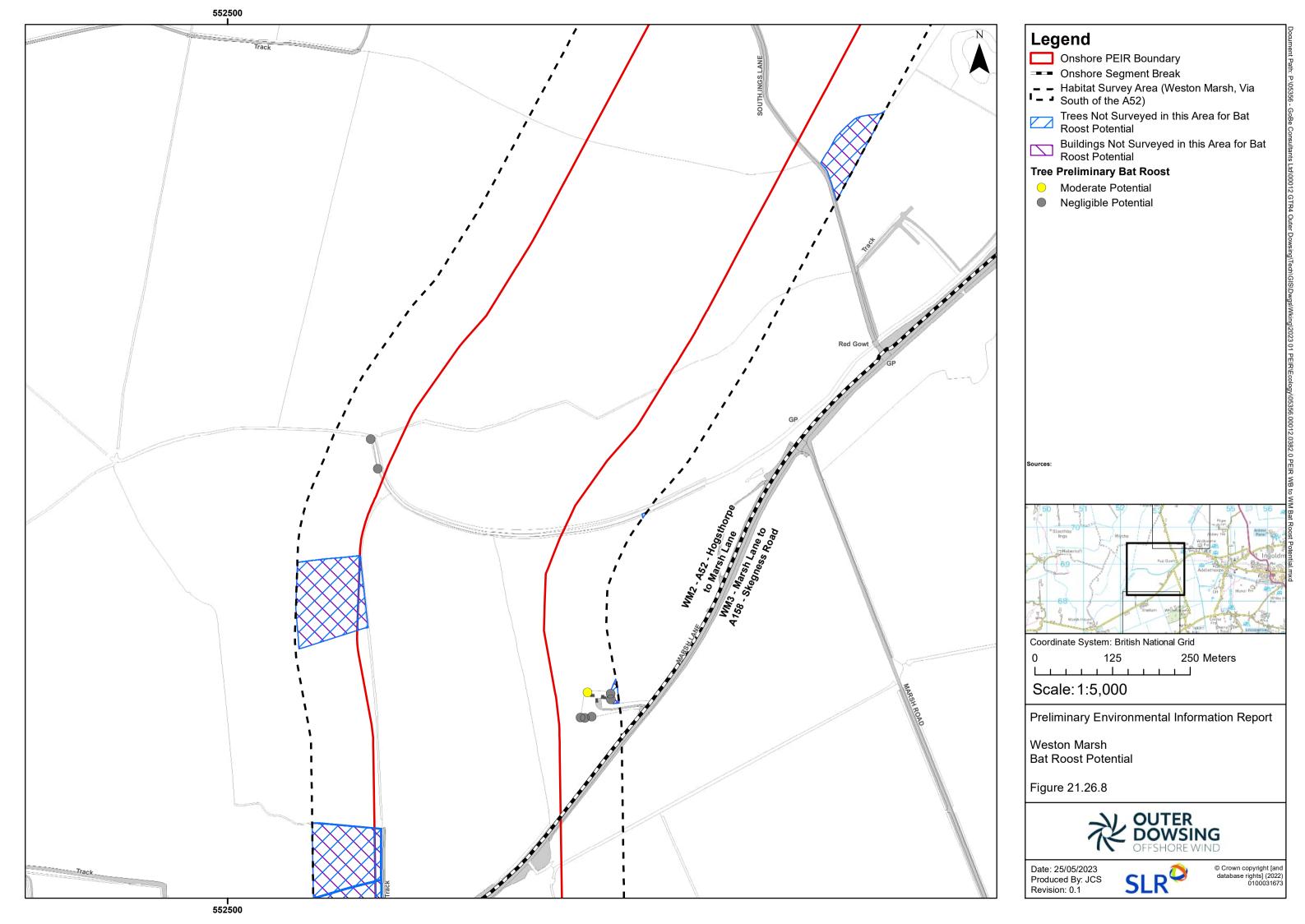
Figure 21.26.6

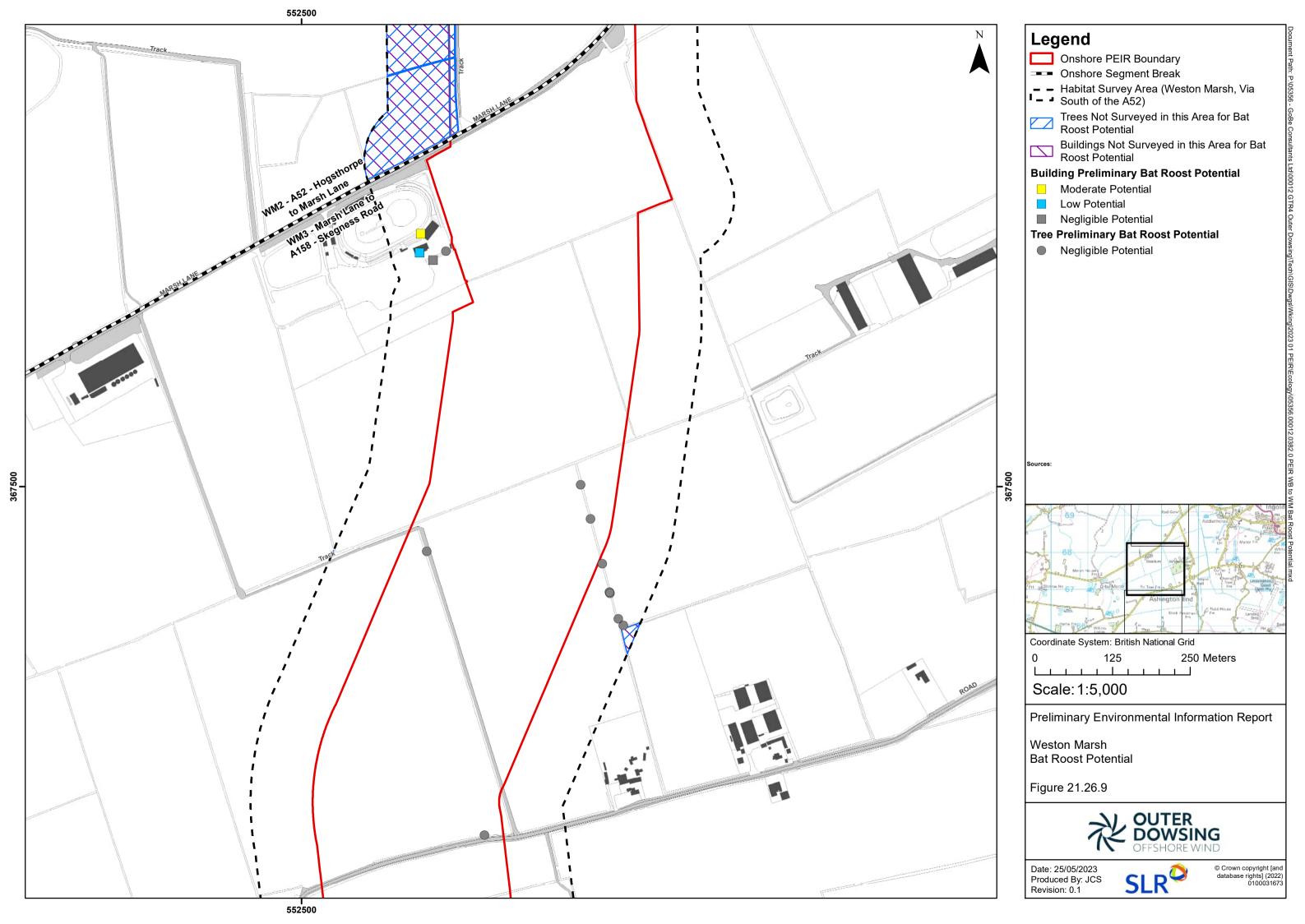


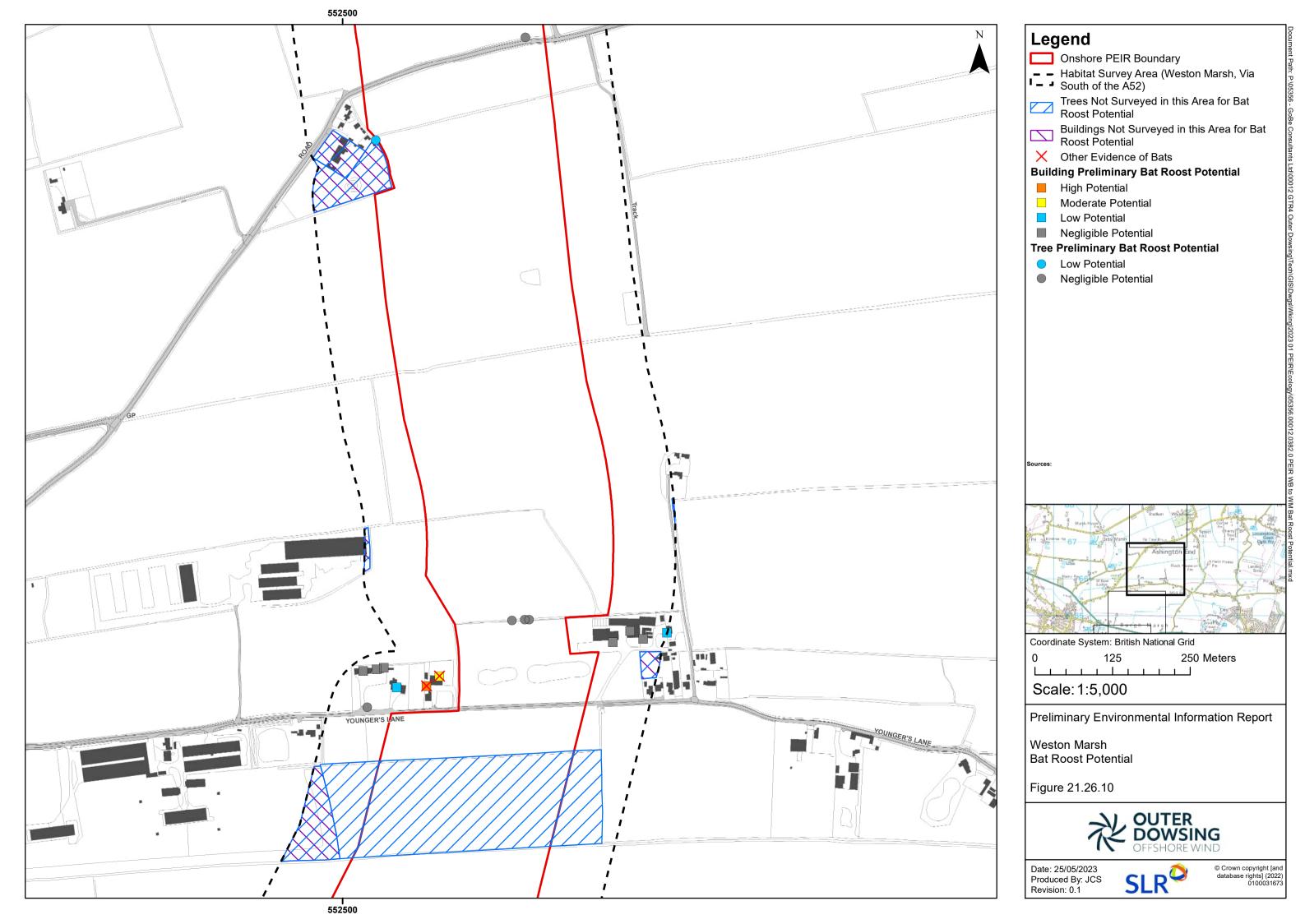
Date: 25/05/2023 Produced By: JCS Revision: 0.1

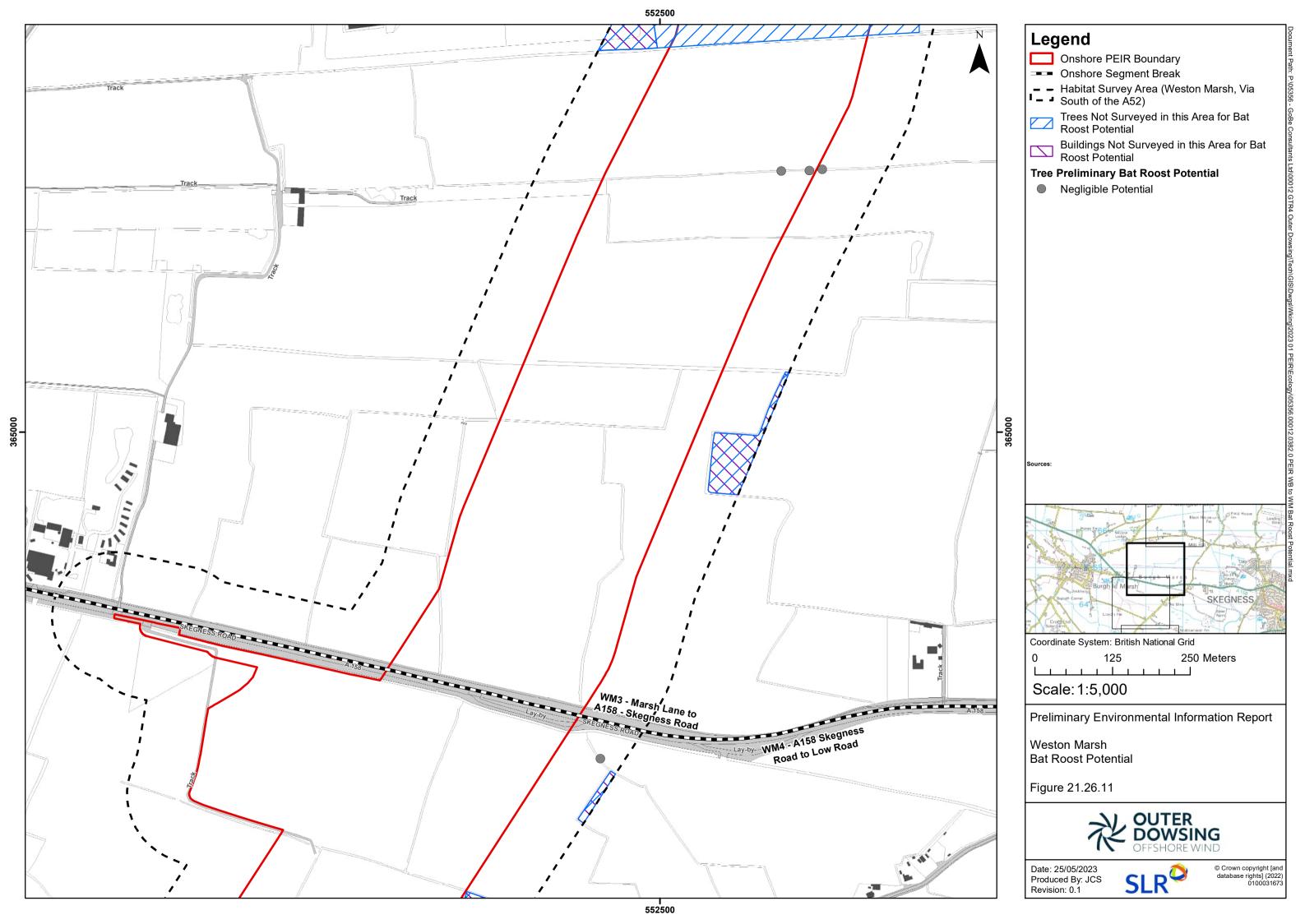


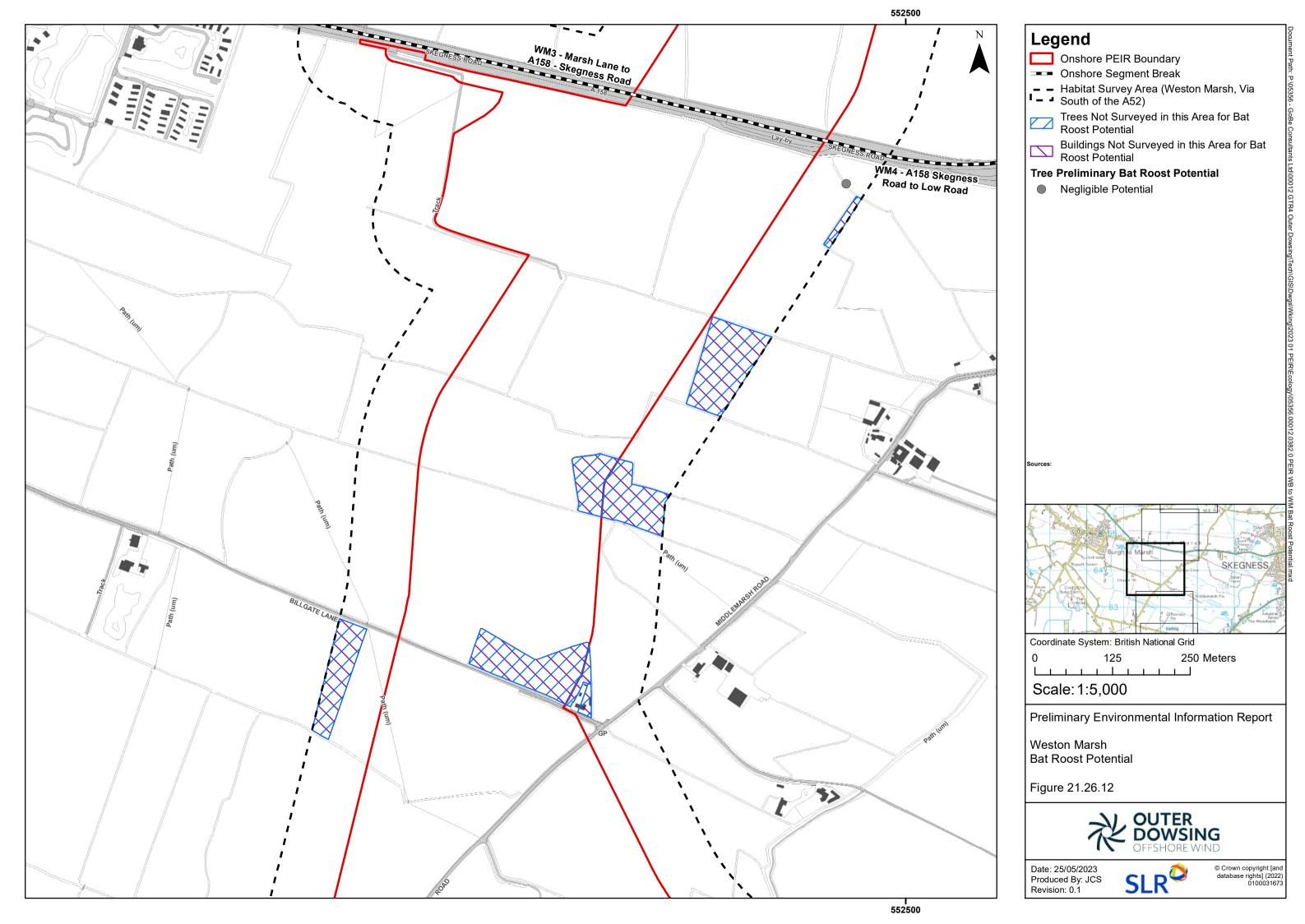


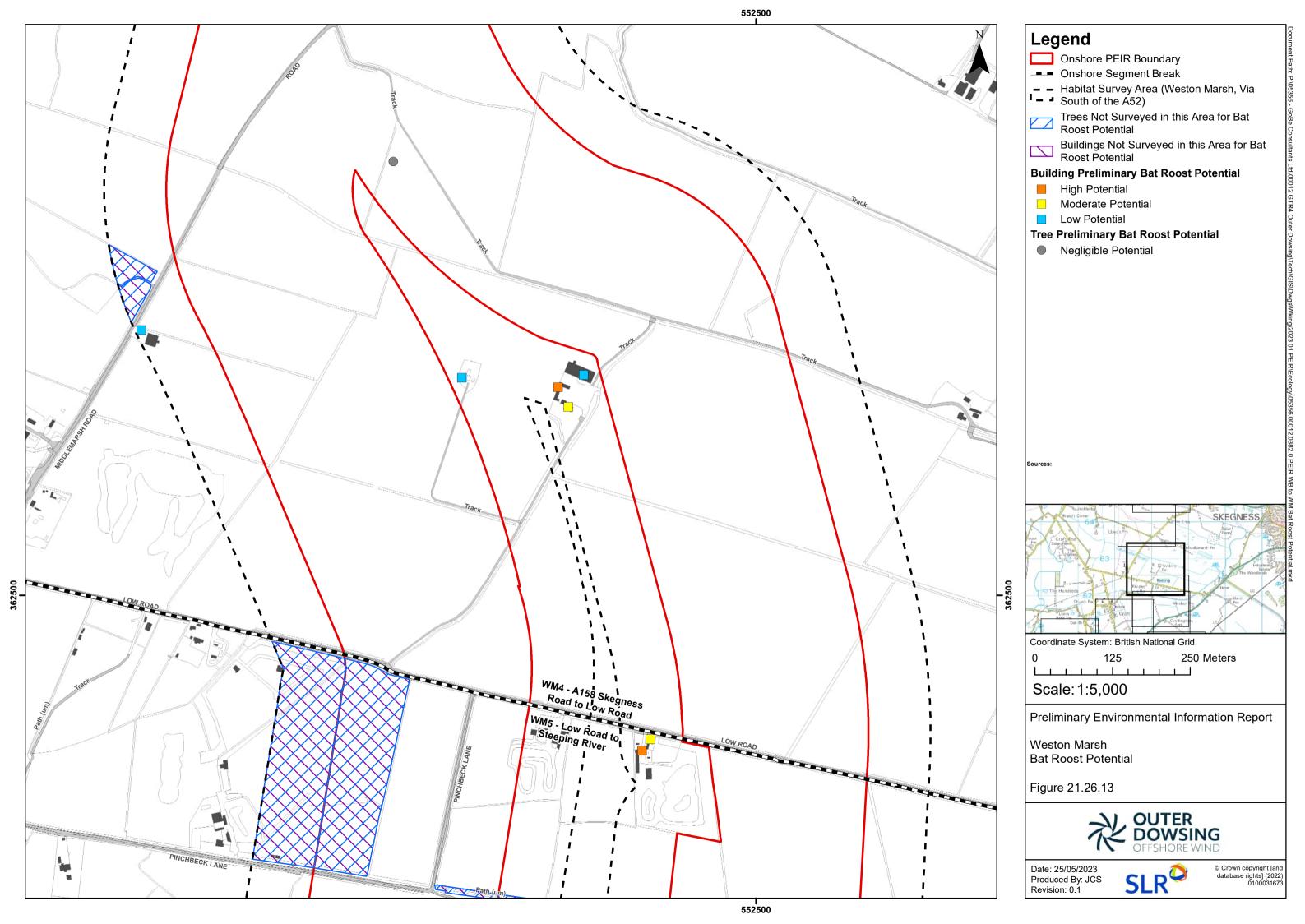


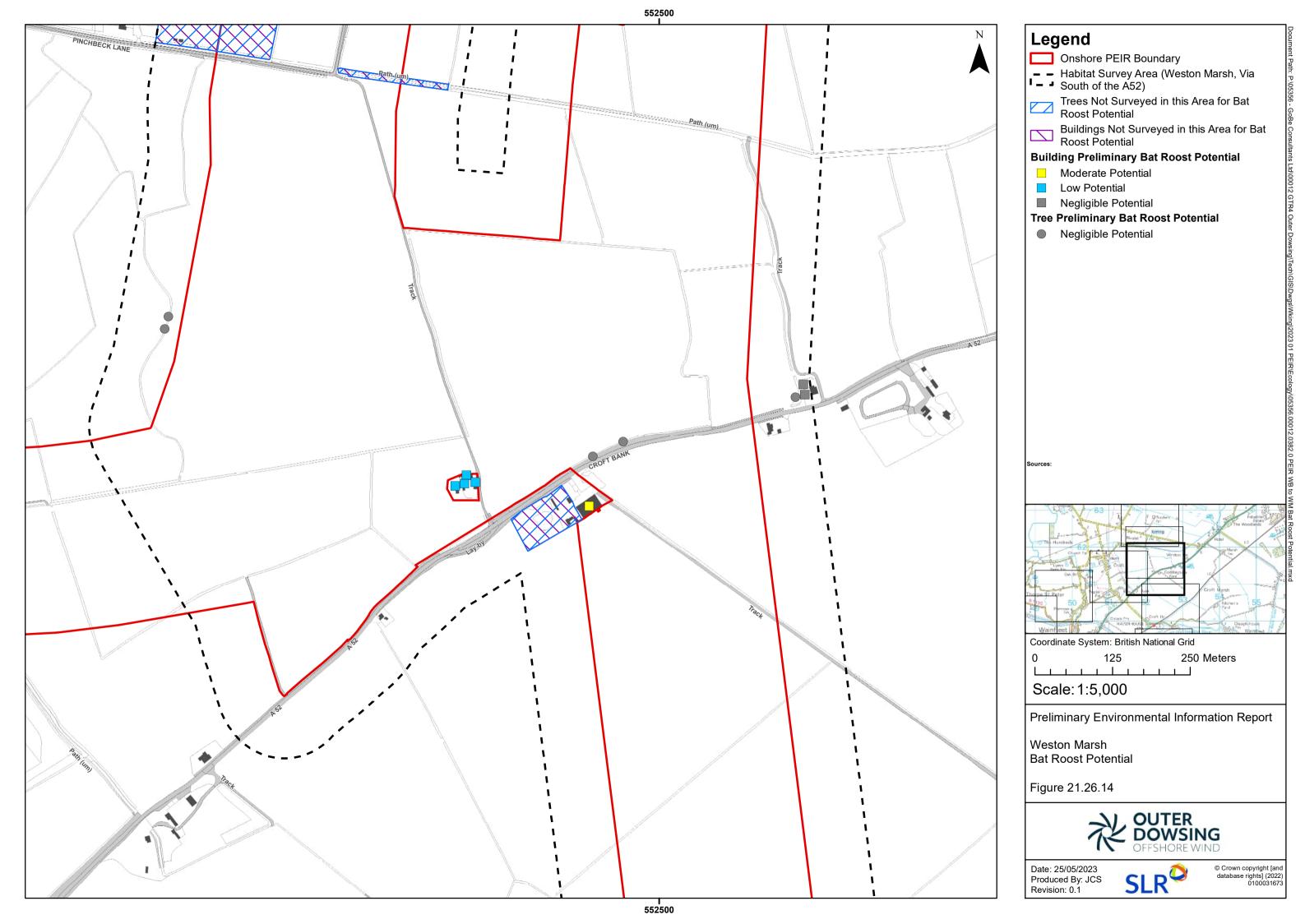


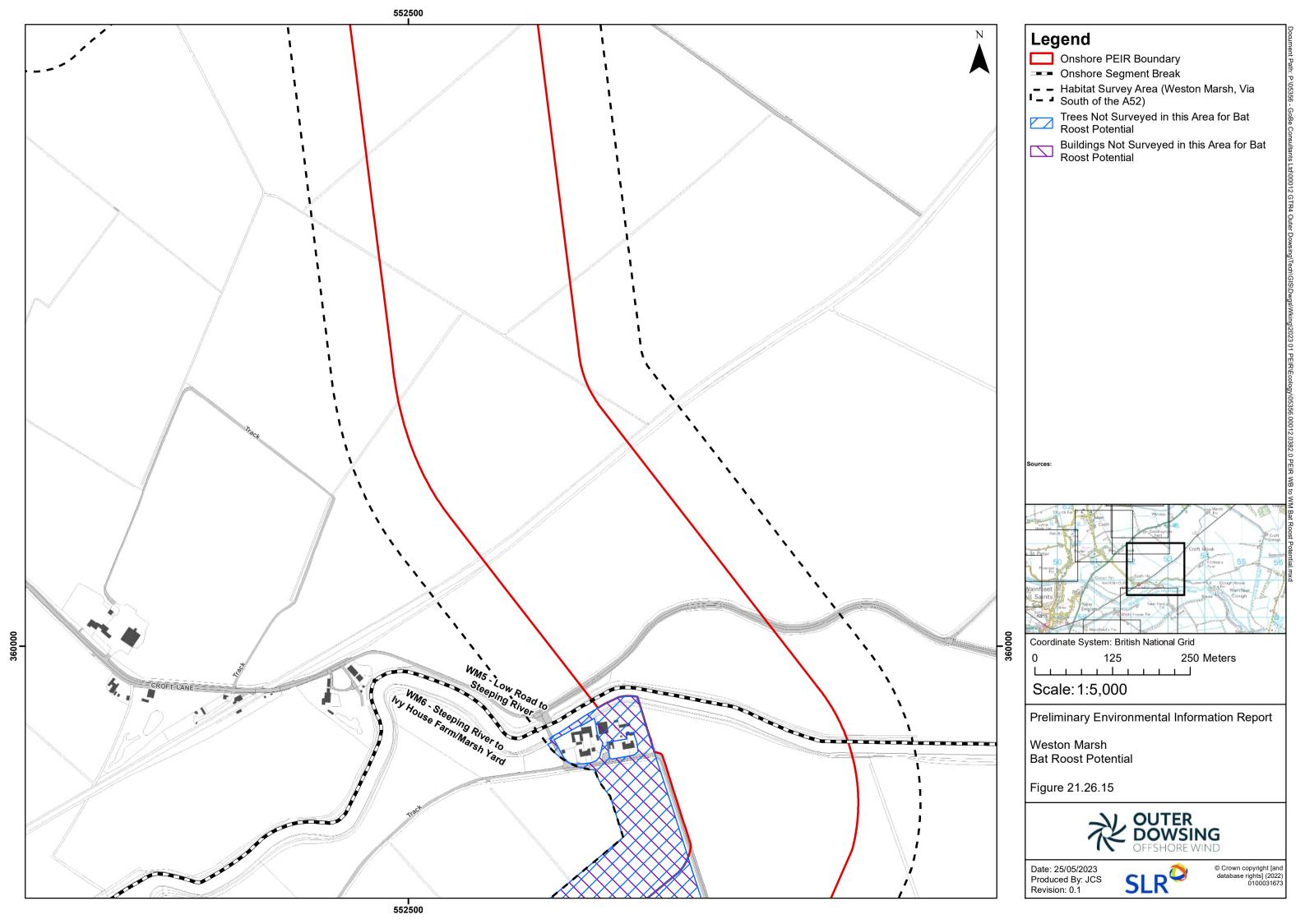


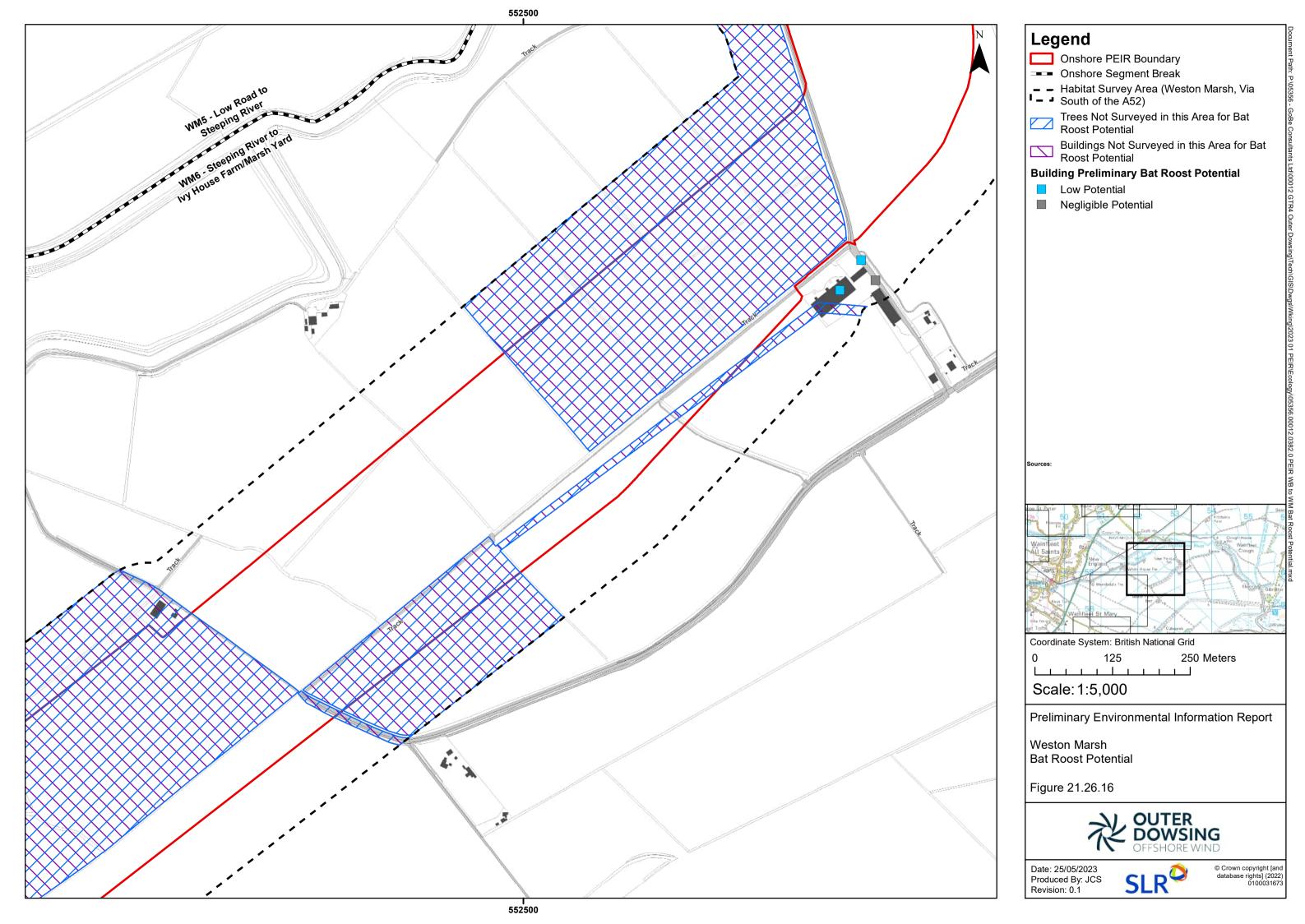


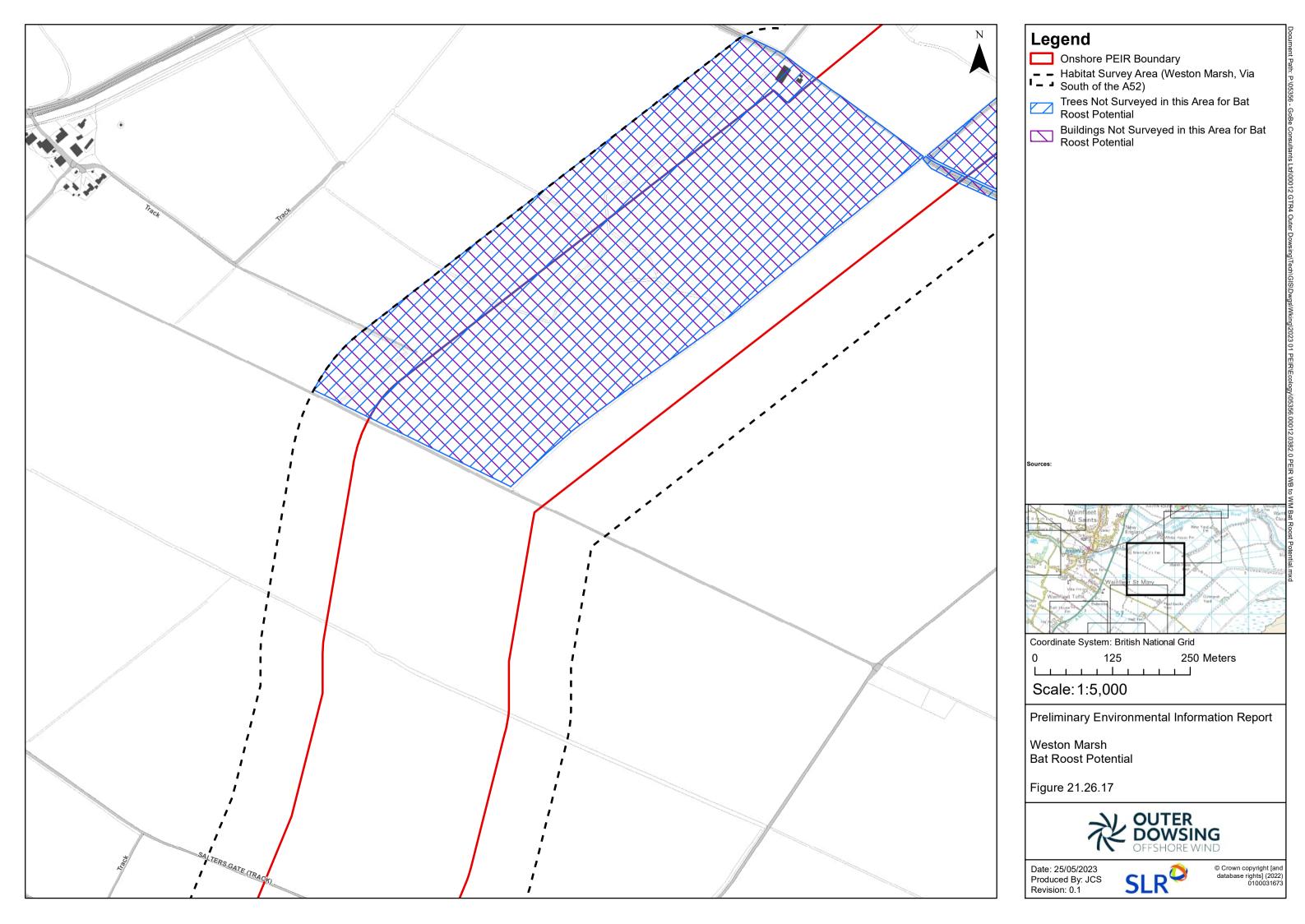


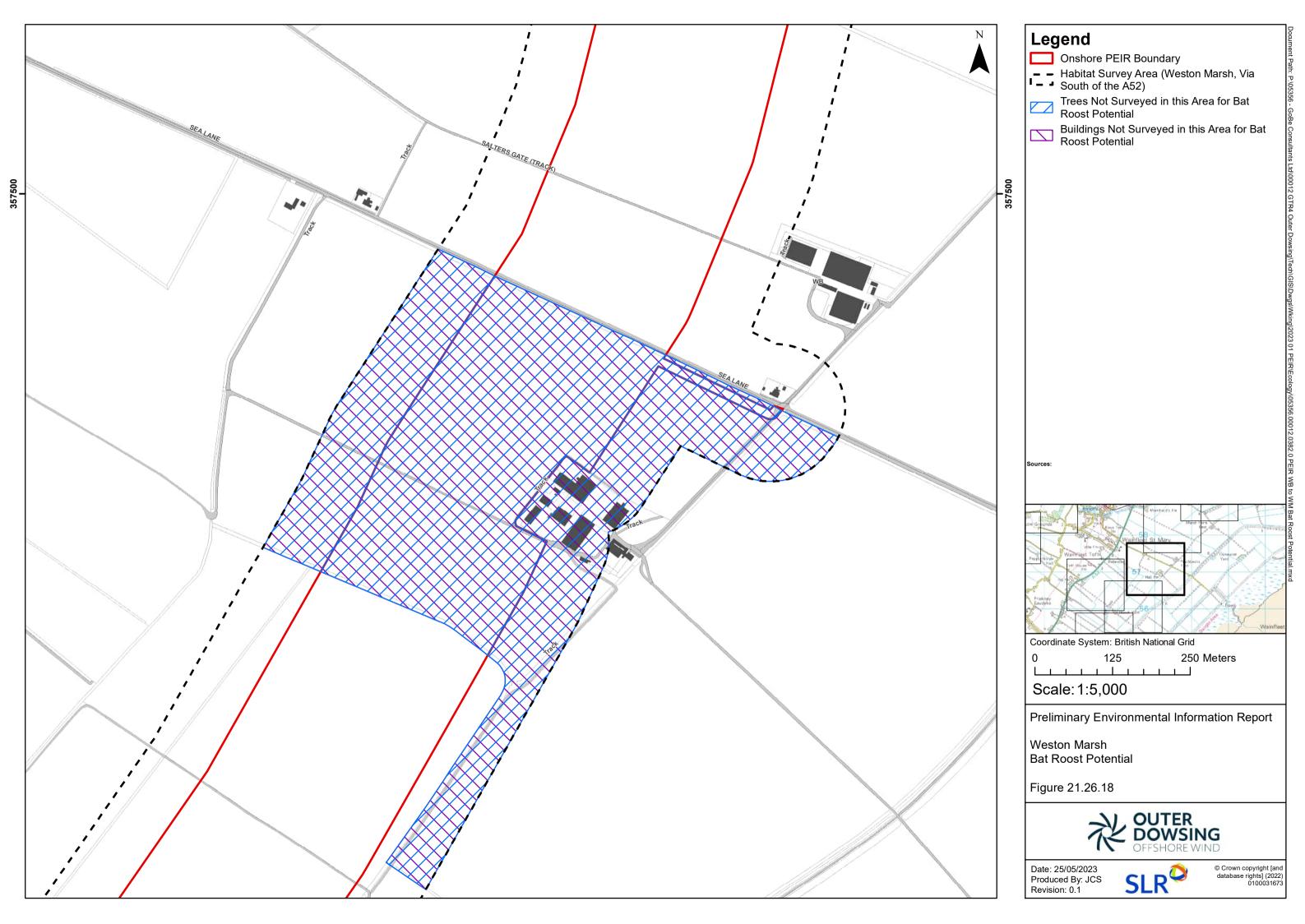


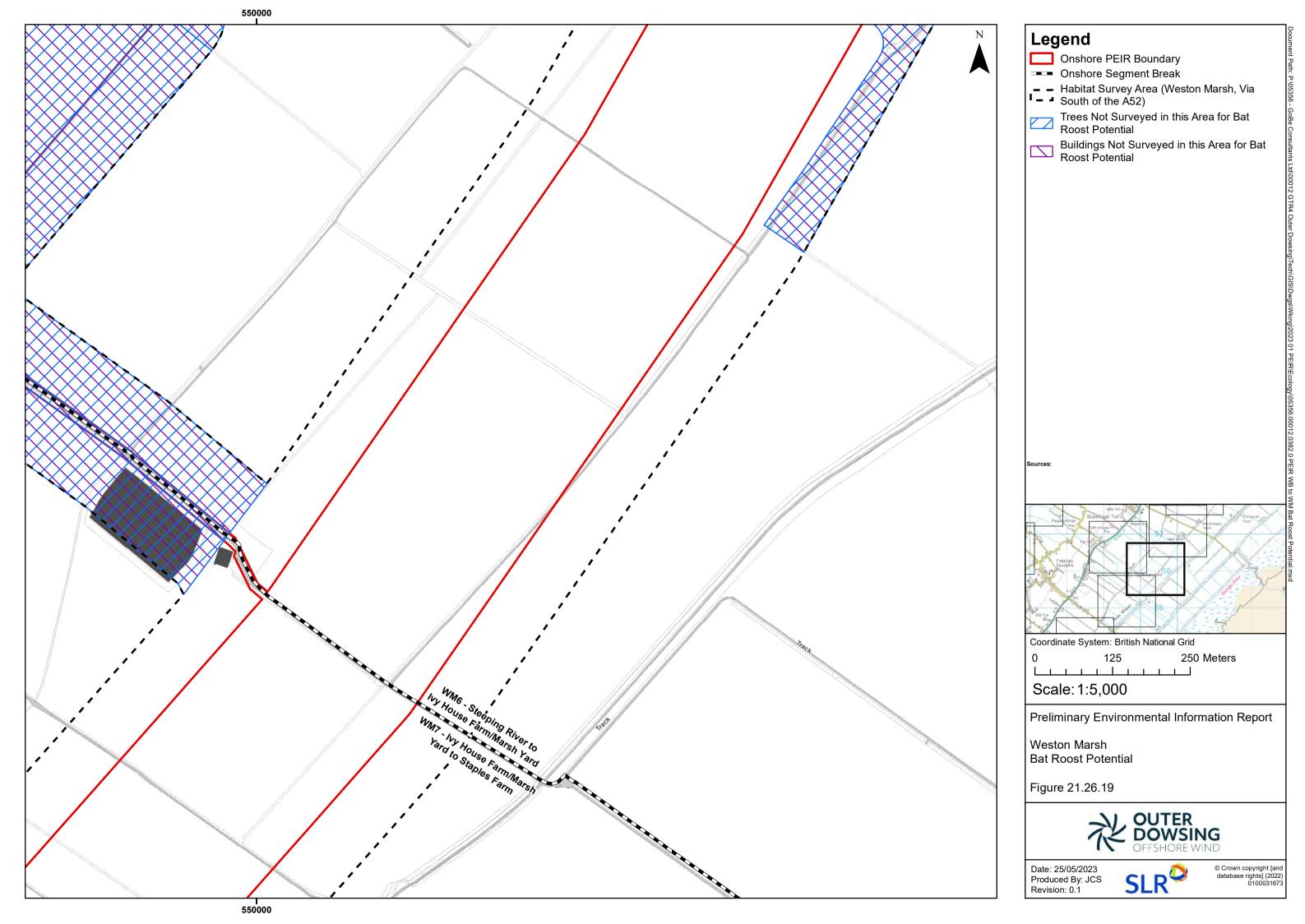


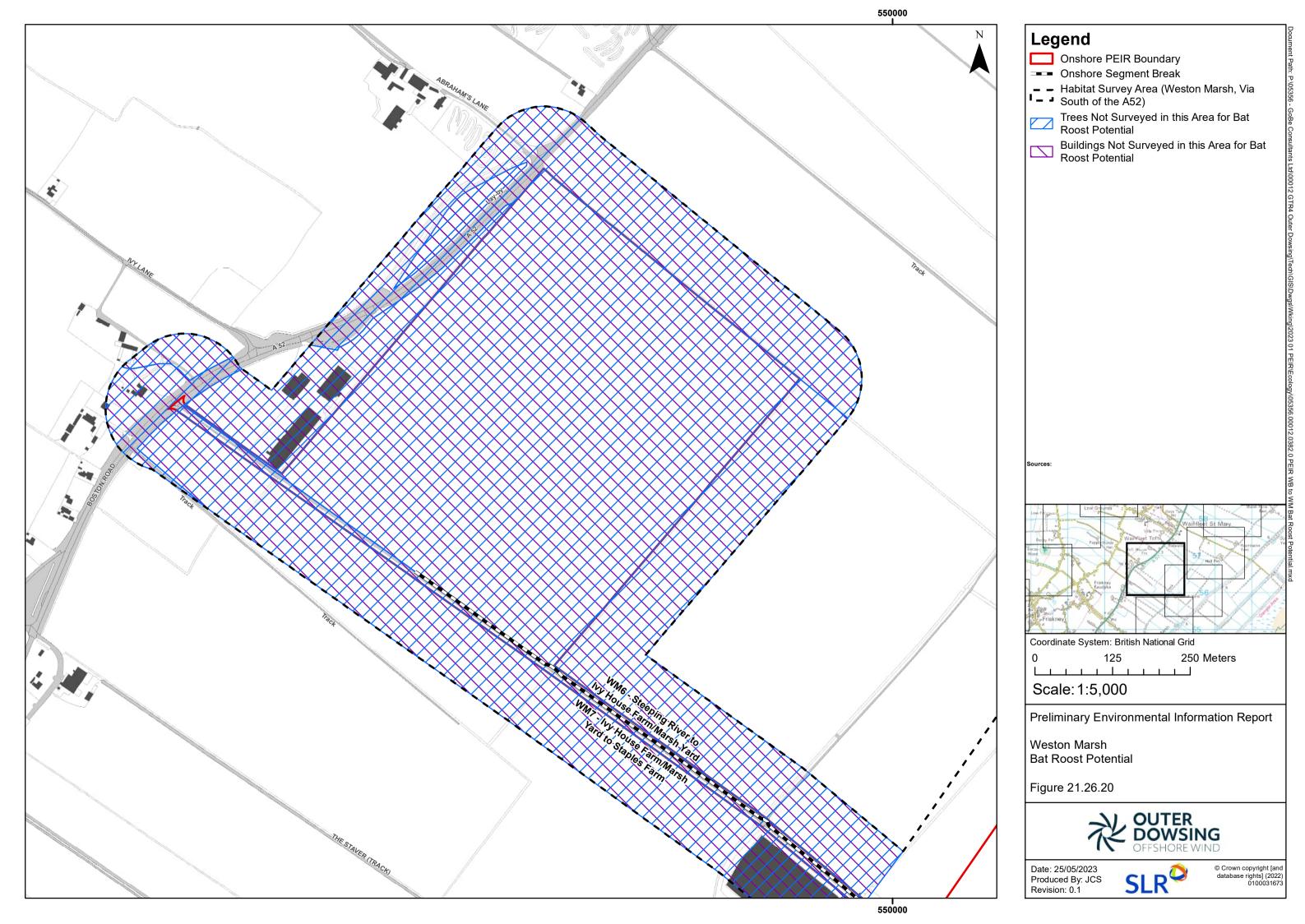


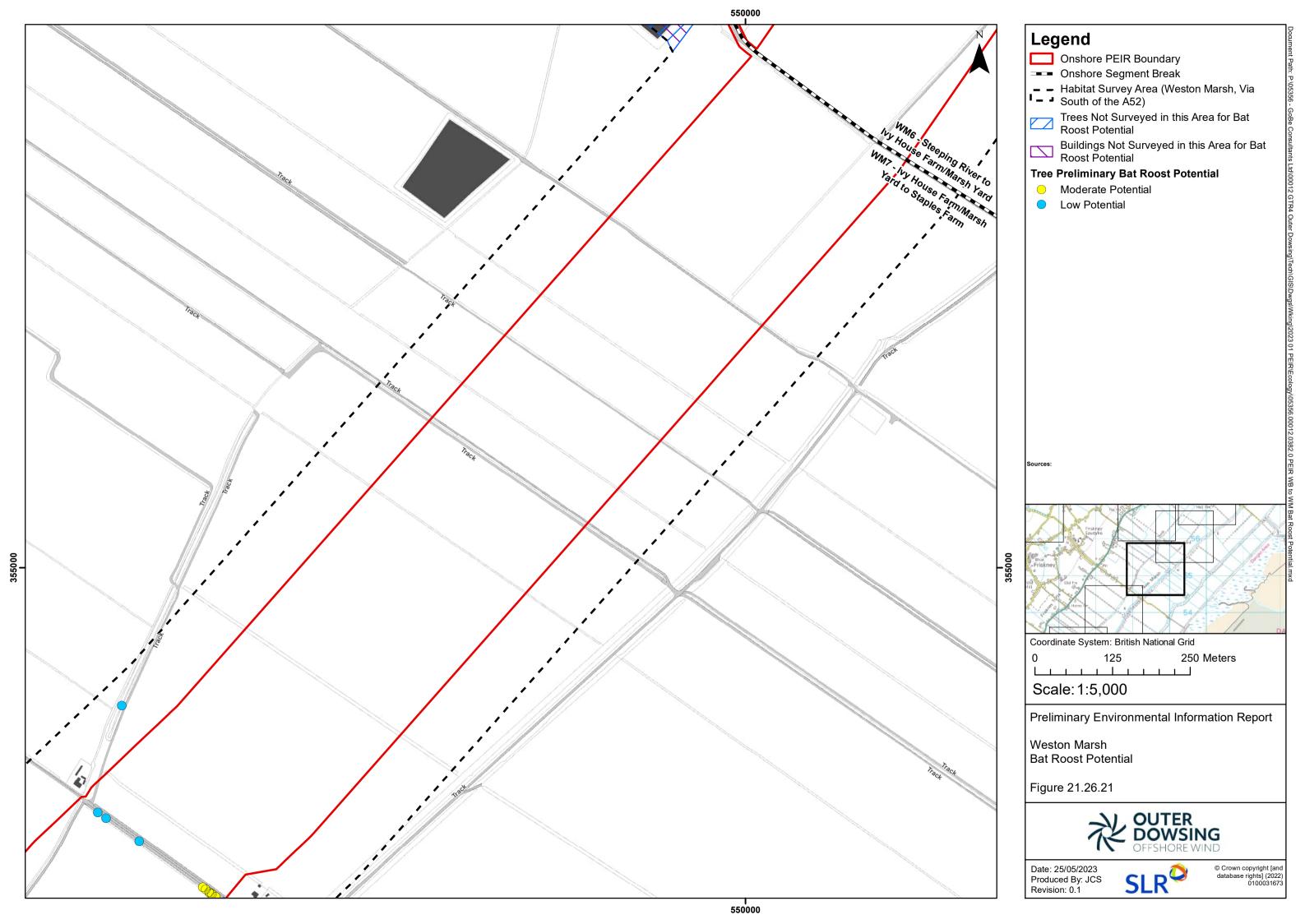


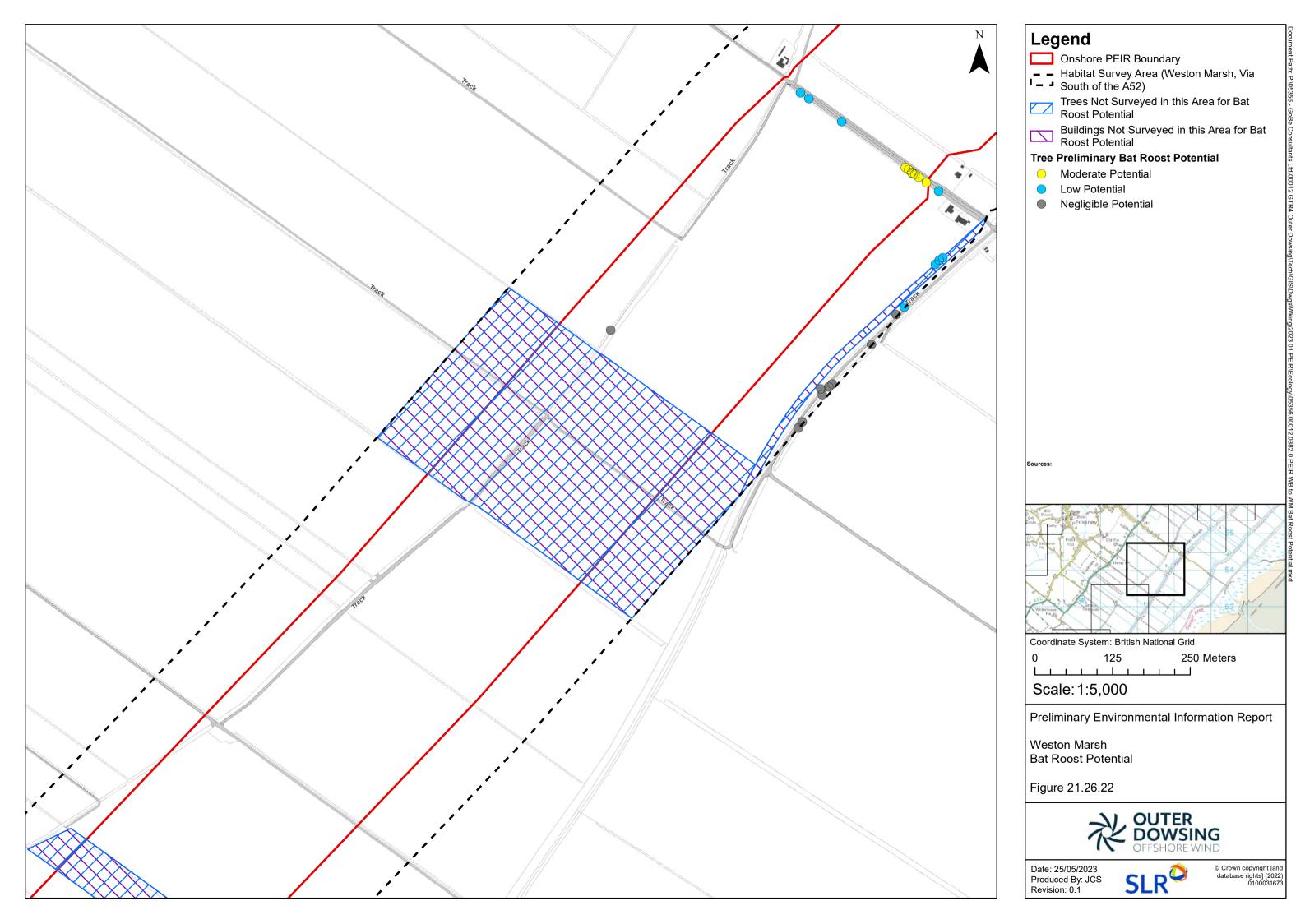


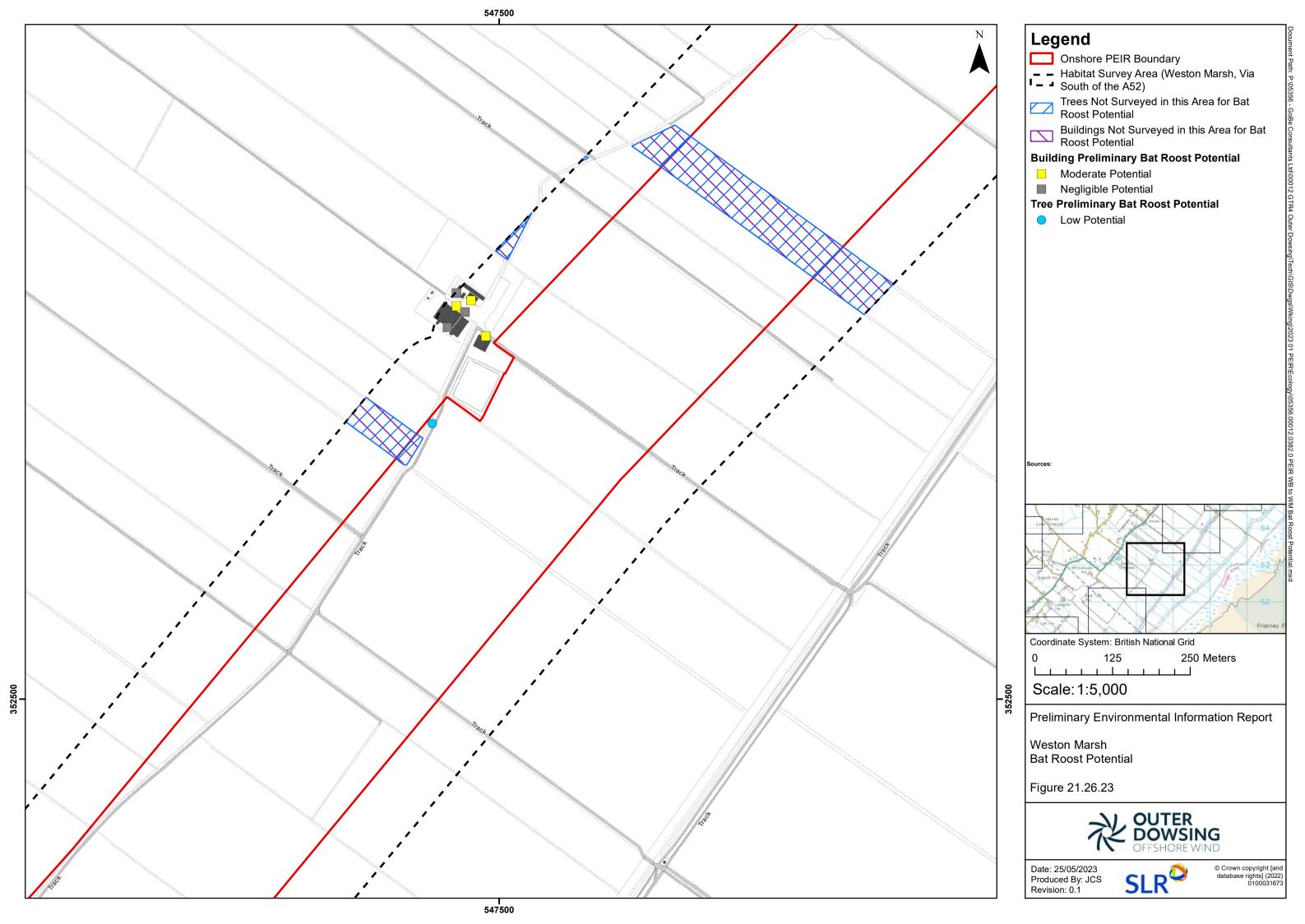


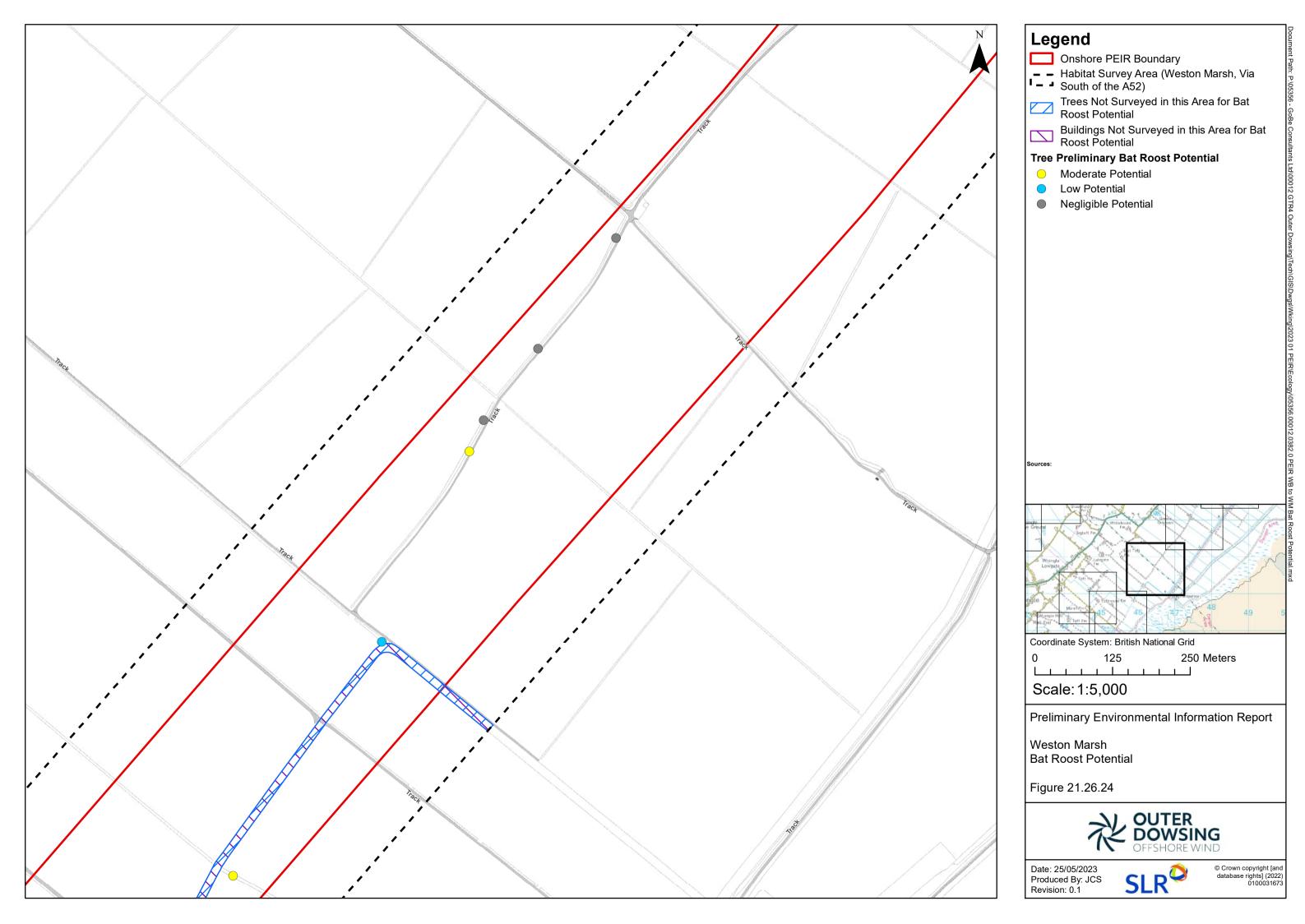


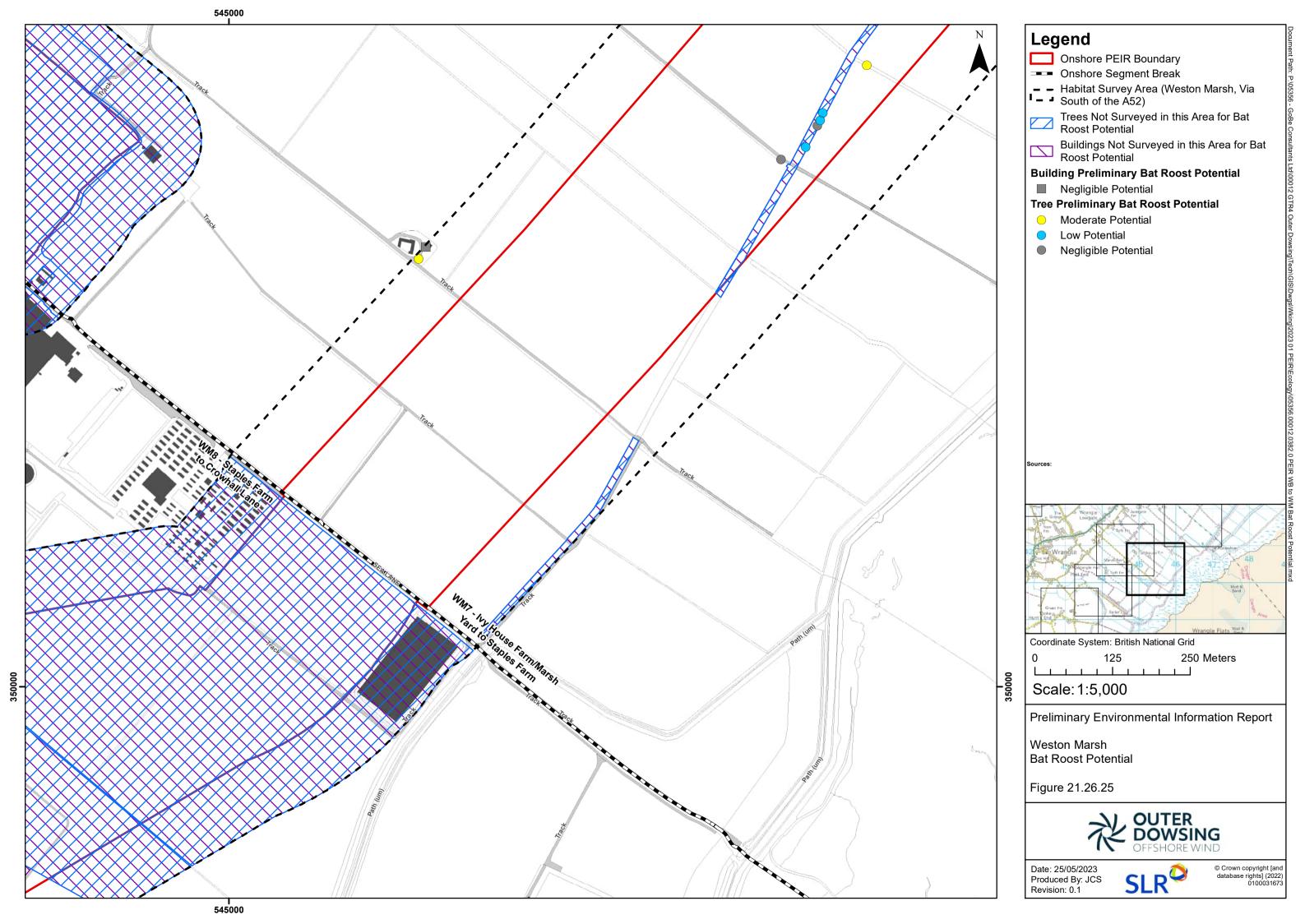


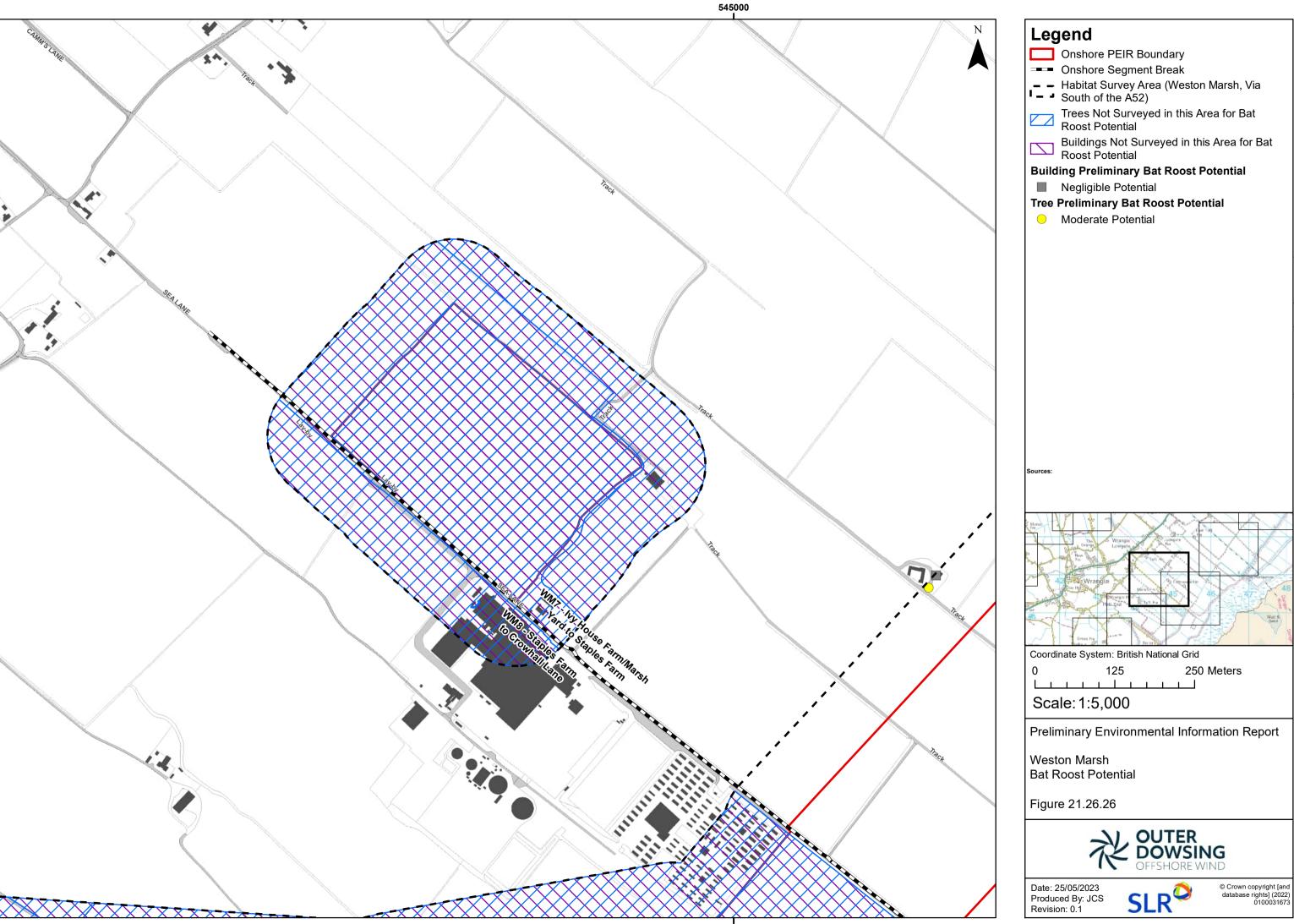


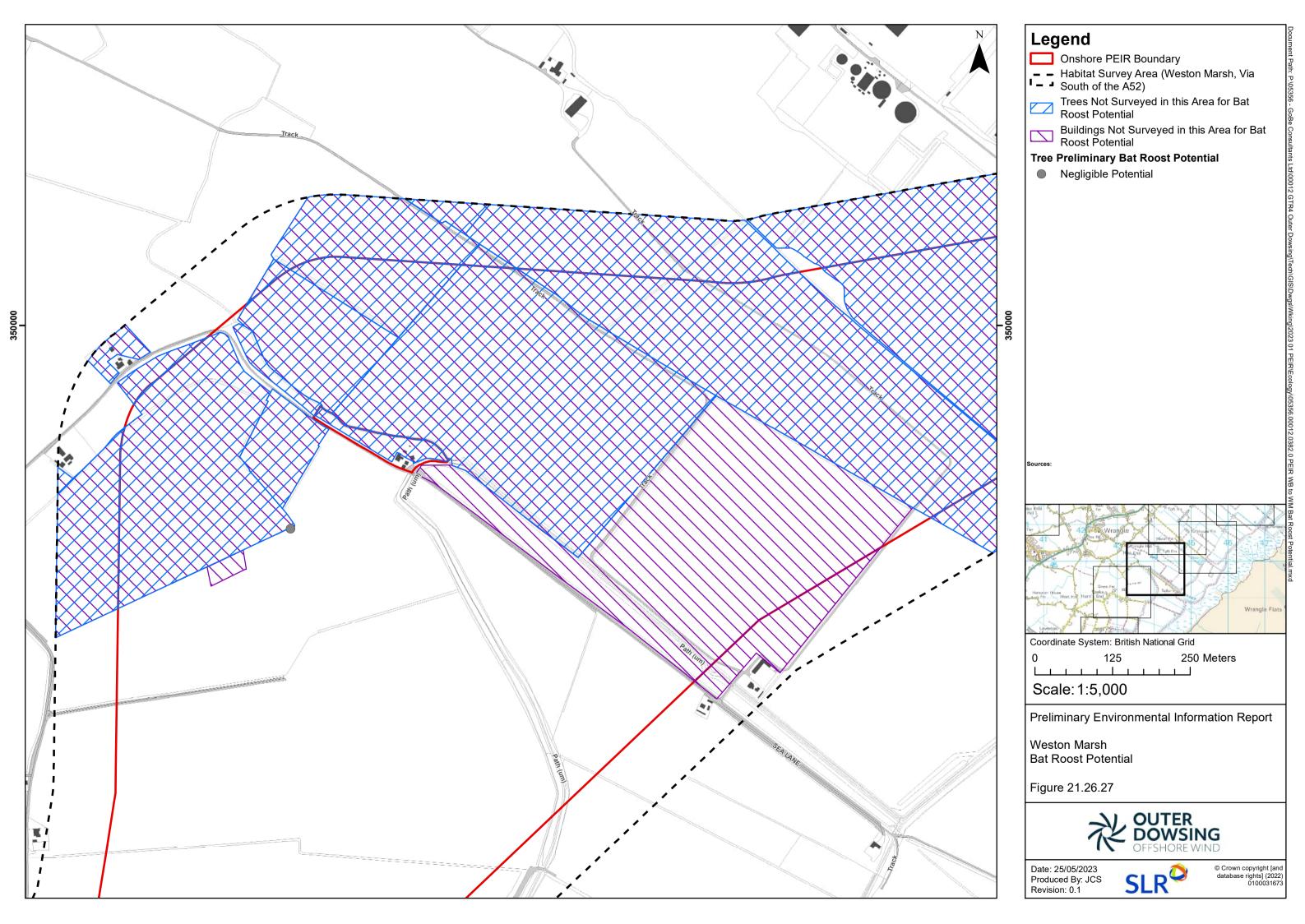


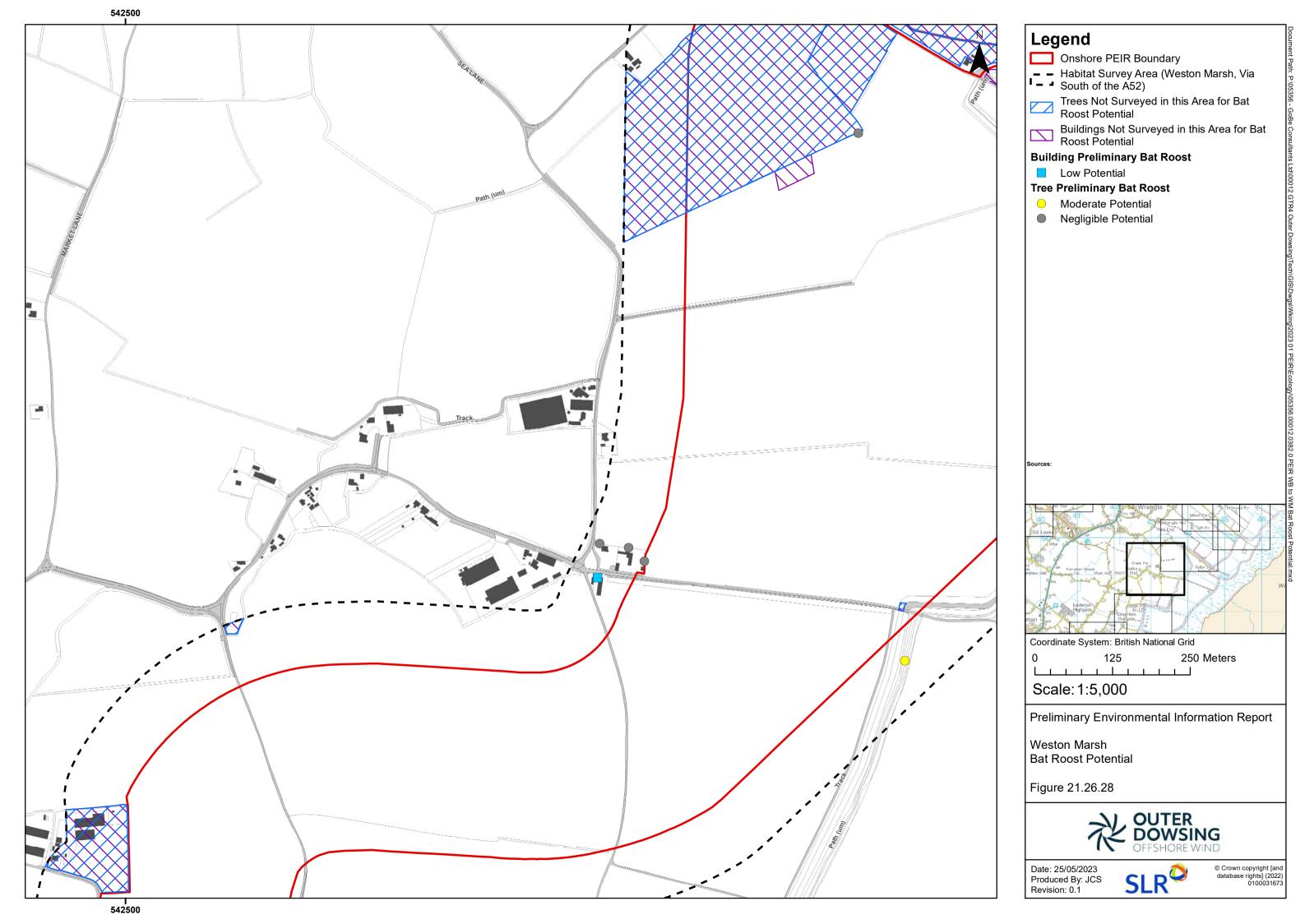


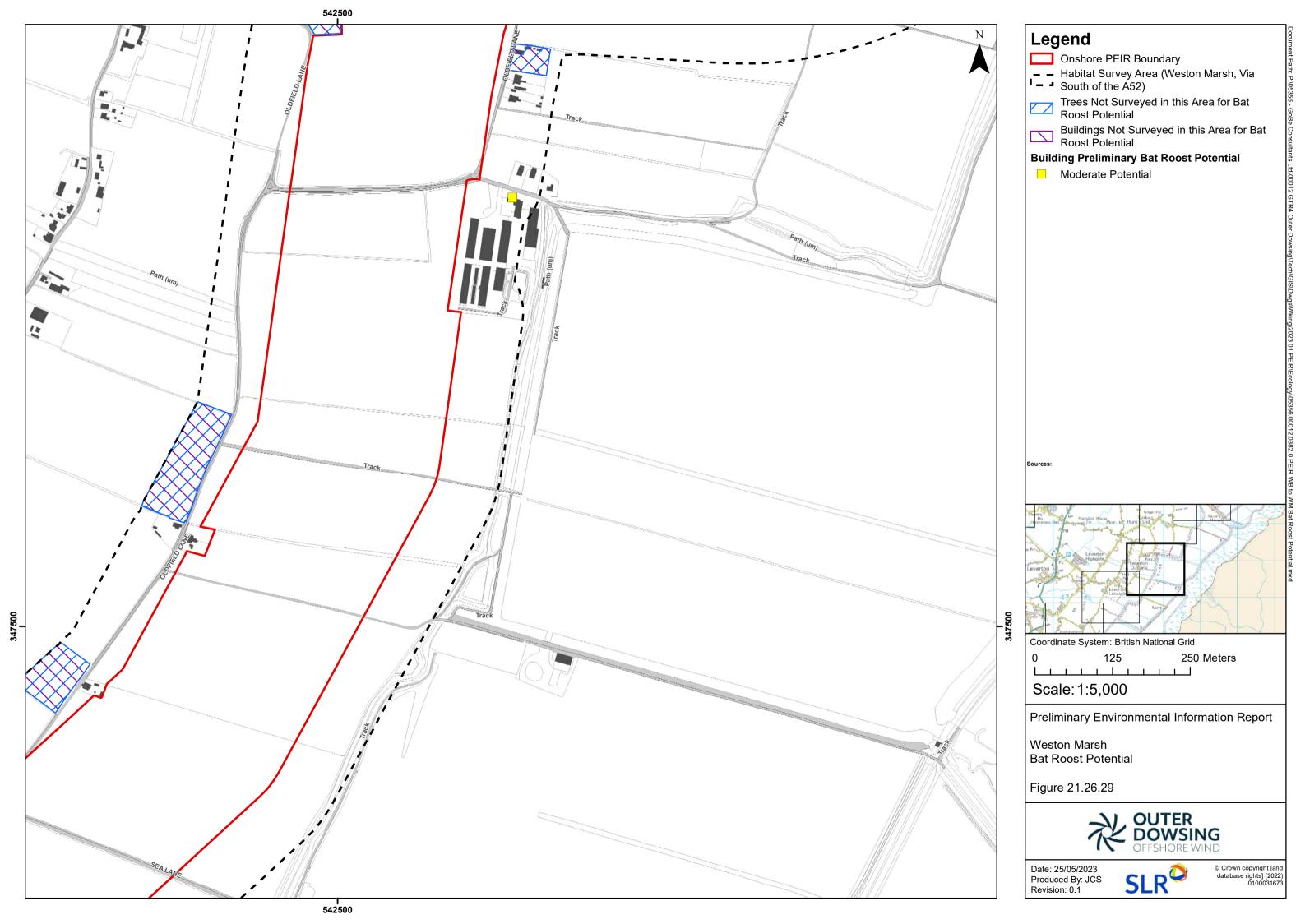


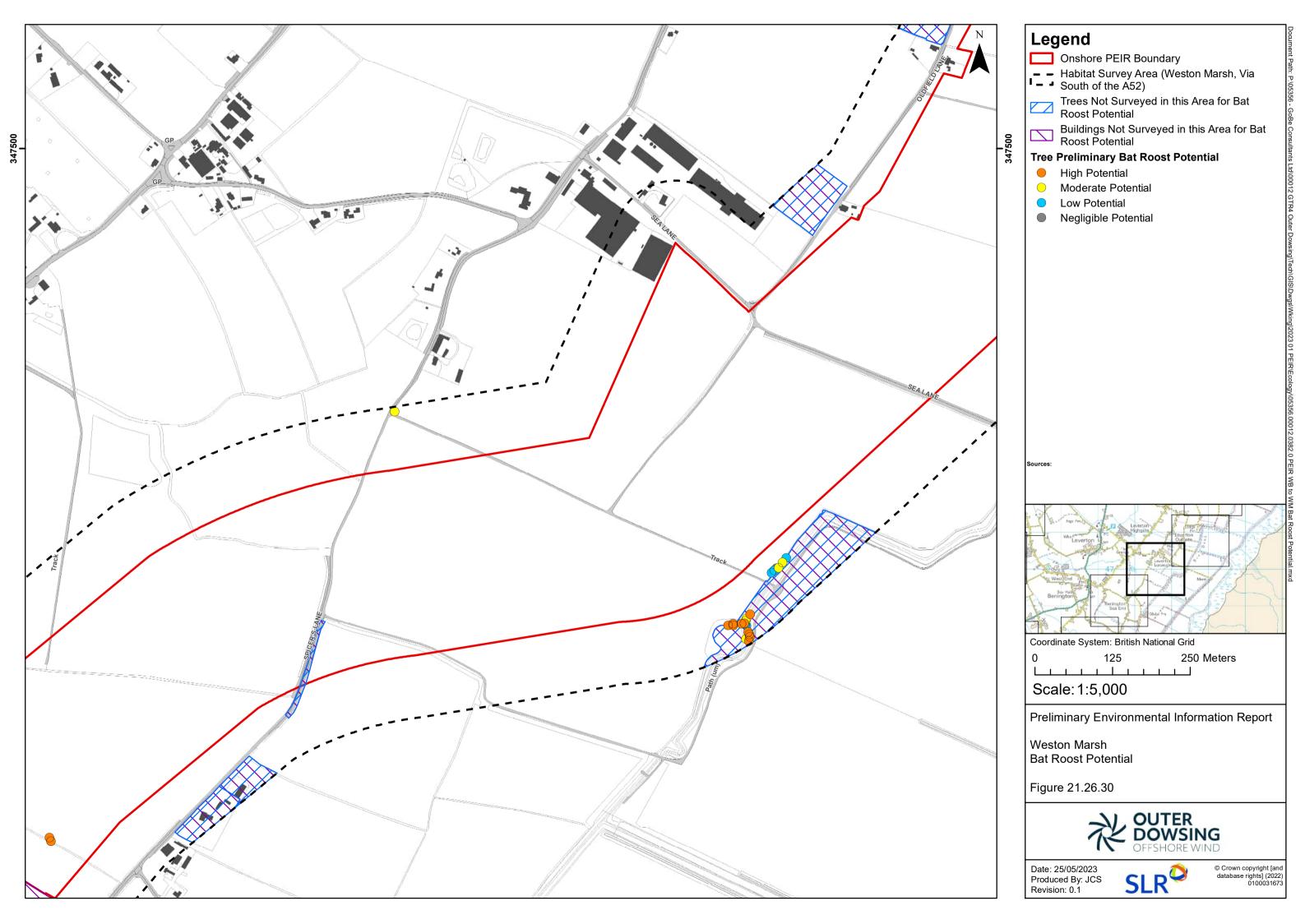


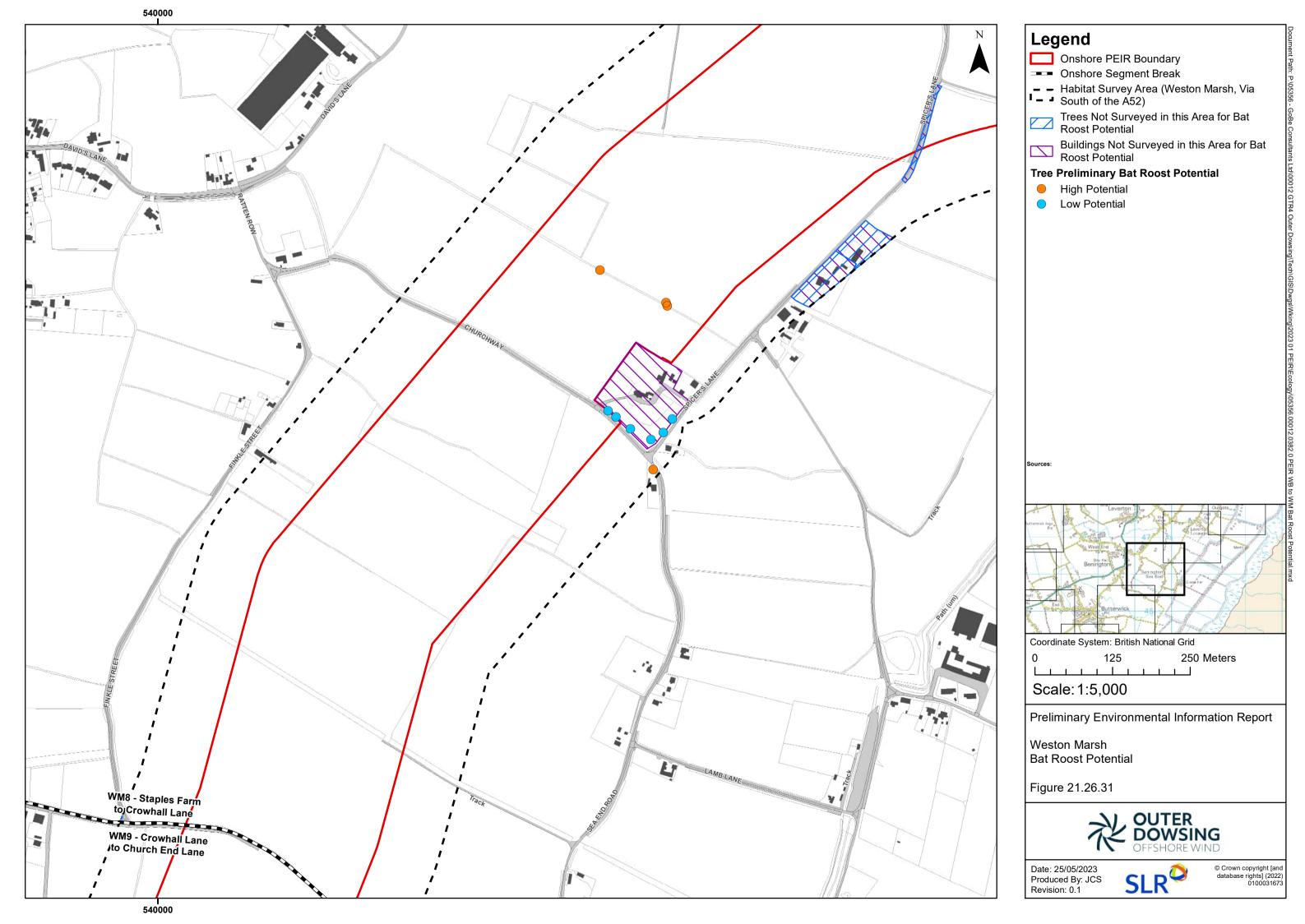


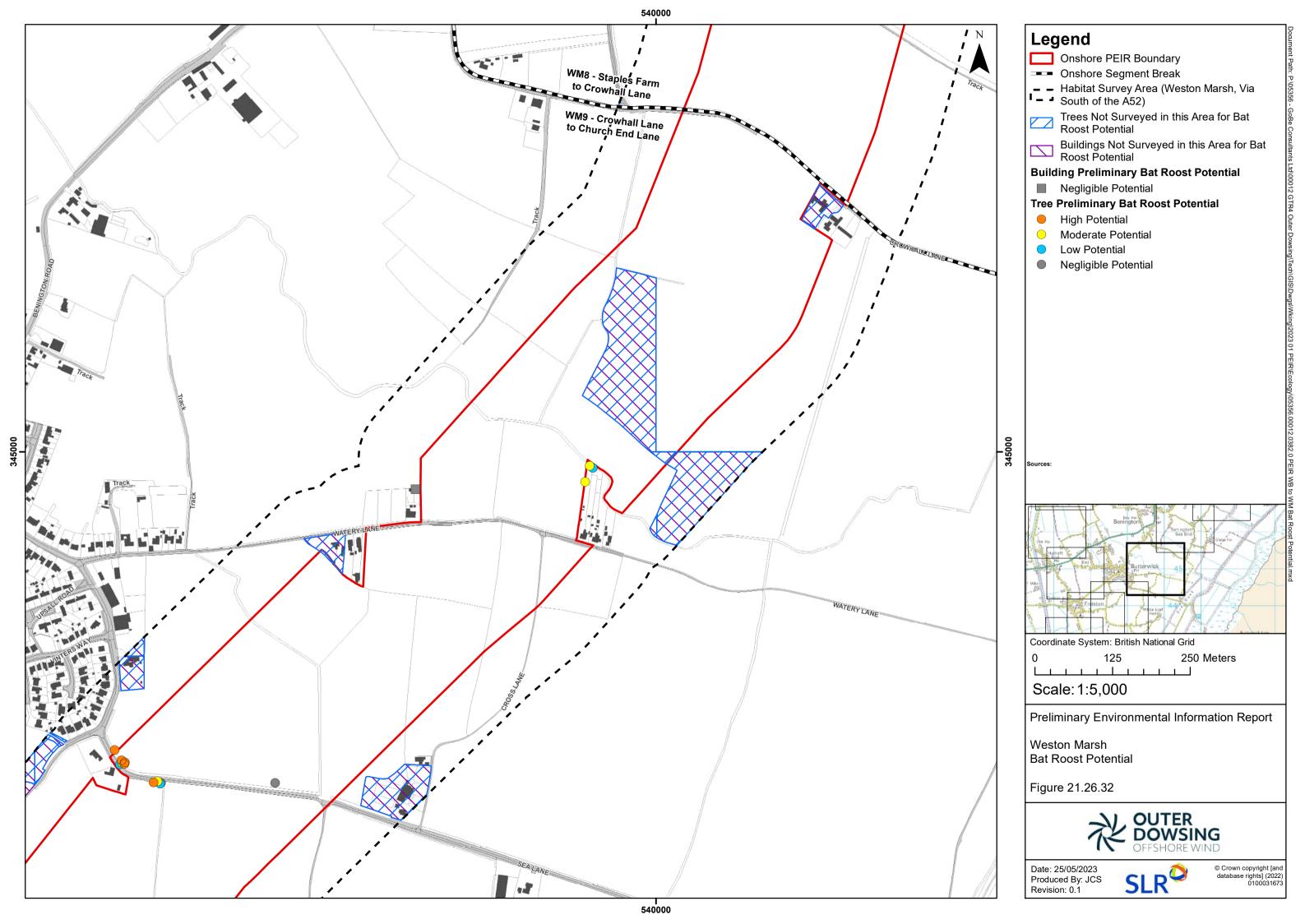


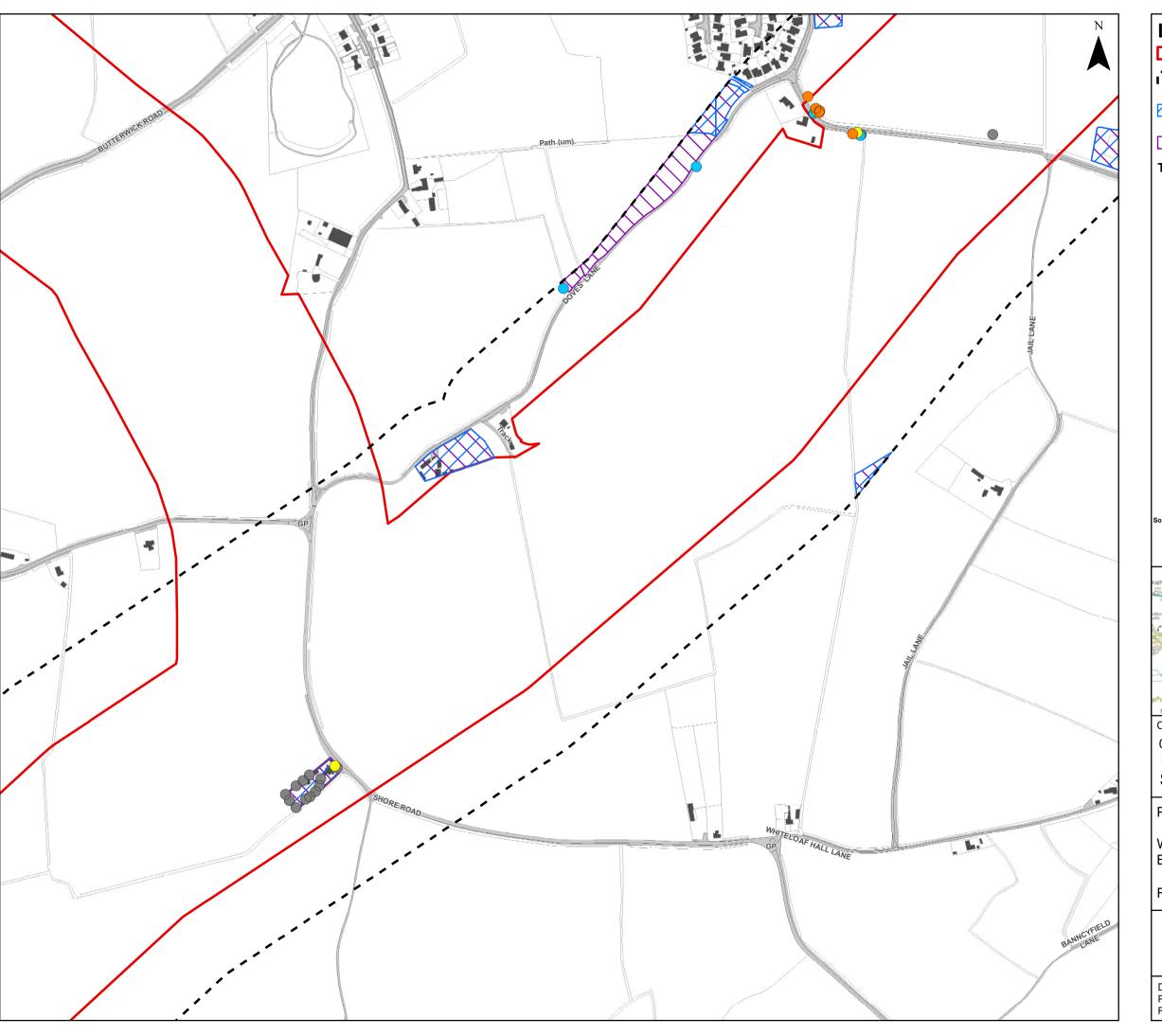












## Legend Onshore PEIR Boundary - Habitat Survey Area (Weston Marsh, Via South of the A52)

Trees Not Surveyed in this Area for Bat Roost Potential

Buildings Not Surveyed in this Area for Bat Roost Potential

## **Tree Preliminary Bat Roost Potential**

- High Potential
- Moderate Potential
- Low Potential
- Negligible Potential



Coordinate System: British National Grid

125 250 Meters

Scale: 1:5,000

Preliminary Environmental Information Report

Weston Marsh Bat Roost Potential

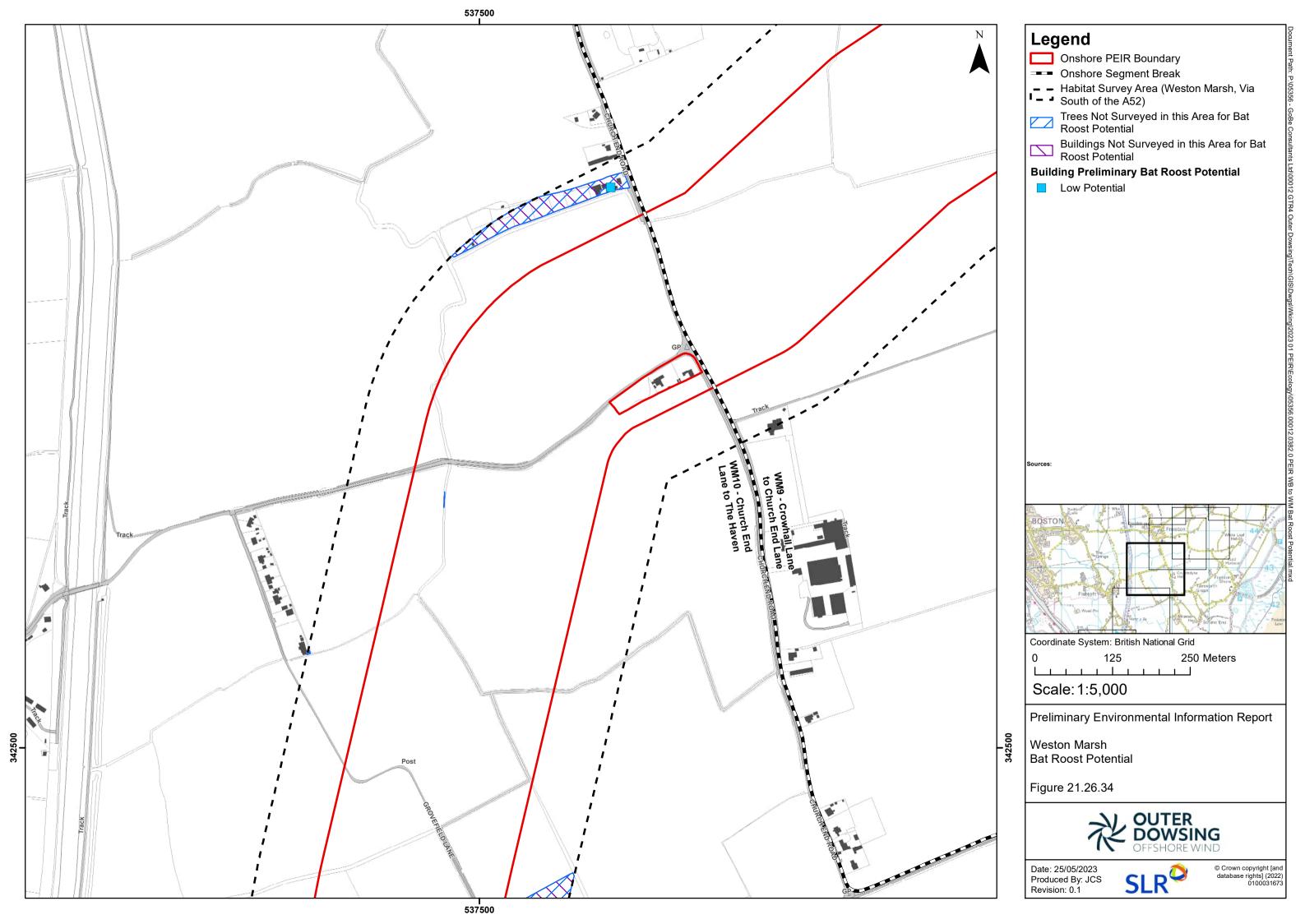
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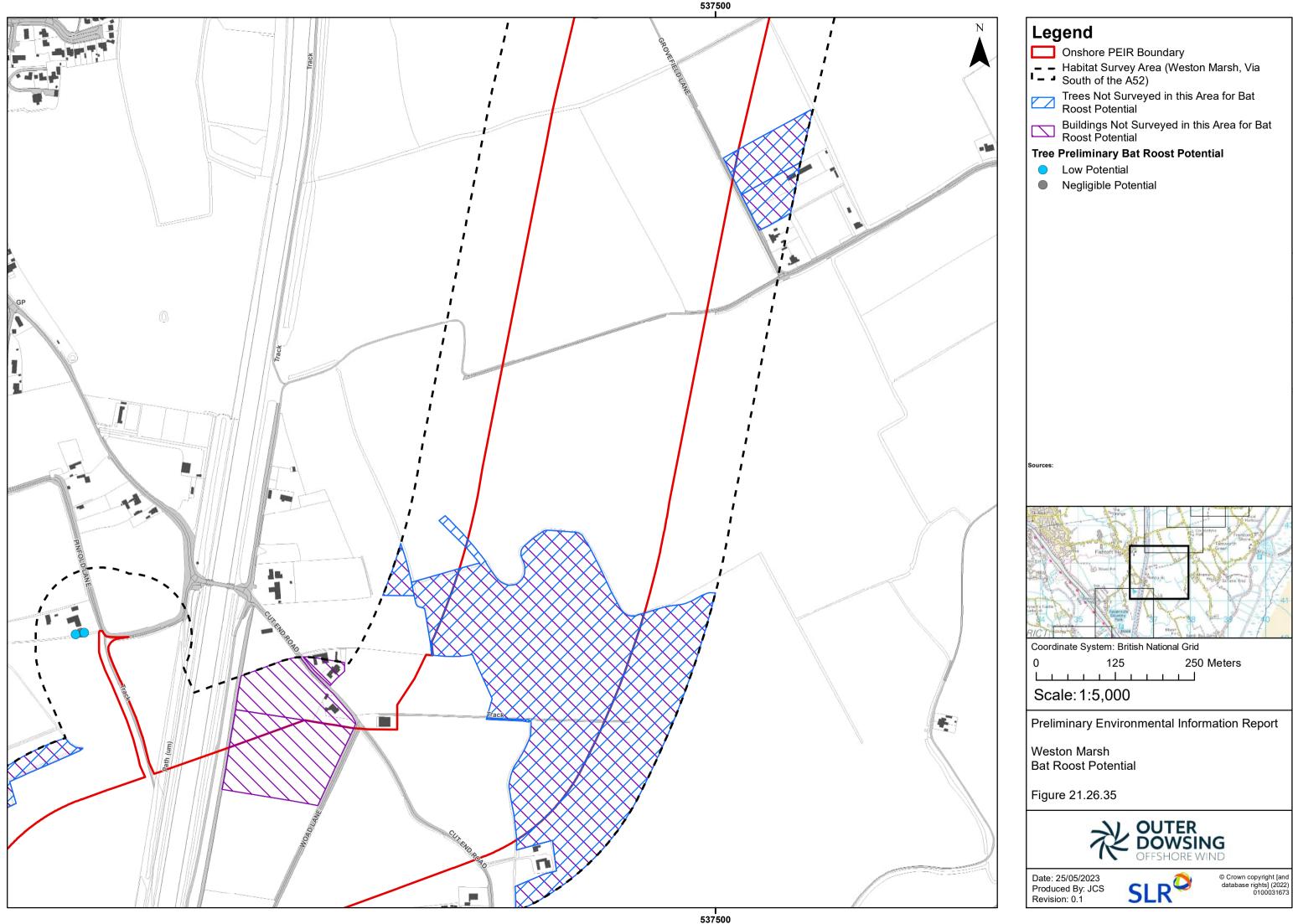


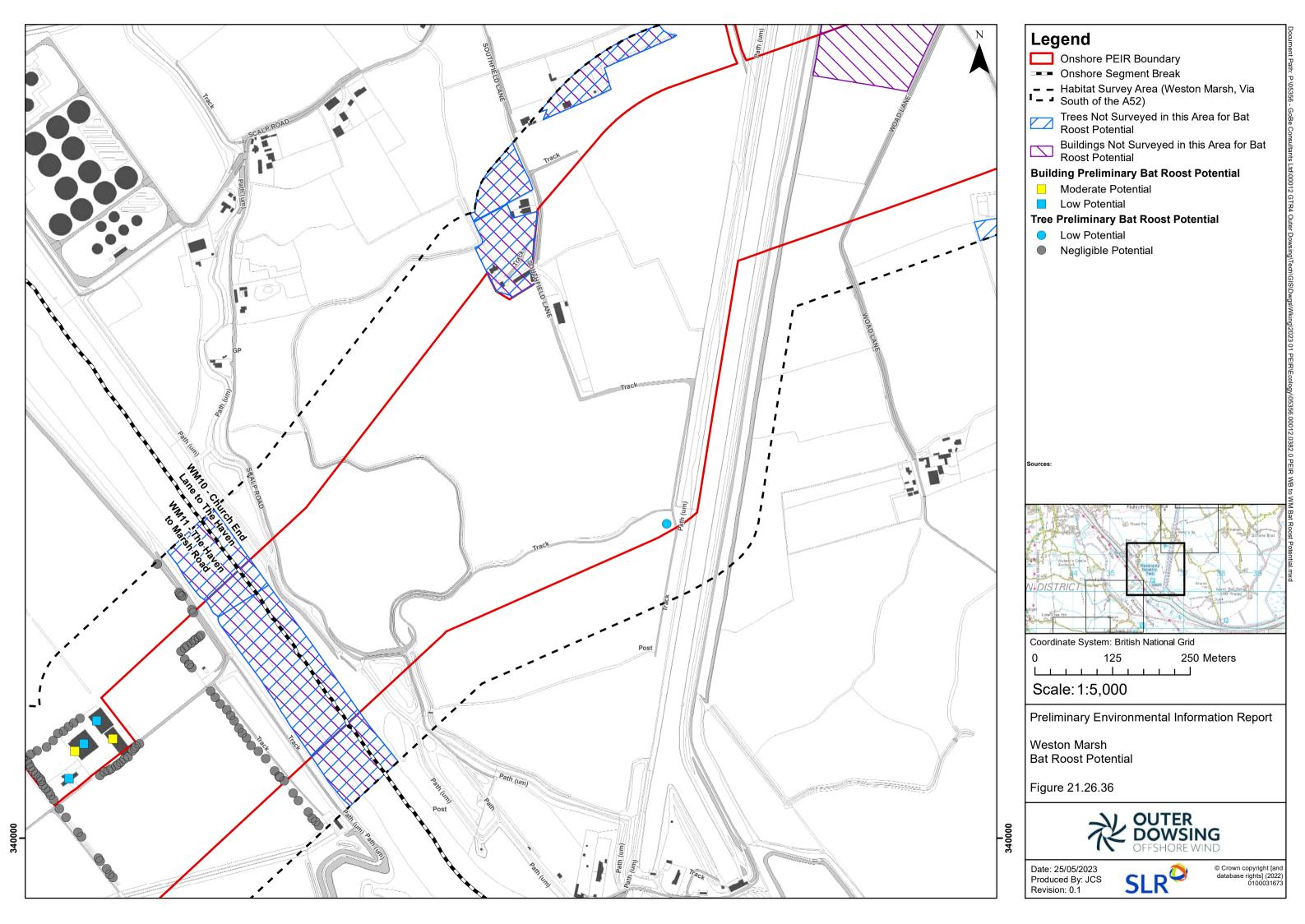
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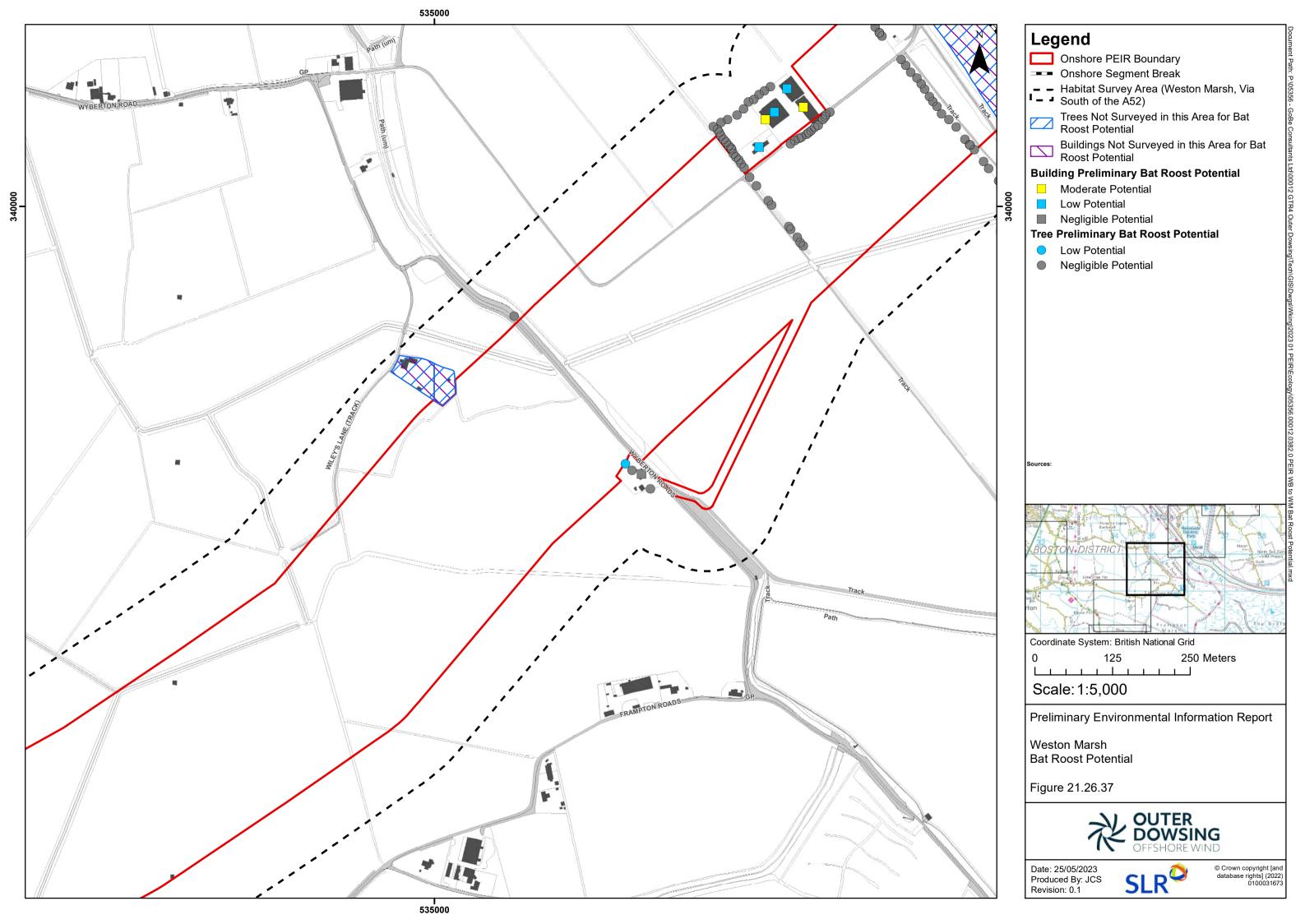


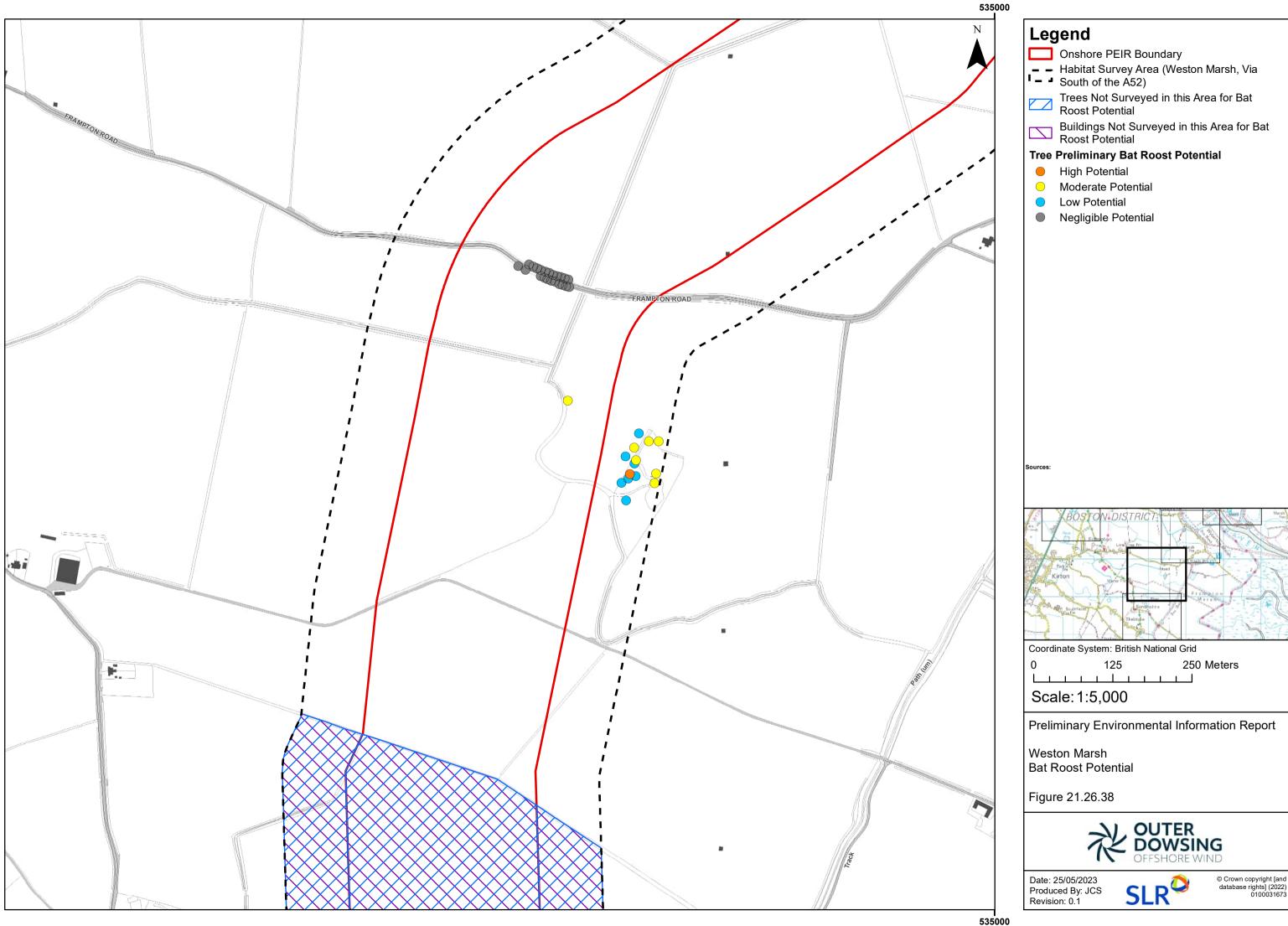
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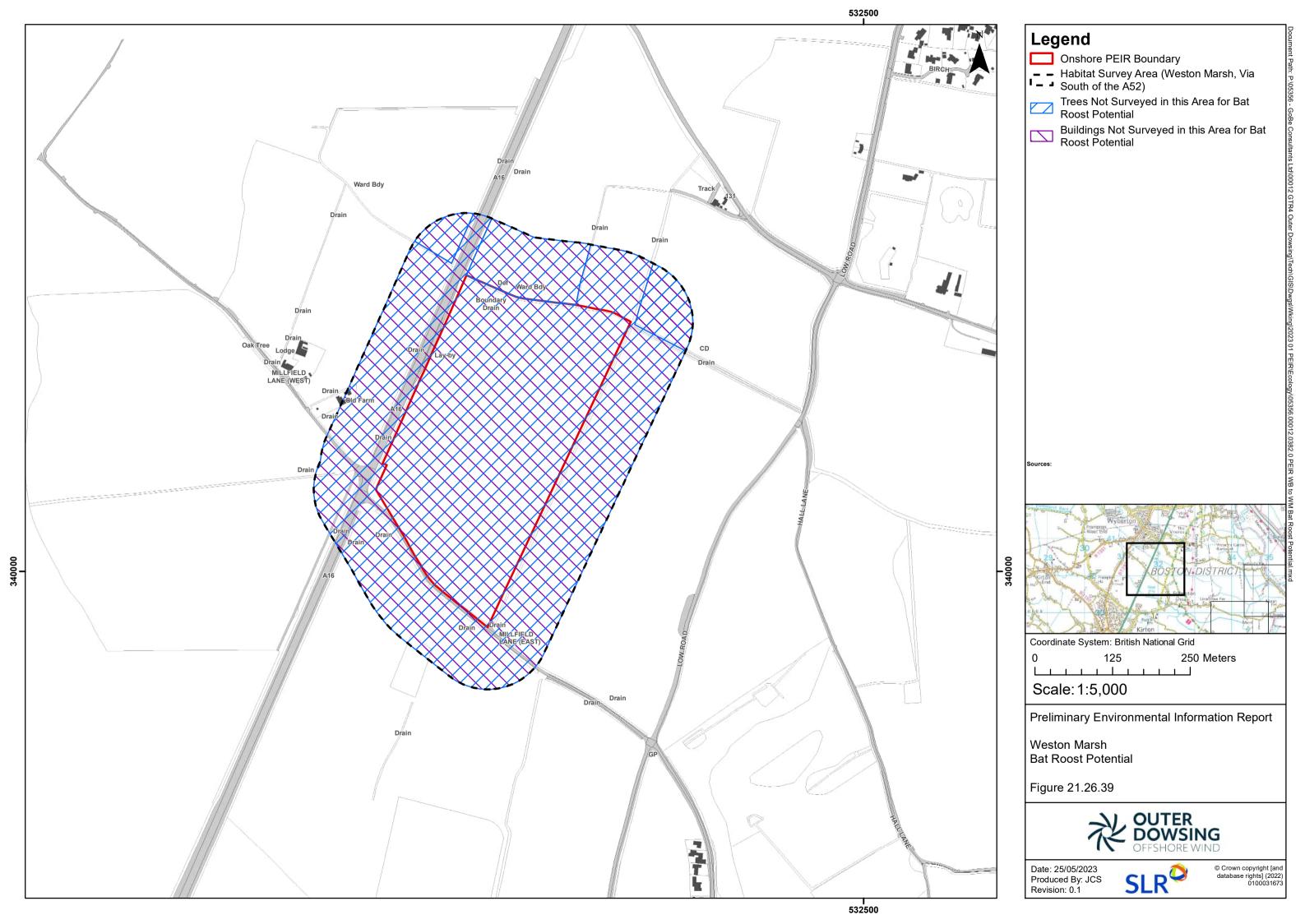


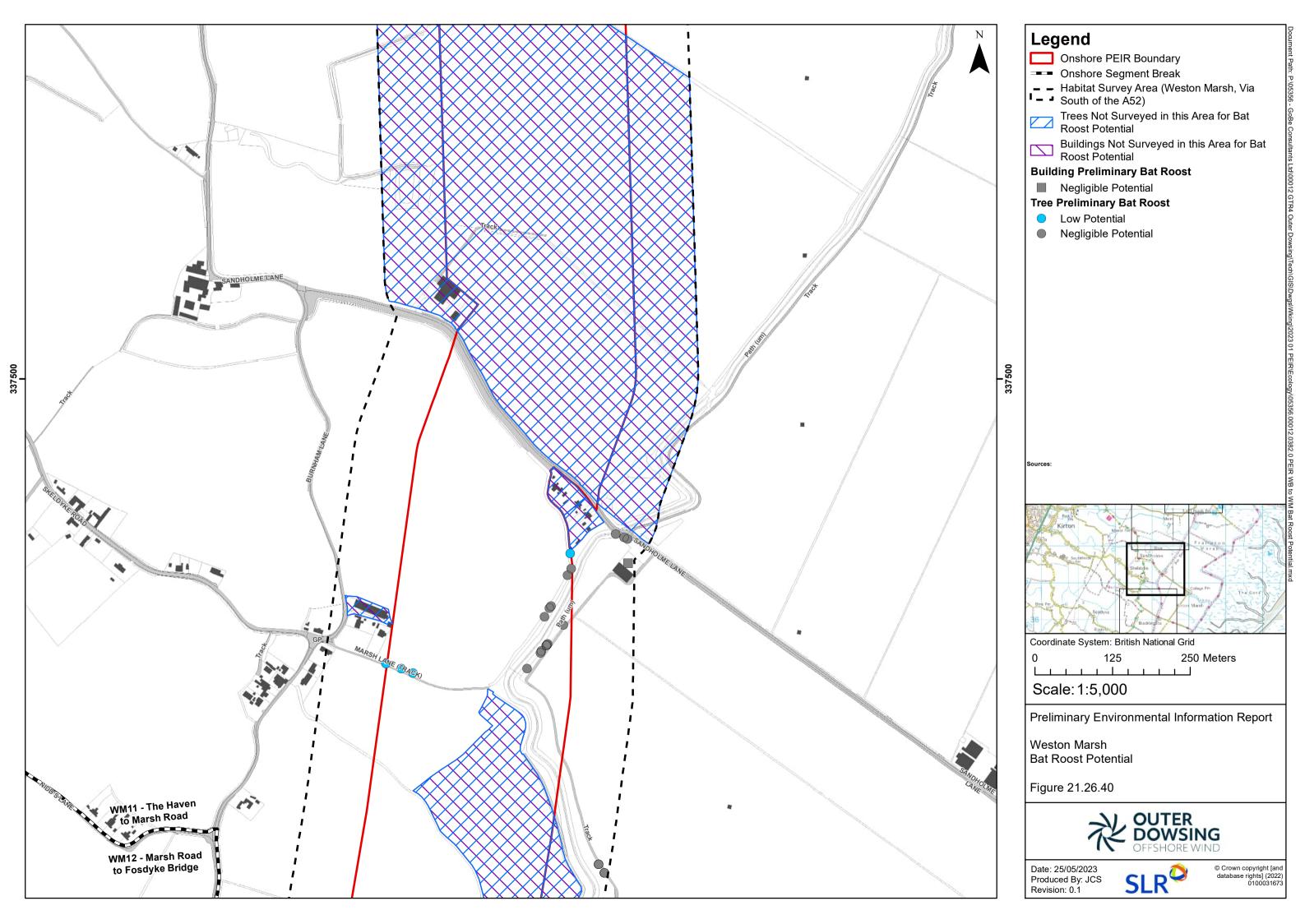


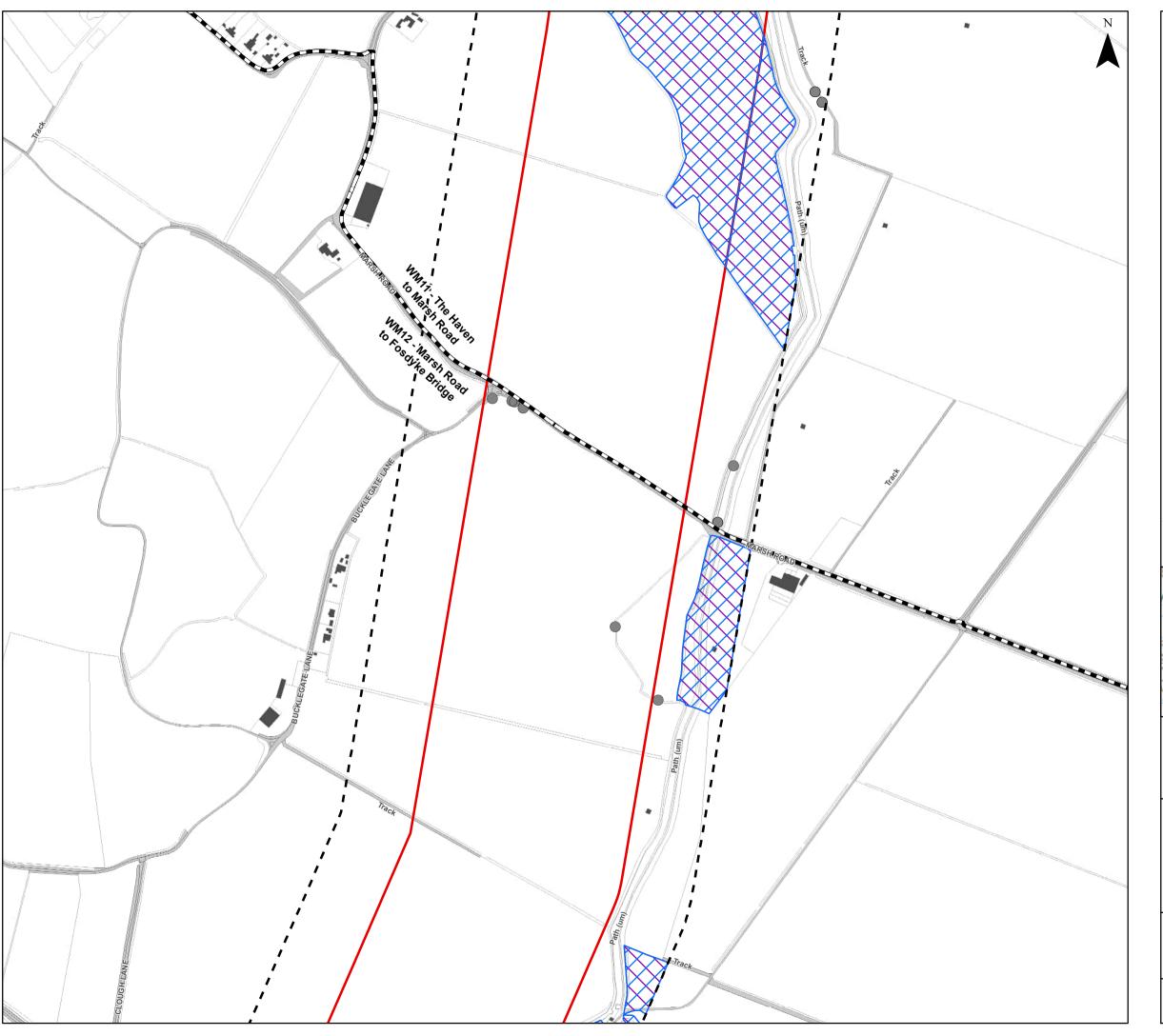














Onshore PEIR Boundary

Onshore Segment Break

Habitat Survey Area (Weston Marsh, ViaSouth of the A52)

Trees Not Surveyed in this Area for Bat Roost Potential

Buildings Not Surveyed in this Area for Bat Roost Potential

## **Tree Preliminary Bat Roost Potential**

Negligible Potential



Coordinate System: British National Grid

250 Meters

Scale: 1:5,000

Preliminary Environmental Information Report

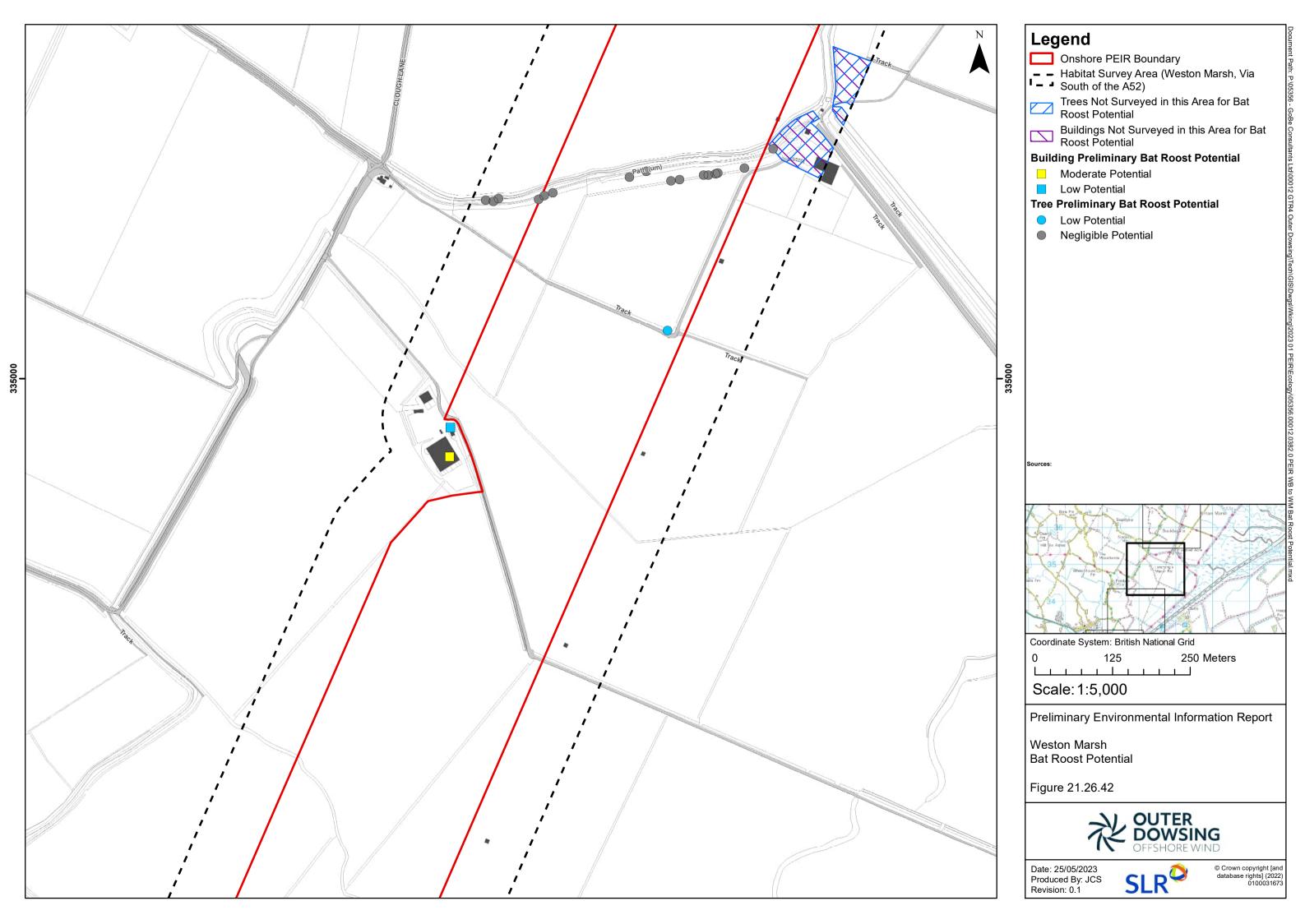
Weston Marsh Bat Roost Potential

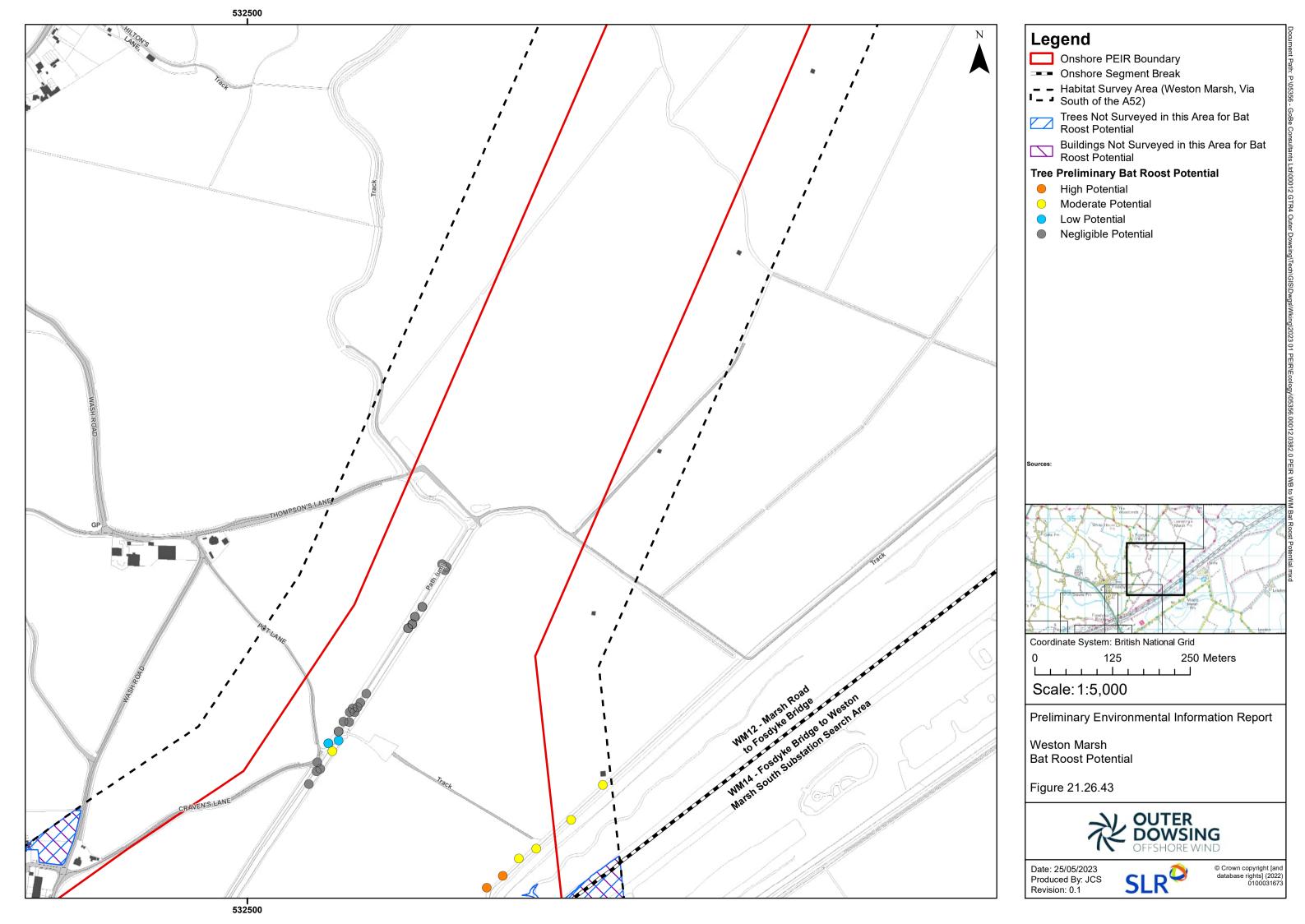
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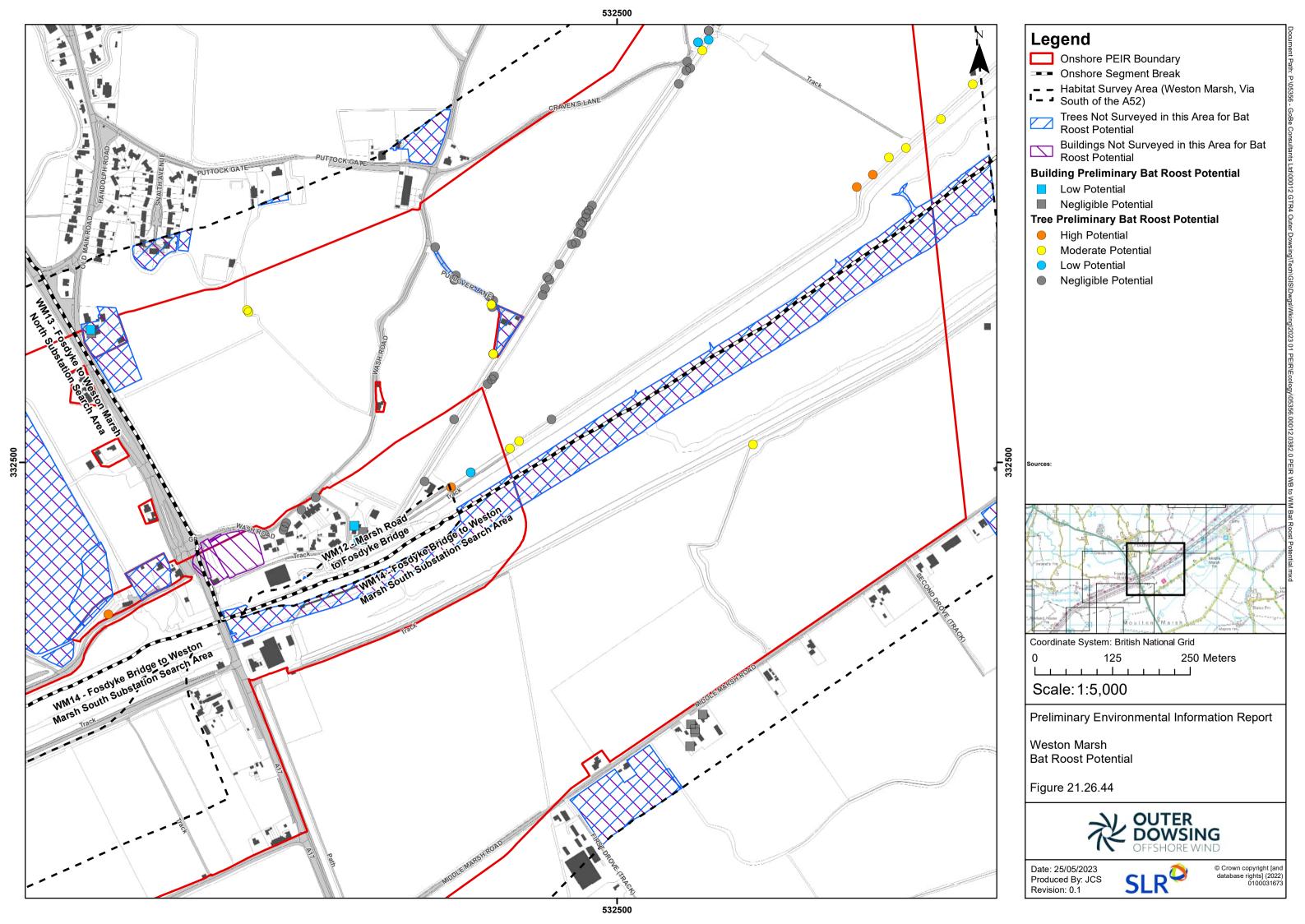


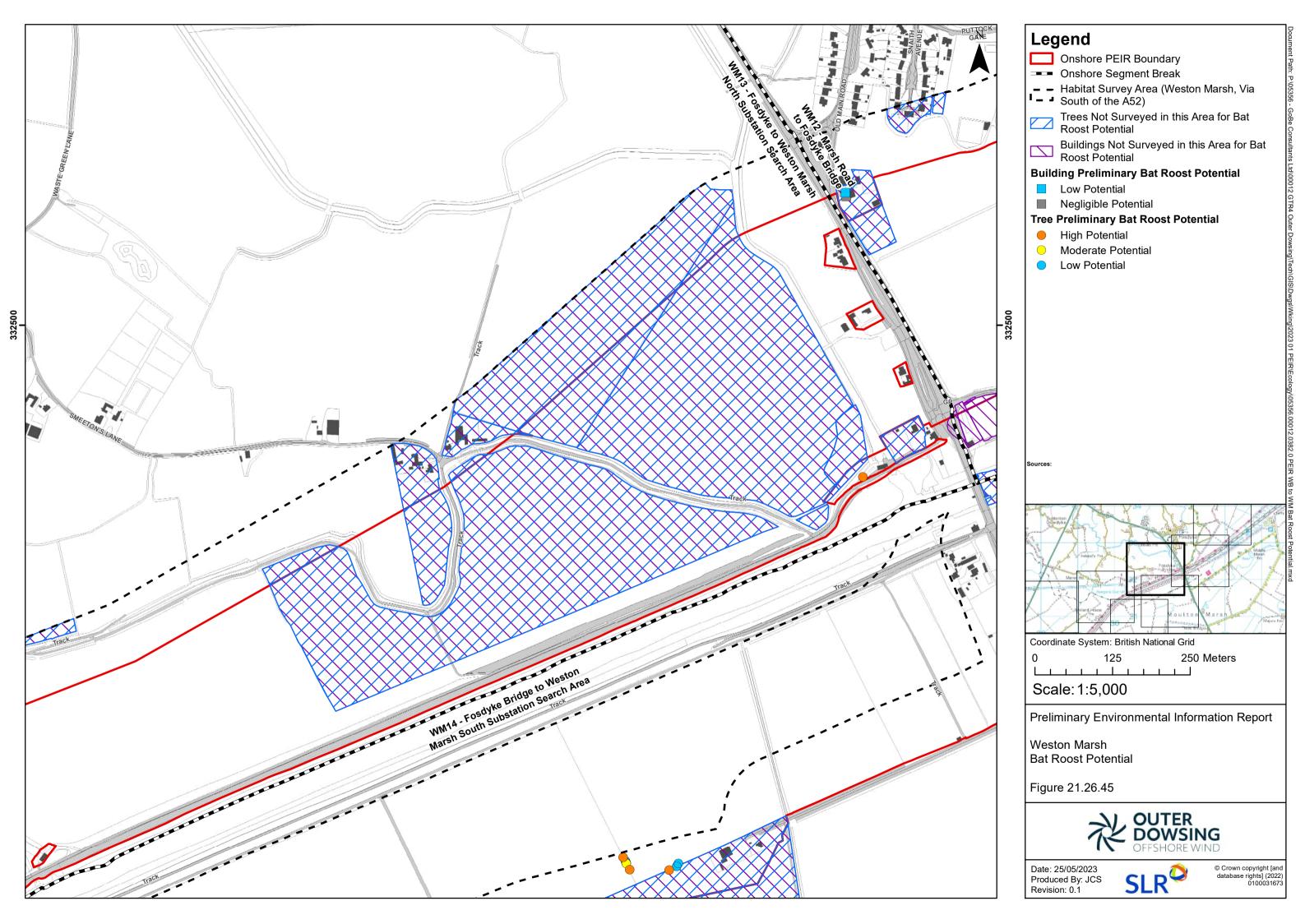
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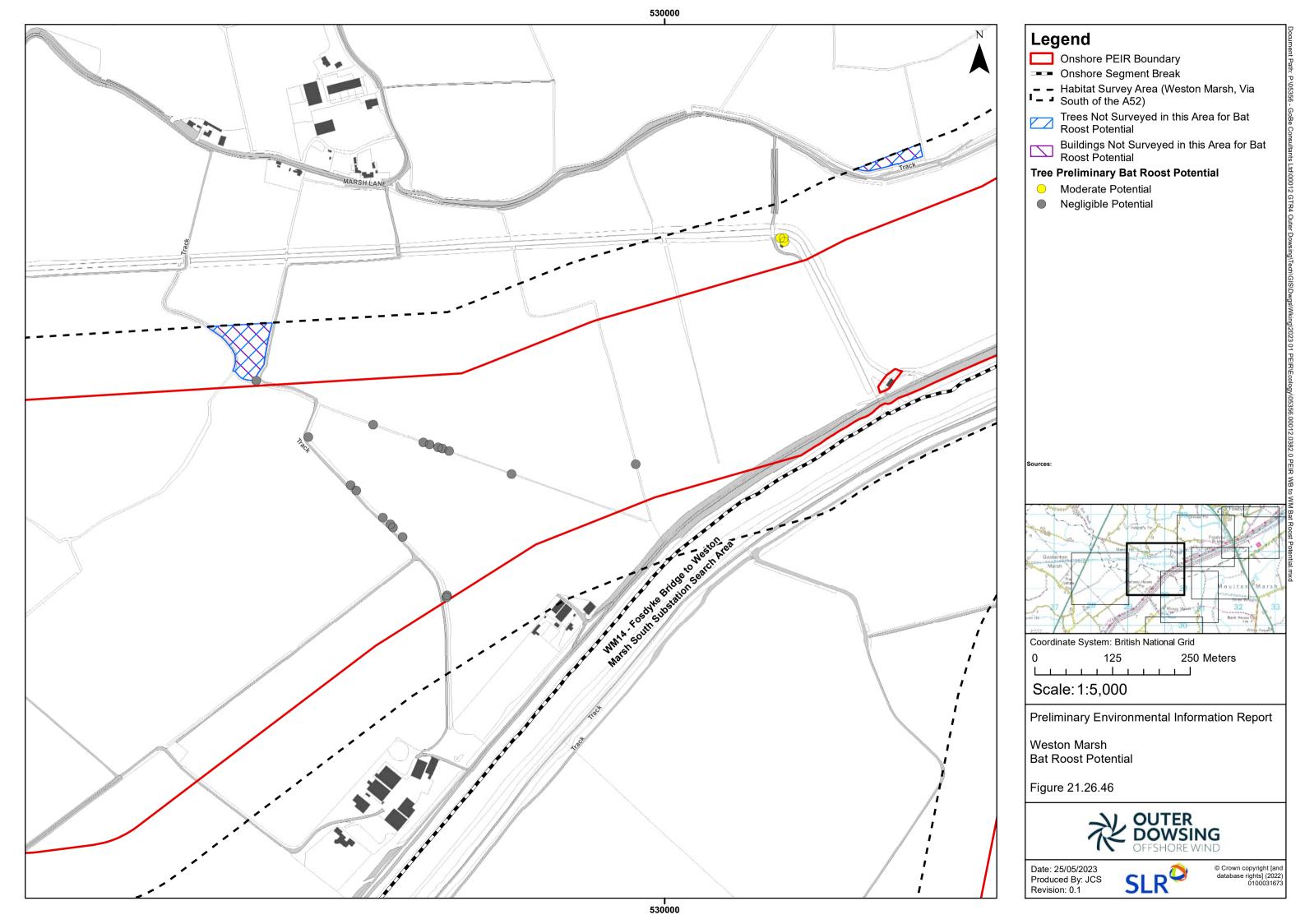


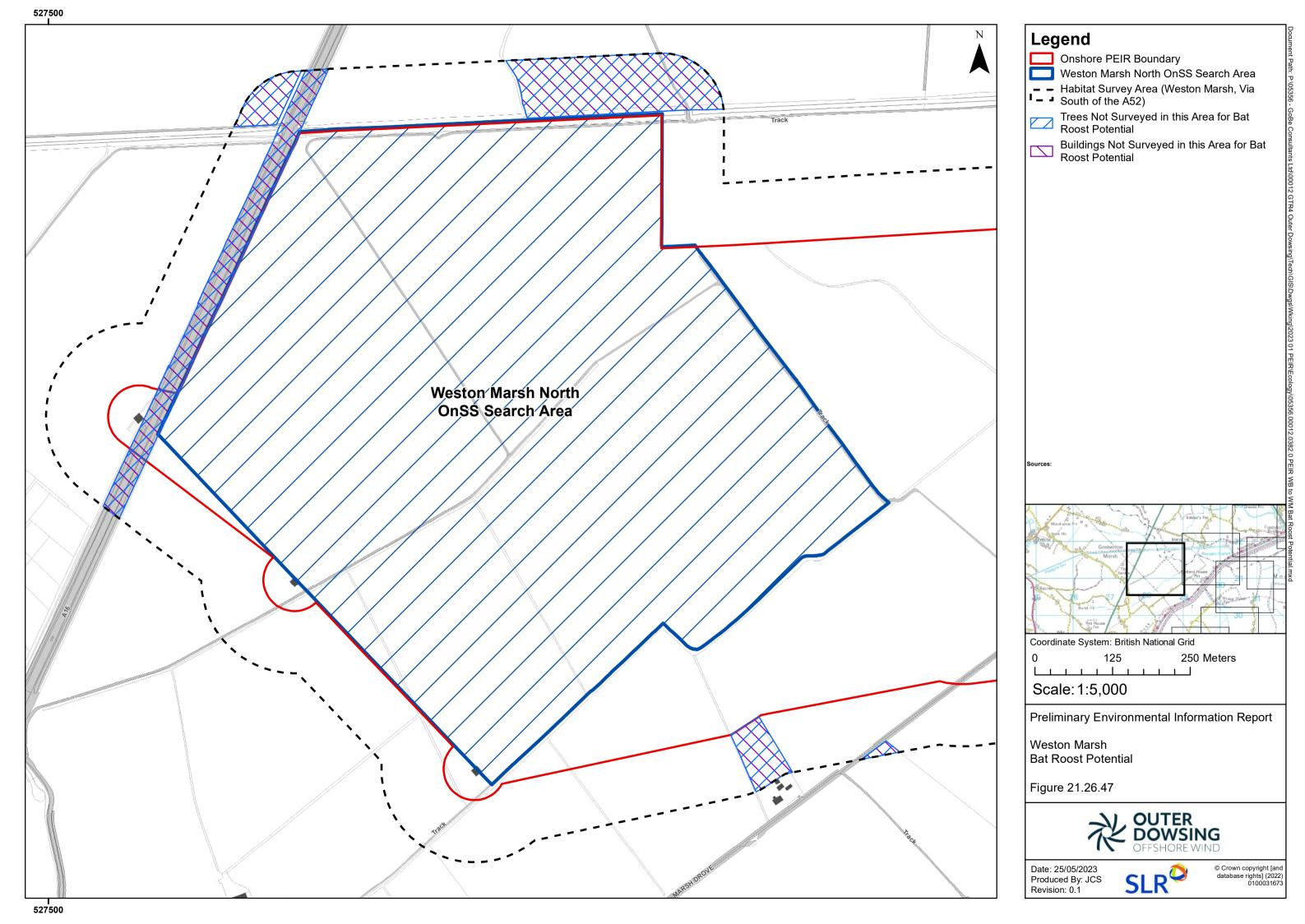


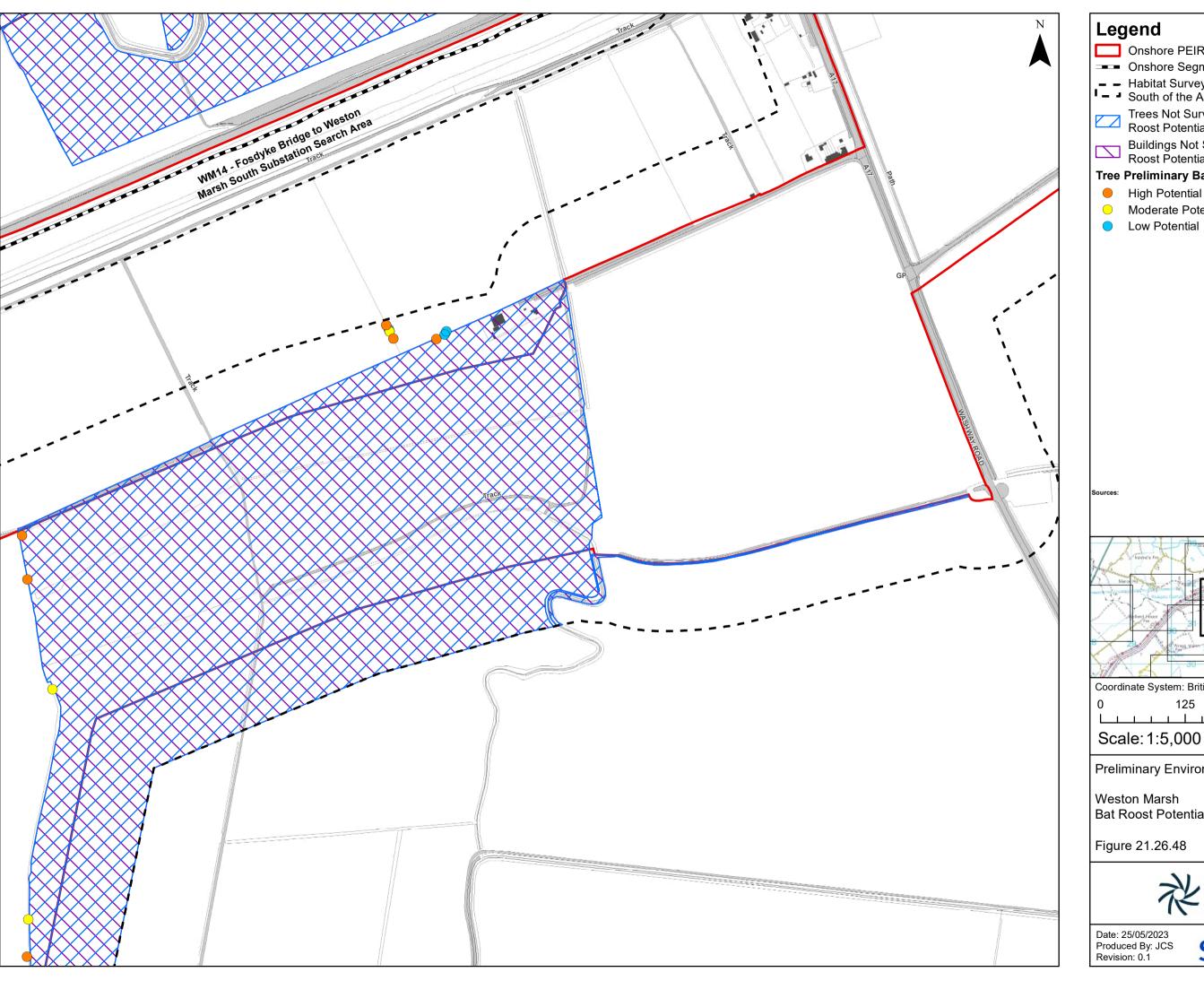




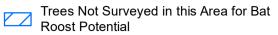








- Onshore PEIR Boundary
- Onshore Segment Break
- Habitat Survey Area (Weston Marsh, ViaSouth of the A52)



Buildings Not Surveyed in this Area for Bat Roost Potential

## **Tree Preliminary Bat Roost Potential**

- High Potential
- Moderate Potential
- Low Potential

Coordinate System: British National Grid

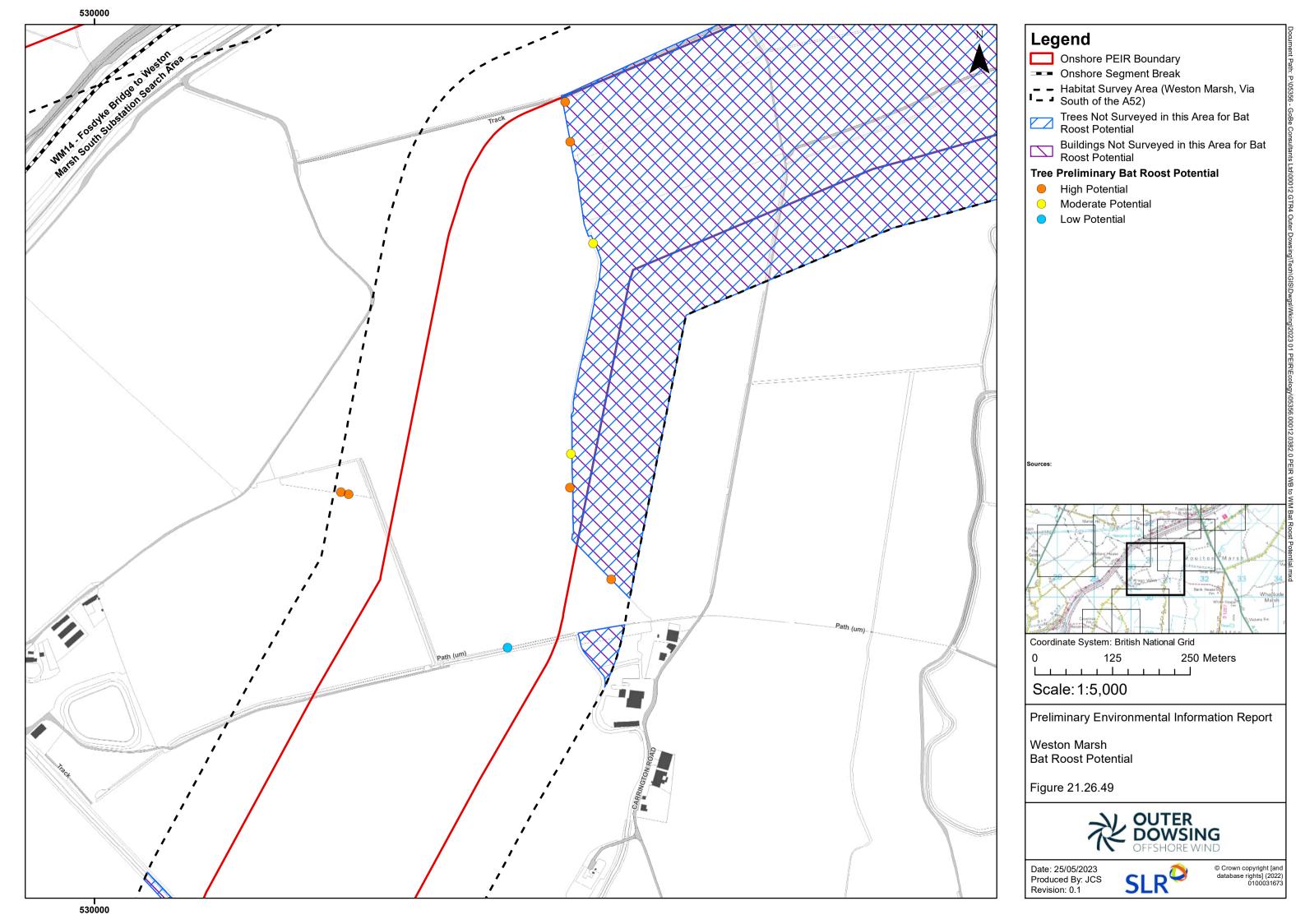
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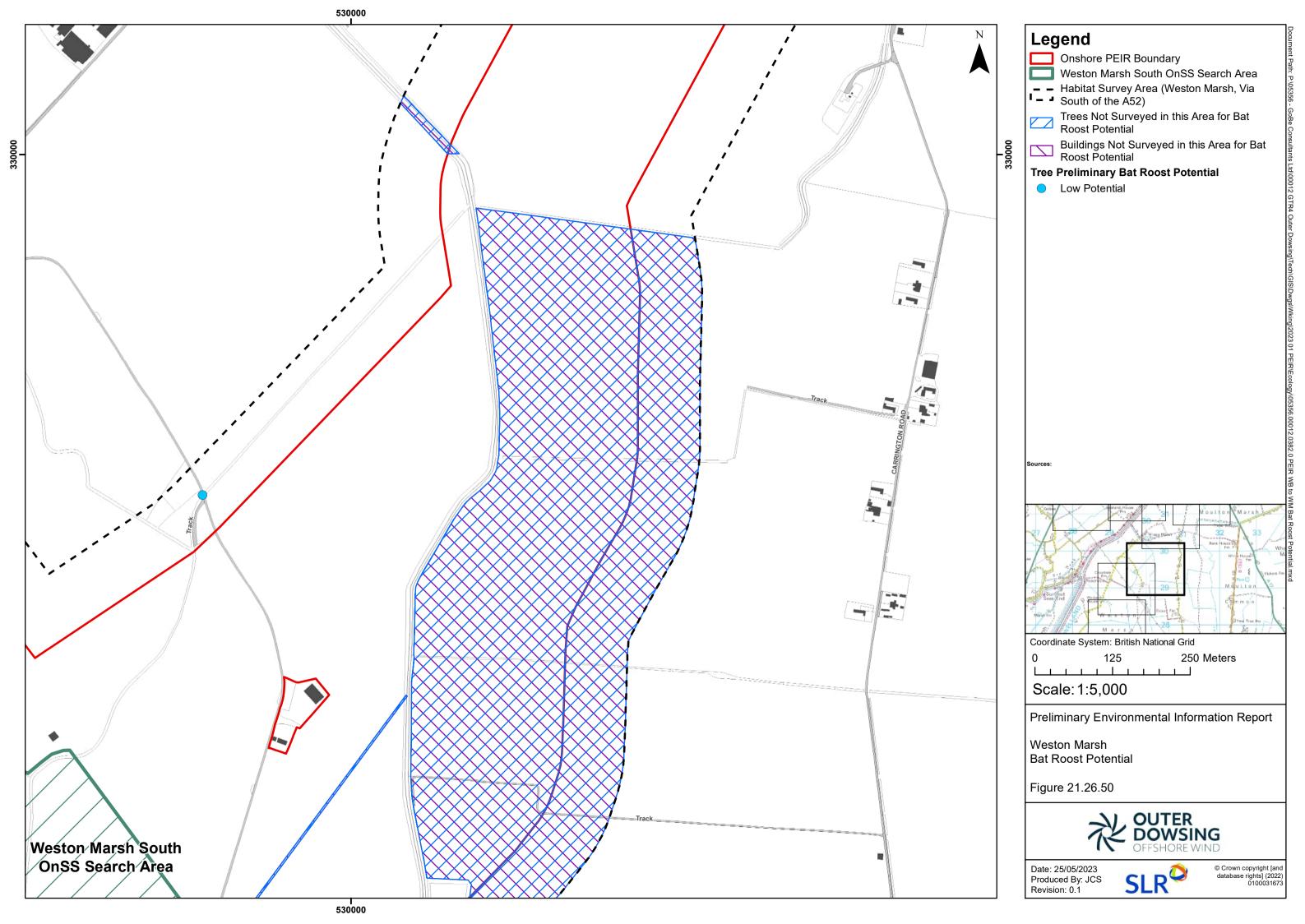
Preliminary Environmental Information Report

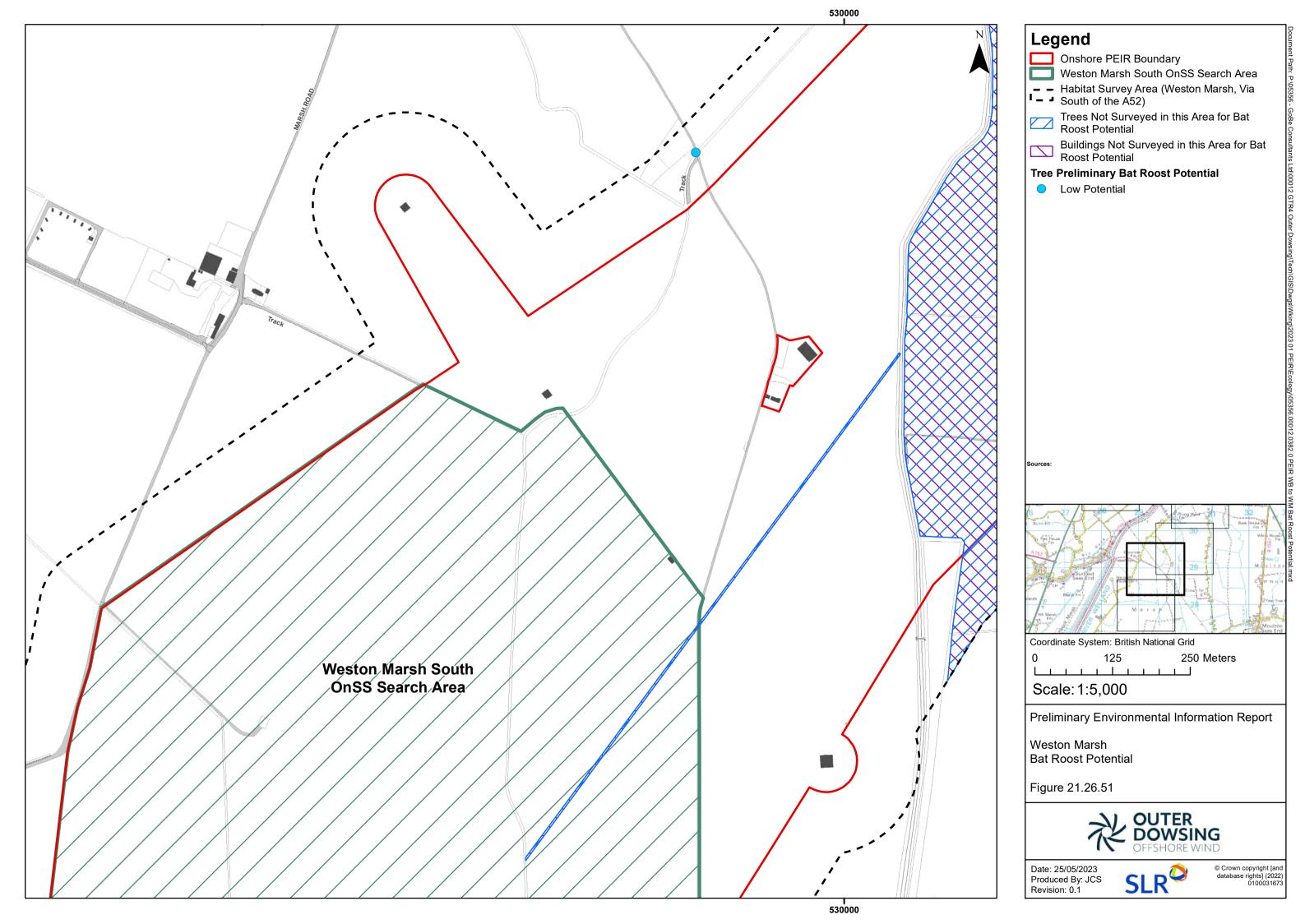
Weston Marsh **Bat Roost Potential** 

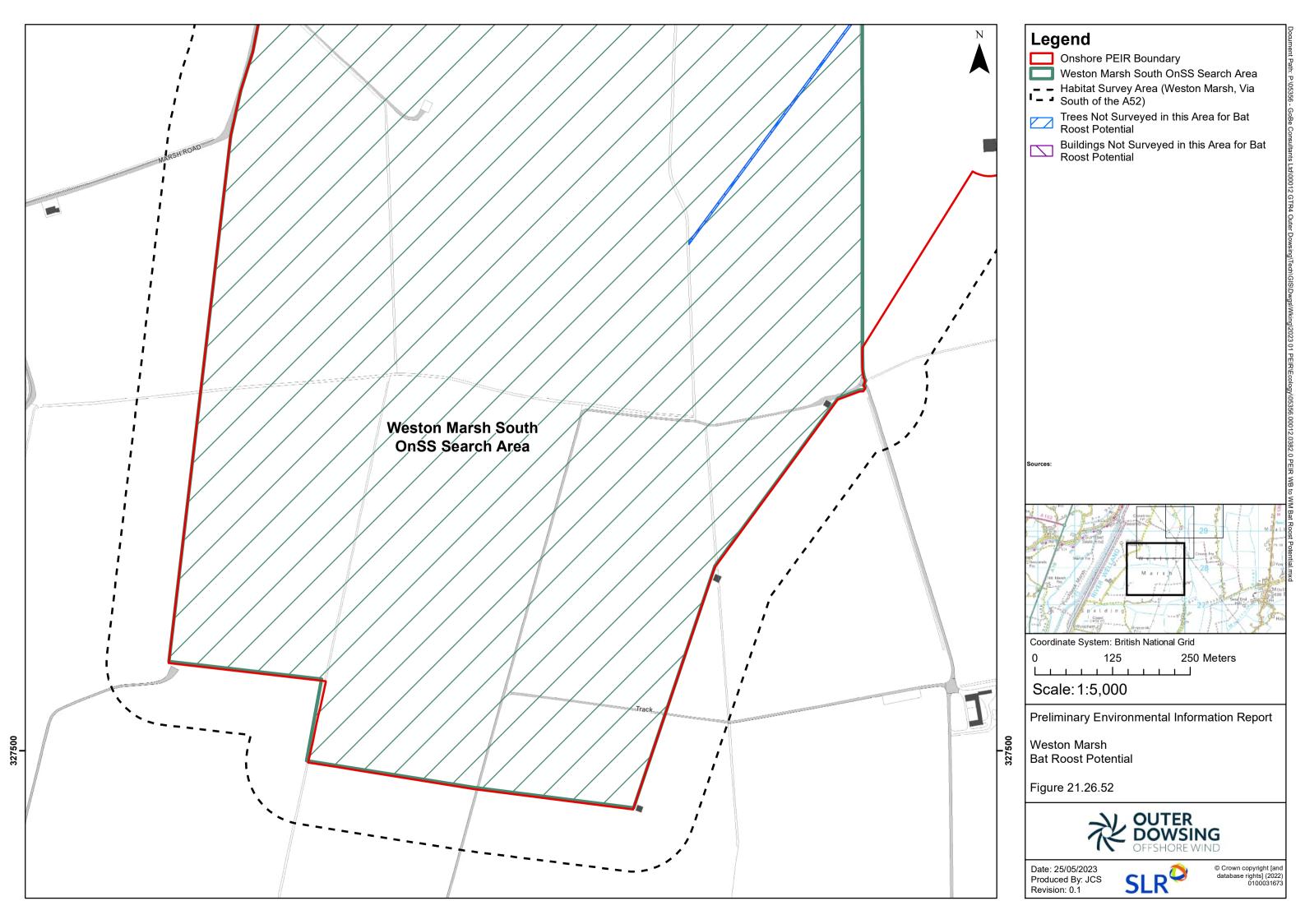


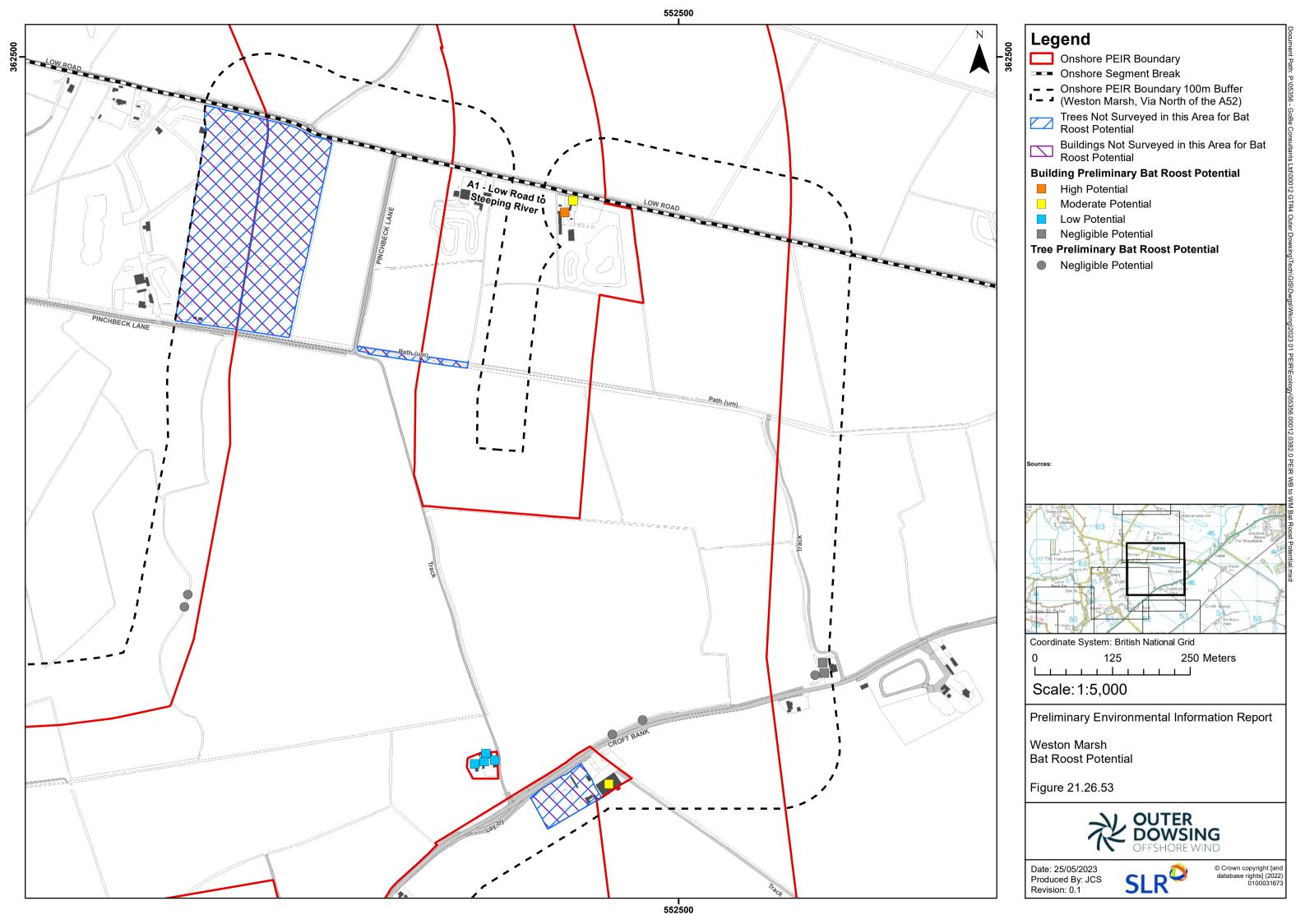


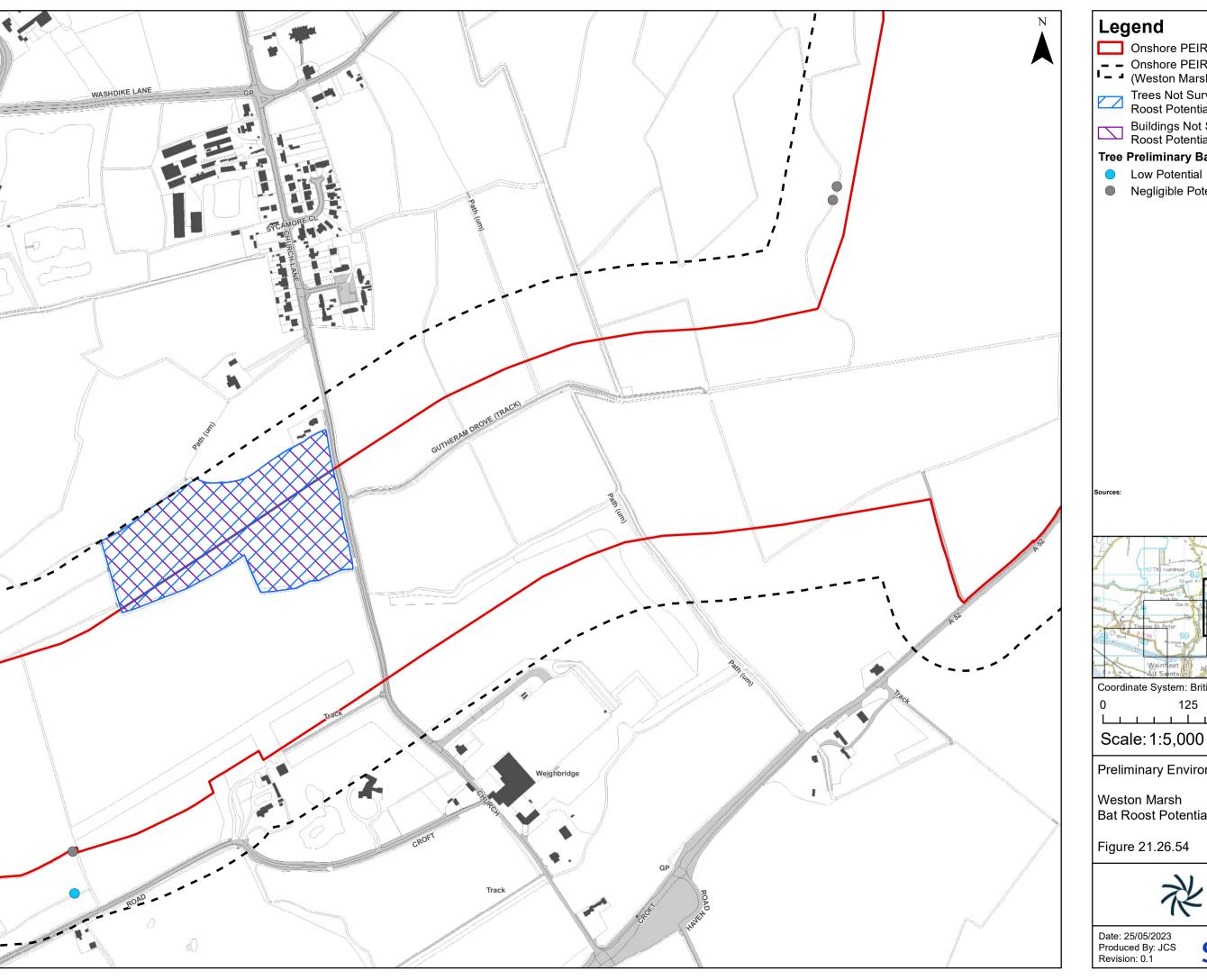












Onshore PEIR Boundary

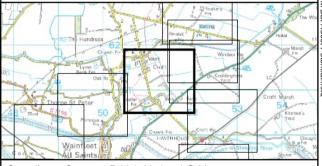
Onshore PEIR Boundary 100m Buffer
 (Weston Marsh, Via North of the A52)

Trees Not Surveyed in this Area for Bat Roost Potential

Buildings Not Surveyed in this Area for Bat Roost Potential

## **Tree Preliminary Bat Roost Potential**

- Low Potential
- Negligible Potential



Coordinate System: British National Grid

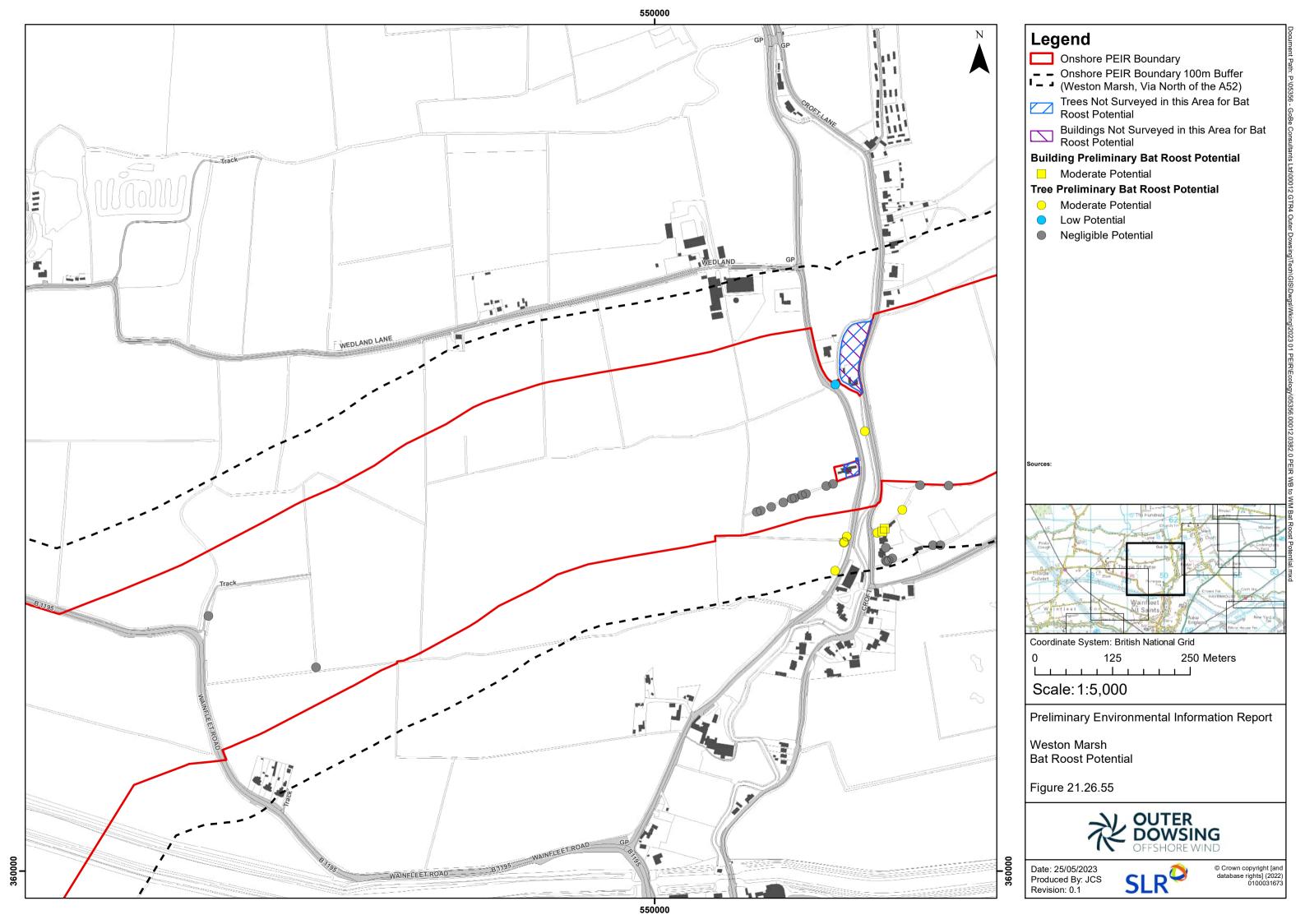
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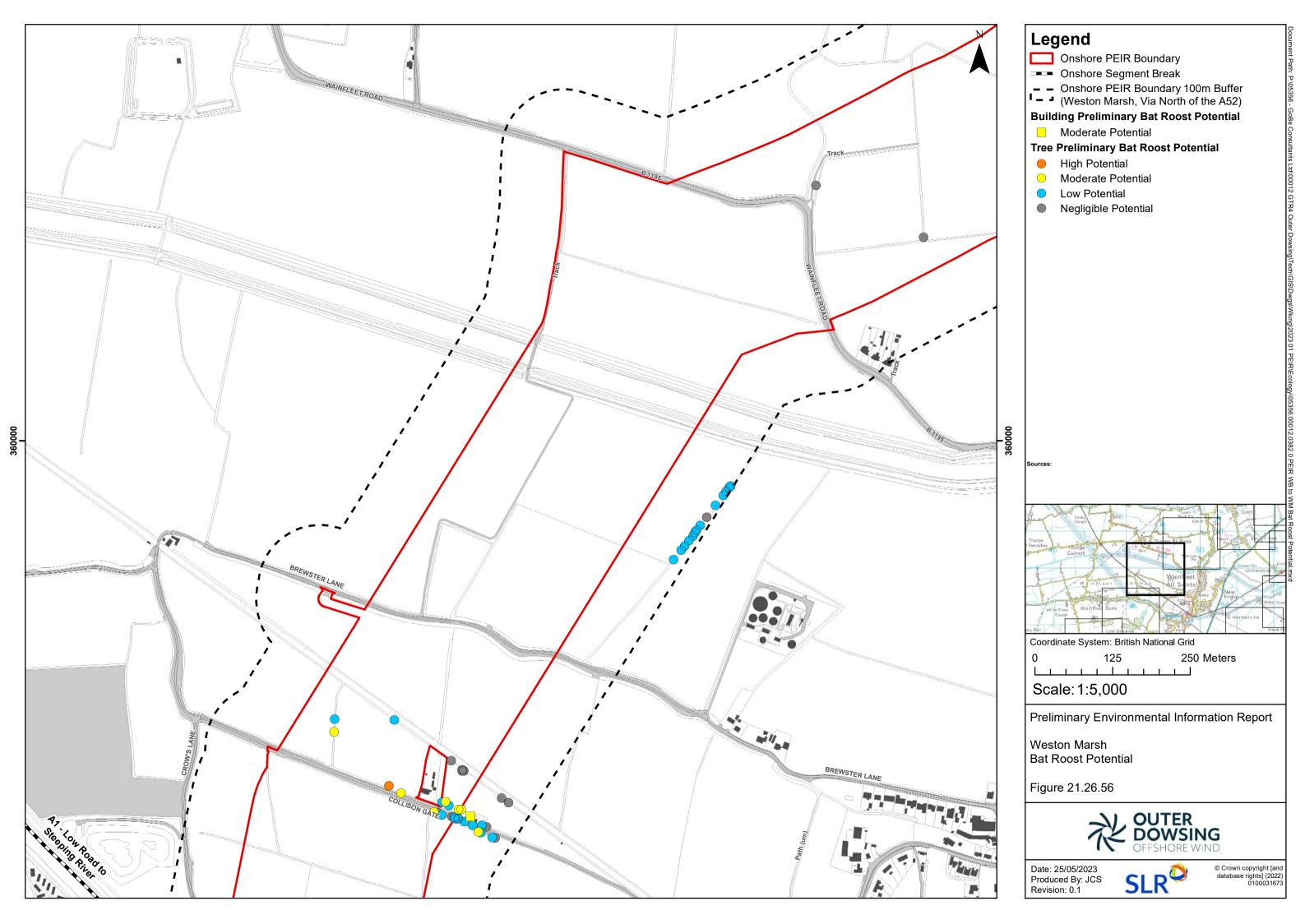
Preliminary Environmental Information Report

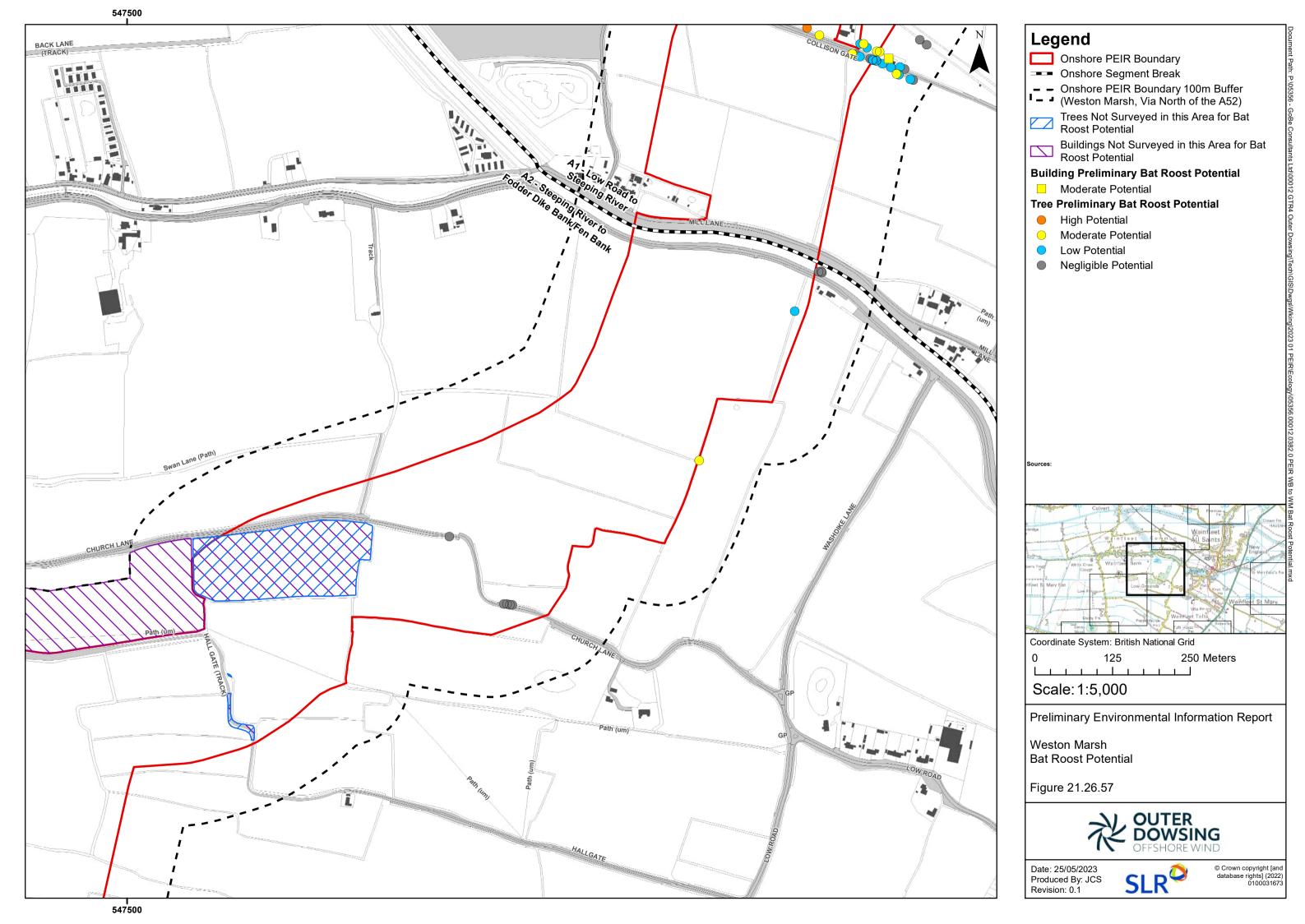
Weston Marsh **Bat Roost Potential** 

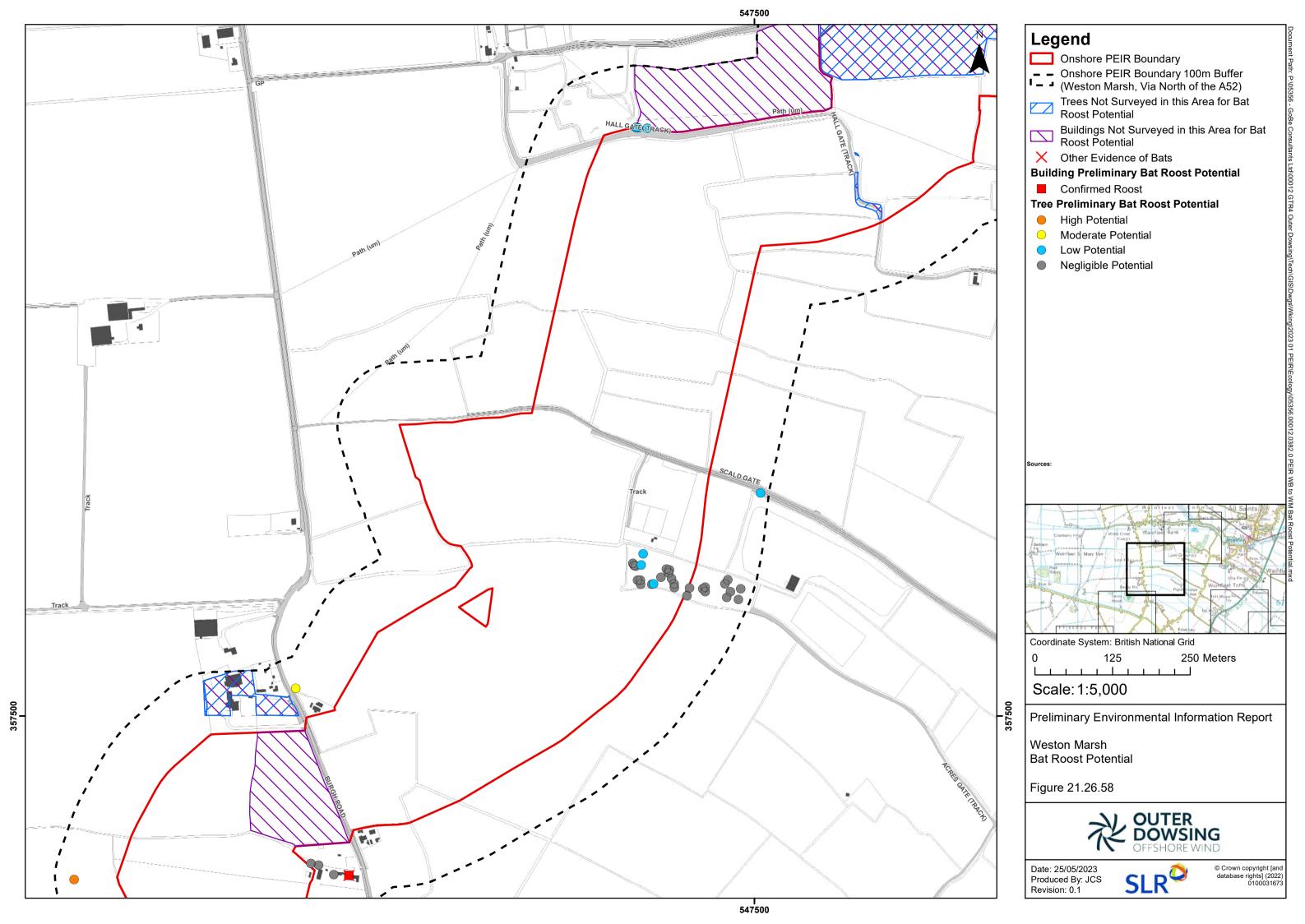


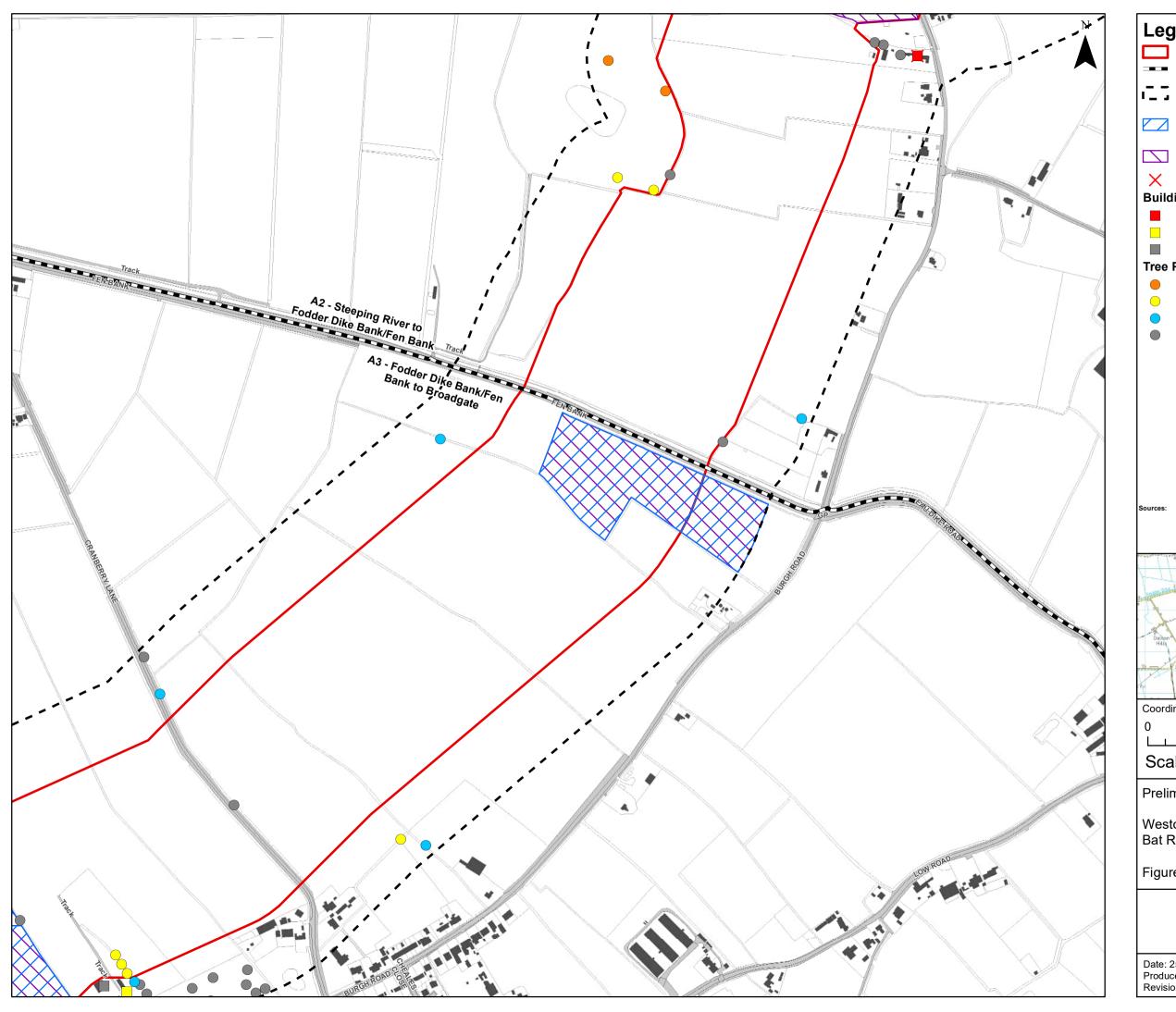












## Legend

- Onshore PEIR Boundary
- Onshore Segment Break
- Onshore PEIR Boundary 100m Buffer
  (Weston Marsh, Via North of the A52)
- Trees Not Surveyed in this Area for Bat Roost Potential
- Buildings Not Surveyed in this Area for Bat Roost Potential
- Other Evidence of Bats

## **Building Preliminary Bat Roost Potential**

- Confirmed Roost
- Moderate Potential
- Negligible Potential

## **Tree Preliminary Bat Roost Potential**

- High Potential
- Moderate Potential
- Low Potential
- Negligible Potential



Coordinate System: British National Grid

250 Meters

Scale: 1:5,000

Preliminary Environmental Information Report

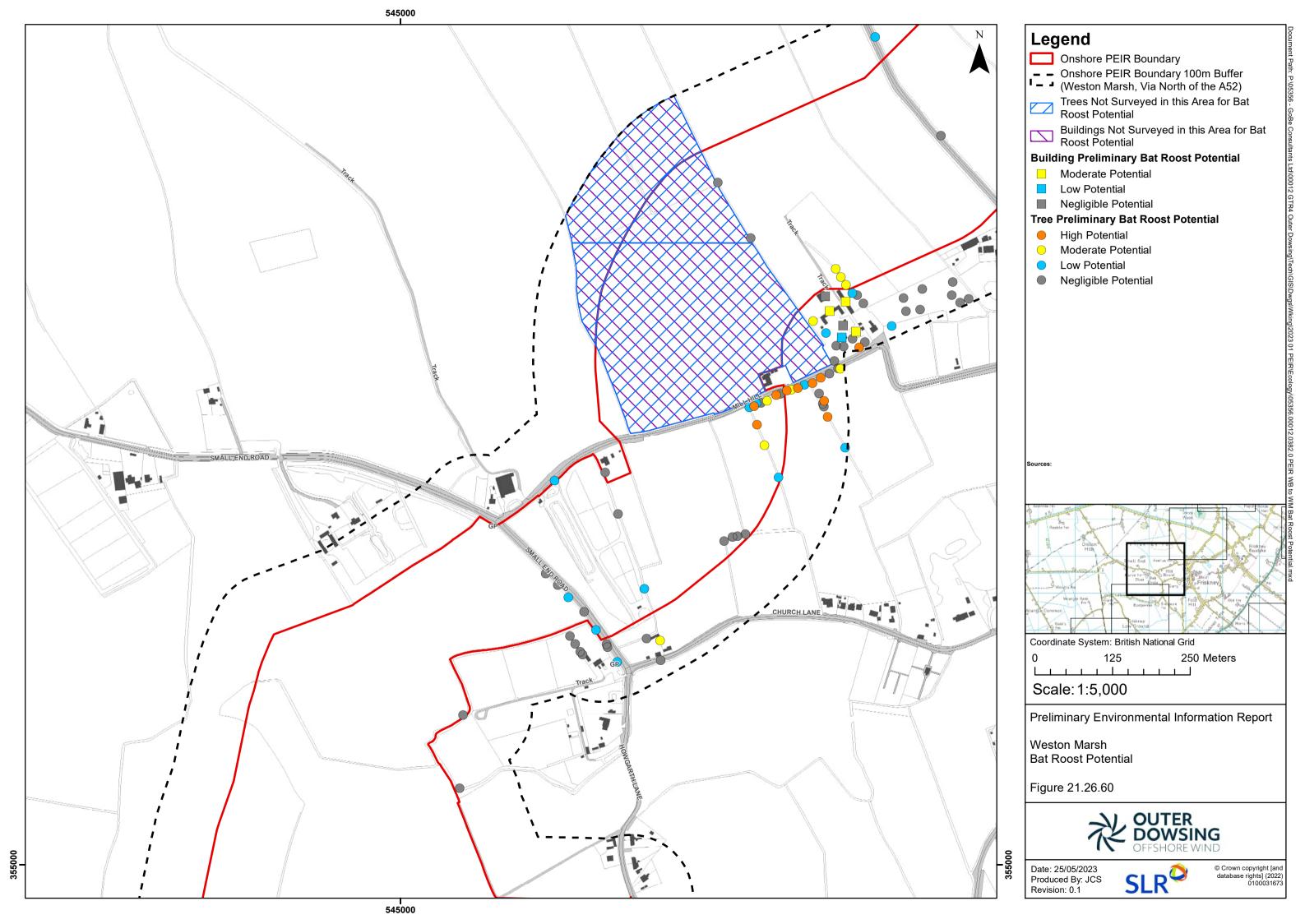
Weston Marsh **Bat Roost Potential** 

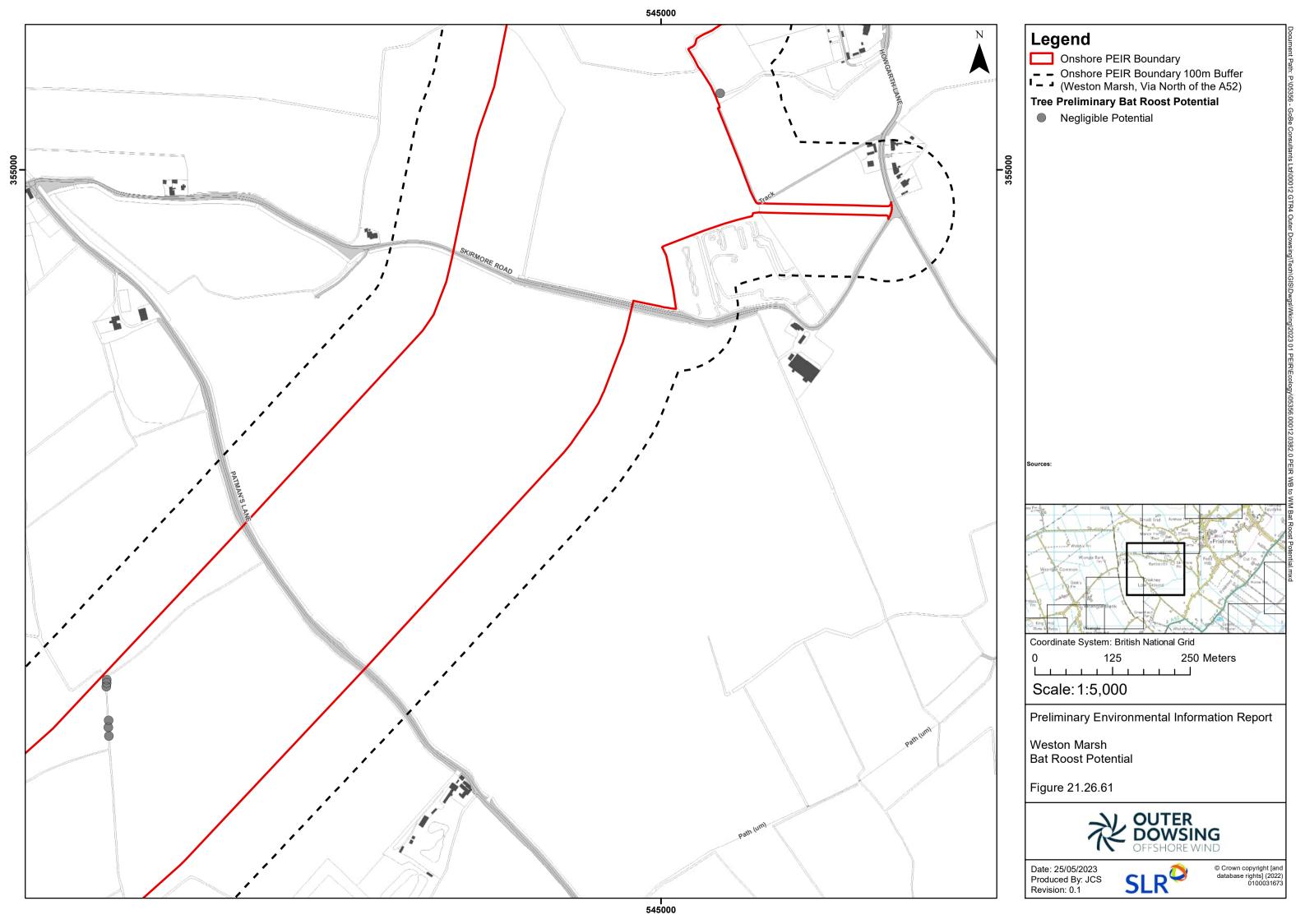
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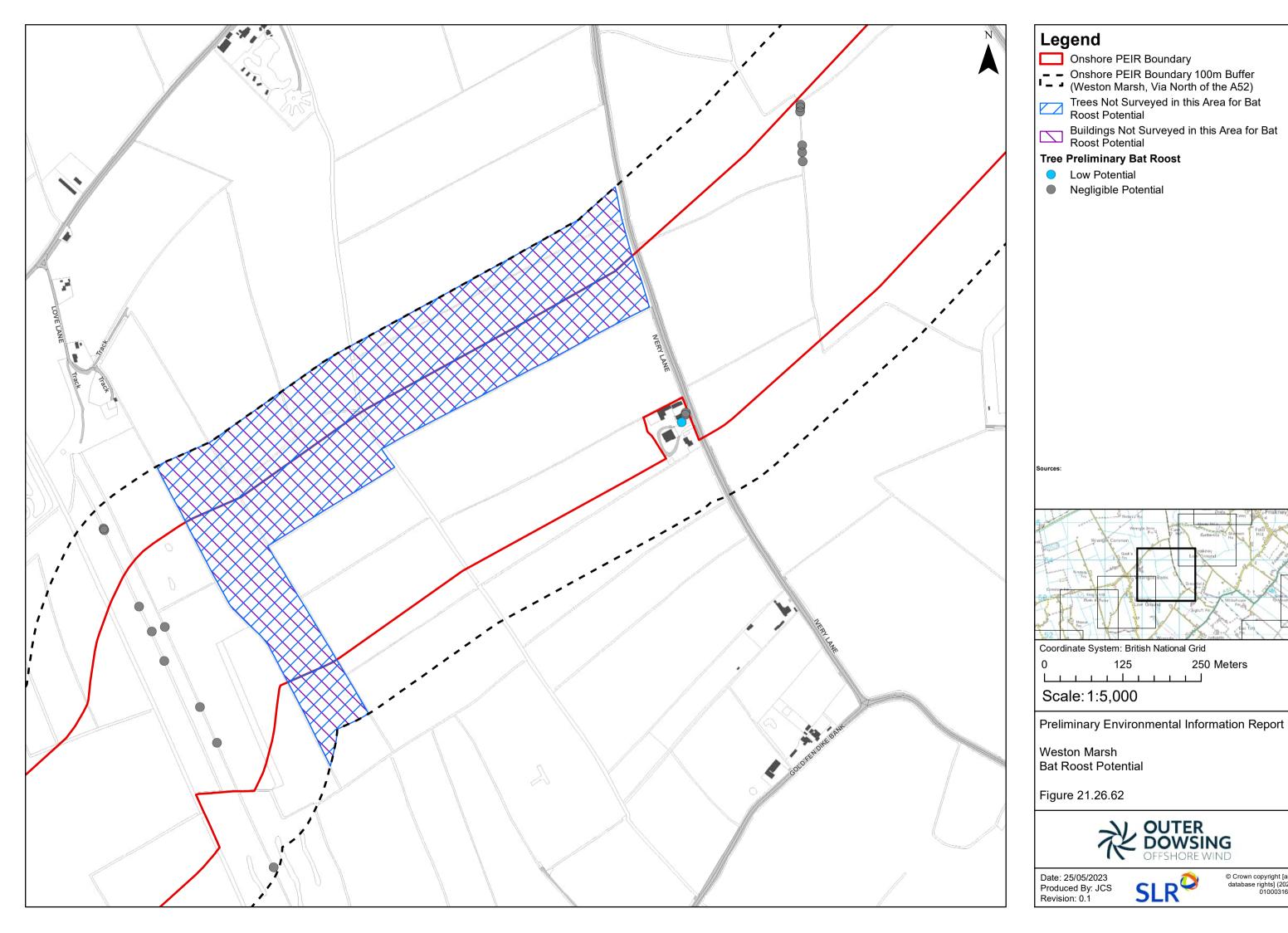


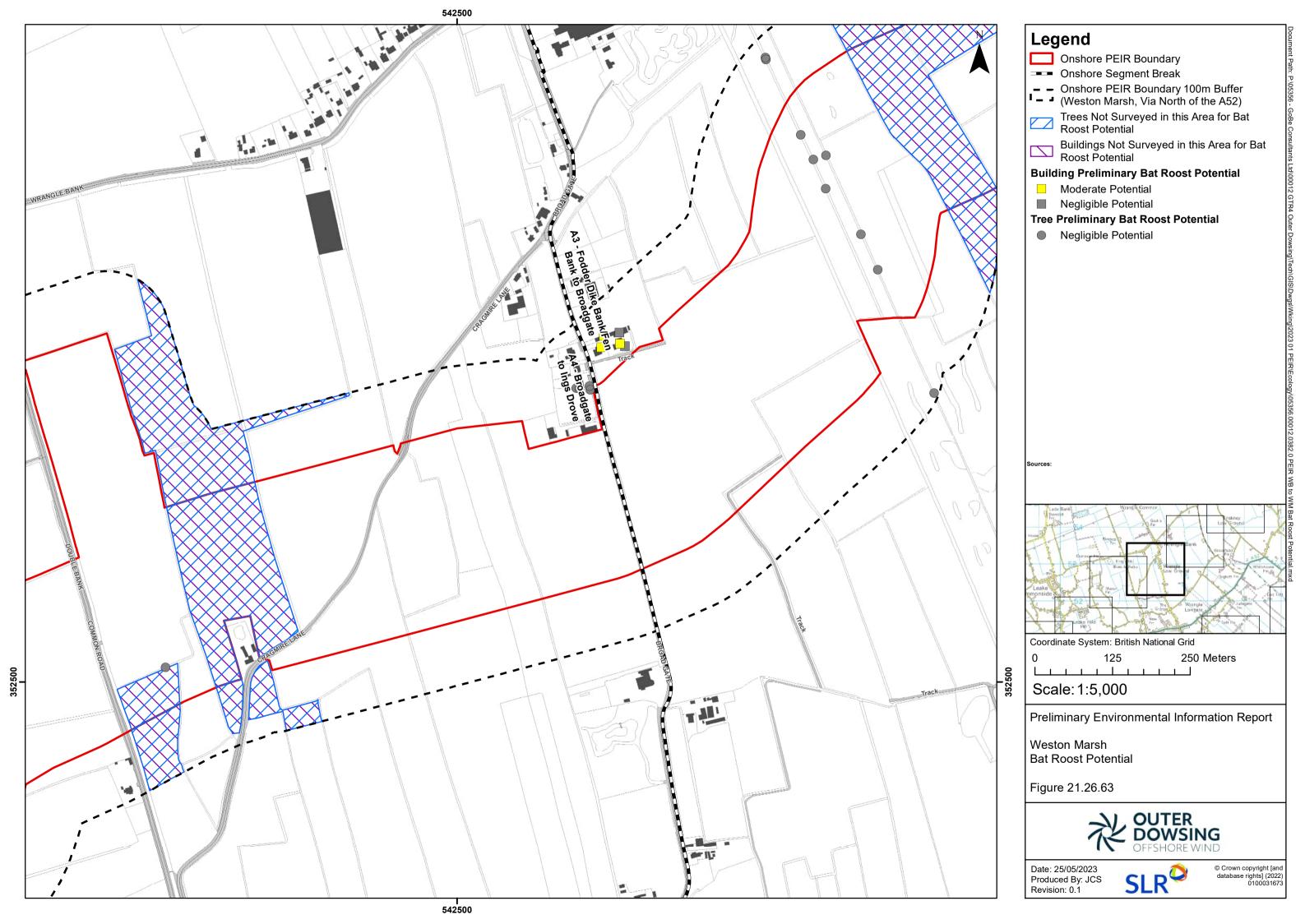
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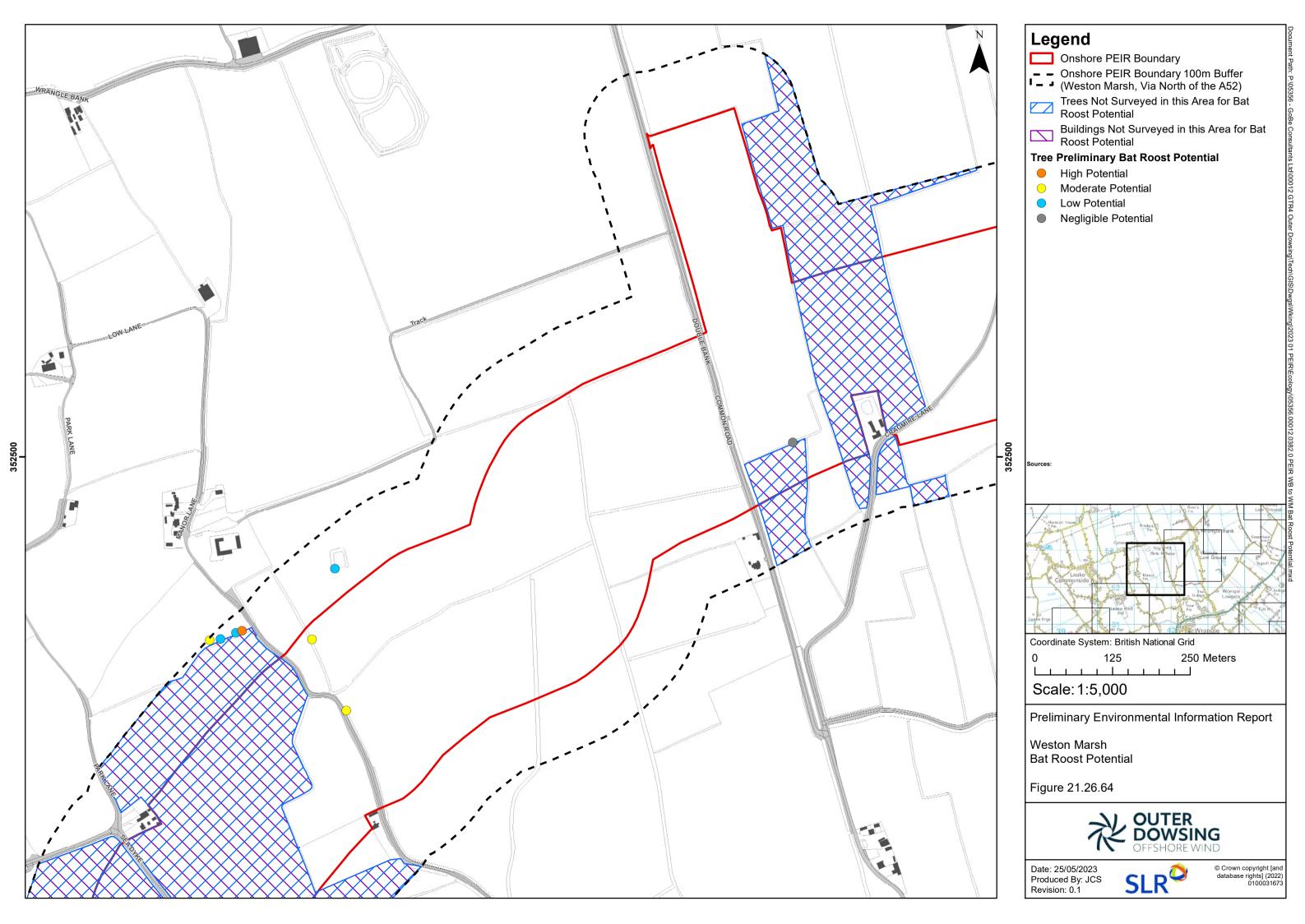


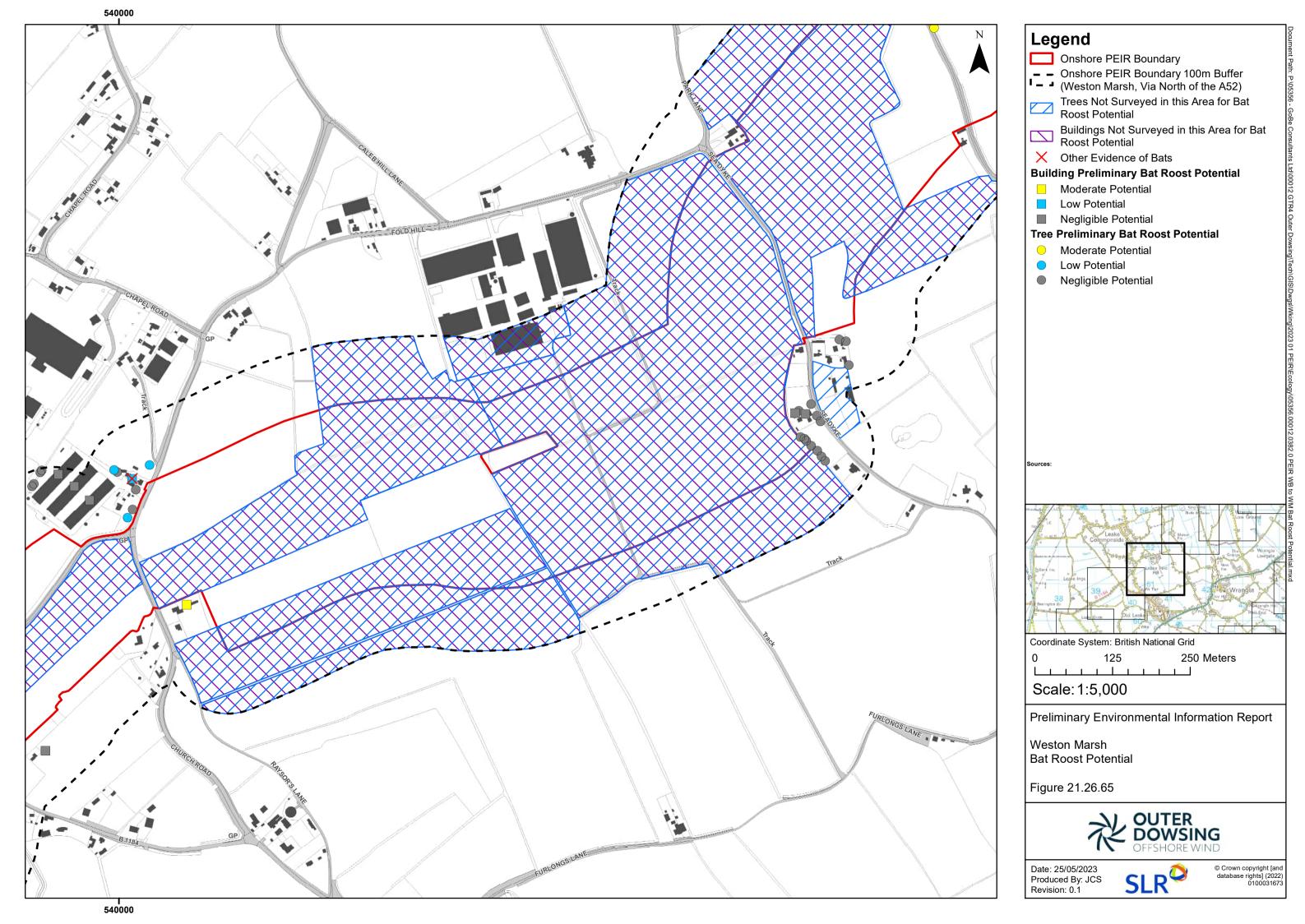


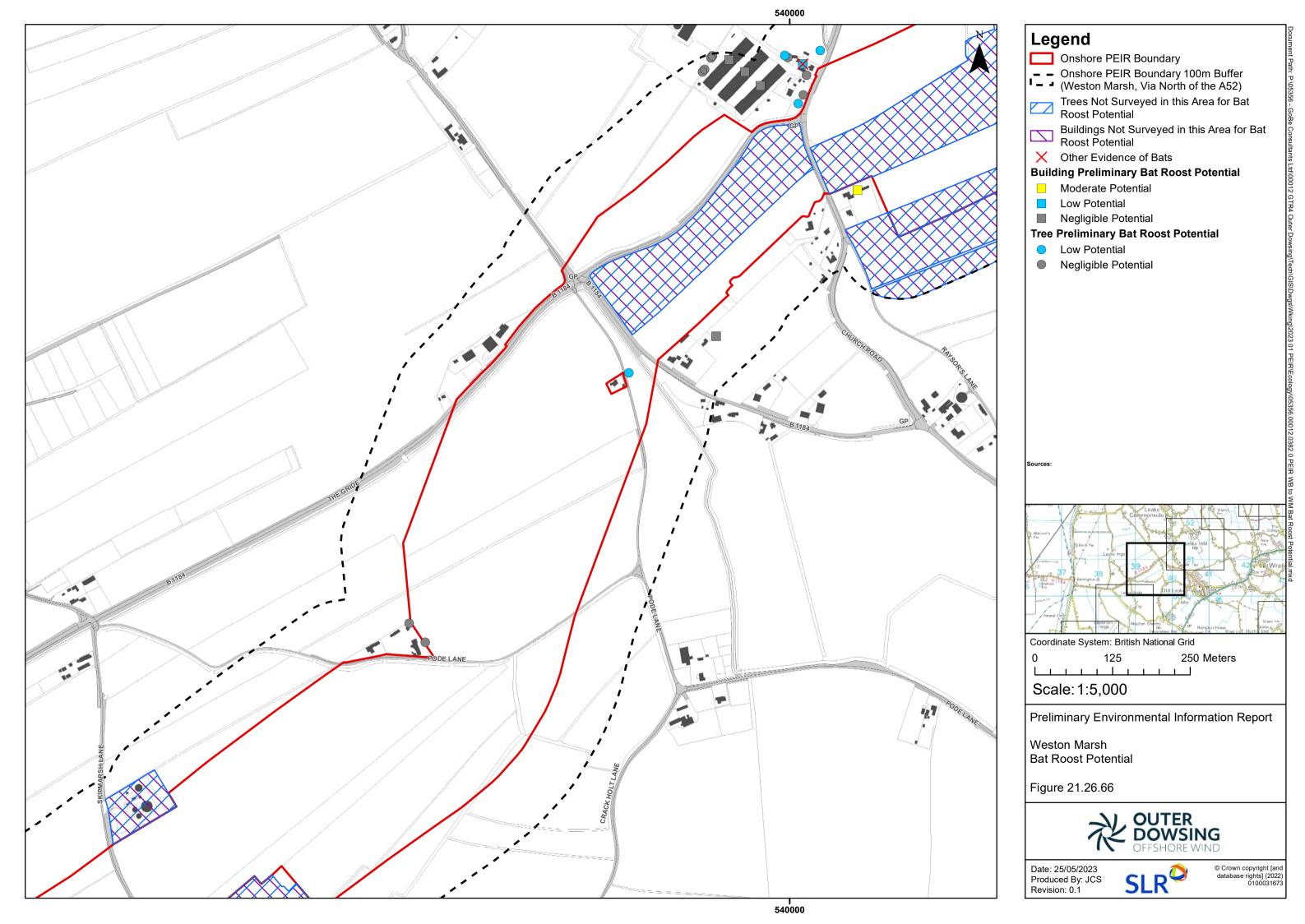


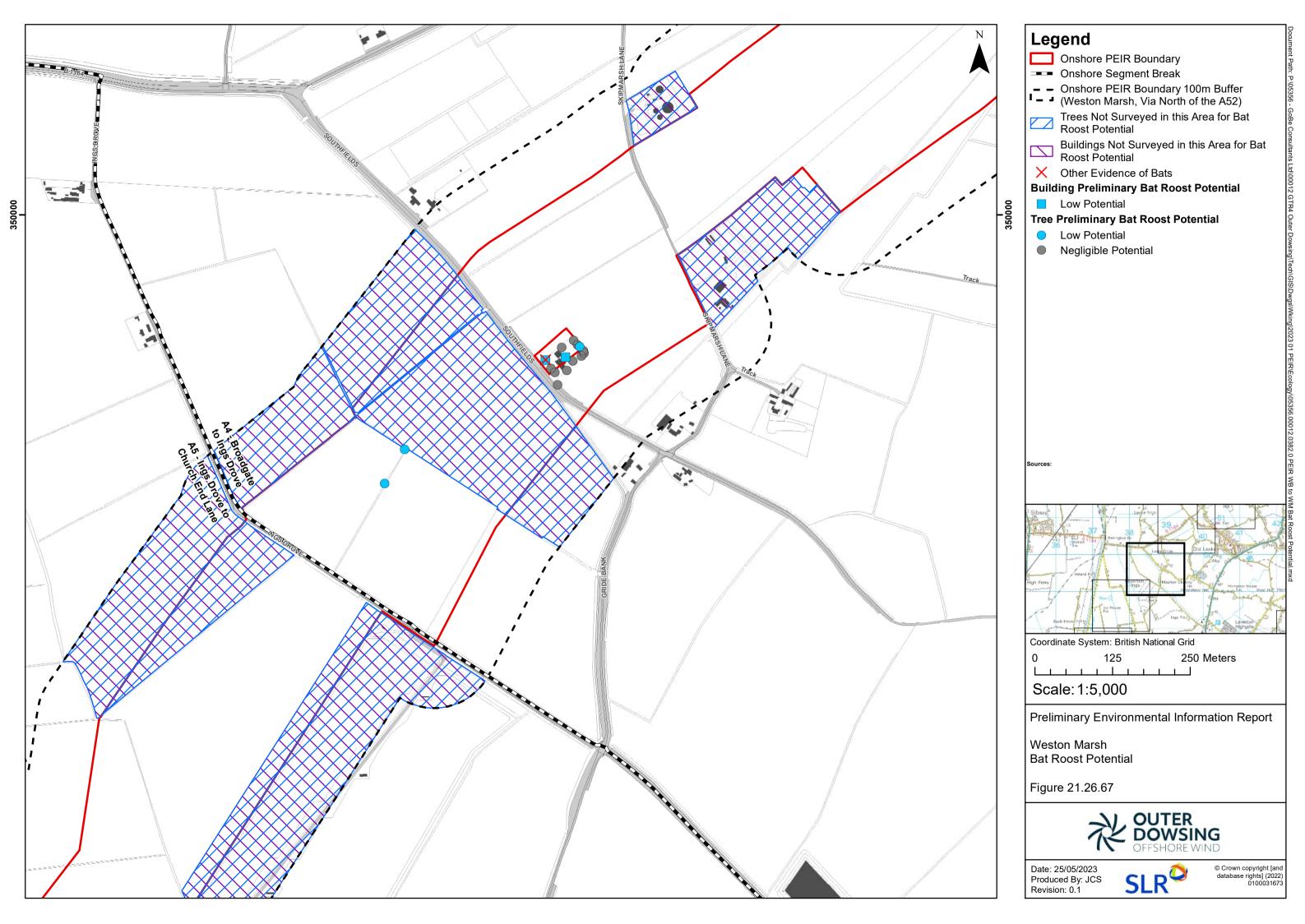


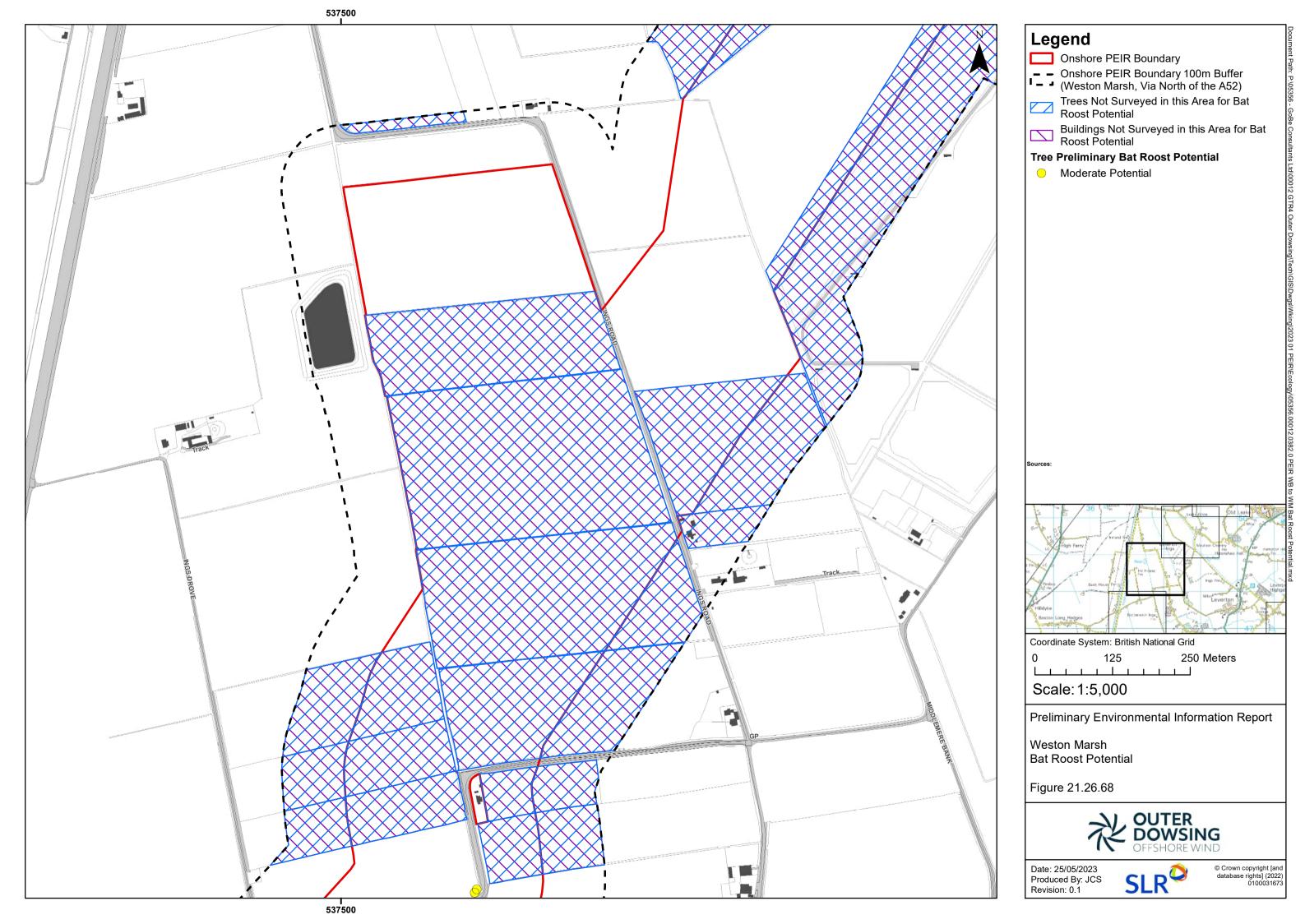


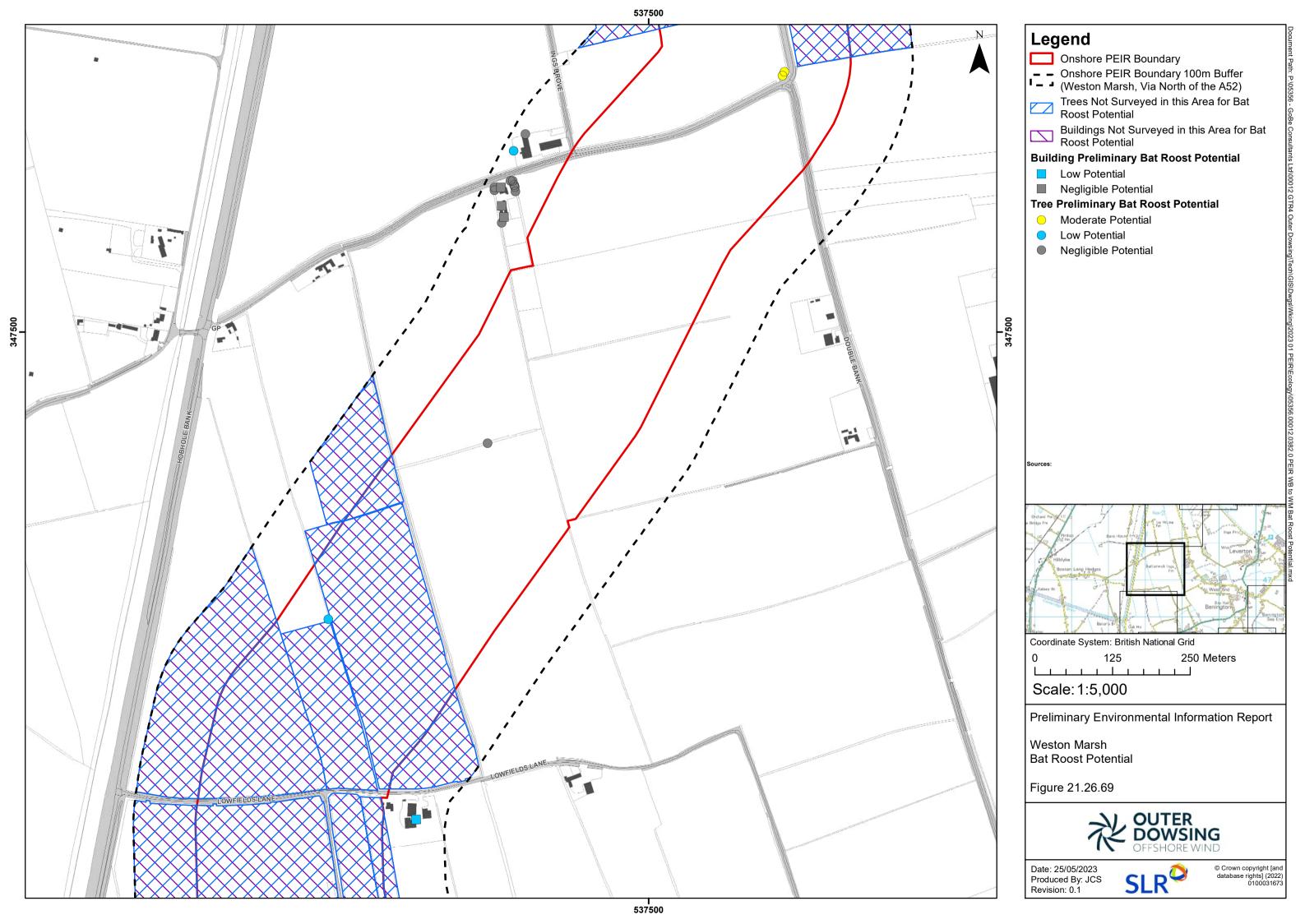


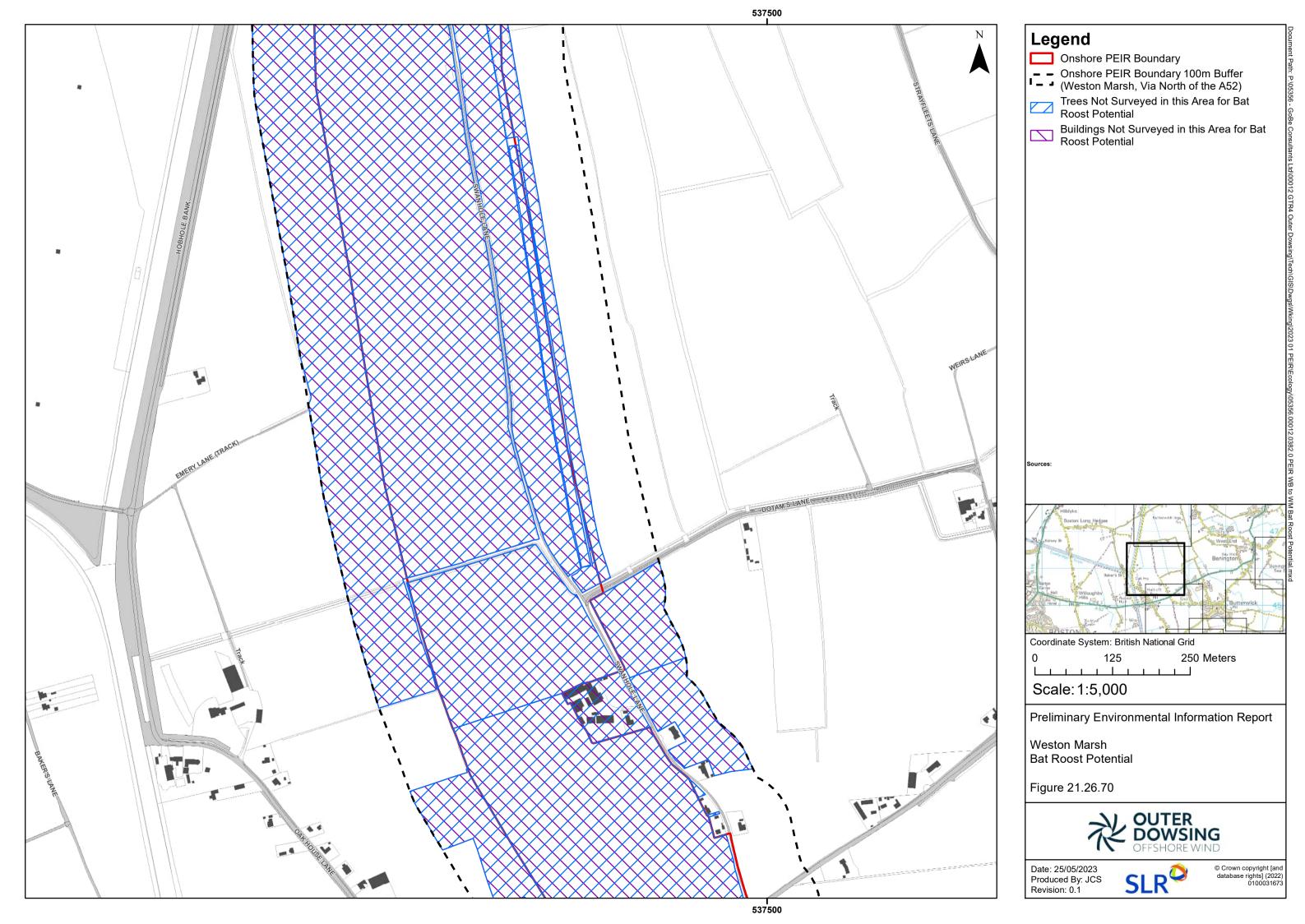


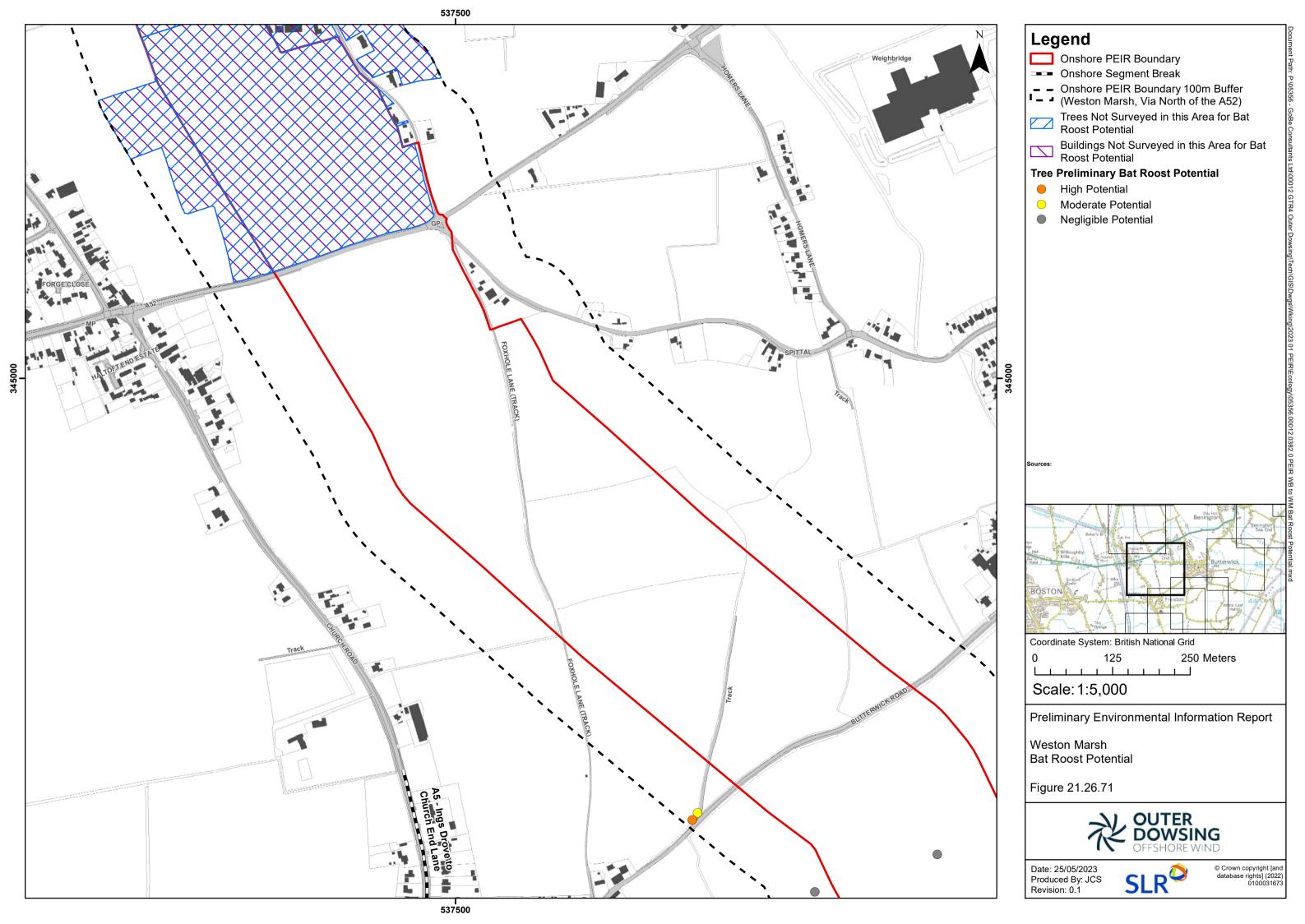


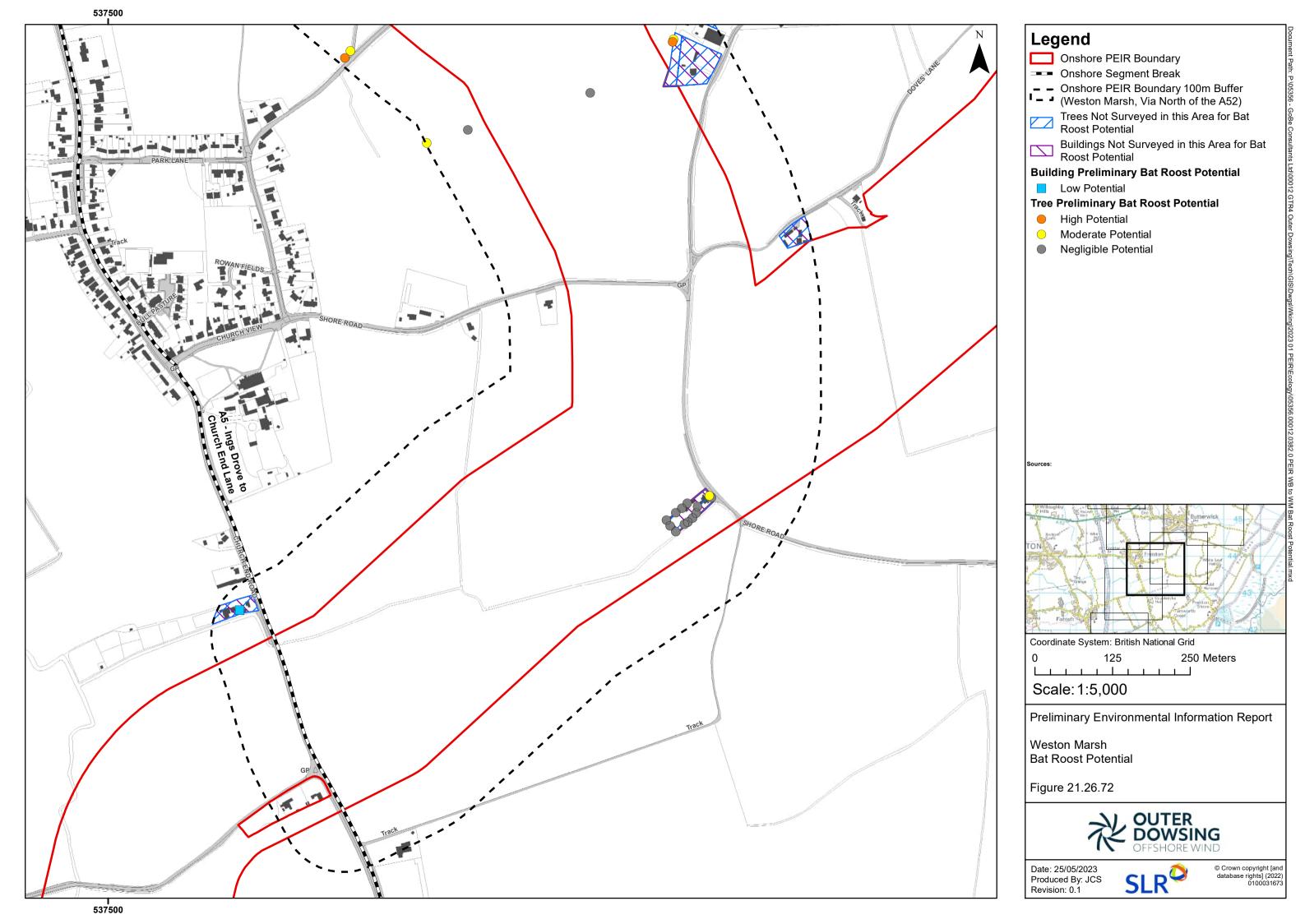


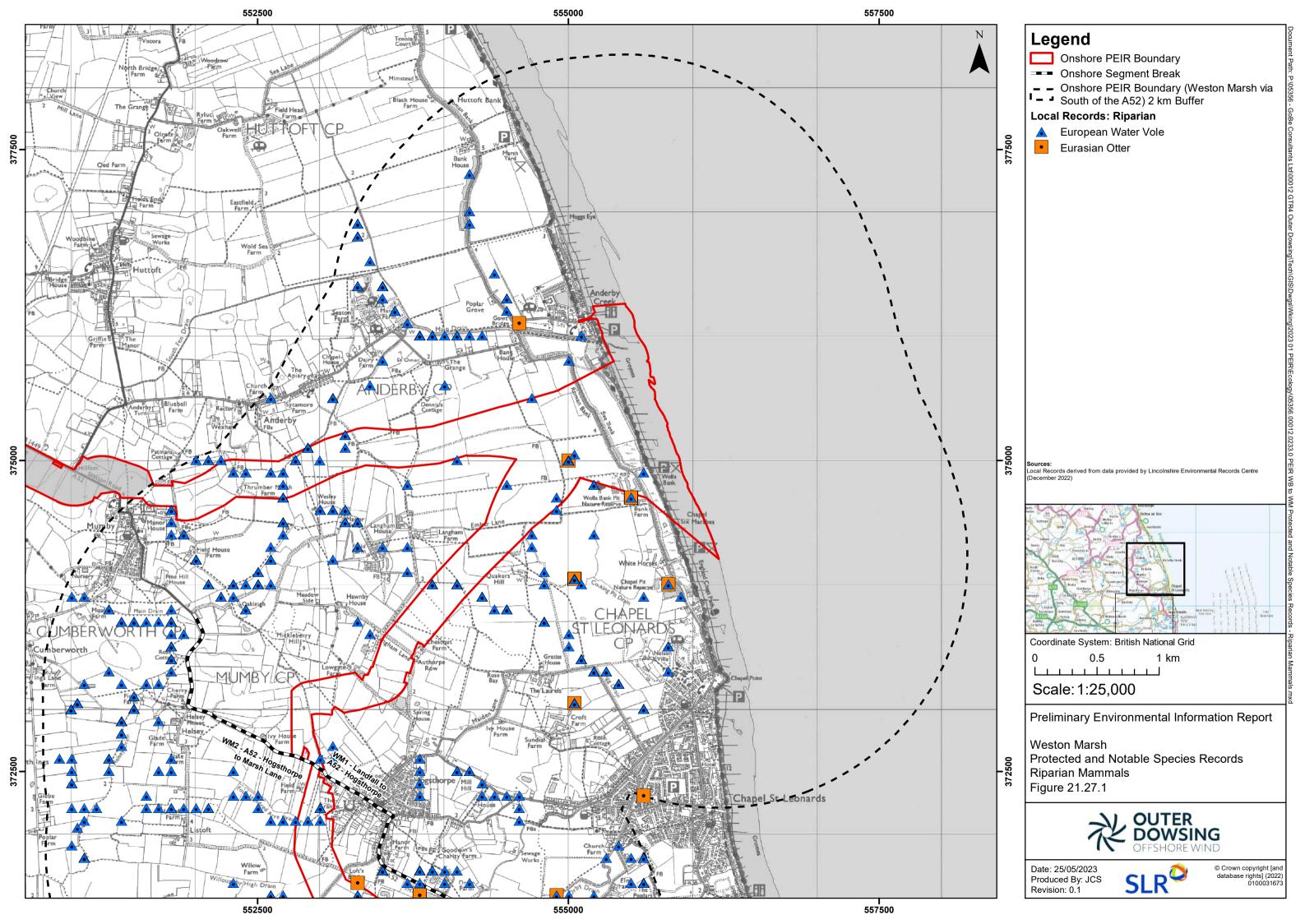


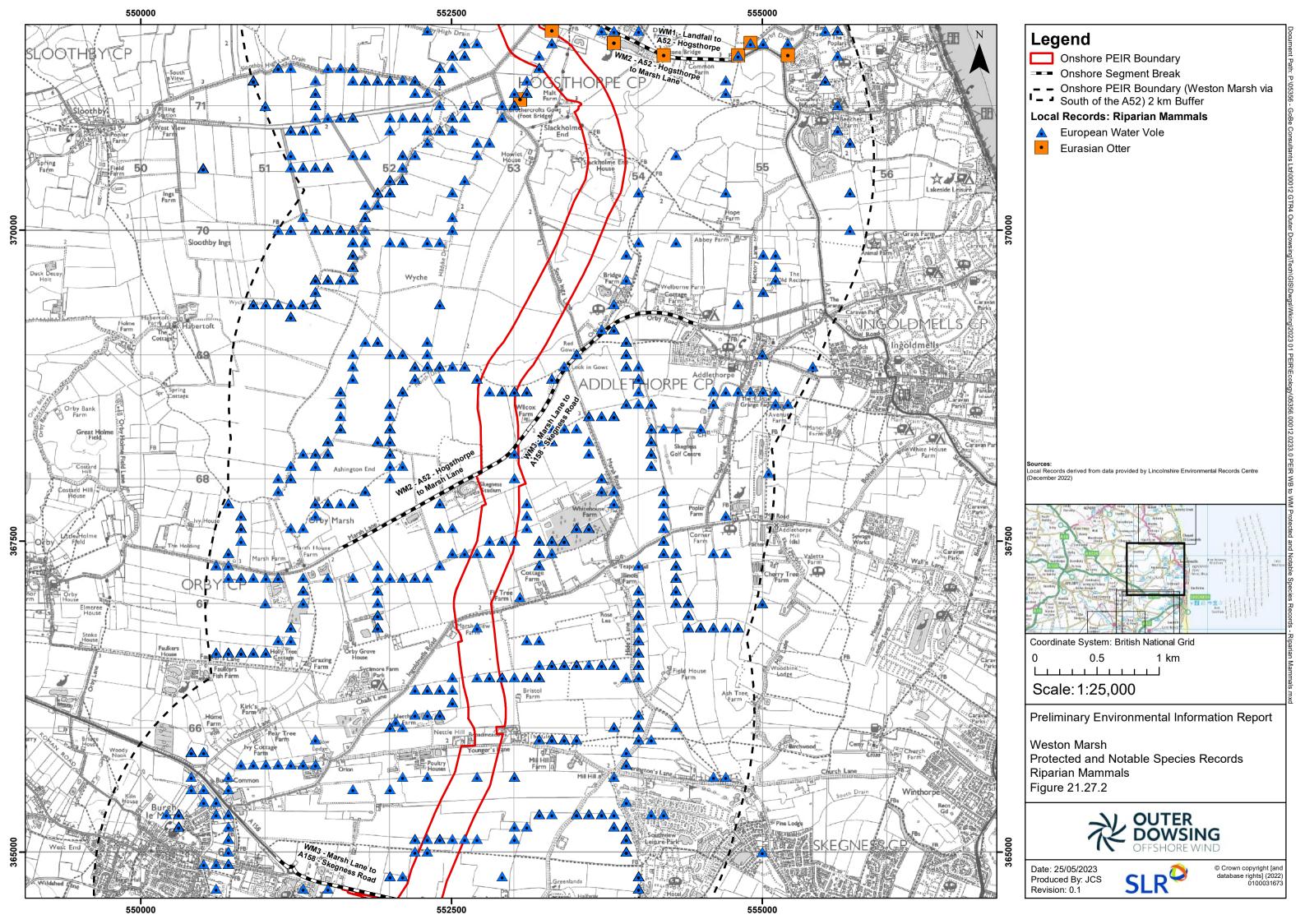


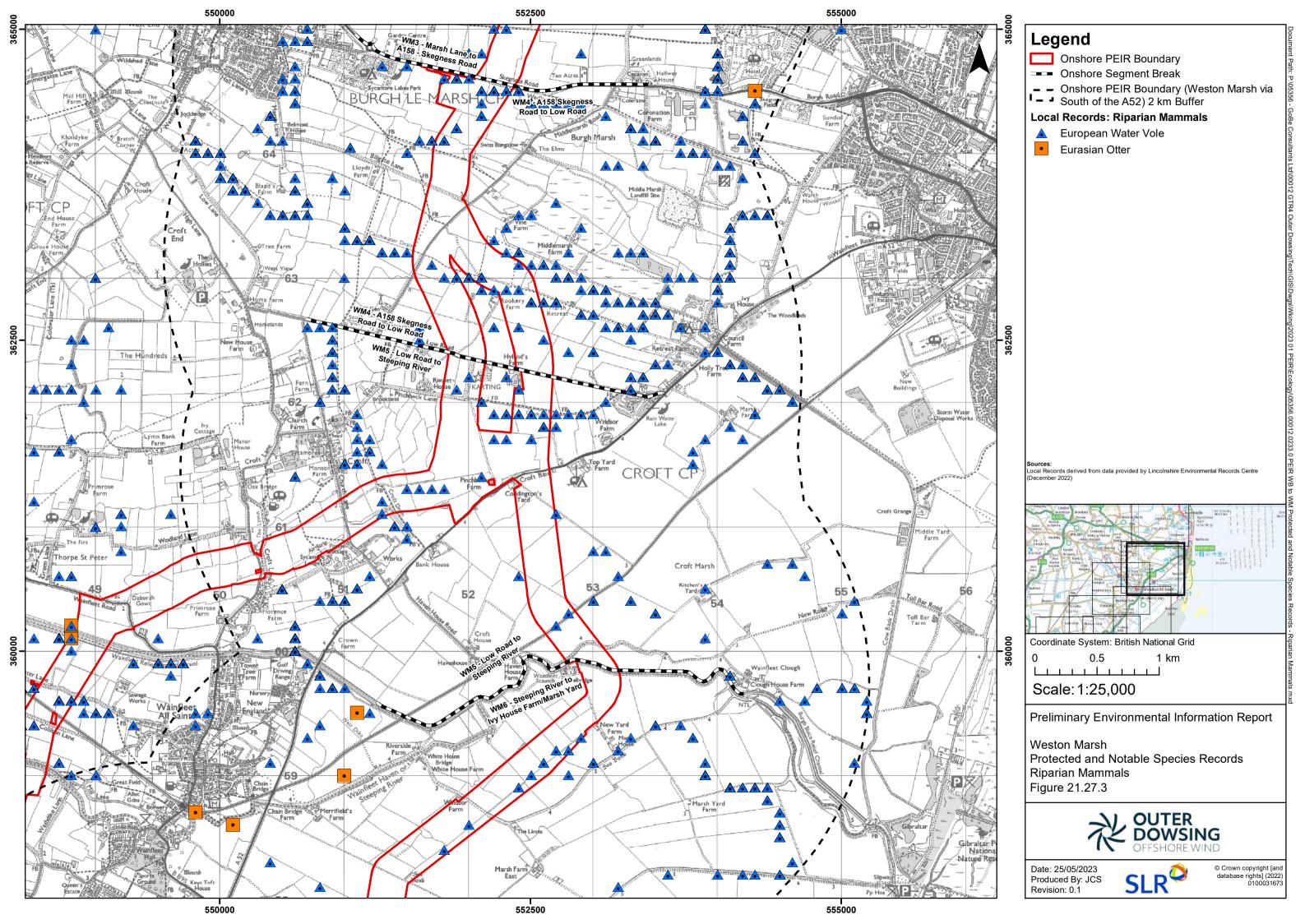


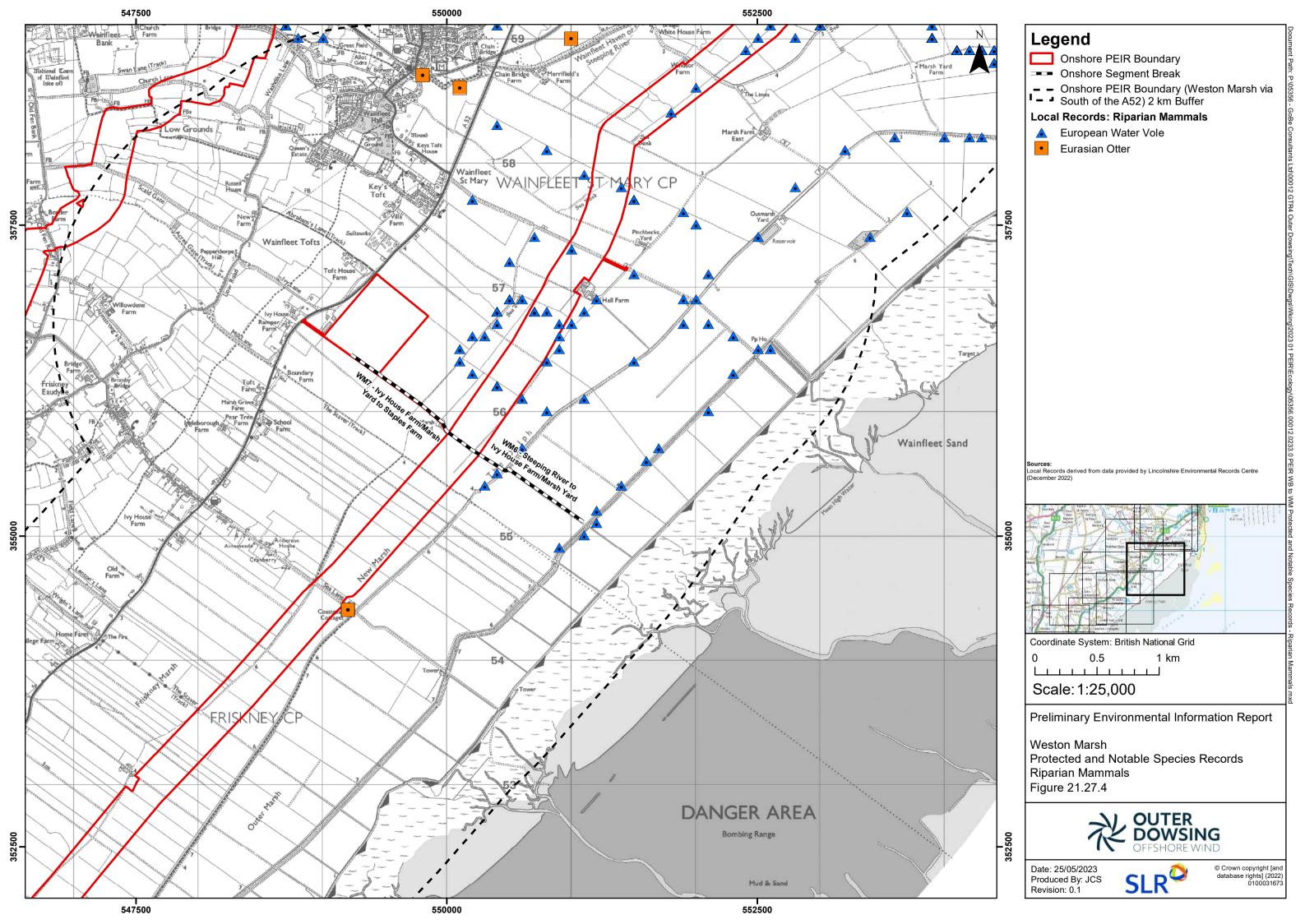


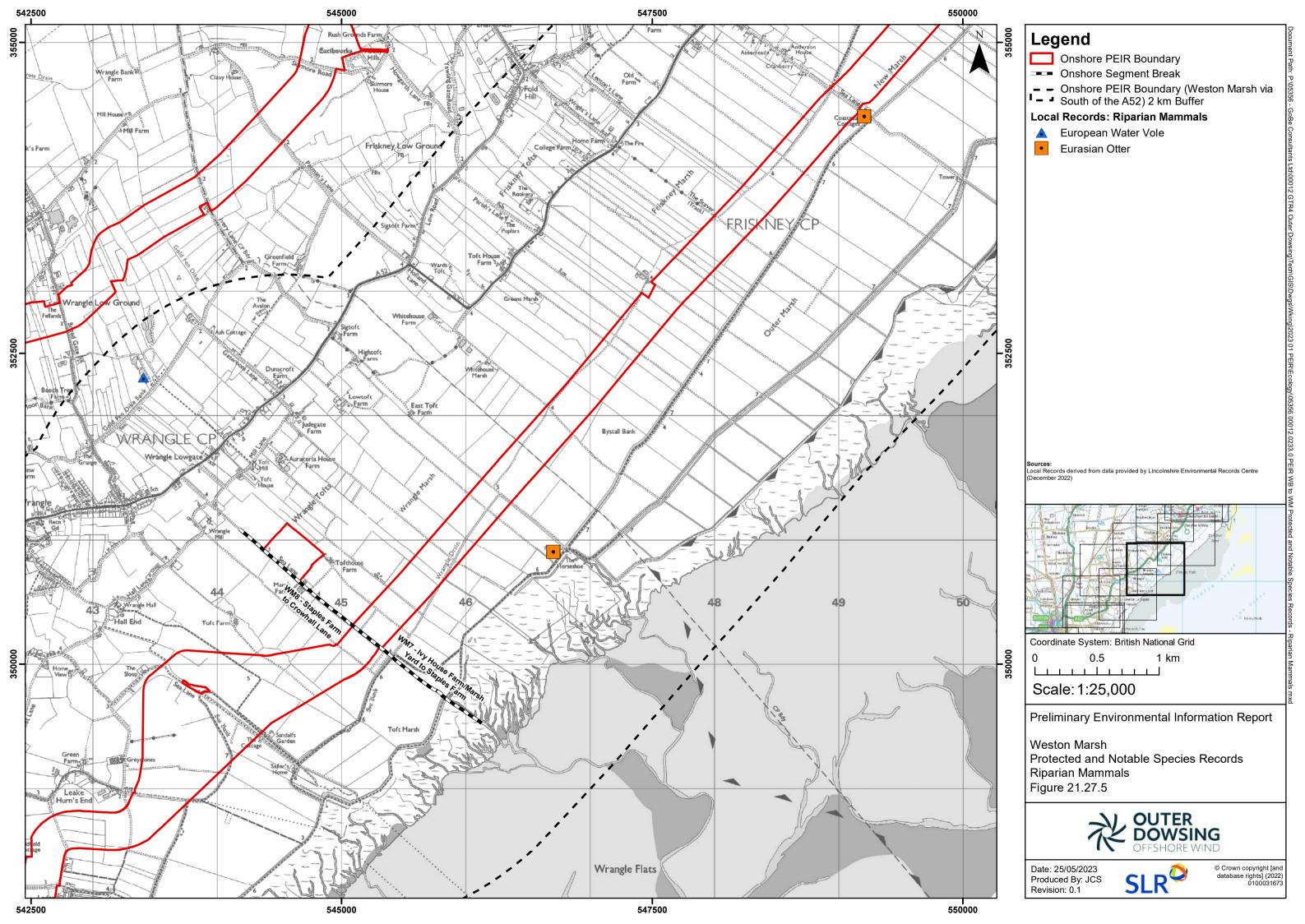


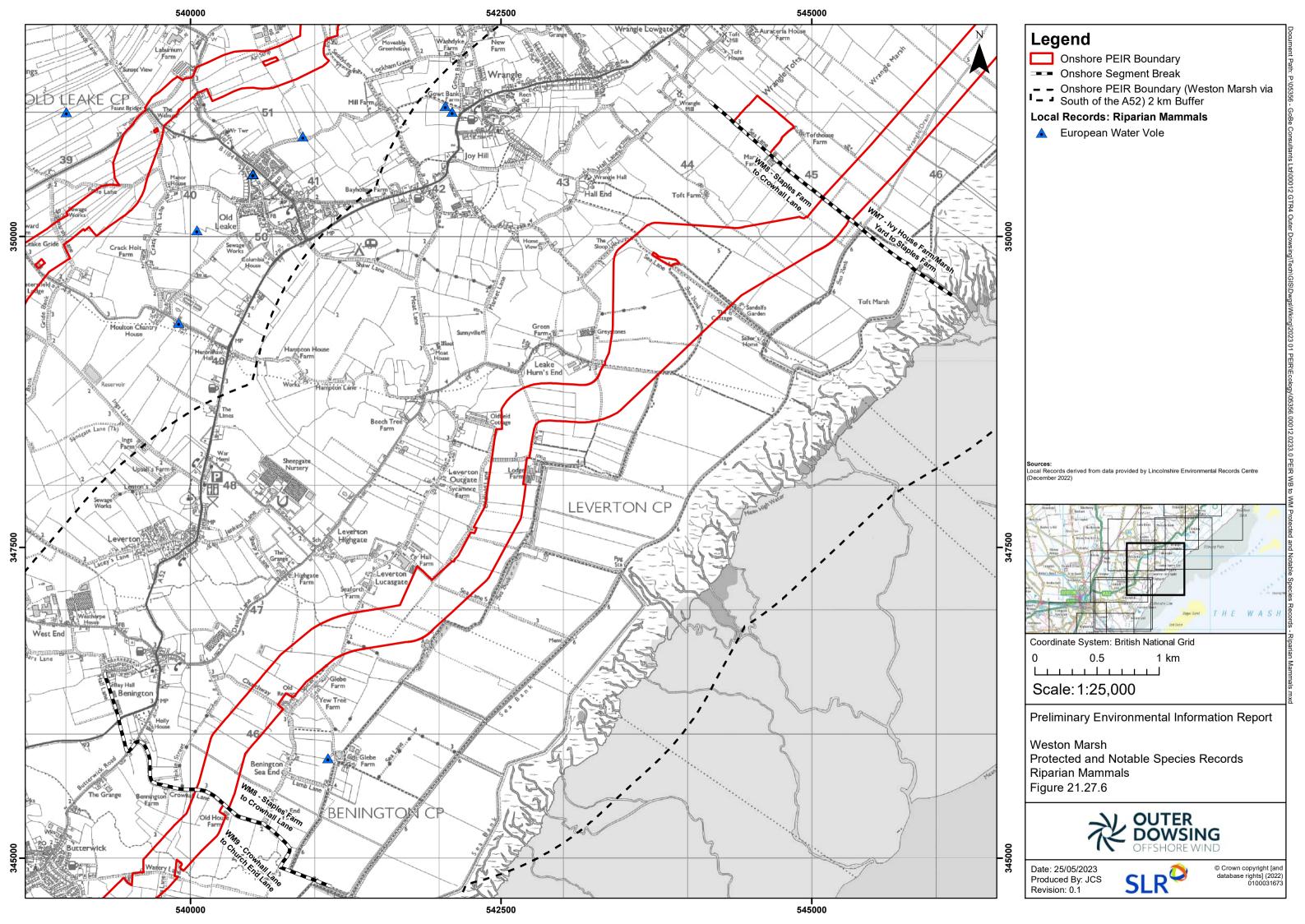


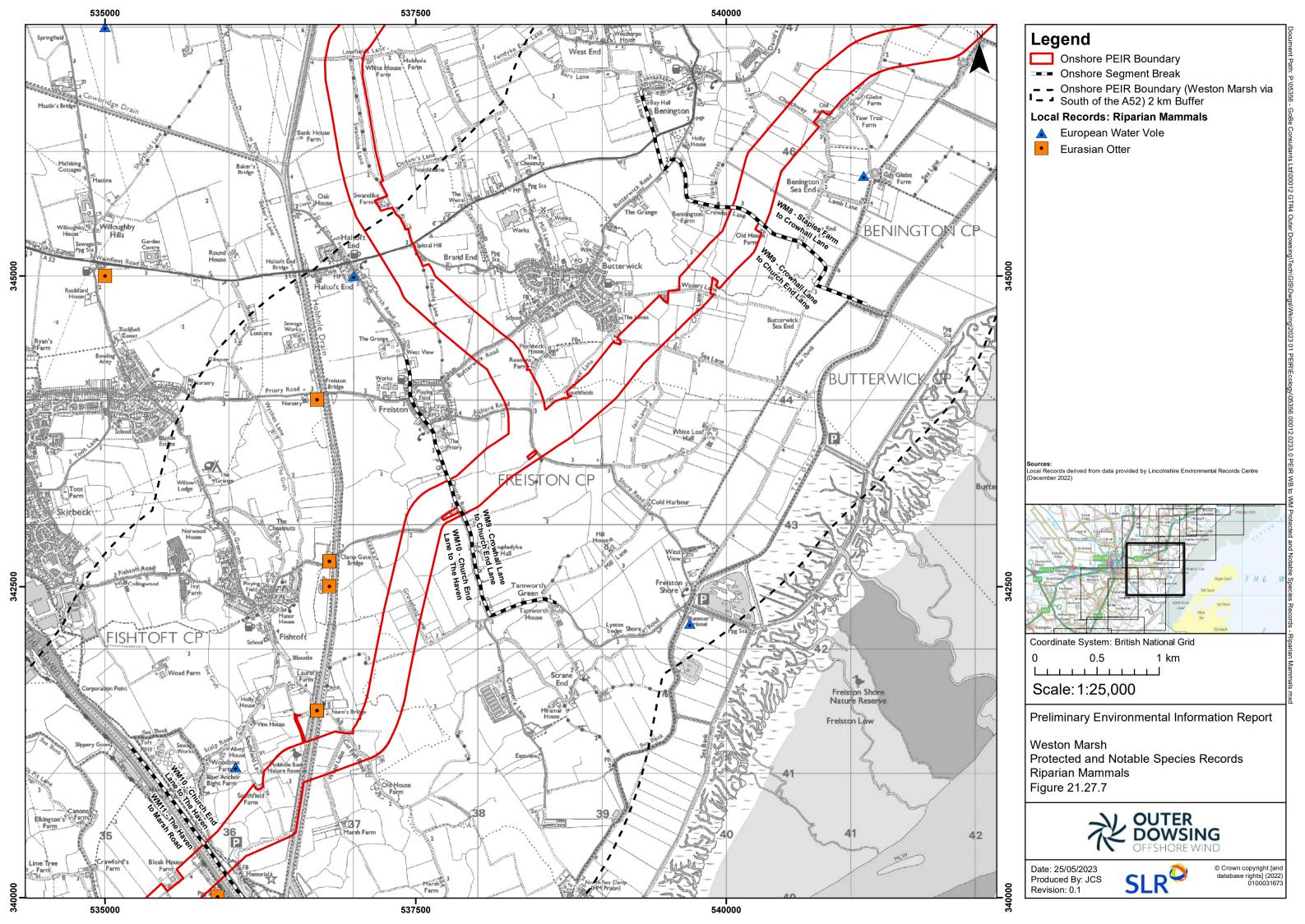


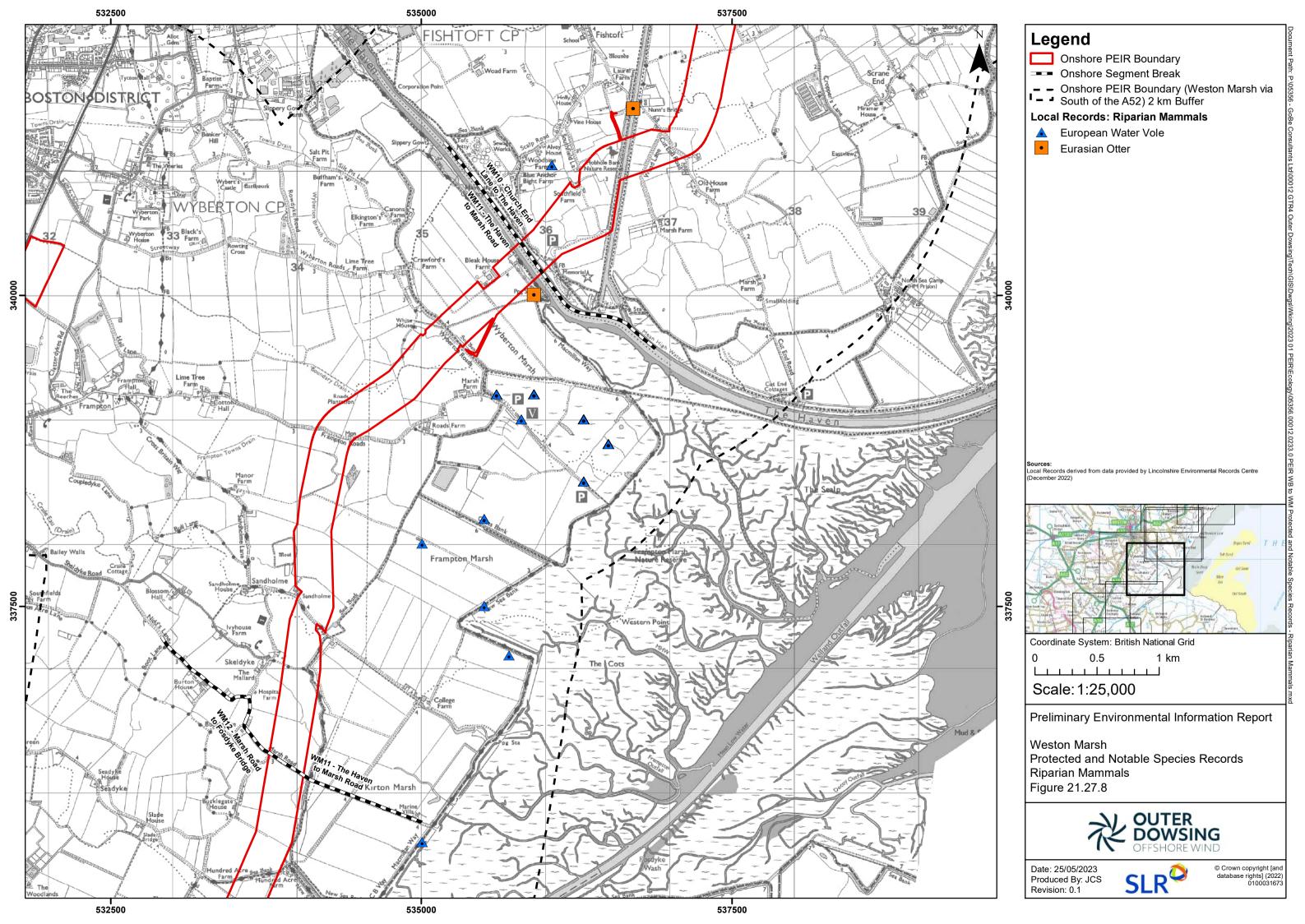


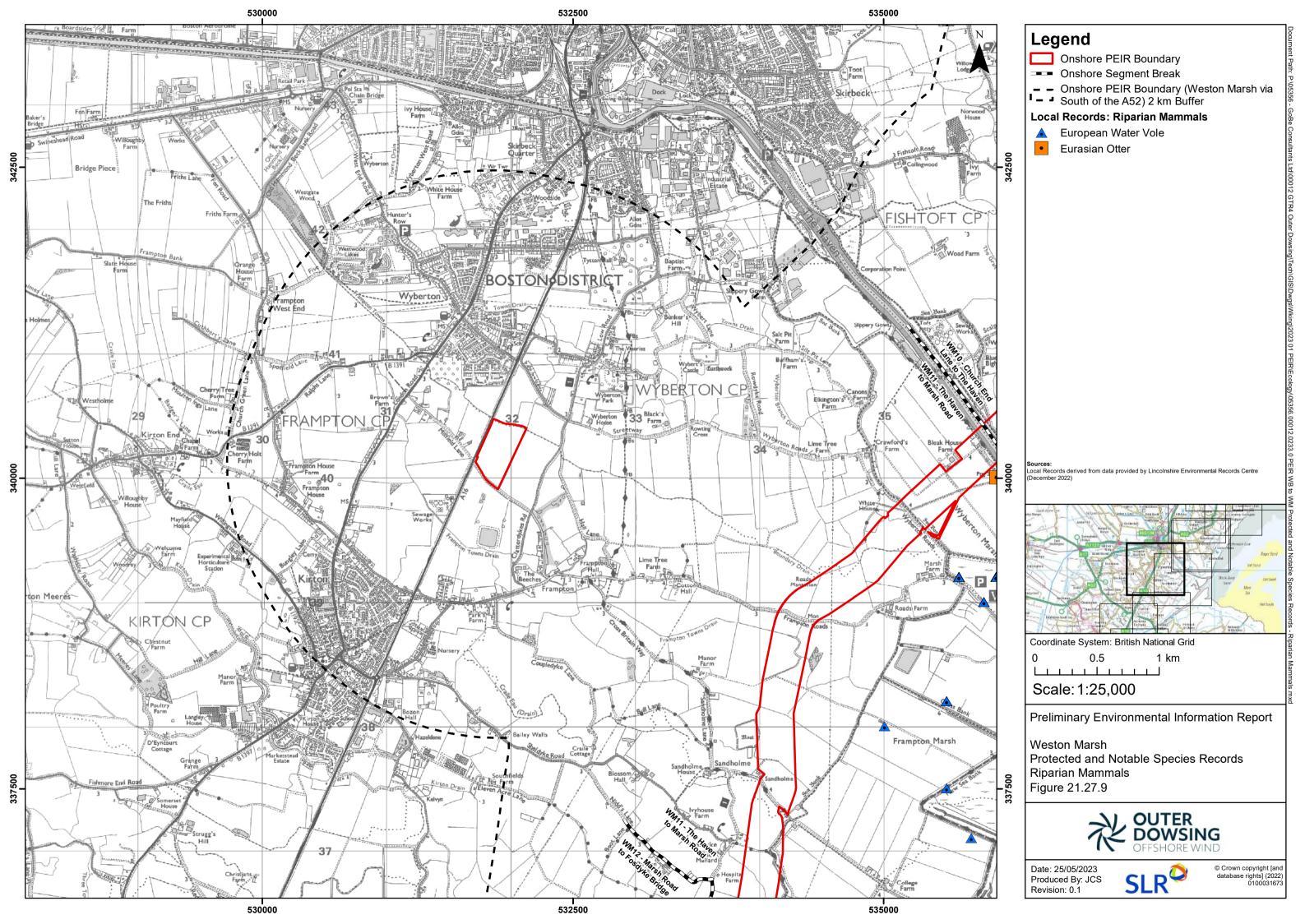


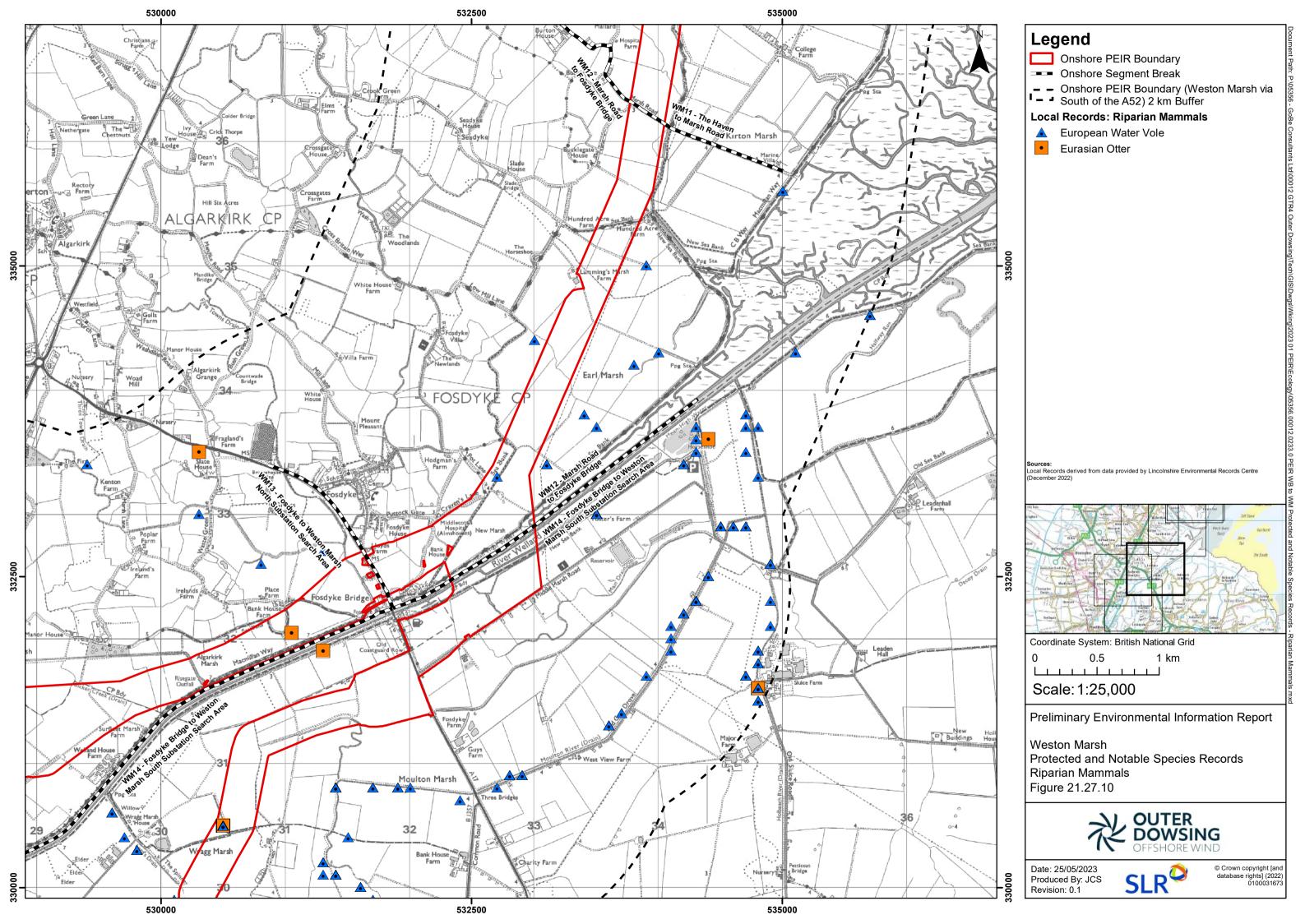


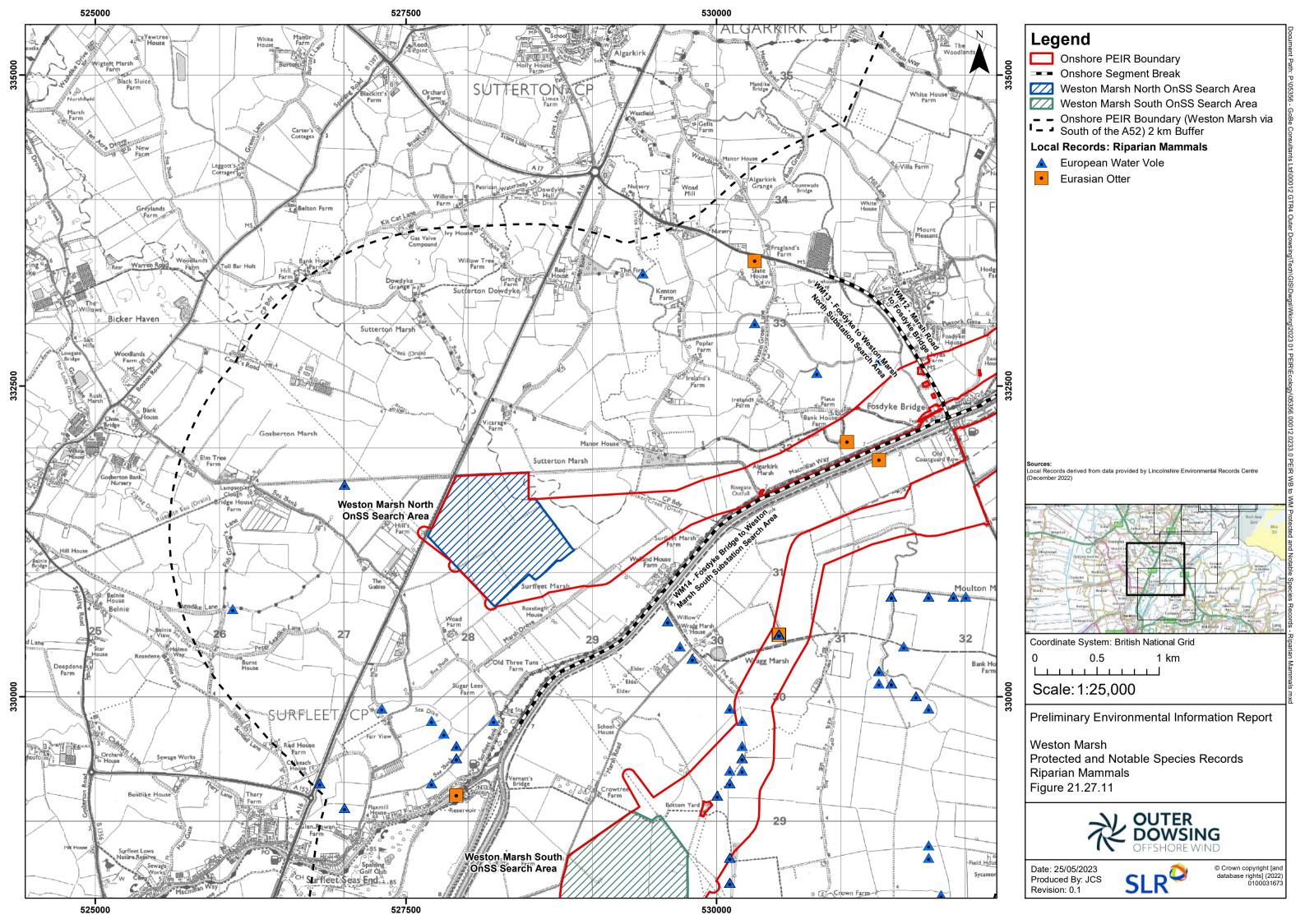


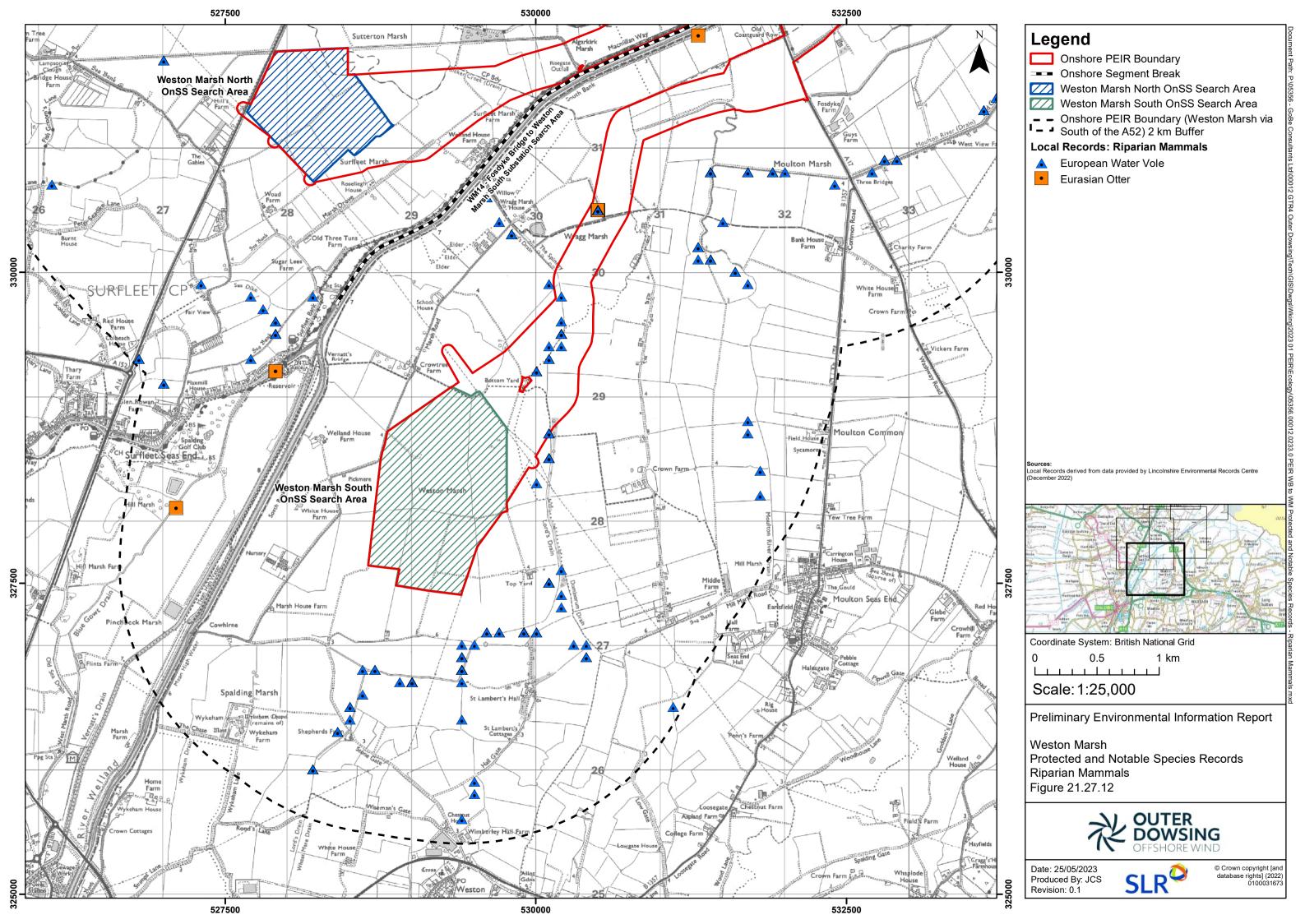


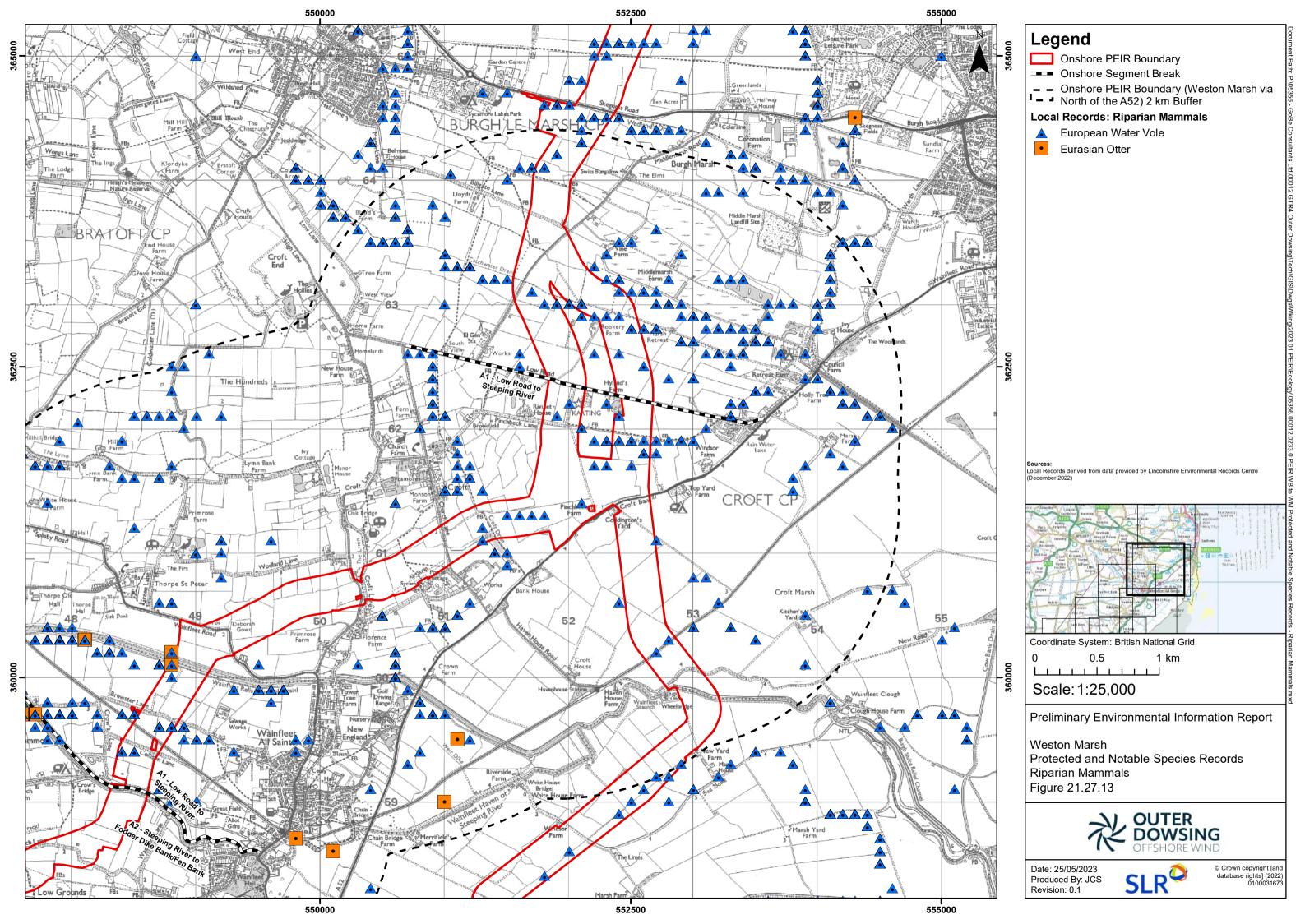


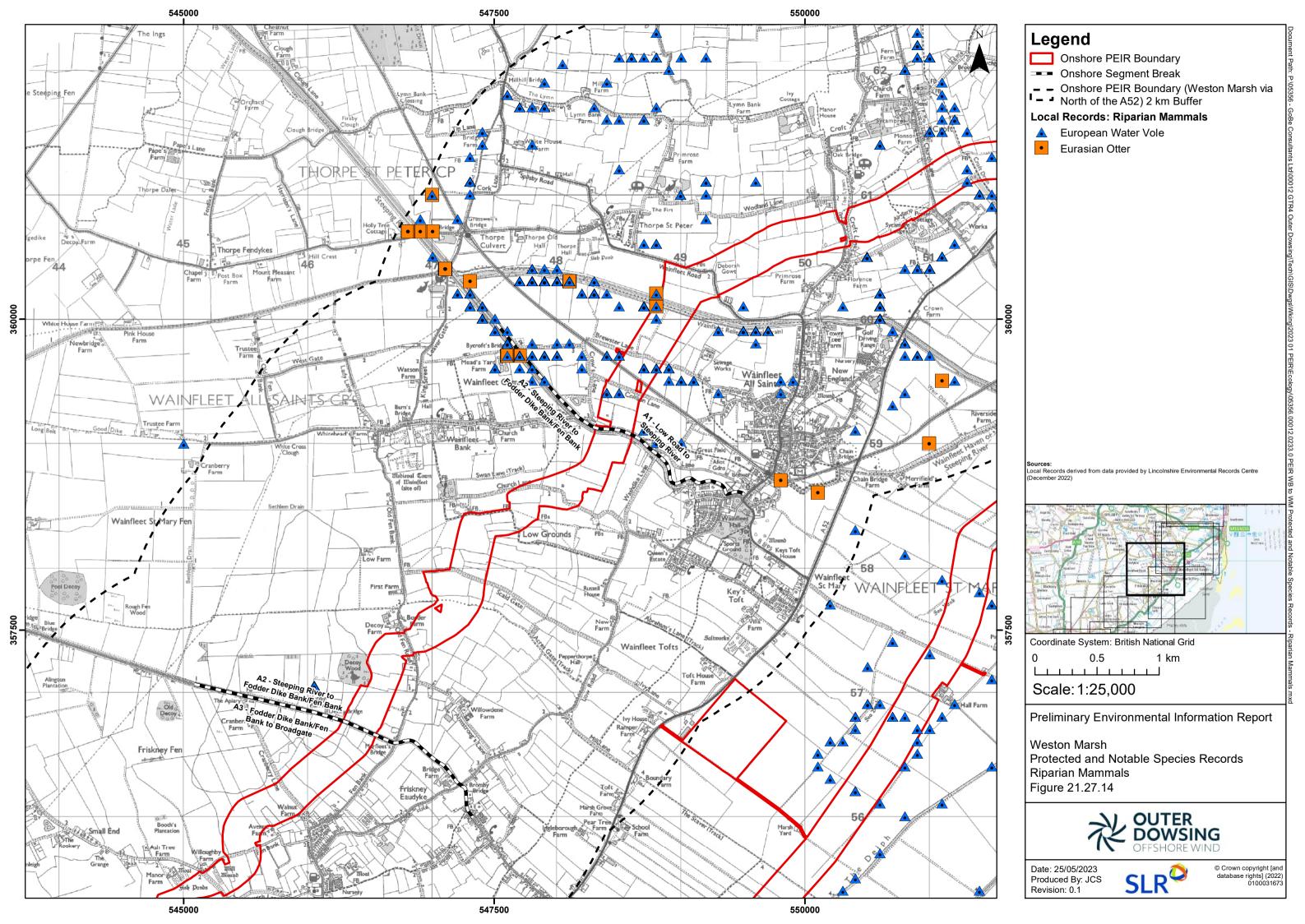


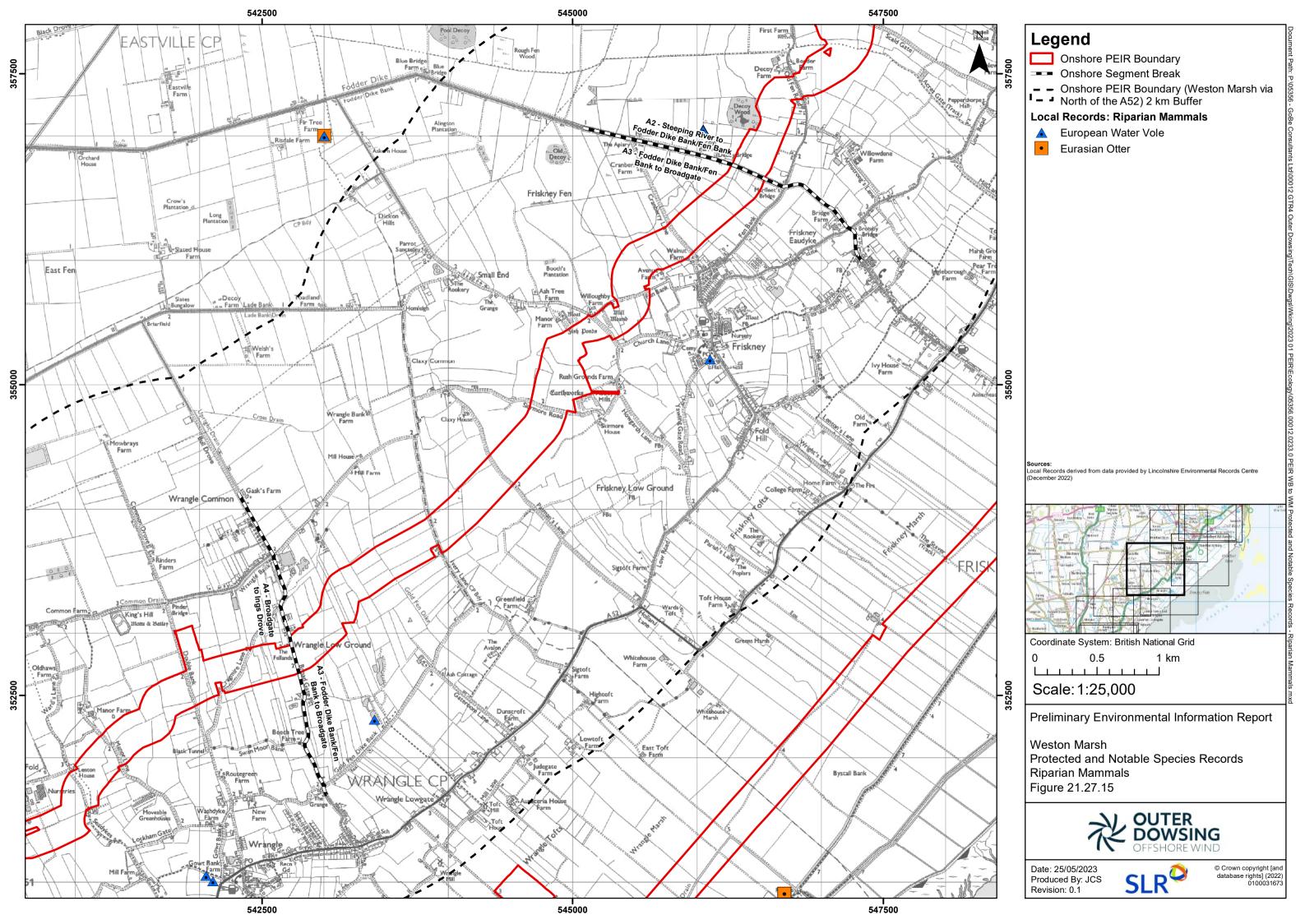


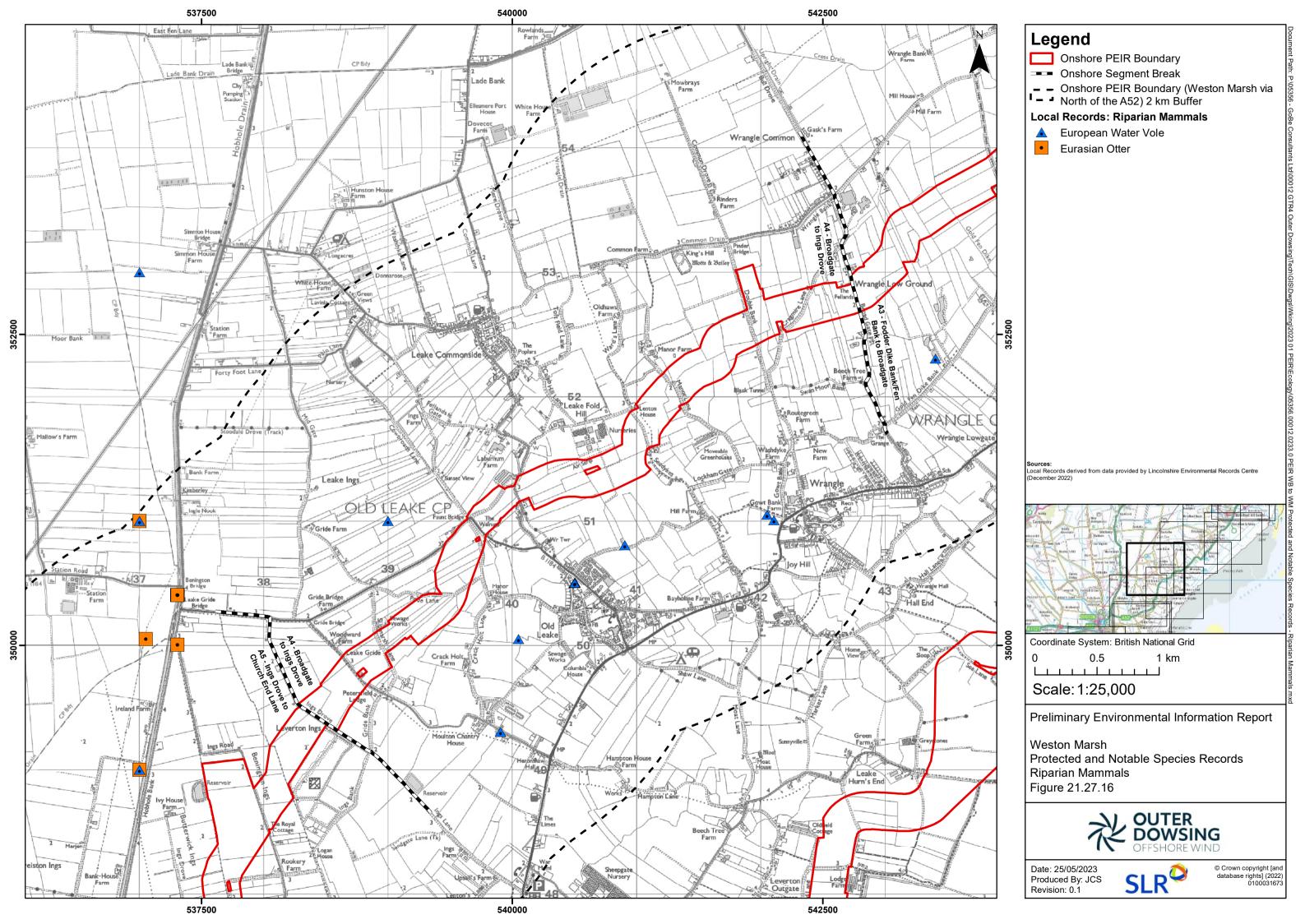


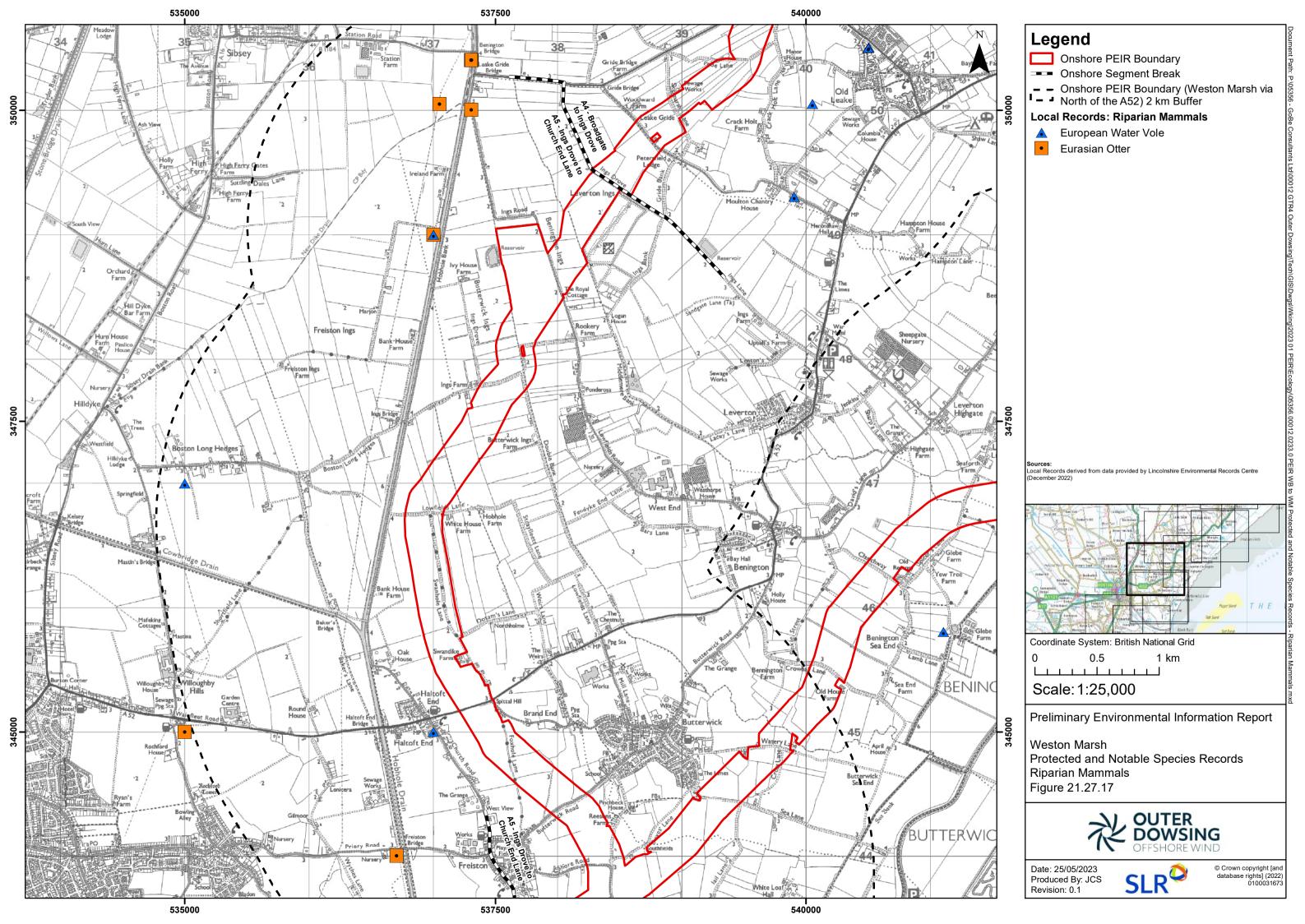


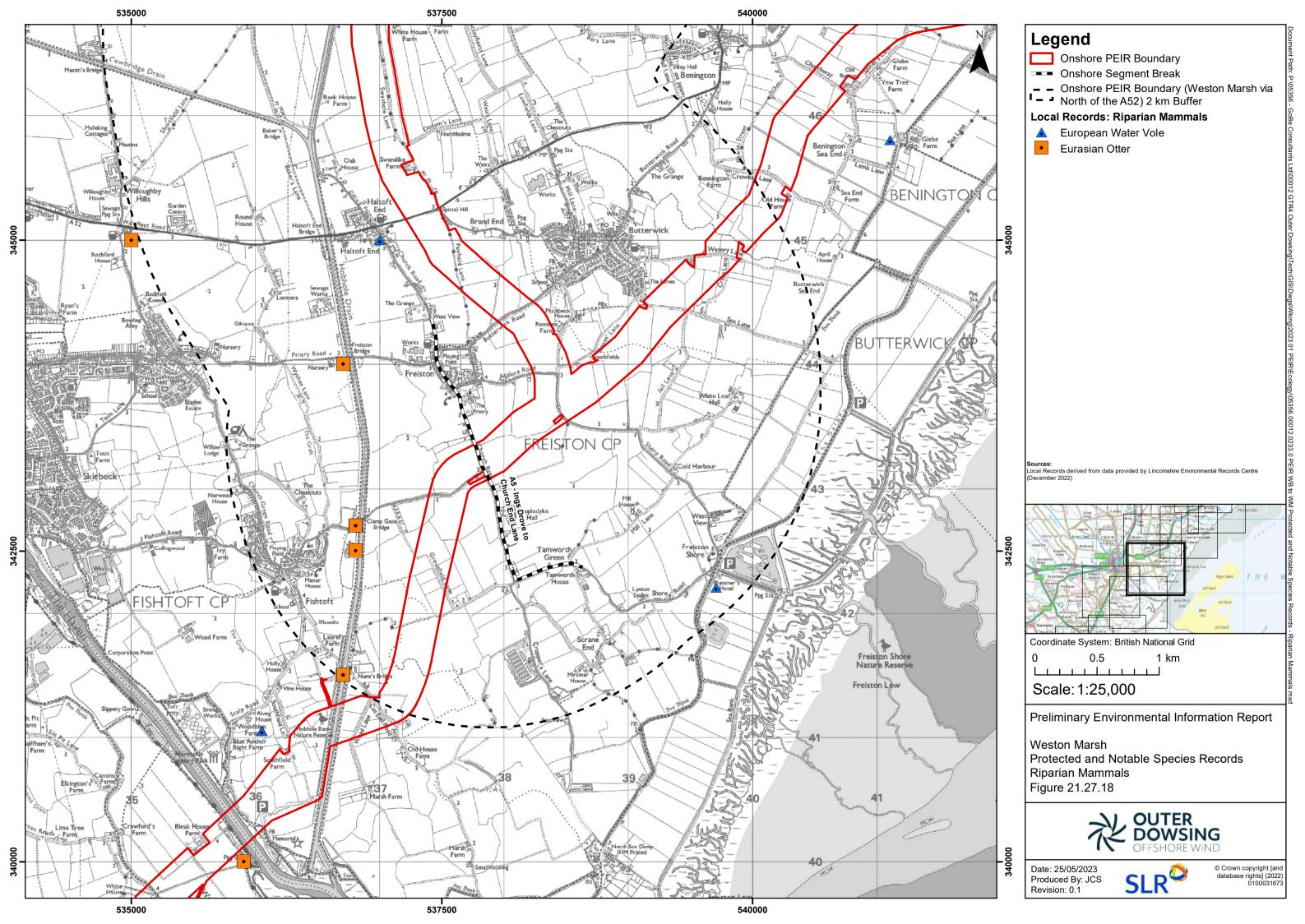


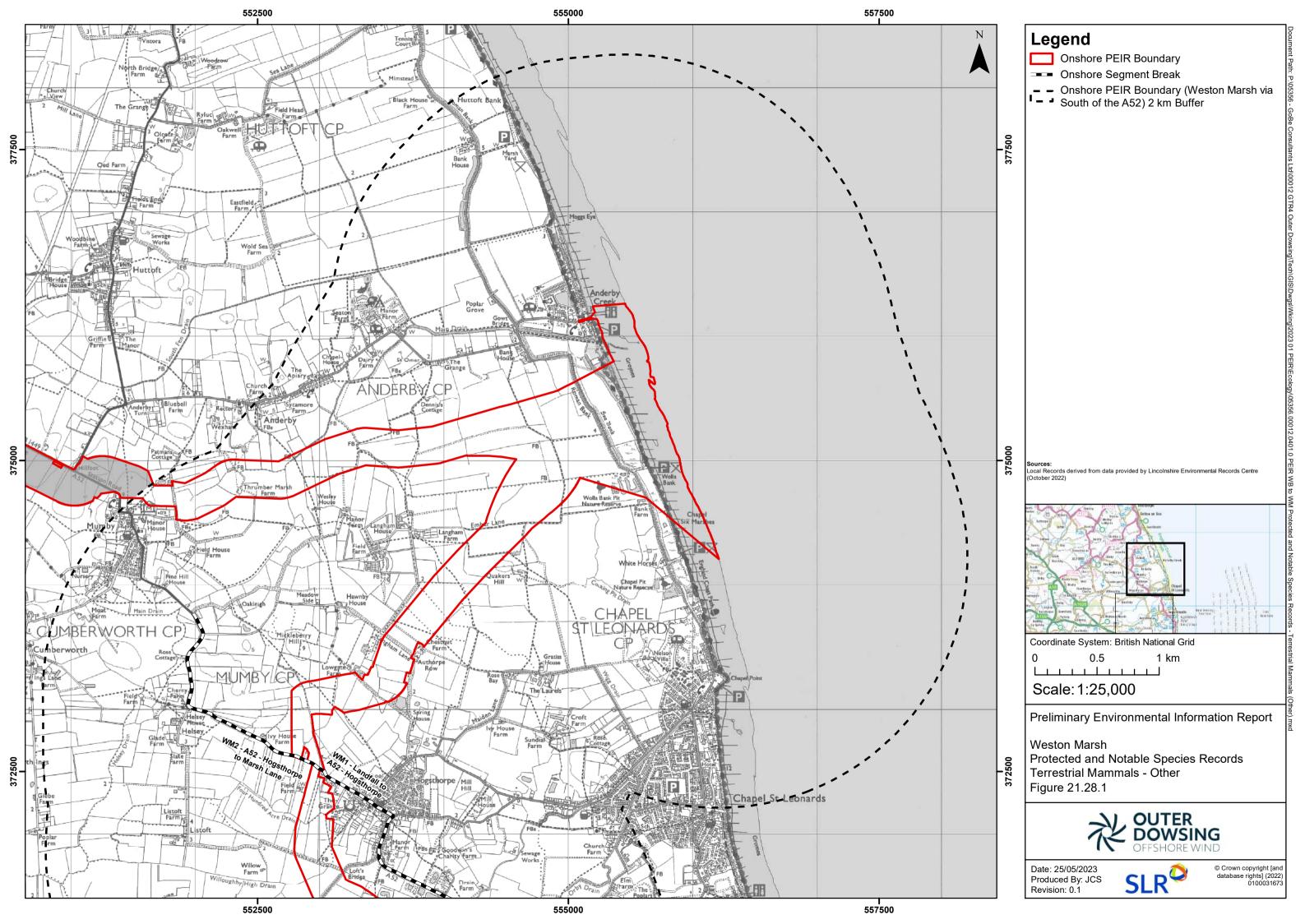


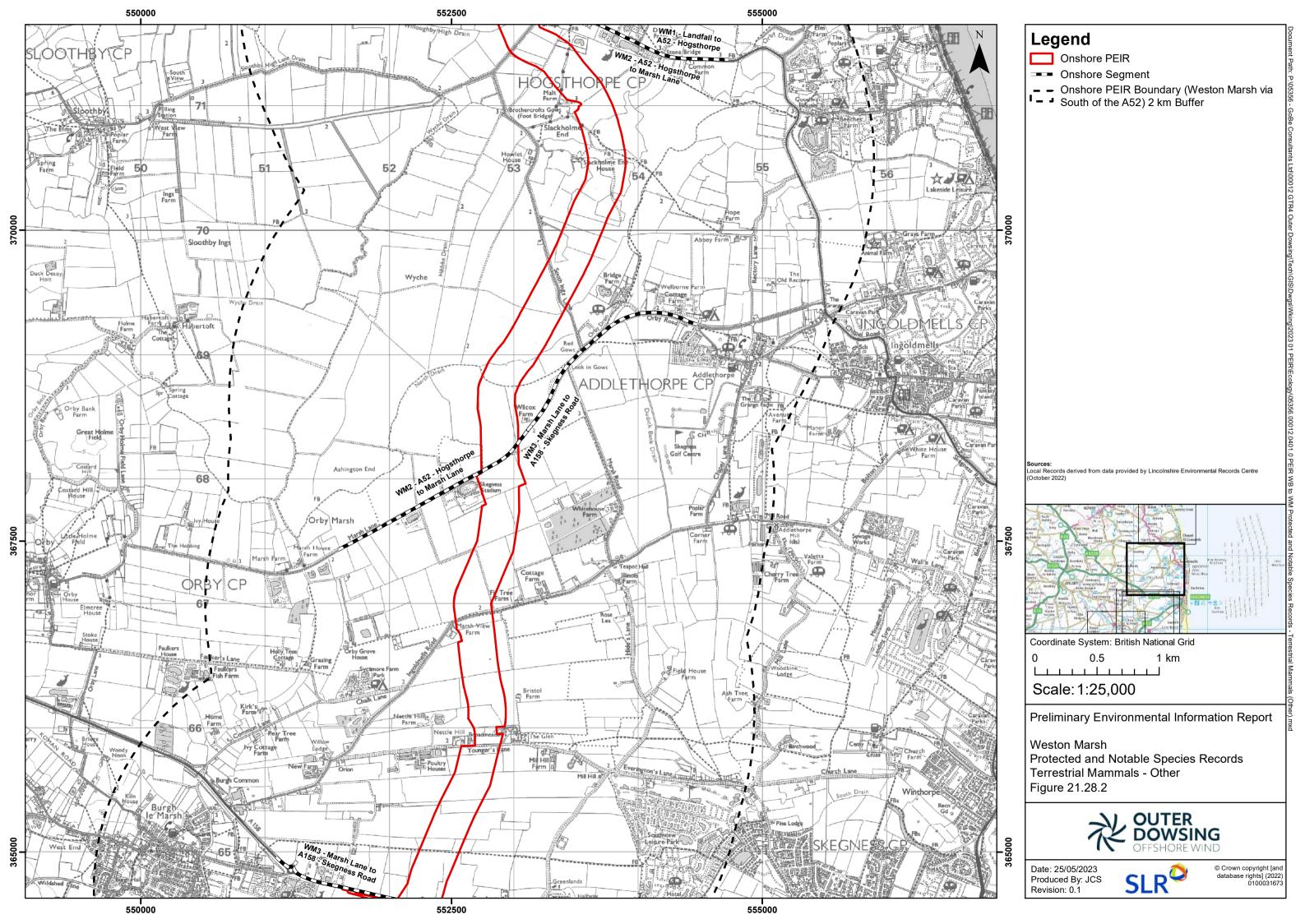


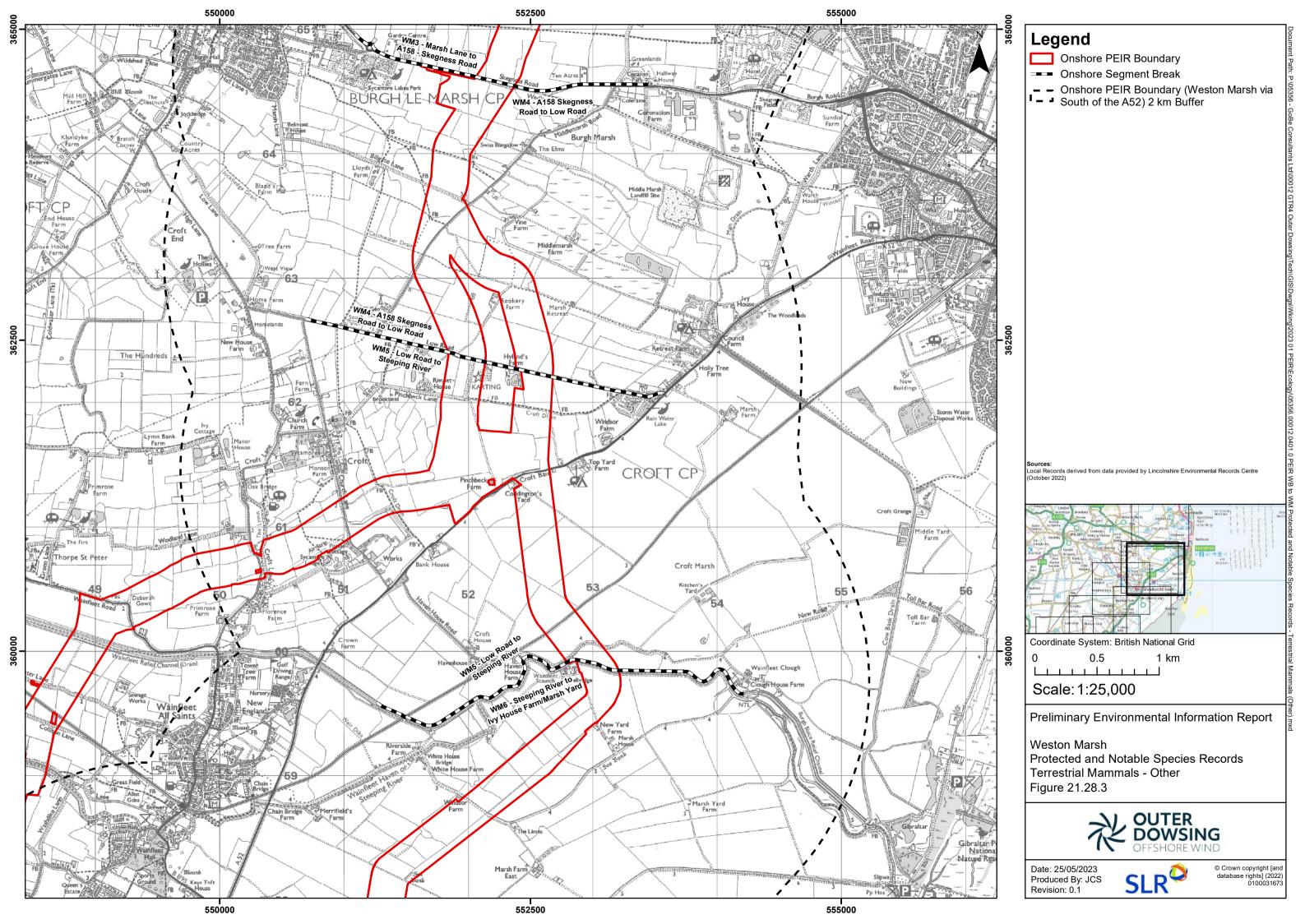


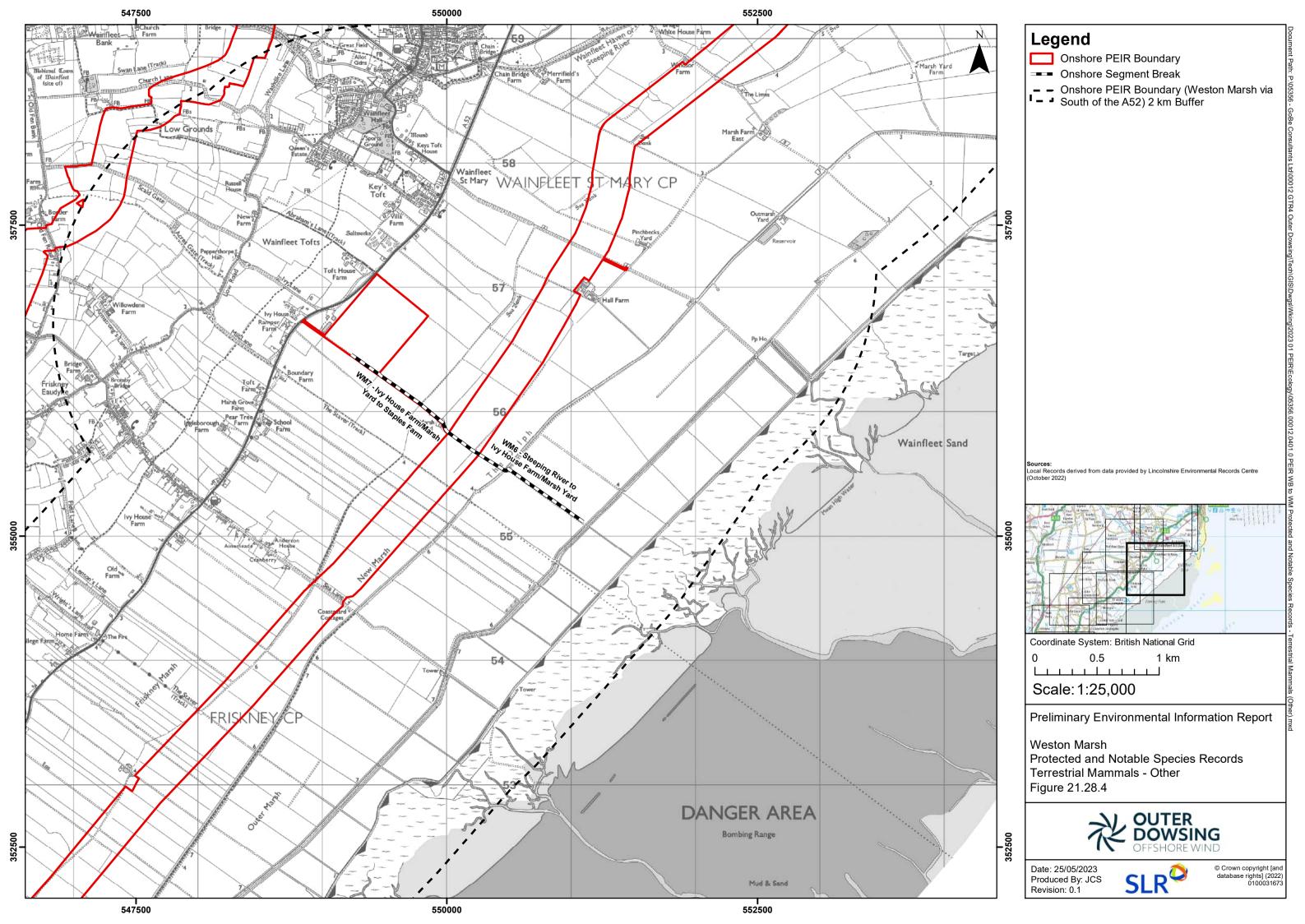


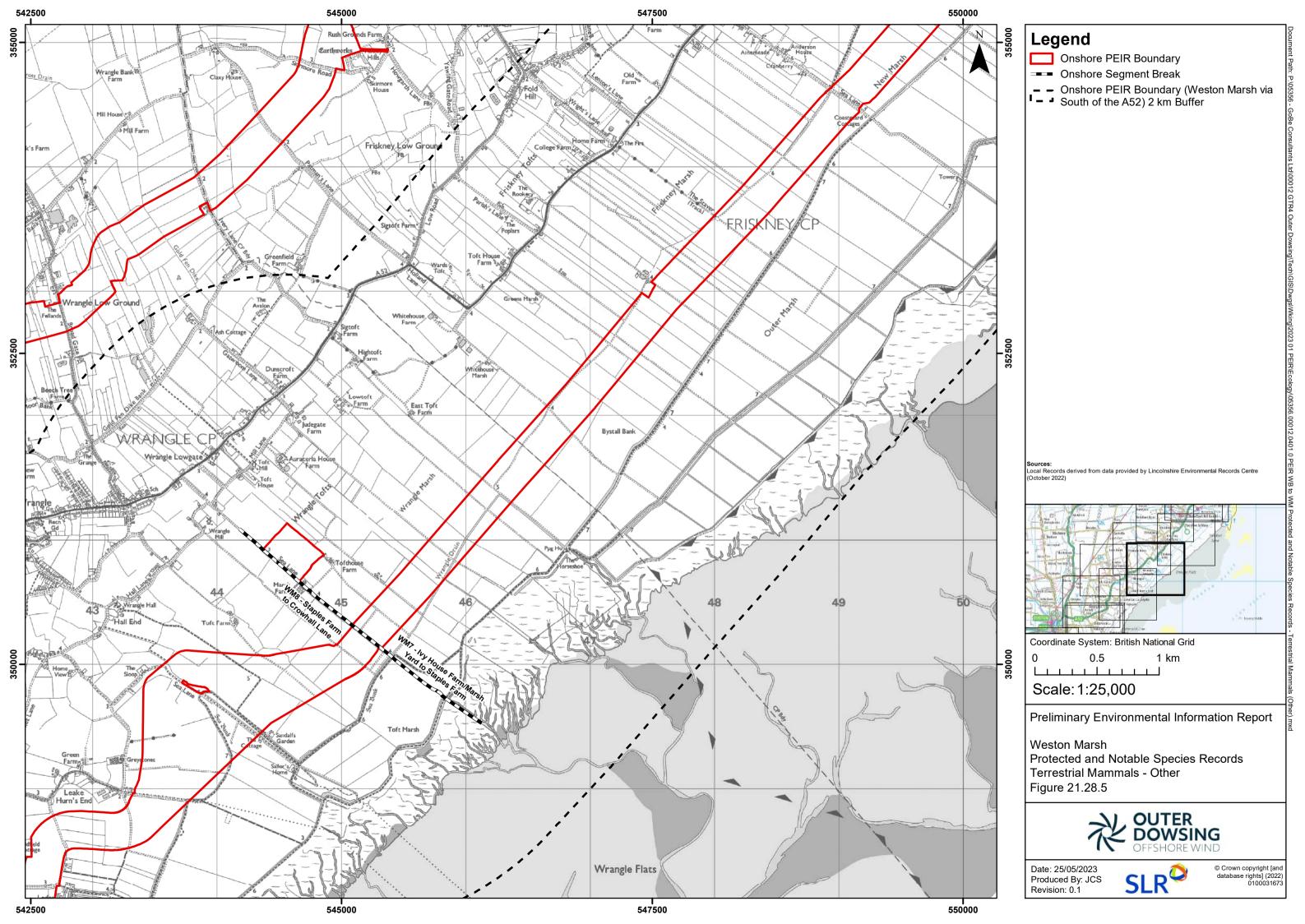


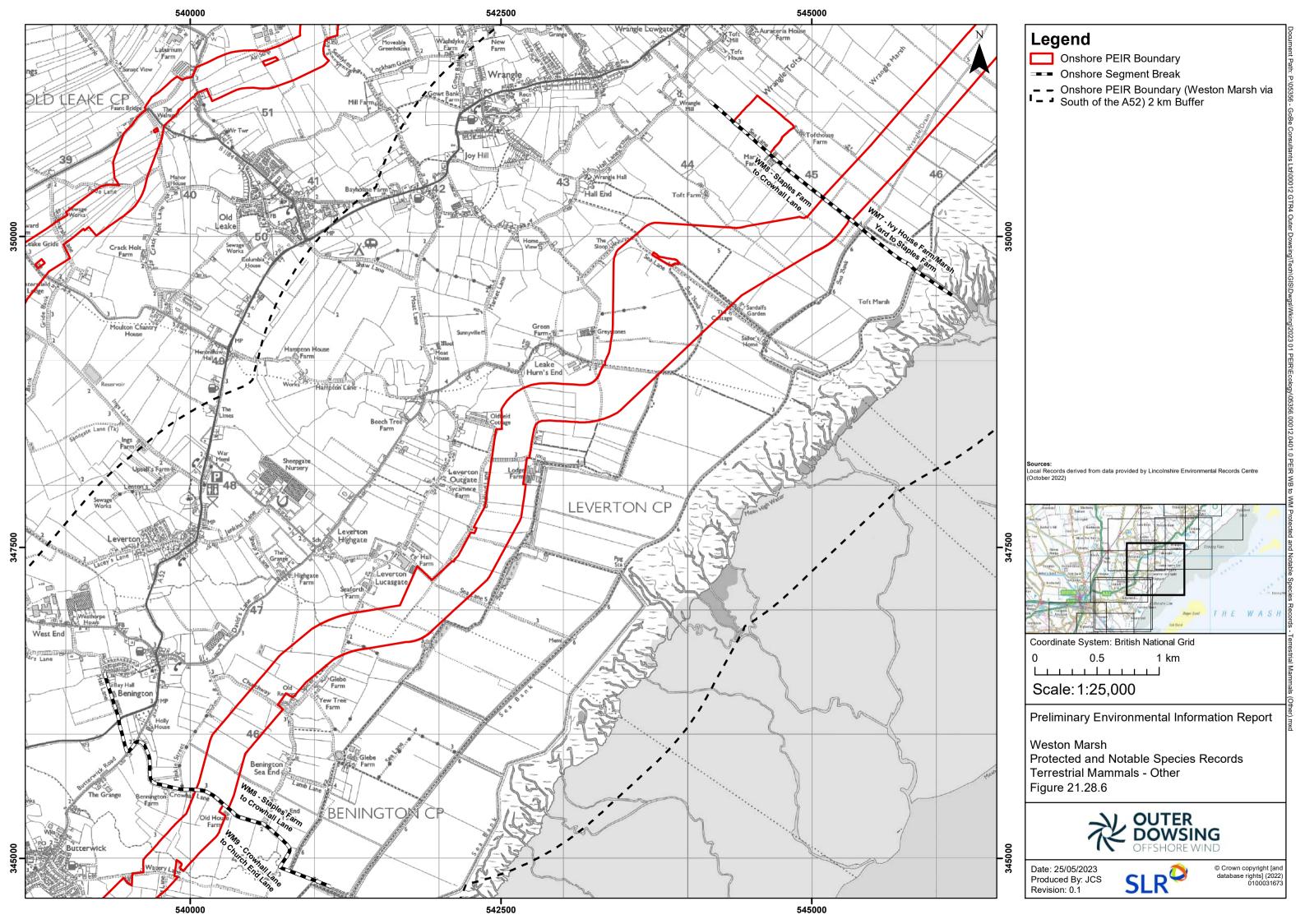


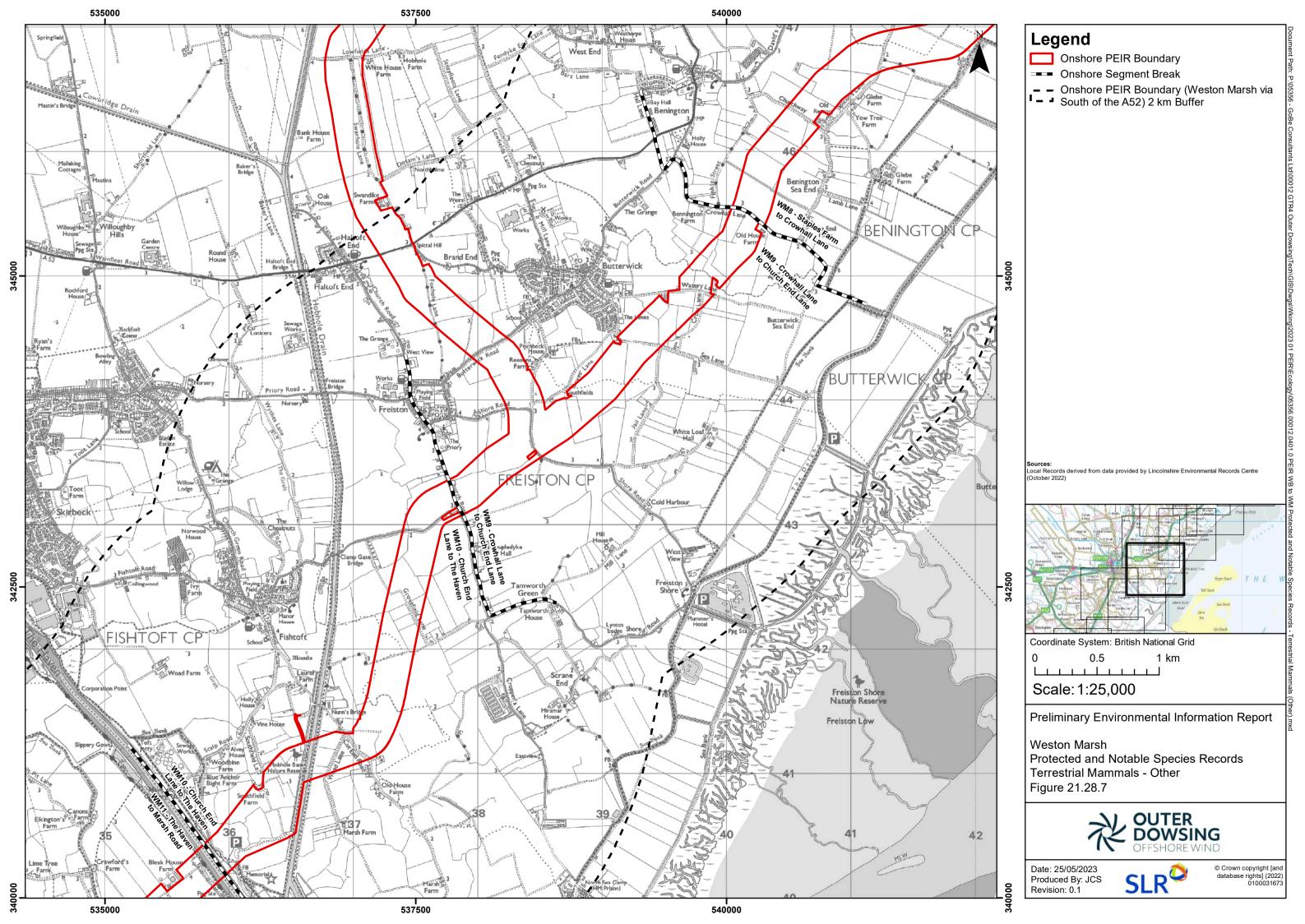


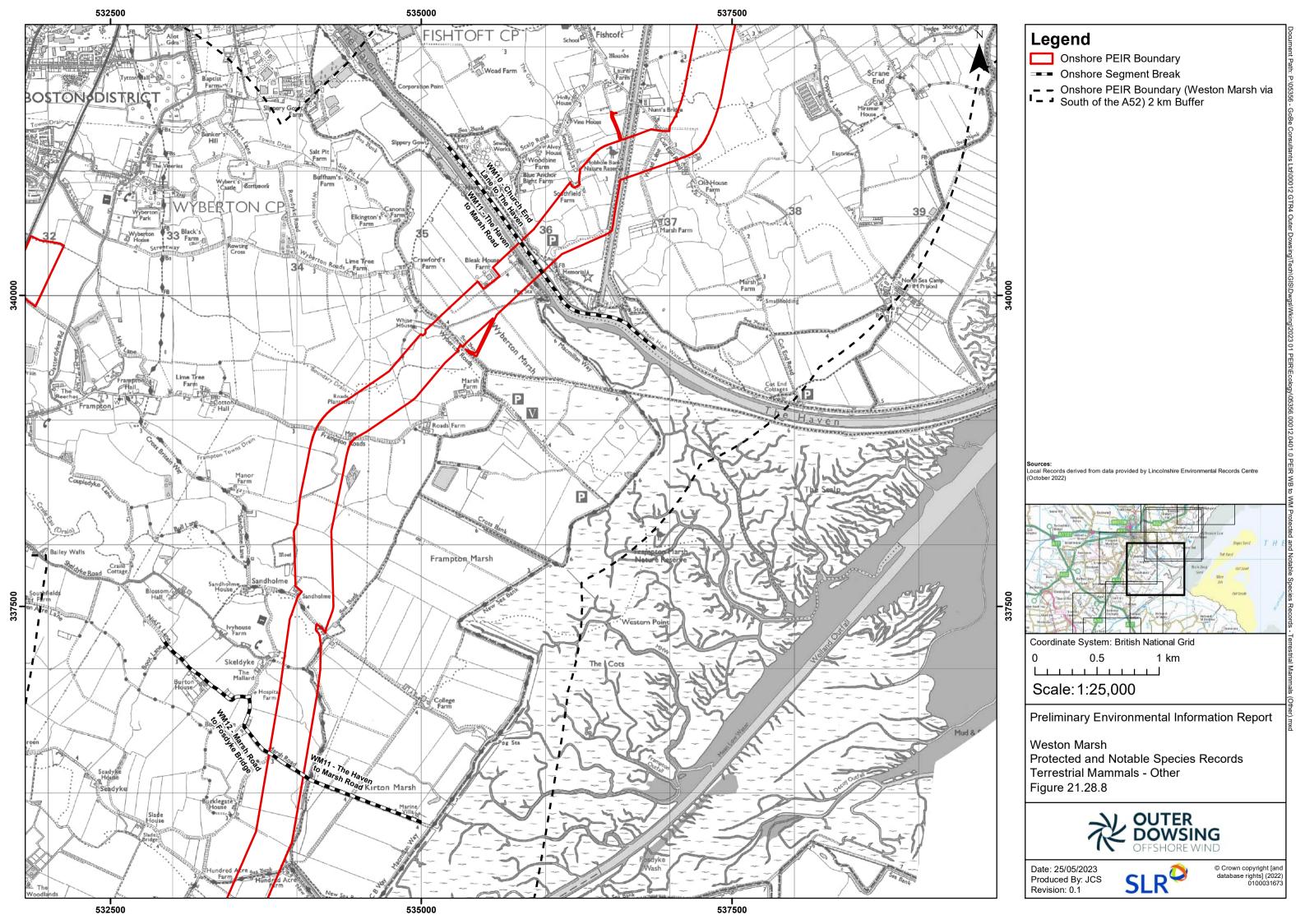


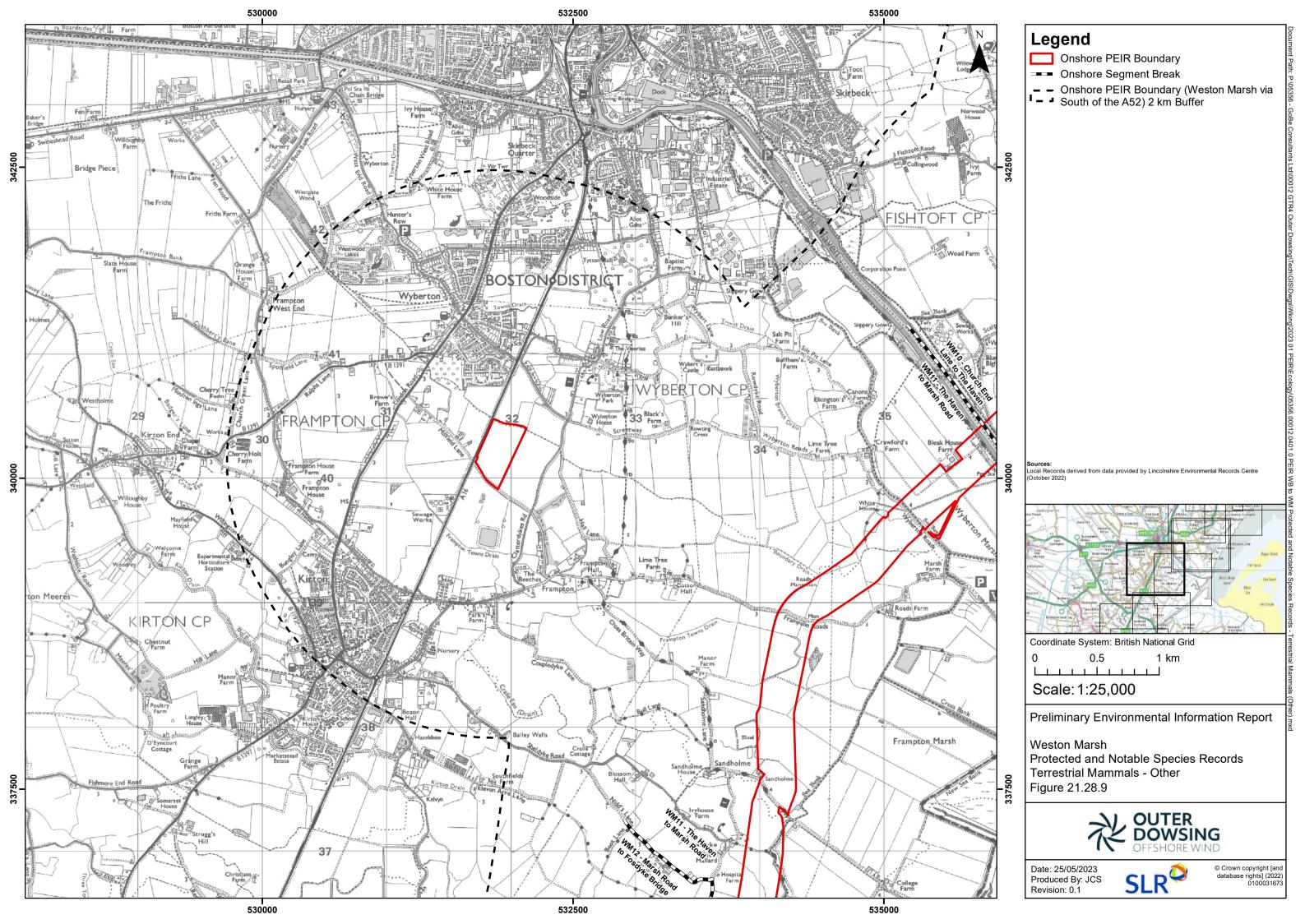


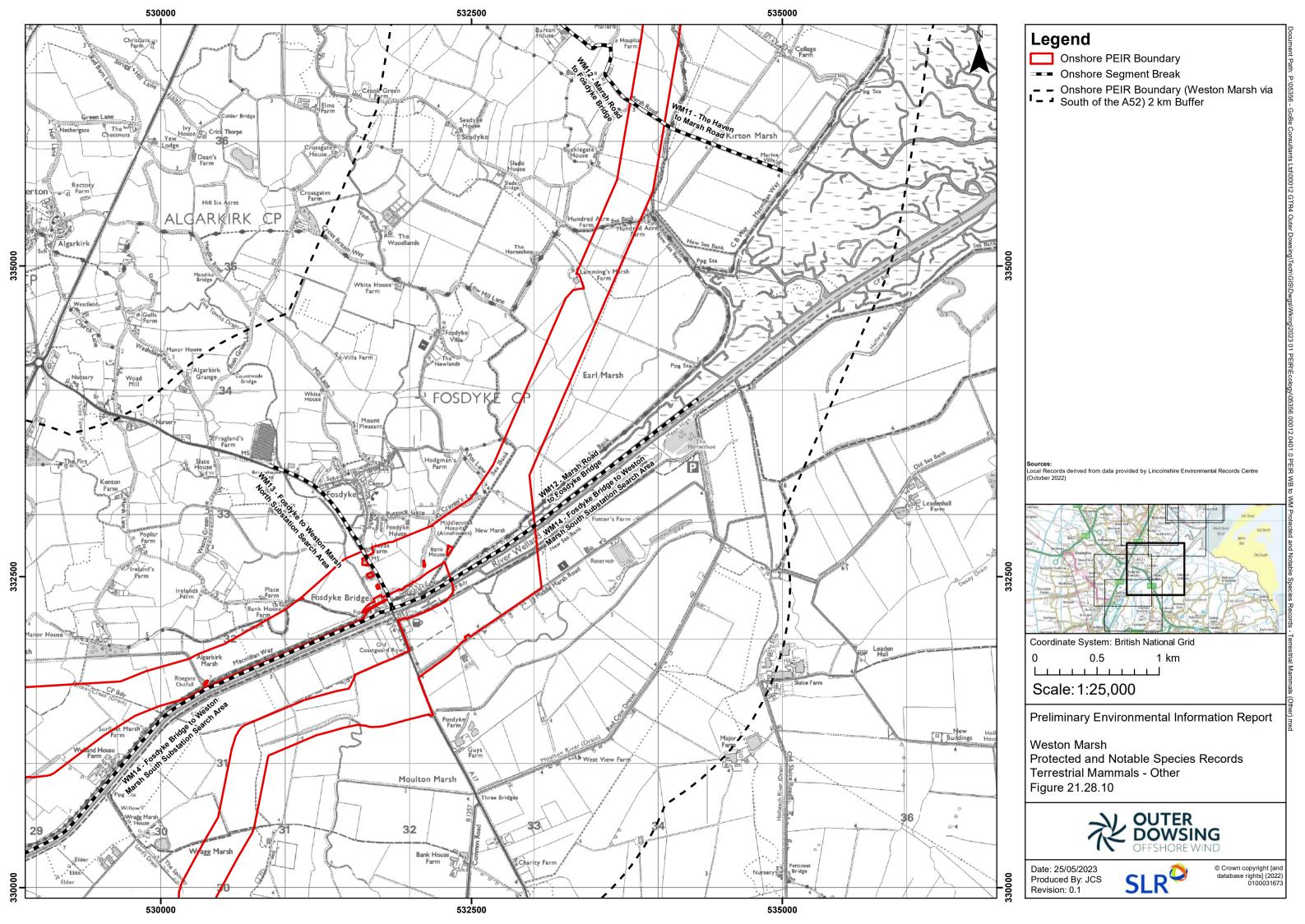


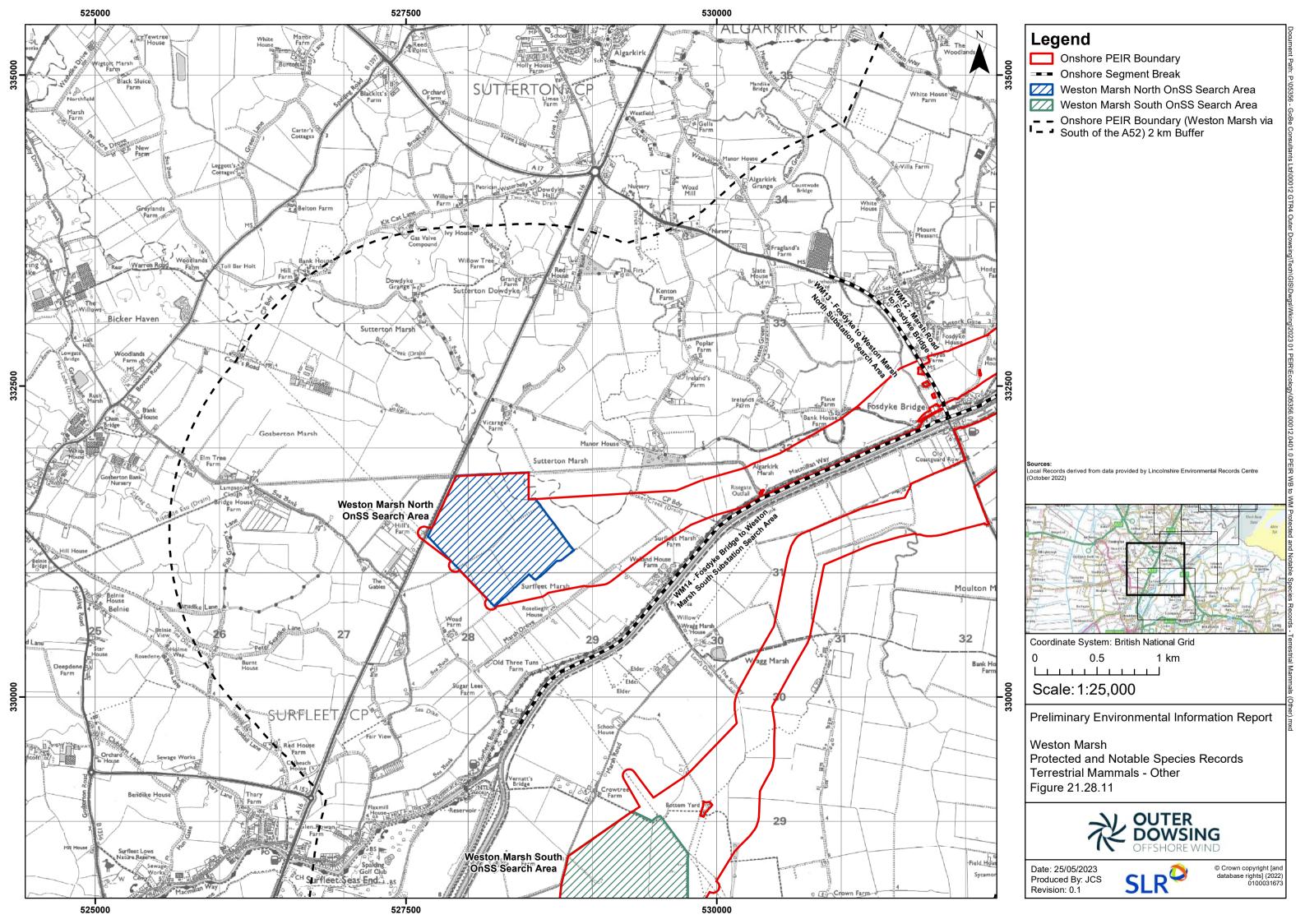


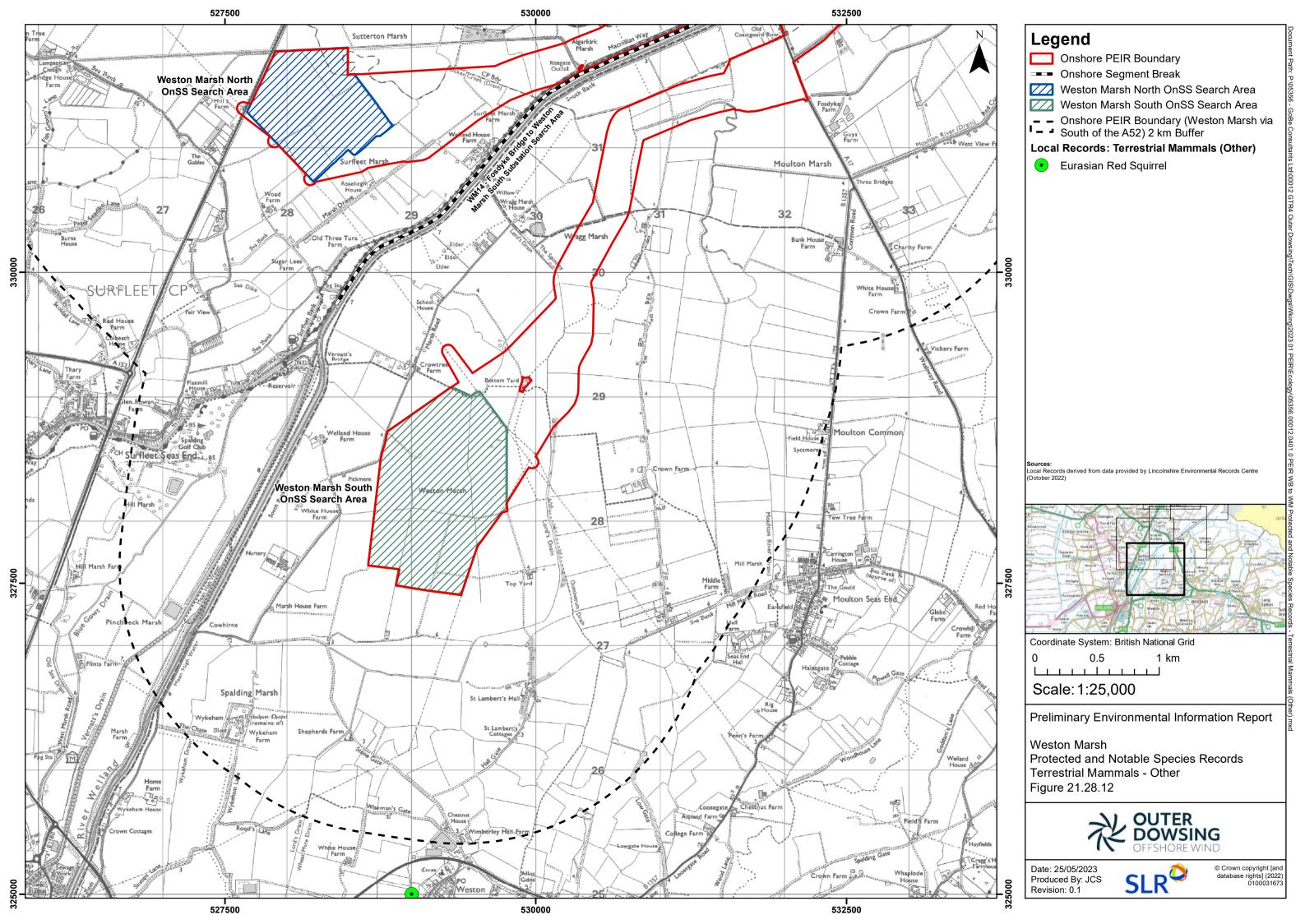


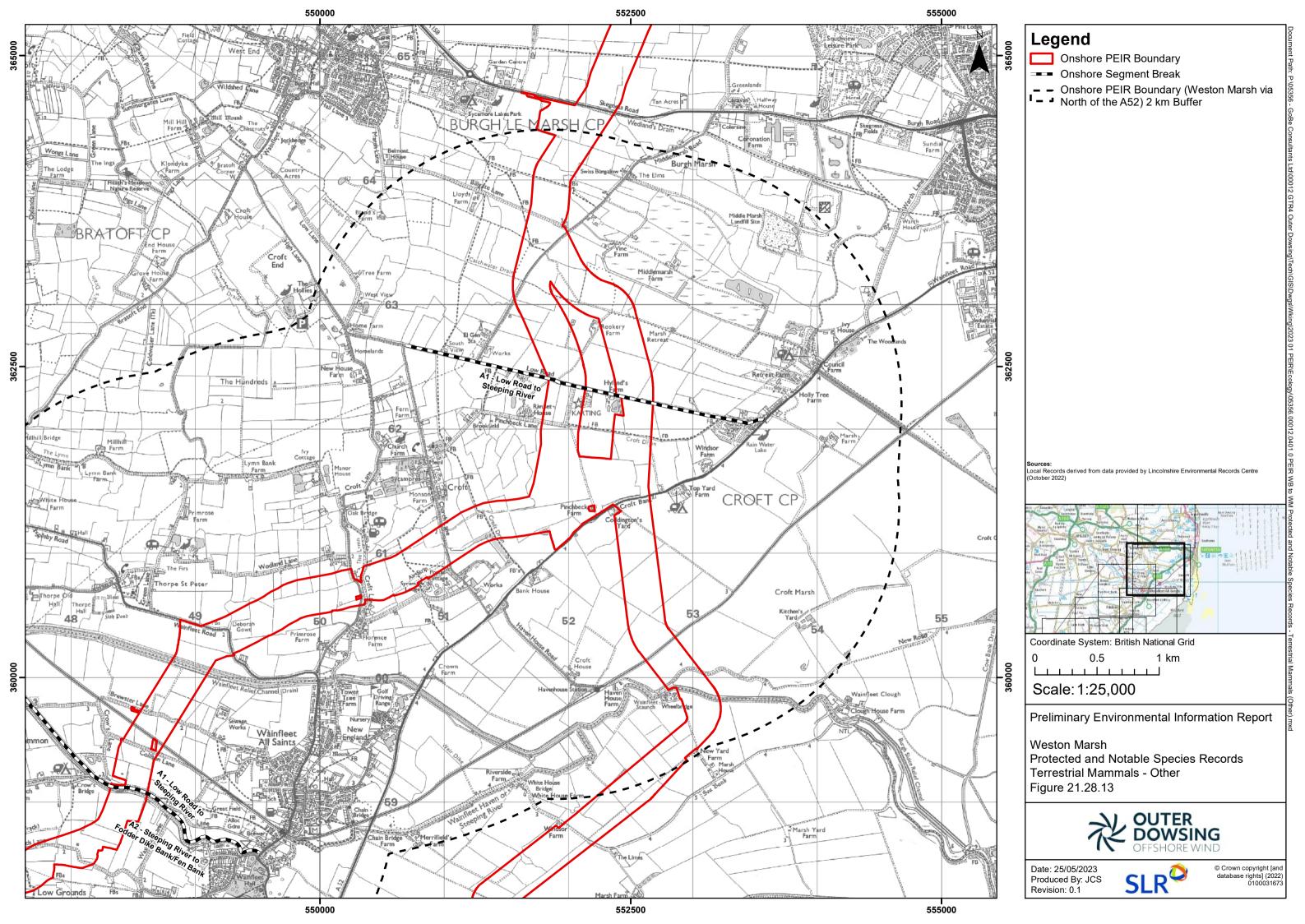


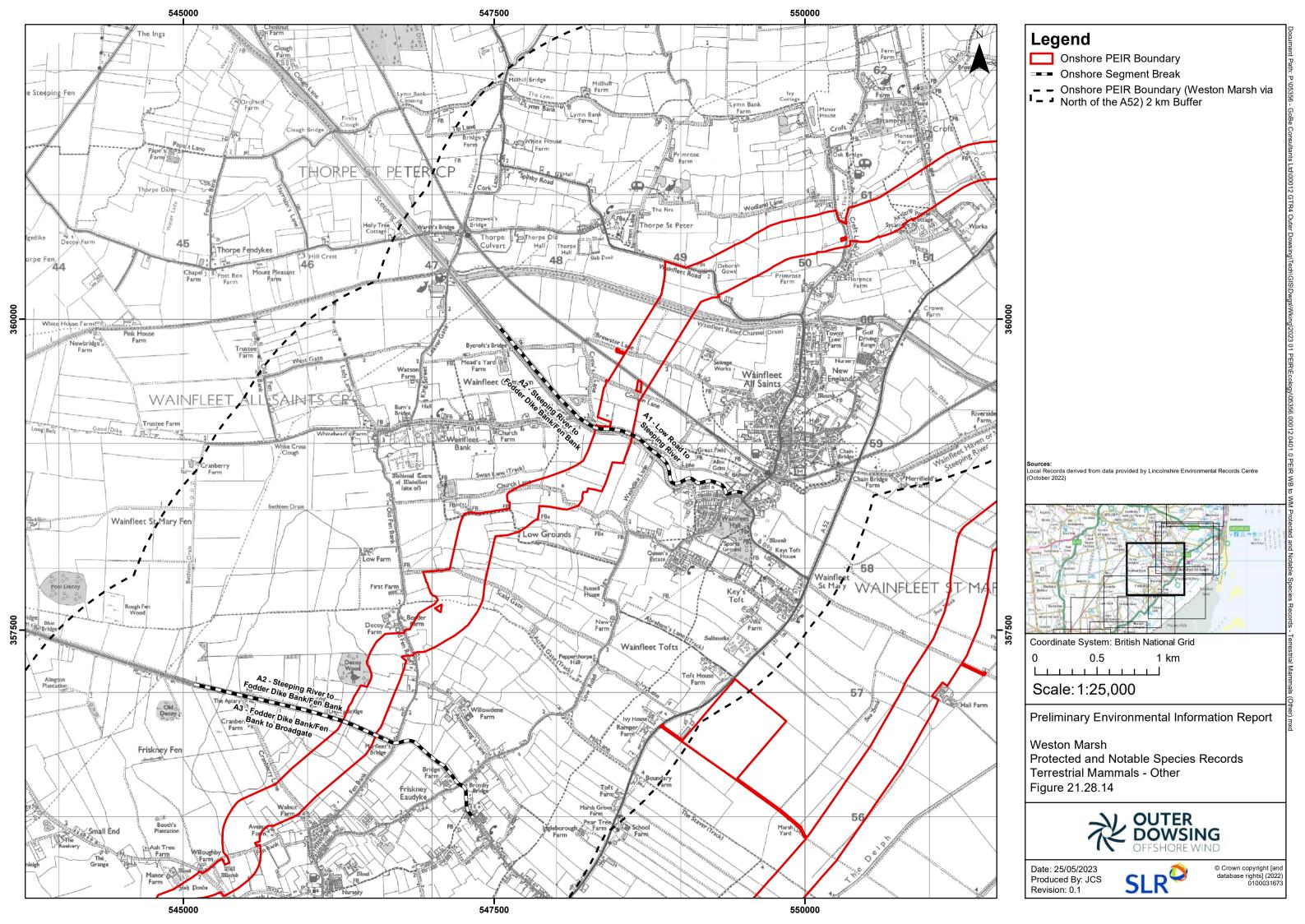


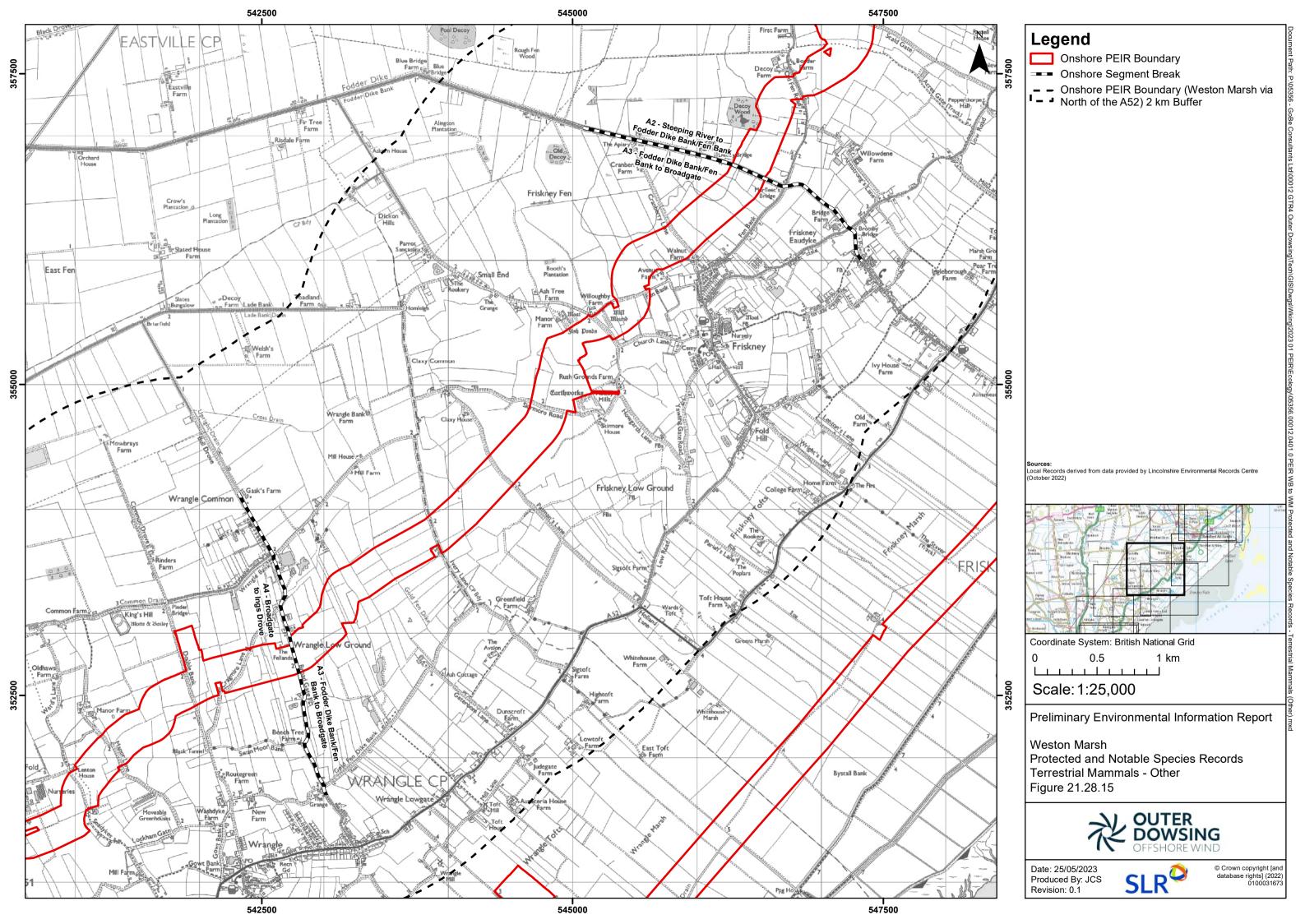


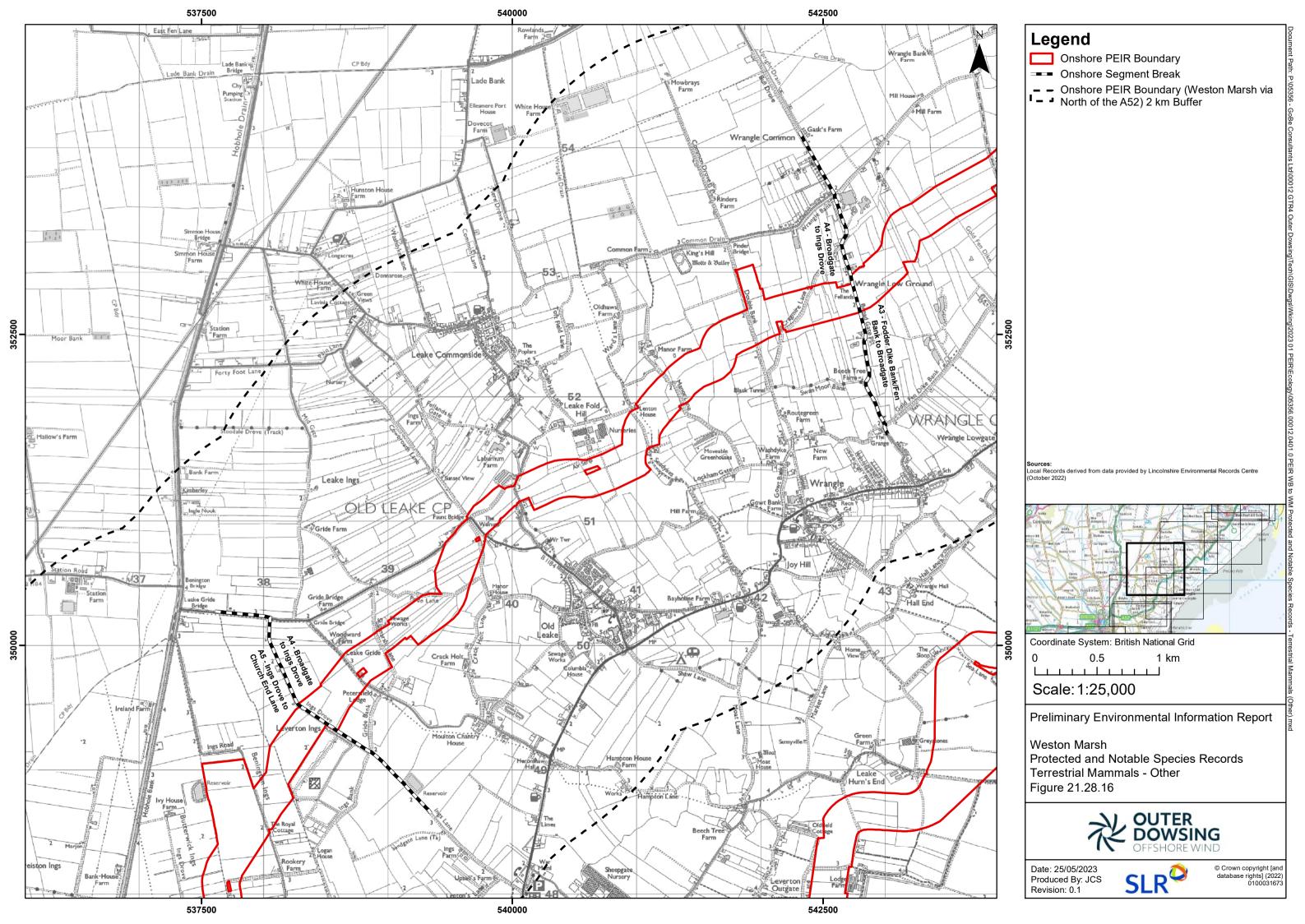


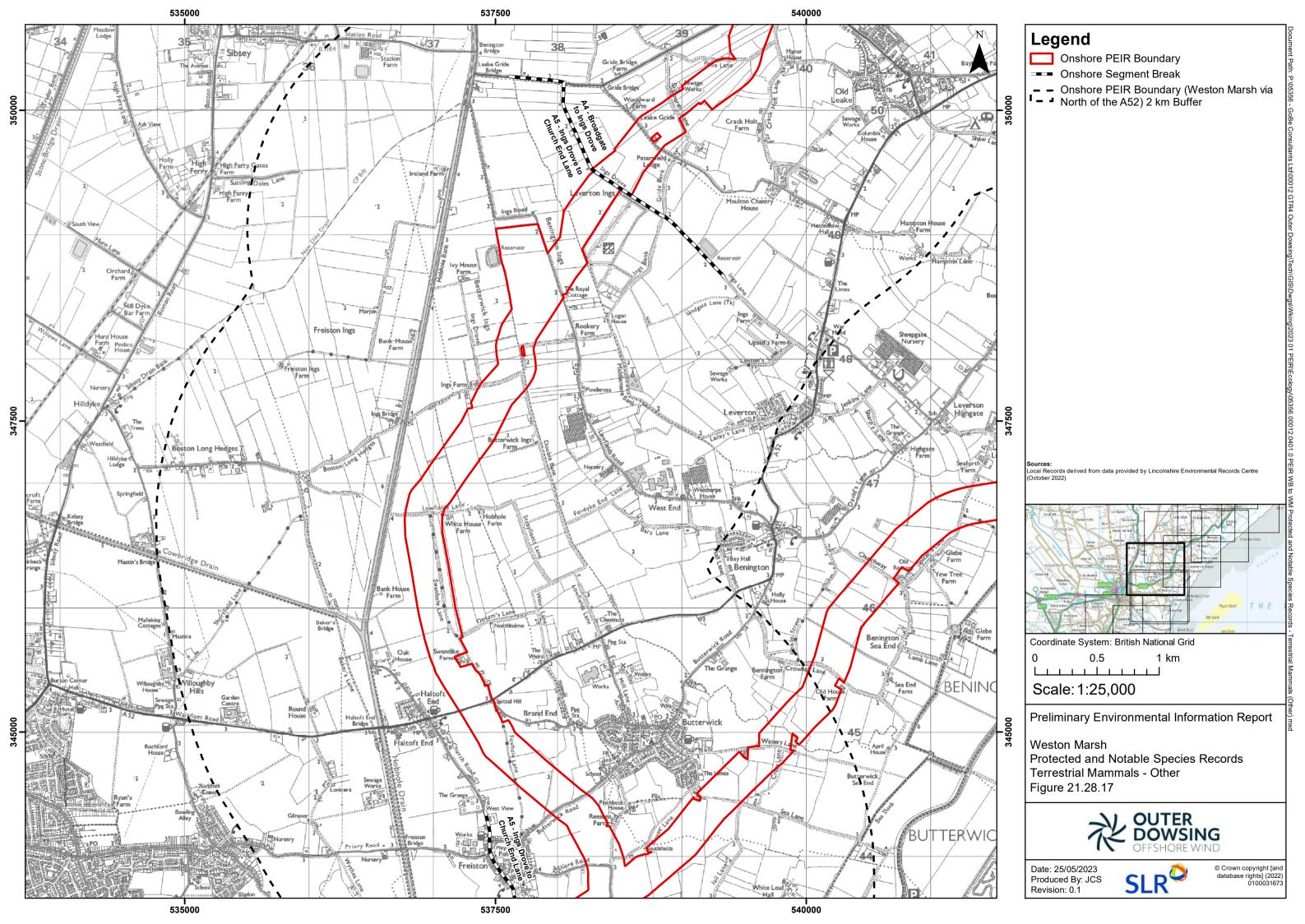


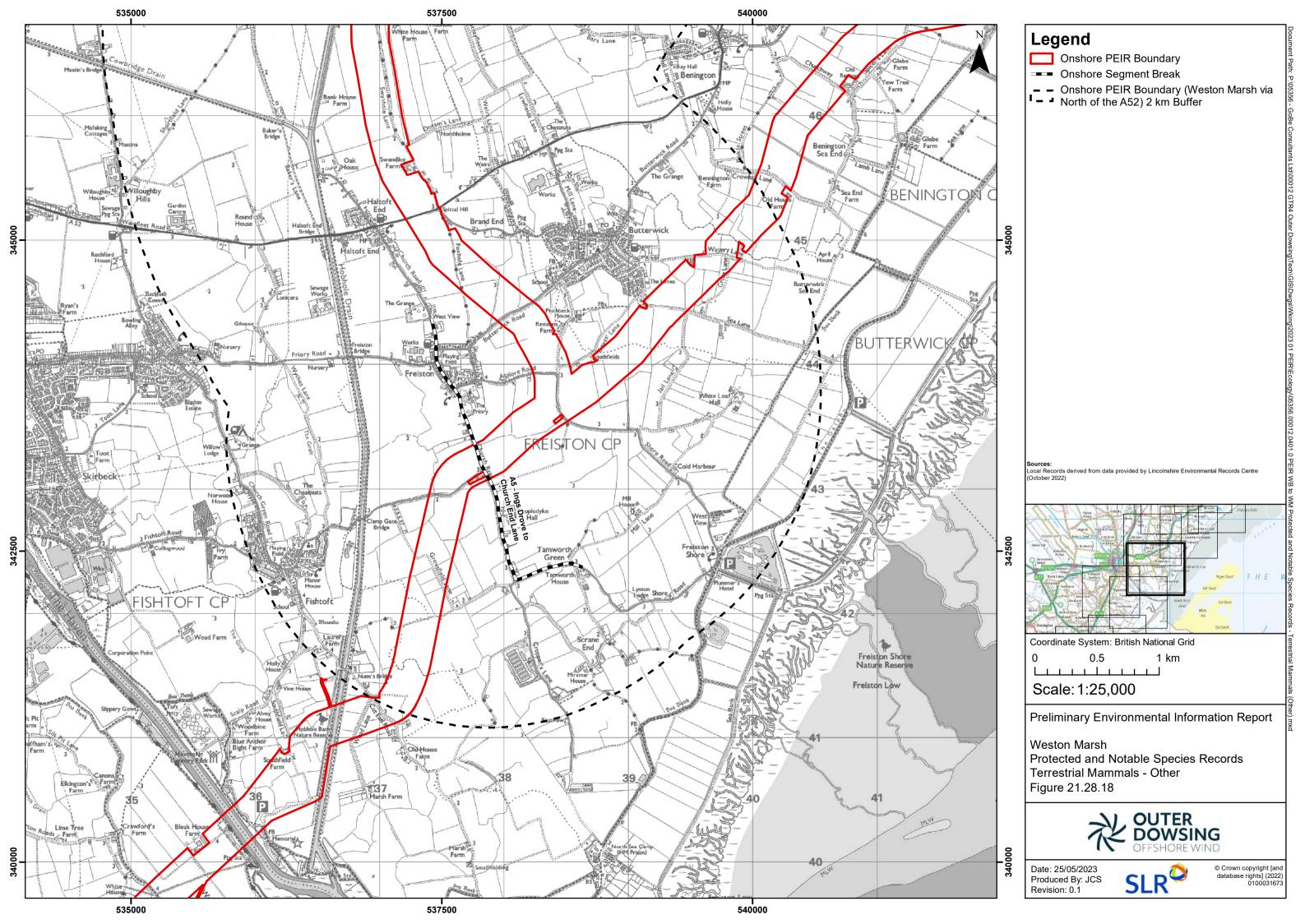


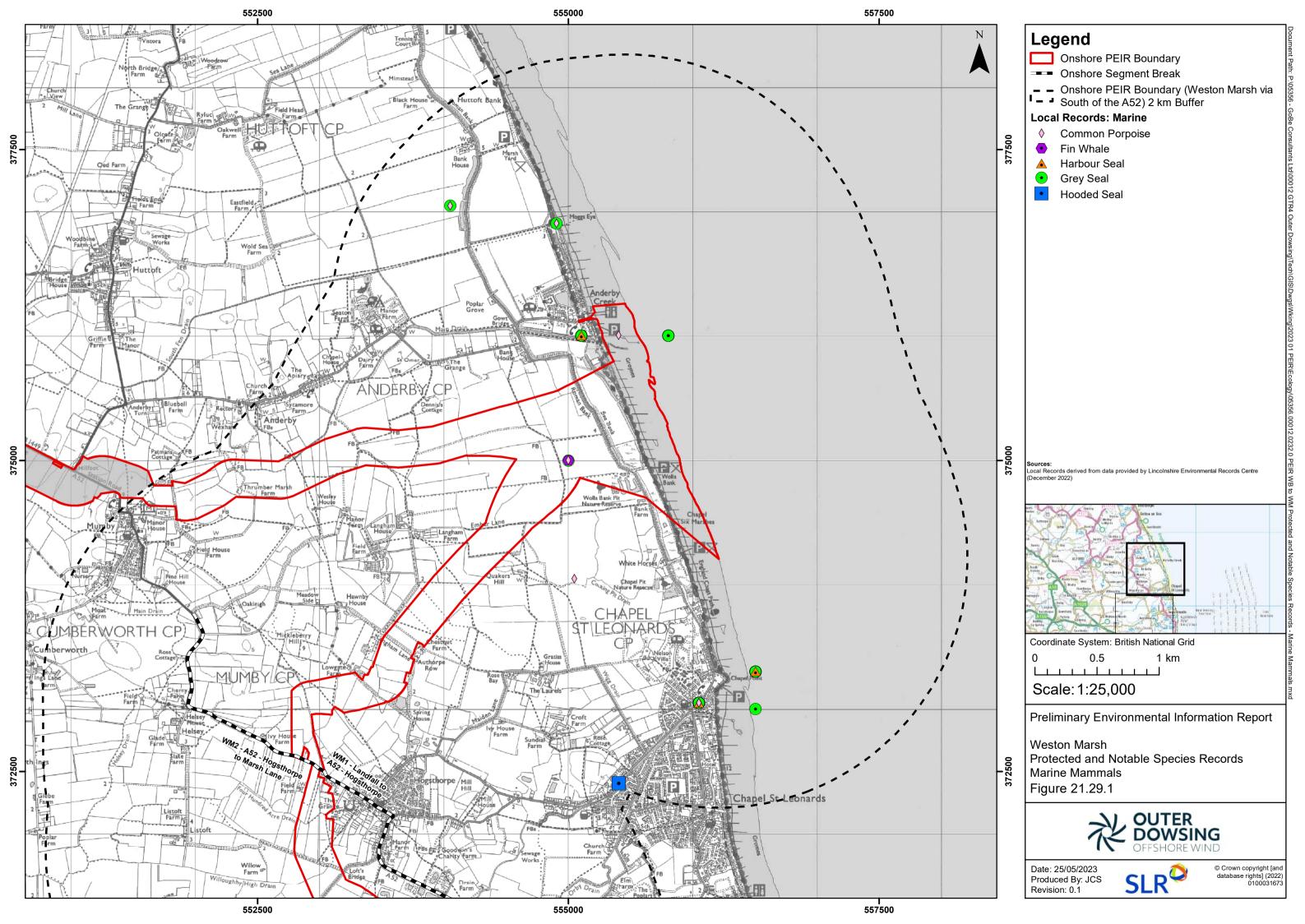


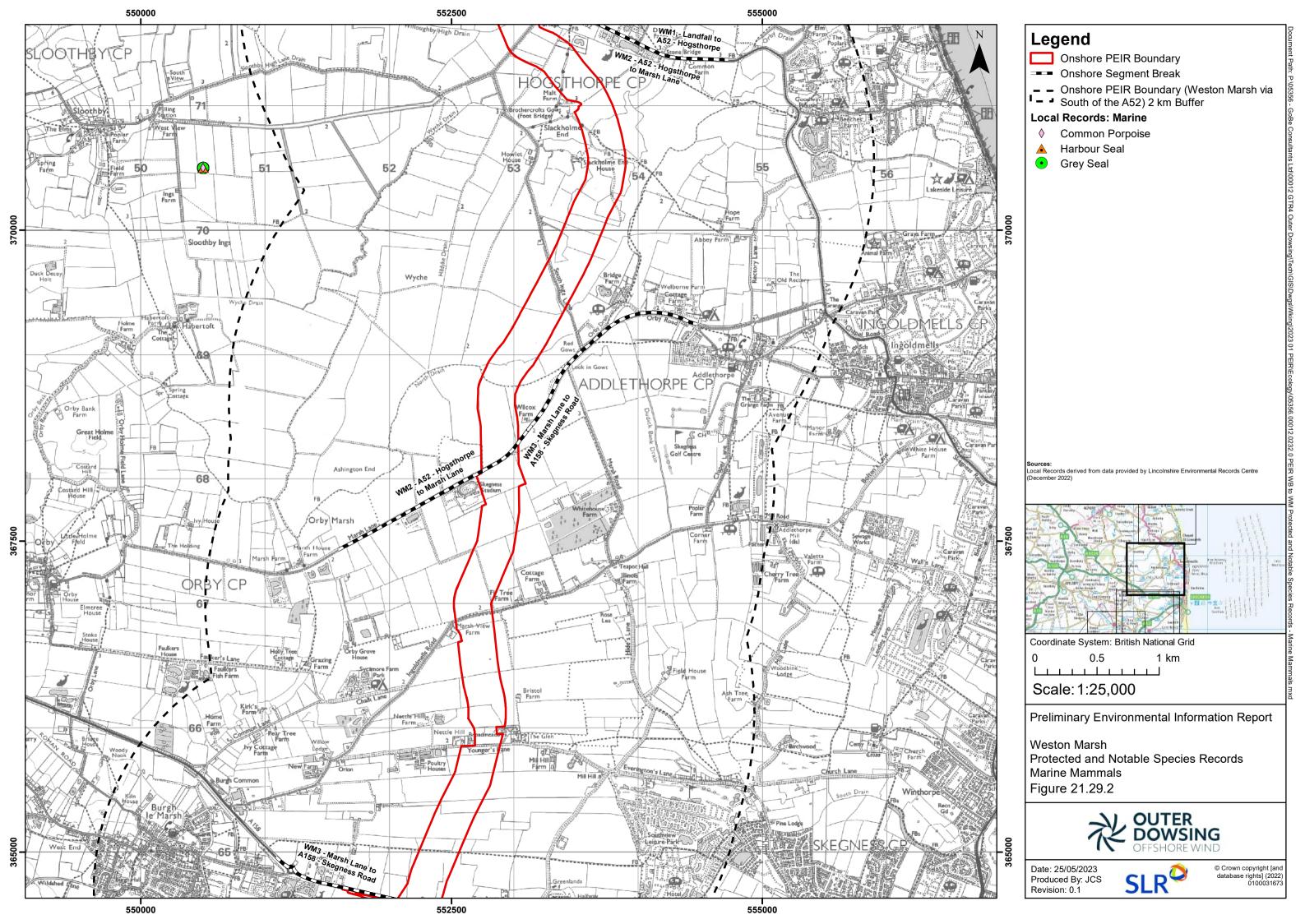


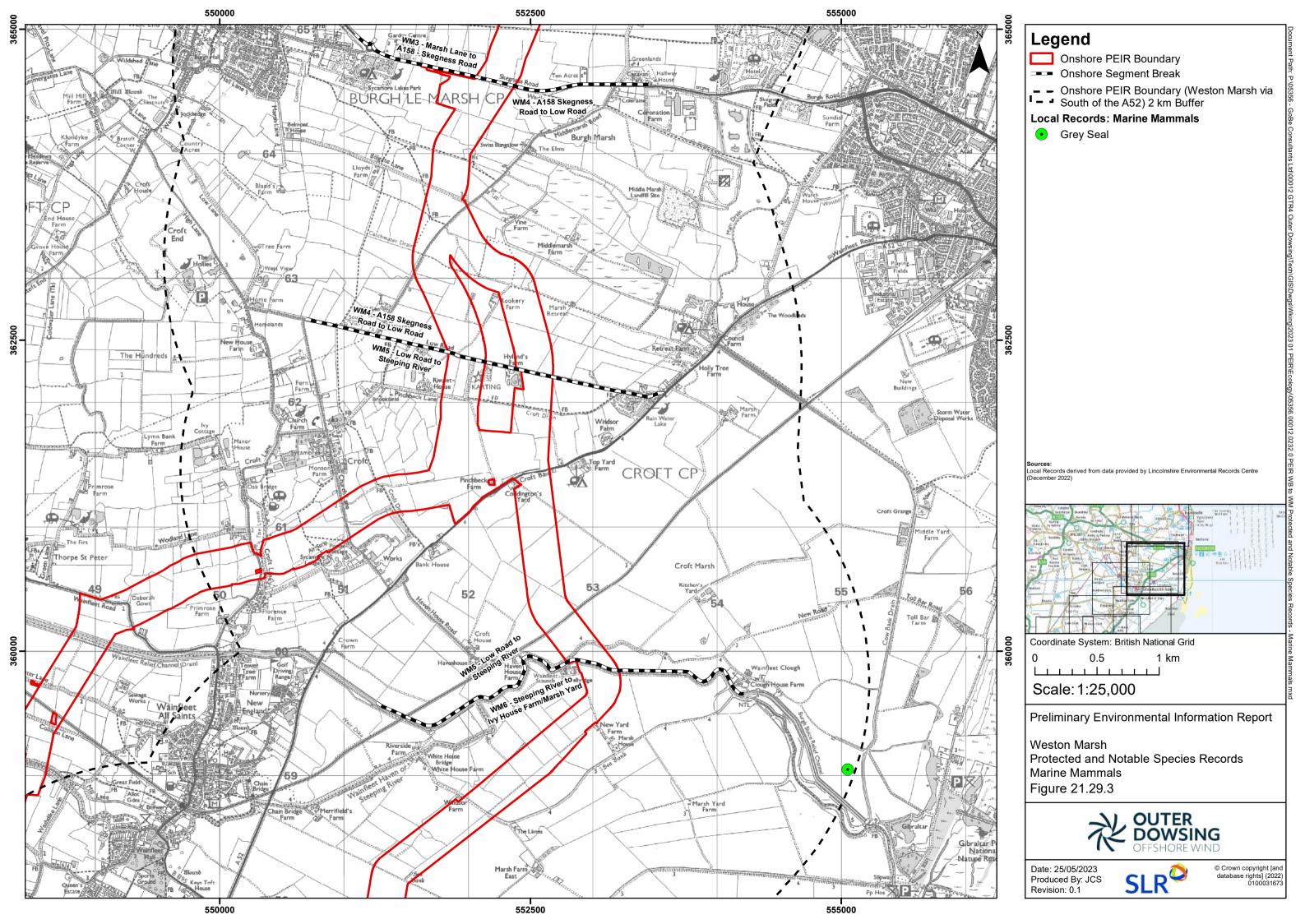


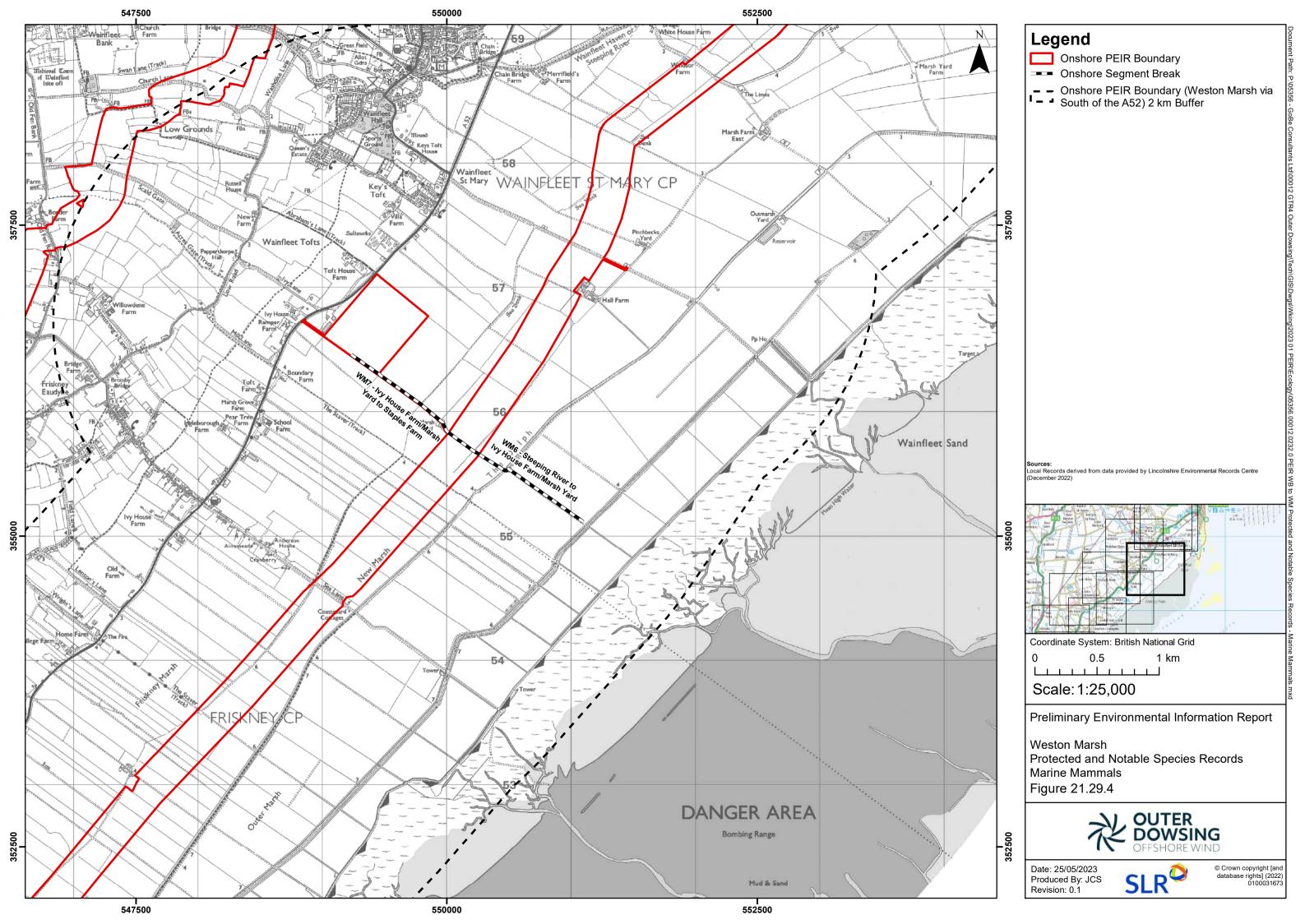


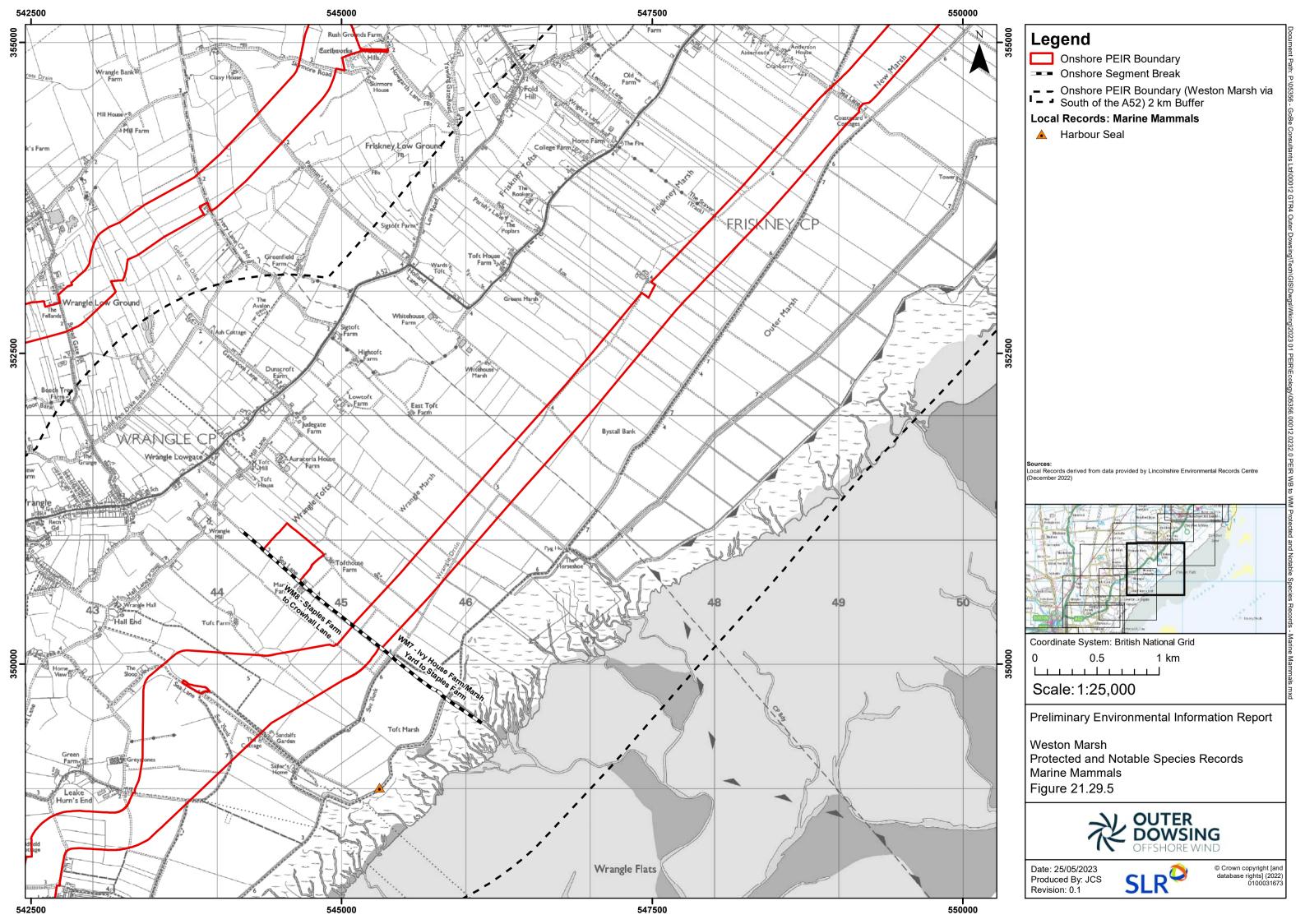


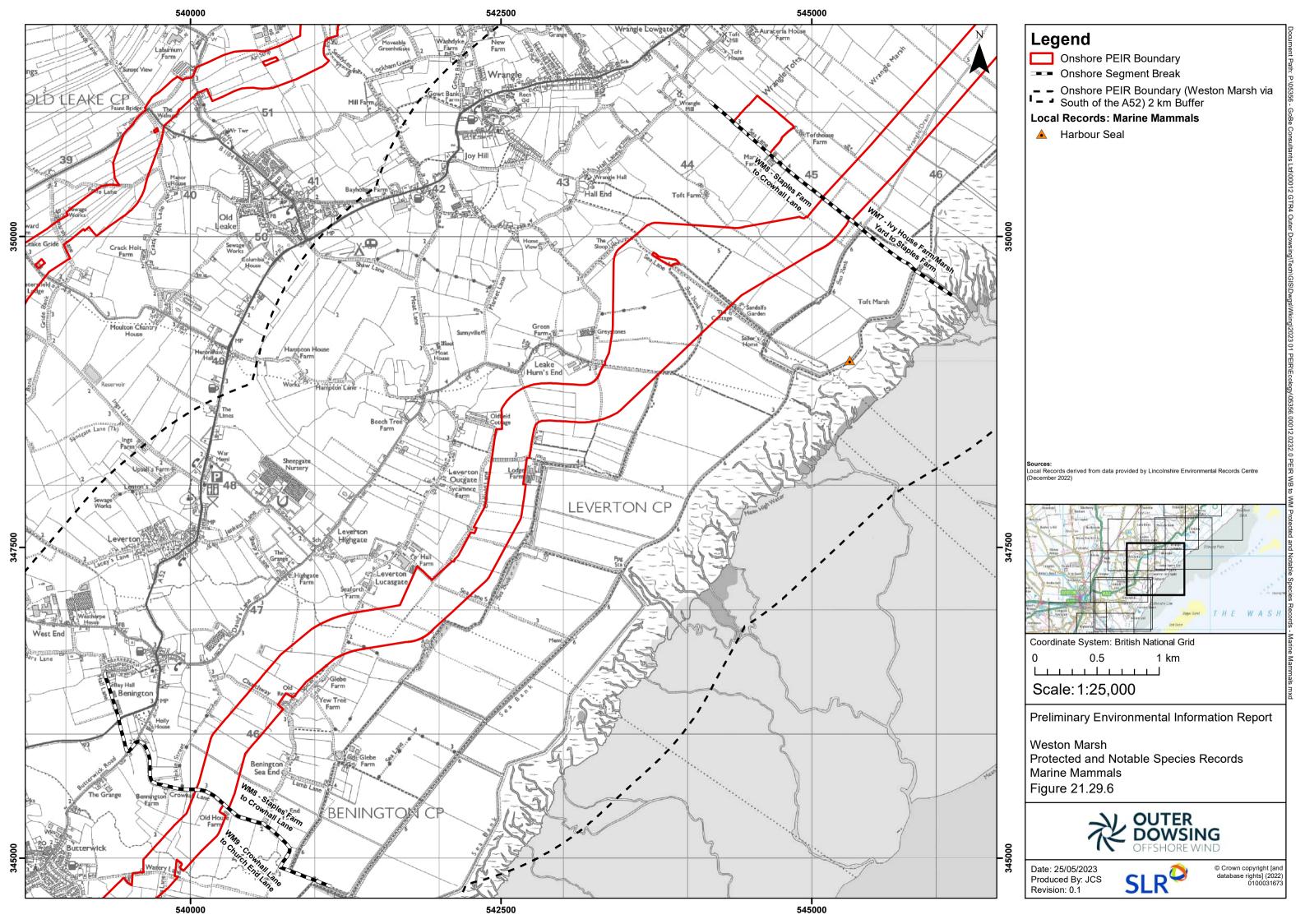


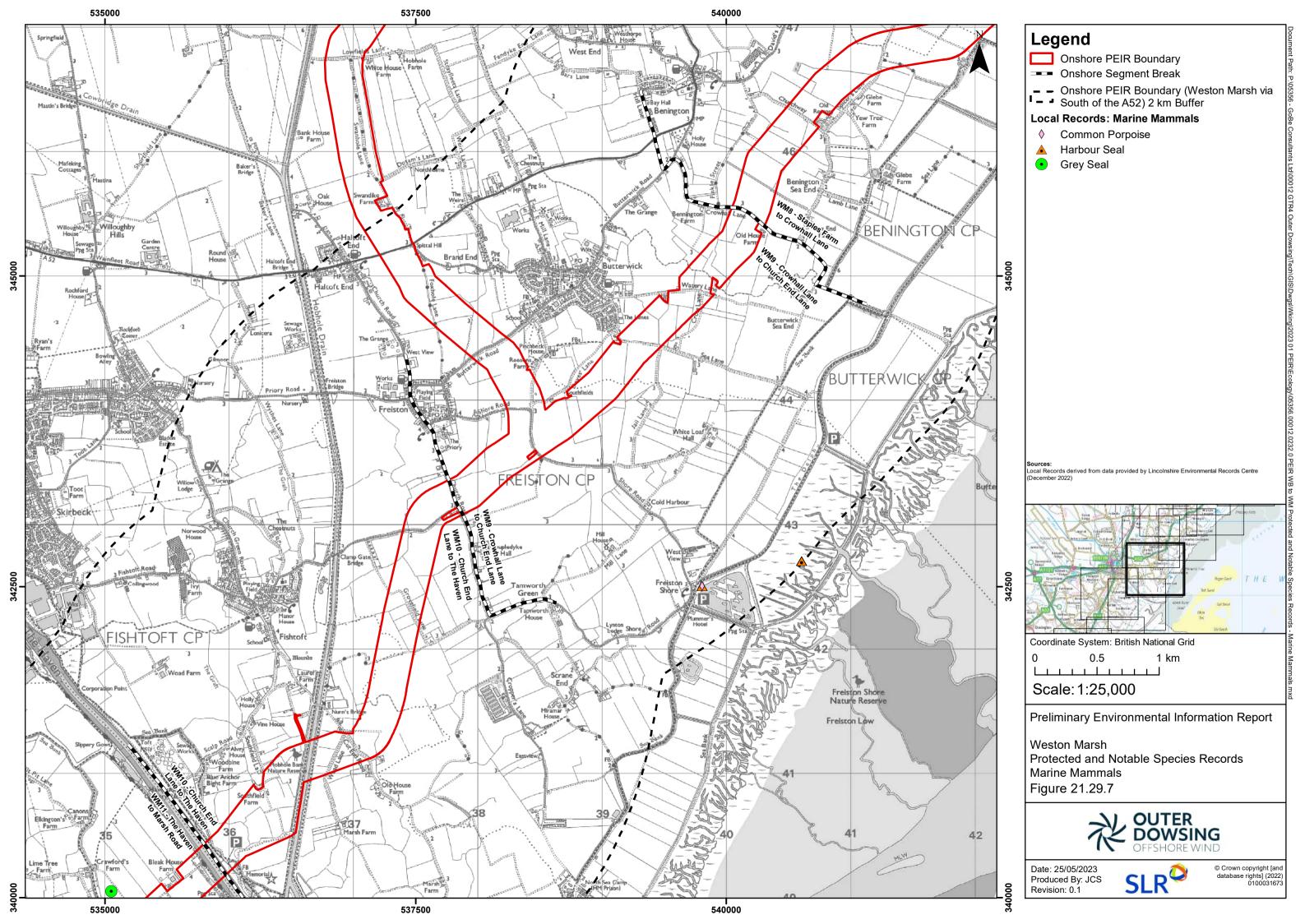


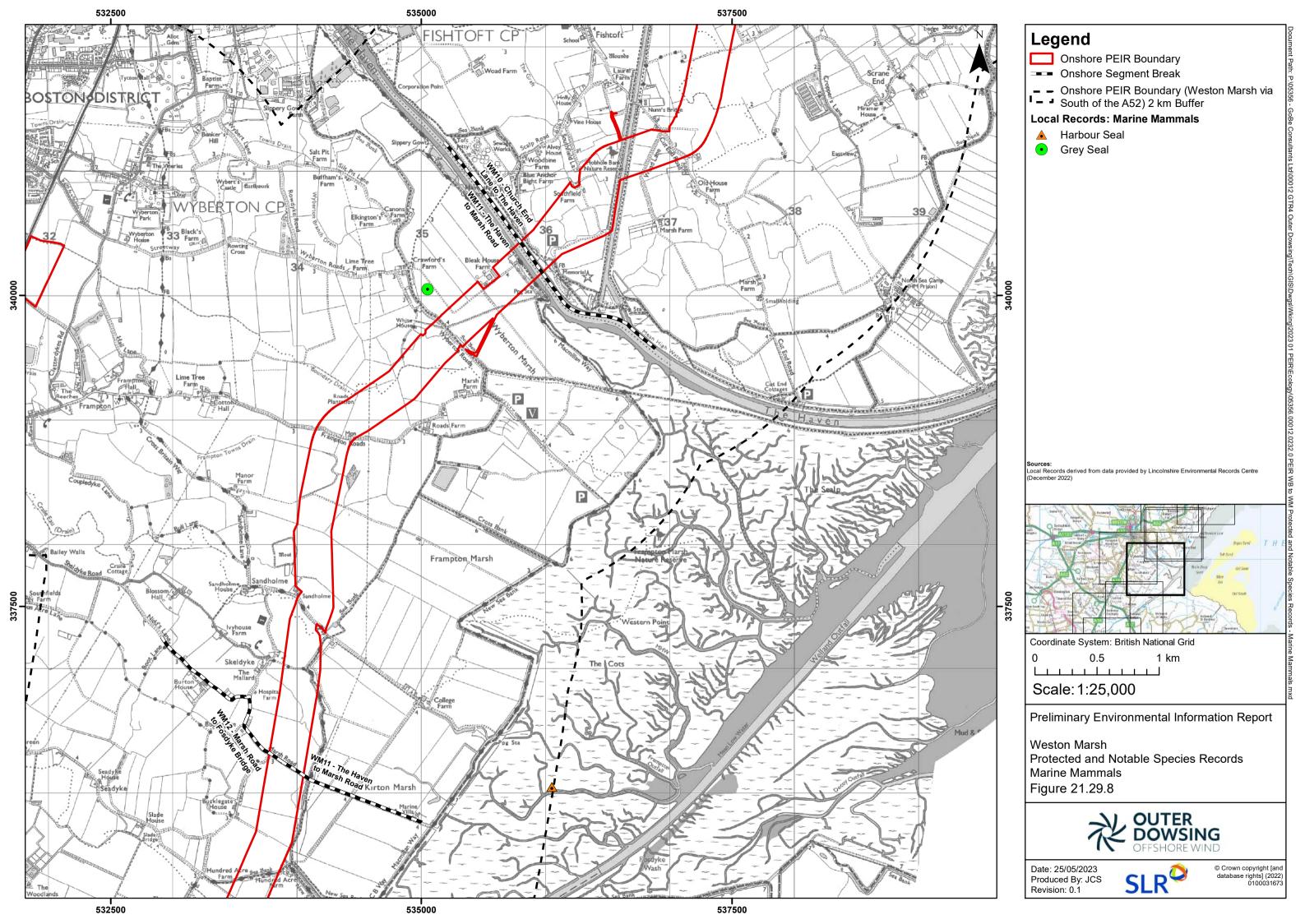


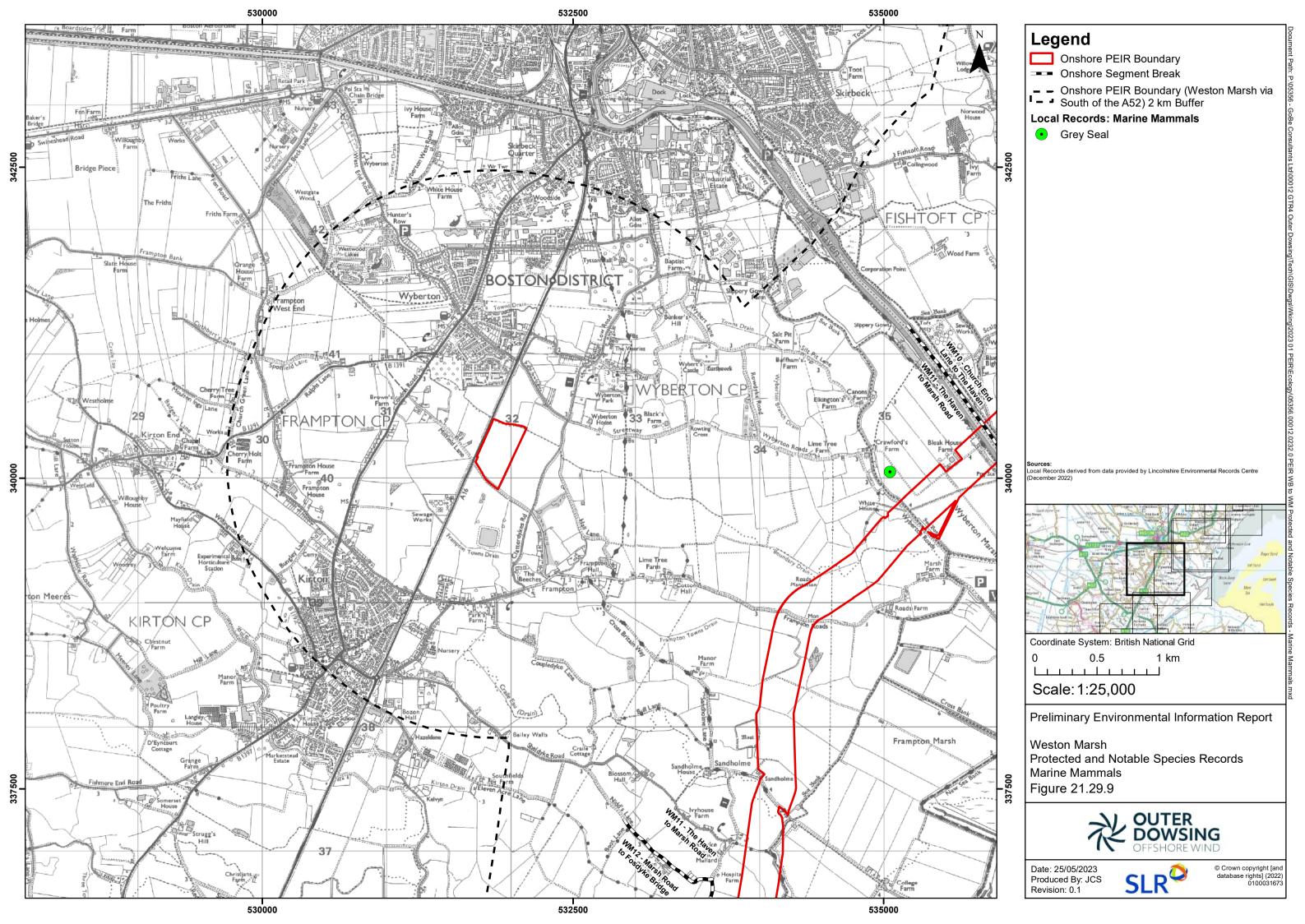


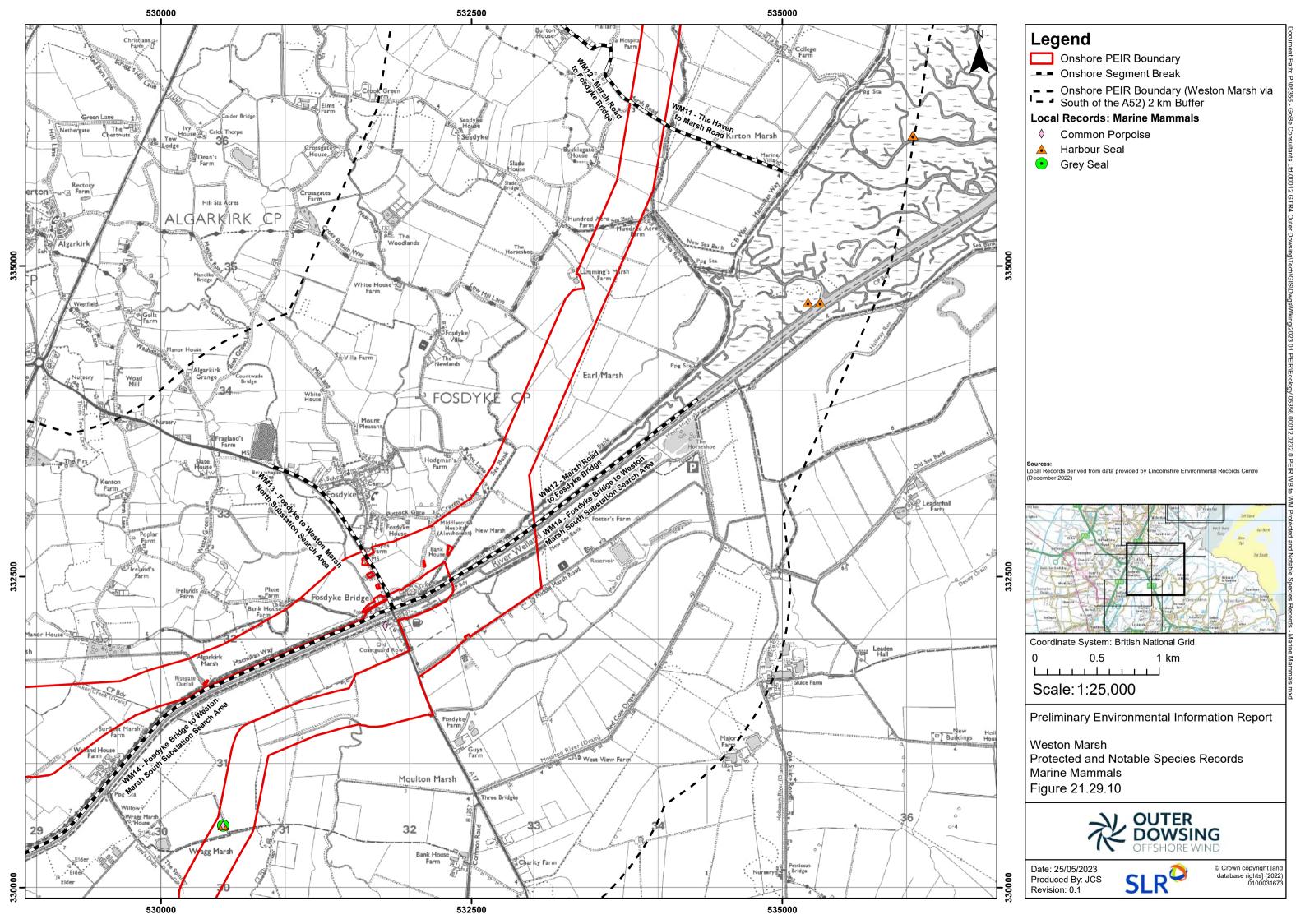


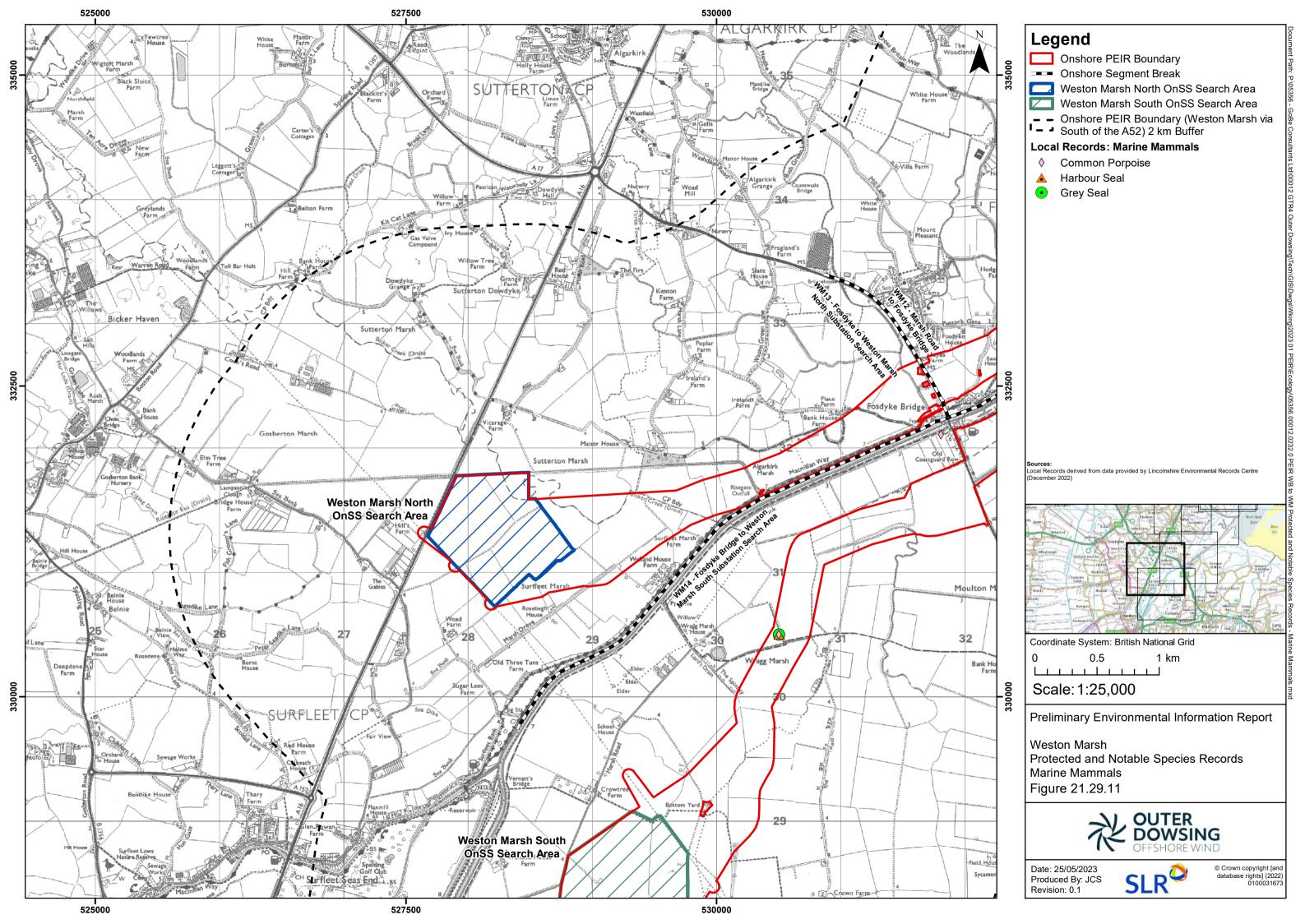


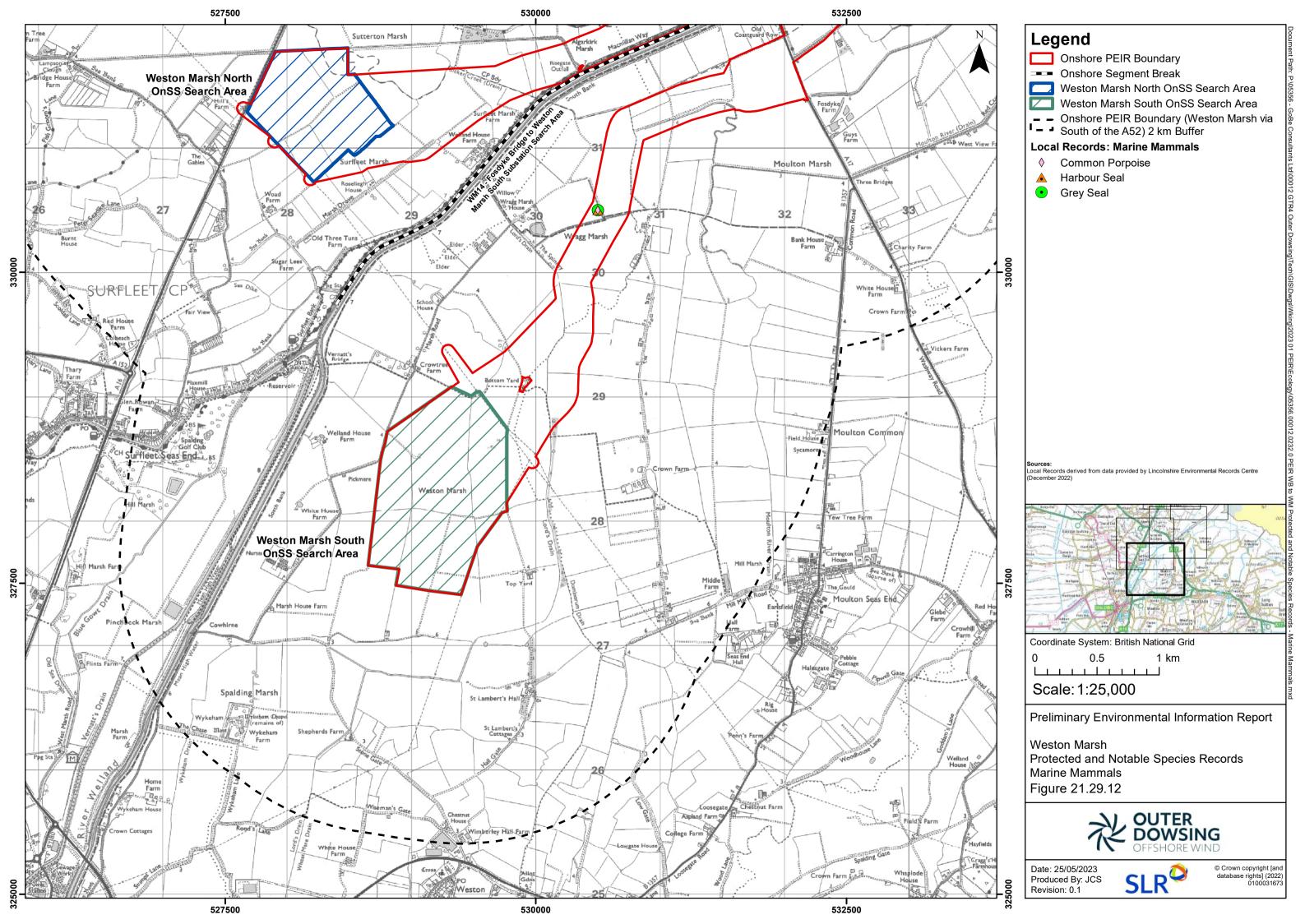


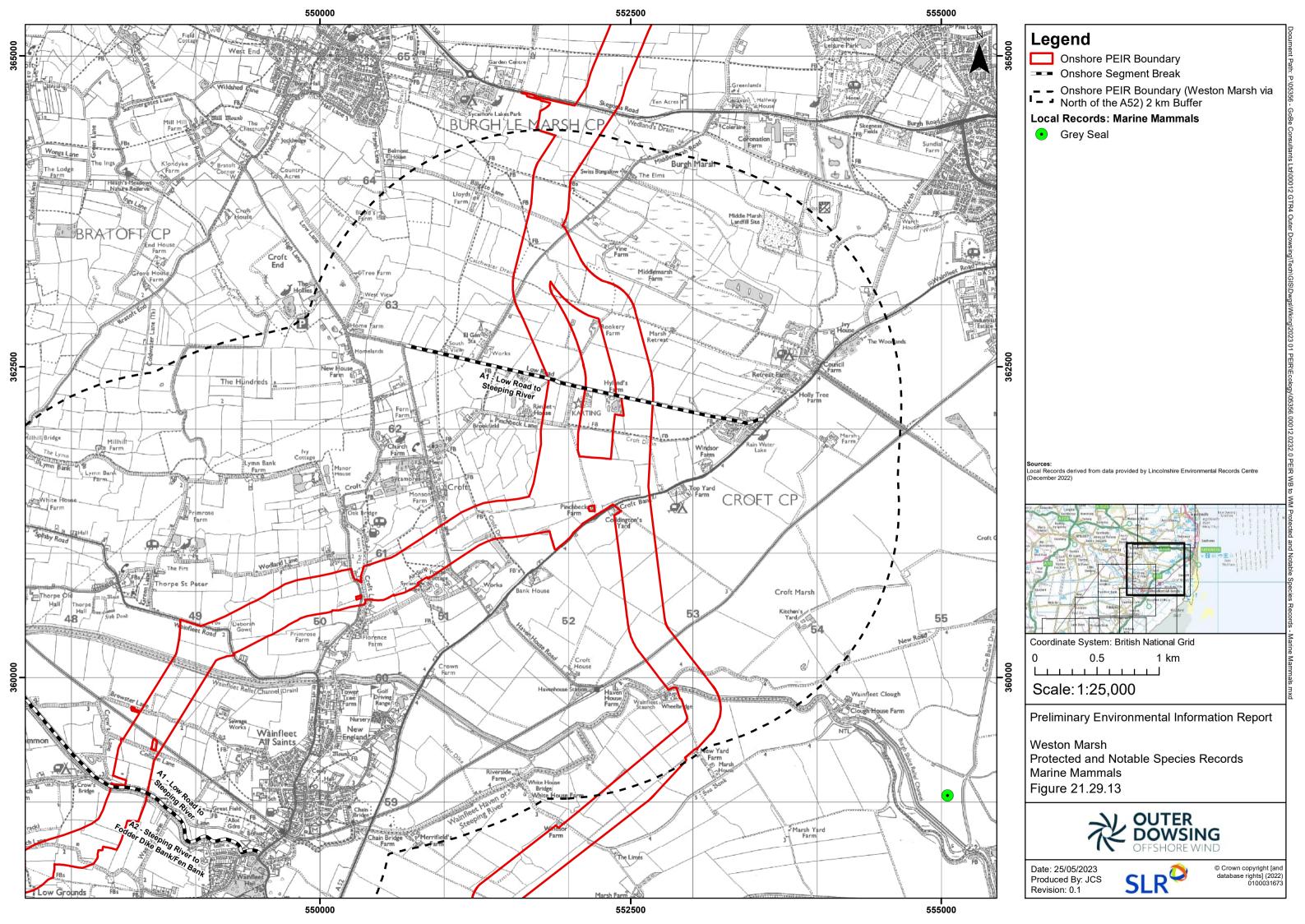


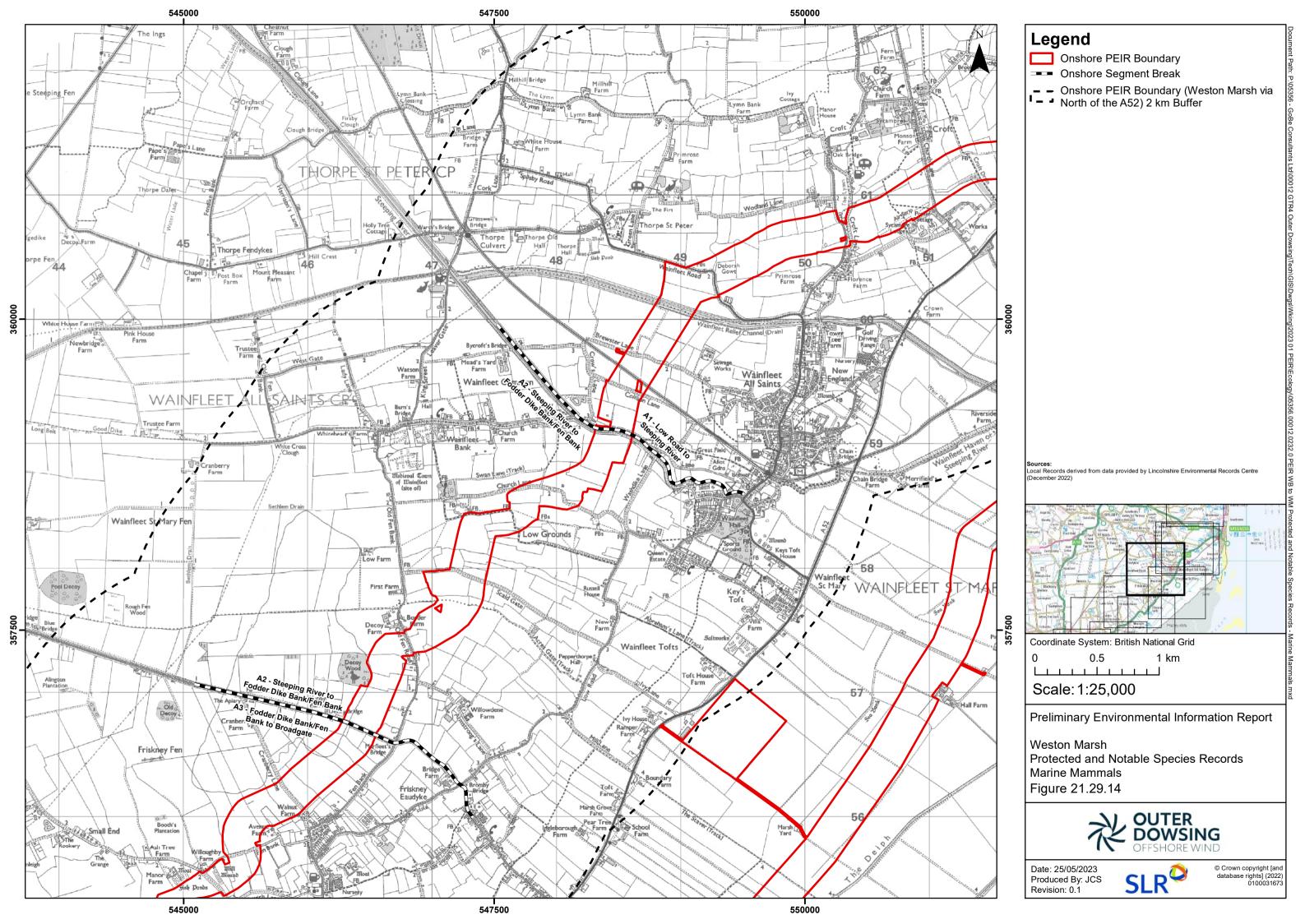


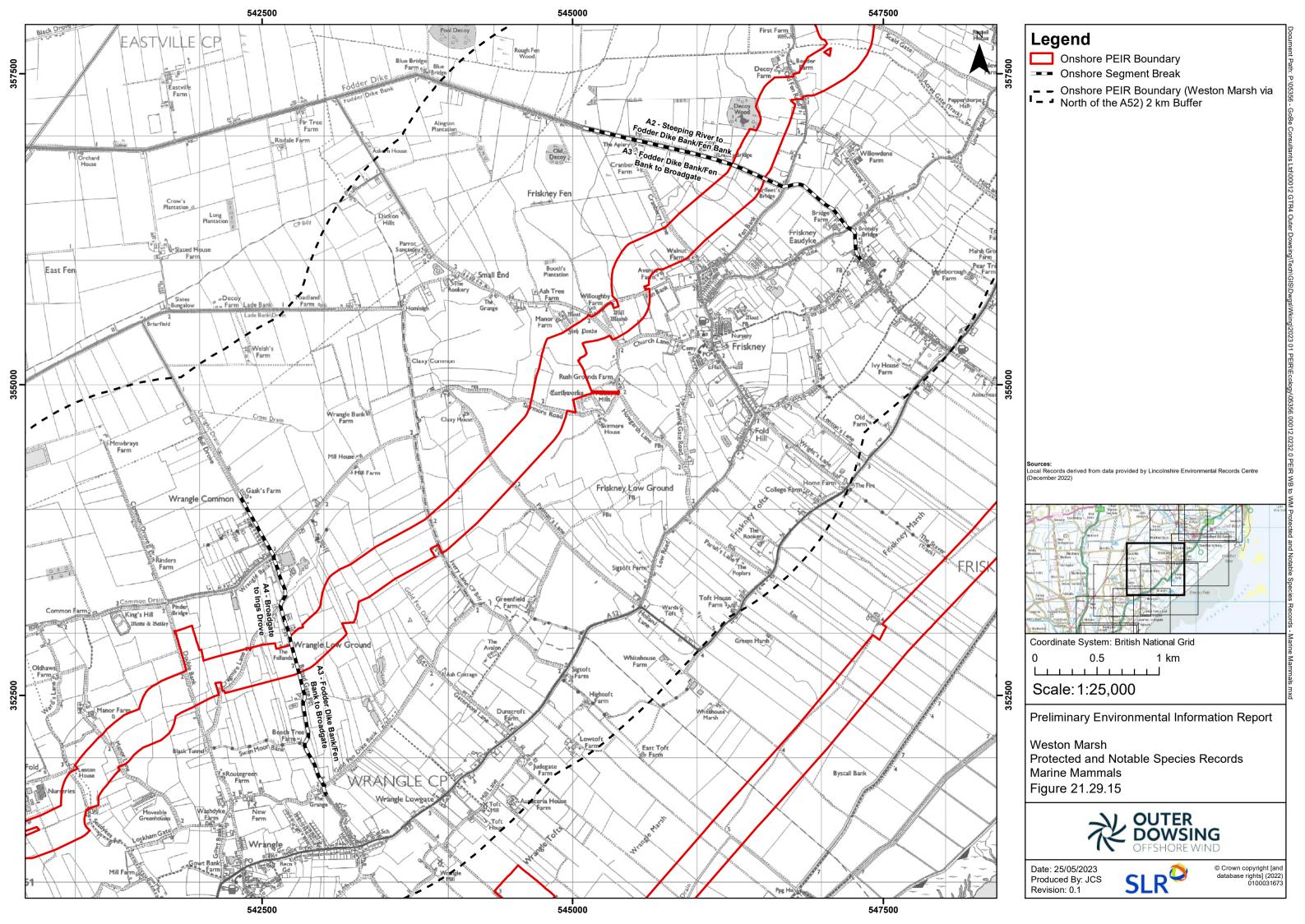


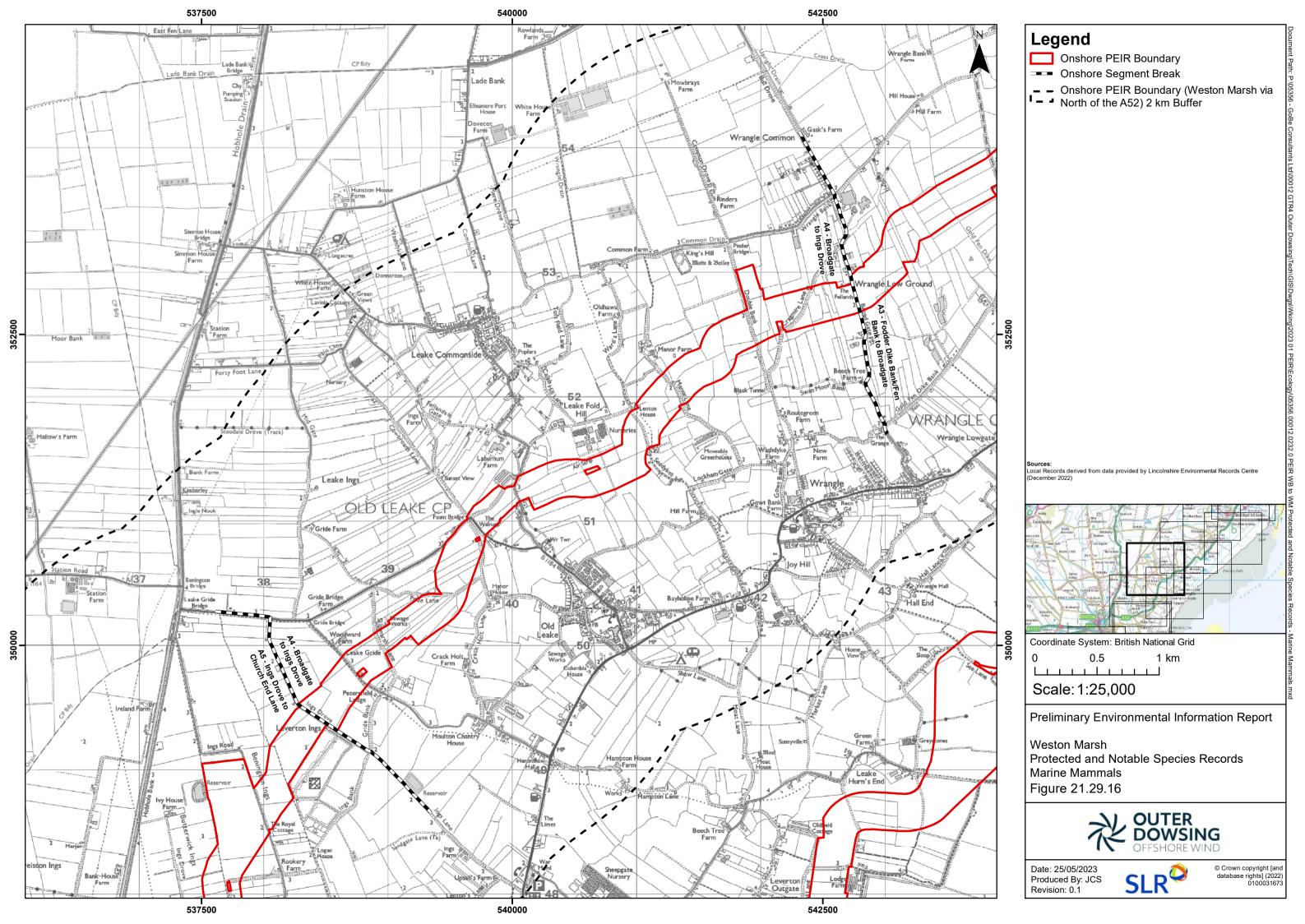


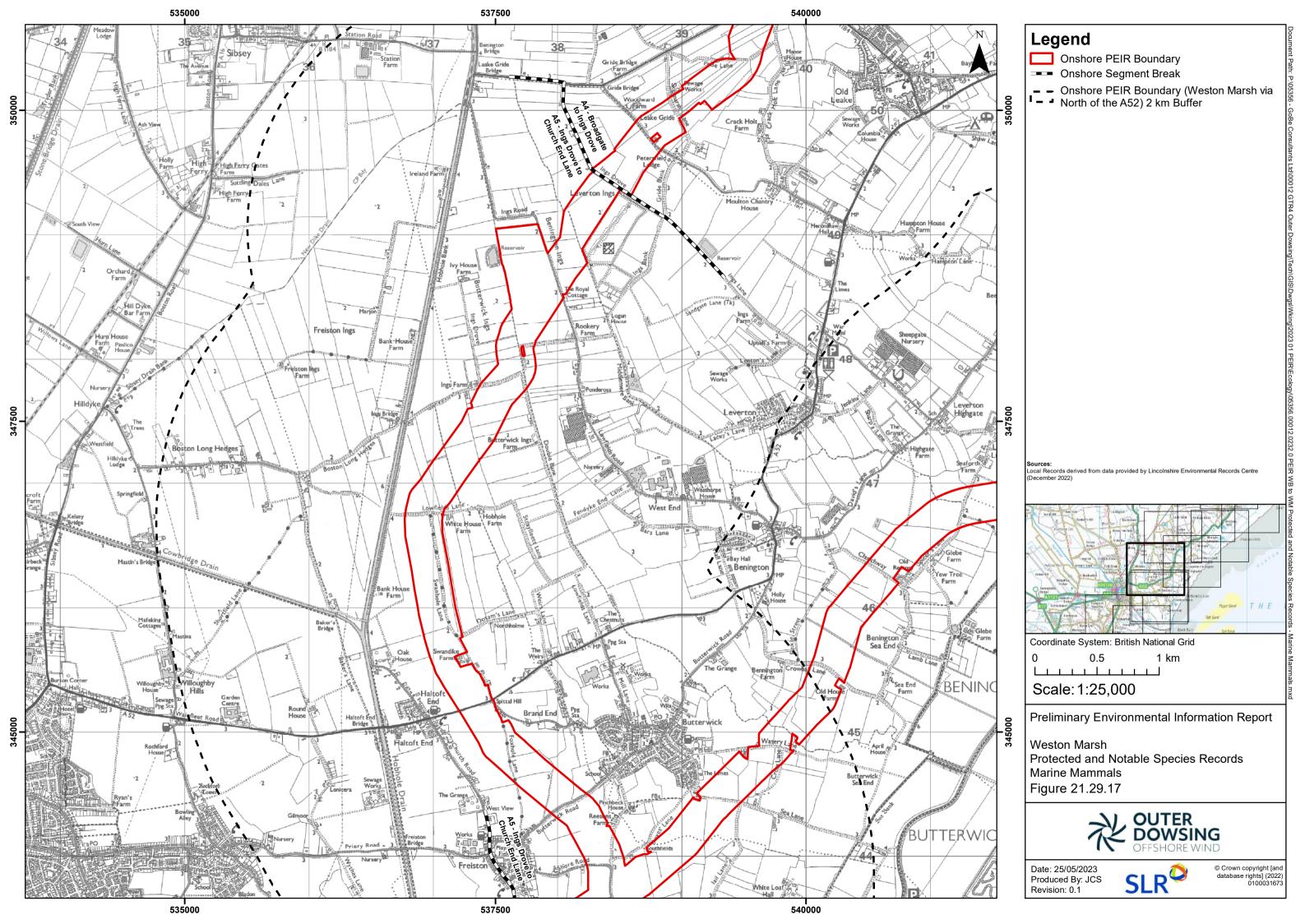


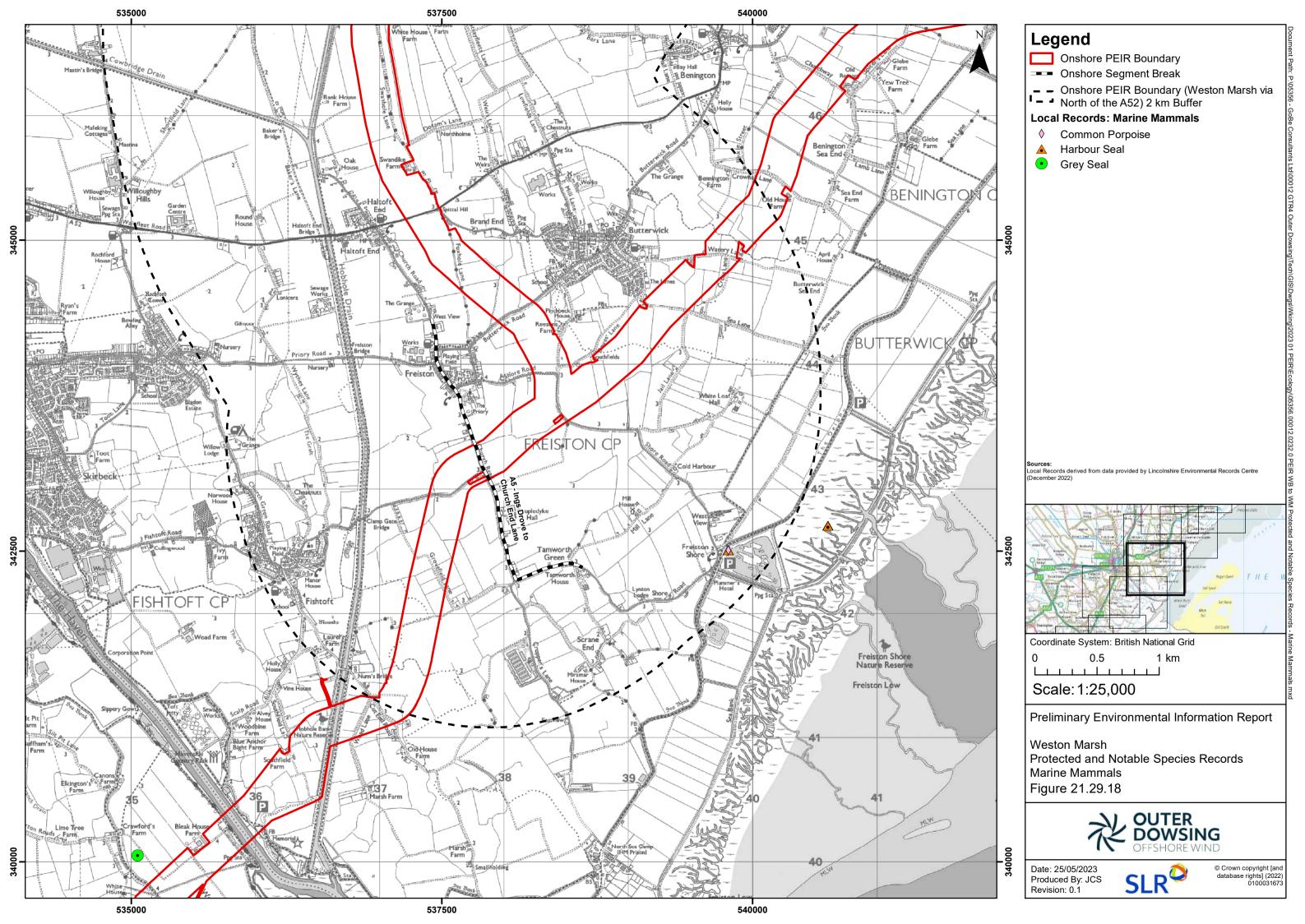














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## Annex 1: Survey Scope to be included in ES and relevant Consultee Comments

Survey Type	Timing	Survey Scope	Consultee Comments
Desk Study	August 2022 for Lincolnshire Node and Westone Marsh south of A52. March 2023 for Westone Marsh north of A52.	PEIR Boundary and 2km buffer for protected/ important species and local designations, priority habitats and important plant areas. PEIR Boundary and 5km buffer for roosting bats. PEIR Boundary and 15km buffer for international and national statutory designations.	Natural England DAS Response dated 29 <sup>th</sup> July 2022 'The desk study should include any records for water vole within a 2km radius of the site' The Planning Inspectorate paragraph 8.3.6 'Natural England advises the desk-based search area be increased to 5 km for known bat roosts.' Natural England's comments have been taken into account and the study areas revised accordingly.
Badger Survey	November 2022 to September 2023 By 28 <sup>th</sup> February 75-80% survey coverage achieved	PEIR Boundary and 100m buffer zone.	Natural England DAS Response dated 29 <sup>th</sup> July 2022. With reference to badger 'The outline proposals appear sufficient, but we will provide further advice once survey data is available.'
Preliminary Roost Appraisal: Trees, Buildings and other Structures	November 2022 to September 2023 By 28 <sup>th</sup> February 50-70% coverage for buildings and structures and 70-75% for trees	PEIR Boundary and 100m buffer zone.	Natural England DAS response 29 <sup>th</sup> July 2022 'Preliminary Roost Assessment (PRA) should also include any structures, that are to be impacted on/removed or illuminated should be assessed for their suitability for roosting bats within the cable route buffer area, and where potential suitability exists, presence/likely absence surveys should be carried out.'  Natural England's comments have been taken into account and study areas revised accordingly.



Survey Type	Timing	Survey Scope	Consultee Comments
Aerial Inspection Surveys for Bats	May to September 2023	PEIR Boundary and 100m buffer zone. To be carried out on trees graded as having low, moderate or high bat roost potential.	Agreement with detailed scope to be sought via the DAS Service and/ or ETGs.
Dusk Emergence/ Dawn Re- Entry Surveys for Bats	May to September 2023 (extended to October/ November should hibernation roosts be identified)	PEIR Boundary and 100m buffer zone. To be undertaken on trees where aerial inspection is not viable.	Natural England DAS response 29 <sup>th</sup> July 2022 ' the proposed bat emergence/re-entry survey methodology is sufficient' Agreement with detailed scope to be sought via the DAS Service and/ or ETGs.
Bat Activity Surveys	May to September 2023	PEIR Boundary and 100m buffer zone. Positioning and number of transects are currently being refined.	Natural England DAS response 16 <sup>th</sup> September 2022 'Please note that the appropriate level of survey effort for activity surveys is required. As per best practice guidance (Collins, 2016) number of walked transects and numbers of static bat detectors should be based on the suitability of the habitat for bats.'  Agreement with detailed scope to be sought via the DAS Service and/ or ETGs.
Static Detector Surveys	May to October 2023	PEIR Boundary and 100m buffer zone. Positioning and number of statics are currently being refined.	Natural England DAS response 16 <sup>th</sup> September 2022 'Please note that the appropriate level of survey effort for activity surveys is required. As per best practice guidance (Collins, 2016) number of walked transects and numbers of static bat detectors should be based on the suitability of the habitat for bats.'  Agreement with detailed scope to be sought via the DAS Service and/ or ETGs.



Survey Type	Timing	Survey Scope	Consultee Comments
Habitat Suitability Index for GCN	August 2022 to May 2023	PEIR Boundary and 100m buffer for ditches. PEIR Boundary and 250m buffer for ditches.	DAS request regarding GCN survey methods sent to Natural England in May 2023.
eDNA survey for GCN	15 <sup>th</sup> April to May 2023	PEIR Boundary and 100m buffer for ditches. PEIR Boundary and 250m buffer for ditches. Undertaken on those ditches scoring 'Average' or above in the HSI Assessment	
Population Class Assessment for GCN	May to June 2023	PEIR Boundary and 100m buffer for ditches. PEIR Boundary and 250m buffer for ditches. Carried out for those water bodies returning a positive result for eDNA.	
Reptile Presence/ Absence	June to September 2023	PEIR Boundary and 100m buffer zone. Surveys are ongoing to assess habitat suitability for reptile species.	Natural England DAS response 29 <sup>th</sup> July 2022.  NE confirmed that 'Presence/likely absence surveys are not proposed for 'low potential habitat'.  Also, that 'Moderate or large-scale impacts' need to be defined'  Definitions of moderate and large scale impacts will be provided via the DAS Service and/ or ETGs
Water Vole	Commenced April 2023 and programmed for completion by June 2023. Undertaken in conjunction with the otter surveys.	PEIR Boundary and 200m upstream/ downstream in suitable habitat. Suitable habitat identified using existing species records and habitat assessment.	Natural England DAS response 29 <sup>th</sup> July 2022. 'The Extended Phase 1 survey should identify suitable habitat for water vole. It is advised that the initial habitat survey is undertaken during the breeding season to best inform any required surveys'
Otter	Commenced April 2023 and programmed for completion by June 2023. Undertaken in conjunction with the water vole surveys.	PEIR Boundary and 250m upstream/ downstream in suitable habitat. Suitable habitat identified using existing species records and habitat assessment.	No comments for otter survey, other than an acknowledgement within The Planning Inspectorate.



Survey Type	Timing	Survey Scope	Consultee Comments
Fish	Summer 2023	Habitat suitability surveys and level of impacts to fish is still being determined. The scope of survey is therefore still to be agreed.	The Planning Inspectorate 'The ES should assess impacts to fish and other freshwater species and on water quality, where significant effects are likely to occur, supported by desk study information and surveys as necessary. Effort should be made to agree the methodology with the relevant consultation bodies.'
Invertebrates	Summer 2023	Habitat suitability surveys and level of impacts to aquatic and terrestrial invertebrates is still being determined. The scope of survey is therefore still to be agreed.	The Planning Inspectorate 'Natural England advises that invertebrate surveys should be carried out across all SSSIs within the scoping area along the Lincolnshire Coast plus any linked land around these sites for where habitats/species may be impacted upon. For where LNRs border the SSSIs, these should also be assessed for further survey.