

# Outer Dowsing Offshore Wind Community Liaison Group

April 2023

# Agenda

## Outer Dowsing Offshore Wind - CLG

Item:

Timing (approx.)

1	Coffee and tea	10 mins
2	Chair's welcome and introductions	5 mins
3	Project Update	5 mins
4	Presentation of onshore substation design option	25 mins
5	Consultation next steps	10 mins
4	Question and answer session / discussion on future topics	5 mins
5	AOB	5 mins
6	Chair's closing remarks and next steps / next meeting	5 mins



# A quick reminder of what we hope to achieve with these Community Liaison Groups...

## Our Aims ...

- To **involve key local stakeholders** in the design and development of the Outer Dowsing Offshore Wind project (landfall, onshore cable route and substation) through presentations, discussions and planned workshop activities.
- To act as a **two-way communication channel** between local communities and the project team.
- To help **foster local involvement and ownership** of the project.

To facilitate focused discussions and ensure attendees can make the most out of the CLG's – it is intended for these groups to be focused on concerns/ issues / thoughts relative to their specific **local area.**

# The Project Partners

**Outer Dowsing Offshore Wind is being developed jointly by TotalEnergies, Corio Generation (part of the Green Investment Group) and Gulf Energy**

**TotalEnergies** is a global multi-energy company that produces and markets energies: oil and biofuels, natural gas and green gases, renewables and electricity.

It's over 100,000 employees are committed to energy that is ever more affordable, cleaner, more reliable and accessible to as many people as possible. Active in more than 130 countries, TotalEnergies puts sustainable development in all its dimensions at the heart of its projects and operations to contribute to the well-being of people.

**Corio Generation** is a Green Investment Group (GIG) portfolio company, operating on a standalone basis. GIG is a specialist green investor within Macquarie Asset Management, part of Macquarie Group.

With a unique blend of sector-leading expertise and deep access to long-term capital, Corio Generation applies a long-term partnership approach to the creation and management of projects, taking them from origination, through development and construction, and into operations.

**Gulf Energy Development (GULF)** is a holding company based in Thailand that invests in a portfolio of energy, infrastructure, and digital and telecommunications businesses.

As one of Thailand's largest private power producers with over 20 GW of gas-fired and renewable capacity, GULF is committed to supporting the energy transition to create sustainable shared value in all spheres where it operates



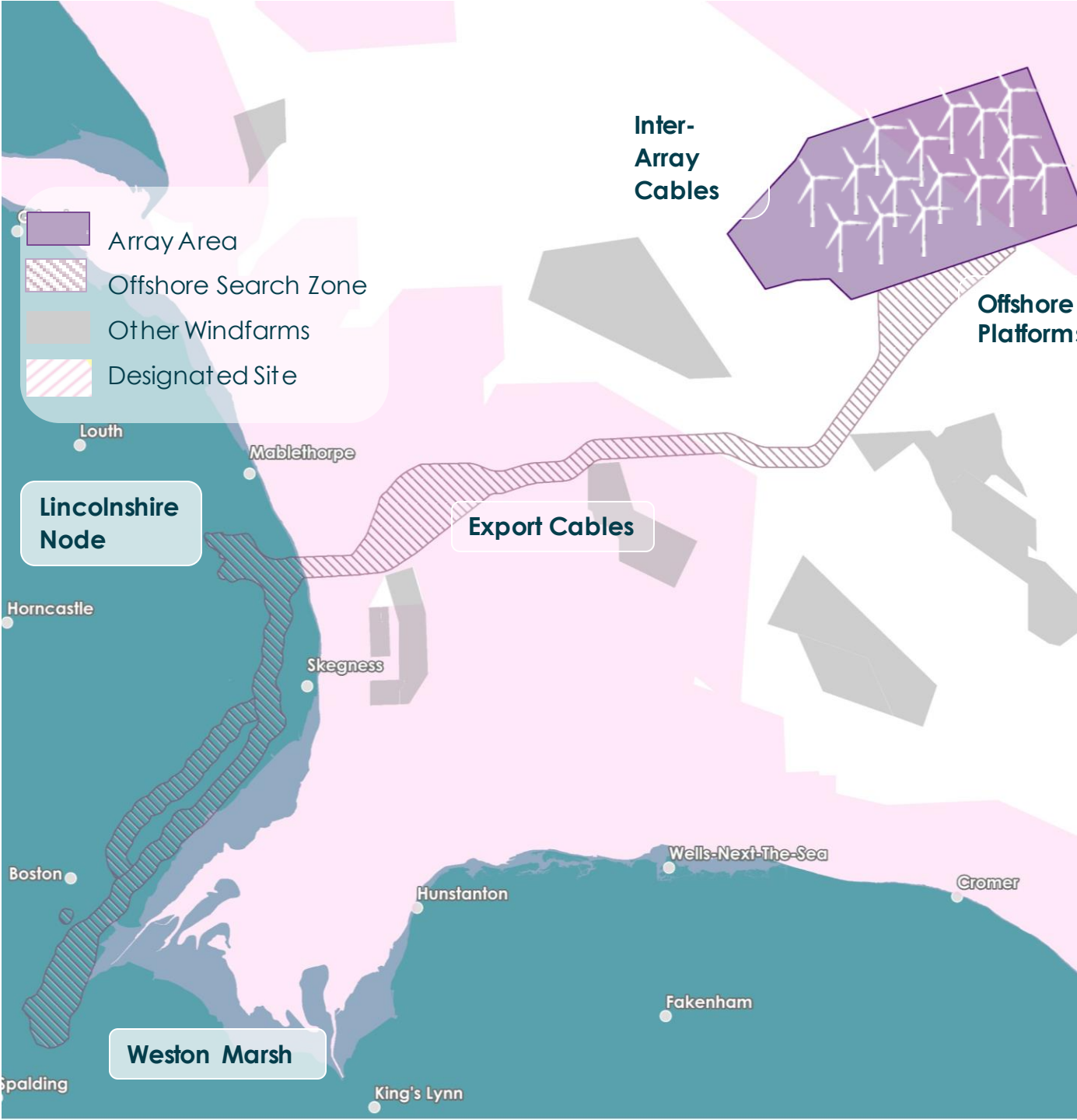
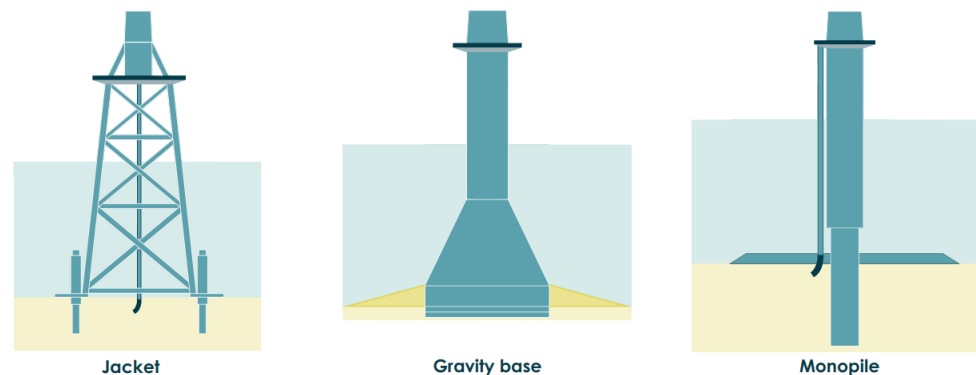
# Our Offshore Proposal

The offshore elements of The Project consist of an offshore wind turbine array, located approximately 54 km east of the Lincolnshire coast, along with offshore platforms, and export cables and array cables to connect the electricity generated to the National Grid.

## Wind Turbine Array Area

The Project design envelope allows for a maximum of 100 wind turbines, with a maximum tip height of **403m LAT (m)**.

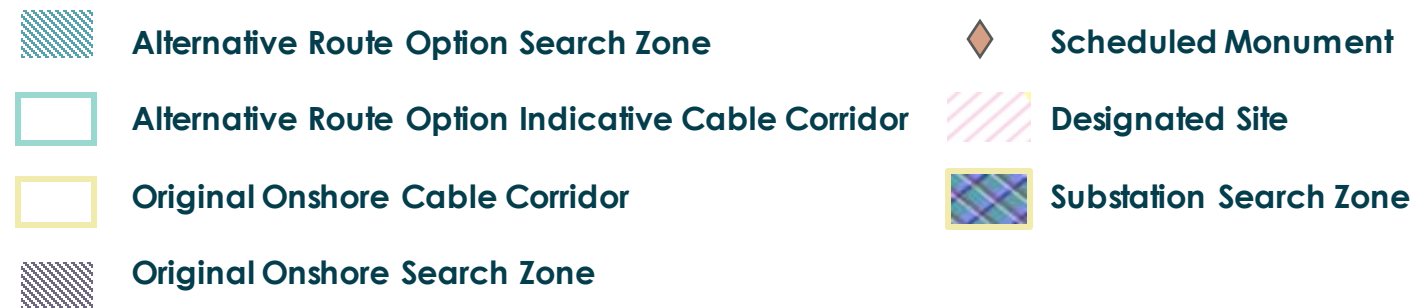
## Typical Foundation Types



# Our Onshore Proposals

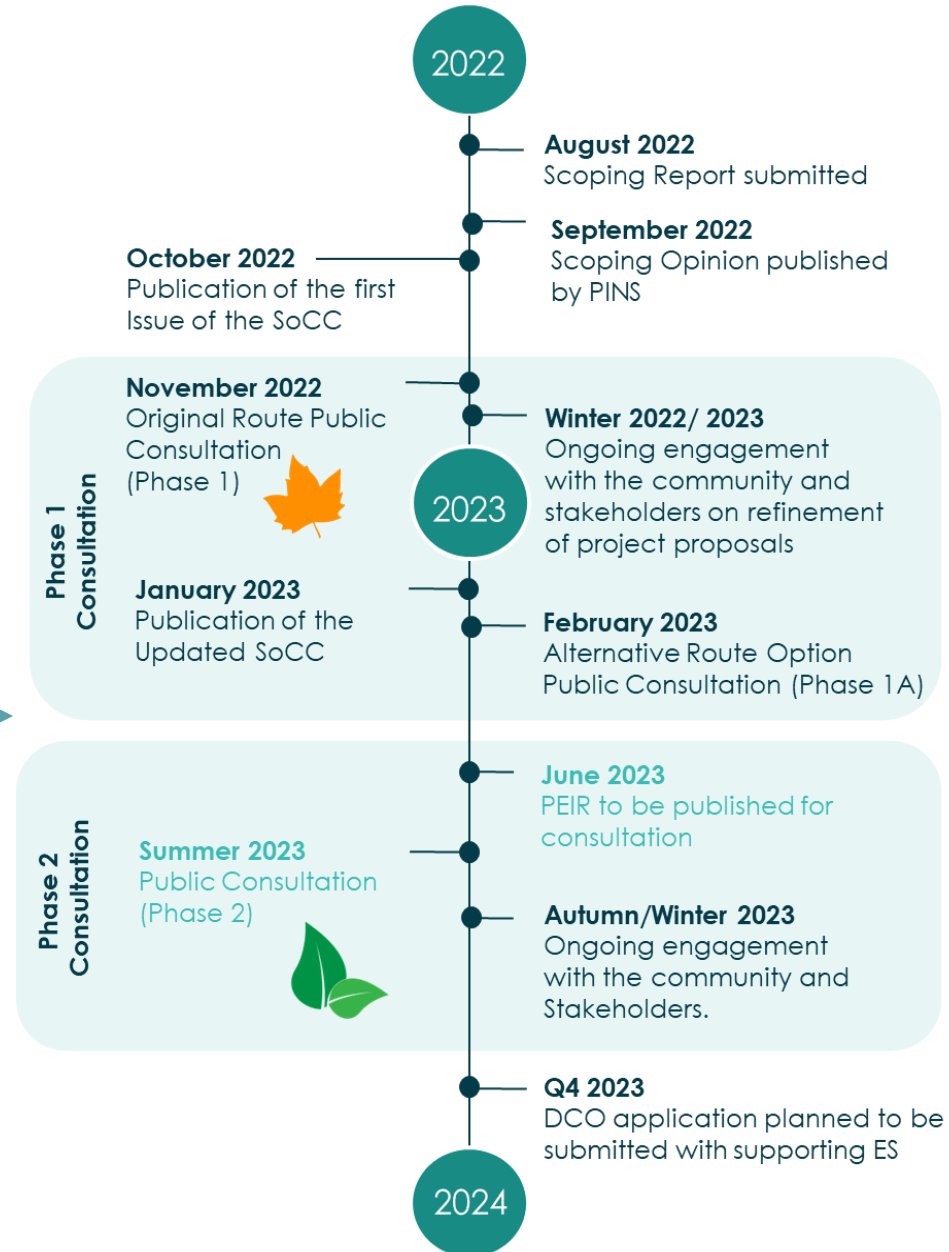


- Landfall **south of Anderby Creek** (there is only one landfall search zone as this has been assessed as the optimum search zone for both connection options);
- Underground cables would continue underground to **one of two different connection points** still under consideration by National Grid;
- a connection to the **existing overhead line circuits at Weston Marsh** (north of Spalding) or;
- to a **proposed new National Grid connection point, Lincolnshire Node**, (east of Alford).



# Programme

We are here →



# Public Consultation Events to date

## November 2022

Original Route Public Consultation (Phase 1)



### 4x Public Information Days c. 500 attendees

- 2 Webinars, Online virtual exhibition, Questionnaires / feedback forms, Freephone, Email, social media
- 4x **Community Liaison Groups** established with all affected Parish Councils & **Landowner Interest Group** established
- **Winter Newsletter** – summarising feedback and introducing Phase 1A Consultation

## February 2023

Alternative Route Option Public Consultation (Phase 1A)

### 2x Public Information Days c. 300 attendees

- 2 Webinars, Online virtual exhibition, Questionnaires / feedback forms, Freephone, Email, social media
- 4x **Community Liaison Groups** met with additional affected Parish Councils & **Landowner Interest Group** met
- **Spring Newsletter**– summarising feedback and next steps





# Newsletter – Spring 2023



Theme	Comments	Response
Alternative route proposals	The general feedback was that this was a good route as it affected fewer residential properties and avoided the engineering issues raised at Phase 1.	These comments will be fed back to the development team to help with the production of the Preliminary Environmental Information Report, the next step in the consultation process.
Energy costs	A number of respondents asked whether the project would make a difference to the energy bills of people in the local area.	The cost of energy crisis is a broad issue and one that this project cannot solve on its own. However, the Outer Dowsing scheme will increase supply of renewable energy into the Grid, providing enough electricity to power 1.6 million homes with clean, green electricity.
Biodiversity and environmental enhancements	Several people commented that they would like to see an environmental corridor/green grid, with an increase in relevant biodiversity.	We are actively looking into opportunities where we can provide Biodiversity Net Gain as part of the Project and are talking to local organisations who may be able to help us deliver these aims.
Consultation quality	A number of attendees at the events commented on how well the information was presented and that it was easy to understand. They also wanted the Project to keep in regular contact at a local level.	We are delighted that attendees found the exhibition useful. We will take on board these comments when designing the exhibition for the Phase 2 consultation in the summer. We will continue to hold regular community liaison groups and communicate via newsletters and the website.
Supporting local projects	We received a lot of feedback on how other projects in the area delivered community benefit in the form of a Community Benefit Fund, with suggestions on how we could support with funding local projects	We are keen to offer a community benefit fund with an aim to deliver a substantive and enduring benefit to local communities. We are talking to local organisations who may be able to help us deliver these aims.
The effects of previous schemes on local communities	People highlighted concerns regarding previous schemes in the area. It was acknowledged that whilst some aspects could have perhaps been handled better, there was also a lot of good practices the scheme could learn from.	We aim to learn from what worked well for other schemes and also what didn't work so well. Our aim is to deliver a traffic, construction and operations programme that has been shaped by local input and views.

# Gathering environmental data

## Onshore Surveys

- Ornithology – wintering bird surveys
- Ecology – Phase 1 Habitat surveys & protected species surveys
- Archaeology – geophysical and trial trenching investigations
- Engineering – geotechnical, topographical, soil thermal resistivity
- Traffic & Transport – traffic counts
- Visual – photomontages of substation
- Geology & hydrology – flow rates, filtration, drainage
- Aerial Photography – Hi-res aerial imagery, vegetation survey and Lidar
- Meteorology – weather & climate



## Offshore Surveys

- Geophysical & Geotechnical
- Metocean & wind resource
- Ornithology & Marine Mammals
- Benthic ecology
- Marine Traffic Surveys



# Onshore Geotechnical Survey

## Scope

- Up to 25 Geotechnical boreholes (15-30m deep)
- Trial Pits (3m x 2m)
- Cone Penetration Tests (CPTs)

## Programme

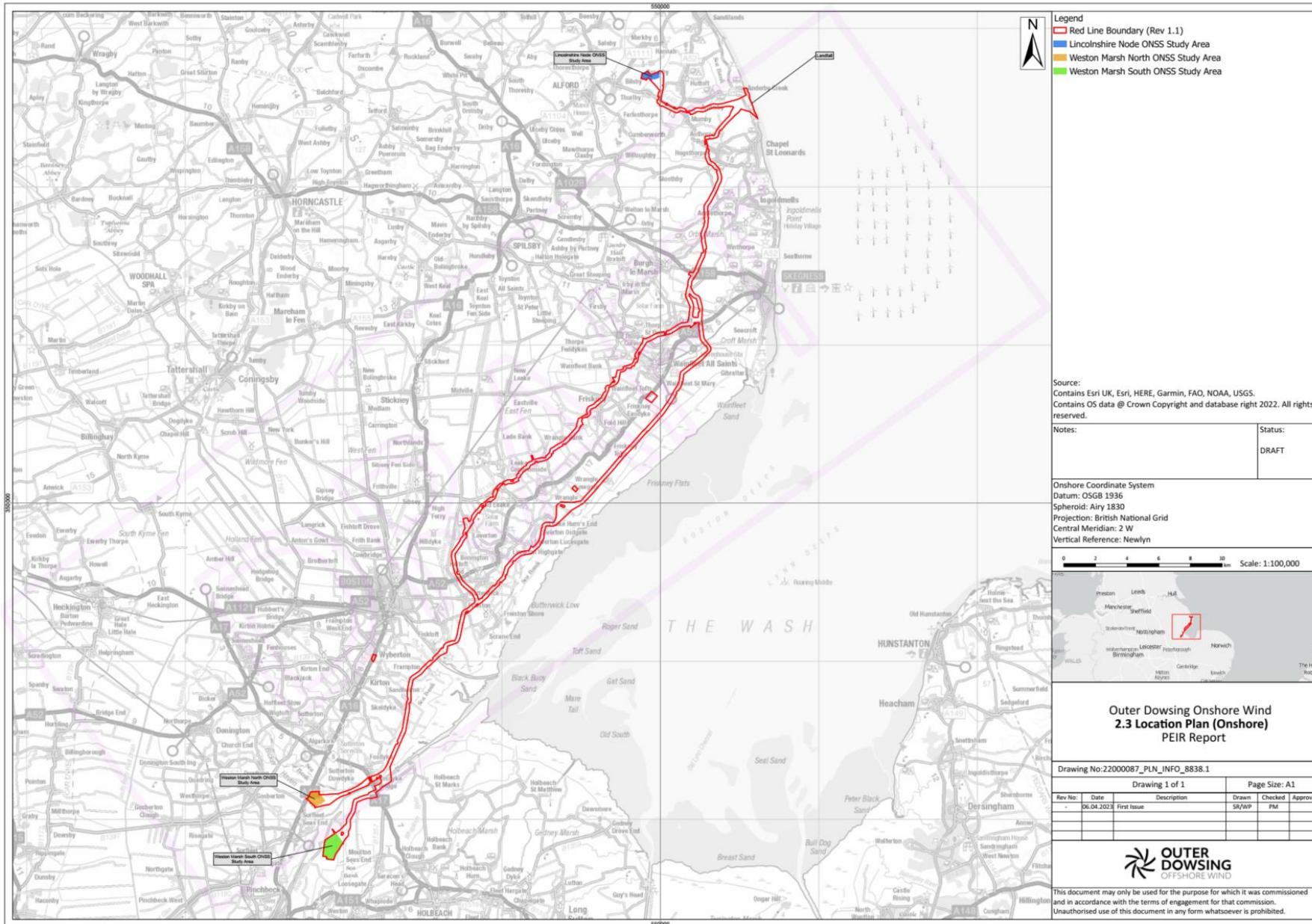
- Mid-May- ~6 weeks

## Stakeholder Engagement

- Natural England
- Lincolnshire Wildlife Trust
- The Crown Estate
- ELDC, LCC & Parish Councils
- Site Notices for beach at Wolla Bank
- Access arrangements
- Intrusive Survey Licenses from landowners



# Onshore Cable Route – Access & Temporary Compounds



**Legend**

- Red Line Boundary (Rev 1.1)
- Lincolnshire Node ONSS Study Area
- Weston Marsh North ONSS Study Area
- Weston Marsh South ONSS Study Area

**Source:**  
Contains Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS.  
Contains OS data © Crown Copyright and database right 2022. All rights reserved.

**Notes:**

**Status:**  
DRAFT

**Onshore Coordinate System**  
Datum: OSGB 1936  
Spheroid: Airy 1830  
Projection: British National Grid  
Central Meridian: 2 W  
Vertical Reference: Newlyn

0 2 4 6 8 10 km Scale: 1:100,000

**Outer Dowsing Onshore Wind  
2.3 Location Plan (Onshore)  
PEIR Report**

Drawing No: 22000087\_PLN\_INFO\_8838.1

Drawing 1 of 1		Page Size: A1			
Rev No.	Date	Description	Drawn	Checked	Approved
-	06.04.2024	First Issue	SR/WP	PM	

**OUTER DOWSING OFFSHORE WIND**

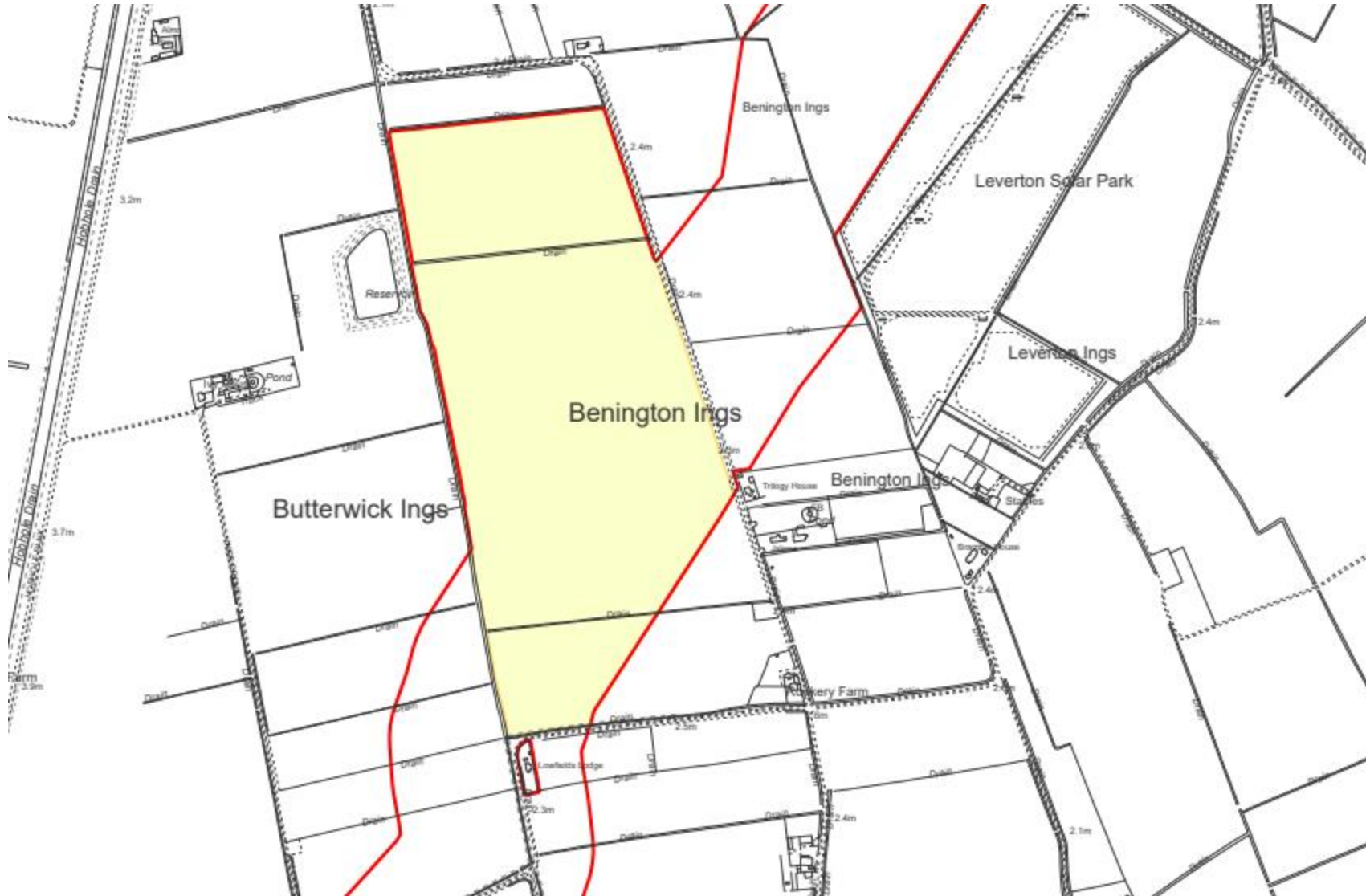
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# CLG – Cable Route South



# Onshore Cable Route – Access & Temporary Compounds

## Weston Marsh Southern Cable Route

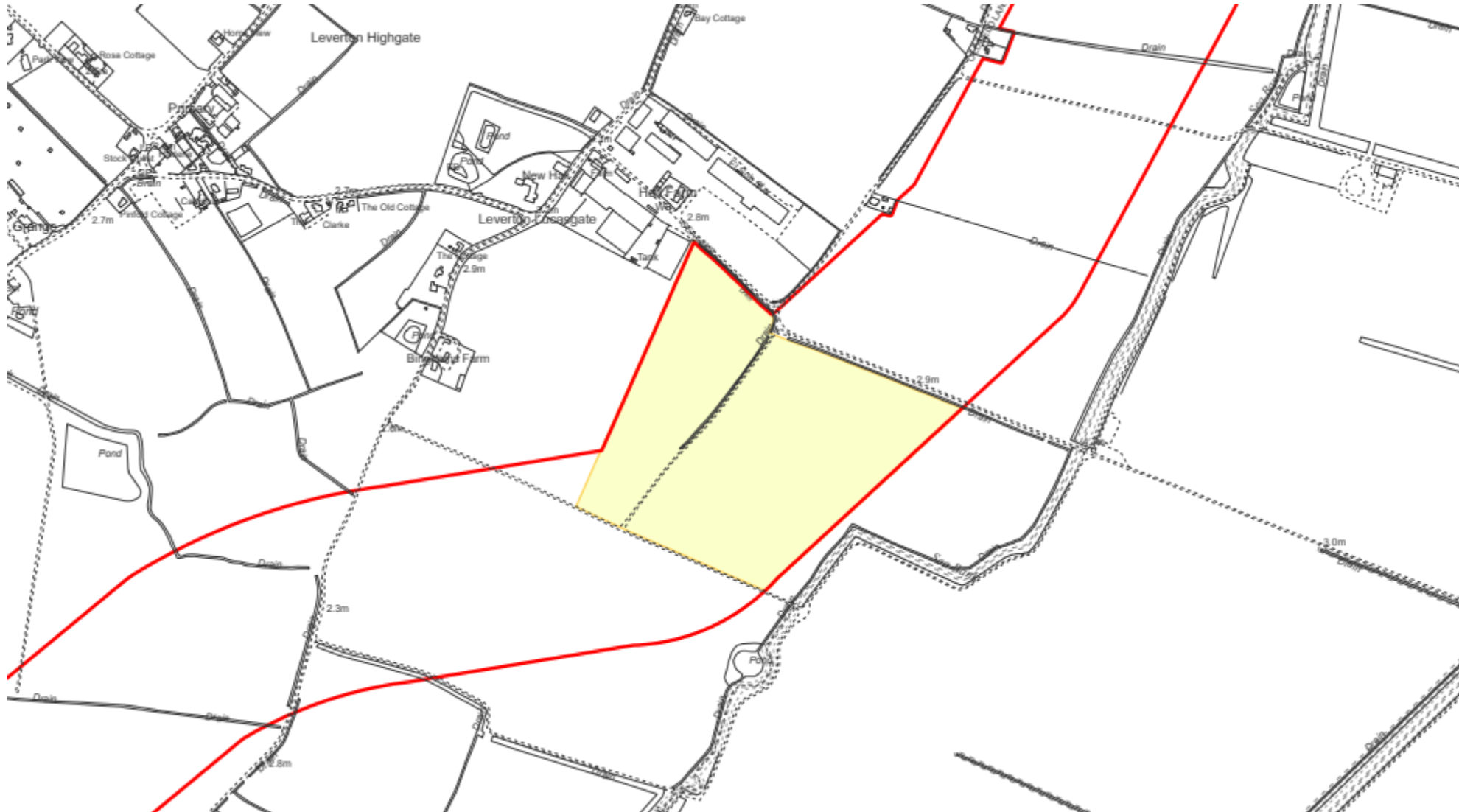


-  PEIR Boundary
-  Compound

Ings Road, Southway,  
Benington CP, Boston,  
Lincolnshire, PE22 0PZ

# Onshore Cable Route – Access & Temporary Compounds

## Weston Marsh Southern Cable Route



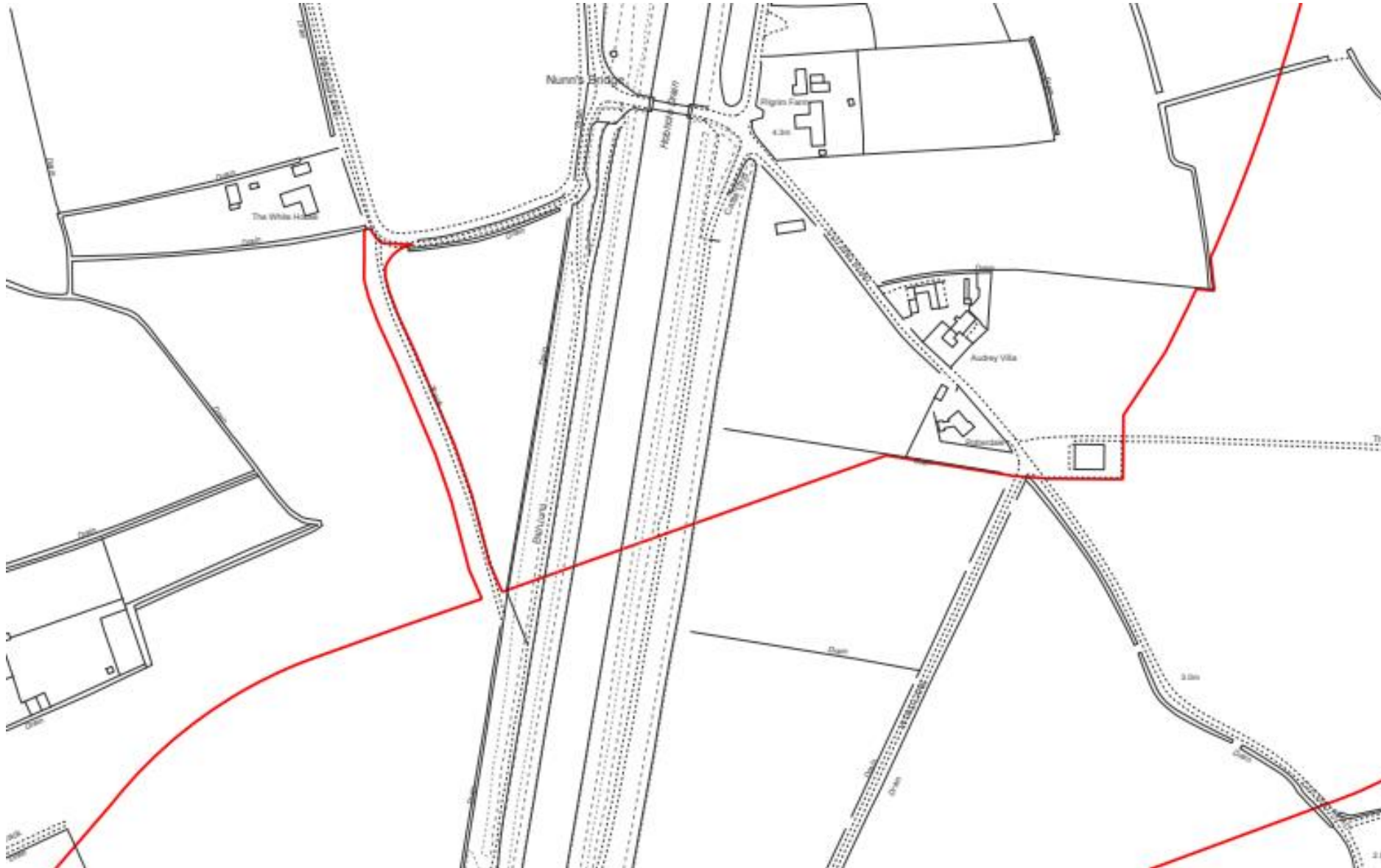
 PEIR Boundary

 Compound

Sea Lane, Glebe  
Farm, Benington CP,  
Boston, Lincolnshire,  
PE22 0DH

# Onshore Cable Route – Access & Temporary Compounds

## Weston Marsh Southern Cable Route



 PEIR Boundary

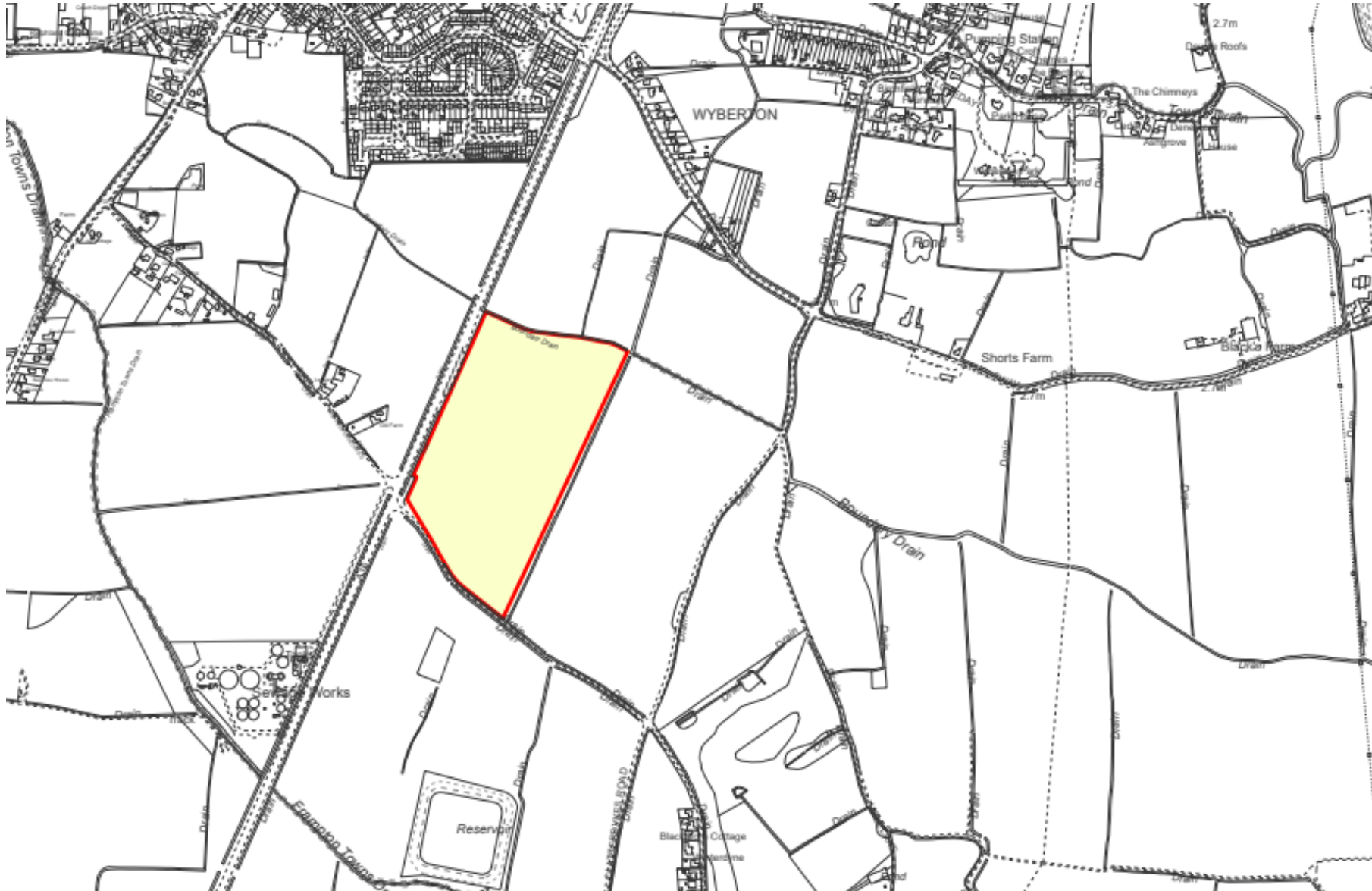
 Compound



Hobhole Bank,  
Pinfold Lane, Laurel  
Farm, Fishtoft CP,  
Fishtoft, Boston,  
Lincolnshire, PE21  
0SL



# Onshore Cable Route – Access & Temporary Compounds

## Weston Marsh Southern Cable Route

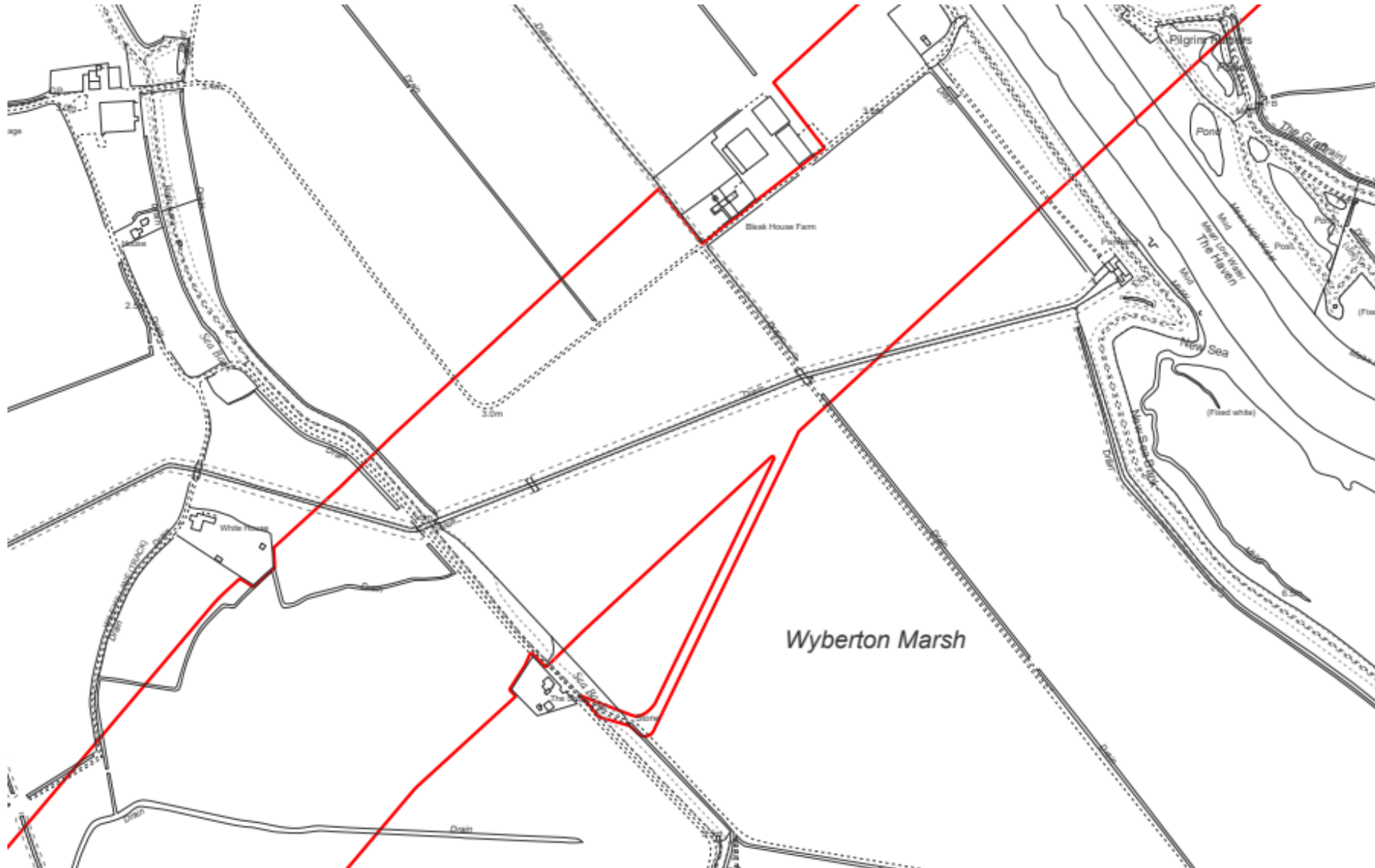




-  PEIR Boundary
-  Compound

A16, Old Farm,  
Frampton CP,  
Wyberton,  
Boston, Lincolnshire,  
PE20 1EB

# Onshore Cable Route – Access & Temporary Compounds

## Weston Marsh Southern Cable Route



-  PEIR Boundary
-  Compound

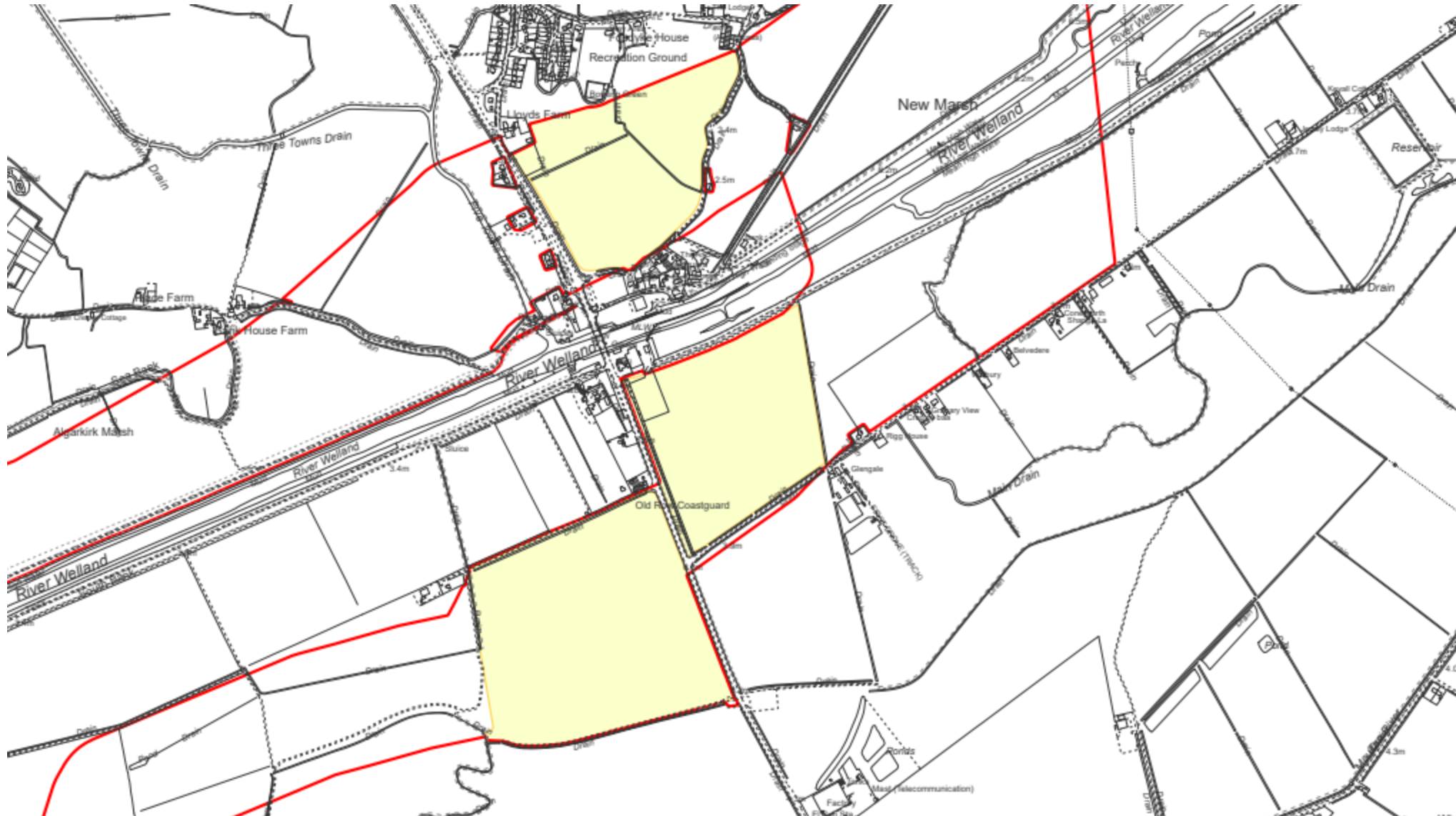
Bleak House Farm, 3,  
Wyberton Roads,  
Bank House,  
Wyberton CP,  
Boston, Lincolnshire,  
PE20 1BD


# CLG – Substation South



# Onshore Cable Route – Access & Temporary Compounds

## Weston Marsh Substation South



-  PEIR Boundary
-  Compound

Fosdyke Bridge, Bram  
Lea, Fosdyke CP,  
Fosdyke, Boston,  
Lincolnshire, PE12 6LH



# Our Onshore Substation Study Areas

Until a final grid connection is confirmed, we have **two study areas** for the onshore substation & associated infrastructure required to connect to the National Grid transmission system.

## Weston Marsh connection option

- Here there would be the Outer Dowsing substation & a National Grid Customer Substation. Some overhead line modifications will be required at, or near to, the ODOW/National Grid substation(s) to facilitate the connection of our project at this location.

## Lincolnshire Node connection option

- Here there would be the Outer Dowsing substation & we would be connected to the planned National Grid wider reinforcement works, this is likely to require a larger footprint, however the details of these plans are not yet known.

# Substation Options – Design Parameters

## Outer Dowsing Offshore Wind

### Onshore Substation Options

Update for ODOW Community Liaison Groups

Date: April 2023

Document Number 123-ODO-CON-K-BE-000006-01



ODOW Consent Stage	ODOW OnSS Site Options			ODOW OnSS Technology	
	LN	WM North	WM South	AIS	GIS
Land engagement and options	X	X	X	X	X
Environmental surveys	X	X	X	X	X
Preliminary Environmental Information Report (PEIR)	X	X	X	X	X
Phase 2 Consultation	X	X	X	X	X
Final Environmental Statement	Single ODOW OnSS adopted site option			X	X
DCO application				X	X
DCO project authorisation				X	X
Detailed design acceptance (Local Planning Authority)				Final ODOW OnSS detailed design	

Design aspect	Technology / Site	Max. Parameter Footprint	Max. Height
Temporary construction area	AIS / GIS	27ha (270,000m <sup>2</sup> )	-
Permanent overall site area	AIS / GIS	18ha (180,000m <sup>2</sup> )	-
Operational area	AIS	9.27ha (92,700m <sup>2</sup> )	12m
Operational area	GIS	7.26ha (72,600m <sup>2</sup> )	12m
GIS building (footprint included in above)	GIS	0.45ha (4,500m <sup>2</sup> )	19m
Lightning protection masts	AIS / GIS		30m
Floor level raising above existing ground level	WM only		1m

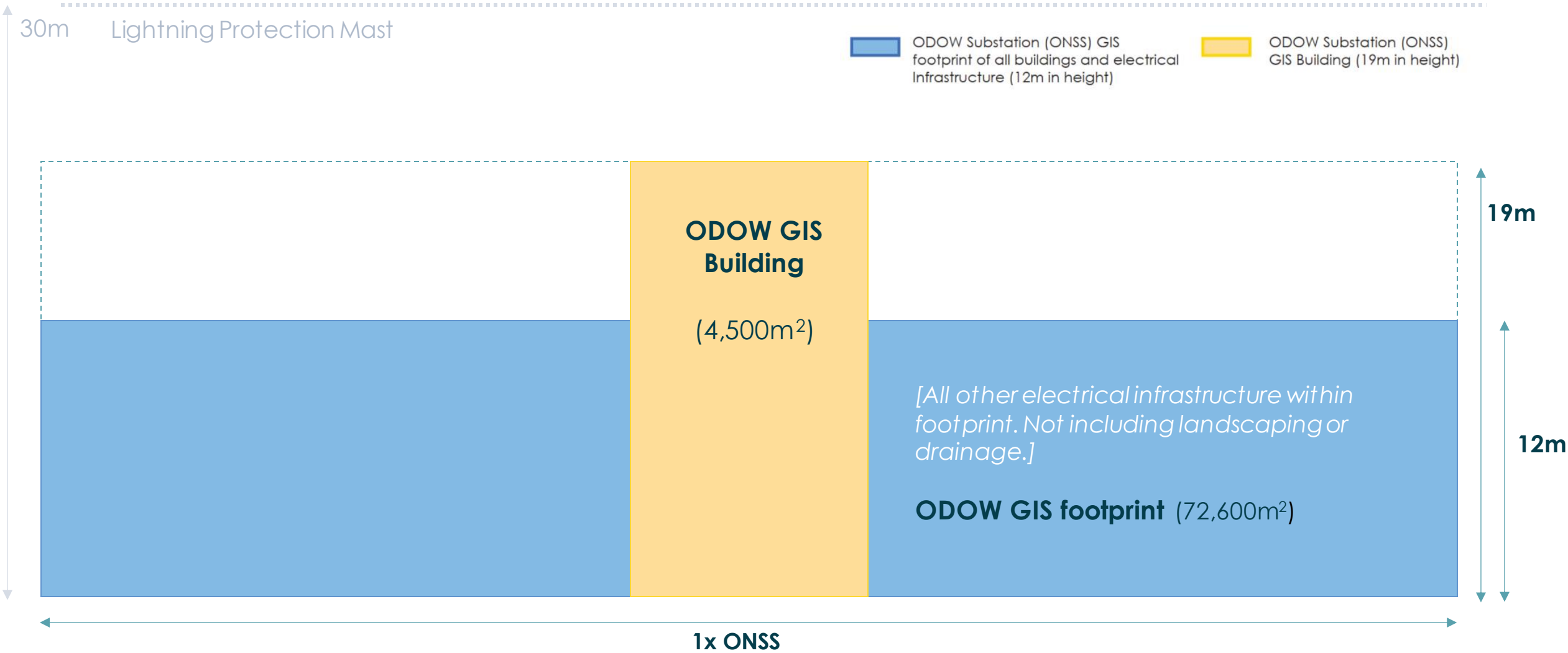


## Memo issued to CLG members on 13<sup>th</sup> April

- Both Air Insulated Substation (AIS) and Gas Insulate Substation (GIS) being considered
- A set of maximum parameters have been defined, to create an 'env elope' for assessment that will accommodate any of the options under consideration.
- The detailed design of the ODOW OnSS will be undertaken post-consent with the env elope defined in the DCO and assessed in the ES.

# Onshore Substation Visualisations

For the purpose of presenting a Realistic Worst Case (RWC) Scenario, all the visualisations at this stage assume a GIS footprint. It should be noted, while the adopted layouts may represent a worst case in respect of specific topics or receptors, in others it may not. The individual topic chapters in the PEIR will each outline how the ONSS has been assessed to reflect a RWC for each technical assessment.



# National Grid Onshore Substation

- In addition to the ODOW OnSS, a National Grid Onshore Substation (NG OnSS) and associated enabling works will be required at, or near to, the ODOW OnSS.
- For a connection at the proposed Lincolnshire Node location, NGET proposes to build a new overhead line and new NGET substation to accommodate multiple connections. Our current understanding is that the NG OnSS would be located within the onshore substation search zone presented at our Phase 1 and 1A Consultation events and would be connected to the ODOW OnSS by underground cables.
- The Lincolnshire Node scheme was proposed by National Grid several years before ODOW approached National Grid for a connection and it is a strategic proposal relating to reinforcement of the wider transmission network rather than being instigated to serve any individual development.
- For a connection at the proposed WM North and WM South locations into the existing NGET overhead line, new NGET infrastructure will be required to facilitate a connection for ODOW. Based on other similar connections this will likely consist of a new NGET substation and localised alterations to the overhead lines to form the connection.
- The NG OnSS could utilise AIS or GIS technology and it is likely that the necessary infrastructure will be designed and constructed by NGET.



# Substation Options – Site Selection Criteria

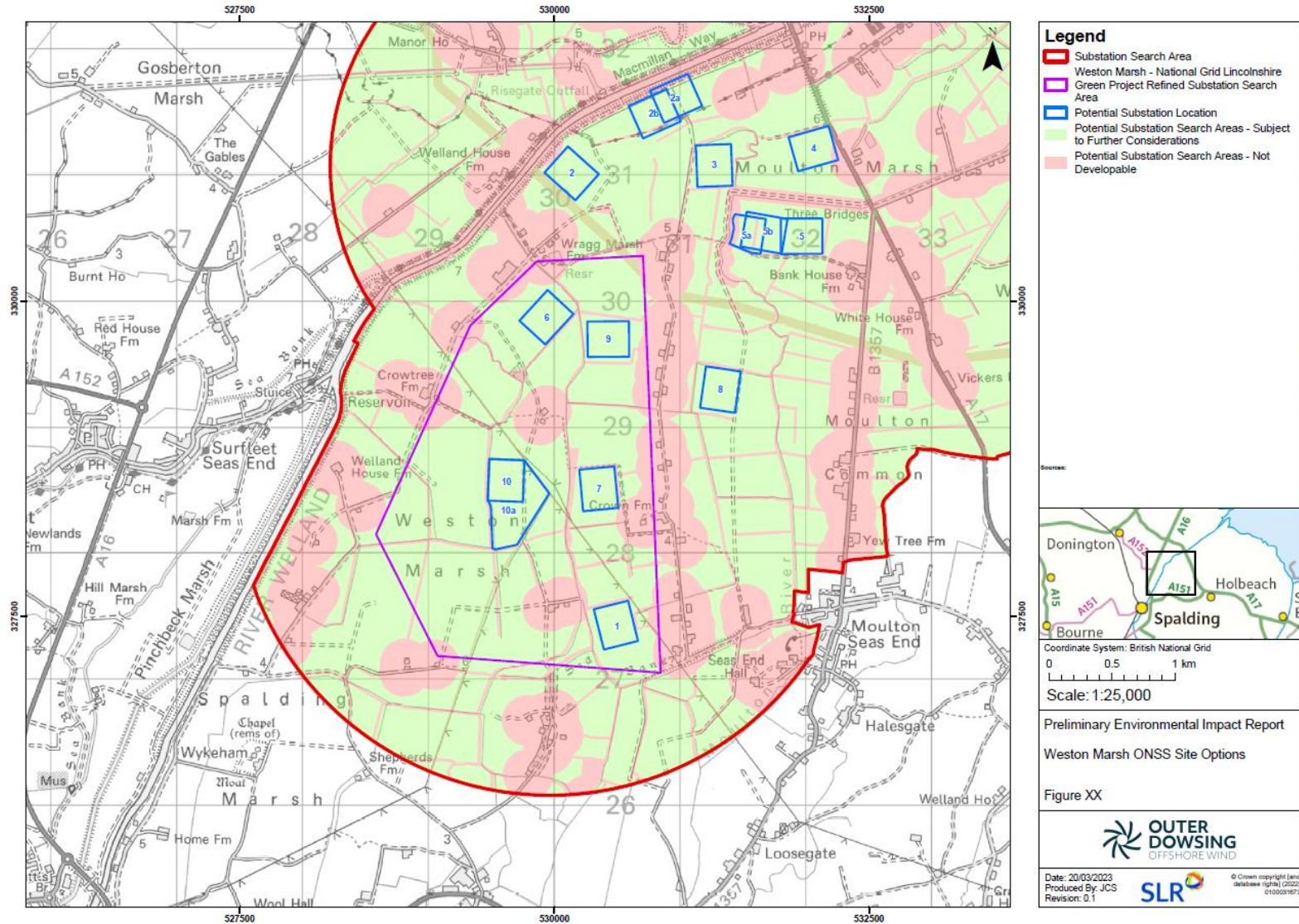
## **Developable plot criteria:**

- Close proximity to the National Grid area of search
- Providing an area of land large enough to meet the requirements of the Project OnSS
- As far as possible, free from environmentally sensitive receptors
- Not within 200m of any occupied building.

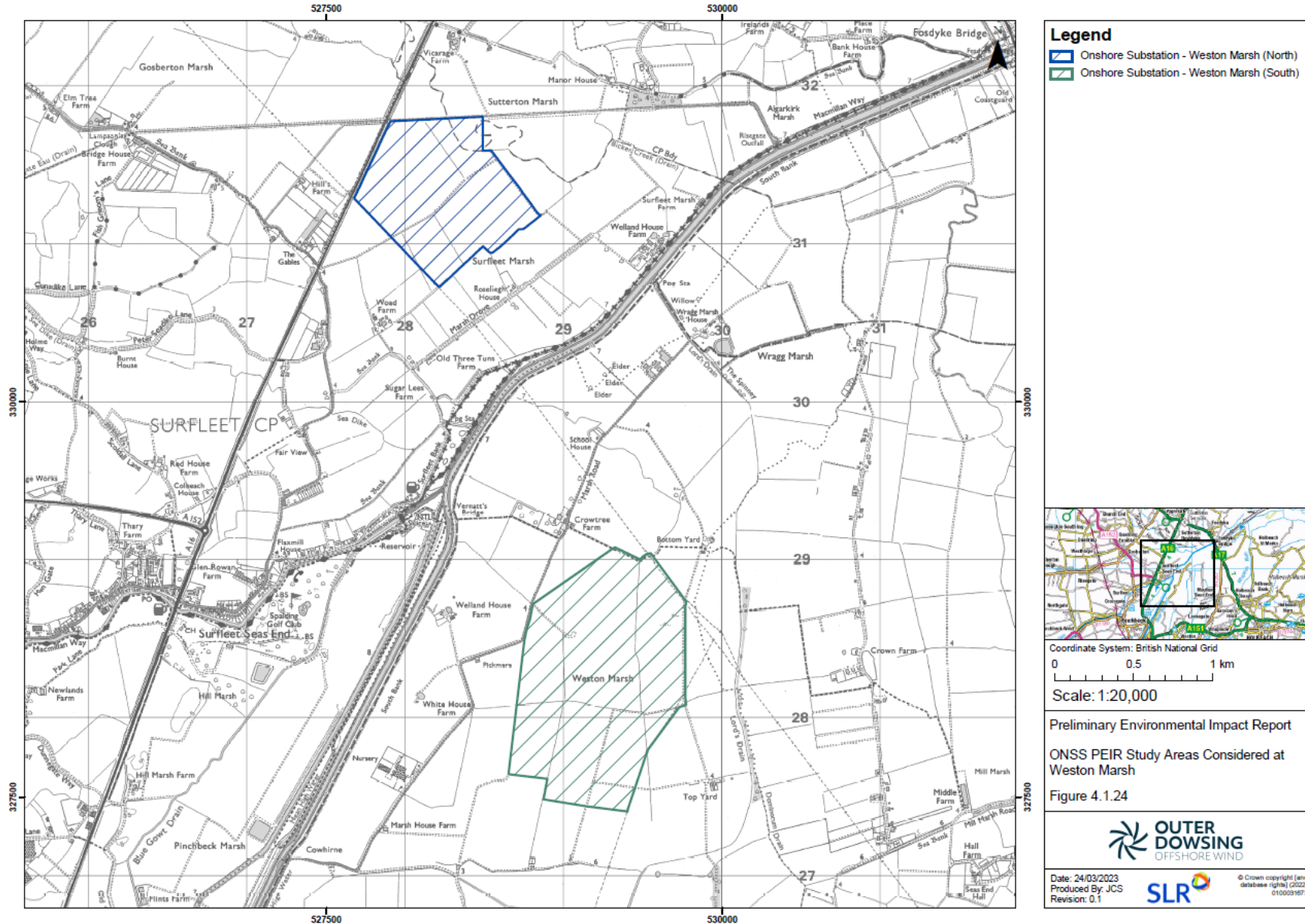
## **Environmental constraints appraisal considering the following issues:**

- Air quality
- Archaeology and cultural heritage
- Ecology and ornithology
- Geology and ground conditions
- Hydrology and flood risk
- Land use
- Noise and vibration
- Traffic and transport
- Landscape and visual assessment
- Planning

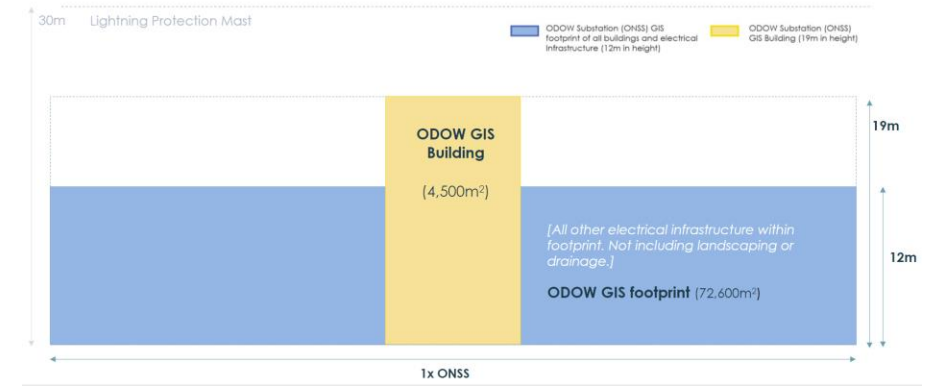
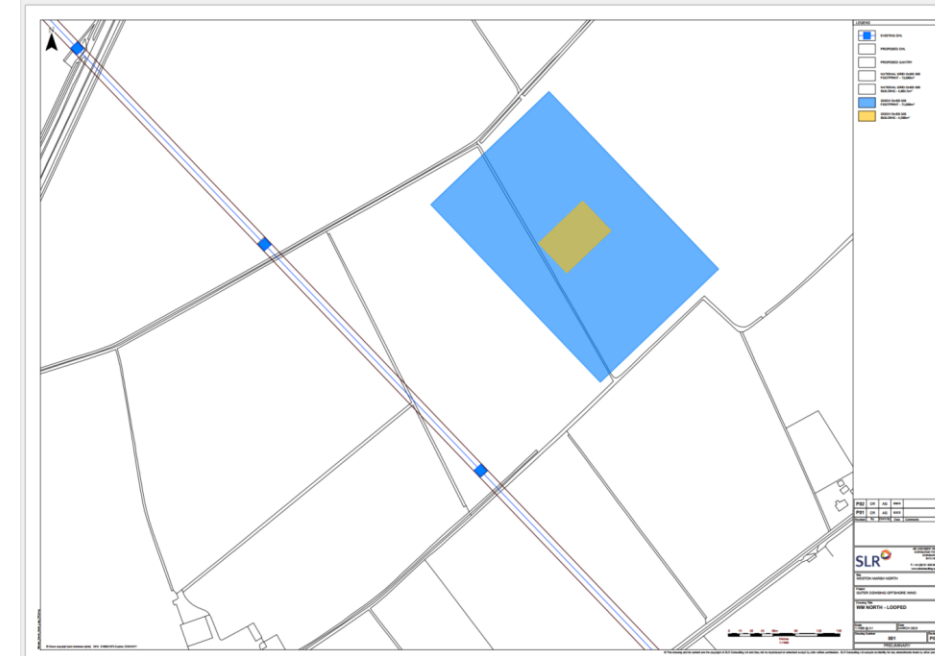
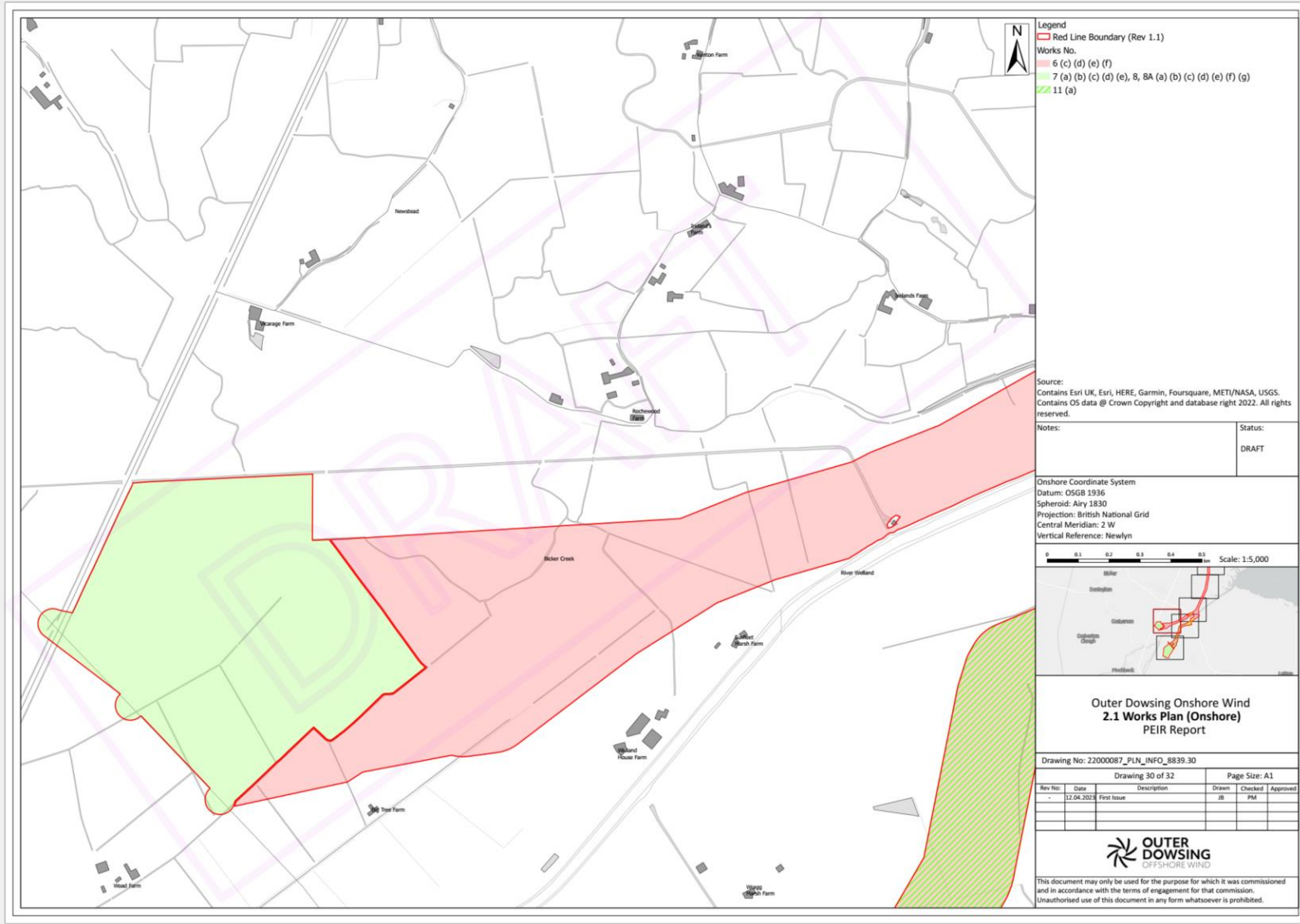
# Substation Options – Weston Marsh (North & South)



# Substation Options – Weston Marsh (North & South)



# Substation Options – Weston Marsh North



# Substation Options – Weston Marsh North

Existing View



OS Reference: SJ270 101465; National Grid of date: SJ270 (1993 projection); Camera: Canon EOS 40D; Megapixel Factor: 100% 6411  
 Date: 12/10/2010; Height above sea level: 1.2m; Camera height: 1.2m; Date and time: 09/10/2010 09:30:28  
 Outer Dowsing Offshore Wind

Weston Marsh North Viewpoint 1: Marsh Lane near Manor House



Year 1



OS Reference: SJ270 101465; National Grid of date: SJ270 (1993 projection); Camera: Canon EOS 40D; Megapixel Factor: 100% 6411  
 Date: 12/10/2010; Height above sea level: 1.2m; Camera height: 1.2m; Date and time: 09/10/2010 09:30:28  
 Outer Dowsing Offshore Wind

Year 15



OS Reference: SJ270 101465; National Grid of date: SJ270 (1993 projection); Camera: Canon EOS 40D; Megapixel Factor: 100% 6411  
 Date: 12/10/2010; Height above sea level: 1.2m; Camera height: 1.2m; Date and time: 09/10/2010 09:30:28  
 Outer Dowsing Offshore Wind

ODOV Substation (ONSS) GIS footprint of all buildings and electrical Infrastructure (12m in height)


ODOV Substation (ONSS) GIS Building (19m in height)


# Substation Options – Weston Marsh North



Weston Marsh North Viewpoint 2: A16 near Marsh Lane junction



 ODOV Substation (ONSS) GIS footprint of all buildings and electrical Infrastructure (12m in height)


 ODOV Substation (ONSS) GIS Building (19m in height)


# Substation Options – Weston Marsh North



Weston Marsh North Viewpoint 3: A16 at Surfleet Bank junction



 ODOW Substation (ONSS) GIS footprint of all buildings and electrical Infrastructure (12m in height)

 ODOW Substation (ONSS) GIS Building (19m in height)

# Substation Options – Weston Marsh North

Existing View



Figure 27.40a - Existing View of Substation  
 Weston Marsh North Viewpoint 4 - Macmillan Way at Surfleet Bank  
 OUTER DOWSING OFFSHORE WIND

Year 1



Figure 27.40b - Proposed Substation  
 Weston Marsh North Viewpoint 4 - Macmillan Way at Surfleet Bank  
 OUTER DOWSING OFFSHORE WIND

Year 15



Figure 27.40c - Proposed Substation with Vegetation Planting (15 Years Growth)  
 Weston Marsh North Viewpoint 4 - Macmillan Way at Surfleet Bank  
 OUTER DOWSING OFFSHORE WIND

Weston Marsh North Viewpoint 4: Macmillan Way at Surfleet Bank



ODOV Substation (ONSS) GIS footprint of all buildings and electrical infrastructure (12m in height)

ODOV Substation (ONSS) GIS Building (19m in height)



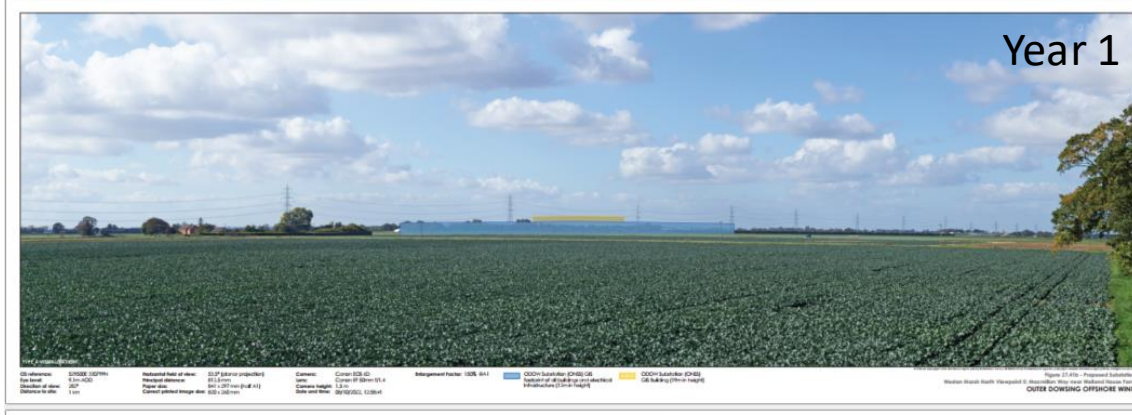
# Substation Options – Weston Marsh North



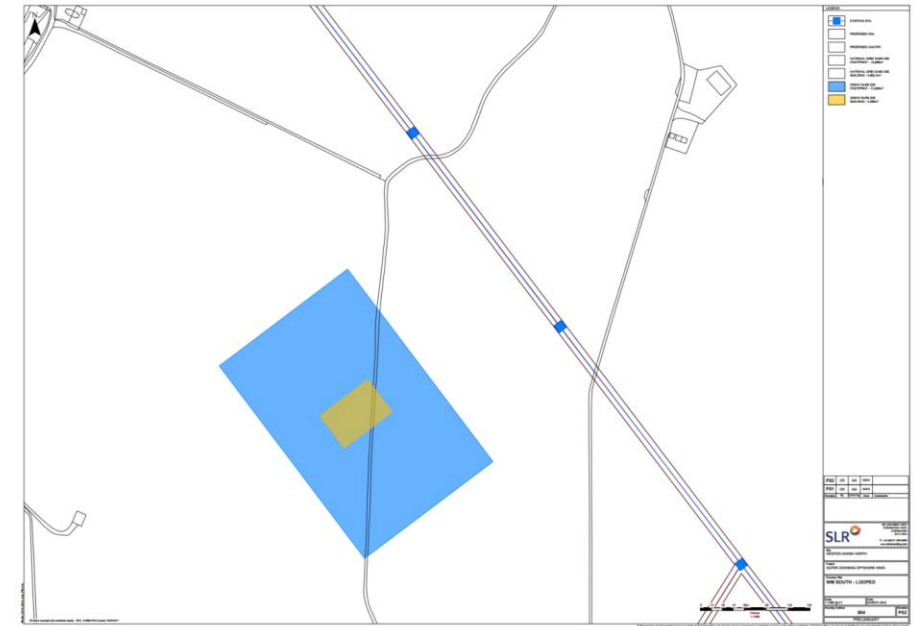
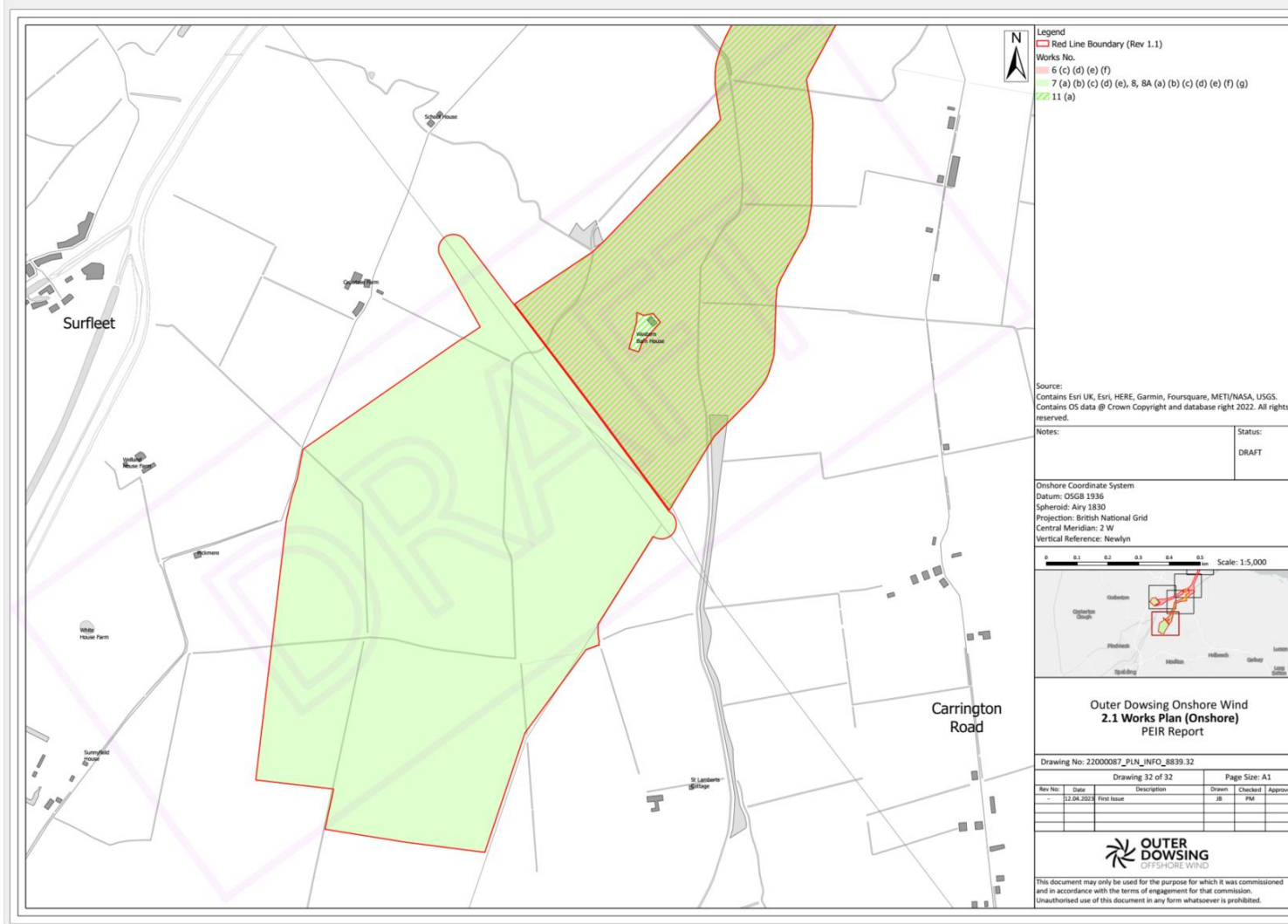
Weston Marsh North Viewpoint 5: Macmillan Way near Welland House Farm



- ODOV Substation (ONSS) GIS footprint of all buildings and electrical Infrastructure (12m in height)
- ODOV Substation (ONSS) GIS Building (19m in height)



# Substation Options – Weston Marsh South



# Substation Options – Weston Marsh South



Existing View

Figure 27.42a - Existing  
Weston Marsh South Viewpoint 1: Marsh Road near Crowtree Farm  
OUTER DOWSING OFFSHORE WIND



Year 1

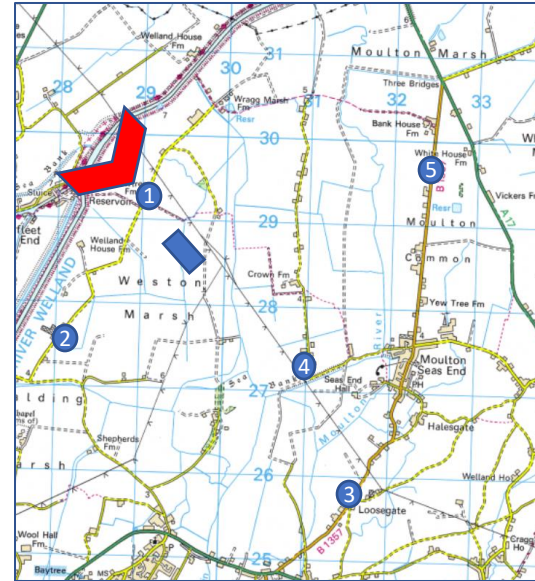
Figure 27.42b - Proposed Substation  
Weston Marsh South Viewpoint 1: Marsh Road near Crowtree Farm  
OUTER DOWSING OFFSHORE WIND



Year 15

Figure 27.42c - Proposed Substation with Alligator Planting (15 Years Growth)  
Weston Marsh South Viewpoint 1: Marsh Road near Crowtree Farm  
OUTER DOWSING OFFSHORE WIND

Weston Marsh South Viewpoint 1: Marsh Road near Crowtree Farm



ODOW Substation (ONSS) GIS footprint of all buildings and electrical infrastructure (12m in height)

ODOW Substation (ONSS) GIS Building (19m in height)

# Substation Options – Weston Marsh South

Existing View



Site & Production  
 OS reference: E1048 075466  
 Site height: 10m AOD  
 Direction of view: East  
 Distance to site: 1.0km  
 Proposed field of view: ELP (Error projected)  
 Proposed substation: E1048 075466  
 Paper size: A1  
 Date of print: 08/08/2014  
 Content approval stage: 02 - 02/08/14  
 Camera: Canon 020.02  
 Lens: Canon EF 50mm f/1.8  
 Camera height: 1.5m  
 Date and time: 08/08/2014 11:41:09  
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 Weston Marsh South - Viewpoint 2 - Marsh Road near Kindergarten Nursery  
 Figure 27.61a - Existing  
 Outer Dowsing Offshore Wind

Year 1



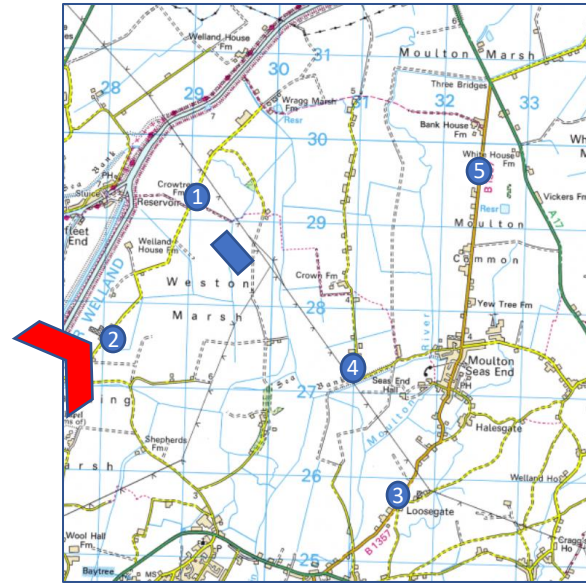
Site & Production  
 OS reference: E1048 075466  
 Site height: 10m AOD  
 Direction of view: East  
 Distance to site: 1.0km  
 Proposed field of view: ELP (Error projected)  
 Proposed substation: E1048 075466  
 Paper size: A1  
 Date of print: 08/08/2014  
 Content approval stage: 02 - 02/08/14  
 Camera: Canon 020.02  
 Lens: Canon EF 50mm f/1.8  
 Camera height: 1.5m  
 Date and time: 08/08/2014 11:41:09  
 Management factor: 1006\_011  
 Weston Marsh South - Viewpoint 2 - Marsh Road near Kindergarten Nursery  
 Figure 27.61b - Proposed Substation  
 Outer Dowsing Offshore Wind

Year 15



Site & Production  
 OS reference: E1048 075466  
 Site height: 10m AOD  
 Direction of view: East  
 Distance to site: 1.0km  
 Proposed field of view: ELP (Error projected)  
 Proposed substation: E1048 075466  
 Paper size: A1  
 Date of print: 08/08/2014  
 Content approval stage: 02 - 02/08/14  
 Camera: Canon 020.02  
 Lens: Canon EF 50mm f/1.8  
 Camera height: 1.5m  
 Date and time: 08/08/2014 11:41:09  
 Management factor: 1006\_011  
 Weston Marsh South - Viewpoint 2 - Marsh Road near Kindergarten Nursery  
 Figure 27.61c - Proposed Substation with Mitigation Planning (15 Years Onward)  
 Outer Dowsing Offshore Wind

Weston Marsh South Viewpoint 2: Marsh Road near Kindergarten Nursery



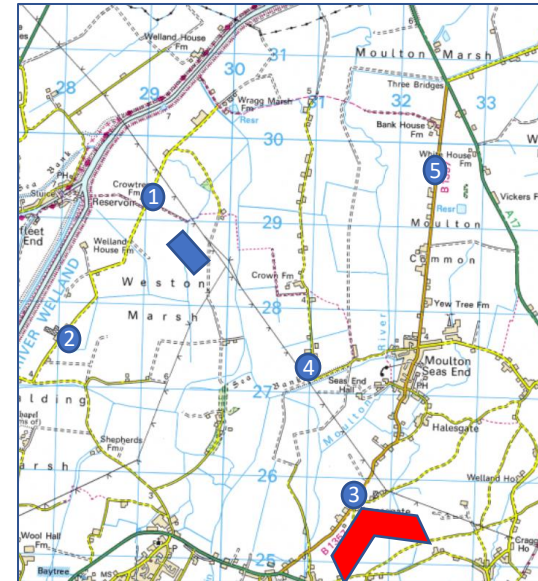
ODOW Substation (ONSS) GIS footprint of all buildings and electrical Infrastructure (12m in height)

ODOW Substation (ONSS) GIS Building (19m in height)

# Substation Options – Weston Marsh South



Weston Marsh South Viewpoint 3: B1357 near Loosegate



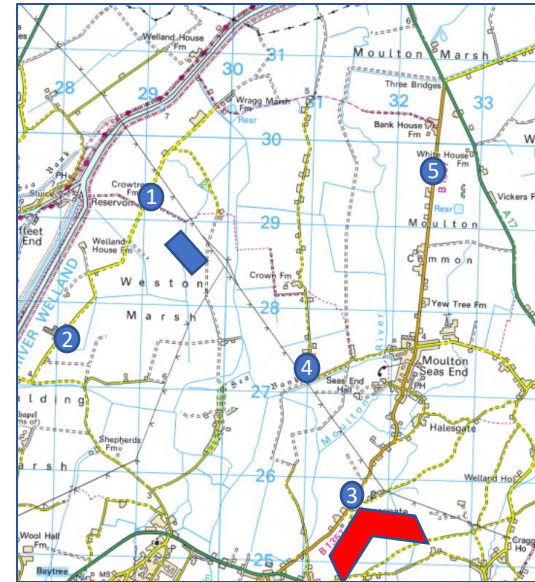
ODOV Substation (ONSS) GIS footprint of all buildings and electrical infrastructure (12m in height)


ODOV Substation (ONSS) GIS Building (19m in height)


# Substation Options – Weston Marsh South



Weston Marsh South Viewpoint 4: Carrington Road south



 ODOW Substation (ONSS) GIS footprint of all buildings and electrical infrastructure (12m in height)

 ODOW Substation (ONSS) GIS Building (19m in height)

ODW Substation (ONSS) GIS footprint of all buildings and electrical infrastructure (12m in height)

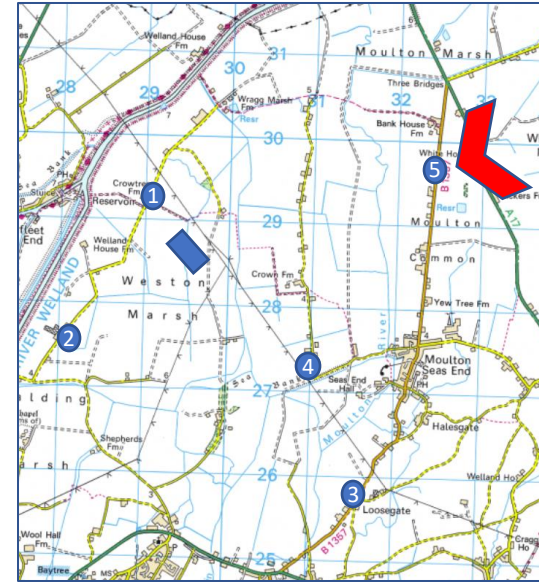
ODW Substation (ONSS) GIS footprint of all buildings and electrical infrastructure (12m in height)


ODW Substation (ONSS) GIS footprint of all buildings and electrical infrastructure (12m in height)


# Substation Options – Weston Marsh South



Weston Marsh South Viewpoint 5: B1357 Common Road north



 ODOV Substation (ONSS) GIS footprint of all buildings and electrical infrastructure (12m in height)

 ODOV Substation (ONSS) GIS Building (19m in height)

# Q&A

Thanks for joining us again this evening! We really appreciate your time and feedback.

