The Great Grid Upgrade

Sea Link

Sea Link

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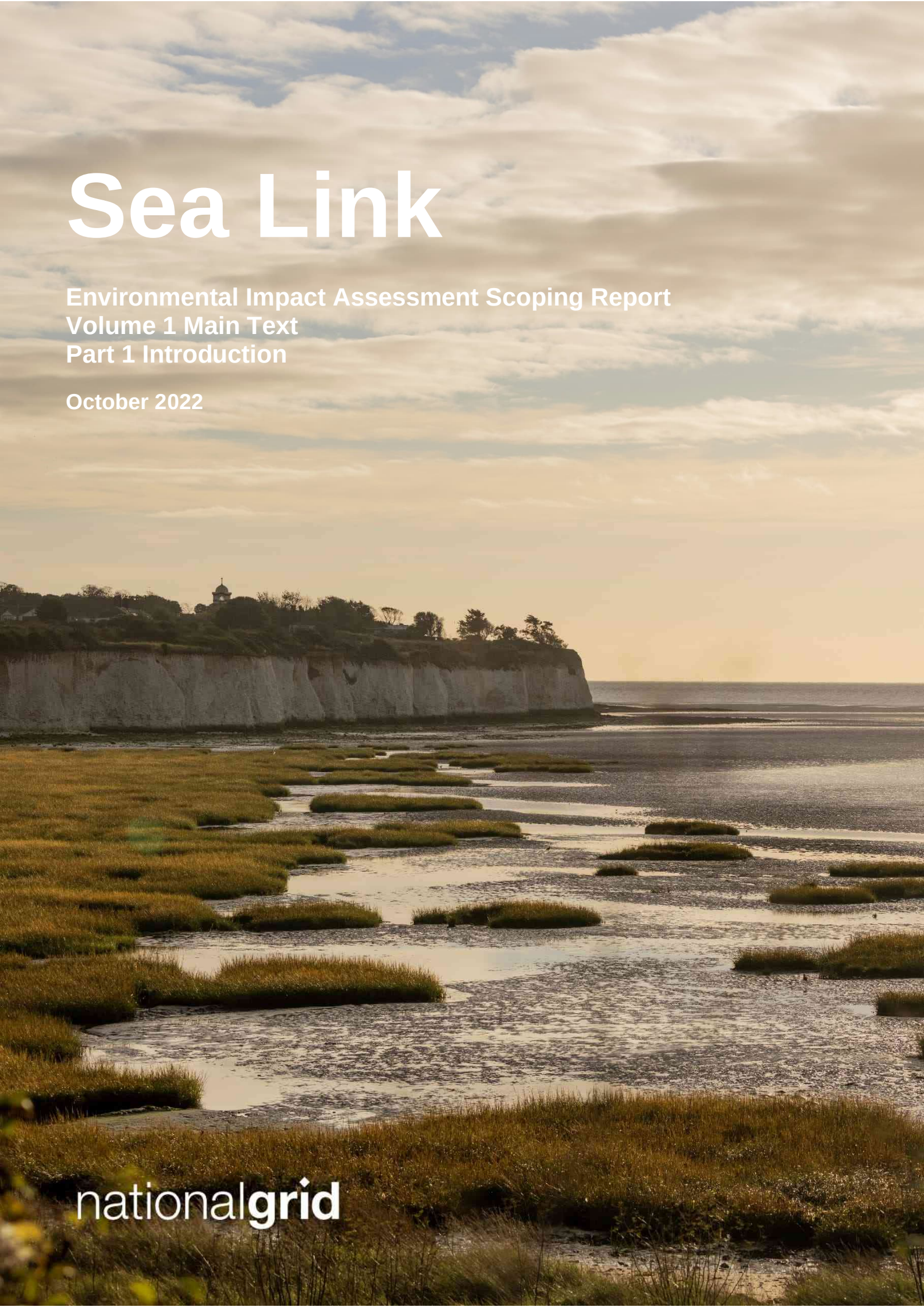
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Sea Link

Environmental Impact Assessment Scoping Report
Volume 1 Main Text
Part 1 Introduction

October 2022

nationalgrid

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Glossary

Term	Definition
Abnormal Indivisible Loads (AIL)	Large loads to be delivered to the construction site which by their nature cannot be broken into smaller multiple deliveries.
Above Ordnance Datum (AOD)	An Ordnance Datum or OD is a vertical datum used by an ordnance survey as the basis for deriving altitudes on maps. A spot height may be expressed as AOD. Usually mean sea level is used for the datum.
Access points	A location connecting a construction site to the public highway
Access routes	Public highway used by construction traffic to access a construction site
Accidents and safety	In the context of traffic and transport, the risk of accidents occurring where the Project is expected to produce a change in the character of traffic.
Acoustic environment	The sound with contribution from all sources, as modified by the current environment and associated conditions. This is related to the ambient sound, which is the totally encompassing sound in a given situation at a given time, usually composed of sound from many sources near and far.
Acute health effect	An adverse health effect that manifests itself immediately or shortly after exposure to a causative factor (e.g. soil contamination). Associated with short-term exposures.
Additional measures	Further measures required in order to achieve the anticipated outcome. These may be implemented as part of the development consent or through inclusion in the ES. These are referred to as ‘secondary measures’ in accordance with Institute of Environmental Management and Assessment (IEMA) guidelines.
Admiralty Chart	Nautical charts issued by the United Kingdom Hydrographic Office and subject to Crown Copyright
Agricultural Land Classification (ALC)	A standardised method for classifying agricultural land according to its versatility, productivity, and workability, based upon inter-related parameters including climate, relief, soil characteristics and drainage. These factors form the basis for classifying agricultural land into one of five grades (with Grade 3 land divided into Subgrades 3a and 3b), ranked from excellent (Grade 1) to very poor (Grade 5). ALC is determined using the MAFF Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land,1988.
Agri-environment scheme	Government programme set up to help farmers manage their land in environmentally friendly way.
Air Quality Management Areas (AQMAs)	If a local authority finds any places where the Air Quality Objectives (AQO) are not likely to be achieved, it must declare an AQMA there. This area could be just one or two streets, or it could be much bigger.

Term	Definition
	Then the local authority will put together a plan to improve the air quality - a Local Air Quality Action Plan (AQAP).
Air Quality Objectives (AQO)	The AQOs are policy targets often expressed as a maximum ambient concentration not to be exceeded, either without exception or with a permitted number of exceedances, over a specified averaging period.
Air Quality Standards (AQS)	The AQS Regulations report limit values at differing averaging periods for certain pollutants. There are limits provided for the protection of human health for SO2, NO2, Benzene, CO and Pb. Target values have been set for the concentration of PM2.5.
Alternating current	The electrical current changes direction in a cycle. Mains electricity is alternating current.
Anchorage area	A place where boats and ships or other water vessels can safely drop anchor.
Anchor handling vessel or Anchor Handling Tug Supply	Anchor Handling Tug Supply (AHTS) vessels are mainly built to handle anchors for oil rigs, tow them to location, and use them to secure the rigs in place
Ancient woodland	Land that has been continually wooded since at least 1600 in England. Regarded as irreplaceable habitat' in national planning guidance. Ancient woodland greater than 2ha is recorded on the National England Woodland Inventory.
Annex 1 habitat	Annex 1 Habitat refers to a habitat as defined under the EU Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora.
Aquifer	Water-bearing rock or sediment below the soil layer.
Archaeological Interest	A heritage asset with value from the potential to hold evidence about the past that can be retrieved though specialist investigation.
Archaeological remains	The material remains of human activity from the earliest persons of human evolution to present. These may be buried traces of human activities, sites visible above ground, or moveable artifacts.
Architectural/Artistic Interest	A heritage asset with value from contemporary appreciation of a heritage asset's aesthetics.
Area of Outstanding National Beauty (AONB)	An AONB is land protected by the Countryside and Rights of Way Act 2000 (CROW Act). It protects the land to conserve and enhance its natural beauty.
Artificial ground	Deposits that have accumulated or been placed through human activity.
Associated development	Development which is associated with a Nationally Significant Infrastructure Project (NSIP), as defined in the Planning Act 2008. It should be subordinate to, and necessary for, the construction and/or

Term	Definition
	the effective operation of the NSIP that is the subject of the Development Consent Order (DCO) application.
Auger bore	A form of trenchless crossing in which a pit is created wither side of the constraint or infrastructure being crossed and a bore is created by augering from one pit to the other.
Automatic Identification System	An AIS-equipped system on board a ship presents the bearing and distance of nearby vessels in a radar-like display format
Automatic RADAR Plotting Aid	A marine radar with automatic radar plotting aid (ARPA) capability can create tracks using radar contacts. The system can calculate the tracked object's course, speed and closest point of approach (CPA), thereby knowing if there is a danger of collision with the other ship or landmass.
Background sound/noise level	The A weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval, T, measured using time weighting F and quoted to the nearest whole number of decibels. This represents the underlying sound level in the absence of contributions from the sound source under assessment relating to the residual sound level but characterised by LA90,T.
Baseline	The situation prevailing before the Project is commenced (the current baseline), and also to the situation that would prevail in the future without the Project (the projected future baseline).
Basis Noise Level	A reference noise level at 10m from the nearside carriageway, calculated as a function of traffic flow, percentage of Heavy Goods Vehicles, average speed, road gradient and road surface.
Bathymetry	Bathymetry is the information that describes the topography of the seabed. It is an essential component in understanding the dynamics of the marine environment, both in terms of sediment transport but also in the prediction of tides, currents and waves
Bellmouth	An access point from the public highway for construction purposes.
Best and Most Versatile (BMV) agricultural land	Defined as land of excellent (ALC Grade 1), very good (Grade 2) and good (Subgrade 3a) agricultural quality. BMV agricultural land is afforded a degree of protection against development within planning policy.
Biodiversity	The variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems.
Biodiversity Net Gain (BNG)	BNG is an approach to development which aims to leave nature in a better state than it was before the project was completed. National

Term	Definition
	Grid has made a commitment to delivering a BNG target of 10% above baseline on its development projects (as agreed with Ofgem).
Biodiversity Action Plan	A strategy for conserving and enhancing wild species and wildlife habitats in the UK.
Biosecurity	Measures aimed at preventing the spread of harmful organisms (e.g. viruses and bacteria) to crops and livestock in order to reduce the risk of transmission of infectious diseases.
Birds of Conservation Concern	Quantitative criteria are used to assess the population status of bird species found in the UK, which are placed on the red, amber or green list. With those on the red list being at most risk.
Bronze Age	-2,600 to -700
Cable	An insulated conductor designed for underground installation.
Cable Lay Barge	A Cable Laying Barge (cable layer or cable ship) is a sea going vessel specially designed to lay underwater cables (telecommunications, electric power transmission, or other).
Cable Lay Vessel	A Cable Laying Vessel (cable layer or cable ship) is a sea going vessel specially designed to lay underwater cables (telecommunications, electric power transmission, or other).
Cable Sealing End Compound (CSEC)	Electrical infrastructure used as the transition point between overhead lines and underground cables. A compound on the ground acts as the principal transition point.
Chronic health effect	An adverse health effect that occurs as a result of long-term regular or continuous exposure to a causative factor (e.g. soil contamination).
Code of Construction Practice (CoCP)	Sets out the standards and procedures to which a developer or contractor must adhere in order to manage the potential environmental impacts of construction works.
Concrete mattressing	A rectangular unit made of concrete blocks joined together by polypropylene ropes. The mattress is flexible in two dimensions and is available in a range of thicknesses to suit the conditions required. Concrete matresses are used for the anchorage and protection of underwater pipelines and cables and for protecting the foundations of structures against water scouring.
Construction Environmental Management Plan (CEMP)	The purpose of the CEMP is to outline how construction of the Project will avoid, minimise or mitigate effects on the environment and surrounding area. The CEMP will detail the implementation of measures in accordance with environmental commitments outlined in the ES. It is a ‘live’ document which is to be reviewed and updated at regular intervals throughout the Project life cycle.
Conductor	The overhead wire that carries electricity from one place to another. For example, the line between two pylons.

Term	Definition
Conservation Area	An area of special architectural or historic interest, the character or appearance of which it is desirable to preserve or enhance as defined in Section 69(1)(a) in the Planning (Listed Building and Conservation Areas) Act 1990.
Contaminated land	Land where substances are causing or could cause significant harm to people, property or protected species or could cause significant pollution of surface waters or groundwater
Corona discharge	An electrical discharge caused by the ionisation of fluid such as air surrounding a conductor carrying a high voltage. It represents a local region where the air (or other fluid) has undergone electrical breakdown and become conductive. A corona occurs at locations where the strength of the electric field (potential gradient) around a conductor exceeds the dielectric strength of the air.
Converter Station	A converter station is part of a HVDC system and converts High Voltage Direct Current to High Voltage Alternating Current and vice versa.
Corridor	A broad area, within which a new overhead line could be routed.
County Wildlife Site	Non-designated areas of land important for their wildlife and nature conservation value
Cumulative effects	There are two types of effect, in-combination effects and cumulative effects. The former occurs as a result of two or more impacts acting together (i.e. combined), to result in a new or changed effect on a single receptor. The latter arise as a result of the Project in combination with other large-scale developments or projects.
Decibel (dB)	Noise is conventionally measured in decibels (dB). The ratio between the quietest audible sound and the loudest tolerable sound is a million to one in terms of the change in sound pressure. Due to this wide range, a scale based on logarithms is used in noise level measurement. The scale used is the dB scale which extends from 0 to 140dB corresponding to the intensity of the sound pressure level.
Demographic	Relating to the structure of populations.
Development Consent Order (DCO)	Where the Secretary of State (SoS) proposes to grant consent for a NSIP, this will be through a DCO which is normally made as a statutory instrument – a form of secondary legislation. The DCO not only provides planning consent for the Project but may also incorporate other consents and include authorisation for the compulsory acquisition of land.
Dewatering	The removal of groundwater (e.g. by pumping) to keep a below-ground works area dry. This can be used during construction of the underground cable sections.
Direct effects	Direct effects are those that result directly from the Project.

Term	Definition
Disaster	A disaster is a man-made/external hazard (such as an act of terrorism) or a natural hazard (such as an earthquake) with the potential to cause an event or situation that meets the definition of a major accident.
Double tee	A connection from both circuits on either side of the same structure, creating a third and fourth circuit on another structure.
Dredging vessels	Dredging vessels are used for the removal of sediments and debris from the bottom of lakes, rivers, harbours, and other water bodies. It is a routine necessity in waterways around the world because sedimentation—the natural process of sand and silt washing downstream—gradually fills channels and harbours.
Driver delay	Traffic delays to non-development traffic.
Ducting	The installation of ducts (pipes) within which a cable can be pulled through.
Dust	Generic term used to describe larger non-respirable airborne particulates (typically those which are deposited rapidly and normally associated with soiling / marking of property, cars, vegetation etc.).
Early Medieval	410 to 1066 CE
Easement	An easement is a right benefiting a piece of land (known as the dominant land) that is enjoyed over another piece of land owned by someone else (the servient land). Usually, an easement allows the owner of the dominant land to do something on the servient land, such as use a right of way, or run services over it.
Ecological feature	Habitats, species or ecosystems.
Ecosystem	A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.
Effects	For the purposes of the EIA and this Scoping Report, the term ‘effects’ are the consequences of changes (e.g. habitat becomes degraded by changes in drainage pattern).
Electricity System Operator (ESO)	Body required to support and guide the future development of the electricity transmission system in Britain.
Electricity transmission system	The electricity transmission system is made up largely of 400kV, 275kV and 132kV assets connecting separately owned generators and interconnectors with the demand for electricity fed directly from the transmission system, and distribution systems. The ‘transmission’ classification applies to assets at 132kV or above in Scotland or offshore. In England and Wales, it relates to assets at 275kV and above. The electricity transmission system is designed to make sure there is sufficient transmission capacity to ensure that the system can be operated in an economic and efficient way by the ESO, ensuring power can be moved from where it is generated to demand centres across Britain. This planning and development of the electricity

Term	Definition
	transmission system is governed by the Security and Quality of Supply Standard (SQSS) which ensure that the network is developed and operated securely and is resilient to any foreseeable network faults and disruption.
Electromagnetic Compatibility	The interaction of electrical equipment with its electromagnetic environment and with other equipment.
Electromagnetic fields (EMF)	Electric fields are created by differences in voltage: the higher the voltage, the stronger will be the resultant field. Magnetic fields are created when electric current flows: the greater the current, the stronger the magnetic field. An electric field will exist even when there is no current flowing. If current does flow, the strength of the magnetic field will vary with power consumption but the electric field strength will be constant.
Embedded measures	Modifications to the location, design or operation of the development made during the pre-application phase that are an inherent part of the Project, and do not require additional action to be taken. These are referred to as 'primary measures' in accordance with IEMA guidelines and will be embedded within the design of the Project.
Environmental Gain (EG)	National Grid has defined 'Environmental Gain' with Ofgem as being an amalgam of BNG and the status of Natural Capital (NC). This sees a simple formula being used to calculate overall EG.
Environmental Impact Assessment (EIA)	An EIA is a tool for systematically examining and assessing the impacts and effects of a development on the environment. The objective of the EIA is to identify any likely significant effects which may arise from the Project and identify measures to prevent, reduce or offset any adverse effects.
Environmental Statement (ES)	The outcome of the EIA process is reported within a document called an ES.
European Protected Species	Animals and plants listed under the Habitats Directive and protected under the Conservation of Habitats and Species Regulations 2017, as amended.
Fall pipe vessel	A fallpipe vessel (FPV) is a self-propelled vessel that is equipped with a flexible fallpipe. The vessel's design allows the fallpipe to be lowered into the water beneath the vessel allowing it to position rock with extreme accuracy down to a depth of 1,500 meters.
Fear and intimidation	In the context of traffic and transport, these may be experienced by people as a result of an increase in traffic volume and its proximity or the lack of protection caused by such factors as narrow pavement widths.
Fisheries Liaison Officer	FLOs liaise between fishing vessels and Clients, using local knowledge and fisheries experience to encourage co-operation and help ensure operations run smoothly and efficiently

Term	Definition
Flood Risk Assessment (FRA)	The FRA will assess the flood risk both to and from the Project and demonstrate how that flood risk will be managed over the Project's lifetime.
Flood Zone 1	Land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%).
Flood Zone 2	Land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% – 0.1%), or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
Flood Zone 3	Land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.
Fragmentation	Breaking up of, for example, an area of land or habitat resulting in difficulties in accessing or using some or all of that land.
Future baseline	This is the theoretical situation that would exist in the absence of the Project. This is based upon extrapolating the current baseline using technical knowledge of likely changes over the identified period (for example anticipated habitat change over time, climate change projections, traffic and waste volume growth over time, etc.).
Future Energy Scenarios (FES)	Published annually by the ESO to indicate future power requirements and where future connections may occur across the network.
Geographical Information Systems	GIS is a framework for gathering, managing and analysing data. It analyses spatial location data and organises layers of information into visualisations on maps.
Good practice measures	Actions that would occur with or without input from the EIA feeding into the design process. These include actions that will be undertaken to meet other existing legislative requirements or actions that are considered to be standard practice used to manage commonly occurring environmental effects. These are referred to as 'tertiary measures' in accordance with the IEMA guidelines and would also be embedded within the design of the Project.
Graduated Swathes	Indicate the broad areas where the components of the new overhead lines forming part of the Project are likely to be located.
Ground dissolution (of limestone)	A reduction in the solid mass of rock as a result of groundwater dissolving it. This loss of mass can cause ground instability at the surface.
Ground gas	A general term to include all gases occurring and generated within the ground whether originating from Made Ground or from natural soil or rock. Typically used to mean only potentially hazardous ground gases, such as carbon dioxide, methane, hydrogen sulphide and carbon monoxide.

Term	Definition
Groundwater Dependent Terrestrial Ecosystems	The process by which plans and projects are assessed as to whether they are likely to have a significant effect on a European Site either alone or in combination with other plans or projects, under the Conservation of Habitats and Species Regulations 2017, as amended.
Guard vessel	During the construction stage of an offshore wind farm, a substation platform or a cable route, the construction site needs to be secured by a guard vessel. The vessel must constantly monitor marine traffic near the construction site visually and with radar and AIS.
Habitat of Principal Importance (HPI)	HPI are covered under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. The term is interchangeable with 'UK Priority BAP Habitat', 'Section 41 habitat' and 'NERCs41 habitat'.
Habitats Regulations Assessment (HRA)	A HRA refers to the several distinct stages of Assessment which must be undertaken in accordance with the Conservation of Habitats and Species Regulations 2017 (as amended) and the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) to determine if a plan or project may affect the protected features of a habitats site before deciding whether to undertake, permit or authorise it.
Habitat Suitability Index	A technique used for evaluating the suitability of habitats for great crested newt in order to assess the likelihood of their presence or absence.
Habitat Suitability Modelling	A statistical technique that predicts the distribution of a species from environmental variable data and bat occurrence records which can produce heat maps, identifying the most important flight paths and habitat connections for bats. The model identifies which of the environmental variables assessed (such as roads, the presence of woodland, or water) will most affect the distribution of a species.
Heavy Duty Vehicle (HDV)	Goods vehicles + buses >3.5 t gross vehicle weight.
Heritage asset	A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. Heritage assets include designated heritage assets and assets identified by the local planning authority (including local listing).
Heritage Significance	The significance of a heritage asset is the product of the value it holds for this and future generations as a result of its historic, archaeological, architectural or artistic interests.
High Water Springs or Mean High Water Springs	Mean high water springs is the highest level that spring tides reach on the average over a period of time. The height of mean high water springs is the average throughout the year of two successive high waters during those periods of 24 hours when the range of the tide is at its greatest

Term	Definition
Historic buildings	Architectural, designed, or other structures with a significant historical value. These may include structures that have no aesthetic appeal or structures not usually thought of as buildings, such as milestones or bridges.
Historic landscape	The current landscape, whose character is the result of the action and interaction of natural and/or human factors.
Historical Interest	A heritage asset with value from its association with past events or past people; or where a heritage asset is illustrative of a particular asset type, theme, or period.
Horizontal directional drill	A method of cable installation where the cable is drilled beneath a feature without the need for trenching.
Hydromorphology	The physical character and water content of water bodies.
Impacts	For the purposes of the EIA and this Scoping Report, the term 'impacts' is used to describe the changes that arise as a result of the Project (e.g. changes in drainage pattern).
Index of Multiple Deprivation (IMD)	The IMD is the official measure of relative deprivation for small areas (neighbourhoods) in England. The IMD are calculated based on the following factors: income deprivation, employment, health and disability, education, skills and training, barriers to housing and services, crime and living environment.
Indicative Alignment	The alignment of the overhead lines and underground cables that has been identified through the options appraisal process to date.
Indirect and secondary effects	Indirect and secondary effects are those which are not caused immediately by the Project but arise as a consequence of it. As such they would normally occur later in time or at locations farther away than direct effects. An example would be where water or gas pipes are damaged as a result of the Project, and the consequences of that damage is fire or flood risk to other receptors.
Infiltration	Incident rainfall that percolates into the ground, rather than evaporating or running off.
Inter-project effects	Arise as a result of the Project in combination with other large-scale developments or projects.
Intra-project effects	Effects that occur as a result of two or more impacts acting together (i.e. combined, to result in a new or changed effects on a single receptor).
Intertidal area	The extent of soft sediment beach that lies between High Water Springs and Low Water Springs at the landfall location.
Intervisibility	Intervisibility is defined as the ability to see in a direct line of sight from one position on the earth's surface to another, considering the intervening terrain.

Term	Definition
Invasive non-native species	An invasive non-native species is any non-native animal or plant that has the ability to spread, causing damage to the environment, the economy, health, and way of life.
Iron Age	-800 BCE to 43 CE
Jack-up barge	A jackup barge or a self-elevating unit is a type of mobile platform that consists of a buoyant hull fitted with a number of movable legs, capable of raising its hull over the surface of the sea. Often used as a base for servicing other structures such as offshore wind turbines, long bridges, and drilling platforms.
Joint bay	Underground structures constructed at regular intervals along the onshore cable route to join sections of cable and facilitate installation of the cables into the buried ducts.
Kilovolts (kV)	A unit of electromotive force, equal to 1,000 volts.
$L_{Aeq\ T}$	The A-weighted L_{eq} sound level measured over a specified period of time.
Land cover	The surface cover of the land, usually expressed in terms of vegetation cover or lack of it. Related to but not the same as land use.
Landform	The shape and form of the land surface resulting from combinations of geology, geomorphology, slope, elevation and physical processes.
Land use	What land is used for, based on broad categories of functional land cover such as urban and industrial use and the different types of agricultural and forestry.
Landscape	An area, as perceived by people, the character of which is the result of the action and integration of natural and/or human factors.
Landscape character	A distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse.
Landscape Character Area (LCA)	Discrete geographical areas of a particular landscape type with a broadly consistent character, which might include: pattern of topography, land use, vegetation cover, geology, cultural and ecological features, pattern of evolution, visual and perceptual qualities and habitats.
Landscape Character Type (LCT)	Generic, typically homogenous types of landscape that may occur in different parts of the country. They have similar geology, topography, drainage patterns, vegetation, land use, patterns of settlement and aesthetic character.
Landscape susceptibility	The ability of the landscape (whether it be the overall character or quality/condition of a particular landscape type or area, or an individual element and/or features, or a particular aesthetic and perceptual aspect) to accommodate the proposed development without undue consequences for the maintenance of the baseline situation.

Term	Definition
Landscape value	The relative value that is attached to different landscapes by society. A landscape may be valued by different stakeholders for a whole variety of reasons.
Light Goods Vehicle (LGV)	Cars and small vans <3.5 t gross vehicle weight.
Limit of Deviation	A maximum distance or measurement of variation within which the works must be constructed. These are lateral (i.e. on the ground) and vertical limits (in relation to height).
Listed Building	A building or structure of special historical or architectural/artistic interest. Designated by the Department for Digital, Culture, Media and Sport. All buildings built before 1700 which survive in anything like their original condition are likely to be listed, as are most buildings built between 1700 and 1850.
Local Geological Sites	A non-statutory designation for regionally important geological and geomorphological sites that have been identified as being of importance locally.
Local Nature Reserve	Sites dedicated by the local authority under Section 21 of the National Parks and Access to the Countryside Act 1949 for nature conservation which have wildlife or geological features that are of special interest locally.
Local planning authority	The public authority whose duty it is to carry out specific planning functions for a particular area
Local Wildlife Site (LWS)	Non-statutory nature conservation sites of local value.
Low Water or Low Water Springs	The height of mean low water springs is the average throughout a year of the heights of two successive low waters during those periods of 24 hours (approximately once a fortnight) when the range of the tide is greatest
Lower Layer Super Output Area (LSOA)	LSOAs are a geographic hierarchy designed to improve the reporting of small area statistics in England and Wales.
Lowest Observed Adverse Effect Level (LOAEL)	This is the level above which adverse effects on health and quality of life can be detected.
Macroinvertebrate	Any invertebrate organism which can be seen with the naked eye.
Macrophyte	Aquatic plants that grow in or near water.
Magnetic field	A measure of the force experienced by a moving electric charge, due to the motion of other charges.
Magnitude of change	A term that combines judgements about the size and scale off the effect, the extent of the area over which it occurs, whether it is

Term	Definition
	reversible or irreversible and whether it is short or long term in duration.
Major accident	A major accident is an event that threatens immediate or delayed serious environmental effects to human health, welfare and/or the environment and requires the use of resources beyond those of the client or its appointed representatives (i.e. contractors) to manage. Major accidents can be caused by disasters resulting from both man-made and natural hazards
Main river	Usually larger rivers and streams that the Environment Agency maintain and improve to manage flood risk.
Marine conservation zone	Marine areas that protect a range of nationally important, rare or threatened habitats and species
Mean High water Springs or High Water Springs	Mean high water springs is the highest level that spring tides reach on the average over a period of time. The height of mean high water springs is the average throughout the year of two successive high waters during those periods of 24 hours when the range of the tide is at its greatest
Mean Low Water Springs or Low Water Springs	The height of mean low water springs is the average throughout a year of the heights of two successive low waters during those periods of 24 hours (approximately once a fortnight) when the range of the tide is greatest
Mechanical ploughing	A mechanical plough is a device towed along the seabed and is optimised to help deliver reductions in the cost of offshore wind installation and to minimise project risk by combining operations to reduce the time required to install subsea cables
Medieval	1066 to 1540 CE
Mesolithic	-10,000 to -4,000 BCE
Metocean	Metocean conditions refer to the combined wind, wave and climate (etc.) conditions as found on a certain location.
Micro bore	A type of trenchless crossing technique in which a pit is created wither side of the constraint or infrastructure being crossed and a micro bore is created from one pit to the other.
Mineral reserve	Mineral deposit whose extraction is economically feasible.
Mitigation	The action of reducing the severity and magnitude of change (impact) to the environment. Measures to avoid, reduce, remedy or compensate for significant adverse effects.
Modern	1901 to present
Mooring	Lassoing, tethering, tying, or otherwise securing your boat to a fixed object, such as a mooring buoy, rather than dropping an anchor to secure your vessel

Term	Definition
National Cycle Network (NCN)	The NCN is a UK-wide network of signed paths and routes for walking, cycling, wheeling and exploring outdoors.
National Grid Electricity Transmission (NGET) ('National Grid')	National Grid operate the national electricity transmission network across Great Britain and own and maintain the network in England and Wales, providing electricity supplies from generating stations to local distribution companies. National Grid does not distribute electricity to individual premises, but its role in the wholesale market is vital to ensuring a reliable, secure and quality supply to all.
National Nature Reserve	Sites that are dedicated by the statutory country conservation agencies, under the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981, for nature conservation and which have wildlife or geological features that are of special interest nationally.
Nationally Significant Infrastructure Project (NSIP)	NSIPs are developments (relating to energy, transport, water, or waste) which are identified in the Planning Act 2008 and require a type of consent known as "development consent".
National Vegetation Classification	System of classifying natural habitat types in Great Britain according to their vegetation types.
Natural Capital (NC)	The total stock of natural resources and services provided by natural assets which benefit people.
Natural Superficial Deposits	Geologically recent deposits that consist of various sediments (clay, sand, gravel etc.) and sit on top of the bedrock.
Nautical Mile	A nautical mile is a unit of measurement used in air, marine, and space navigation, and for the definition of territorial waters. It is based on the circumference of the earth and is equal to one minute of latitude. It is slightly more than a statute (land measured) mile (1 nautical mile = 1.1508 statute miles). Nautical miles are used for charting and navigating.
NAVAREA warnings	NAVAREAs are the maritime geographic areas in which various governments are responsible for navigation and weather warnings.
Navigational dredging sites	Dredging sites to deepen berths and channels for the purpose of navigation. Navigational dredging will usually require a licence but there is an exemption available for low volume dredging and harbour authorities in certain circumstances.
Navigational Risk Assessment	Navigation (Marine) Risk Assessment identifies and assesses the hazards and risks affecting vessel navigation, before considering current controls to mitigate risks and further controls that could be adopted to minimise risk as low as reasonably practicable (ALARP).
Navigational Telex	NAVTEX (NAVigational TEleX), sometimes styled Navtex or NavTex,[1] is an international automated medium frequency direct-printing service for delivery of navigational and meteorological

Term	Definition
	warnings and forecasts, as well as urgent maritime safety information (MSI) to ships.
Neolithic	-4,000 to -2,200 BCE
Nitrous Dioxide (NO2)	Reddish brown gas (in high concentrations), respiratory irritant and precursor to photochemical processes which produce other pollutants, photochemical smog and contribute to global warming.
Nitrous Oxide (NOx)	Inert product of combustion, which does not contribute to local air pollution.
Noise Important Area	Determined via strategic noise maps and highlight the residential areas experiencing the highest 1% of noise levels from road and rail sources in England.
Non-Road Mobile Machinery (NRMM)	A broad category which includes mobile machines, and transportable industrial equipment or vehicles which are fitted with an internal combustion engine and not intended for transporting goods or passengers on roads.
Non-statutory designated site	A site designated at a local level for its biodiversity and/or geological value. These are not underpinned by legislation.
Notice to Mariners	A notice to mariners advises mariners of important matters affecting navigational safety, including new hydrographic information, changes in channels and aids to navigation, and other important data. Over 60 countries which produce nautical charts also produce a notice to mariners
Options appraisal	A robust and transparent process used to compare options and to assess the positive and negative effects they may have across a wide range of criteria including environmental, socio-economic, technical and cost factors. The outcome is to identify a Strategic Proposal for the Project.
Options Identification and Selection	Work undertaken to determine the preferred corridor and preliminary routeing and siting options for the Project. It is intended to demonstrate how National Grid's statutory duties, licence obligations, policy considerations, environmental, socio-economic, technical, cost, and programme issues have been considered and provide information on the approach to the identification and appraisal of route corridors and siting locations.
Order Limits	The presently anticipated maximum extent of land within which the proposed development may take place.
Ordinary watercourse	Watercourses that are not main rivers, and that Lead Local Flood Authorities, district councils and Internal Drainage Boards maintain.
Outage	A period of interruption to electricity supply.
Overhead line	Conductor (wire) carrying electric current, strung from pylon to pylon.

Term	Definition
Palaeolithic	-1,000 000 to -10,000 BCE
Particulate matter (PM10 and PM2.5)	PM is the term used to describe condensed phase (solid or liquid) particles suspended in the atmosphere. Their potential for causing health problems is directly linked to the size of the particles. PM10 is particulate matter with a diameter of 10 microns or less (also referred to as micrometres or 1/1000th of a meter). PM2.5 is particulate matter 2.5 microns or less in diameter.
Pathway (for contamination)	A route or means by which a receptor could be, or is, exposed to or affected by a contaminant.
Peak Particle Velocity	A measurement of vibration level, being the maximum rate of displacement of the vibration propagation medium (such as the ground) for a given event, such as the impact of a piling hammer, at specific locations.
Pedestrian amenity	The effect on the relative pleasantness of a pedestrian journey as a result of changes in traffic flow, traffic composition and pavement width / separation from traffic.
Pedestrian delay	The ability of people to crossroads as a result of changes in traffic volume, composition and speed, the level of pedestrian activity, visibility and general physical conditions.
Permanent effects	These are effects that will remain even when the Project is complete, although these effects may be caused by environmental changes that are permanent or temporary.
Phytotoxic	Displaying toxicity towards plants.
Pipe jack	A type of trenchless crossing technique in which a pit is created wither side of the constraint or infrastructure being crossed and applying force to push a pipe through from one pit to the other.
Post Lay Burial	This is the final stage of the cable laying process where the subsea cable is buried.
Post Medieval	1540 to 1901
Potential roost feature	Potential roosting features in buildings are features used as bat roosts include (but are not limited to) gaps between stone or brickwork or cracks and splits in trees.
Power control devices	Power control devices are designed to increase or decrease the apparent reactance of a line, thereby pushing power away from or pulling more power towards the circuit on which they are installed.
Pre-lay grapnel run	The Pre Lay Grapnel Run – or PLGR – occurs a few days before the installation. The ship dredges a grapnel to clear any obstacle that could obstruct the plough, such as fishing nets, ropes, lines.
Pre-sweep dredging	Before installation of a pipeline or cable, pre-sweeping of sand waves is usually required in order to level the seabed. One or more dredgers may do the pre-sweeping with pipe-laying vessels following behind.

Term	Definition
	The pre-sweeping operation prepares a smooth enough seabed upon which to lay the pipeline or cable.
Project Need Case	Sets out the reasons why the Project is required.
Protected wreck	A shipwreck designated under the Protection Wrecks Act 1973
Preliminary Environmental Information Report	Information that has been compiled by the applicant to support statutory consultation held in advance of submitting an application for development consent. The Preliminary Environmental Information Report should contain information reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development and any associated development.
Priority habitat	Habitats identified as of principal importance in England, in accordance with requirements of the NERC Act 2006. These are based on the UK Biodiversity Action Plan Priority Habitats.
Priority Hazardous Substance	Substances which are toxic and persistent in the water environment, defined by the Water Framework Directive.
Priority species	Species identified as of principal importance in England, in accordance with requirements of the NERC Act 2006. These are based on the UK Biodiversity Action Plan Priority Species
Protected Lane	Country lanes and byways of historic and landscape value that make an important contribution to rural character, which have been designated as having ‘Protected Lane’ status in development planning policy.
Public Rights of Way (PRoW)	These are designated routes under the CroW Act 2000, which the public can use at any time.
Pylon	Overhead line structure used to carry overhead electrical conductors, insulators and fittings.
Radon	A naturally occurring radioactive chemical element, which occurs as a gas.
Ramsar sites	Wetlands of international importance designated under the Ramsar Convention.
Rating level	The specific sound level, with the addition of character corrections to consider certain acoustic features that could potentially increase the significance of impact. If no acoustic features are present then the rating level is equal to the specific sound level.
Receptor	A component of the natural or man-made environment such as water or a building that is affected by an impact.
Reconductoring	The replacement of old conductors (wires), insulators, earthwires, etc on an existing overhead line.

Term	Definition
Registered Battlefield	Register of nationally significant military engagements maintained and designated by Historic England.
Registered Park and Garden	Register of historic parks, gardens, grounds, and planned open spaces maintained and designated by Historic England.
Riparian	Relating to or situated on the banks of a watercourse.
Road links	A linear spatial object that describes the geometry and connectivity of a road network between two points in the network.
Rochdale Envelope	The ‘Rochdale Envelope’ or ‘Design Envelope’ approach is employed where the nature of a proposed development means that some details of a project have not been confirmed (for instance, the precise dimensions of structures) when an application is submitted, and flexibility within clearly defined parameters is therefore sought to address uncertainty.
Rock placement vessel	A rock placement vessel or fallpipe vessel (FPV) is a self-propelled vessel that is equipped with a flexible fallpipe. The vessel's design allows the fallpipe to be lowered into the water beneath the vessel. Uniquely, the fallpipe vessel can position rock with extreme accuracy down to a depth of 1,500 meters.
Romano-British	43 to 410 CE
Root Protection Area (RPA)	A notional area of tree root spread (as calculated per BS5837) considered as the minimum volume necessary to ensure tree health and function.
S41 of NERC Act	Section 41 of the NERC Act 2006 lists species of principal importance in England for the purpose of conserving biodiversity
Sandbank	A raised area of sand within the sea or river which may also be visible a low tide.
Sandwave	A seabed structure formed by currents
Sandwave dredging	The process of clearing sandwaves by dredging prior to cable installation.
Schedule 1 Species	Bird species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), for which it is an offence to intentionally or recklessly disturb birds and their young at, on or near an ‘active’ nest.
Scheduled Monument	Nationally important archaeological sites. Designated by the Department for Digital, Culture, Media and Sport. These can be above or below-ground and do not need to be ancient.
Scoping Opinion	A Scoping Opinion is requested from the Planning Inspectorate on behalf of the SoS, to inform the requirements of EIA process and ultimately the ES which will be submitted as part of the application for development consent. Through the scoping process the views of the

Term	Definition
	statutory consultees and other relevant organisations on the proposed scope of the EIA are sought.
Scoping Boundary	A Scoping Red Line Boundary has been defined to represent the likely maximum extent of development.
Security and Quality of Supply Standard (SQSS)	The SQSS sets out a coordinated set of criteria and methodologies that the Transmission Licences shall use in the planning and operation of the national electricity transmission system.
Seabed plough	Subsea cable ploughs are used for the process of pre-trenching cable routes and backfilling the seabed and are designed to work in a seabed consisting mostly of sands and clays, where the seabed is well known and understood.
Sensitivity	A term applied to specific receptors, combing judgements of the susceptibility of the receptors to the specific type of change or development proposed and the value related to that receptor
Setting	The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate an asset, or may be neutral.
Severance	The separation of people from places and other people and places or impede pedestrian access to essential facilities.
Side-Scan Sonar surveys	Side-scan sonar produces a detailed picture of the seafloor or riverbed, regardless of water clarity. The system, which may be towed from a surface vessel or mounted on a ship's hull, emits fan shaped pulses down towards the seafloor across a wide angle, perpendicular to the path of the sensor through the water
Significance	A measure of the importance or gravity of the environmental effect, defined by significance criteria specific to the environmental topic.
Significant Observed Adverse Effect Level (SOAEL)	This is the level above which significant adverse effects on health and quality of life occur.
Site of Special Scientific Interest (SSSI)	An area of land designated by Natural England as of special interest by reason of its flora, fauna or geological or physiographical features.
Siting Area	An area of land within which a new CSEC or substation could be sited.
Soil association	Represent a group of soil series (soil types) which are typically found occurring together in the landscape.
Soil compaction	Degradation of soil structure, which can be caused by heavy loading, resulting in a reduction in the voids within the soil.

Term	Definition
Soil stockpiles	Mounds of soil created through the storage of soil materials which have been stripped from an area of construction.
Source (of contamination)	A substance that is in, on or under the land and that has the potential to cause harm or to cause pollution of Controlled Waters.
Source Protection Zone	A defined area around a drinking water source that carries statutory protection from damaging activities.
Special Areas of Conservation (SACs)	Protected areas in the UK designated under: the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales.
Special Protection Areas (SPA)	Protected areas for birds in the UK classified under the Wildlife & Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales.
Species of Principal Importance (SPI)	Covered under Section 41 of the NERC Act 2006. The term is interchangeable with ‘UK Priority BAP Species’, ‘Section 41 species’ and ‘NERCs41 species’.
Specific sound level	The equivalent continuous A-weighted sound pressure level produced by a specific sound source (i.e. the sound source under assessment in accordance with BS 4142:2014) at the assessment location over a given reference time interval, Tr.
Statutory designated site	A site which receives protection by means of legislation in recognition of its biodiversity value.
Strategic Proposal	The outcome of the strategic options appraisal; the Strategic Proposal is then taken forward to the Options Identification and Selection stage.
Strategic Road Network (SRN)	The SRN is made up of motorways and trunk roads (the most significant 'A' roads).
Substation	Electrical equipment in an electric power system through which electrical energy is passed for transmission, transformation, distribution or switching.
Subsoil	The layer of soil under the topsoil on the surface of the ground, lacking in the levels of organic matter found in topsoil.
Super Grid Transformer	Used at substations along the electricity transmission system to increase or reduce voltage.
Superficial geology	Uncemented sediments, such as alluvium, immediately beneath the soil and above the bedrock.
Suspended Particulate Matter	Suspended particulate matter (SPM) are finely divided solids or liquids that may be dispersed through the air from combustion processes, industrial activities or natural sources.

Term	Definition
Suspended sediment concentration	Is defined as the total value of both mineral and organic material carried in suspension by a river.
Temporary effects	These are effects that are related to environmental changes associated with a particular activity and that will cease when that activity finishes.
Tensioning site	A site where the new conductor is fed out from during construction. This also includes a tensioning winch to keep the conductor off the ground.
Topsoil	The uppermost layer of soil, usually with the highest concentration of nutrients, organic matter and microorganisms.
Traffic separation scheme	A maritime traffic management route system ruled by the International Maritime Organisation.
Tranquillity	A state of calm and quietude associated with peace, considered to be a significant asset of landscape.
Transboundary effects	Transboundary effects are those effects that would affect the environment in another state within the European Economic Area (EEA).
Transition joint bay	Underground structures at the landfall that house the joints between the offshore export cables and the onshore cables.
Tree Preservation Order (TPO)	A statutory designation protecting trees, administered by the relevant local planning authority
Trenched	Installation of the cable using an open trench to lay the cable within before backfilling
Trenchless	Installation of a cable below a constraint or other infrastructure without using a trench
Underground Cable	An insulated conductor carrying electric current designed for underground installation.
Vessel Monitoring System	Vessel Monitoring System data tracks vessels in a similar way to an Automatic Identification System but this data has historically been restricted to government regulators or other fisheries authorities.
Vessel-side discharge methods	A method used for placing material after a subsea cable has been laid. Less precise than using a fall-pipe vessel.
Vibration	Vibration is an oscillatory motion. The magnitude of vibration can be defined in terms of displacement, i.e. how far from the equilibrium something moves, velocity (how fast something moves), or acceleration (the rate of change of velocity).
Visual effect	The change in the appearance of the townscape as a result of the development. This can be positive or negative.

Term	Definition
Visualisation	A computer simulation, photomontage or other technique illustrating the predicted appearance of a project to aid engagement with consultees.
Visual receptor	Individuals and/or defined groups of people who have the potential to be affected by a project impacting on their views.
Water jetting	High Pressure Water Jetting (also known as hydroblasting and water cutting) is an industrial tool capable of removing material and cleaning a wide variety of materials using extremely high-pressure jets of water, or a mixture of water and chemicals.
Working area	The working area refers to the area of land that is likely to form part of the construction site. This is not the same as the Scoping Boundary, as there may be parts of the Scoping Boundary that lie outside the working area.
Working width	The temporary working area required to install a cable which normally includes stock proof fencing, temporary drainage, access road, topsoil and sub soil storage and the cable trench.
World Heritage Site	A natural or man-made site, area, or structure recognised as being of outstanding international importance and therefore as deserving special protection. Sites are nominated to and designated by the World Heritage Convention.
XC/XCP 275kV overhead line	Existing 275kV overhead line running between Monk Fryston and Poppleton.
XD/XC 275kV overhead line	Existing 275kV overhead line running between Poppleton and Knaresborough.
Zone of Influence (ZoI)	An identified geographical area around the Project where there is a potential for impacts to occur.
Zone of Theoretical Visibility (ZTV)	The likely (or theoretical) extent of visibility of a development, usually shown on a map.

List of Initialisations and Abbreviations

AAAC	All Aluminium Alloy Conductor	MAREA	Marine Aggregate Regional Environmental Assessment
AADT	Annual Average Daily Traffic	MARPOL	International Convention for the Prevention of Pollution from Ships
AC	Alternating Current	MBES	Multi- Beam Echo Sounder
AD	Anno Domini	MCA	Maritime and Coastguard Authority

ADMS	Atmospheric Dispersion Modelling Software	MCAA	Marine and Coastal Access Act
AEP	Annual Exceedance Probability	MCZ	Marine Conservation Zone
AEZ	Archaeological Exclusion Zone	MFE	Mass Flow Excavator
AGI	Above Ground Infrastructure	MHCLG	Ministry of Housing, Communities and Local Government
AIS	Automatic Identification System	MHWN	Mean High Water Neaps
ALARP	As Low as Responsibly Practicable	MHWS	Mean High Water Springs
ALC	Agricultural Land Classification	MLWN	Mean Low Water Neaps
ALDFG	Abandoned, Lost or Discarded Fishing Gear	MLWS	Mean Low Water Springs
AM	Morning	mm	Millimetres
AN17	Advice Note 17	MMO	Marine Management Organisation
AONB	Area of Outstanding Natural Beauty	MPCP	Marine Pollution Contingency Plan
AQAL	Air Quality Assessment Level	MPS	Marine Policy Statement
AQMA	Air Quality Management Area	MRA	Mineral Resource Assement
AQS	Air Quality Strategy	MSA	Mineral Safeguarding Areas
ARPA	Automatic RADAR Plotting Aid	MSL	Mean Sea Levels
As	Arsenic	MS-LOT	Marine Scotland Licensing Operations Team
ASCOBANS	Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas	MTBM	Micro Tunnel Boring Machine
ASSI	Area of Special Scientific Interest	MTS	Marine Traffic Survey
ATC	Automatic Traffic Count	MU	Marine Mammal Management Units
AtoN	Aids of Navigation	MW	Megawatt
Ba	Barium	MWLP	Minerals and Waste Local Plan
BAP	Biodiversity Action Plan	MWp	Megawatt peak
BC	Before Christ	NAVAREA	Navigational Areas

BCT	Bat Conservation Trust	NAVTEX	Navigational Telex
BGS	British Geological Survey	NCA	National Character Area
BMV	Best and Most Versatile	NCERM	National Coastal Erosion Risk Mapping
BNG	Biodiversity Net Gain	NCN	National Cycle Network
BNL	Basic Noise Level	NCR	National Cycle Route
BOA	Biodiversity Opportunity Areas	NE	Natural England
BS	British Standard	NERC	Natural Environment and Rural Communities Act
BTO	British Trust for Ornithology	NETS SQSS	National Electricity Transmission System Security and Quality of Supply Standard
CBC	Common Bird Census	NF_3	Nitrogen trifluoride
CBRA	Cable Burial Risk Assessment	NFI	National Forest Inventory
CBS	Cement Bound Sand	NGV	National Grid Ventures
CCA	Coastal Character Area	NHLE	National Heritage List for England
CCME	Canadian Council of Ministers of the Environment	NHS	National Health Service
CCR	Climate Change Resilience	Ni	Nickel
Cd	Cadium	NIA	Noise Impact Area
CEA	Cumulative Effects Assessment	NIPZ	Nitrate Issues Priority Zone
CBS	Cement Bound Sand	NLS	National Library of Scotland
CCA	Coastal Character Area	NM	Nautical Mile
CCME	Canadian Council of Ministers of the Environment	NMHR	National Marine Heritage Record
CCR	Climate Change Resilience	NNR	National Nature Reserve
Cd	Cadium	NO_2	Nitrogen dioxide
CEA	Cumulative Effects Assessment	N_2O	Nitrous oxide
CEFAS	Centre for Fisheries, Aquaculture Science	NOEL	No Observed Effect Level
CEMP	Construction Environmental Management Plan	NOAA	National Oceanographic and Atmospheric Organisation
CFE	Controlled Flow Excavator	NO_x	Nitrous Oxide
CFP	Common Fisheries Policy	NPF2	National Planning Framework 2

CH_4	Methane	NPPF	National Planning Policy Framework
CIEEM	Chartered Institute of Ecology and Environmental Management	NPPG	National Planning Policy Guidance
CIfA	Chartered Institute for Archaeologists	NPS	National Policy Statement
CIRIA	Construction Industry Research and Information Association	NPSE	Noise Policy Statement for England
CLB	Cable Lay Bay	NRA	Navigational Risk Assessment
CLV	Cable Lay Vessel	NRMM	Non-Road Mobile Machinery
CoCP	Code of Construction Practice	NRW	Natural Resources Wales
COLREGS	Convention on the International Regulations for Preventing Collisions at Sea	NSIP	Nationally Significant Infrastrcute Project
COMAH	Control of Major Accident Hazard	NSR	Noise Sensitive Receptors
CPA	Coast Protection Act	NSTA	North Sea Transition Authority
Cr	Chromium	NtM	Notices to Mariners
CRoW	Countryside and Rights of Way Act	O&G	Oil and Gas
CRTN	Calculation of Road Traffic Noise	OFTO	Offshore Transmission Owner
CSEC	Cable Sealing End Compound	ONS	Office for National Statistics
CTMP	Construction Traffic Management Plan	OOS	Out-Of-Service
Cu	Copper	OS	Ordnance Survey
dB	Decibels	OSPAR	Oslo Paris
DBA	Desk Based Assessment	OWEER	Offshore Wind Environmental Evidence Register
DC	Direct Current	OWF	Offshore Wind Farm
DCO	Development Consent Order	PAD	Protocol for Archeological Discoveries
DDLCA	Dover District Council Landscape Character Assessment	PADI	Professional Association of Diving Instructors
DECC	Department for Energy and Climate Change	Pb	Lead

DEFRA	Department for Environment, Food and Rural Affairs	PBDE	Polybrominated diphenyl ethers
DENI	Department of the Environment Northern Ireland	PEIR	Preliminary Environmental Information Report
DLHC	Department for Levelling Up, Housing and Communities	PEL	Probable Effect Levels
DMRB	Design Manual for Roads and Bridges	PEXA	Practice and Exercise Area
DOC	Depth of Cover	PFC	Perfluorocarbons
DOL	Depth of Lowering	PGG	Pollution Prevention Guideline
DP	Dynamic Position	PHE	Public Health England
DTM	Digital Terrain Model	PIA	Personal Injury Accident
DWSZ	Drinking Water Safeguard Zone	PIC	Personal Injury Collision
EA	Environment Agency	PINS	Planning Inspectorate
EC	European Commission	PLB	Post Lay Burial
EcIA	Ecological Impact Assessment	PLGR	Pre-Lay Grapnel Run
ECoW	Ecological Clerk of Works	PLONOR	Pose Little or No Risk to the Environment
EEZ	Exclusive Economic Zone	PM	Particulate Matter
EIA	Environmental Impact Assessment	PM10	Particulate Matter (10 micrometres diameter)
EMF	Electromagnetic Field	PM2.5	Particulate Matter (10 micrometres diameter)
EMODnet	European Marine Observation Data Network	PPE	Personal Protective Equipment
EPS	European Protected Species	PPG	Planning Practice Guidance
ES	Environmental Statement	PPGN	Planning Practice Guidance for Noise
ESCA	European Subsea Cable Association	PRoW	Public Right of Way
ETRS89	European Terrestrial Reference System 1989	PSC	Potential Sources of Contamination
EU	European Union	PV	Photovoltaic
EUNIS	European Union Nature Identification System	RAF	Royal Air Force
FAME	Future of the Atlantic Marine Environment	RBMP	River Basin Management Plan
FEPA	Food and Environmental Protection Act	RIGS	Regionally Important Geological Sites

FLO	Fisheries Liaison Officer	RNLI	Royal National Lifeboat Institution
FPROV	Fall Pipeline Remotely Operated Vehicle	RNR	Roadside Nature Reserves
FRA	Flood Risk Assessment	ROV	Remotely Operation Vehicle
FSA	Formal Safety Agrement	RPL	Route Position List
GCN	Great Crested Newt	RSPB	Royal Society for the Preservation of Birds
GCR	Geological Conservation Review	RYA	Royal Yachting Association
GEA	Gross External Area	SAC	Special Area of Conservation
GHG	Greenhouse Gas	SACO	Supplementary Advice on Conservation Objectives
GIF	Growth and Infrastructure Framework	SARH	Search and Rescue Helicopter
GIS	Geographic Information System	SBP	Sub Bottom Profiler
GLVIA	Guidelines for Landscape and Visual Impact Assessment	SCANS	Small Cetaceans in European Atlantic waters and the North Sea
GPLC	Guiding Principles for Managing and Reducing Land Contamination	SCASNE	Seascape Character Assessment of Suffolk, South Norfolk and North Essex
GREEN	Green Energy Enablement	SCC	Suffolk County Council
GVA	Gross Value Added	SCLCA	Suffolk Coastal Landscape Character Assessment
GWDTE	Groundwater Dependant Terrestrial Ecosystems	SCLP	Suffolk Coastal Local Plan
HAT	Highest Astronomical Tide	SCOS	Special Committee on Seals
HDD	Horizontal Directional Drilling	SCT	Seascape Character Type
HDV	Heavy Duty Vehicle	SELEP	South East Local Enterprise Partnership
HER	Historical Environmental Records	SF_6	Sulphur hexafluoride
HFC	Hydrofluorocarbons	SHOM	Service Hydrographique et Océanographique de la Marine
Hg	Mercury	SLB	Simultaneous Cable Lay and Burial
HGV	Heavy Goods Vehicle	SLR	Sea Level Rise

HIA	Health Impact Assessment	SMP	Shoreline Management Plan
HLC	Historic Landscape Characterisation	SMRU	Sea Mammal Research Unit
HMSO	His Majesty's Statutory Office	SNCI	Sites of Nature Conservation Importance
HoPI	Habitats of Principal Importance	SNH	Scottish Natural Heritage
HRA	Habitat Regulation Assessment	SOAEL	Significant Observed Adverse Effect Level
HSC	Historic Seascape Characterisation	SOLAS	Safety of Life at Sea
HUDU	Healthy Urban Development Unit	SOPEP	Shipboard Oil Pollution Emergency Plan
HVAC	High Voltage Alternating Current	SoS	Secretary of State
HVDC	High Voltage Direct Current	SPA	Special Protection Area
Hz	Hertz	SPM	Suspended Particulate Matter
IAMMWG	Inter-Agency Marine Mammal Working Group	SPR	Scottish Power Renewables
IAQM	Institute of Air Quality Management	SPZ	Special Protection Zone
ICCI	In-Combination Climate Change Impact	SSC	Suspended Sediment Concentration
ICE	Inventory of Carbon and Energy	SSS	Side- Scan Sonar
ICES	International Council for the Exploration of the Sea	SSSI	Site of Special Scientific Interest
ICNIRP	International Commission on Non-Ionizing Radiation Protection	STAR	Seabird Tracking and Research
ICPC	International Cable Protection Committee	SuDS	Sustainable Drainage System
IDB	Internal Drainage Board	TA	Transport Assessment
IEMA	Institute for Environmental Management and Assessment	TBM	Tunnel Boring Machine
IFCA	Inshore Fisheries and Conservation Authority	tCO_2e	Tonnes of Carbon Dioxide Equivalent
IHBC	Institute of Historic Building Conservation	TDLCA	Thanet District Council Landscape Character Assessment

IMO	International Maritime Organisation	TEMPro	Trip End Model Presentation Program
INNS	Invasive Non-Native Species	TEZ	Temporary Exclusion Zone
IPC	Infrastructure Planning commission	TIN	Technical Information Note
ISO	International Organization for Standardization	TJB	Transition Joint Bay
ISQG	Interim Marine Sediment Quality Guidelines	TOC	Total Organic Carbon
IUCN	International Union for the Conservation of Nature	TPO	Tree Preservation Order
JFS	Joint Fisheries Statement	TSS	Traffic Separation Scheme
JNCC	Joint Nature Conservation Committee	TTLCA	Touching the Tide Landscape Character Assessment
KCC	Kent County Council	UK	United Kingdom
KIS-ORCA	Kingfisher Information Service – Offshore Renewable Cable	UK BAP	United Kingdom Biodiversity Action Plan
kW	Kilowatt	UKCP	United Kingdom Climate Projection
LAQM.TG	Local Air Quality Management Technical Guidance	UKHO	United Kingdom Hydrographic Office
LAT	Lowest Astronomical Tide	UKSIA	United Kingdom Single Issuing Authority
LCA	Landscape Character Assessment	UNCLOS	United Nations Convention on the Law of the Sea
LCRM	Land Contamination: Risk Management	UNESCO	United Nations Educational, Scientific and Cultural Organization
LCT	Landscape Character Type	UNFCCC	United Nations Framework Convention on Climate Change
LEMP	Landscape Ecological Management Plan	UTC	Universal Transverse Mercator
LEP	Local Enterprise Partnership	UXO	Unexploded Ordnance
LGS	Local Geological Site	VMS	Vessel Monitoring System
LGV	Light Goods Vehicle	WeBS	Wetland Bird Survey
LiDAR	Light Detection and Ranging	WFD	Water Framework Directive
LLFA	Lead Local Flood Authority	WHO	World Health Organisation

LNR	Local Nature Reserve	WSI	Written Scheme of Investigations
LOAEL	Lowest Observed Adverse Effect Level	WWTW	Waste Water Treatment Works
LoGS	Local Geological Sites	XLPE	Cross Linked Polyethylene
LPA	Local Planning Authority	Zn	Zinc
LTP	Local Transport Plan	ZOI	Zone of Influence
LVIA	Landscape and Visual Impact Assessment	ZTV	Zone of Theoretical Visibility
LWS	Local Wildlife Sites		
m	Metres		
MAFF	Ministry of Agriculture, Fisheries and Food		
MAIB	Marine Accident Investigation Branch		
maOD	metres above Ordnance Datum		

1.1 Introduction

1.1.1. Overview of the Project

1.1.1.1. The Sea Link Project (hereafter referred to as the 'Project') is a proposal by National Grid Electricity Transmission plc (hereafter referred to as National Grid) to reinforce the transmission network in the South East of England and East Anglia. The Project is required to accommodate additional power flows generated from renewable and low carbon energy generation, as well as additional new interconnection with mainland Europe.

1.1.1.2. National Grid owns, builds and maintains the electricity transmission network in England and Wales. Under the Electricity Act 1989, National Grid holds a transmission licence under which it is required to develop and maintain an efficient, coordinated, and economic electricity transmission system.

1.1.1.3. National Grid is also required, under Section 38 of the Electricity Act 1989, to comply with the provisions of Schedule 9 of the Act. Schedule 9 requires licence holders, in the formulation of proposals to transmit electricity, to:

Schedule 9(1)(a) '…have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest;' and

Schedule 9(1)(b) '…do what [it] reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects'.

1.1.1.4. The Project is proposed to reinforce the transmission system in the South East of England and East Anglia. This would be achieved by reinforcing the network with a High Voltage Direct Current (HVDC) Link between the proposed Friston substation in the Sizewell area of Suffolk and the existing Richborough to Canterbury 400kV overhead line close to Richborough in Kent.

1.1.1.5. The Project would comprise of the following elements:

- Underground HVAC cable between the proposed Friston substation and a new converter station in Suffolk.
- New converter station in Suffolk.
- Underground HVDC cable between a new converter station in Suffolk and a landfall on the Suffolk coast, either between Aldeburgh and Thorpeness or at Sizewell Gap.
- Marine HVDC cable between a landfall on the Suffolk coast and a landfall in Pegwell Bay in Kent.
- Underground HVDC cable between a landfall in Pegwell Bay and a new converter station in Kent.
- New converter station in Kent.

- A HVAC connection (either by overhead line or underground cables) between a new converter station in Kent and the existing Canterbury to Richborough overhead line.

1.1.1.6. None of the components of the Project fall within the definition of a 'Nationally Significant Infrastructure Project' (NSIP) defined under Part 3 of the Planning Act 2008 (PA2008). In consultation with the relevant Local Planning Authorities (LPA) in Suffolk and Kent, the Project sought direction on 4th March 2022 under Section 35 of the PA2008 from the Secretary of State (SoS) for the Project to be treated as a development for which development consent under the PA2008 is required.

1.1.1.7. On 31st March 2022 Section 35 direction was granted[1] by the SoS on the grounds that:

The proposed Project is of national significance, taking into account that it is a large-scale linear electricity transmission reinforcement project of approximately 130km in length and that it has a two Gigawatt capacity to transmit electricity.

The proposed Project will play an important role in enabling an energy system that meets the UK's commitment to reduce carbon emissions and the Government's objectives to create a secure, reliable and affordable energy supply for consumers.

By progressing the development through the Planning Act 2008 development consent process, it would provide the certainty of a single, unified consenting process and fixed timescales

1.1.1.8. Since the Section 35 Direction is now granted, National Grid intends to apply for the granting of an order for development consent under Section 37 of the PA2008 to the Planning Inspectorate (PINS). The application will provide details of the proposed development and will be accompanied by an Environmental Statement (ES).

1.1.1.9. This Scoping Report supports a request by National Grid, under Regulation 10 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (hereafter referred to as 'the EIA Regulations'), for a written Scoping Opinion from the SoS for Business, Energy and Industrial Strategy (BEIS), administered by the Planning Inspectorate on behalf of the SoS, to inform the Environmental Impact Assessment (EIA) for the Project.

1.1.2. The Need for the Project

1.1.2.1. The UK's target to achieve Net Zero carbon emissions by 2050 is resulting in fundamental changes to the way that electricity is going to be generated and supplied. The Government has established intermediary targets such as the development of up to 50GW of offshore wind by 2030, up from approximately 11GW today.

1.1.2.2. Offshore wind generation, Nuclear generation and Interconnectors to mainland Europe are strategically important investments to meet 2050 net-zero targets. Proximity to mainland Europe and suitability of the seabed off the coast of East Anglia region has resulted in large-scale offshore wind and interconnector connection applications in the East Anglia region. NGET as the transmission network owner in England and Wales has the responsibility to provide these

[1] Department for Business, Energy and Industrial Strategy (2022). National Grid Electricity Transmission - Sea Link electricity reinforcement project: Section 35 Direction, Planning Act 2008. [online] Available at: https://www.gov.uk/government/publications/national-grid-electricity-transmission-sea-link-electricity-interconnector-section-35-direction-planning-act-2008.

applications with a network that is compliant to the criteria contained within the National Electricity Transmission System Security and Quality of Supply Standard (NETS SQSS).

1.1.2.3. The future energy scenarios, established by the National Grid Electricity System Operator, highlight that additional generation between 7 and 25GW could be expected to connect in the East of England Region by 2035 and up to 14GW of interconnector and energy storage in the South of England.

1.1.2.4. Increasing levels of generation will drive substantial increases in the north - south power flows within and beyond these regions. Therefore, significant reinforcement of the transmission system is needed in the East Anglian and South East England regions, requiring the development of additional transmission circuits.

1.1.2.5. The increase in interconnector capacity between Britain and continental Europe is likely to substantially increase the duration and magnitude of power exported from Britain during periods of high wind generation and imported from continental Europe during periods of low wind generation requiring power to be supplied to and from the interconnectors located along the south and east coasts of England.

1.1.2.6. Given the substantial increase in generator-driven power flows out of East Anglia, and the region's proximity to the south coast and London, the optimum reinforcement solutions for the two regions are interactive. When generation levels are high in East Anglia, power will need to be transmitted to centres of demand in London and the South East of England. During these periods of high generation much of the 'surplus' power exported to the continent will also need to be transmitted to the south coast to supply the power requirements of the continental interconnectors, further increasing the East Anglia to South East of England power flows.

1.1.2.7. The Sea Link project therefore seeks to address these two different but interrelated transmission system constraints which trigger the need for significant reinforcement of the transmission system in both East Anglia and the South East of England. Sea Link is needed in addition to other network reinforcements identified in the region.

1.1.3. The Need for an Environmental Impact Assessment

1.1.3.1. None of the components which make up the Project are explicitly identified under Schedule 1 or 2 of the EIA Regulations. Schedule 3 of the EIA Regulations sets out the selection criteria for determining if Schedule 2 development is likely to have significant effects and is thereby 'EIA Development'. Having considered the criteria in Schedule 3, National Grid proposes to undertake an EIA having given regard to the whole of Schedule 3 but specifically:

Characteristics of development

1.- (1) The characteristics of development must be considered with particular regard to—

(a) the size and design of the whole development;

(b) cumulation with other existing development and/or approved development;

and

Location of development

2.- (1) The environmental sensitivity of geographical areas likely to affected by development, including:

(c) the absorption capacity of the natural environment, in particular:

(i) wetlands, riparian areas, river months;

(ii) coastal zone and the marine environment;

(iv) nature reserves and parks;

(v) European sites and other areas classified or protected under national legislation; and

(viii) landscapes and sites of historical, cultural or archaeological significance

1.1.3.2. This Scoping Report provides formal notification to the SoS, under Regulation 8(1)(b) of the EIA Regulations, that the Applicant (hereafter referred to as 'National Grid') proposes to provide an Environmental Statement (ES) in respect of the Project.

1.1.4. Geographical Context

1.1.4.1. The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary**. All onshore parts of the Project would be located within England and offshore parts of the Project would be located within the English Territorial Waters. For ease of presentation within this Scoping Report, the Project has been split into three geographical parts, hereafter referred to as: the Suffolk Onshore Scheme; Kent Onshore Scheme; and the Offshore Scheme.

Suffolk Onshore Scheme

1.1.4.2. The Suffolk Onshore Scheme is illustrated on **Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary** and is located within the administrative boundary of Suffolk County Council (SCC) and the East Suffolk Council (ESC) local planning authority areas.

1.1.4.3. The Suffolk Onshore Scheme is in an area that is predominantly rural. The settlements of Aldeburgh, Friston, Saxmundham, Leiston, and Knodishall Common are located adjacent to the Project Scoping Boundary. The Sizewell Nuclear Site is located to the north of the Project Scoping Boundary and there are two existing 400kV overhead lines that cross the Project Scoping Boundary that connect the existing Sizewell substation to Bramford substation.

1.1.4.4. The Project Scoping Boundary includes part of the Suffolk Coasts and Heath Area of Outstanding Natural Beauty (AONB) and Sandlings Special Protection Area (SPA). Parts of the Leiston Aldeburgh and Sizewell Marshes Sites of Special Scientific Interest (SSSI) are located within the Project Scoping Boundary, as are part of North Warren RSPB reserve and two areas of Ancient Woodland.

1.1.4.5. The Hundred River is crossed by the Scoping Boundary to the south of Aldringham and the Alde or Ore River is located approximately 1km to the south of the Scoping Boundary.

Kent Onshore Scheme

1.1.4.6. The Kent Onshore Scheme is illustrated on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary** and is located within the administrative boundary of Kent County Council (KCC) and the Thanet District Council (TDC) and Dover District Council (DDC) local planning authority areas.

1.1.4.7. The Kent Onshore Scheme is in an area which is semi-rural although land use in the areas closest to the coast include golf courses and areas of nature conservation. The settlement of Cliffs End is located adjacent to the north of the Project Scoping Boundary and the settlement of Minster approximately 350m from the Project Scoping Boundary also to the north. Richborough Energy Park and a wastewater treatment works are located adjacent to the south of the Project Scoping Boundary. The existing Richborough to Canterbury 400kV overhead line crosses through the far western extent of the Project Scoping Boundary.

1.1.4.8. Parts of the Thanet Coast and Sandwich Bay Ramsar and SPA are located within the Project Scoping Boundary in addition to parts of the Sandwich Bay Special Area of Conservation (SAC), Sandwich Bay to Hacklinge Marshes SSSI and Sandwich and Pegwell Bay National Nature Reserve (NNR).

1.1.4.9. The River Stour flows through the south of the Project Scoping Boundary and several watercourses and field drains are present across the Project Scoping Boundary.

Offshore Scheme

1.1.4.10. The Offshore Scheme is illustrated on **Figure 1.1.4 Offshore Scheme Scoping Boundary** It is located wholly within English Territorial Waters, and it lies within the East Inshore[2] and South East Inshore Marine Plan Areas[3]. The Project Scoping Boundary crosses the Suffolk Coastal Waters, East Anglian Shipping Waters, Eastern English Channel Approaches and the Goodwin Sands and North Dover Strait Marine Character Areas (MCA).

1.1.4.11. The Offshore Scheme is located to the west of London Array Offshore Wind Farm and to the east of Thanet, Greater Gabbard and Galloper Offshore Wind Farms.

1.1.4.12. Parts of the Outer Thames Estuary and Thanet Coast and Sandwich Bay Ramsar and SPAs are located within the Scoping Boundary as well as parts of the Southern North Sea and the Sandwich Bay SACs. Parts of the Leiston Aldeburgh and Sandwich Bay to Hacklinge Marshes SSSI as well as Goodwin Sands Marine Conservation Zone (MCZ) are located within the Project Scoping Boundary.

1.1.5. Purpose of this Report

1.1.5.1. Scoping forms a key stage of the EIA process; providing a framework for identifying potential significant effects arising from the Project and distinguishing the environmental topics to be addressed within the ES.

[2] Marine Management Organisation (2014). East Inshore and East Offshore Marine Plans. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/312496/east-plan.pdf.

[3]Marine Management Organisation (2021). South East Inshore Marine Plan. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1004493/FINAL_South_East_Marine_Plan__1_.pdf.

1.1.5.2. This Scoping Report sets out the proposed content, methodologies to be adopted and the anticipated potential significant environmental effects that are proposed to be considered in the EIA. It supports a request from National Grid for a written Scoping Opinion from PINS, on behalf of the SoS to inform the ES which will accompany the application for development consent.

1.1.5.3. This Scoping Report has been prepared in accordance with the EIA Regulations, as well as having due regard to PINS Advice Note Seven[4].

1.1.5.4. The EIA Regulations set out the requirements for an applicant who proposes to request a scoping opinion from the SoS. Regulation 10(3) of the EIA Regulations states that a request for a scoping opinion must include:

(a) a plan sufficient to identify the land;

(b) a description of the proposed development, including its location and technical capacity;

(c) an explanation of the likely significant effects of the development on the environment, and

(d) such other information or representations as the person making the request may wish to provide or make.

1.1.5.5. Table 1.1.1 identifies where the information set out in Regulation 10(3) and PINS Advice Note Seven can be found within this Scoping Report.

Table 1.1.1: Compliance with regulation 10(3) and PINS Advice Note Seven

Suggested information to be included within the Scoping Report	Location within this Scoping Report
The Proposed Development	
Referenced plans presented at an appropriate scale to cover clearly all known features associated with the proposed development	The Project Scoping Boundary is shown on **Figure 1.1.1 Project Scoping Boundary**. The boundary of the Suffolk Onshore Scheme is shown on **Figure 1.1.2 Suffolk Onshore Scheme**. The boundary of the Kent Onshore Scheme is shown on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary**. The boundary of the Offshore Scheme is shown on **Figure 1.1.4 Offshore Scheme Scoping Boundary**.
An explanation of the approach to addressing uncertainly which remains in relation to the elements of the proposed development	**Part 1, Chapter 4, Description of the Project** **Part 2, Chapter 1, Evolution of the Suffolk Onshore Scheme** **Part 3, Chapter 1, Evolution of the Kent Onshore Scheme** **Part 4, Chapter 1, Evolution of the Offshore Scheme**
EIA Approach and Topic Areas	

[4] Planning Inspectorate (2020). Advice Note Seven. EIA: Process, Preliminary Environmental Information, and Environmental Statements. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-and-environmental-statements/.

Suggested information to be included within the Scoping Report	Location within this Scoping Report
An outline of the reasonable alternatives considered and the reasons for selecting the preferred option	**Part 1, Chapter 3, Main Alternatives Considered** **Part 2, Chapter 1, Evolution of the Suffolk Onshore Scheme** **Part 3, Chapter 1, Evolution of the Kent Onshore Scheme** **Part 4, Chapter 1, Evolution of the Offshore Scheme**
A summary table describing each of the aspects and matters that are requested to be scoped out allowing for quick identification of issues	Each of the technical chapters in Parts 2-5 include a summary table identifying those sources, impact and receptors proposed to be scoped in and out of the ES.
A detailed description of the aspects and matters proposed to be scoped out of further assessment with justification provided	This is presented within each of the technical chapters in Parts 2- 5.
Results of desktop and baseline studies where available and where relevant to the decision to scope in or out aspects or matters	Information on the baseline characteristics are included in each of the technical chapters in Parts 2-5.
Aspects and matters to be scoped in, the report should include details or the methods to be used to assess the impacts and to the determine the significance of effect e.g., the criteria for determining sensitivity and magnitude	Sources, impacts and receptors proposed to be 'scoped in' for the purpose of the ES are identified within each of the technical chapters in Parts 2-5. The proposed EIA approach and methods are described in **Part 1, Chapter 5, EIA Approach and Methodology** and each of the technical chapters in Parts 2 - 5 describe how they will apply that methodology to their assessments or where it differs due to specific topic guidance set out their proposed methodologies.
Any avoidance or mitigation measures proposed, how they may be secured and the anticipated residual effects	These are set out within each of the technical chapters in Parts 2-5. An outline Code of Construction Practice (CoCP) is provided in **Appendix 1.4.A Outline Code of Construction Practice**
Information Sources	
Reference to any practice and best guidance to be relied upon	This is set out within each of the technical chapters in Parts 2-5.
Evidence or agreements reached with consultation bodies	Feedback from stakeholders is described as appropriate through Parts 1-5.
Transboundary Effects	
The Applicant may also wish to provide a completed transboundary screening matrix dealing with the potential effects of	**Appendix 1.1.A Transboundary Screening Matrix** presents this matrix which follows the suggested format for the transboundary screening matrix which is provided

Suggested information to be included within the Scoping Report	Location within this Scoping Report
the proposed development on other European Economic Area (EEA) States	in the PINS Advice Note Twelve 'Transboundary Impact Consultation'[5]

1.1.6. Structure of this Scoping Report

1.1.6.1. The structure of this Scoping Report is outlined below in Table 1.1.2 below. For ease of presentation, Volume 1 (main text) this Scoping Report is split into Parts.

1.1.6.2. Part 1 Introduction sets out an overview of the Project, an overview of the regulatory and planning context; the main alternatives considered; provides a description of the Project; sets out the proposed EIA approach and method; and the proposed approach to the Environmental Statement.

1.1.6.3. Parts 2-4 describe the evolution of the Onshore Schemes in Suffolk and Kent and the Offshore Scheme respectively and provides the technical chapters for each area.

1.1.6.4. Part 5 of the Scoping Report presents potential effects which are project wide.

1.1.6.5. Appendices are provided in Volume 2 and the Figures are provided in Volume 3.

Table 1.1.2 Structure of this Scoping Report

Chapter	Content
Volume 1 Part 1 - Introduction	
Chapter 1 Introduction	An introduction to the Project and the purpose and structure of this Scoping Report.
Chapter 2 Regulatory and Planning Context	Sets out an overview of the legislation and policy relevant to the Project.
Chapter 3 Main Alternatives Considered	An outline of the reasonable alternatives considered and the reasons for selecting the preferred option.
Chapter 4 Project Description	A description of the Project including permanent features and associated temporary works. It describes the general characteristics of the Project and outlines areas of uncertainty in relation to design parameters.
Chapter 5 EIA Approach and Method	A description of the overall EIA methodology that is proposed for the Project including temporal durations and approach to mitigation.
Chapter 6 Approach to the Environmental Statement	A description of how the ES is proposed to be structured.

[5] Planning Inspectorate (2020). Advice Note Twelve. Transboundary Impacts and Process. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-twelve-transboundary-impacts-and-process/.

Chapter	Content
Volume 1 Parts 2 and 3 - Suffolk Onshore Scheme and Kent Onshore Scheme	
Chapter 1 Evolution of the Onshore Schemes in Suffolk and Kent	A description of how the Project has evolved in Suffolk and Kent.
Chapter 2 Landscape and Visual Chapter 3 Ecology and Biodiversity Chapter 4 Cultural Heritage Chapter 5 Water Environment Chapter 6 Geology ad Hydrogeology Chapter 7 Agriculture and Soils Chapter 8 Traffic and Transport Chapter 9 Air Quality Chapter 10 Noise and Vibration Chapter 11 Socio-economic Recreation and Tourism Chapter 12 Health and Wellbeing	Each chapter (2-12) provides a description of: • the regulatory and planning context specific to the topic area; • a description of the study area; • a description of the relevant baseline environment; • any embedded or good practice measures taken into consideration when proposing the scope; • potential for significant effects; • proposed assessment methodology; and • a brief conclusion summarising the proposed scope of the assessment to be included within the ES.
Chapter 13 Cumulative Effects	A description of those receptors likely to be screening into the intra-project cumulative impact assessment. A description of the other projects and developments which are proposed and known at the time of writing to be considered for the assessment of the inter-project cumulative effects.
Volume 1 Part 4 Offshore Scheme	
Chapter 1 Evolution of the Offshore Scheme	A description of how the Project has evolved in marine environment
Chapter 2 Physical Environment Chapter 3 Benthic Ecology Chapter 4 Fish and Shellfish Ecology Chapter 5 Marine Mammals Chapter 6 Ornithology Chapter 7 Marine Archaeology Chapter 8 Shipping and Navigation Chapter 9 Commercial Fisheries Chapter 10 Other Sea Users	Each chapter provides a description of: • the regulatory and planning context specific to the topic area; • a description of the study area; • a description of the relevant baseline environment; • any embedded or good practice measures taken into consideration when proposing the scope; • potential for significant effects; • proposed assessment methodology; and

Chapter	Content
	• a brief conclusion summarising the proposed scope of the assessment to be included within the ES.
Chapter 11 Cumulative Effects	A description of those receptors likely to be screening into the intra-project cumulative impact assessment. A description of the other projects and developments which are proposed and known at the time of writing to be considered for the assessment of the inter-project cumulative effects.
Volume 2 Part 5 Project Wide Effects	
Chapter 1 Climate Change Chapter 2 Major Accidents and Disasters	Each chapter provides a description of: • the regulatory and planning context specific to the topic area; • a description of the study area; • a description of the relevant baseline environment; • any embedded or good practice measures taken into consideration when proposing the scope; • potential for significant effects; • proposed assessment methodology; and • A brief conclusion summarising the proposed scope of the assessment to be included within the ES.
Chapter 4 Combined Effects of the Project	This chapter sets out how the combined effects assessment will consider the potentially significant effect on shared receptors.
Volume 2 Appendices	Provides the appendices which support Volume 1
Volume 3 Figures	Provides the Figures which support Volume 1

1.1.7. Other Assessments

1.1.7.1. In addition to the EIA, the preparation of the application for the Project requires other standalone assessments to be carried out to meet the requirements of other policy and legislation, such as The Conservation of Habitat and Species Regulations 2017. Whilst the outcomes of these assessments may be drawn upon when carrying out the EIA (and vice versa), the scope of these other assessments will be discussed and agreed with appropriate regulatory authorities in line with their own regulatory requirements and relevant policy and legislation, rather than within this Scoping Report.

1.1.7.2. Where appropriate, however, the individual topic chapters in this Scoping Report outline where the findings of one of the additional assessments are to be drawn upon when carrying out the EIA, and any proposed scope of the relevant additional assessment is set out to facilitate consultation with relevant consultees in relation to this Scoping Report.

1.1.8. Net Gain Commitments

1.1.8.1. National Grid has committed to 10% Net Gain in Environmental value including as a minimum 10% Biodiversity Net Gain (BNG) across all its construction projects.

1.1.8.2. This commitment is underpinned by the delivery of quantifiable enhancements for biodiversity measured from a baseline using the DEFRA Biodiversity Calculator[6] with actions formalised and secured by long term management arrangements with external organisations and partners.

1.1.8.3. Wider environmental benefits such as carbon capture and storage, air quality and recreation and associated financial values are also considered and quantified using valuation tools and emerging methodologies.

1.1.8.4. These commitments ensure that National Grid can deliver long term environmental improvements as part of our works. The commitments will align and make a positive contribution to regional and national strategies and facilitate collaboration and partnerships with our communities and stakeholders.

1.1.9. Competence

1.1.9.1. Regulation 14(4) of the EIA Regulations requires that an ES is prepared by 'competent experts' and that the ES is accompanied by a statement outlining the relevant expertise or qualifications of such experts.

1.1.9.2. This Scoping Report has been prepared and coordinated by environmental consultants who are competent members, the members of the Institute of Environmental Management and Assessment (IEMA) EIA Quality Mark Scheme[7]. The Scheme allows organisations that lead the coordination of EIAs in the UK to make a commitment to excellence in their EIA activities and have this commitment independently reviewed.

1.1.9.3. A Statement of Competence (SoC) will be included within the ES, outlining the relevant expertise or qualifications of the experts who have prepared the ES for the Project.

[6] Department for Food, Environment and Rural Affairs (2021). Biodiversity metric: calculate the biodiversity net gain of a project or development. [online] Available at: https://www.gov.uk/guidance/biodiversity-metric-calculate-the-biodiversity-net-gain-of-a-project-or-development.

[7] Institute of Environmental Management and Assessment (No Date). EIA Quality Mark Scheme. [online] Available at: https://www.iema.net/corporate-programmes/eia-quality-mark.

1.2 Regulatory and Planning Context

1.2.1. Introduction

1.2.1.1. This chapter sets out an overview of the regulatory and planning policy framework that applies to the Project, which has been taken into account across all topic chapters in the preparation of this EIA Scoping Report. Additional legislation and policy is applicable to some topics. Any such topic specific legislation is set out in the relevant topic chapters.

1.2.2. Key Legislation

The Planning Act 2008

1.2.2.1. The Planning Act 2008 ('PA 2008') provides the legislative basis for applications for a Development Consent Order (DCO). It also defines the application process under which a DCO is sought. The PA 2008 sets out that projects meeting certain defined criteria, are classified as Nationally Significant Infrastructure Projects (NSIPs). It requires that developers wishing to construct, operate and maintain NSIPs must obtain a DCO from the relevant Secretary of State (SoS) to authorise their project.

1.2.2.2. Section 14 of the PA 2008 defines types of projects which are classified as NSIPs, subject to the criteria and thresholds set out in Sections 15 to 30A for different types of infrastructure. Section 16 of the PA 2008 sets this out for projects comprising 'Electricity lines'.

1.2.2.3. The Project is does not meet any of the definitions of an NSIP that are set out in Sections 14 and 16 of the PA 2008. Only electricity lines that are above ground, 132kV or greater and 2km or more in length are defined as NSIPs in their own right under Section 16 of the PA 2008. The Project, as described in **Part 1, Chapter 4, Description of the Project** will not include any above ground electricity line of 132kV or more that is 2km or more in length. The Project is therefore not an NSIP under the definitions set out in the PA 2008. However, under Section 35(1) of the PA 2008, "the Secretary of State may give a direction for development to be treated as development for which development consent is required" if certain criteria (including the type and location of the development) are met.

1.2.2.4. On 4 March 2022, the Applicant submitted a request for a direction pursuant to Section 35 of the PA 2008 to the Secretary of State (hereafter the 'SoS') for Business, Energy and Industrial Strategy (BEIS) requesting for the Project to be treated as development for which development consent is required. On 31 March 2022, the SoS issued a Direction that confirmed that the Project should be treated as a development for which a DCO under the PA 2008 is required. In the Annex to the Direction, the SoS confirmed his opinion that:

"*The proposed Project is of national significance, taking into account that it is a large-scale linear electricity transmission reinforcement project of approximately 130km in length and that it has a two Gigawatt capacity to transmit electricity*."

1.2.2.5. This Scoping Report takes account of the national significance of the project and that the SoS has directed that it is to be treated as development for which development consent is required.

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

1.2.2.6. The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) govern the EIA process relevant to NSIPs. Schedule 1 of the EIA Regulations lists those projects for which an EIA is required and Schedule 2 lists projects which may be considered an EIA development, based on the selection criteria provided in Schedule 3 on characteristics of the development, its location and the types and characteristics of the potential impacts.

1.2.2.7. None of the components which make up the Project are explicitly identified under Schedule 1 or Schedule 2 of the EIA Regulations. However, National Grid proposes to undertake an EIA, having considered the criteria in Schedule 3 regarding the characteristics of the development (size of the development and cumulation with other existing and/or approved development) and its location (environmental sensitivity of geographical areas likely to be affected by the development). As such National Grid will be submitting an Environmental Statement (hereafter 'ES') with the DCO application, which will render the Project as EIA development under Regulation 6 of the EIA Regulations.

1.2.2.8. Part 5 of the EIA Regulations sets out the EIA process. Regulation 5(2) states that the EIA:

"*must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development*".

1.2.2.9. It states that the EIA must undertake the above in relation to the following factors: population and human health, biodiversity, land, soil, water, air, climate, material assets, cultural heritage, and landscape.

1.2.2.10. In addition, Regulation 5(4) requires the EIA to include, where relevant:

"the expected significant effects arising from the vulnerability of the Project to major accidents or disasters that are relevant to that development".

1.2.2.11. Schedule 4 of the EIA Regulations sets out the information for inclusion in the ES.

1.2.2.12. Paragraph 32(1) pf the EIA Regulations requires applicants to consider transboundary effects, meaning, those effects that could affect receptors in other countries. A screening exercise has been undertaken as part of the scoping process and is documented in **Appendix 1.1.A Transboundary Screening Matrix**. No transboundary effects in relation to the Project are expected to have an impact on the other countries, as there are no pathways for effects to occur outside the UK.

Marine and Coastal Access Act 2009

1.2.2.13. A spatial planning system for the management of the marine environment was introduced by the Marine and Coastal Access Act 2009 (MCCA 2009). This introduced a requirement to obtain Marine Licences for works at sea.

1.2.2.14. The MMO is responsible, under Part 4 of the MCAA, for administering marine licensing of activities related to construction or removal of any substance or object in UK territorial waters and also for regulating activities where they are undertaken outside of the UK territorial waters e.g. within the UK Exclusive Economic Zone (EEZ). They do so by issuing a Marine Licence.

1.2.2.15. The PA 2008 enables an applicants for a DCO to apply for 'Deemed Marine Licence' as part of the DCO process by virtue of Section 149A of the PA 2008 which was inserted by the MCAA 2009.

1.2.2.16. In addition, Section 126 of the MCAA 2009 sets out that where a public authority has the function of determining an application that is capable of affecting (other than insignificantly) the protected features of a Marine Conservation Zone (MCZ), or the processes on which those features depend, then they have a duty to consider MCZs during their decision making.

Electricity Act 1989

1.2.2.17. Section 9(2) of the Electricity Act 1989 places general duties on National Grid a licence holder:

"*to develop and maintain an efficient, co-ordinated and economical system of electricity transmission…*".

In addition, Section 38 and Schedule 9 of the Electricity Act 1989 requires National Grid when formulating proposals for new lines and other works, to:

"*have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and shall do what it reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects*.

1.2.2.18. National Grid's Stakeholder, Community and Amenity Policy[8], published December 2016, sets out how the company will meet the Schedule 9 duty placed upon it by the aforementioned legislation.

1.2.3. Related Assessments

1.2.3.1. In addition to the EIA, the Project will be assessed in accordance with the other regulatory regimes, where they apply. Information on these is included in the environmental topic chapters of this scoping report where applicable. These include the Conservation of Habitats and Species Regulations 2017, as amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (hereafter 'the Habitats Regulations') and the Conservation of Offshore Marine Habitats and Species Regulations 2017.

[8] National Grid (2016). National Grid's commitments when undertaking works in the UK: Our stakeholder, community and amenity policy. [online] Available at: https://www.nationalgrid.com/sites/default/files/documents/National%20Grid_s%20commitments%20when%20undertaking%20works%20in%20the%20UK.pdf.

Habitats Regulations

1.2.3.2. The Secretary of State is required by the Habitats Regulations to consider whether a plan or project has the potential to have an adverse effect on the integrity and features of a site which is part of the National Site Network or a European Site. 'European Sites' include Special Protection Areas (SPA) and Special Areas of Conservation (SAC). The Habitats Regulations require an Appropriate Assessment if a project is likely to have a significant effect on a National Site Network site or a European Site.

1.2.4. National Planning Policy

1.2.4.1. This section sets out the current national planning policy documents that are expected to be important and relevant to the SoS' consideration of the DCO application for the Project, and contain information that may be relevant to scoping the EIA. These documents have been taken into account in preparing this Scoping Report.

National Policy Statements for Energy

1.2.4.2. The following NPSs are expected to be important and relevant to the SoS' determination of the DCO application for the Project.

- Overarching National Policy Statement for Energy (EN-1) (NPS EN-1); and,
- National Policy Statement for Electricity Networks Infrastructure (EN-5) (NPS EN-5).

1.2.4.3. NPS EN-1 and NPS EN-5 are discussed below.

Overarching National Policy Statement for Energy (EN-1)

1.2.4.4. NPS EN-1 sets out the Government's overarching policy with regard to the development of NSIPs in the energy sector. It emphasises the need and urgency for new energy generation, transmission and distribution projects to contribute to a secure, diverse and affordable energy supply. This is to support the Government's policies on sustainable development, in particular by mitigating and adapting to climate change.

1.2.4.5. Section 3.7 in NPS EN-1 states that current scenarios show significant potential increases in generation and changes in direction of net electricity flows from Eastern England to centres of demand in the Midlands and South East England and that these kinds of flows of power cannot be accommodated by the existing network and new lines will have to be built. It also acknowledges in Paragraph 3.7.10 that:

"*in most cases, there will be more than one technological approach by which it is possible to make such a connection or reinforce the network (for example, by overhead line or underground cable) and the costs and benefits of these alternatives should be properly considered as set out in EN-5 before any overhead line proposal is consented*".

1.2.4.6. Part 5 of NPS EN-1 sets out generic impacts in respect of matters such as air quality and emissions, biodiversity, dust and odour, flood risk, historic environment, landscape, land use, noise and vibration, socio-economic, traffic and transport and

waste management. These generic impacts have been considered in the preparation of the Scoping Report.

National Policy Statement for Electricity Networks Infrastructure (EN-5)

1.2.4.7. NPS EN-5 relates to electricity networks and Part 2 includes specific policies relating to matters including consideration of good design, biodiversity and geological conservation, landscape and visual and noise and vibration. These policies have also been considered in the preparation of this Scoping Report.

1.2.4.8. Paragraph 2.2.6 of EN-5 reiterates the duties under Section 9 of the Electricity Act 1989, both in relation to developing and maintaining an economical and efficient network and, in formulating proposals for new electricity network infrastructure, to *"have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and … do what [they] reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects".*

Draft Energy National Policy Statements

1.2.4.9. The Government is currently reviewing and updating the Energy NPSs. It is doing this to reflect its policies and strategic approach for the energy system that is set out in the Energy White Paper (December 2020), and to ensure that the planning policy framework enables the delivery of the infrastructure required for the country's transition to net zero carbon emissions. As part of the Energy NPS review process, the Government published a suite of Draft Energy NPSs for consultation on 6 September 2021.

1.2.4.10. The following Draft Energy NPSs have also been considered in the scoping of this EIA:

- Draft Overarching National Policy Statement for Energy (EN-1) (Draft NPS EN-1)
- Draft National Policy Statement for Electricity Networks Infrastructure (EN-5) (Draft NPS EN-5).

1.2.4.11. Draft NPS EN-1 sets out general principles and impacts to be considered for all types of energy NSIP covered by the draft Energy NPSs. Once designated it will form the primary basis for determining if development consent should be granted and is underpinned by the principle that there will be a need for significant amounts of new large-scale energy infrastructure to meet the Government's energy objectives. It states at paragraphs 2.1.1 and 2.3.5 that the energy system needs to be transformed by "…*tackling emissions while continuing to ensure secure and reliable supply, and affordable bills for households and businesses*".

1.2.4.12. Paragraph 3.2.9 of Draft EN-1 states that in circumstances where the SoS has given a Section 35 direction: "…any application for development consent would need to be considered in accordance with [Draft EN-1]". The second bullet point sets out that this includes: "…where the application is for electricity network infrastructure not covered by sections 15-21 of the Planning Act, including underground or offshore infrastructure…".

1.2.4.13. Like its predecessor, Draft NPS EN-5 covers electricity networks and focuses on policies and considerations that are specific to this type of energy infrastructure.

National Planning Policy Framework

1.2.4.14. The revised National Planning Policy Framework (NPPF) was most recently revised in July 2021. Paragraph 5 of the NPPF sets out that it does not contain specific policies for NSIPs and states that "*These are determined in accordance with the decision-making framework in the Planning Act 2008 (as amended) and relevant national policy statements for major infrastructure, as well as any other matters that are relevant (which may include the National Planning Policy Framework*)".

1.2.4.15. Since the NPPF has the potential to be considered important and relevant to the SoS' consideration of the Project, each topic chapter has considered whether there is guidance in the NPPF that differs from NPS and draft NPS policies. At this stage it is not possible to determine if such guidance will be considered relevant to, or be given weight by, the SoS, and it is therefore included for completeness to allow the SoS to make such determination.

1.2.5. Local Planning Policies

1.2.5.1. Regional and local planning policies have also been considered in the development of the Scoping Report. The main local planning policy that could be relevant to the Project comprises of the following:

- East Suffolk Council – Suffolk Coastal Local Plan (adopted 23 September 2020)[9]
- Thanet District Council – Thanet Local Plan (adopted 9 July 2020)[10]
- Dover District Council – Core Strategy (adopted 24 February 2010)[11]
- Dover District Council – Land Allocations Local Plan (adopted 28 January 2015)[12]
- Dover District Council – Saved Policies of the Dover District Local Plan 2002 (adopted 2002)[13]
- Suffolk County Council – Suffolk Minerals and Waste Local Plan (adopted 9 July 2020)[14]

[9] East Suffolk Council (2020). Suffolk Coastal Local Plan. [online] Available at: https://www.eastsuffolk.gov.uk/assets/Planning/Planning-Policy-and-Local-Plans/Suffolk-Coastal-Local-Plan/Adopted-Suffolk-Coastal-Local-Plan/East-Suffolk-Council-Suffolk-Coastal-Local-Plan.pdf.

[10] Thanet District Council (2020). Thanet Local Plan. [online] Available at: https://www.thanet.gov.uk/wp-content/uploads/2018/03/LP-adjusted.pdf.

[11] Dover District Council (2010). Local Development Framework: Core Strategy. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/PDF/Adopted-Core-Strategy.pdf.

[12] Dover District Council (2015). Land Allocations Local Plan. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/PDF/Land-Allocations-Local-Plan.pdf.

[13] Dover District Council (2002). Saved Policies of the Dover District Local Plan 2002. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/Adopted-Development-Plans/Saved-Policies.aspx.

[14] Suffolk County Council (2020). Suffolk Minerals and Waste Local Plan. [online] Available at: https://www.suffolk.gov.uk/planning-waste-and-environment/minerals-and-waste-policy/suffolk-minerals-and-waste-development-scheme/.

- Kent County Council - Kent Minerals and Waste Local Plan 2013-2030 (adopted September 2020)[15]
- Kent County Council – Mineral Sites Plan (adopted September 2020)[16]

1.2.5.2. A summary of national and local planning policy relevant to each technical assessment is provided for each environmental topic chapter.

1.2.6. Marine Policy Statement

1.2.6.1. The Marine Policy Statement was adopted 2011. This provides the policy framework for the preparation of marine plans and establishes how decisions affecting the marine area should be made. The Marine Policy Statement has been considered in the development of this Scoping Report in particular within the chapters relating to Part 4, the Offshore Scheme.

1.2.7. Marine Plans

1.2.7.1. The following Marine Plans have been considered in the development of this scoping report:

- East Inshore and East Offshore Marine Plan, April 2014[17]
- South East Inshore Marine Plan, June 2021[18]

1.2.7.2. A summary of marine policy that is relevant to each technical assessment is provided for each environmental topic chapter.

[15] Kent County Council (2020). Kent Minerals and Waste Local Plan 2013-2030. [online] Available at: https://www.kent.gov.uk/__data/assets/pdf_file/0004/112585/Kent-Minerals-and-Waste-Local-Plan-2013-2030.pdf.

[16] Kent County Council (2020). Mineral Sites Plan. [online] Available at: https://www.kent.gov.uk/__data/assets/pdf_file/0003/112584/Kent-Mineral-Sites-Plan.pdf.

[17] Marine Management Organisation (2014). East Inshore and East Offshore Marine Plans. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/312496/east-plan.pdf.

[18] Marine Management Organisation (2021). South East Inshore Marine Plan. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1004493/FINAL_South_East_Marine_Plan__1_.pdf.

1.3 Main Alternatives Considered

1.3.1. Introduction

1.3.1.1. The current stage of Project design is the result of an iterative process that commenced at Project inception when the initial need to reinforce the network in the South East of England was identified in 2019. Environmental, engineering and economic considerations have influenced the optioneering and design evolution process. There have also been extensive discussions with the relevant stakeholders during the Project development early stages. The iterative design process will continue up to the application for development consent in parallel with, and informed by, the EIA process.

1.3.1.2. **Part 1 Chapter 2, Regulatory and Planning Context** sets out the overarching policy relevant to the Project, comprising NPS EN-1 and NPS EN-5, which have been considered during the options appraisal process for the Project. With reference to the consideration of alternatives, paragraph 4.4.2 of EN-1 states that:

"*Applicants are obliged to include in their ES, as a matter of fact, information about the main alternatives they have studied. This should include an indication of the main reasons for the applicant's choice, taking into account the environmental, social and economic effects including, where relevant, technical and commercial feasibility*."

1.3.1.3. Whilst there is no statutory requirement to include an assessment of alternatives in support of a request for a Scoping Opinion, the PINS Advice Note Seven recommends that a Scoping Report includes:

"*An outline of the reasonable alternatives considered and the reasons for selecting the preferred option*".

1.3.2. National Grid Approach to Options Appraisal

1.3.2.1. National Grid undertakes options appraisal on each new project. There are often a number of different ways that a project could be developed which could involve different locations, technologies or designs. Each project requires judgements and decisions to be made about the best way forward to achieve the required outcome. The options appraisal process provides information to help inform those judgements.

1.3.2.2. Options appraisal is a robust and transparent process that is used to compare options and to assess the positive and negative effects, those options may have across a wide range of criteria including environmental, socio-economic, technical and cost factors, as set out in National Grid's approach to options appraisal[19]. The aim is to find a balanced outcome, bearing in mind the range of National Grid's statutory duties. The assessment is documented to provide, in a transparent manner, information upon which decisions are based.

[19] National Grid (2012). Our Approach to Options Appraisal. [online] Available at: https://www.nationalgrid.com/electricity-transmission/document/96531/download.

1.3.2.3. At each stage of the options appraisal process, a clearly defined methodology has been used to inform the decision-making process. This has included technical inputs from engineers and environmental consultants to inform the decisions and design. The assessment has drawn on data and evidence collected from both, desktop studies and site visits. Decision making has also taken into account the feedback from prescribed bodies, as defined in the PA2008, and will continue to take account the feedback from the prescribed bodies alongside feedback from the local community through an extensive programme of engagement and consultation. In addition, the Project has been subject to periodic internal challenge and review process to ensure the robustness of the decision made in the light of a changing environmental baseline related to technical, physical and economic matters.

1.3.2.4. Image 1.3.1 shows where the options appraisal sits within National Grid's approach to project development and delivery, as set out in the National Grid publication 'Our Approach to Consenting'[20].

Image 1.3.1: National Grid's approach to project development and delivery



1.3.2.5. Project decisions have taken into account National Grid's statutory obligations set out in Sections 9 and 38 of the Electricity Act 1989, its licence requirements and all other relevant considerations including the relevant NPSs. The options appraisal has also considered other policy and guidance when making judgements and decisions on the Project including the Horlock Rules[21].

1.3.3. Overview

1.3.3.1. Alternatives have been considered at each stage of the Project's development, from strategic options through to routeing and siting. They will continue to be considered in the development of the proposed order limits for which an application for development consent will be made to the SoS.

1.3.3.2. The following sections provide a summary of the alternatives that have been considered at each stage.

[20] National Grid (2022). Our Approach to Consenting: National Grid, 2012, Out approach to options appraisal. [online] Available at: https://www.nationalgrid.com/electricity-transmission/document/96531/download.

[21] National Grid (2003). NGC Substations and the Environment: Guidelines on Siting and Design (updated 2006). [online] Available at: https://www.nationalgrid.com/sites/default/files/documents/13796-The%20Horlock%20Rules.pdf.

Strategic Options

1.3.3.3. A range of strategic options that might address the network reinforcement needs were identified and appraised at a strategic level. These appraisals considered the likely environmental and socio-economic effects, technical issues, and costs that would be associated with each strategic option. The network performance of each strategic option was also modelled to determine the benefits. The appraisal and modelling results informed judgements regarding the relative merits of the options and ensured that the final Strategic Proposal would meet National Grid's statutory duties under the Electricity Act, including the requirement to bring forward proposals that are 'economic, efficient and coordinated' and that would comply with the relevant planning policies for which the consents would be granted.

Background to the Project

1.3.3.4. The strategic options considered for the Project were developed and appraised alongside the needs case to rationalise network reinforcement where possible whilst ensuring compliance with National Grid's statutory duties.

1.3.3.5. The need to reinforce the transmission system is reviewed on an annual basis in response to predicted changes, such as new renewable and low-carbon energy generation forecasted to connect to the network. This review, which sets out the parts of the network that require reinforcing, is within the Electricity Ten Year Statement[22]. Proposals that provide those reinforcements are then assessed through the Network Options Assessment (NOA)[23] which is published annually.

1.3.3.6. The need to reinforce the network in the South East of England is driven by interconnection with mainland Europe as well as new renewable generation connecting to the network. This reinforcement was assessed in the 2018/2019 NOA and National Grid explored several strategic options that could deliver the required reinforcement. One of the strategic options that was considered was a nominal subsea HVDC link between the South East of England and East Anglia. This was included in order to appraise the performance of this strategic option, which crossed multiple system boundaries against others which just addressed the need in the South East of England. The appraisal identified that this strategic option provided the reinforcement required to the network in the South East of England as well as providing reinforcement to the network in East Anglia. The network in East Anglia was also identified in the 2018/2019 NOA as likely to need reinforcing in the future due to the volume of possible upcoming generation connecting within this region.

1.3.3.7. Strategic options were then developed that explored alternative subsea HVDC links between the South East of England and East Anglia that could provide the reinforcement required. This work identified that a connection between East Anglia and Richborough in Kent provided this reinforcement, this was then reflected in the 2019/2020 NOA.

1.3.3.8. Additional network studies in East Anglia were then undertaken to confirm which connection point provided the best value to customers whilst minimising potential environmental and socio-economic impacts. These studies identified that the HVDC

[22] National Grid ESO (2021). Electricity Ten Year Statement (ETYS). [online] Available at: https://www.nationalgrideso.com/research-publications/etys.

[23] National Grid (2022). Network Options Assessment 2021/22 Refresh. [online] Available at: https://www.nationalgrideso.com/document/262981/download.

Link needed to connect into the Sizewell area in order to maximise the system benefit.

1.3.3.9. The 2020/2021 NOA[24] also identified the reinforcements that were required to the network in East Anglia and National Grid undertook a similar exercise to investigate solutions that could provide this wider reinforcement. The Sizewell to Richborough HVDC Link (by this point named the 'Sea Link Project') was included as part of this exercise to confirm it remained the preferred solution under all scenarios.

Strategic options considered for the Project

1.3.3.10. Following the identification of the need for the HVDC reinforcement to connect into the Sizewell area in East Anglia and into the South East of England three alternative strategic options were appraised these were:

- HVDC Link between the Sizewell area and Richborough substation;
- HVDC Link between the Sizewell area and Canterbury substation; and
- HVDC Link between the Sizewell area and Sellindge substation.

1.3.3.11. The appraisal concluded a preference for a Richborough connection in Kent. This option was identified as having a significantly shorter onshore route than either Canterbury or Sellindge, resulting in lower terrestrial environment and socio-economic effects from the Project. In addition, the Richborough area was considered to provide more opportunities to sensitively site a new converter station.

1.3.3.12. A connection into Sellindge would require an overall longer route length than the other two options, without offering any additional benefits (e.g., network, cost, or programme). Whilst Canterbury was comparable to Richborough in terms of an overall length, there are several significant challenges, both within the vicinity of Canterbury substation and with the associated routeing to/from Canterbury and marine cable routeing to the north Kent, which made it less preferable due to the likely significance of environmental effects both onshore and offshore.

1.3.3.13. The strategic option appraisal therefore identified a preferred strategic option of an HVDC Link between the Sizewell area in East Anglia and existing Richborough substation in Kent.

1.3.4. Routeing and Siting

1.3.4.1. Having identified the preferred Strategic Option, National Grid undertook a Corridor and Preliminary Routeing and Siting Study (CPRSS). This process is described below.

Approach to Routeing and Siting

1.3.4.2. A staged approach was adopted to identify corridors and preliminary routeing and siting options for the Project. This approach considered the potential effects on the environment, local communities, relevant spatial planning policy and planning applications, other existing and proposed developments, and technical and engineering design considerations.

[24] National Grid ESO (2022). Network Options Assessment 2021/22 Refresh. [online] Available at: https://www.nationalgrideso.com/document/262981/download.

1.3.4.3. The aim of the approach was to identify 'on-balance' preferences for landfalls, converter station sites and potential route corridors within which preliminary alignments could be developed.

1.3.4.4. Each of the options identified for the converter site option areas and cable route corridors were appraised in accordance with National Grid's approach to options appraisal[25]. This guidance has been developed by National Grid to provide a thorough and consistent approach to the appraisal of network reinforcement options. It represents the best practice approach to inform the decision-making process. The aim of the guidance is to ensure that decisions regarding the technology options and/or location of infrastructure are based on a full understanding of the implications of each option using a wide range of criteria.

1.3.4.5. In addition to above and in the absence of guidance for specific siting of converter stations, the Horlock Rules[26] have been applied. These were developed for the siting of substations, were used when identifying and appraising converter site option areas.

1.3.4.6. The overarching principle of National Grid's approach is to follow a staged process for routeing and siting to identify preferred options. The steps undertaken for the Project in this staged approach are summarised below.

1.3.4.7. **Step 1 Identification of the Routeing and Siting Study Area:** This step sought to identify the extent of the study area within which route corridors and converter station site option areas could be developed. This was based on the study area used at the strategic option stage but widened out in places to ensure route corridors could be developed that avoided environmental and socio-economic constraints as far as possible. The routeing and siting study area is illustrated on **Figure 1.3.1 Routeing and Siting Study Area**.

1.3.4.8. **Step 2 Data Gathering:** This step sought to build on the constraints data already obtained through the strategic options process to ensure relevant baseline information from available sources was taken into consideration in the options appraisal process.

1.3.4.9. **Step 3 Identification of Landfall Areas of Search:** This step involved the identification of areas of potential landfall within the study area as this is the interface between the onshore and offshore elements of the Project and therefore form the start and end points from which corridor options could be identified. The landfall areas of search are illustrated on **Figure 1.3.2 Suffolk Landfall Areas of Search** and **Figure 1.3.3 Kent Landfall Areas of Search** and were identified based on the following criteria:

- Access to the proposed onshore grid connection point;
- Suitability of ground conditions (e.g. areas of low elevation, avoidance of estuarine habitats);
- Potential for site access;
- Avoidance of existing infrastructure; and

[25] National Grid (2012). Our Approach to Options Appraisal. [online] Available at: https://www.nationalgrid.com/electricity-transmission/document/96531/download.

[26] National Grid (2003). NGC Substations and the Environment: Guidelines on Siting and Design (updated 2006). [online] Available at: https://www.nationalgrid.com/sites/default/files/documents/13796-The%20Horlock%20Rules.pdf.

- High level consideration of potential key environmental and socio-economic constraints such as populated areas and ecological designations. Landfall areas of search were not necessarily ruled out on the basis of these potential constraints and were taken forward in order to be subjected to an initial routeing and siting environmental and socio-economic options appraisal.

1.3.4.10. **Step 4 Identification of Route Corridors and Site Option Areas:** This step involved the identification of marine route corridors and alignments between the landfall areas of search in parallel with the identification of terrestrial route corridors and converter station site option areas including the connection to the network.

1.3.4.11. **Step 5 Appraisal of Route Corridors and Site Option Areas:** This step involved an appraisal of the marine route corridors and alignments, terrestrial corridors, converter station siting areas and network connection options.

1.3.4.12. **Step 6 Identification of the Preferred end-to-end solution:** This step used the outcomes of the environmental and socio-economic and technical appraisal of the individual elements as well, as a consideration of cost, to identify an on-balance preferred end-to end solution for the Project.

Steps 3 – 4 Identification of Landfalls, Corridors and Site Option Areas

1.3.4.13. The sections below provide a summary of the options that were considered within steps 3-4 above.

Landfall areas of search

1.3.4.14. On the East Anglian coast in Suffolk five broad landfall areas of search were identified, these are illustrated on **Figure 1.3.2 Suffolk Landfalls Areas of Search** which were: an area to the south of Aldeburgh, north of the Alde and Ore River (S1); an area between Aldeburgh and Thorpeness (S2); an area between Thorpeness and Sizewell (S3); an area at Sizewell (S4); and an area to the north of Sizewell, south of Minsmere (S5).

1.3.4.15. On the Kent coast six landfall areas of search were identified, which were split geographically across the north Kent coast, Broadstairs and Pegwell Bay, these are illustrated on **Figure 1.3.3 Kent Landfall Areas of Search**. Four areas of search were identified along the north Kent coast between the settlements of Herne Bay and Birchington (K2-K5). One area was identified at Broadstairs at North Foreland between the settlements of Margate and Broadstairs (K1a). Within Pegwell Bay one area of search was identified that stretched across the area from the settlement of Ramsgate to the settlement of Deal (K1).

Converter station site option areas

1.3.4.16. The main search parameter for the converter station site option areas was that they should be within approximately 5km of the network connection point, as a distance greater than this would trigger the need for reactive compensation equipment on the network resulting in additional land take and cost. This search parameter was however used as a guide, so as not to discount potentially suitable sites at a slightly greater distance where the benefits might outweigh the additional land take and cost.

1.3.4.17. Within Suffolk, the needs case identified that the network connection point needed to be in the Sizewell area, so all three strategic options were based on this. Three potential points of connection were identified and appraised as part of the routeing and siting appraisal. These connection points are illustrated on **Figure 1.3.4 Suffolk Network Connection Points** and were the existing Sizewell B substation or the new Sizewell C substation (part of the proposed Sizewell C Nuclear Power Station Project); the proposed Friston substation (forms part of the proposed Scottish Power Renewables (SPR) East Anglia One North and East Anglia Two Offshore Wind Farm Projects); or a new connection point directly onto the existing 400kV overhead lines close to Sizewell.

1.3.4.18. Nine converter station site option areas were identified, these are illustrated on **Figure 1.3.5 Suffolk Converter Site Option Areas.** A number of which were in the search parameters for more than one connection point. Four site option areas within the 5km search parameter for a connection to the Sizewell substations (option areas A, B, C and D), seven within the 5km search parameter for the proposed Friston substation (option areas (B, C, D, E, G and H) and six within the 5km search parameter for a new connection onto the existing 400kV overhead lines (option areas B, D, E, F, H and I).

1.3.4.19. In Kent, the preferred strategic option included Richborough substation as the connection point and this was therefore used as the 5km radius search parameter. Two converter site option areas were identified, one adjacent to Richborough substation and wider Richborough Energy Park and a second between the settlements of Minster and Birchington adjacent to some larger scale agricultural uses. These are illustrated on **Figure 1.3.6 Kent Converter Site Option Areas**.

1.3.4.20. There were few brownfield sites that could accommodate the technical parameters required for the converter station. Therefore, the identification of converter station site option areas was based on avoidance of designated sites as far as possible, landform, opportunities for natural screening and opportunities to limit visual impacts on nearby settlements.

Terrestrial route corridors

1.3.4.21. Once the landfall areas of search and converter station site option areas had been identified, terrestrial route corridors between the two were developed. Corridors were developed that could connect each of the landfall areas of search to each of the converter station site option areas.

1.3.4.22. Within Suffolk this process resulted in 15 corridors being identified, some of which could be used for multiple landfall/site permutations:

- five corridors from each of the five landfall areas of search to the four converter station site option areas that could connect into the existing and proposed Sizewell substations (see **Figure 1.3.7 Suffolk Terrestrial Route Corridors – Sizewell Connection**);
- five corridors from each of the five landfall areas of search to the seven converter site option areas that could connect into the proposed Friston substation (see **Figure 1.3.8 Suffolk Terrestrial Route Corridors – Proposed Friston Connection**); and

- five corridors from each of the five landfall areas of search to the six converter station site options that could connect into the existing 400kV overhead lines (see **Figure 1.3.9 Suffolk Terrestrial Route Corridors – New Connection**).

1.3.4.23. Within Kent seven corridors were identified; three corridors connecting three of the four landfall areas of search along the north Kent coast to the two converter site option areas, one corridor from the landfall area of search at Broadstairs to the two converter station site option areas; and three corridors from the wide landfall area of search within Pegwell Bay to the two converter station site option areas. These are illustrated on **Figure 1.3.10 Kent Terrestrial Route Corridors**.

1.3.4.24. The terrestrial corridors were not developed to a specified width but were limited by larger constraints such as:

- Avoidance of designations where possible;
- avoidance of settlements; and
- consideration of traffic and access opportunities.

1.3.4.25. This was to allow for maximum flexibility also factoring in the potential technical constraints and avoiding prematurely discounting potentially favourable/feasible alignment options.

Marine route alignments

1.3.4.26. The very large geographical marine study area and large-scale nature of many of the constraint features meant that in order to undertake a meaningful routeing appraisal, it was necessary to identify indicative marine alignments within the broader corridors to appraise the feasibility of cable burial. Therefore, alignments are illustrated on **Figure 1.3.11 Marine Alignments**.

1.3.4.27. The marine alignments were split down into sections within three broad areas. These comprised sections that connected to each of the five Suffolk landfalls, sections that connected to each of the six Kent landfalls, and central sections. Due to the number of end-to-end marine alignments associated with multiple landfall connection points and central sections, the marine alignment sections were taken through the appraisal stage but whole marine end to end solutions were considered as part of the identification of the preferred end-to end solution.

1.3.4.28. The principal driver in defining the marine corridors and alignments between the landfall areas of search was to identify areas that would ensure the long-term integrity and security of the cable whilst also avoiding key constraints. The following design criteria were taken into consideration when developing the marine corridors and marine alignments:

- Shortest route possible to minimise the cable length, which in turn reduces the manufacturing and installation cost as well as the environmental and security footprint;
- Avoidance of environmentally sensitive areas where possible;
- Avoidance of areas that have restricted movement i.e., anchorages;
- Avoidance of known wrecks and areas of archaeological importance;
- Avoidance of offshore installations (renewable, oil/gas, wells/platforms, etc.);

- Limiting the need to cross in-service cables and pipelines and, where crossings would be necessary, corridors and alignments were routed to ensure the crossing angle would be optimal and water depth would be sufficient for navigational safety;
- Routed to consider shipping density, i.e., anchorage areas, high density shipping lanes;
- Avoidance of hazardous seabed terrain (e.g., bedrock outcrop and mobile sediments) where possible, ensuring the cable would be protected by achieving an acceptable depth of burial; and
- Limiting the impact on third-party considerations including seasonal fishing activities, local tourist trade, and military practice zones.

Step 5 Appraisal of Landfalls, Route Corridors and Site Option Areas

1.3.4.29. Each of the elements described above was assessed individually. A separate assessment was not undertaken for each of the landfall areas of search as the performance of each landfall is influenced by both the marine and terrestrial corridor approach. The landfalls were therefore assessed as part of the assessment of both the terrestrial route corridors and the marine route alignments.

1.3.4.30. The sections below provide an overarching summary of the appraisal of the individual elements.

Converter station site option areas

1.3.4.31. Within Suffolk the appraisal of the three connection points was undertaken alongside that of the converter site option areas.

1.3.4.32. Of the possible connection points in the Sizewell area, only the Sizewell B substation is currently in existence; all the other proposed connection points would require the installation of a new substation, either proposed through another project in the area or installed as part of this Project. Connecting to the existing Sizewell B substation would require taking over two of the super grid transformer (SGT) circuits feeding the existing Leiston 132kV substation, by connecting into the 400kV circuits feeding the SGTs. This would require the installation of two new 400/132kV SGTs in the converter station site with new 400kV cables connecting into the existing Sizewell B substation and new 132kV cables connecting the SGTs in the converter station with the Leiston 132kV substation. The 400kV cable route to the existing Sizewell B substation would require either using the corridor allocated to the existing 132kV connection or routeing through Sizewell Marshes SSSI.

1.3.4.33. A connection into the proposed Sizewell C substation would also require using the corridor allocated to the existing 132kV connection or require routeing through Sizewell Marshes SSSI. A connection into either, the existing or the proposed Sizewell substation would also need to take into account the works to construct the proposed Sizewell C Nuclear Power Station, as the works would overlap. This interaction with the proposed Sizewell C Nuclear Power Station could have programme implications on the delivery of this Project in line with the needs case due to construction sequencing.

1.3.4.34. At the time of the routeing and siting appraisal, the DCO that would deliver Friston substation was advanced in the consenting process and it has subsequently received development consent.

1.3.4.35. A connection into the existing 400kV overhead lines would require a new substation to be built. A new substation was assessed as being co-located within the converter site option areas (B, D, E, F, H and I) and would also require, either, the existing overhead lines to be diverted in and out of the new substation, or an underground cable (where economic and efficient) from a new substation to the existing overhead lines, with a cable sealing end compound located adjacent to the overhead lines.

1.3.4.36. A summary of the appraisal outcomes of each of the converter site option areas in Suffolk is presented in **Part 2, Chapter 1, Evolution of the Suffolk Onshore Scheme**.

1.3.4.37. Within Kent only two converter site option areas were identified and appraised. The area closest to the connection point at Richborough substation was generally favoured as it minimised the connection back to the existing network and facilitated an opportunity to site a converter station close to similar existing infrastructure.

Terrestrial route corridors

1.3.4.38. Within Suffolk none of the corridors avoided designated sites. The Suffolk Coasts and Heaths AONB extends across the full extent of the routeing and siting study area and was therefore unavoidable for a11of the 15 corridors. Whilst the routeing and siting study area was drawn to provide opportunities to avoid designated sites and constraints, the AONB extends unbroken from Felixstowe and Harwich in the south to Kessingland in the north. It was not therefore possible to avoid this designation and meet the needs case without a significantly longer and indirect route that would not be in accordance with National Grid's statutory duties.

1.3.4.39. All three green corridors that connect with the southernmost of the five landfall areas of search (S1), south of Aldeburgh, would require an extensive crossing of the Alde-Ore Estuary, which is designated as a SAC and SPA. These corridors would also interact with the same designated sites around the settlements of Iken and Snape.

1.3.4.40. The three orange corridors connecting to the most northern landfall area of search (S5) to the north of Sizewell would need to cross several sites designated for their ecological conservation value (including Minsmere RSPB Reserve) and would entail significant interaction with the proposed Sizewell C Nuclear Power Station Project.

1.3.4.41. The three blue corridors that connect into the southern part of the landfall area of search (S3) between Thorpeness and Sizewell would need to cross a section of the Leiston Aldeburgh SSSI and would likely require interaction with the proposed cable routes for the Scottish Power Renewables (SPR) East Anglia One North and East Anglia Two Offshore Wind Farms.

1.3.4.42. The three purple corridors connecting into the northern part of landfall area of search S3, when considered in isolation, provided an opportunity to avoid sites designated for nature conservation but would have entailed interaction with the proposed Sizewell C Nuclear Power Station Project. Routeing was also constrained by the presence of other cables that make landfall at this location.

1.3.4.43. The three red corridors that connect to the landfall area of search between Aldeburgh and Thorpeness (S2) would also need to cross a section of the Leiston Aldeburgh SSSI as well as part of the North Warren RSPB Reserve.

1.3.4.44. Other areas considered included the three green corridors connecting into the southernmost landfall areas of search (S1), which would require the installation of cables in an extensive area of flood zones 2 and 3; these corridors would also have a longer length within the AONB compared with the other corridors

1.3.4.45. Four pinch-points were identified within the route corridors. The first pinch-point is located at a crossing of Leiston Road close to the South Warren Golf Course, which would be crossed by all three red corridors connecting to the landfall area of search between Aldeburgh and Thorpeness (S2).

1.3.4.46. The second pinch-point is located between the B1353 and Leiston Road and would require cable routes to cross the Sandlings SPA, the Leiston Aldeburgh SSSI, and a section of a golf course, as well as a narrow crossing of Leiston Road. This pinch-point would affect the three blue corridors connecting to the southern part of the Thorpeness to Sizewell landfall area of search (S3).

1.3.4.47. The third pinch-point is located to the south of Aldringham at the crossing of the Hundred River. This area is constrained by the Hundred River itself, the crossing of the B1353 and the B1122, and an area of woodland and nearby properties. In addition, the proposed cables for the SPR East Anglia One North and Two Offshore Windfarms are proposed to be routed through this same pinch-point. Depending on which converter station site option area is selected, this pinch-point would need to be routed through the three purple corridors connecting to the northern part of the Thorpeness to Sizewell landfall area of search (S3) and the three blue corridors connecting to the southern part of that same landfall.

1.3.4.48. The fourth pinch-point is located to the northwest of Leiston and is associated with the offsite works for the proposed Sizewell C Nuclear Power Station Project, including an area which has recently been established for ecological mitigation measures related to that project. Depending on which converter station site option area is selected, this this pinch-point would need to be routed through by the three purple corridors connecting to the northern part of the Thorpeness to Sizewell landfall area of search (S3) and the three blue corridors that connect to the southern part of that same landfall. Within Kent none of the landfall areas of search avoided sites designated for nature conservation, albeit the designated features vary across the landfalls. The three route corridors (green, blue and red) connecting to the landfall areas of search (K2-K4) along the north Kent coast would all require the cable to be routed through an area of Flood Zone 2 and 3. Access to the landfall areas of search was also limited by the presence of a railway line, as construction access would need to cross this feature.

1.3.4.49. The green corridor connecting to the landfall area of search (K1a) at Broadstairs would need to cross North Foreland Golf Course. There is also a pinch-point along this corridor between the settlements of Margate and Ramsgate where there is a linear belt of settlement where cables would need to be routed within the public highway. This green corridor is further constrained by a site allocated for development in the Local Plan, avoidance of which would require a longer length of cable within the public highway.

1.3.4.50. The three corridors (green, red and blue) connecting to the landfall area of search (K1) in Pegwell Bay would all cross the Thanet Coast and Sandwich Bay designated sites, albeit the extent of the designated area crossed would reduce towards the south of this area of search. Crossing of a golf course would be unavoidable across all three of these corridors. The blue southernmost of the corridor would require routeing through an extensive area of Flood Zone 2 and 3 and the southern two

corridors (blue and red) would require a crossing of the River Stour and several large waterbodies either to the north or south of Great Stonar. The northernmost of the three corridors (green) connecting to this landfall area of search would cross a greater extent of the designated site but would avoid crossing the River Stour and other waterbodies.

Marine corridors and alignments

1.3.4.51. All marine approaches to the landfall areas of search along the Suffolk Coast would need to be routed through the Outer Thames Estuary SPA and the Southern North Sea SAC. The marine alignment connecting to the landfall area of search to the north of Sizewell (S5) would result in more cable crossings than the other alignments and would have potential to interact with the proposed Sizewell C Nuclear Power Station Project's offshore works. The marine alignments connecting to the southern part of the landfall areas of search (S3), between Thorpeness and Sizewell, are significantly constrained by the presence of rocky reefs in the nearshore area, although marine alignments to the northern part of this same landfall area of search could avoid this feature. The marine alignments to the two southernmost landfall areas of search (S1 and S2), between Aldeburgh and Thorpeness and to the south of Aldeburgh, are not significantly constrained.

1.3.4.52. All marine approaches to the north Kent coast landfall areas of search (K2 – K5) would require routeing through the Margate and Long Sands SAC and would also interact with the Thanet Coast MCZ and Thanet Coast SAC. It is likely that any works required to protect the cable, where sufficient burial depth could not be achieved, could result in permanent habitat loss, affecting the interest features of Margate and Long Sands SAC. There is also an area of 'mobile sandbanks some of which may be exposed at low tide', off the north Kent coast. This area is unlikely to be avoidable for any option to a north Kent coast landfall area of search. This presents a considerable exposure and engineering risk. It is also likely that there would be some impact on key anchorage areas offshore off Margate.

1.3.4.53. The marine alignment to the landfall search area at Broadstairs (K1a) would interact with areas designated for nature conservation at the landfall but could avoid the Margate and Long Sands SAC and could also avoid routeing through the Goodwin Sands MCZ.

1.3.4.54. The marine alignments connecting to the Pegwell Bay landfall area of search (K1) could not avoid the nature conservation sites at the landfall; however, the length of the crossing would reduce for those marine alignments routed to the south of this landfall option area.

1.3.4.55. It is unlikely that marine alignments to this landfall could avoid the Goodwin Sands MCZ. This interaction is due to the routeing in this area being constrained, to the east, by the Goodwin Sandbank. Routeing over the Goodwin Sandbank would increase the risk of cable exposure during the lifetime of the cable and would subsequently likely to result in the need for additional rock protection to be put in place, potentially resulting in permanent habitat loss. Routes to the west are constrained by the Ramsgate dredged channel and an area of sandwave field. Additionally, when routeing east out from Pegwell Bay, the route must cross the Nemo Link cable and the Thanet Offshore Wind Farm export cables, requiring the placement of rock protection on the seabed at these locations and potentially resulting in permanent habitat loss, including within the Goodwin Sands MCZ. The water depths in this area are very shallow, slowly gaining depth moving to the east.

To avoid unacceptable reductions in water depths that could pose a hazard to marine vessels, the proposed cable crossings would need to be located in areas with a suitable water depth.

1.3.4.56. In the central section of the marine alignments there is a pinch-point location where the north-eastern extent of the Margate and Long Sands SAC abuts the Sunk Traffic Separation Scheme (TSS); there are also several aggregate extraction areas and deep-water shipping channels in this area. There are also three proposed projects in this area, including: the NeuConnect Interconnector, the Five Estuaries and the North Falls Offshore Wind Farms. The existing Greater Gabbard and Galloper Offshore Wind Farms also constrain marine alignments. Marine alignments through this area were considered to have suitable seabed conditions for cable installation and burial.

1.3.4.57. Due to the range of constraints in this area, engagement was undertaken with the relevant marine stakeholders. Concerns were raised by stakeholders about the need for rock placement for crossing of existing and proposed infrastructure within Margate and Long Sands SAC, both in terms of potential for permanent habitat loss and unacceptable reductions in water depth for shipping and navigation. Aggregate operators also expressed a preference for routeing to be located to the east in order to minimise impacts on their operations.

1.3.4.58. As a result an alternative route was therefore identified to the east of Margate and Long Sands SAC. This route is located close to the centre of the Sunk TSS approach channels where the shipping density is lower and the crossing would be in deeper water.

Step 6 Identification of a Preferred End-to-end Solution

1.3.4.59. Following the appraisal of the individual elements, an on-balance preferred end-to-end solution was identified, which took account of environmental, socio-economic and technical appraisals as well as cost in accordance with National Grid's statutory duties.

1.3.4.60. Within Suffolk, the significant constraints associated with a connection into either, the existing or proposed Sizewell substations meant that these options were not preferred. Connecting into a new connection point in the area, with an associated additional substation, was also not preferred. The proposed Friston substation was therefore identified as the preferred connection point for the Project.

1.3.4.61. Whilst the southernmost of the landfall areas of search (S1) was least constrained from a marine perspective, the terrestrial green corridors from this would have the greatest interaction with the AONB and require a significant crossing of the Alde and Ore Estuary, as well as interaction with the associated SAC and SPA designations. The northernmost landfall area of search (S5) was constrained both, on the marine approach from existing and proposed infrastructure, and terrestrially due to the Minsmere designated sites and potential interaction with the proposed Sizewell C Nuclear Power Station Project. The southern part of the landfall area of search (S3) between Thorpeness and Sizewell was significantly constrained on the marine approach due to the presence of an area of rocky reef. Terrestrial route corridors from this same landfall area of search could not avoid any of the pinch-points described in the sections above. The marine approach to the landfall area of search between Aldeburgh and Thorpeness (S2) has few constraints, however the Leiston Aldeburgh SSSI and North Warren RSPB reserve could not be avoided without the

use of trenchless construction techniques at the landfall. Terrestrial route corridors from this landfall area of search also include the pinch-point along Leiston Road. The northern part of the landfall area of search (S3) between Thorpeness and Sizewell could avoid the area of rocky reef however the presence of existing and proposed cables at this landfall area and in the nearshore environment constrain the marine alignments. Terrestrial route corridors connecting to this landfall could avoid the designated sites, however the terrestrial route corridors could not avoid at least one of the pinch-points described above and would result in a longer overall connection to the proposed Friston substation.

1.3.4.62. On balance, the preferred solution identified was the landfall area of search between Aldeburgh and Thorpeness (S2) connecting to a converter site option area E to the southeast of the proposed Friston substation via the red corridor. This converter site option area offered good existing screening and opportunities to develop mitigation in keeping with the existing landscape character. Whilst this option was constrained at the landfall due to presence of terrestrial nature conservation sites, it was identified that trenchless installation methods could be used to minimise or avoid potential impacts. However, as further survey work is required to confirm the feasibility of using trenchless techniques at this landfall it was considered prudent to also progress an alternative, which is to make landfall at the northern part of the landfall area of search (S3) between Thorpeness and Sizewell with the purple terrestrial route corridor connecting to the same converter site option area E.

1.3.4.63. Within Kent, the marine alignments to the landfall areas area of search along the north Kent coast (K2-K5) were highly constrained by the Margate and Long Sands SAC and an area of mobile sandbanks. Whilst the marine alignment to the landfall area of search at Broadstairs (K1a) had few constraints the terrestrial green corridor from this landfall was highly constrained by the development between the settlements of Margate and Ramsgate and several planning applications and allocations. Whilst the marine alignments to the Pegwell Bay landfall area of search (K1) could not avoid the Pegwell Bay and Sandwich designated sites, with some potential interaction with the Goodwin Sands MCZ, the appraisal identified that any potential impacts could be mitigated through careful selection and trenchless installation techniques. The preferred solution was identified as a landfall in the northernmost part of the landfall area of search K1 connecting to the converter site option area A adjacent to the existing Richborough Energy Park via the green corridor as it offered the shortest connection of the three corridors. It also avoided areas of Flood Zone 2 and 3 and crossings of the River Stour or other significant waterbodies. Whilst this option would require the longest crossing of the designated sites of the three corridors options from Pegwell Bay, trenchless installation techniques could be used to avoid the most sensitive saltmarsh habitat within this designated area.

1.3.4.64. Of the central marine alignments, the revised alignment to the centre of the Sunk TSS approach channels and outside of Margate and Long Sands SAC was identified as being preferred.

Stakeholder Engagement

1.3.4.65. Following the identification of the preferred end-to-end solution, a round of stakeholder engagement was undertaken and as a result several amendments were made which are described in the following sections.

Suffolk

1.3.4.66. During engagement with stakeholders Suffolk County Council and East Suffolk District Council emphasised the importance of looking at opportunities to co-ordinate with the interconnector projects being proposed by National Grid Ventures (NGV) in the area. These are the proposed Nautilus Interconnector which undertook non-statutory consultation in September 2021 and the proposed EuroLink Interconnector. Both projects are at the pre Environmental Impact Assessment (EIA) Scoping stage. Both interconnector projects would require its own converter station, underground HVDC cables between a landfall and the converter station and an HVAC connection between the converter station and the network connection point.

1.3.4.67. The Project has explored the concept of co-location of converter stations, shared cable corridors and consolidation of landfalls and to look at potential challenges and options for consenting a coordinated approach. The coordinating exercise has been undertaken in consultation with NGV and the Project will continue to engage with NGV to consider opportunities for coordination as the proposal for Sea Link, Nautilus and EuroLink progress.

1.3.4.68. A backcheck and review of all potential converter station sites/option areas identified independently through both the NGV Nautilus and the Project routeing and siting studies was undertaken to check the feasibility of whether those sites could accommodate up to three co-located converter stations and to identify any additional sites that should be investigated/appraised further for co-location opportunities, again up to three converter stations.

1.3.4.69. Seven sites were identified as potentially offering opportunities for coordination and an appraisal was undertaken of these sites in accordance with the National Grid options appraisal methodology described above. Two sites were identified as preferred for the development of the Project converter station, as well as offering the potential to co-locate with the other proposed projects. The conclusions on the landfall option areas and terrestrial route corridors remained unchanged and as described in the sections above; however, the northern part of the landfall option area between Thorpeness and Sizewell, and the corresponding terrestrial corridors, were identified as offering limited opportunities for coordination. Further information on the development of the Project in Suffolk, and the options that are being scoped on in this Scoping Report, is set out in **Part 2, Chapter 1, Evolution of the Suffolk Onshore Scheme**.

Kent

1.3.4.70. Following engagement with other developers who have subsequently submitted planning applications for other energy developments within Richborough Energy Park, a backcheck and review was undertaken, as the proposed developments significantly constrained the Project being able to connect into the existing network at Richborough substation. As such an alternative connection directly onto the existing Richborough to Canterbury 400kV overhead line was identified. A backcheck and review was undertaken of the routeing and siting options in Kent based on this revised connection point and following this review the conclusions on the landfall area of search (K1), Pegwell bay green corridor and converter site option area A remained unchanged. Further information of the development of the Project in Kent is set out in **Part 3, Chapter 1, Evolution of the Kent Onshore Scheme**.

1.4 Description of the Project

1.4.1. Introduction

1.4.1.1. The Project involves the reinforcement of the electricity transmission network between the proposed Friston substation in Suffolk to the existing Richborough to Canterbury 400kV overhead line in Kent. This reinforcement would be between approximately 130km – 140km long, comprising of a HVDC link.

1.4.1.2. This chapter sets out the emerging description of the Project and has been split into the following sections, which describe:

- a description of the infrastructure proposed in Suffolk, Kent and in the marine environment;
- the construction methods that are proposed for installing the infrastructure associated with the Project;
- operation and maintenance requirements; and
- how the Project is proposed to be decommissioned if required.

1.4.2. Project Description

1.4.2.1. As described in Part 1, Chapter 1, for ease of presentation the Project has been split geographically into the Suffolk Onshore Scheme, Kent Onshore Scheme and the Offshore Scheme, the following sections describe the infrastructure proposed in each of these areas.

Suffolk Onshore Scheme

1.4.2.2. The Suffolk Onshore Scheme Scoping Boundary is illustrated on **Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary**. The Suffolk Onshore Scheme comprises of:

- an extension to the proposed Friston substation;
- underground HVAC connection from the proposed Friston substation to the proposed converter station site;
- a new converter station; and
- a HVDC underground cable from the new converter station to a landfall.

1.4.2.3. Within Suffolk there are two options being considered for the proposed converter station site, as well as an alternative landfall including the associated HVDC underground cable corridors. Whilst the infrastructure described above and below would be the same regardless of the option ultimately developed, the location of the infrastructure would vary depending on which option is selected. The Project Scoping Boundary (**Figure 1.1.1 Project Scoping Boundary**) and Suffolk Onshore Scheme Scoping Boundary (**Figure 1.1.2 Suffolk Onshore Scheme Scoping**

Boundary) encompass all the options being considered. The options are described in more detail in **Part 2, Chapter 1, Evolution of the Suffolk Onshore Scheme**.

Proposed Friston substation

1.4.2.4. The works at the proposed Friston substation comprise of:

- extension to the boundary of the site and boundary fencing;
- installation of one new Air-insulated switchgear (AIS) bay; and
- additional switch gear and bus bars to be located within the substation.

1.4.2.5. Consent to construct the proposed Friston substation has been secured by SPR as part of their East Anglia One North and Two Offshore Windfarm projects. If the proposed Friston substation does not come forward under that consent , the Project needs to secure consent to build the proposed Friston substation. Under this scenario the proposed infrastructure applied for by the Project would include:

- construction of a New AIS Substation to connect to the existing 400kV overhead lines;
- replacement of three overhead line towers and installation of one additional tower;
- creation of three new Cable Sealing End Compounds (CSEC); and
- construction of a substation access road.
- the proposed scope of assessment takes account of both scenarios.

HVAC connection

1.4.2.6. The HVAC connection from the proposed converter station to the proposed Friston substation would be via HVAC underground cables.

1.4.2.7. Table 1.4.1 provides a summary of the typical characteristics of the HVAC connection.

Table 1.4.1: Typical characteristics of HVAC underground cables – Suffolk

Characteristic	Description
Working width	60m Up to 100m where coordination is included
Permanent easement	Typically 25m
No of cables	Up to 12 cables
No of trenches	Up to 4
Trench width	Typically 1.5m
Trench depth	Typically, 1.5m
Minimum depth of cover	Agricultural land – typically 0.9 m (900 mm)

Characteristic	Description
	Watercourses – typically 2.0 m (2000 mm) Roads – typically 0.75 m (750 mm) Railways – typically 5 m (5000 mm) Footpaths and non-agricultural verges – typically 0.6 m (600 mm)
Backfill material	Soil and cement bound sand (CBS) or other thermally suitable material
Cable section length	Typical cable section length: 800-1200m
Above ground infrastructure	At each cable joint there will be an above ground kiosk, which will be used to monitor and occasionally test the underground cables.

1.4.2.8. As set out in **Part 1, Chapter 3, Main Alternatives Considered** opportunities are being explored for the coordination of the Project with the proposed interconnectors in the area. Whilst each project would be consented individually, each project may seek to consent the ability to install cable ducts for the other projects to minimise disturbance along the HVAC underground cable corridors where cables can be co-located. Therefore, the proposed scope of assessment presented within this Scoping Report has included for the installation of up to 12 ducts.

Converter station

1.4.2.9. The proposed converter station would comprise of the following general components:

- AC switchyard;
- converter transformers;
- valve halls;
- DC switchyard ;
- control building;
- spare parts building;
- permanent access road; and
- landscaping / landscape planting

1.4.2.10. The proposed Project converter station would be up to 10ha in area and the valve halls could be up to 30m in height. Opportunities to coordinate the proposed Project's converter station site with the proposed interconnector projects are being explored which could result in the proposed Project converter station site being located within a larger site complex.

Underground HVDC cables

1.4.2.11. The underground HVDC cables would be made of a copper core with cross linked polyethylene (XLPE) insulation.

1.4.2.12. Table 1.4.2 provides a summary of the typical characteristics of the HVDC underground cables.

Table 1.4.2: Typical characteristics of HVDC underground cables – Suffolk

Characteristic	Description
Working width	Typically 40m Up to 80m where coordination is included
Permanent easement	Typically 15m
No of cables	Up to 4
No of trenches	Up to 2
Trench width	Typically 1.5m
Trench depth	Typically 1.5m
Minimum depth of cover	Agricultural land – typically 0.9m (900 mm) Watercourses – typically 2.0m (2000 mm) Roads – typically 0.75m (750 mm) Railways – typically 5m (5000 mm) Footpaths and non-agricultural verges – typically 0.6m (600 mm)
Backfill material	Soil and cement bound sand (CBS) or other thermally suitable material
Cable section length	Typical cable section length: 800-1200m
Above ground infrastructure	None

1.4.2.13. As set out in **Part 1, Chapter 3, Main Alternatives Considered** opportunities are being explored for the coordination of the Project with the proposed interconnectors in the area. Whilst each project would be consented individually, each project may seek to consent the ability to install cable ducts for the other projects to minimise disturbance along the HVDC underground cable corridors where cables can be co-located. Therefore, the proposed scope of assessment presented within this Scoping Report has included for the installation of up to 12 ducts.

Kent Onshore Scheme

1.4.2.14. The Kent Onshore Scheme Scoping Boundary is illustrated on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary**. The Kent Onshore Scheme comprises of:

- HVAC connection, either by overhead line or underground cable, from the existing Richborough to Canterbury 400kV overhead line to a converter station site;
- a new converter station; and
- a HVDC underground cable from the new converter station to a landfall in Pegwell Bay.

HVAC connection

1.4.2.15. The HVAC connection from the proposed converter station to the existing Richborough to Canterbury 400kV overheard line would either be made via HVAC underground cables or overhead line. Both options have been included in this Scoping Report. The type of infrastructure proposed will be refined through discussions with stakeholders and baseline surveys.

1.4.2.16. Table 1.4.3 provides a summary of the typical characteristics of the HVAC connection either by underground cables or overhead line.

Table 1.4.3: Typical characteristics of a HVAC connection – Kent

Type	Characteristic	Description
HVAC underground cable	Working width	Typically 60m
	Permanent easement	Typically 25m
	No of cables	Up to 12 cables
	No of trenches	Up to 4
	Trench width	Typically 1.5m
	Trench depth	Typically 1.5m
	Minimum depth of cover	Agricultural land – typically 0.9 m (900 mm) Watercourses – typically 2.0 m (2000 mm) Roads – typically 0.75 m (750 mm) Railways – typically 5 m (5000 mm) Footpaths and non-agricultural verges – typically 0.6 m (600 mm)
	Backfill material	Soil and cement bound sand (CBS) or other thermally suitable material
	Cable section length	Typical cable section length: 800-1200m
	Above ground infrastructure	At each cable joint there will be an above ground kiosk, which will be used to monitor and occasionally test the underground cables. A Cable Sealing End Compound (CSEC) 116m x 63m would be required at the interface with the existing Richborough to Canterbury overhead line.
Overhead line	Pylon type	Steel lattice – typical low height

Type	Characteristic	Description
	Pylon height	Typically, 46m (standard height) and 45m (low height)
	Pylon footprint	Typically 10m^2 (standard)
	Conductor type	2 x 700mm^2 Araucaria (AAAC)/ 2x 620mm^2 Matthew or Similar
	Turn in/Tee in	Double turn in - This would require the installation of approximately ten new low height towers and the removal of three existing low height towers. The existing overhead line route would be diverted, and four new towers would be installed between this point and the proposed substation site within the converter station option area. Four further towers will then connect the substation with the existing line. Double Tee - This would require the installation of approximately nine new low height towers and the removal of two existing low height towers. The works would also require the installation of a cable sealing end compound (approx.132m x 93m) adjacent to the existing overhead line. The cable sealing end compound would be constructed to the north of the existing overhead line and new towers installed either side to connect back to the existing route, this would require the removal of two towers and the installation of two new towers to the west of the proposed compound and one new tower to the east. A new Tee overhead line would then connect the compound to the proposed substation within the converter site option area via a new set of 6 towers.

Converter station

1.4.2.17. The proposed converter station would comprise of the following general components:

- AC switchyard;
- converter transformers;
- valve halls;
- DC switchyard;
- control building;
- spare parts building;
- permanent access road; and

- landscaping/landscape planting.

1.4.2.18. The proposed converter station in Kent would be up to 10ha in area and the valve halls could be up to 30m in height.

Underground HVDC cables

1.4.2.19. The underground HVDC cables would be made of a copper core with cross linked polyethylene (XLPE) insulation.

1.4.2.20. Table 1.4.4 provides a summary of the typical characteristics of the HVDC underground cables.

Table 1.4.4: Typical characteristics of HVDC underground cables – Kent

Characteristic	Description
Working width	Typically 40m
Permanent easement	Typically 15m
No of cables	Up to 4
No of trenches	Up to 2
Trench width	1.5m
Trench depth	1.5m
Minimum depth of cover	Agricultural land – typically 0.9m (900 mm) Watercourses – typically 2.0m (2000 mm) Roads – typically 0.75m (750 mm) Railways – typically 5m (5000 mm) Footpaths and non-agricultural verges – typically 0.6m (600 mm)
Backfill material	Soil and cement bound sand (CBS) or other thermally suitable material
Cable section length	Typical cable section length: 800-1200m
Above ground infrastructure	None

Offshore Scheme

1.4.2.21. The Offshore Scheme Scoping Boundary is illustrated on **Figure 1.1.4 Offshore Scheme Scoping Boundary**.

1.4.2.22. The Offshore Scheme includes three distinct components, which are summarised below:

- Suffolk Landfall: This is the area where the cable route transitions between the marine and terrestrial environment in Suffolk. This is located between Aldeburgh

and Thorpeness with an alternative landfall currently also under consideration at Sizewell gap.

- Kent Landfall: this is the area where the cable route transitions between the marine and terrestrial environment in Kent, located in the Pegwell Bay area;
- Marine Cable Route: This is the cable route from landfalls in Suffolk up to Mean High Water Springs (MHWS) to the landfall in Kent up to MHWS, between approximately 120-128 km in length and located entirely within UK territorial waters.

1.4.2.23. The detailed configuration of the cable system is still under development at this stage and will be informed by further electrical design studies and through selection of the cable supplier and installation contractor. However, up to four cables could be installed within a maximum of two trenches, these will either be installed individually, if the final design is for two cables, or as bundled pairs.

1.4.3. Construction

1.4.3.1. This section describes how the infrastructure described above would typically be constructed and installed. An outline Code of Construction Practice (CoCP) has been produced and is included at **Appendix 1.4.A Outline Code of Construction Practice**. The technical chapters within Parts 2-4 have taken account of the control and management measures which are set out in the outline CoCP when proposing their scopes.

Construction Programme

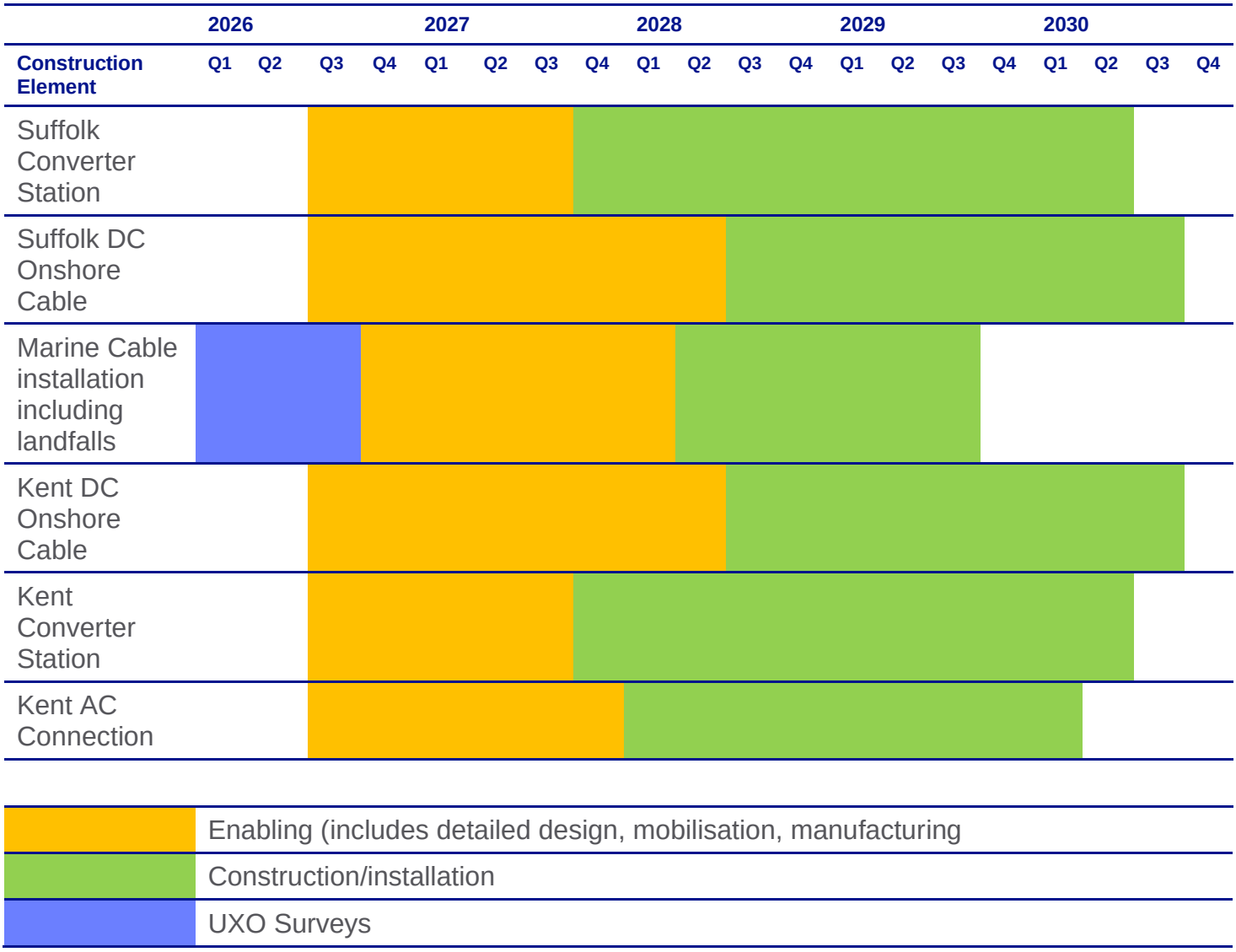
1.4.3.2. Subject to gaining development consent, construction works would be expected to start in 2026 and be completed by 2030. Certain advance works (such as archaeological trial trenching or protected species mitigation) may take place in advance of the main construction period.

1.4.3.3. The construction schedule will be developed as the Project progresses and will take account of seasonal constraints such as protected species breeding or hibernation seasons and reducing impacts associated with flood zones.

1.4.3.4. An indicative construction programme for the Project is presented in Table 1.4.5.

Table 1.4.5: Indicative construction programme

	2026				2027				2028				2029				2030			
Construction Element	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Friston substation bays																				
Suffolk AC Onshore Cable																				



Construction workforce

1.4.3.5. It is anticipated that the peak workforce would typically be within the range of 300 – 400 across the whole Project.

Enabling Works, Access and Site Preparation

1.4.3.5. In order for the elements of the Suffolk and Kent Onshore Schemes to be constructed, enabling works are required such as the establishment of temporary bellmouths and access tracks and drainage works. The enabling works are consistent across all elements of the Onshore Schemes and have therefore been described once below rather than for each individual element.

1.4.3.6. Bellmouths would be installed where new accesses or widening of existing accesses from the public highway are required. The installation of bellmouths may require realignment of existing underground services and the creation of visibility splays to create a line of sight for the safe use of the junction. Within the visibility splay vegetation would need to be cut to a specified height or visual obstacles removed depending on local conditions, the speed rating of the road and whether traffic

management was in place. Typically, a bellmouth would take approximately ten days to install.

1.4.3.7. Once a new or widened access point has been created the proposed access tracks and working areas would be fenced off using approximately 1.2m high stock proof fencing or equivalent. Gates or equivalent would be incorporated into the fencing to maintain access to farmland where possible and to maintain access to Public Rights of Way (PROWs) where possible. The topsoil would be stripped from the access tracks, cable working width and pylon working areas. The topsoil would be stored carefully to one side; typically, topsoil would be stored in bunds approximately 4m wide by 1.2m high. Temporary drainage would be installed as required, with silt fences installed where required. Topsoil stripping is typically undertaken at a rate of approximately 50m to 100m per day for access tracks, 20m-40m per day for the cable working width and three days per pylon construction area depending on the excavator chosen, soil type and location.

1.4.3.8. Temporary drainage would be required during construction, to deal with rainfall and water encountered during excavation where appropriate. Construction sustainable drainage systems (SuDS) would be used if necessary and where appropriate to do so.

1.4.3.9. The access tracks would typically be 4.5m wide, and up to 9m wide at passing places. They would either be stone laid on a geotextile, or formed of interlocking panels, depending on ground conditions and the duration and type of use. The installation of the access tracks would typically be undertaken at a rate of approximately 50m per day and a typical or low height pylon working area would take one week to install. The stone access tracks would be constructed using primary or secondary aggregates. On completion of construction the access tracks would be removed, and aggregates taken to an appropriate facility which could include recycling, or onward use, for example as secondary aggregate in the construction industry.

1.4.3.10. Culvert installations would be required for temporary access tracks to cross ditches and watercourses. The size of each culvert would vary depending on the dimensions of the crossing, and sensitivity and importance of the watercourse. To install a culvert, typically the banks are first strimmed at the proposed culvert location. Bunds would then be installed upstream and downstream to prevent water from entering the work site, water contained between the two bunds would be pumped downstream to clear the work area. To maintain the flow of the watercourse during installation of the culvert, a pump would be used to pump water from upstream to downstream, bypassing the work site. The bottom of the ditch or watercourse would be excavated to the size of the proposed foundation and, if required lined with a geotextile separation membrane overlain by bedding material. If required, a geotextile separation membrane would be placed on top of the ditch banks, prior to backfilling. The culvert would then be installed and backfilling commenced. The backfill would be laid to provide minimum cover over the culvert based on maximum loadings. A sandbag (or concrete bag) headwall and temporary fencing would subsequently be installed after which the bunds upstream and downstream would be removed and the over-pumping stopped to allow water to flow through the culvert. The installation of culverts would typically take approximately two days per culvert.

1.4.3.11. Should culverts not be suitable for a particular crossing, due to either the sensitivity of the watercourse or engineering requirements, a temporary bridge would be

installed. Temporary bridges would need to accommodate a 250t capacity mobile crane for overhead line construction and the temporary bridge support requirements would be assessed on a site-by-site basis. Most bridge crossings would be of a short span and flat deck construction; however, Bailey style bridges may also be used. All bridges would be a clear span and the foundations would be placed clear of the banks of the watercourse. Once the foundations were in place the temporary bridge would be fitted. Although the installation method is dependent on the type of bridge being installed, a typical bridge would be delivered in sections. Each bridge component would be assembled on site and lifted into position by crane. With the bridge in position, decking panels would be lifted and fixed into position. The installation of a typical short span, flat deck bridge would typically take approximately four to five days. If concrete, or piled bridge foundations were needed a further ten to 15 days per bridge would be required.

Proposed Friston Substation

1.4.3.12. A typical construction sequence for the construction of an extension would involve:

- survey and ground investigations;
- set up of site establishment and temporary facilities;
- temporary access to the substation(if required);
- earthworks;
- civil engineering works;
- building works;
- AIS extensions and bay installation(mechanical and electrical) ;
- outage works to connect to the existing substation;
- commissioning; and
- energisation

1.4.3.13. For the purposes of this Scoping Report, it has been assumed that the construction of the proposed substation extension would take between 9 and 12 months, which is typical for a substation extension.

1.4.3.14. Should the Project need to construct Friston substation, the construction sequence above would be the same up to the civil engineering works and would follow the following typical sequence thereafter:

- OHL reconfiguration works under outages including temporary towers/masts where required;
- building works;
- AIS busbars and bay installation (Mechanical and Electrical); ·
- outages to connect the new substation;
- commissioning; and
- energisation.

1.4.3.15. The construction of the proposed substation extension would take approximately 13 months or 18-24 months for the proposed substation if not already built, which is typical for a new build substation.

Converter Stations

1.4.3.16. A typical construction sequence for the construction of a converter station would include:

- survey and ground investigations;
- installation of bellmouths and creation of visibility splays (where required);
- access road construction;
- site establishment;
- earthworks;
- civil engineering works;
- building works;
- cable installation;
- provision/installation of permanent services;
- mechanical and electrical works;
- commissioning; and
- site reinstatement & landscape works.

1.4.3.17. The construction of the proposed converter stations would take between 27 months.

Overhead HVAC Connection (Kent Onshore Scheme only)

1.4.3.18. The construction of a section of overhead line would generally be sequenced as follows:

- survey and ground investigations;
- installation of bellmouths and creation of visibility splays;
- installation of stock proof fencing and gates or equivalent;
- topsoil stripping, temporary drainage installation where required;
- installation of access tracks (including culverts and bridges) and demarcated pylon working areas;
- installation of pylon foundations (pad and column, mini pile, tube pile or bespoke);
- layout of steelwork in preparation for erection;
- assembly (painting if required) and erection of steelwork;
- installation of protection prior to stringing of conductors, including scaffolding;
- installation of insulators

- establishment of machine sites for conductor stringing;
- conductor stringing;
- removal of construction equipment and reinstatement of ground and restoration of soils;
- removal of access tracks and bellmouths; and
- removal of construction compounds and reinstatement of ground.

1.4.3.19. The sections above provide a description of the enabling works and the following sections provide a description of the typical construction of an overhead line.

1.4.3.20. The foundations of the proposed pylons would either be pad and column, mini pile or tube pile (or bespoke if required). The selection of foundation type would depend upon the ground conditions encountered. The installation of pad foundations would take approximately three weeks for each pylon (four pads). Mini pile or tube pile foundations would typically take approximately four weeks for each pylon. For pylon locations where ground conditions do not easily permit the installation of pad and column, mini-pile or tube pile foundations, a bespoke foundation would be required. The design for each bespoke foundation would be subject to the ground conditions encountered.

1.4.3.21. The steel work would be brought to each pylon working area and laid out in pre-constructed sections or in numbered parts prior to assembly and erection of the pylon. Laying out of the steelwork would typically take approximately three days per pylon.

1.4.3.22. The numbered steelwork parts would be bolted together on the ground. The pylon would be assembled in sections beginning with each bottom leg section being fastened to the foundation steelwork. The pylon would be erected using a mobile crane which would lift the assembled steelwork into position. Linesmen would bolt together the pylon, climbing to each part to help guide the next section into place and fasten the bolts. The number of pylon sections required would vary according to the size of the pylon being built and the lifting capacity of the crane. To lift the topmost sections of the taller pylons a crane with a capacity of up to 250t may be required for the reach and weight of the sections to be positioned into place. A smaller capacity crane could be used to lift pylon sections up to the limit of reach of the crane considering load to be lifted. Though in this instance the larger capacity crane would still be required to complete the pylon.

1.4.3.23. Temporary scaffolding and nets would be installed during construction, where required, as a safety measure to protect assets such as roads, railways, a water treatment works and distribution network overhead lines (where not already moved underground) and could include hedgerows which would be crossed by the proposed overhead line. This is required to protect these features during conductor stringing from the accidental dropping of conductors and any of the associated equipment. The scaffolding would be transported to site using a lorry or tractor and trailer and assembled by hand at either side of the feature being protected. Typically, approximately 8m^2 of scaffolding would be installed per day.

1.4.3.24. The insulators would be fastened to the cross arms of the pylons, with running wheels hung from the end of the insulators to carry the pilot wires in preparation for installing the conductors. The installation of the insulators would typically take approximately two days per pylon.

1.4.3.25. The machine sites for conductor stringing (pulling positions) would be sited on interlocking panels laid directly onto the ground surface reducing disturbance to the underlying soils. The machine sites would be sited to avoid individual trees wherever possible. It would typically take approximately one day to establish the area to receive materials and equipment at each conductor stringing site.

1.4.3.26. The wires (conductors) of the overhead lines would be delivered to the machine sites for conductor stringing using lorries, or tractor and trailer. The conductors are wound onto large cable drums and, depending on the conductor type, each completed drum could weigh up to 8t, although larger and heavier drums are possible depending on the supplier and the length of conductor. A conductor pulling position would be established at each end of the section with a winching machine ('winch') and empty steel reels to accept pilot wires. At the other end of the section the full conductor drums would be arranged near the tensioning machine ('tensioner'). Light pilot wires would be laid at ground level (and over temporary scaffolding protecting assets such as roads and railway lines) along the length of the section between the pulling positions (note that it is not typically necessary to clear hedgerows specifically for this activity, though some vegetation management could be required). The pilot wires would be lifted and fed through running wheels on the cross arms of all the pylons in the section, and then fed around the winch at the pulling position. The light pilot wires are used to pull through heavier, stronger pilot wires which are in turn used to pull conductors through from their drums. The tensioning machine would keep the wires off the ground and prevent the conductors running freely when the winch pulls the pilot wire. When the conductor is fully 'run out', it would be fastened at its finished tension and height above ground by a linesman working from platforms on the pylons which are suspended beneath the conductors. Additional fittings such as spacers, if required, and vibration dampers, would be fitted to the conductors. To counter balance the out of balance loading at the tension pylons at the end of a conductor stringing section, it is normal to install temporary backstays or concrete blocks for safety of installation. The temporary backstays or concrete blocks are removed after conductor stringing is completed. Stringing the conductors would typically take approximately four weeks per conductor stringing section.

1.4.3.27. Once the overhead line is constructed, the access tracks and working areas at the pylon site would be removed and the ground reinstated by removing stone and trackways. Soils would be restored to their previous condition. Other surfaces would be reinstated and widened accesses would be restored to the condition they were in at the commencement of the works.

Underground HVAC and HVDC Cables

1.4.3.28. Whilst the number of cables and working width vary depending on whether the underground cable is HVAC or HVDC the sequence and method of construction and installation is the same and has therefore been described together below.

1.4.3.29. Installation of the proposed HVAC and HVDC cables will typically be undertaken within an 80m and 40m wide working width respectively. The exception to this is where environmental or engineering constraints mean additional land is required such as where the proposed cable routes cross obstacles such as roads or watercourses using a non-open cut technique. In these locations working width may be required to be larger to accommodate the larger construction equipment required to undertake installation works.

1.4.3.30. There are several cable installation methods which are summarised below:

- **Open cut methods**: These would typically be utilised in open agricultural land. This involves the excavation of a trench into which the cables could either be directly laid, or a duct could be laid through which cables will then be pulled through.
- **Trenchless methods**: These would typically be utilised where obstacles (watercourses, roads, railway lines, flood defences or other utilities) require to be crossed. This would involve the installation of ducts below the obstacle. The cables would then be pulled through the ducts.
- **Jointing methods**: These would be utilised where two adjacent sections of cable meet. This requires clean and dry conditions, so covers or cabins would be temporarily erected at joint bay locations. Due to the precise nature of engineering works undertaken, joint bays could remain open for several weeks to allow for trench and joint bay excavation, cable pulling, jointing and reinstatement.

1.4.3.31. Underground cable installation would typically be undertaken in the following sequence:

- survey and ground investigations;
- installation of bellmouths and creation of visibility splays;
- installation of stock proof fencing and gates or equivalent;
- topsoil stripping, temporary drainage installation where required;
- installation of access tracks (including culverts and bridges);
- trench dug utilising excavators (or by hand in areas of known buried utilities). Excavated sub-soil will be stockpiled separately from the top soil;
- installation of a base layer of cement bound sand (CBS) into the cable trench;
- cables laid in trench by ‘pulling’ from cable drum, with the aid of rollers placed within the trench.
- cables are bedded in with CBS;
- protective tiles are placed along the width of the trench;·
- trench is back filled with excavated sub-soil or thermally suitable material where required (to avoid the alteration of local environmental temperatures around the cables);
- warning tapes will be place 100mm above the protective tiles vertically in line with the cable poles; and
- topsoil will be reinstated to original soil profile and land re-seeded or released to the farmer for cultivation as it was found.

1.4.3.32. To install the proposed cable routes there would be a requirement to establish temporary construction facilities and areas for dewatering, temporary and permanent land drainage and temporary access roads which are described above under enabling works. The following section provides a typical description of the works required to construct and install underground cables.

1.4.3.33. Where ducting is proposed as an alternative to direct lay, the ducts would need bedding in with the CBS and the trench backfilled. Joint bays would be excavated along the route (800m – 1200m, dependant on detailed design) which would act as pulling locations for the cables and then the cables would be installed in the ducts by pulling from the cable drum between joint bays.

1.4.3.34. Cable installation does not need to be undertaken sequentially along the whole route; as a result, installation could occur in multiple sections of the length of the proposed cable route in parallel. This would limit the extent and duration of construction activity at any given location including the length of time that land remains disturbed for. The exact programme will depend on several factors including the underlying ground conditions and installation methods used.

General trenching

1.4.3.35. Soft, collapsible soils such as sand based soils would require either temporary trench boarding (direct buried) or trench boxing (ducted) to facilitate the containment construction. In firmer soils, 'battered' excavations become more acceptable for both configurations.

1.4.3.36. Lengths of 'open' trench would be around 2km for normal direct buried configuration whereas a ducted system can be backfilled on a rolling basis and therefore there is significantly less open trench at any one time (approximately 200-300m).

1.4.3.37. Construction of an open trench in good soils can progress at 100-200m+ per day, dropping to 30m per day or less in challenging areas or urban environments.

Cable installation

1.4.3.38. Cable laying durations between the main two configurations can vary significantly and use substantially different numbers of operatives to install. With an open trench, direct buried configuration, a significant amount of time is required to set up the system to install – these include flat rollers for straight runs, box rollers for corners and careful calculation of pull forces on the cable. A section can usually be installed (2 cables) in around 4 days including moving of rollers and resetting. This is achievable provided the infrastructure is in place (drum laydown and pulling points).

1.4.3.39. For a ducted system, which may not always be viable due to system constraints, provided that any moves away from the horizontal and vertical planes (bends) are within acceptable parameters, installation can be achieved much quicker – typically two days for a section (2 cables) is achievable provided the infrastructure is in place (drum laydown and pulling points).

1.4.3.40. Typically, the construction of a 1km length of cable would take approximately 4 to 9 months dependent on the complexity of the installation. This timeframe includes the pre-construction site set up as well as the reinstatement of the land following completion of installation. This assumes that the season after cable burial is completed is suitable for undertaking reinstatement. For the purposes of this Scoping Report it has been assumed that installation of the proposed cable routes would take between one and two years.

1.4.3.41. Where a constraint is required to be crossed using a trenchless method, there are a number of methods that can be employed depending on the ground conditions and detailed design. A typical description of each is provided below.

Pipe Jacking (Auger Bore)

1.4.3.42. A hydraulic ram or jack and associated boring equipment would be located in a launch pit. The size and depth of the launch pit is dependent upon the depth of the cable (deeper cable requires a deeper and larger pit). A tunnel is then created by progressively inserting clay pipes behind the drill head (driven by the hydraulic jack), with material returned to the launch site (typically via a screw-shaped shaft). One tunnel is required for each cable. The direction of the tunnel is determined by the set-up equipment in the launch pit and it is continuously surveyed. Drilling continues to the reception pit (also constructed prior to drilling, to a depth relative to the depth of cable). The launch and reception pits may require sheet piling and further works to ensure a dry and stable working environment. Following completion of the works, the launch and reception would be backfilled on completion of the crossing and the area reinstated. Topsoil will be reinstated to original soil profile and land re-seeded or released to the farmer for cultivation as it was found.

Horizontal directional drilling

1.4.3.43. A Horizontal Directional Drilling (HDD) rig and associated equipment would be set up at the launch site. This includes electricity supply (portable generator), drill mud filter, control unit and welfare facilities. Drilling utilises a drill bit, drill head and drilling fluid. Drilling fluid (typically bentonite slurry) assists the drilling process, as well as lubricating and cooling the drill head. A pilot hole is typically drilled first, followed by a series of increasing size bores until the final drill diameter that is required is achieved. Location and direction of drilling can be monitored using the HDD locating system to ensure drilling follows the pre-planned path. Ducting is then pulled back through the drilled hole towards the HDD rig. One cable duct is required for each cable. It is likely that spare ducts will be installed to allow for ease of replacement should any faults be identified in future. Ducts can be capped to ensure no attenuation of water or sediment or prevent use by animals if left prior to cable pulling. The launch site would be reinstated on completion. Topsoil will be reinstated to original soil profile and land re-seeded or released to the farmer for cultivation as it was found.

Micro boring (micro-tunnelling)

1.4.3.44. This method is similar to pipe jacking, however, it utilises a steerable tunnel boring machine (TBM) to tunnel between a launch pit and a reception pit. Lengths of pipe are inserted behind the TBM as it progresses, and a hydraulic jack is used to drive the pipe forward. Water or mud mix is utilised to fluidise excavated material which is pumped to the launch pit. Cable ducting is pulled through the pipe tunnel following tunnelling through to the reception pit. The launch pit and reception pit require concrete bases to ensure a clean working environment and prevent water entering the working area. The launch and reception pits also require a concrete back wall for the hydraulic jack to work against. The launch and reception pits would be backfilled on completion of the crossing and the area reinstated. Topsoil will be reinstated to original soil profile and land re-seeded or released to the farmer for cultivation as it was found.

Landfalls

1.4.3.45. The cable landfalls form the transition between the underground HVDC cable and the marine HVDC cable. The underground HVDC cable and marine HVDC cables

are jointed together at transition joint bays (TJB) located as close to the coast as possible whilst taking account of any environmental or technical constraints at a particular landfall.

1.4.3.46. At the time of writing, a decision between a trenched or trenchless technique at all landfalls has not yet been confirmed, as the feasibility of the trenchless techniques needs to be informed by further ground investigation surveys. Consequently, this Scoping Report considers basic design principles for both options at this stage.

1.4.3.47. There are several techniques which can be used to make a cable landfall, these are described below:

Trenched

1.4.3.48. This installation method comprises the excavation of trenches across the intertidal zone perpendicular to the water line using conventional land-based excavators, whilst the tide is low and potentially supported by barge mounted excavators below MLWS. This would seek to form a trench of approximately 3m wide and between 1m and 5m deep, subject to sediment conditions. Access to the installation site would generally be gained terrestrially but could be gained from the marine side depending on local conditions. Following the formation of the trench, the cables will either be pulled directly ashore using rollers, or else ducts and messenger wires would be installed to facilitate cable pull in at a later date, subject to detailed engineering.

1.4.3.49. Up to four open cut trenches would be excavated through the intertidal zone, once the cable or ducts are installed these trenches will be backfilled.

1.4.3.50. Any potential requirement for a temporary works structure to facilitate this landfall construction technique is still to be confirmed. This is typically a cofferdam or sheet-piled structure that can be used within the marine environment to create a safe, dry working area. If a temporary works structure is required, it is expected that vibratory piling would be adopted for installation of sheet walls, with percussive piling only used where required to achieve design depth. Additional mitigation would be confirmed, and secured where required, via the appropriate regulatory controls as part of the application for relevant consents.

Trenchless – horizontal directional drill (HDD)

1.4.3.51. An HDD compound, typically 75m x 100m, would be established at the HDD launch site and an HDD rig and associated equipment set up within the compound. This includes electricity supply (portable generator), drill mud filter, control unit and welfare facilities. Drilling utilises drill bit, drill head and drilling fluid. Drilling fluid (typically bentonite slurry) assists the drilling process, as well as lubricating and cooling the drill head. A pilot hole is typically drilled first, followed by a series of increasing size bores until the final drill diameter that is required is achieved. Location and direction of drilling can be monitored using the HDD locating system to ensure drilling follows the pre-planned path. Ducting is then pulled back through the drilled hole towards the HDD rig, this is supported by a jackup rig/barge and dive spread in the marine environment. One cable duct is required for each cable. It is likely that spare ducts will be installed to allow for ease of replacement should any faults be identified in the future. Ducts can be capped to ensure no attenuation of water or sediment or prevent use by animals if left prior to cable pulling. The launch site compound would be reinstated on completion. Topsoil will be reinstated to

original soil profile and land re-seeded or released to the farmer for cultivation as it was found.

Trenchless - micro tunnel

1.4.3.52. Micro tunnelling uses a large micro tunnel boring machine (MTBM) combined with pipe sections being jacked into position as the tunnel is lengthened. It requires that the MTBM is removed from the distal end of the pipeline after installation. The diameter of the micro tunnel can be large enough for more than one cable to be installed within the tunnel. The technique is often used in areas of poor geotechnical ground conditions for construction. This would be supported by a jackup rig and dive spread to enable the recovery of the MTBM.

Trenchless - direct pipe

1.4.3.53. A combination of micro tunnel and HDD techniques where a small tunnelling machine is used to create a larger diameter bore through which a pipe is installed directly behind the machine as it bores out the tunnel. It is a single-pass technique thus reducing the need for a series of increasing size bores to reach the final drill diameter. This may allow more than one cable to be installed in a single duct. This methodology may reduce the needs for drilling fluids and is typically used in soft sediments, although it is being developed for wider application in other ground conditions.

Marine Cable

1.4.3.54. Installation of marine HVDC cable installation typically includes the following activities:

- ground preparation and cable laying activities within the intertidal zone at the landfall sites;
- pre-lay seabed preparation activities along the route below MLWS (including route clearance, pre-lay grapnel run and any pre-sweeping);
- construction of cable crossings;
- installation and burial of the subsea cables, and
- placement of external cable protection (as required).

Marine pre-installation activities

Pre-lay surveys

1.4.3.55. Multiple seabed surveys will be carried out prior to installation to reconfirm existing geotechnical and geophysical information about seabed conditions, bathymetry and other seabed features. These may include Multi-Beam Echo Sounder (MBES); Side-Scan Sonar (SSS), Sub-Bottom Profiler (SBP), Magnetometer, cable trackers etc. In addition, visual inspections may also be undertaken using a Remotely Operated Vehicle (ROV) or other visual inspection system. Pre-lay surveys may also include additional specialist studies, including geotechnical, benthic and unexploded ordnance (UXO) investigations.

Cable route clearance

1.4.3.56. Route preparation is expected to involve clearance activities to ensure the installation corridor is clear of boulders, dropped object debris and other obstacles. Removal of Out-Of-Service (OOS) cables may be required, along with boulder/debris clearance using either ploughs or ROVs and grabs. A pre-lay grapnel run (PLGR) is also expected to be completed, involving towing a heavy grapnel with a series of specially designed hooks along the centre line of the route, to confirm the installation route is clear of obstacles. Cable route clearance using the methods described here will seek to avoid areas of known sensitive habitats and/or features and will not be used near live third party assets.

Pre-sweeping (if required)

1.4.3.57. Pre-sweeping may be required if areas of large sand waves are identified within the cable corridor, during the marine surveys, which cannot be avoided. Pre-sweeping may be performed using a variety of tools including dredgers, ploughs, mass flow excavators (MFE) or controlled flow excavators (CFEs).

Unexploded ordinance

1.4.3.58. A high-level desktop study risk assessment of UXO has been undertaken to inform the geophysical and geotechnical seabed survey undertaken in Autumn 2021. The UXO risk was assessed as High and Medium risk throughout the Scoping Corridor. As part of the seabed survey, single source magnetic data was collected to provide an overview of the distribution of magnetic anomalies and to cross-check with the desk-based risk assessment, where areas of known high UXO densities have been identified.

1.4.3.59. A detailed UXO survey; including use of multiple gradiometers, ROV inspections combined with high resolution MBES, is planned to be carried out to better detect and define pUXOs and to enable rerouting away from targets throughout the route. Micro-routeing around isolated targets will be undertaken, with a closest point of approach to the target, based on the eventual installation methodology.

1.4.3.60. Whilst avoidance will be the preferred approach, if UXO clearance is necessary, the activity will be undertaken in accordance with approved industry practices for removal and disposal / waste management of ordnance. This may include detonating UXO in place or lifting and relocating to a designated storage or demolition area, for safe disposal.

Cable installation

1.4.3.61. The detailed configuration of the cable system is still under development at this stage and will be informed by further electrical design studies and through selection of the cable supplier and installation contractor. However, up to four cables could be installed within a maximum of two trenches, these will either be installed individually if final design is for two cables or as bundled pairs.

1.4.3.62. In the case that the cables are laid separately, the separation between the cables is typically around 30m, although this can be up to 60m depending on water depth. If there are two bundled pairs then higher separation distances would be required, potentially up to 200m.

1.4.3.63. Cable installation operations will be performed on a 24-hour basis in order to minimise installation time and therefore the duration of any disruption to sensitive environmental receptors, as well as navigation and other sea users. 24-hour operations will also maximise available weather opportunities, as well as vessel and equipment availability.

1.4.3.64. Cable installation will require a Cable Lay Vessel (CLV) and various support vessels, including survey vessels, trenching support vessels, guard vessels and potentially anchor handling vessels. Dredging vessels and/or other specialist vessels may also be required for limited periods, in response to localised conditions along the cable corridor. A Cable Lay Barge (CLB) and Jack-Up platform may also be required for shallow water operations.

1.4.3.65. The preferred method of protection for marine cables is by burial. The burial conditions for the cables will be assessed within the Cable Burial Risk Assessment (CBRA) to optimise burial along the route between the landfalls, typically up to a depth of 1-2m or deeper in areas of greater risk. The route will be optimised to maximise the distance over which the required cable burial depth can be achieved, to limit the need for external protection. This is achieved by varying the depth of burial of the cables, selecting appropriate burial tools, and remedial trenching where unexpected soil conditions are encountered. It is not known at this stage what type of equipment will be required to install the cables as it will depend on the seabed conditions present within the cable corridor.

1.4.3.66. There are two main cable installation techniques, cable lay and post lay burial (PLB) or simultaneous cable lay and burial (SLB) these are described below followed by the different methods of burial:

Cable lay and post lay burial

1.4.3.67. In cable lay and PLB the cable is laid on the surface of the seabed before subsequently being buried. The subsequent burial is almost always carried out by a second vessel following on from the CLV. This enables a wide variety of burial techniques to be used.

1.4.3.68. The standard post lay burial methods are listed below, followed by an outline description. This is not an exhaustive list and more specialised techniques may be required, such as a barge mounted excavator in the nearshore areas.

- ploughs;
- jet trenching;
- mechanical trenching (rock wheel or chain cutters);
- Mass Flow Excavator (MFE); or
- Controlled Flow Excavator (CFE)

Ploughs

1.4.3.69. Ploughs are large machines towed behind a vessel that create a trench into which the cable is laid. This trench is then normally left to backfill naturally, but can sometimes be backfilled manually. Ploughs may be used for simultaneous lay and burial or for pre-lay trenching. Ploughs are best suited for relatively soft sediments.

Jet trenching

1.4.3.70. Jet trenchers use high pressure water jets to fluidise the seabed and bury the cable, they are most effective in soft sediments, non-cohesive and normally consolidated sediments.

Mechanical trenching (rock wheel or chain cutters)

1.4.3.71. Mechanical trenchers use force to cut a trench in the seabed which the cable is then laid in. This technique is generally used in harder sediments. The trench then backfills through natural processes or backfill can be directed into the trench by mechanical adaptors on the rear of the trencher body.

MFE and CFE

1.4.3.72. MFE and CFE use relatively low pressure but high volumes of seawater to excavate relatively large volumes of seabed (compared to jet trenching). Some models allow both burial and backfill of a cable nearly simultaneously. They are best suited for soft and loose sediments but have significantly less control on sediment spoil dispersion than the other PLB methods.

Simultaneous cable lay and burial

1.4.3.73. Simultaneous lay and burial (SLB) is where the cable is plough buried at the same time as it is laid.

External cable protection

1.4.3.74. Where burial cannot be achieved, external cable protection may be required where the soil or rock conditions are too hard to achieve effective burial, or third-party assets cross the route. Other locations may require additional protection to mitigate the effects of mobile sediments, such as at HDD exit points and to mitigate potential coastal erosion.

1.4.3.75. Options for external cable protection include:

- Rock Placement (planned berms) – installation of a pre-designed berm over the installed cables, Planned berms may comprise different grades of rock to provide a stable structure. Rock Placement (remedial berms) – installation of discontinuous single-grade rock berm in order to enhance the external protection due to insufficient achieved burial depth. Targeted placement will be undertaken using Fall Pipe ROV (FPROV) rock emplacement vessel, where water depths allow. Where water depths do not allow the use of an FPROV vessel, other methods may be used which are selected to minimise environmental disturbance, such as side dumping or open hopper dumping.
- Concrete Mattresses – frequently used to protect cables where external risks are lower, and as part of crossing constructions. The flexibility of the mattresses allows them to follow the contours of the seabed or any exposed subsea asset. Several types of mattress are available for deployment in different environments, and appropriate types will be used for the local conditions.
- Rock / gravel / sand / grout bags – a range of pre-filled bags of different sediment grades, or grout, which can be used to provide local protection, or structural support, in areas where access is restricted for conventional protection systems.

- Protection Sleeves / Cast-Iron Shells – additional, flexible, protection systems for the cable, which are installed around the cable during installation and/or post installation. Protective sleeves usually comprise of polyurethane with steel banding.

1.4.3.76. The requirement for external cable protection will be clarified following the CBRA works and as more survey data is received. In addition, the design development will further progress as an iterative process both pre- and post-consent, including during the detailed engineering, by the installation Contractor.

1.4.3.77. Where external protection is or may be required, details of the type, quantity and nature of each protection measure will be provided to inform the detailed environmental assessment, including estimated locations, volumes/numbers, tonnages and likely grades of rock or other materials to be used. This will include both planned and potential remedial requirements and will be provided to characterise the nature and extent of cable protection which may be installed within UK territorial waters.

Cable and pipeline crossings

1.4.3.78. The Offshore Scheme would enter into crossing agreements and/or proximity agreements with the third-party asset owners of any subsea infrastructure installed and/or planned along the corridor. Power, telecom and fibre optic cables will be crossed by the HVDC cables; these cables will be both In-Service (IS) and OOS. Crossings of IS cables will be undertaken using agreed crossing designs in accordance with the crossing agreements with the third-party owners and will ensure separation between the assets and protection over the installed HVDC cables. The separation and protection structures may comprise concrete mattresses, protective sleeves on the HVDC cables and/or pre- and post-lay rock placement.

1.4.3.79. OOS cables may be cleared prior to installation of the cables, thus removing the need for a crossing structure.

1.4.3.80. No pipelines currently cross the Offshore Scheme Scoping Boundary. However, the same principal would be applied to any future pipelines that may cross the HVDC cables, where the pipeline owner will be responsible for crossing installation.

Vessel activities

1.4.3.81. A range of different vessels are expected to be used during cable installation. These are expected to include:

- Cable Lay Vessel (CLV): The CLV will be a specialist ship designed to carry and handle long lengths of heavy power cables, the CLV will be equipped with Dynamic Position (DP) system. The shallowest depth in which the cable ship can operate will depend on the vessel used, however at this stage it has been assumed that larger vessels such as a CLV would not be expected inshore of the 10 m depth contour;
- Cable Burial Vessel: a dynamically positioned ship carrying post-lay burial equipment, this might include jet or mechanical trenchers or possibly MFE equipment. This is typically supported by an ROV to monitor the cable during the protection work.

- Guard vessel(s): Guard vessels may be required to accompany the CLV, particularly in areas of high-density other users/shipping and potentially other specialist vessels required to install required cable protection systems (other than rock placement);
- Support vessel(s): These may include survey vessels, for pre- during- and post-installation surveys, anchor handler/offshore support vessels, dredgers etc. as required;
- Rock placement vessel: A rock placement vessel features a large hopper to transport rock and a mechanism for deployment of the rock at the placement location where target burial depth cannot be achieved. For the purposes of this Scoping Report it has been assumed that a flexible fall pipe mechanism for rock placement will be used; and
- Cable Lay Barge (CLB): A CLB may be required at landfall, in the event that vessel operation is required in water depths less than 10 m. A CLB may be anticipated to require a four to six-point anchor mooring system covering an area of between 500 m and 1,000 m radius from the vessel to allow the barge to hold station whilst the installation work is undertaken.

Post installation survey and reporting

1.4.3.82. Following the various phases of route preparation and cable installation, there will be an as-built survey of the route. This will be combined with the installation contractors' records to produce an as built report. The report will include all data relating to the protection status of the installed cables, between the TJBs, at each landfall and the marine corridor: i.e. as-built drawings, engineering alignment sheets, imagery and video data, which together will provide a record of the safe installation of the cable. In effect this will be the baseline (reference) report for future OMR (Operations, Maintenance and Repair) activities, as well as input into the eventual decommissioning operations.

1.4.3.83. Central to the report will be the as-trenched and as-installed geophysical reports from the post-burial surveys, rock emplacement campaigns and as-built trenchless solution construction drawings at the landfalls. Together, the reports will provide the Depth of Lowering (depth the cable is found below the mean seabed level) and Depth of Cover (DOC) (depth of material above the buried cable – may be less than Depth of Lowering (DOL)) achieved immediately after installation, as well as the location of the cables.

1.4.3.84. Subsequent routine inspection surveys will be compared to the baseline report to assess any changes to the DOL and DOC of the cables and inform the engineering of any remediation or repair activities during the lifetime of the cables.

1.4.3.85. The 'as-built' Route Position List (RPL) data will be supplied to relevant stakeholders, third-party asset owners and the United Kingdom Hydrographic Office (UKHO), for inclusion in the relevant Charts. Other national hydrographic agencies may also be supplied with the data, as per best practice (such as NOOA in the US, or SHOM in France).

1.4.4. Operation

Proposed Friston Substation

1.4.4.1. Once the Project is operational the proposed Friston substation would be operated in the same way that National Grid operates all other substations on the network.

Converter Stations

1.4.4.2. Following a period of commissioning and testing the proposed converter stations would operate continuously throughout the year. Whether each end is (converting DC to AC) or (converting AC to DC) would depend on supply and demand on the transmission system.

1.4.4.3. The proposed converter station would be operated by a small team based on site. In general, a minimum of two operators would be present at all times. During normal operation there would be approximately six personnel on site, divided between three shifts over a 24-hour period.

Overhead HVAC Connection (Kent Onshore Scheme only)

1.4.4.4. During operation the overhead line would transmit electricity from the proposed Kent converter station onto the existing network in the South East of England.

Underground HVAC and HVDC Cables

1.4.4.5. During operation the HVDC link would transmit electricity from the proposed Friston substation to the existing network in Kent and vice versa depending on the supply and demand at the time.

Marine Cable

1.4.4.6. During operation the HVDC link would transmit electricity from the proposed Friston substation to the existing network in Kent and vice versa depending on the supply and demand at the time.

1.4.5. Maintenance

Proposed Friston Substation

1.4.5.1. Maintenance would be undertaken on an ongoing basis with individual equipment subject to a three-year maintenance cycle. Visual checks would be undertaken on a monthly inspection visit to the site.

1.4.5.2. If the substation required refurbishment or replacement works, vehicles would be used to carry workers in and out of site and suitable vehicles would be used to bring new materials and equipment to site and remove old equipment.

Converter Stations

1.4.5.3. During maintenance (planned and unplanned) the number of personnel present on site would increase with the number of staff proportionate to the nature of the maintenance works being undertaken.

1.4.5.4. If the converter stations required refurbishment or replacement works, vehicles would be used to carry workers in and out of site and suitable vehicles would be used to bring new materials and equipment to site and remove old equipment.

Overhead HVAC Connection (Kent Onshore Scheme only)

1.4.5.5. The overhead line would be subject to an annual inspection from the ground or by helicopter. The inspection would identify if there are any visible faults or signs of wear and would also indicate if changes in plant or tree growth or development had occurred that could risk infringing safety clearances. Inspections would provide input as to when refurbishment was required.

1.4.5.6. The overhead line could support telecommunication equipment such as small mobile telephone antennae and would contain optical fibres within the earthwire. If this were to be the case, independent companies would require access for maintenance purposes using pickup trucks and vans. Access for the optical fibres will usually be at the joint box positions located just above the anticlimbing devices on certain pylons. Position and frequency of joint boxes is subject to design by the successful contractor.

1.4.5.7. Access for vegetation management, telecommunications and fibre optic maintenance would be along routes agreed with the landowners and may require interlocking track mat panels.

1.4.5.8. The overhead line would be made up of a variety of materials, including concrete and steel for the foundations, steelwork for the pylon and aluminium for the conductors. All these materials have an expected lifespan, which would vary depending on how the overhead line was used and where it is located. Typically, pylon steelwork and foundations have a life expectancy of approximately 80 years, the conductors have a life expectancy of approximately 40 to 60 years and the insulators and fittings have a life expectancy of approximately 25 to 40 years. The lifespan of the overhead line may be longer than the anticipated 80 years, depending on its condition, the environment to which it is exposed, refurbishments and transmission network requirements.

1.4.5.9. Minor repairs or modifications may be required from time to time for local earthwire damage, addition of jumper weights, local conductor damage, broken insulator units, damaged or broken spacers, broken or damaged vibration dampers, damaged or broken anti climbing guards. Minor repairs would be programmed locally by a maintenance team using pickup trucks and vans to access site along routes agreed with landowners. Access may require interlocking track mat panels.

1.4.5.10. Refurbishment work would be undertaken typically on one side of the pylon at a time, so that the other side could be kept ‘live’ or in use.

1.4.5.11. Refurbishment work could involve:

- the replacement of conductors and earth wires;
- the replacement of insulators and steelwork that holds the
- conductors and insulators in place, insulator fittings and
- conductor fittings;
- painting or replacement of the pylon steelwork and

- replacement of telecommunication equipment (by separate companies).

1.4.5.12. During refurbishment there would be activity along the overhead line, especially at tension pylons when a new conductor is installed and an old conductor taken down.

1.4.5.13. Vans would be used to carry workers in and out of the site and trucks would be used to bring new materials and equipment to site and remove old equipment. Temporary works including access tracks and scaffolding to protect roads may be required as for construction.

Underground HVAC and HVDC Cables

1.4.5.14. Maintenance activity along the proposed cable routes would generally be limited to non-intrusive inspections and cable repairs. The latter would only be required in the unlikely event of a cable fault. Where a fault does occur the location of the fault would be identified and the faulty section of cable replaced. The activities involved in cable repair would be similar to those outlined above for installation albeit over a much smaller area and scale.

Marine Cable

1.4.5.15. Maintenance activity along the marine cable route would generally be limited to non-intrusive inspections and cable repairs.

1.4.5.16. Periodic surveys would be undertaken to assess the protection levels afforded the cable, particularly important in areas of mobile seabed. The survey results would be used to inform the necessity of any remedial works to maintain depth of cover to the cables. A schedule of surveys would be prepared to monitor the stability of the seabed after installation and identify any critical areas where the seabed does not stabilise, necessitating additional monitoring and a maintenance/mitigation plan.

1.4.5.17. Cable repair would only be required in the unlikely event of a cable fault. Where a fault does occur, the location of the fault would be identified and the faulty section of cable replaced. The activities involved in cable repair would be similar to those outlined above for installation albeit over a much smaller area and scale.

1.4.5.18. In areas of mobile seabed periodic surveys may identify areas where the cable has become exposed or is in free span, in these areas remedial burial may be needed using similar techniques to those described above for installation, particularly jetting and rock placement, albeit over a much smaller section.

1.4.6. Decommissioning

Proposed Friston Substation

1.4.6.1. The lifespan of substation equipment is approximately 40 years. If the elements of the proposed Friston substation, that form part the Project were no longer required, the equipment would be safely disconnected from the transmission system and carefully dismantled. Much of the material would be taken for recycling. Similar methods and equipment would be required for dismantling as for construction.

Converter Stations

1.4.6.2. The anticipated operational life of the proposed converter station is approximately 40 years. It is likely that during this period refurbishment and plant replacement would extend the life of the converter station rather than decommissioning. In the event that the Project ceases operation the proposed converter stations would be decommissioned. The main components would be dismantled and removed for recycling wherever possible. Where this is not possible disposal would be undertaken in accordance with the relevant waste disposal regulations at the time of decommissioning. It is anticipated that the permanent access road would be left in-situ.

Overhead HVAC Connection (Kent Onshore Scheme Only)

1.4.6.3. If the Project is required to be decommissioned the section of overhead line between the proposed converter station site and the existing Richborough to Canterbury 400kV overhead line would be removed. Fittings such as dampers and spacers would be removed from the conductors. The conductors would be cut into manageable lengths or would be winched onto drums in a reverse process to that described for construction. the fittings would be removed from the pylons and lowered to the ground.

1.4.6.4. Each pylon would most likely be dismantled by crane, with sections cut and lowered to the ground for further dismantling and removal from site. Depending on the access and space available, it may be possible to cut the pylon legs and then pull the pylon to the ground using a tractor. The pylon could be cut into sections on the ground. Unless there was a compelling need for removal of all the foundations, these would be removed to approximately 1.5m deep, sufficient for safe agricultural use of the land and subsoil and topsoil reinstated.

Underground HVAC and HVDC Cables

1.4.6.5. If the Project is required to be decommissioned, the proposed underground cables would be decommissioned. Dependent on specific requirements the redundant cables could either be left in-situ, or all or parts of the cable could be removed for recycling. Where this is not possible, removed cables would be disposed of in accordance with the relevant waste disposal regulations at the time of decommissioning.

Marine Cable

1.4.6.6. If the Project is required to be decommissioned, the proposed marine cables would be decommissioned. Dependent on the specific requirements, the redundant cables would either be left in-situ, or all or parts of the cables could be removed. An initial decommissioning plan would be written once the final route and installation methodology is chosen. This would be in accordance with all applicable legislation and best practice guidance at the time of compilation, however as decommissioning of the cable would be many decades into the future, regulatory requirements and industry best practice will change. The decommissioning plan would be updated throughout the life of the project in preparation for decommissioning occurring.

1.5 EIA Approach and Methodology

1.5.1. Introduction

1.5.1.1. EIA is the process of compiling, evaluating and presenting information about the likely significant environmental effects, both adverse and beneficial, of a proposed project. The assessment is designed to help produce an environmentally sympathetic project and to provide decision makers and statutory consultees with the environmental information they require during determination of an application for consent. The early detection of likely significant adverse environmental effects enables appropriate mitigation (i.e., measures to avoid, reduce or offset likely significant adverse effects) to be identified and incorporated into the design of a project, or commitments to be made, for example to environmentally sensitive construction methods and practices. The approach is iterative and involves close working between the undertaker, the EIA team and the designers.

1.5.1.2. Three main EIA documents are produced as part of the DCO pre-application process:

- **EIA Scoping Report**: The Scoping Report sets out the likely significant effects from a project (scope). It also presents the data collected and the proposed assessment methodology and approach that would be used during the EIA. The Scoping Report is issued by PINS to consultees for comment on the scope and methodology proposed informing the scoping opinion.
- **Preliminary Environmental Information Report (PEIR):** The PEI Report sets out the information that 'is reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development' (Planning Inspectorate, 2020). The PEIR is used by consultees to inform their consultation responses during the Statutory Consultation and it is issued at the same time the Statutory Consultation launches; and
- **Environmental Statement (ES):** The ES presents the results of the EIA undertaken for the project. It identifies the likely significant effects that would result if the project was implemented, and any mitigation proposed to reduce those significant effects. The ES is submitted as part of the application for development consent and is taken into account during the decision-making process.

1.5.2. General Approach

1.5.2.1. This chapter describes the methodology which will be used to assess the potential effects on the natural, human and built environment because of the project. In accordance with the EIA Regulations 2017, the assessments undertaken will evaluate and identify the likely significant environmental effects arising from the proposed construction and operational phases of the project. This information will be presented in an ES.

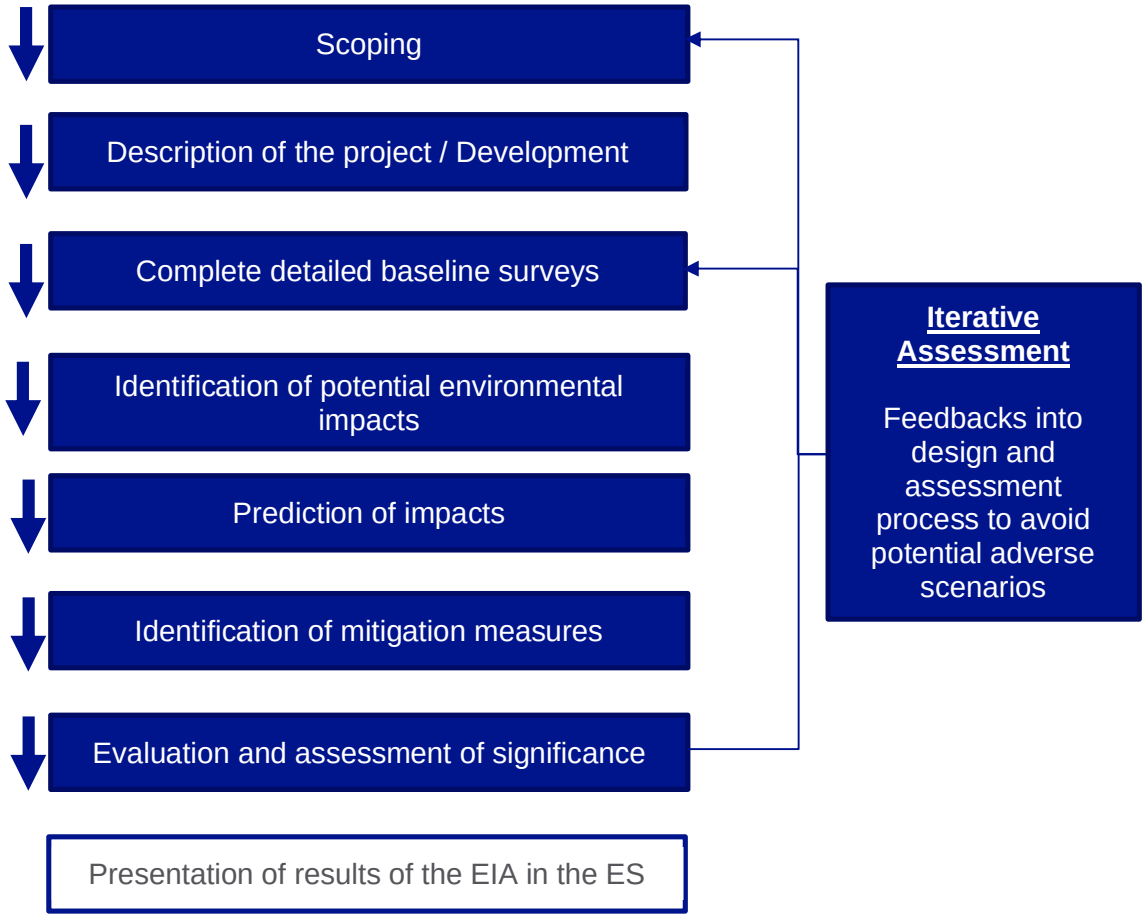
1.5.2.2. The Project would follow best practice by integrating the environmental considerations into the design process at all stages. This has already begun

through the strategic options and routeing and siting processes as described in Part 1, Chapter 3.

1.5.2.3. The EIA will identify environmental effects and, if any, propose project specific mitigation measures to avoid, reduce or offset adverse environmental effects or maximise environmental benefits.

1.5.2.4. The EIA Process involves the main steps illustrated on Image 1.5.1 below.

Image 1.5.1: EIA Process



The 'Rochdale Envelope' Approach

1.5.2.5. Major infrastructure projects such as linear infrastructure projects for underground cables, overhead lines and above ground installations, such as converter stations, typically need some flexibility to be maintained for detailed design and construction, if conditions are found that would otherwise prevent or delay construction. Examples can include previously unknown archaeological assets or poor ground conditions on cable routes and to allow for detailed design of the converter station by a specialist manufacturer post consent. To mitigate such issues a flexible approach to design parameters is used within the EIA process, and this is typically referred to as the 'Rochdale Envelope'; and it allows for a realistic worst-case assessment to be undertaken.

1.5.2.6. By developing a realistic worst-case scenario in response to critical technical and engineering parameters, as well as the emerging findings of the EIA and feedback from stakeholders, it is possible to strike a balance between the level of design

information needed for the purpose of EIA and the application for consent and while still retaining the level of design flexibility needed as the Project moves into detailed design and construction.

1.5.2.7. The EIA process will aid and inform the design process and support the identification of a design freeze that is flexible enough to accommodate change in future stages but not so flexible that it could over-state or unnecessarily amplify the potential environmental impacts of the Project.

1.5.3. Approach to Scoping

1.5.3.1. Scoping sets the proposed scope for the EIA process and, when done right, it makes the subsequent phases more straightforward. A robust scope, focussed on the potential for likely significant environmental effects is required in order to ensure the EIA is focused and proportionate. The process of scoping helps to ensure that the topics covered, the baseline information used, and the methods of assessment, are appropriate, and have considered the views of decision makers, and consultees where appropriate.

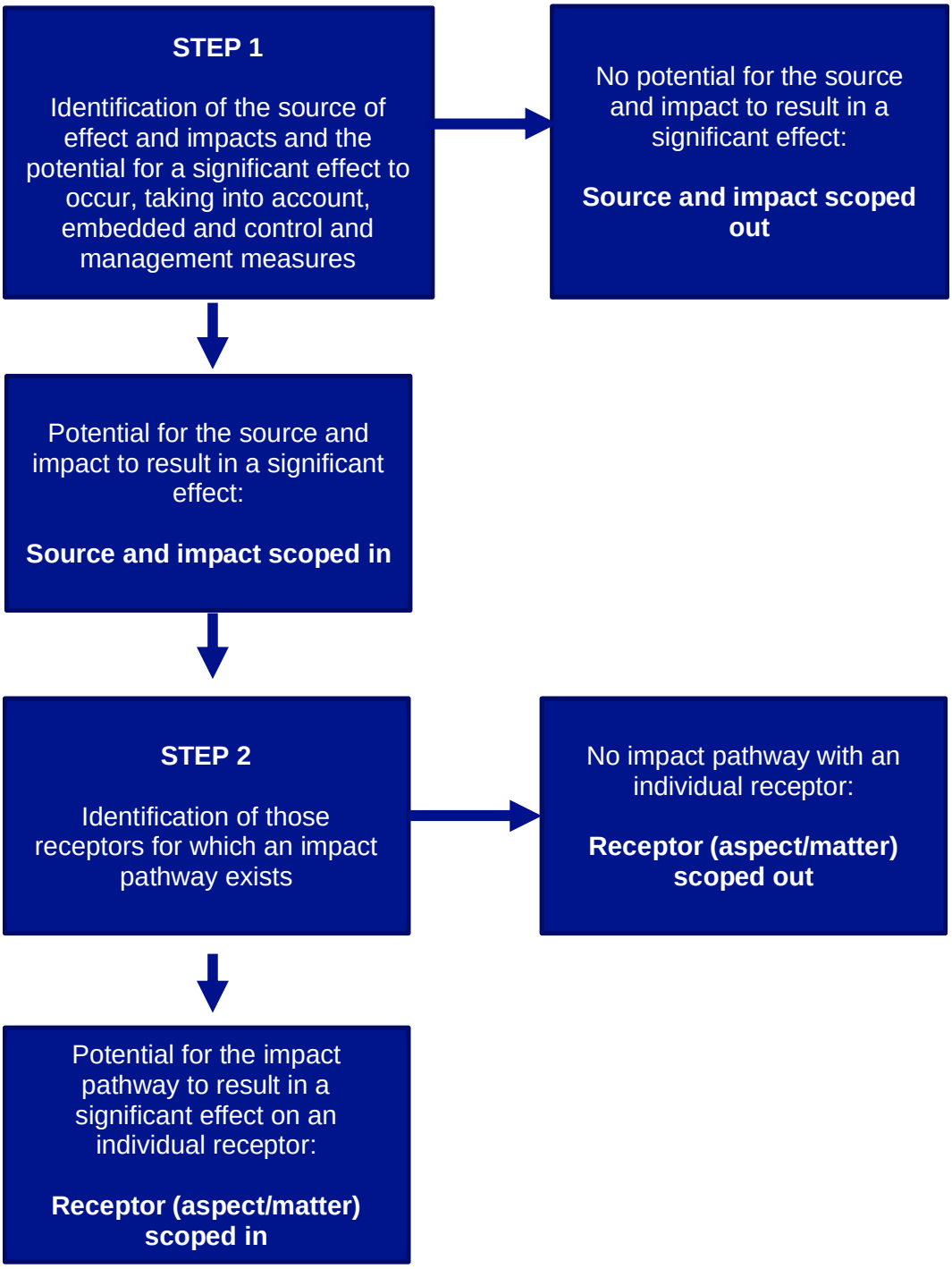
1.5.3.2. The approach taken in preparation of this Scoping Report has also been informed by the Planning Inspectorate's Advice Note Seven[27] and reflects that the EIA Regulations 2017 which require an ES to focus on aspects of the environment likely to be subject to significant effects. In line with guidance and legislation this Scoping Report seeks to, where appropriate, scope out aspects/matters from further assessment with suitable justification provided. This will streamline the assessment to focus on key likely significant effects and ensure the EIA for the Project is proportionate as promoted by the IEMA (2017) Delivering Proportionate EIA guidance document[28].

1.5.3.3. The approach taken to identifying the proposed scope of the EIA has used a staged approach that considers the likelihood of significant impacts using a source, pathway, receptor-based approach. This is to ensure transparency and provide a clear justification as to why particular receptors and aspect/matters are either proposed to be scoped in or scoped out of the EIA, with the aim of ensuring that the ES is proportionate. The approach taken to the identification of the proposed scope is presented in Image 1.5.2 below.

[27] Planning Inspectorate (2020). Advice Note Seven: Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-and-environmental-statements/.

[28] Institute for Environmental Management and Assessment (2017). Delivering Proportionate EIA: A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice. [online] Available at: https://www.iema.net/resources/reading-room/2017/07/18/delivering-proportionate-eia.

Image 1.5.2: Approach to the identification of the proposed scope of assessment



Technical Scope

1.5.3.4. The technical scope of assessment for each environmental aspect is detailed in the technical chapters of Parts 2-4 and this includes proposals for scoping matters in or out of the EIA. The technical scope also details the approach to baseline data collection and assessment methodologies.

Spatial Scope

1.5.3.5. The spatial scope for each environmental aspect is the area over which changes to the environment are predicted to occur because of the Project. This will depend on the nature of the potential effects and the location of receptors that could be affected. It takes account of:

- The physical area of the Project;
- The nature of the baseline environment; and
- The manner and extent to which environmental effects may occur.

1.5.3.6. Each of the technical chapters in Parts 2-4 describes the study area to be considered, providing a clear explanation as to why that particular study area has been adopted. The spatial scope of each assessment may be refined for both the PEIR and the ES in response to comments from consultees, refinement of the Project or further assessment work.

Temporal Scope

1.5.3.7. The temporal scope considers the time period over which changes to the environment and the resultant effects are predicted to occur, and are typically defined as either being temporary or permanent:

- Permanent - these are effects that will remain even when the Project is complete, although these effects may be caused by environmental changes that are permanent or temporary.
- Temporary – these are effects that are related to environmental changes associated with a particular activity and that will cease when that activity finishes.

1.5.3.8. The assessment will have regard to the project programme and will evaluate the environmental effects of the Project during construction, operation, maintenance and decommissioning. These effects will be compared to the situation prevailing before the Project is commenced (the current baseline), and to the situation that would prevail in the future without the Project (the projected future baseline).

1.5.3.9. The future baseline is the theoretical situation that would exist in the absence of the Project. This is based upon extrapolating the current baseline using technical knowledge of likely changes to predict this (e.g., predictable changes such as climate change, changes that can be predicted based on reasonable assumptions and modelling calculations, information about other relevant developments etc.).

1.5.3.10. Each technical chapter of the ES will define the baseline (current or future or both) against which the environmental effects of the Project will be assessed. The baseline conditions to be assessed for each environmental topic are outlined in the technical chapters of Parts 2-4 of this Scoping Report. Where relevant, aspect

chapters provide further information on the time elements within the project programme that will be considered for their assessment.

1.5.4. Assessment of Effects and Determination of Significance

1.5.4.1. The Institute of Environmental Management and Assessment (IEMA) guidelines (2004, p11/2)[29] state that:

"*The assessment stage of the EIA should follow a clear progression; from the characterisation of 'impact' to the assessment of the significance of the effects taking into account the evaluation of the sensitivity and value of the receptors.*"

1.5.4.2. The prediction of potential impacts will be undertaken to determine what could happen to each environmental receptor because of the Project and its associated activities. There is expected to be a diverse range of potential impacts to consider within the assessment process and it will likely be appropriate to use a range of prediction methods including quantitative, semi-qualitative and qualitative.

Identification of Potential Effects

1.5.4.3. The likely significant effects (beneficial and adverse) of the Project will be predicted and evaluated using appropriate evaluative techniques, many of which follow specific best practice guidelines for a particular topic. Potential effects will be identified first, usually in summary, as an indication of what effects could theoretically occur in the absence of mitigation (other than mitigation inherent in the design of the Project).

Approach to Mitigation

1.5.4.4. After the identification of the potential effects, consideration will be given to how those potential effects could be avoided, reduced or offset. This is referred to as mitigation. Each topic chapter of the ES will identify proposed mitigation measures that may be required to avoid or reduce the potential significant adverse effects of the project. Mitigation will be categorised as follows:

- Embedded Measures: are those that are intrinsic to and built into the design. They include the avoidance of designated sites through sensitive routeing, siting and design.
- Control and Management Measures: These are Good practice measures that are included within the Code of Construction Practice (CoCP) and other control and management plans such as the use of road sweepers and the implementation of measures to control silt-laden runoff during construction.
- Mitigation Measures: These are measures over and above design mitigation, for example anything that has been added to the design purely to mitigate an effect such as landscape planting.

[29] Institute of Environmental Management and Assessment (2004). Guidelines for Environmental Impact Assessment.

Assessing Effects and Determining Residual Significance

1.5.4.5. There is no statutory definition of what constitutes a 'significant' effect within the EIA Regulations and whilst the determination of the significance of effects is important to informing the decision-making process, defining what is significant is not a simple task. The process typically involves consideration of two aspects of a potential effect, namely the sensitivity and/or value of the receptor or resource, and the magnitude of the impact on the receptor/resource.

1.5.4.6. The significance of the residual effects will be determined by reference to criteria for each assessment topic. Specific significance criteria for each technical discipline, include giving due regard to the following:

- scale of the impact;
- impact duration, and whether effects are temporary, revisable, or permanent;
- effect nature (whether direct or indirect, reversible or irreversible, beneficial or adverse);
- where the effect occurs in isolation, is cumulative, or will interact with other effects;
- performance against any relevant environmental quality standards;
- sensitivity of the receptor; and
- compatibility with environmental policies.

1.5.4.7. Each technical chapter of this Scoping Report includes a description of the proposed approach to determining the significance of effects, including how professional judgement may be applied.

Magnitude of impact

1.5.4.8. General criteria for defining the magnitude of an impact, or change, are set out in Table 1.5.1. Key factors that influence this include:

- scale of change – the scale of change refers to the degree of change to or from the baseline environment caused by the impact being described;
- spatial extent - the extent of an impact is the full area over which the impact occurs; and
- duration and frequency – the duration is a measure of how long the impact is expected to last. Frequency refers to how often the impact would occur; it may be continuous or periodic.

Table 1.5.1: Impact magnitude criteria

Magnitude	General criteria
Large	Adverse: Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements

Magnitude	General criteria
	Beneficial: Large scale or major improvement of resource = quality; extensive restoration; major improvement of attribute quality
Medium	Adverse; Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements Beneficial: benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality
Small	Adverse: Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements Beneficial: Minor benefit to, or in addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk or negative impact occurring
Negligible	Adverse: Very minor loss of detrimental alteration to one or more characteristics, features or elements. Beneficial: Very minor benefit to or positive addition of one or more characteristics, features or elements

Sensitivity and value of the receptor

1.5.4.9. The sensitivity of a receptor or feature is characterised by its vulnerability to change and its ability to recover. The value of a receptor or feature reflects its overall importance and the value placed on it by society; this may be reflected by its level of statutory or policy protection or else a value may be attributed through consultation and the application of professional judgement. Criteria for defining the sensitivity and/or value of a receptor are set out in Table 1.5.2. Characterisation of the receptor is achieved by balancing out of these three considerations to determine the receptor's sensitivity.

- Vulnerability – the vulnerability of the receptor relates to its capacity to accommodate change i.e. the tolerance/intolerance of the receptor to change;
- Recoverability – the ability of the receptor to return to the baseline state; and
- Importance - the importance of the receptor or feature is a measure of the value assigned to that receptor based on biodiversity and ecosystem services, social value and economic value. Importance of the receptor is also defined within a geographical context, whether it is important internationally, nationally or locally.

Table 1.5.2: Sensitivity criteria

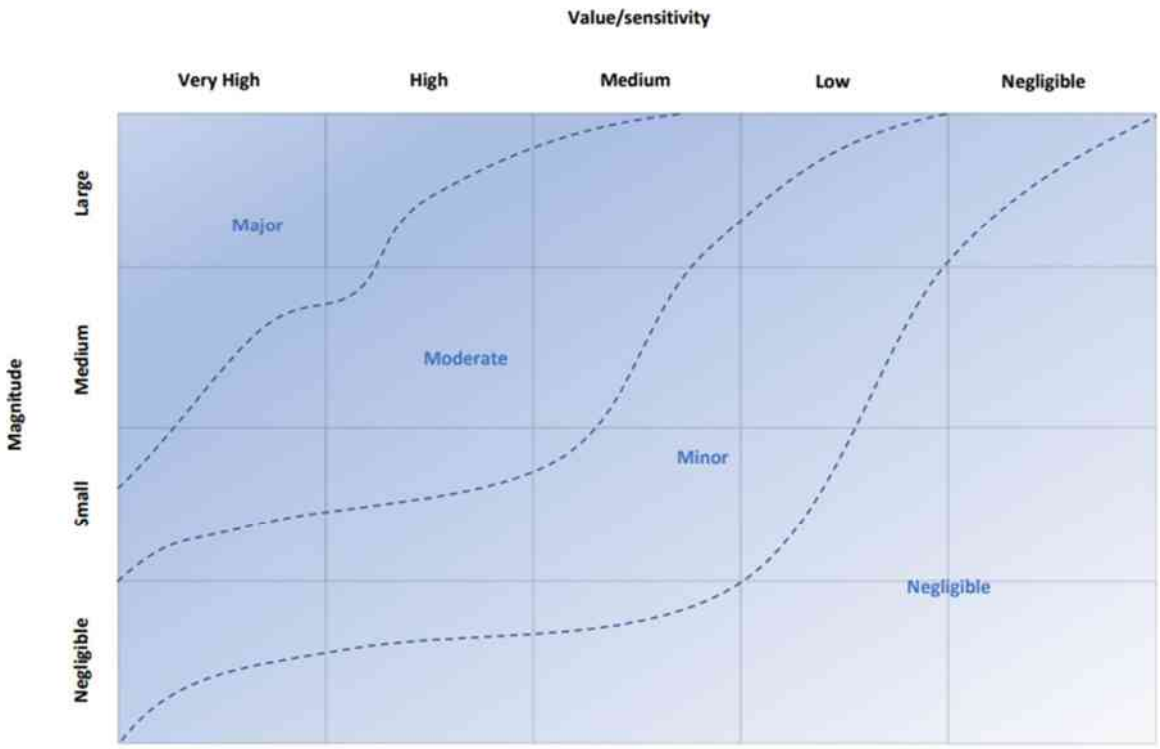
Value/Sensitivity	General Criteria
Very High	Very high importance and rarity, valued at an international level and limited potential for recovery or substitution

Value/Sensitivity	General Criteria
High	High importance and rarity, valued at a national level and limited potential for recovery or substitution
Medium	Medium importance and rarity, valued at a regional level, some potential for recovery or substitution
Low	Low or medium importance and rarity, valued at a local level, good potential for recovery or substitution
Negligible	Very low importance and rarity, valued at a local level, easy to replace.

Evaluating the significance of effects

1.5.4.10. Having established the magnitude of change and sensitivity of the receptor, the significance of an effect can be assessed. To aid transparency in the assessment process, the matrix shown in Image 1.5.3 will be used as the basis for assigning significance to an effect; however the identification of significance typically requires the application of professional judgement. As an illustration, a high sensitivity receptor subject to a large magnitude of change would experience a major significance effect, and a low sensitivity receptor subject to a small magnitude of change would experience a minor or negligible significance effect.

Image 1.5.3: Basis of assigning significance



1.5.4.11. Each of the specialist disciplines will apply magnitude and sensitivity criteria that best suit the topic area, and for some topics these may be defined in industry guidelines.

1.5.4.12. Following the classification of an effect using this methodology, a clear statement will then me made in the ES as to whether that effect is significant or not significant. Major and moderate effects are typically considered to be significant, whilst minor and negligible effects are considered to be not significant. However, professional judgement will also be applied in reaching conclusions as to the significance of effects. Typical definitions for the classification of effects are shown in Table 1.5.3.

Table 1.5.3: Generic significance description

Significance	General criteria	Significant effect
Major	A large and detrimental change to a valuable/sensitive receptor; likely exceeding an accepted (often legal) threshold. A large and beneficial change, resulting in improvements to the baseline result in previously poor conditions being replaced by new legal compliance or a major contribution being made to national targets.	**Yes**

Significance	General criteria	Significant effect
	These effects may represent key factors in the decision-making process. Potentially associated with sites and features of national importance or likely to be important considerations at a regional or district scale. Major effects may relate to resources or features that are unique and which, if lost, cannot be replaced or relocated.	
Moderate	A medium scale change that, although not beyond an accepted threshold, is still considered to be generally unacceptable, unless balanced out by other significant positive benefits of a project. Likely to be in breach of planning policy, rather than legal statute. These effects, if adverse, are likely to be important at a regional or local scale and on their own could have a material influence on decision making. A positive moderate effect is a medium scale change that is significant in that the baseline conditions are improved to the extent that guideline targets (e.g. UK BAP targets) are contributed to.	**Yes (typically)**
Minor	A small change that, whilst adverse, does not exceed legal or planning policy thresholds. A small positive change, but not one that is likely to be a key factor in the overall balance of issues. These effects may be raised as local issues and may be of relevance in the detailed design of a project, but are unlikely to be critical in the decision making process.	**No**
Negligible	A very small change that is so small and unimportant that it is considered acceptable to disregard. Effects which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error, these effects are unlikely to influence decision making, irrespective of other effects.	**No**

1.5.5. Cumulative Effects

1.5.5.1. When undertaking an assessment of the environmental effects of a project, it is necessary to consider how various effects may interact, and also how the effects of the Project could accumulate with the effects of other developments proposed within the same zone of influence.

Intra-project effects

1.5.5.2. Intra-project cumulative effects (sometimes referred to as combined or interactive effects) occur where a single receptor is affected by more than one source of effect or aspect of the Project. An example of an intra-project effect would be where a local community is affected by dust, noise, and traffic disruption during the construction of the Project, with the result being a greater level of nuisance than each individual effect alone.

1.5.5.3. A useful summary of the principle of cumulative intra-project effects is provided by the Planning Inspectorate in Advice Note Nine[30].

"*The ES should not be a series of separate unrelated topic reports. The inter-relationship between aspects of the proposed development should be assessed and careful consideration should be given by the developer to explain how inter-relationships have been assessed in order to address the environmental impacts of the proposal as a whole. It need not necessarily follow that the maximum adverse impact in terms of any one topic impact would automatically result in the maximum potential impact when a number of topic impacts are considered collectively. In addition, individual impacts may not be significant but could become significant when their interrelationship is assessed. It will be for the developer to demonstrate that the likely significant impacts of the project have been properly assessed*."

1.5.5.4. Schedule 4 of the EIA Regulations states that an ES should include:

Paragraph 19:

"A description of the aspects of the environment likely to be significantly affected by the development, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the inter relationship between the above factors."

Paragraph 20:

"A description of the likely significant effects of the development on the environment, which should cover the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the development, resulting from:

(a) The existence of the development;

(b) The use of natural resources;

(c) The emission of pollutants, the creation of nuisances and the elimination of waste, and the description by the applicant of the forecasting methods used to assess the effects on the environment."

1.5.5.5. In line with this requirement, a description of the likely significant intra-project cumulative effects will be provided within the ES.

1.5.5.6. The Overarching NPS EN-1 states the following in relation to requirements for the assessment of cumulative effects:

'*The Infrastructure Planning Commissions (IPC) [now the Planning Inspectorate (PINS)] should consider how the accumulation of, and interrelationship between,*

[30] Planning Inspectorate (2018). Advice Note Nine: Rochdale Envelope. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-nine-rochdale-envelope/.

effects might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place.'

1.5.5.7. There is no established EIA methodology for assessing and quantifying the effects intra-project effects.

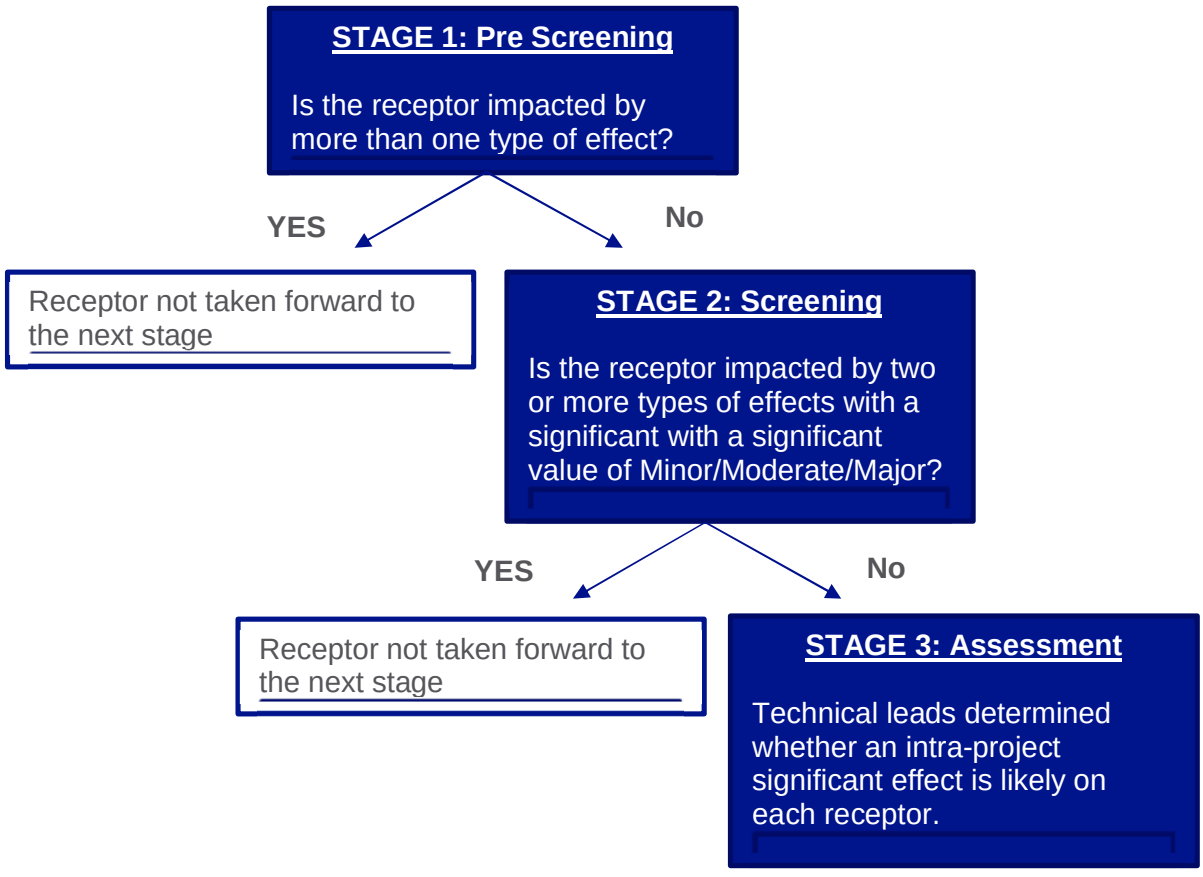
1.5.5.8. Some environmental topics consider receptors that are not considered by any other topics and so intra-project cumulative assessment is unlikely to be necessary. Examples include buried archaeology and protected species.

1.5.5.9. Other receptors may be considered by multiple topics, and as such intra-project cumulative effects are more likely to occur. Receptors considered in multiple chapters are likely to include local residents, communities, and businesses.

1.5.5.10. It is proposed to undertake the assessment of intra-project cumulative effects using as three-stage approach. The first stage consists of a pre-screening exercise to determine whether a receptor is exposed to more than one type of effect. Those receptors identified as experiencing more than one type of effect will be taken through to the second stage. The second stage will consist of a screening exercise to identify the significance each type of effect has on each receptor. Those receptors exposed to two or more types of effect, with a significance of effect greater than negligible, will be taken forward to the third stage. The third stage is the main intra-project assessment, which will consider if the combination of effects is likely to lead to overall effects of greater significance.

1.5.5.11. This three-stage approach is described in more detail in the following section and the approach is illustrated in Image 1.5.4 below.

Image 1.5.4: Methodological approach to identifying intra-project cumulative effects



Inter-project effects

1.5.5.12. Inter-project cumulative effects occur where a receptor is affected by two or more projects at the same time, potentially amplifying the overall effect. Individually the effects may not be significant, but when considered together could create a significant cumulative effect.

1.5.5.13. In addition to paragraph 20 for the EIA Regulations described above, NPS EN-1 states the following in relation to requirements for the assessment of cumulative effects:

'*When considering cumulative effects, the Environmental Statement (ES) should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other developments (including projects for which consent has been sought or granted, as well as those already in existence).*'

1.5.5.14. The Planning Inspectorate Advice Note 17 (AN17)[31] provides a methodology for assessing inter-project cumulative effects. It provides guidance about the type and scale of other developments that should be considered in the assessment of cumulative effects with other projects.

1.5.5.15. The approach outlined in AN17[29] is split into four stages, as outlined below:

- Stage 1 – the two main tasks in this stage are to establish what the 'zone of influence (ZOI)' is for each topic and to then identify a 'long list' of other developments, by reviewing planning applications, development plans.
- Stage 2 – criteria are set for the inclusion or exclusion of developments on the long list. These will be based on overlaps in construction programmes, shared receptors or shared effect pathways.
- Stage 3 – information is gathered about the shortlisted projects, including design, location, programme, operation and decommissioning information and reported environmental effects.
- Stage 4 – Cumulative Effects Assessment (CEA) is undertaken in relation to the shortlisted developments and the findings are reported in a matrix format. The focus is on Tier 1 and 2 projects, with Tier 3 included if possible. These three tiers are described below in Table 1.5.4.

Table 1.5.4 'Other Development' for inclusion in the Inter-project cumulative effects assessment

Tier	Development
Tier 1	Under Construction
	Permitted permission(s) not yet implemented
	Submitted application(s) not yet determined
Tier 2	Projects on the Planning Inspectorate's Programme of Projects where a scoping report has been submitted

[31] Planning Inspectorate (2019). Advice Note Seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-17/.

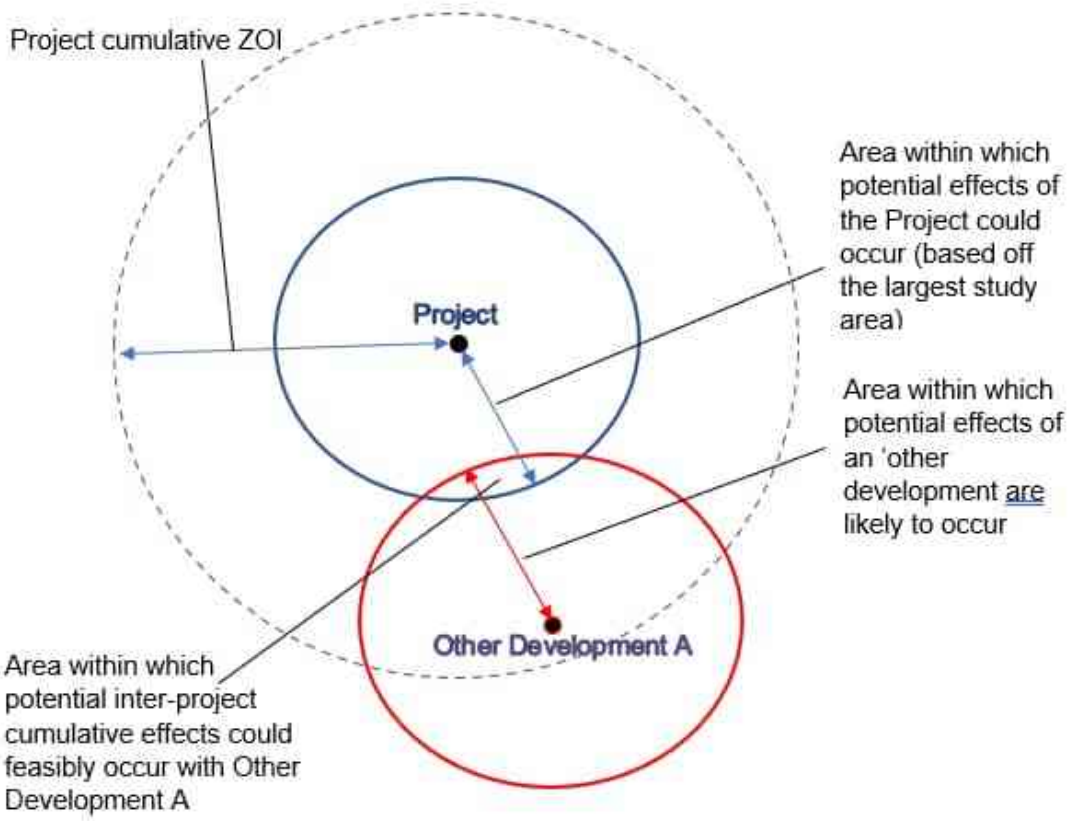
Tier	Development
Tier 3	Projects on the Planning Inspectorate's Programme of Projects where a scoping report has not been submitted
	Identified in the relevant Development Plan
	Identified in other plans and programmes (as appropriate) which set the framework for future development consents/ approvals, where such development is reasonably likely to come forward

Stage 1

1.5.5.16. The first step of Stage 1 is to identify a ZOI within which the long list of projects can be identified.

1.5.5.17. The ZOI has been based off the largest study area of the environmental topic chapters, as the maximum area within which potential effects of the Project could occur. This has then been doubled to take account of potential study areas of 'other developments'. It is considered that doubling the maximum study area is sufficient to identify the 'long list' of 'other developments' whose study areas may overlap with the area within which the Project could result in a potential effect, therefore the area within which inter-project cumulative effects could feasibly occur. This is illustrated on Image 1.5.5. Professional judgement was also applied so as to not use this as hard cut off when identifying the 'long list'.

Image 1.5.5: Defining the ZOI



1.5.5.18. The second step is to identify a long list of projects within the ZOI. This initial long list is provided in **Appendix 1.5.A Inter Project Effects Long List** and will be continually reviewed and updated as required.

1.5.5.19. Those projects which are proposed to be progressed through to Stage 2 are presented within each of the cumulative effects chapters in Parts 2-4 and the outputs of the inter-project cumulative effects assessment will be reported in the ES.

1.5.6. Monitoring

1.5.6.1. Schedule 4, Paragraph 7 of the EIA Regulations states that, where appropriate, the ES should include a description of any proposed monitoring arrangements where likely significant residual effects have been identified. The monitoring requirements will be detailed within the ES topic chapters to include clear and proportionate objectives for monitoring, the parameters to be monitored, the methodology for the monitoring, a timescale for implementation, identification of the party who will be responsible for the monitoring, and an outline of the remedial actions to be undertaken should results be adverse.

1.6 Approach to the Environmental Statement

1.6.1. Introduction

1.6.1.1. The PINS Advice Note Seven[32] requires that applicants provide an outline structure of what the ES will contain. The structure of the ES for the Project will broadly follow the same order of chapters that are presented in this Scoping Report, acknowledging that changes may need to be made within the ES to address the advice from the Scoping Opinion, both in terms of presentation of the Project to aid understanding and address the design requirements as they evolve.

1.6.1.2. An indicative outline structure of the ES is set out in Table 1.7.1.

Table 1.7.1: Indicative structure of the ES

ES volume	Likely content	
Volume 1 – Non-Technical Summary	A concise and standalone document which will provide a description of the Project, EIA process and its findings in a manner that is easily understood by the general public.	
Volume 2 – Main Document	Part 1 Introduction	Introduction – setting out an overview of the Project including the Project need. The purpose and structure of the ES and a brief summary of the other relevant assessments and documents.
		Regulatory and Planning Context – this section will set out the legislative, national and local planning context, other relevant guidance and policies and any applicable consents and permits.
		Main Alternatives Considered – this section will set out the main alternatives considered and the reasons for the selection of the preferred options.
		Description of the Proposed Development – this section will provide a description of the Proposed Development and how the Proposed Development would be constructed, operated maintained and decommissioned.

[32] Planning Inspectorate (2020). Advice Note Seven. EIA: Process, Preliminary Environmental Information, and Environmental Statements. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-and-environmental-statements/.

ES volume	Likely content	
		EIA Methodology and Basis of Assessment – this section will set out the overarching approach to the ES and the methodology used including the basis of assessment.
	Part 2 Suffolk Onshore Scheme	This will include a chapter describing the evolution of the Suffolk Onshore Scheme and the technical assessment chapters for the Suffolk Onshore Scheme. This part is proposed to comprise of the following: • Evolution of the Suffolk Onshore Scheme • Landscape and Visual • Ecology and Biodiversity • Cultural Heritage • Water Environment • Geology and Hydrogeology • Agriculture and Soils • Traffic and Transport • Air Quality • Noise and Vibration • Socio-economics recreation and tourism • Health and Wellbeing • Intra-project Cumulative Effects • Inter-project Cumulative Effects It is proposed that each of the technical chapters will be structured as follows: • Introduction • Legislation and Planning Context • Scope of Assessment and Consultation • Methodology • Basis of Assessment • Study Area

ES volume	Likely content	
		• Baseline Conditions • Potential Effects • Mitigation and Residual Effects • Cumulative Effects • Summary
	Part 3 Kent Onshore Scheme	This will include a chapter describing the evolution of the Kent Onshore Scheme and the technical assessment chapters for the Kent Onshore Scheme. This part is proposed to comprise of: • Evolution of the Suffolk Onshore Scheme • Landscape and Visual • Ecology and Biodiversity • Cultural Heritage • Water Environment • Geology and Hydrogeology • Agriculture and Soils • Traffic and Transport • Air Quality • Noise and Vibration • Socio-economics recreation and tourism • Health and Wellbeing • Intra-project Cumulative Effects • Inter-project Cumulative Effects It is proposed that each of the technical chapters will be structured as follows: • Introduction • Legislation and Planning Context • Scope of Assessment and Consultation • Methodology

ES volume	Likely content	
		• Basis of Assessment • Study Area • Baseline Conditions • Potential Effects • Mitigation and Residual Effects • Cumulative Effects • Summary
	Part 4 Offshore Scheme	This will include a chapter describing the evolution of the Offshore Scheme and the technical assessment chapters for the Offshore Scheme. This part is proposed to comprise of: • Evolution of the Offshore Scheme • Physical Environment • Benthic Ecology • Fish and Shellfish Ecology • Marine Mammals • Marine Ornithology • Marine Archaeology • Shipping and Navigation • Commercial Fisheries • Other Sea Users • Intra-project Cumulative Effects • Inter-project Cumulative Effects It is proposed that each of the technical chapters will be structured as follows: • Introduction • Legislation and Planning Context • Scope of Assessment and Consultation • Methodology • Basis of Assessment • Study Area

ES volume	Likely content	
		• Baseline Conditions • Potential Effects • Mitigation and Residual Effects • Cumulative Effects • Summary
	Part 5 Project Wide Effects	Climate Change – this section will provide an assessment of climate change and greenhouse gas emissions as a result of the Proposed Development
		Combined Effects of the Project – this will provide an assessment as required of any project wide effects over and above those assessed within the individual chapters where there is a pathway for a combined effects between the offshore and onshore schemes.
Volume 2 Appendices	This will set out the appendices for the chapters listed above where required	
Volume 3 Figures	This will provide the Figures for the chapters listed above where required.	

Sea Link

Environmental Impact Assessment Scoping Report
Volume 1 Main Text
Part 2 Suffolk Onshore Scheme

October 2022



nationalgrid

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2.1 Evolution of the Suffolk Onshore Scheme

2.1.1 Introduction

2.1.1.1 The current stage of Project design is the result of an iterative process that commenced at project inception when the initial need to reinforce the network in the South East of England was identified in 2019.

2.1.1.2 **Part 1, Chapter 3, Main Alternatives Considered** describes National Grid's approach to options appraisal and summarises both the strategic options that have been considered for the Project as well as the routeing and siting process. This chapter provides a more detailed summary of the routeing and siting appraisal relevant to the evolution of the Suffolk Onshore Scheme from the selection of the preferred strategic option to the Suffolk Onshore Scheme Scoping Boundary as illustrated on **Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary**.

2.1.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 3, Main Alternatives Considered;**
- **Part 2, Chapter 1, Evolution of the Suffolk Onshore Scheme;** and
- **Part 4, Chapter 1, Evolution of the Offshore Scheme.**

2.1.1.4 This chapter is supported by the following figure:

- **Figure 2.1.1 Evolution of the Suffolk Onshore Scheme**.

2.1.2 Network Connection Points

2.1.2.1 The preferred strategic option identified the Sizewell area as the area on the network the Project was required to connect, in order to meet the Needs Case as described in **Part 1, Chapter 1, Introduction** and as described in **Part 1, Chapter 3, Main Alternatives Considered**. Three potential points of connection were identified within the Sizewell area, and these were appraised as part of the routeing and siting appraisal. These connection points are illustrated on **Figure 1.3.4 Suffolk Network Connection Points** and were:

- the existing Sizewell B substation or the new Sizewell C substation (which forms part of the proposed Sizewell C Nuclear Power Station Project)
- the proposed Friston substation (which forms part of the Proposed Scottish Power Renewables East Anglia One North and East Anglia Two Offshore Wind Farm Projects), or
- a new connection point directly onto the existing 400kV overhead lines within proximity to the Sizewell area.

2.1.2.2 These were used as the basis for defining the routeing and siting study area in Suffolk.

2.1.3 Study Area

2.1.3.1 The routeing and siting study area in Suffolk extended from Hollesley in the south to Dunwich in the north along the Suffolk coast, and, inland to Wickham Market. The routeing and siting study area is illustrated on **Figure 1.3.1 Routeing and Siting Study Area**.

2.1.4 Landfall Areas of Search

Areas of Search

2.1.4.1 Five landfall areas of search were initially identified in Suffolk. These are illustrated on **Figure 1.3.2 Suffolk Landfall Areas of Search**. The southernmost area of search (S1) was identified to the south of Aldeburgh, north of the Alde and Ore River. A second area of search was identified between Aldeburgh and Thorpeness (S2). A third area of search was identified between Thorpeness and Sizewell (S3). This area was further split down into two sub areas, south (S3) and north (S3N). A fourth area (S4) at Sizewell and the northern most area of search was identified to the north of Sizewell, south of Minsmere (S5).

Summary of Appraisal Outcomes

Terrestrial constraints

2.1.4.2 All five landfall areas of search are within the Suffolk Coasts and Heaths AONB which was unavoidable within the study area.

2.1.4.3 Landfall area of search S1 is located to the south of Aldeburgh and the north of the Alde and Ore River. The Alde and Ore River is located adjacent to the south of this landfall area of search and is designated as the Alde-Ore Estuary Ramsar, SPA and SSSI and the Alde-Ore & Butley Estuaries SAC. These designations are avoidable within this landfall area of search however they would need to be crossed by any onward terrestrial routeing from this landfall. The whole of this landfall area of search is within Flood Zones 2 and 3 and construction within the flood zone could not be avoided. Access to this landfall area of search is also limited and would likely need to be taken through Aldeburgh.

2.1.4.4 Landfall area of search S2 is located to the north of Aldeburgh and south of Thorpeness. The whole of the landfall area of search is designated as Leiston – Aldeburgh SSSI and North Warren RSPB Reserve. These designations are unavoidable within this area of search, but the use of trenchless construction techniques (subject to confirmation through further studies and ground investigations) could be used to avoid potential significant effects. The majority of the landfall area of search is within Flood Zone 2 and 3, depending on the installation technique, construction works within these zones are potentially avoidable.

2.1.4.5 Landfall area of search S3 stretches from Thorpeness in the south to Sizewell in the north and was broadly split into two, S3 in the south from Thorpeness to Beach View

Holiday Park and S3N to the north of Beach View Holiday Park to Sizewell Gap Road. The whole of the intertidal area within S3 is designated as Leiston – Aldeburgh SSSI, however within this landfall area of search this designation is very narrow and likely to be avoidable with the use of trenchless construction techniques (subject to confirmation through further studies and ground investigations). A section of North Warren RSPB Reserve is located in the south of this landfall area of search but is likely to be avoidable. S3N is wholly outside of the Leiston – Aldeburgh SSSI. There are small areas of Flood Zone 2 and 3 across both S3 and S3N but these areas are localised and likely to be avoidable.

2.1.4.6 Landfall area of search S4 is located to the north of Sizewell Gap Road at Sizewell. There are no terrestrial designations for ecological conservation within the intertidal area however the landfall area of search is significantly constrained by the existing Sizewell B Nuclear Power Station.

2.1.4.7 Landfall area of search S5 is located to the north of existing Sizewell Nuclear Power Station and south of Minsmere New Cut drainage channel. The whole of the intertidal area and immediate terrestrial area is designated as Minsmere-Walberswick Ramsar and SPA, Minsmere to Walberswick Heaths & Marshes SAC and SSSI and Minsmere RSPB Reserve. These designated sites are unavoidable within this area of search but the use of trenchless construction techniques (subject to confirmation through further studies and ground investigations) could be used to avoid potential significant effects. A second crossing of the Minsmere to Walberswick Heaths & Marshes SSSI and Minsmere RSPB Reserve would also be required for any onward terrestrial routeing. The majority of this landfall area of search is within Flood Zones 2 and 3 and construction within the flood zone could not be avoided. Access to this landfall area of search is also very limited and likely to require a long temporary access road.

Summary of relevant marine alignments

2.1.4.8 Whilst the immediate offshore landfall area of search at S1 and S2 is outside of the Southern North Sea SAC all marine alignments to the landfall areas of search in Suffolk would need to cross both the Southern North Sea SAC and the Outer Thames Estuary SPA.

2.1.4.9 The marine approaches to both landfall area of search S1 and S2 were considered to be relatively unconstrainted.

2.1.4.10 The marine alignments to landfall area of search S3 was considered significantly constrained due to the presence of rocky reefs comprised of cemented limestone rich shells in the immediate offshore environment. This constraint is reduced at landfall S3N.

2.1.4.11 The marine alignments to landfall areas of search S4 and S5 were considered to be more constrained than the other options due to the additional number of offshore crossings that would be required and the potential for interaction with the proposed Sizewell C development.

Overall summary

2.1.4.12 Landfall area of search S1 was considered to be relatively unconstrainted from a marine approach perspective but terrestrially has access and flood risk constraints and constraints associated with the onward terrestrial routeing.

2.1.4.13 Landfall area of search S2 was considered to be relatively unconstrainted from a marine approach perspective but terrestrially crosses a wide area designated as SSSI and RSPB reserve.

2.1.4.14 Landfall area S3 was considered to be significantly constrained from a marine approach perspective due to the presence of rocky reefs and in the immediate offshore by the proposed export cable route from the East Anglia One North and Two developments. Onshore it was considered likely that the SSSI and RSPB reserve could be avoided through the use of trenchless installation techniques (subject to confirmation through further studies and ground investigations). Offshore the approach to landfall S3N was less constrained due to the presence of the rocky reef but other existing and proposed offshore infrastructure on the approach still pose a constraint. Terrestrially S3N is relatively unconstrained environmentally.

2.1.4.15 Landfall area of search S4 was considered to be significantly constrained both on the offshore approach and terrestrially by the presence of the existing Sizewell C Nuclear Power Station development.

2.1.4.16 Landfall area of search S5 was considered to be constrained on the marine approach by the number of offshore crossings and the potential interaction with the proposed Sizewell C Nuclear Power Station development and onshore by both European and national designated sites for nature conservation.

2.1.5 Converter Station Option Areas

Option Areas

2.1.5.1 Nine converter station option areas were identified within the routeing and siting study area. These were based on the siting parameter of approximately 5km from the network connection point as explained in **Part 1, Chapter 3, Main Alternatives Considered**.

2.1.5.2 Due to there being a number of potential network connection points in the Sizewell area, converter station option areas were identified for each connection point, but some option areas provided a connection into more than one of the connection points. Table 2.1.1 lists the option areas appraised for each connection point and a description of the option areas is provided below. The option areas are illustrated on **Figure 1.3.5 Suffolk Converter Site Option Areas**.

Table 2.1.1: Connection points and converter site option areas

Connection point	Converter site option areas
Existing and proposed Sizewell substations	A, B, C, D
Proposed Friston substation	B, C, D, E, F, G, H
New substation along the existing 4Z overhead lines	B, E, F, H, I

2.1.5.3 Option Area A is located to the north of Kenton and Goose Hill, to the southeast of Eastbridge. The option area is wholly within the Suffolk Coasts and Heaths AONB, but, was identified as a potential option area, as it is close to the existing Sizewell B Nuclear Power Station and adjacent to the proposed Sizewell C Nuclear Power Station, therefore, providing an opportunity to keep energy infrastructure close together. The option area is adjacent to the Minsmere-Walberswick Ramsar and SPA, Minsmere to Walberswick Heaths & Marshes SAC and SSSI and Minsmere RSPB Reserve.

2.1.5.4 Option Area B is located to the east of Leiston and west of the existing Sizewell B Nuclear Power Station. The option area is wholly within the Suffolk Coasts and Heaths AONB, but, was identified as a potential option area as it adjacent to the existing Sizewell B Nuclear Power Station and existing overhead lines, therefore, providing an opportunity to keep energy infrastructure close together. Sandlings SPA, Leiston – Aldeburgh SSSI and North Warren RSPB Reserve boarder this option area to the south.

2.1.5.5 Option Area C is located on the site of the former Leiston Airfield and is bordered to the south by Harrow Lane to the northwest by Theberton Woods. Moat Road runs west to east through the northern half of the option area.

2.1.5.6 Option Area D is located to the west of Leiston and is bordered to the northwest by the B1119 and Abbey Road and to the west by the Hundred River. There is a small parcel of Ancient Woodland (Buckles Wood) located within the north of this option area adjacent to Buckleswood Road. There is an area of Flood Zone 2 and 3 on the far western boundary of the option area associated with the Hundred River.

2.1.5.7 Option Area E is located to the south of Knodishall and is bounded to the east by the Suffolk Coasts and Heaths AONB, the south by the A1094 Aldeburgh Road and the B1069 (Snape Road) runs southwest to northeast through the centre of the option area. There is a small area of Ancient Woodland at Great Wood located on the eastern edge of the option area and Grove Wood Ancient Woodland is located adjacent to the northwest corner of the option area.

2.1.5.8 Option Area F is located to the southeast of Sternfield and west of Friston. An unnamed road linking Church Hill to the A1094 borders the west of the option area and the B1121 boarders the option area to the north and northeast. Red Lane and Kiln Lane run west to east through the northern half of this option area. The existing 400kV overhead lines run southwest to northeast through the centre of this option area. The Suffolk Coasts and Heaths AONB is located to the south of the option area, south of the A1094.

2.1.5.9 Option Area G is located the southwest of Saxmundham and is bordered to the east by the A12 and the west by Deadmans Lane.

2.1.5.10 Option Area H is located to the west of Gromford and is bounded to the south and east by a railway line the west by Langham Road, Racewalk Covert is located to the north of the site. Snape RSPB Reserve is located to the south of the option area, south of the railway line.

2.1.5.11 Option Area I is located to the east of Lower Hacheston and is bounded to the north by the A12. The existing 400kV overhead lines and railway line cross the far southeastern boundary of the option area. A small area of Flood Zone 2 and 3 is

located in the northeastern corner of option the option area, associated with the River Ore.

Summary of Appraisal Outcomes

2.1.5.12 Of the possible connection points in the Sizewell area, only the Sizewell B substation is currently in existence; all the other proposed connection points would require the installation of a new substation, either proposed through another project in the area or installed as part of this Project. Connecting into the Sizewell B substation would require taking over two of the super grid transformer (SGT) circuits feeding the existing Leiston 132kV substation by connecting into the 400kV circuits feeding the SGTs. This would require the installation of two new 400/132kV SGTs in the converter station site with new 400kV cables connecting into the existing Sizewell B substation and new 132kV cables connecting the SGTs in the converter station with the Leiston 132kV substation. The 400kV cable route to the substation would require either using the corridor allocated to the existing 132kV connection or routeing through Sizewell Marshes SSSI. A connection into either the existing or proposed Sizewell substation would also need to take into account the works to construct the proposed Sizewell C Nuclear Power Station as the works would overlap. This could have programme implications for the delivery of this Project in line with the needs case and to meet the required connection date.

2.1.5.13 At the time of the routeing and siting appraisal the Development Consent Order (DCO) that would deliver Friston substation (which is proposed forms part of the Proposed Scottish Power Renewables East Anglia One North and East Anglia Two Offshore Wind Farm Projects) was advanced in the consenting process and it has subsequently received Development Consent.

2.1.5.14 A connection into the existing 400kV overhead lines would require a new substation to be built. This was assessed on the basis that it would be co-located within the converter station site option areas and would also require either the existing overhead lines to be diverted into and out of the new substation or a cable route (where economic and efficient) from a new substation to the overhead lines with a cable sealing end compound located adjacent to the overhead lines.

2.1.5.15 Converter site option areas A and B are both within the Suffolk Coasts and Heaths AONB but offers opportunities to keep existing and proposed energy infrastructure together. Both areas are also within land which is being used as part of ecological mitigation areas for the proposed Sizewell C Nuclear Power Station. As set out above a connection from either of these sites into either the existing or proposed Sizewell substation was considered to be significantly constrained and a connection into either the proposed Friston substation or a new connection into the existing 400kV overhead lines would likely be required. Site option area A was not identified as a site suitable for either a connection into the proposed Friston substation or the existing 400kV overhead lines due to the distance from this option area to these connection points.

2.1.5.16 Converter site option area C was considered to be constrained by the existing access, however the development of the proposed Theberton bypass as part of the proposed Sizewell C development, would alleviate some of these constraints if developed in time.

2.1.5.17 Converter site option area D was considered constrained by planned future development plans to the north including the proposed Sizewell C rail head and poor site access along the existing road network that would require routeing of traffic through Leiston.

2.1.5.18 Converter site option areas E and F both have good access from the A1094 but were considered constrained by the proximity to the Suffolk Coasts and Heaths AONB in terms of the potential for setting impacts.

2.1.5.19 Converter site option areas G and H were considered highly constrained by future development plans on the eastern side of the A12 constraining the ability to connect into either the proposed Friston substation and, in the case of option area H, a new connection point on the existing 400kV overhead lines.

2.1.5.20 Converter site option area I was not identified for a Sizewell or a Friston connection due to the distance from this proposed connection point so the site would require a new connection point to be established. This option area is also constrained by the length of onshore cable that would be required to connect to any of the landfall areas of search increasing the spread of potential temporary disturbance during construction.

2.1.5.21 Due to the existing and proposed energy development within the study area coupled with the proximity of the Suffolk Coats and Heaths AONB in this locality the environmental and socio-economic appraisal concluded that an underground High Voltage Alternating Current (HVAC) connection would be preferred to an OHL HVAC connection between the converter site options areas an any of the connection points.

2.1.6 Route Corridors

Route Corridors

2.1.6.1 Corridors were developed that could connect each of the landfall areas of search to each of the converter station site option areas.

2.1.6.2 Within Suffolk this process resulted in 15 corridors being identified:

- five corridors from each of the five landfall areas of search to the four converter station site option areas that could connect into the existing and proposed Sizewell substations (**Figure 1.3.7 Suffolk Terrestrial Route Corridors Sizewell Connection**);
- five corridors from each of the five landfall areas of search to the seven converter station site option areas that could connect into the proposed Friston substation (**Figure 1.3.8 Suffolk Terrestrial Route Corridors Proposed Friston Connection**); and
- five corridors from each of the five landfall areas of search to the five converter station site options that could connect into the existing 400kV overhead lines (**Figure 1.3.9 Suffolk Terrestrial Route Corridors New Connection**).

Summary of Appraisal Outcomes

2.1.6.3 Within Suffolk none of the corridors avoided designated sites. The Suffolk Coasts and Heaths AONB extends across the full extent of the routeing and siting study area and

was therefore unavoidable for any of the 15 corridors that were identified and appraised. Whilst the routeing and siting study area was drawn to provide opportunities to avoid designated sites and constraints. The Suffolk Coasts and Heaths AONB extends unbroken from Felixstowe and Harwich in the south to Kessingland in the north. It was not therefore possible to avoid this designation and meet the need case without a significantly longer and indirect route that would not be in accordance with National Grid's statutory duties.

2.1.6.4 All three green corridors that connect with the southernmost of the five landfall areas of search S1, south of Aldeburgh, would require an extensive crossing of the Alde-Ore Estuary, which is designated as the Alde-Ore Estuary Ramsar, SPA and SSSI and the Alde-Ore & Butley Estuaries SAC. These corridors would also interact with the same designated sites around the settlements of Iken and Snape. A large proportion of the green corridors is also within Flood Zone 2 and 3 and would require the longest cable route within the Suffolk Coasts and Heaths AONB of all the corridors.

2.1.6.5 The three red corridors that connect to the landfall area of search S2, between Aldeburgh and Thorpeness would need to cross a section of the Leiston Aldeburgh SSSI as well as part of the North Warren RSPB Reserve. It is likely trenchless construction techniques (subject to confirmation through further studies and ground investigations) could be used to avoid significant effects.

2.1.6.6 The three blue corridors that connect into the southern part of the landfall area of search S3 between Thorpeness and Sizewell would need to cross a section of Sandlings SPA and the Leiston Aldeburgh SSSI and would likely require interaction with the proposed cables routes for the Scottish Power Renewables (SPR) East Anglia One North and East Anglia Two Offshore Wind Farms.

2.1.6.7 The three purple corridors connecting into the northern part of this landfall area of search S3N, when considered in isolation, provided an opportunity to avoid sites designated for nature conservation but would entail interaction with the proposed Sizewell C Nuclear Power Station project.

2.1.6.8 The three orange corridors connecting to the most northern landfall area of search S5, to the north of Sizewell would need to cross Minsmere-Walberswick Ramsar and SPA, Minsmere to Walberswick Heaths & Marshes SAC and SSSI and Minsmere RSPB Reserve and would entail significant interaction with the proposed Sizewell C Nuclear Power Station project.

2.1.6.9 Four pinch-points were identified within the route corridors:

- The first is at a crossing of Leiston Road close to South Warren Golf Course, which would be crossed by all three red corridors connecting to the landfall area of search S2.
- The second of these is located between the B1353 and Leiston Road and would require cable routes to cross the Sandlings SPA, the Leiston Aldeburgh SSSI, and a section of the golf course, as well as having a pinch-point at the crossing of Leiston Road. This pinch-point would affect the three corridors blue corridors connecting to landfall area of search S3.
- The third pinch-point is to the south of Aldringham at the crossing of the Hundred River. This area is constrained by the Hundred River itself, the crossing of the B1353 and the B1122, and an area of woodland and properties. In addition, the

proposed cables for the SPR East Anglia One North and Two Offshore Windfarms are proposed to be routed through this same pinch-point. This area would need to be routed through (depending on which converter station site option area) by the three purple corridors connecting to landfall area of search S3N or by all three blue corridors connecting to landfall area of search S3 to avoid the second pinch point.

- The fourth pinch-point is to the northwest of Leiston associated with the offsite works for the proposed Sizewell C Nuclear Power Station including an area which has recently been established for ecological mitigation measures related to the project. This area would need to be routed through (depending on which converter station site option area) by the three purple corridors connecting to landfall area of search S3N.

2.1.7 Identification of the Initial Preferred Option

2.1.7.1 The evolution of the Suffolk Onshore Scheme is illustrated on **Figure 2.1.1 Evolution of the Suffolk Onshore Scheme, Sheets 1 to 4**.

2.1.7.2 The connection points, landfall areas of search, converter site option areas, route corridors and nearshore marine alignments considered at the routeing and siting stage are shown on **Figure 2.1.1 Evolution of the Suffolk Onshore Scheme, Sheet 1 of 4**.

2.1.7.3 Significant constraints associated with a connection into either the existing or proposed Sizewell substations meant that these options were not preferred. Connecting to a new connection point in the area, with an associated additional substation, was also not preferred as there would be no environmental or socio-economic, technical, or economic benefit over connecting into an existing (where possible) or proposed substation. The proposed Friston substation was therefore identified as the preferred connection point. As a consequence, those converter option areas (area A and area I) which were not identified for a Friston connection were discounted alongside the associated terrestrial corridors. This is illustrated on **Figure 2.1.1 Evolution of the Suffolk Onshore Scheme, Sheet 2 of 4**.

2.1.7.4 Landfall area of search S4 was identified as being significantly constrained from a terrestrial perspective as no onward terrestrial route corridor was identified from this landfall area of search due to the existing and proposed Sizewell Nuclear Power Stations. The marine approach was also considered to be constrained therefore this option was not taken forward. This is illustrated on **Figure 2.1.1 Evolution of the Suffolk Onshore Scheme, Sheet 2 of 4**.

2.1.7.5 Whilst the marine alignment to landfall area S1 was relatively unconstrainted, the terrestrial green corridor was constrained technically by two large river crossings of the Alde and Ore River which would also require a crossing of the Alde-Ore and Butley SAC in two places and the Alde-Ore Estuary SPA and SSSI in three places. A large proportion of this corridor is within the Flood Zone and this corridor would require the longest route within the Suffolk Coasts and Heaths AONB. Access to this corridor was also considered to be very limited, in particular in the area between the two large river crossings due to the nature and scale of the existing road network. This is illustrated on **Figure 2.1.1 Evolution of the Suffolk Onshore Scheme, Sheet 3 of 4**.

2.1.7.6 The marine approach to landfall area S3 was considered to be significantly constrained by the presence of rocky reefs. Onward terrestrial routeing within the blue corridor would also likely require a crossing of Sandlings SPA and Leighton-Aldeborough SSSI although the potential for significant effects would likely be avoidable through the use of trenchless construction techniques (subject to confirmation through further studies and ground investigations). This is illustrated in **Figure 2.1.1 Evolution of the Suffolk Onshore Scheme, Sheet 3 of 4**.

2.1.7.7 The marine approach to landfall S5 was considered to be constrained by the number of crossings offshore. Terrestrially the onshore orange corridor is constrained at the landfall by the presence of both European and national designated sites for nature consideration, albeit it is likely that significant effects could be avoided through the use of trenchless construction techniques (subject to confirmation through further studies and ground investigations). The orange corridor also crosses a large area of the proposed Sizewell C Nuclear Power Station development area which could significantly constrain the ability to route through this area and also have programme implications associated with construction sequencing of the two developments. This is illustrated on **Figure 2.1.1 Evolution of the Suffolk Onshore Scheme, Sheet 3 of 4**.

2.1.7.8 The marine approach to the landfall area S2 has few constraints, however the Leiston Aldeburgh SSSI and North Warren RSPB reserve could not be avoided without the use of trenchless construction techniques (subject to confirmation through further studies and ground investigations) at this landfall. The red terrestrial route corridor from this landfall area of search also includes the pinch-point along Leiston Road. This is illustrated on **Figure 2.1.1 Evolution of the Suffolk Onshore Scheme, Sheet 4 of 4**.

2.1.7.9 The northern part of the landfall area of search S3 (S3N) could avoid the area of rocky reef which significantly constrains the marine approach to S3 but the presence of existing and proposed cables at this landfall area and in the nearshore environment constrain potential marine alignments. The purple terrestrial route corridor connecting to this landfall area of search could avoid the designated sites for ecological conservation but could not avoid either of the two following pinch points. The first being a pinch-point to the south of Aldringham at the crossing of the Hundred River. This area is constrained by the Hundred River itself, the crossing of the B1353 and the B1122, and an area of woodland and properties. In addition, the proposed cables for the SPR East Anglia One North and Two Offshore Windfarms are proposed to be routed through this same pinch-point. The second being a pinch-point to the northwest of Leiston associated with the offsite works for the proposed Sizewell C Nuclear Power Station including an area which has recently been established for ecological mitigation measures related to the project. This is illustrated on **Figure 2.1.1 Evolution of the Suffolk Onshore Scheme, Sheet 4 of 4**.

2.1.7.10 Converter site options area B was constrained as this site is within the Suffolk Coasts and Heaths AONB and overlaps with an area which has been established for the proposed Sizewell C Nuclear Power Station ecological mitigation. Option Area C was considered to be constrained by the existing access. This option area would also result in a significantly longer onshore cable route if landfall area of search S2 and the red corridor was selected. Option Area D was considered to be constrained due to access and the need to route construction traffic through settlements. Option areas G and H were considered to be significantly constrained by the connection from these sites back to the proposed Friston substation. Option areas E and F are both in close proximity to the Suffolk Coasts and Heaths AONB and therefore setting impacts is a

consideration for both. The landscape character of option area F is more open than option area E and option area E provides a greater opportunity to mitigate both through the use of existing and additional screening. Both option areas have good access to the strategic highway network. Option area E would result in a shorter onshore cable route from either landfall area of search S2 and the red corridor or landfall area of search S3N and the purple corridor. This is illustrated on **Figure 2.1.1 Evolution of the Suffolk Onshore Scheme, Sheet 4 of 4**.

2.1.7.11 On balance the preferred solution identified was landfall area of search S2 connecting to a converter station site option area E via the red corridor with a connection back to the network through the proposed Friston substation. This is illustrated on **Figure 2.1.2 Suffolk Onshore Scheme Initial Preference**.

2.1.7.12 Whilst this option was constrained at the landfall due to presence of terrestrial nature conservation sites it was identified that trenchless installation methods could be used to minimise or avoid potential impacts. However, as further survey work is required to confirm the feasibility of using trenchless techniques at this landfall it was considered prudent to also progress an alternative. This alternative is a landfall within the landfall area of search S3N connection to converter site option area E via the purple corridor with a connection back to the network through the proposed Friston substation. This is illustrated on **Figure 2.1.2 Suffolk Onshore Scheme Initial Preference**.

2.1.8 Stakeholder Feedback and Option Refinement

2.1.8.1 Through engagement, Suffolk County Council and East Suffolk District Council emphasised the importance of looking at opportunities to coordinate with the interconnector projects being proposed by National Grid Ventures (NGV) in the area, which would require similar infrastructure.

2.1.8.2 The Project has explored the concept of co-locating converter stations, sharing cable corridors and consolidating landfalls and to look at potential challenges and options for consenting a coordinated approach.

2.1.8.3 A backcheck and review was undertaken of all potential converter station sites/option areas that were identified independently through both NGV's non-statutory consultation for the Nautilus project and the routeing and siting option appraisal for the Project described above. This backcheck and review considered whether it was feasible for any of the converter option areas to accommodate up to three co-located converter stations and whether there were any additional sites that should be investigated/appraised further for co-location opportunities.

2.1.8.4 The landfall areas of search S2, between Aldeburgh and Thorpeness and S3 and S3N, between Thorpeness and Sizewell were revisited, along with the red, blue and purple cable corridors, to understand the feasibility of coordinated landfalls and corridors.

2.1.8.5 Seven sites were identified as potentially offering opportunities for coordination, these are illustrated on **Figure 2.1.3 Potential Coordinated Converter Station Sites** and an appraisal was undertaken of these sites in accordance with the National Grid options appraisal methodology described in **Part 1, Chapter 3, Main Alternatives Considered**.

Potential Coordinated Converter Station Sites

2.1.8.6 A summary of key considerations for each of the seven sites illustrated on **Figure 2.1.3 Potential Coordinated Converter Station Sites** is described in the following sections.

2.1.8.7 Site 1 is contiguous with part of converter option area E and offers good existing screening to the north of the site and good construction access to the strategic road network. It is close to the AONB so setting is a consideration for this site. However, the site offers good opportunities for mitigation in keeping with the existing landscape character. This site offers the shortest overall onshore cable route.

2.1.8.8 Site 2 is contiguous with part of converter option area F and whilst being located close to strategic road network in terms of access, in terms of landscape character it is a very open landscape and development of a coordinated solution on this site would likely involve substantial mitigation. Suffolk Coasts and Heaths AONB is adjacent to the southern boundary of this site. The settlement of Sternfield is located to the northwest of the site, Church Common to the southwest of the site and Friston to the east of the site.

2.1.8.9 Site 3 is located further from the AONB but in close proximity to the settlement of Saxmundham. There is good existing screening along the western and southern edges of the site, this along with the topography of the local area limits the intervisibility between the settlement and the site. Access to this site is constrained and would need to be routed through the settlement of Saxmundham if taken off the B1119. Opportunity does exist to take temporary construction access from the B1121. This would require construction of a temporary access route and a crossing of the River Fromus.

2.1.8.10 Site 4 is contiguous with part of converter option area C and is located further away from the AONB and offers good existing screening and additional screen plating could be developed in keeping with the existing landscape character. Access to this site is challenging however Site 4 has the benefit of the proposed new link road being developed by the proposed Sizewell C Nuclear Power Station albeit the cumulative impact with this development would be a consideration. The site contains the former RAF Leiston Airfield, therefore this non-designated asset would need to be considered further if taken forward for development.

2.1.8.11 Site 5 is located approximately 2.5km from the AONB at its closest point. There are smaller settlements which surround the site on the west, south and east although intervening vegetation particularly in the southern part of the site would provide a degree of existing screening. The existing overhead lines are routed to the south of the site, and this is the closest of the proposed sites to the proposed Friston substation development. There are a number of non-designated assets within the site which include potential extensive remains of a roman settlement and villa within the north of the site. Physical impacts to these assets could potentially be avoided if development was to take place in the southern part of the site. A small section of Flood Zones 2 and 3 are located along the eastern boundary of the site associated with the Hundred River although it is likely that these areas could be avoided. This site is located further from the strategic road network and routeing construction traffic through settlements is unlikely to be avoidable.

2.1.8.12 Site 6 is contiguous with converter option area D and located approximately 1.5km from the AONB at its closet point. The site is located to the west of the settlement of Leiston and north of the settlement of Knodishall. There are a number of woodland

blocks and shelterbelts which do offer some opportunity for existing screening and integration of mitigation planting. There are a number of historical designated assets within the settlements of Leiston and Knodishall but these are well screened by existing vegetation surrounding the assets. Similar to site 5 this site is located further from the strategic road network and routeing construction traffic through settlements is unlikely to be avoidable.

2.1.8.13 Site 7 is contiguous with part of converter option area D and located within the Suffolk Coasts and Heaths AONB adjacent to the existing nuclear power stations and the Galloper and Gabbard Offshore Windfarm substations as well as the proposed Sizewell C Nuclear Power Station. Whilst within the designated site, this site does offer the opportunity to keep energy development close together. The settlement of Leiston is located to the west of this site although it is the industrial edge of this settlement closest to this site. Existing planting along the southern boundary of the site also provides good existing screening. Sandlings SPA is adjacent to the southern boundary of this site and Sizewell Marshes SSSI to the northern and western boundaries. The site is currently being used as a reptile mitigation area for the proposed Sizewell C Nuclear Power Station, therefore should this site be developed, this would need to be considered. This is the furthest of the sites from the strategic road network and like Site 4 access is constrained based on the existing road network. The proposed bypass as part of the proposed Sizewell C Nuclear Power Station would reduce potential impacts if in place for the start of construction but the cumulative impacts with the Sizewell C development would need to be considered. A connection back into Friston from site 7 is also technically challenging and an alternative solution would likely be required in terms of connecting into the existing network on the site

Potential for Coordinated Landfalls

2.1.8.14 As set out above landfall area of S2 interacts with the Leiston to Aldeburgh SSSI and North Warren RSBP reserve but has minimal constraints on the marine approach and is not constrained by the presence of any other existing or proposed infrastructure.

2.1.8.15 As set out above the majority of landfall S3 is significantly constrained in the immediate offshore environment due to the presence of the Coralline Cragg which is an important feature when considering coastal processes. There do exist opportunities to minimise interaction with this feature to the northern and southern ends of the landfall area of search however the southern extent of the landfall is spatially constrained by the proposed Scottish Power renewables (SPR) East Anglia One North and East Anglia Two Offshore Windfarm developments.

2.1.8.16 Whilst minimising interaction with the Coralline Cragg compared to S3, the routeing and siting process identified that landfall S3N has constraints associated with existing and proposed onshore and offshore infrastructure. When appraised as a landfall for the Project and as described in the sections above this landfall was identified as alternative to take forward. When considered as coordinated landfall it was identified that whilst landfall maybe achieved with two sets of cables but with significant technical complexity it was considered unlikely/impossible that landfall could be made with three sets of cables due to the space available.

2.1.8.17 The appraisal identified that only landfall area of search S2 could potentially deliver a coordinated landfall solution.

Coordinated Terrestrial Route Corridors

2.1.8.18 The assessment of the coordinated terrestrial route corridors identified the same constraints as those identified for the red, blue and purple corridors appraised for Project.

2.1.8.19 With regards to the four pinch points that were identified and are unavoidable on either the red, blue or purple corridors the third pinch point was identified as not being able to accommodate a coordinated solution. This would affect routes within the blue or purple corridors from landfall S3N depending on the location of the converter station.

2.1.8.20 Landfall S2 and the associated red corridor was the only landfall area or search/terrestrial corridor combination that could provide coordinated solution for three projects. It was however identified that the pinch point crossing within this corridor at Leiston Road may require the separation of the circuits over a short length including routeing some of the cables through the Aldeburgh golf course.

Suffolk Onshore Scheme Preferred Option

2.1.8.21 Following a back check of the initial preferred option for the Project and taking account of the appraisal findings of a potential coordinated options, Converter Site 1 and Site 3 have been identified as emerging preferences for the Project and sites which could also accommodated coordination with other projects.

2.1.8.22 Landfall S2 and the red corridor remains the emerging preference and this option could also potentially provide for a coordinated landfall and cable route with other projects.

2.1.8.23 Landfall S3N and the purple corridor remains an alternative option until survey work to determine the installation technique has been completed. However, this option could not facilitate a coordinated landfall or terrestrial cable route to either Site 1 or Site 3.

2.1.9 Suffolk Onshore Scheme Description

2.1.9.1 The Suffolk Onshore Scheme comprises of:

- HVAC connection, by underground cable, from the proposed Friston Substation to a converter station site;
- A new converter station site; and
- A HVDC underground cable from a new converter station site to a landfall on the Suffolk coast.

2.1.9.2 As described above there are currently options for the location of the infrastructure which makes up the Suffolk Onshore Scheme. These locations will be consulted on as part of the Projects non-statutory consultation.

2.1.9.3 There are five options in total which are listed below:

- Suffolk Site 1 Emerging Preference – this is illustrated on **Figure 2.1.4 Suffolk Site 1 Emerging Preference;**
- Suffolk Site 3 Emerging Preference – this is illustrated on **Figure 2.1.5 Suffolk Site 3 Emerging Preference;**

- Suffolk Site 1 Alternative – this is illustrated on **Figure 2.1.6 Suffolk Site 1 Alternative;**
- Suffolk Site 3 Alternative (Option 1) – this is illustrated on **Figure 2.1.7 Suffolk Site 3 Alternative (Option 1)**; and
- Suffolk Site 3 Alternative (Option 2) – this is illustrated on **Figure 2.1.8 Suffolk Site 3 Alternative (Option 2).**

2.1.9.4 The graduated swathes shown on **Figures 2.1.4 to 2.1.8** illustrate the area within the preferred corridors, where, based on the current understanding of baseline conditions the HVAC connection, converter station site and underground HVDC cables are likely to be routed/sited. These will be refined further on the selected option through both technical and environmental surveys and stakeholder and public feedback.

2.1.9.5 For the purpose of this Scoping Report, **Figure 1.1.1 Project Scoping Boundary** and **Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary** encompasses all elements shown on **Figures 2.1.4 to 2.1.8**. The technical chapters 2 to 13 have provided a proposed scope for each of the five options. The boundary of each of the five options relative to the Project Scoping Boundary (**Figure 1.1.1 Project Scoping Boundary**) and the Suffolk Onshore Scheme Scoping Boundary (**Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary**) is shown the following figures:

- **Figure 2.1.9 Suffolk Site 1 Emerging Preference Option Area;**
- **Figure 2.1.10 Suffolk Site 3 Emerging Preference Option Area;**
- **Figure 2.1.11 Suffolk Site 1 Alternative Option Area;**
- **Figure 2.1.12 Suffolk Site 3 Alternative (Option 1) Option Area;** and
- **Figure 2.1.13 Suffolk Site 3 Alternative (Option 2) Option Area**.

2.1.9.6 Whilst both sites 1 and 3 have been identified as being able to potentially accommodate coordination with other developments, these other developments would be subject to their own consent and therefore the proposed scope of assessment presented in chapters 2-13 is for the proposed Project as described in **Part 1, Chapter 4, Description of the Project**.

2.2 Landscape and Visual

2.2.1 Introduction

2.2.1.1 This chapter presents how the Landscape and Visual Impact Assessment (LVIA) will consider the potentially significant effects on landscape and visual amenity that may arise from the construction and operation, maintenance and decommissioning of the Suffolk Onshore Scheme (as described in **Part 1, Chapter 4, Description of the Project**). This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an EIA.

2.2.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Suffolk Onshore Scheme Scoping Boundary hereafter referred to as the Suffolk Scoping Boundary is illustrated on **Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary**.

2.2.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project;**
- **Part 1, Chapter 5, EIA Approach and Methodology;** and
- **Part 2, Chapter 1, Evolution of the Suffolk Onshore Scheme**.

2.2.1.4 This chapter is supported by the following figures:

- **Figure 2.2.1 Topography**;
- **Figure 2.2.2 Landscape Context and Designations**;
- **Figure 2.2.3 Landscape Character - National & Regional**;
- **Figure 2.2.4 Landscape Character - County**;
- **Figure 2.2.5 Landscape Character – District**;
- **Figure 2.2.6 Seascape Character – National & Regional**;
- **Figure 2.2.7 Bare Earth Zone of Theoretical Visibility - Converter Station Site 1**;
- **Figure 2.2.8 Bare Earth Zone of Theoretical Visibility - Converter Station Site 3**;
- **Figure 2.2.9 Representative Viewpoint Locations and Screened Zone of Theoretical Visibility - Site 1**; and
- **Figure 2.2.10 Representative Viewpoint Locations and Screened Zone of Theoretical Visibility - Site 3.**

2.2.1.5 Landscape and visual effects are interrelated with other environmental effects but will be assessed separately. Landscape effects associated with the Suffolk Onshore Scheme relate to the changes to the fabric, character and quality of the landscape and how it is experienced. Visual effects relate closely to changes to the landscape, but also concern changes in people's views as a result of the introduction of the Suffolk Onshore Scheme.

2.2.2 Regulatory and Planning Context

2.2.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. Key legislation, policy and guidance relevant to the assessment of potential effects on landscape and visual associated with the construction, operation, maintenance and decommissioning of the Project is presented below.

Legislation

2.2.2.2 At an International and National level, the following legislation is relevant to landscape and visual matters and will be referred to within the LVIA in the Environmental Statement (ES):

- The European Landscape Convention[1].

Planning Policy

National planning policy

2.2.2.3 At National level, the following policy is relevant to landscape and visual matters and will be referred to within the LVIA in the ES.

- Overarching National Policy Statement for Energy – EN-1[2] ;
- National Policy Statement for Electricity Networks Infrastructure – EN-5[3] ;
- National Planning Policy Framework[4] ; and
- Planning Practice Guidance – Natural Environment[5] .

2.2.2.4 The relevant sections of the *Overarching National Policy Statement for Energy* to landscape and visual matters include:

- 4.5: Criteria for "*good design*" for energy infrastructure;

[1] Council of Europe (2004) Council of Europe Landscape Convention (ETS No. 176). [online] Available at: https://www.coe.int/en/web/conventions/full-list?module=treaty-detail&treatynum=176

[2] Department of Energy and Climate Change (2011). Overarching National Policy Statement for Energy (EN-1). [online] Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure

[3] Department of Energy and Climate Change (2011). National Policy Statement for Electricity Networks Infrastructure (EN-5). [online] Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure

[4] Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework. [online] Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2

[5] Department for Levelling Up, House and Communities and Ministry of Housing, Communities and Local Government (2019). Planning Practice Guidance – Natural Environment. [online] Available at: https://www.gov.uk/guidance/natural-environment

- 5.3: Biodiversity and geological conservation;
- 5.7: Historic environment;
- 5.9: Landscape and visual; and
- 5.10: Land use including open space, green infrastructure & Green Belt.

2.2.2.5 The relevant sections of the *National Policy Statement for Electricity Networks Infrastructure* to landscape and visual matters include:

- 2.5: Consideration of good design;
- 2.7: Biodiversity and Geological Conservation; and
- 2.8: Landscape and Visual.

2.2.2.6 The draft Overarching National Policy Statement for Energy (EN-1) (September 2021) and draft National Policy Statement for Electricity Networks Infrastructure (EN-5) (September 2021) will be referred to if they become adopted during the lifespan of the Suffolk Onshore Scheme.

Local planning policy

2.2.2.7 The Suffolk Onshore Scheme lies within the jurisdiction of Suffolk County Council. County planning guidance which is relevant to a study of landscape and visual matters and will inform the LVIA in the ES are as follows:

- Suffolk Historic Landscape Characterisation[6];
- Historic Seascape Characterisation Newport to Clacton[7]; and
- Suffolk's Nature Strategy[8].

2.2.2.8 The Suffolk Onshore Scheme Scoping Boundary (refer to **Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary**) lies within the jurisdiction of East Suffolk Council. Local planning policy for East Suffolk Council consists of two parts; the Suffolk Coastal Local Plan and the Waveney Local Plan (which cover the former Suffolk Coastal and Waveney Districts).

2.2.2.9 The Suffolk Scoping Boundary lies within the boundary of the *Suffolk Coastal Local Plan* (adopted September 2020)[9]. Local Plan policies which are relevant to landscape and visual matters and will inform the LVIA in the ES include:

- SCLP 2.2: Strategic Infrastructure Priorities;
- SCLP 10.1: Biodiversity and Geodiversity;
- SCLP 10.3: Environmental Quality;

[6] Suffolk County Council (2012). Suffolk Historic Landscape Characterisation. [online] Available at: https://www.suffolk.gov.uk/assets/culture-heritage-and-leisure/suffolk-archaeological-service/2017-SUFFOLK-HISTORIC-LANDSCAPE-CHARACTERISATION-.pdf

[7] English Heritage (2011). Historic Seascape Characterisation Newport to Clacton. [online] Available at: https://archaeologydataservice.ac.uk/archives/view/hscnewport_eh_2011/

[8] Suffolk County Council (2015). Suffolk's Nature Strategy. [online] Available at: https://www.suffolk.gov.uk/planning-waste-and-environment/suffolks-countryside-and-wildlife/protecting-the-environment/suffolk-nature-strategy/

[9] East Suffolk Council (2020). Suffolk Coastal Local Plan. [online] Available at: https://eastsuffolk.inconsult.uk/consult.ti/suffolkcoastallocalplan2020/viewCompoundDoc?docid=11955764&partid=11958292

- SCLP 10.4: Landscape Character;
- SCLP 11.1: Design Quality;
- SCLP 11.2: Residential Amenity; and
- SCLP 11.8: Parks and Gardens of Historic or Landscape Interest.

2.2.2.10 Additional planning guidance documents relevant to landscape and visual matters are set out as follows:

- Sustainable Construction Supplementary Planning Document[10]; and
- Environmental Guidance Note[11].

2.2.2.11 The Settlement Sensitivity Assessment Volume 2: Suffolk Coastal[12] will not be referred to as it is based upon two development scenarios which are housing and commercial developments, of which the Suffolk Onshore Scheme is not relevant to.

2.2.2.12 Specifically relating to the Suffolk Coast & Heaths Area of Outstanding Natural Beauty (AONB), within which the Suffolk Scoping Boundary lies partially in, the following planning guidance documents are relevant to landscape and visual matters:

- Suffolk Coast & Heaths Area of Outstanding Natural Beauty Management Plan[13];
- Development in the setting of the Suffolk Coast & Heaths Area of Outstanding Natural Beauty (AONB) Position Statement[14];
- Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB) Natural Beauty and Special Qualities Indicators[15];
- Suffolk Coast & Heaths Area of Outstanding Natural Beauty Guidance on the selection and use of colour in development[16]; and

[10] East Suffolk Council (2022). Sustainable Construction Supplementary Planning Document. [online] Available at: https://www.eastsuffolk.gov.uk/assets/Planning/Planning-Policy-and-Local-Plans/Supplementary-documents/Sustainable-Construction-2022/FINAL-Sustainable-Construction-SPD.pdf

[11] East Suffolk Council (2020). Environmental Guidance Note. [online] Available at: https://www.eastsuffolk.gov.uk/assets/Environment/Environment-Guidance/Environmental-Guidance-Note.pdf

[12] East Suffolk Council (2018). Settlement Sensitivity Assessment Volume 2: Suffolk Coastal. [online] Available at: https://www.bing.com/search?q=East+Suffolk+Council+(2018)%2C+Settlement+Sensitivity+Assessment+Volume+2%3A+Suffolk+Coastal&cvid=779ea95c1ef948fb9628f703e0561488&aqs=edge.0.69i59j69i11004.994j0j9&FORM=ANAB01&PC=U531

[13] Suffolk Coast & Heaths AONB Partnership (2018). Suffolk Coast & Heaths Area of Outstanding Natural Beauty Management Plan 2018-2023. [online] Available at: https://www.suffolkcoastandheaths.org/wp-content/uploads/2021/01/SCH-AONB-Management-Plan-2018-23.pdf

[14] Suffolk Coast & Heaths AONB Partnership (2015). Development in the setting of the Suffolk Coast & Heaths Area of Outstanding Natural Beauty (AONB) Partnership Position Statement. [online] Available at: https://www.suffolkcoastandheaths.org/wp-content/uploads/2021/01/ENDORSED-SCH-AONB-Position-Statement-on-Development-in-Setting-of-AONB-2015.pdf

[15] Suffolk Coast & Heaths AONB Partnership (2016). Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB) Natural Beauty and Special Qualities Indicators. [online] Available at: https://www.eastsuffolk.gov.uk/assets/Planning/Sizewell/Suffolk-Coast-and-Heaths-AONB-Natural-Beauty-and-Special-Qualities-Indicators.pdf

[16] Suffolk Coast & Heaths AONB Partnership (2019). Suffolk Coast & Heaths Area of Outstanding Natural Beauty Guidance on the selection and use of colour in development. [online] Available at: https://www.suffolkcoastandheaths.org/wp-content/uploads/2021/01/SCH-Use-of-Colour-Guidance-v7.pdf

- Suffolk Coast & Heaths Area of Outstanding Natural Beauty (AONB) State of the AONB Report[17].

2.2.2.13 Where relevant to landscape and visual matters, the following neighbourhood plans within the study area will inform the LVIA:

- Leiston Neighbourhood Plan 2015-2029[18]; and
- Draft Saxmundham Neighbourhood Plan (pre-submission version)[19].

2.2.3 Study Area

2.2.3.1 An initial study area of 3km from the Emerging Preference areas of the two converter sites (Site 1 and Site 3) as shown on **Figure 2.1.4 Suffolk Site 1 Emerging Preference** and **Figure 2.1.5 Suffolk Site 3 Emerging Preference** and 1km from the Suffolk Scoping Boundary has been identified for the landscape and visual assessment and will be referred to as the study area within this chapter from now on. It is judged that significant landscape or visual effects will be unlikely beyond this study area. The LVIA study area is shown on **Figures 2.2.1 – 2.2.9**.

2.2.3.2 The extent of the study area has been informed by a review of the maximum parameters of the Suffolk Onshore Scheme, desk-based research, the appraisal work undertaken to date to inform the routeing and siting phase of the Suffolk Onshore Scheme, knowledge of the area alongside a targeted site visit and professional judgement. The study area will be further refined at the detailed assessment stage following further decision regarding the various options to ensure a proportional approach which will be focused on potential significant effects.

2.2.4 Baseline Conditions

Data Sources

2.2.4.1 The landscape and visual baseline described in this section has been informed by the following data sources:

- Ordnance Survey (OS) mapping, and aerial photography;
- OS Digital Terrain Model (DTM);
- Natural England;
- Historic England;
- National, and local planning policy;
- Published landscape character assessments; and

[17] Suffolk Coast & Heaths AONB Partnership (2018). Suffolk Coast & Heaths Area of Outstanding Natural Beauty (AONB) State of the AONB Report. [online] Available at: https://www.suffolkcoastandheaths.org/wp-content/uploads/2021/05/SCH-State-of-the-AONB-Report-2018.pdf

[18] Leiston-cum-Sizewell Town Council (2017). Leiston Neighbourhood Plan 2015-2029. [online] Available at: https://www.eastsuffolk.gov.uk/assets/Planning/Neighbourhood-Planning/Designated-Neighbourhood-Areas/Leiston/Leiston-NP-Made-Version-March-2017.pdf

[19] Saxmundham Town Council (2021). Saxmundham Neighbourhood Plan 2022-2037 Pre-submission DRAFT. [online] Available at: https://drive.google.com/file/d/1offOL1N8lEAct48PK3GmFWWeSk8xGdjo/view

- Published documents by the Suffolk Coast and Heaths AONB Partnership.

Baseline

2.2.4.2 An initial study of the baseline environment has been undertaken through desk-based research and a targeted site visit to establish the existing conditions of the landscape and visual resources of the study area as defined in Section 2.2.3, to inform the previous options appraisal process, and the ongoing design development of the Suffolk Onshore Scheme.

2.2.4.3 Desk-based research has involved a review of mapping and aerial photography, planning and policy documents, landscape character assessments, and other sources of information relevant to the baseline environment of the study area.

2.2.4.4 The description of the baseline environment within the LVIA in the ES will provide a description of the identified landscape and visual receptors, indicating their key characteristics and value, against which the potential change arising from the Suffolk Onshore Scheme will be assessed.

2.2.4.5 Consultation will be held with relevant LPAs and statutory consultees early in the LVIA process. This will help to inform detailed baseline survey and data collection; refinement of the location of representative viewpoints that will form the basis of the visual assessment; and, to agree the approach to mitigation measures and landscape reinstatement.

Relevant designations

2.2.4.6 The Suffolk Scoping Boundary lies partially within the following landscape specific designations:

- Suffolk Coast & Heaths AONB;
- Tree Preservation Orders (TPOs); and
- Ancient Woodland.

2.2.4.7 Additional to the above, the Suffolk Scoping Boundary falls within the following designations:

- Listed Buildings (refer to **Part 2, Chapter 4, Cultural Heritage**);
- Registered Common Land – Aldringham Green;
- Countryside and Rights of Way (CRoW) Act Access Land;
- RSPB Reserve – North Warren;
- Special Protection Area (SPA) – Sandlings;
- Sites of Special Scientific Interest (SSSI) – Leiston – Aldeburgh;
- Scheduled Monuments (refer to **Part 2, Chapter 4, Cultural Heritage**); and
- Local Nature Reserve (LNR) – The Haven, Aldeburgh.

2.2.4.8 Additional to the above, the study area, outside the Suffolk Scoping Boundary, also includes the following designations:

- Registered Common Land – Knodishall Common;
- SPA – Alde-Ore Estuary;
- Ramsar Site – Alde-Ore Estuary; and
- Special Areas of Conservation (SAC) – Alde-Ore & Butley Estuaries.

2.2.4.9 Whilst effects on these designated areas will not be assessed in the LVIA as they will be considered in other discipline specific chapters, they will inform judgements of landscape value and in the case of registered common land, is also an important recreational resource, views from which will be considered as part of the visual assessment.

2.2.4.10 Local designations include the Coastal Change Management Area (designated within *Suffolk Coastal Local Plan*[9]), which runs alongside the shoreline, and is partially within the Suffolk Scoping Boundary. They also include two Parks and Gardens of Historic or Landscape Interest (designated within *Suffolk Coastal Local Plan*[9]), Benhall Lodge Park and Carlton Park, Kelsale, which are located within the study area but not within the Suffolk Scoping Boundary.

2.2.4.11 As well as relevant designations, within the Suffolk Scoping Boundary, there is also a defined area of Heritage Coast – Suffolk.

Landscape character

2.2.4.12 The National, Regional, County and District landscape character context of the study area is shown on **Figure 2.2.3 Landscape Character - National & Regional** and **Figure 2.2.4 Landscape Character - District & County**. At the National level, the study area falls partly within the Suffolk Coast and Heaths National Character Area (NCA)[20] and partly within the South Norfolk and High Suffolk Claylands NCA[21], as identified by Natural England.

2.2.4.13 At a Regional level, landscape character is defined by the *East of England Landscape Character Typology*[22], published by Landscape East. The study area comprises the following Landscape Character Types (LCTs):

- Forested Estate Sandlands;
- Coastal Levels;
- Valley Settled Farmlands;
- Wooded Plateau Claylands;
- Urban;
- Valley Meadowlands; and
- Saltmarsh and Intertidal Flats.

[20] Natural England (2015). NCA Profile: 82 Suffolk Coast and Heaths (NE491). [online] Available at: http://publications.naturalengland.org.uk/publication/5626055104659456?category=8005

[21] Natural England (2014). NCA Profile: 83 South Norfolk and High Suffolk Claylands. [online] Available at: http://publications.naturalengland.org.uk/publication/6106120561098752?category=587130

[22] Landscape East (2010). East of England Landscape Typology. [online] Available at: http://www.landscape-east.org.uk/east-england-landscape-typology

2.2.4.14 At a County level, landscape character is defined by the *Suffolk Landscape Character Assessment*[23], published by Suffolk County Council. The study area comprises the following LCTs:

- Coastal Dunes and Shingle Ridges;
- Urban;
- Inland Navigable Waters;
- Saltmarsh & Inter-Tidal Flats;
- Coastal Levels;
- Estate Sandlands;
- Nearshore Waters;
- Valley Meadowlands;
- Rolling Estate Sandlands;
- Ancient Estate Claylands;
- Rolling Estate Claylands; and
- Valley Meadows and Fens.

2.2.4.15 At a District level, landscape character is defined by the *Suffolk Coastal Landscape Character Assessment*[24] (SCLCA), published by East Suffolk Council. The study area comprises the following LCTs and Landscape Character Areas (LCAs):

- LCT B: River Valleys - LCA B3: Yox Valley and LCA B4: Fromus Valley;
- LCT D: Coastal Broads and Marshes - LCA D3: Minsmere and Sizewell Coast and LCA D4: Thorpeness to Aldeburgh;
- LCT J: Estuaries – LCA J4: Alde Estuary;
- LCT K: Estate Sandlands – LCA K3: Aldringham and Freston Sandlands;
- LCT L: Ancient Estate Claylands – LCA L1: Heveningham and Knodihall Estate Claylands; and
- LCT O: Rolling Estate Sandlands – LCA O1: Benhall Estate Sandlands.

2.2.4.16 Also at a District level, landscape character is defined by the *Touching the Tide Landscape Character Assessment*[25] (TTLCA) published by the Touching the Tide Partnership. The TTLCA appears to use the LCTs identified in the Suffolk Landscape Character Assessment[23] and then identifies distinct Coastal Character Areas (CCAs). The study area comprises the following CCAs:

- Thorpeness to Aldeburgh Coast;

[23] Suffolk County Council (2008). Suffolk Landscape Character Assessment. [online] Available at: https://suffolklandscape.org.uk/

[24] East Suffolk Council (2018). Suffolk Coastal Landscape Character Assessment. [online] Available at: https://www.eastsuffolk.gov.uk/assets/Planning/Suffolk-Coastal-Local-Plan/First-Draft-Local-Plan/SCDC-Landscape-Character-Assessment.pdf

[25] Touching the Tide Partnership (2012). Touching the Tide Landscape Character Assessment. [online] Available at: https://www.suffolkcoastandheaths.org/wp-content/uploads/2021/01/2012-Touching-the-Tide-Landscape-Character-Assessment.pdf

- Alde Estuary; and
- Dunwich to Sizewell Coast.

2.2.4.17 Suffolk Coasts & Heaths AONB Partnership published the *Landscape Character Guidelines for the Suffolk Coast & Heaths Area of Outstanding Natural Beauty*[26], which will be used to inform the landscape character baseline of the study area.

Seascape character

2.2.4.18 The National and Regional seascape character context of the study area is shown on **Figure 2.2.5 Seascape Character - National & Regional**. At a National level, seascape character is defined by the *Seascape Character Assessment of the East Inshore and East Offshore Marine Plan Areas*[27], published by the Marine Management Organisation. The study area comprises the following Seascape Character Areas (SCAs):

- 10: Suffolk Coastal Waters.

2.2.4.19 At a Regional level, seascape character is defined by the *Seascape Character Assessment of Suffolk, South Norfolk and North Essex*[28] (SCASNE) published by Suffolk County Council. The study area comprises the following Seascape Character Types (SCTs):

- 3: Nearshore Waters.

Visual receptors

2.2.4.20 Visual receptors that have potential to experience views of all or some of the Suffolk Onshore Scheme including the extension to the proposed Friston substation, landfall, underground HVAC cable corridor, converter station and underground HVDC cable corridor include:

- Settlement (east to west) including Sizewell, Thorpeness, Aldeburgh, Leiston, Coldfair Green, Theberton, Knodishall, Friston, Benhall Green, Kelsale Carlton and Saxmudham;
- Isolated and small clusters of dwellings and farmsteads dispersed across the landscape;
- Recreational facilities including various areas of Common Land and Carlton Park;
- Recreational routes and access land including Public Rights of Way (PRoW), several recreational routes such as the Suffolk Coast Path, and National Cycle Network (NCN) route including NCN 42;
- Employers working at Sizewell;

[26] Suffolk Coasts & Heaths AONB Partnership (2010). Landscape Character Guidelines for the Suffolk Coast & Heaths Area of Outstanding Natural Beauty. [online] Available at: https://www.suffolkcoastandheaths.org/wp-content/uploads/2020/04/SCH-Landscape-Character-Guidelines-2010.pdf

[27] Marine Management Organisation (2012). Seascape Character Area Assessment East Inshore and East Offshore Marine Plan Areas. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/312481/east_seascape.pdf

[28] Suffolk County Council (2018). Seascape Character Assessment of Suffolk, South Norfolk and North Essex. [online] Available at: https://suffolklandscape.org.uk/wp-content/uploads/2020/08/Part1_5997_Assessment_V1_10_Issue_web.pdf

- Occupiers of vehicles travelling on A-roads including A1094, B-roads including B1119 and unclassified roads within the study area; and
- Passengers on the East Suffolk railway line.

Representative viewpoint locations

2.2.4.21 The visual assessment will be based on a series of representative viewpoints. These viewpoints have been chosen to provide a representative cross section of receptor types and locations within the study area, focused on those with the potential for significant effects. The representative viewpoint locations have been informed by desk-based work and field work undertaken in March 2022.

2.2.4.22 The chosen representative viewpoint locations for the converter station options (Site 1 and Site 3) have also been informed by a Bare Earth and Screened Zone of Theoretical Visibility (ZTV) plans, as shown on **Figures 2.2.6 – Figure 2.2.9**. The ZTVs have been run for the converter stations only, although as the design evolves it will be updated as the location and extent of permanent above ground infrastructure is finalised.

2.2.4.23 The ZTV has been generated using a 'bare ground' 5m OS digital terrain model (DTM) and is based on a maximum height of 30m, located in the centre of the graduated swathe within the emerging preference area for the converter stations. The graduated swathes are outlined in **Part 2, Chapter 1, Evolution of the Suffolk Onshore Scheme.** The screening from woodland and buildings is based on the following factors:

- Existing buildings have been incorporated into the DTM from OS MasterMap with assigned individual heights and OS Open Map Local (where OS MasterMap data was not available) with an assumed height of 7.5m.
- Woodland from the National Forest Inventory (NFI) has also been incorporated into the DTM with an assumed height of 10m.

2.2.4.24 The ZTVs indicate areas from where it may be possible to view part of or the entire converter station sites. However, the use of the ZTV needs to be qualified by the following considerations:

- The ZTV is limited by the detail of the digital terrain model data used and does not take account of local topographic variations;
- Some areas of theoretical visibility may comprise woodland or other vegetation (not accounted for in the NFI) or agricultural land, where there is effectively no public access and the likelihood of views being experienced is consequently low; and
- The ZTV does not take account of the likely orientation of a viewer, such as the direction of travel and there is no allowance for reduction of visibility with distance, weather or light.

2.2.4.25 These limitations mean that the ZTVs tends to overestimate the extent of the visibility, both in terms of the area from which the Suffolk Onshore Scheme is visible and the extent of the converter station sites, which are visible. Consequently, the ZTV should be considered as a tool to identify areas of potential visibility for further targeted survey and assessment, and not a measure of the visual effect.

2.2.4.26 Table 2.2.1 details the locations proposed for the representative viewpoints for Site 1 Emerging Preference, as shown on **Figure 2.2.9 Representative Viewpoints and Screened Zone of Theoretical Visibility Site 1**, and their reason for inclusion in the LVIA.

Table 2.2.1: Representative viewpoint locations for Site 1 Emerging Preference

Viewpoint number	Location description	Reason for inclusion
1	Grove Road, north of Friston (approximate grid reference: TM416610)	Representative of users of the local road network, including Grove Road between the settlements of Friston and Knodishall. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands.
2	Public footpath (Knodishall 354, route 16), north-west of Friston (approximate grid reference: TM403612)	Representative of recreational users of the local PRoW network within the landscape to the north of Friston. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands.
4	Knodishall Common, west of Knodishall (approximate grid reference: TM430609)	Representative of recreational users within Knodishall Common and CRoW Access Land. Representative of the edge of the settlement of Knodishall. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
5	Sailors' Path recreational route, south of Thorpeness (approximate grid reference: TM469587)	Representative of recreational users of the Sailors' Path recreational route between the settlements of Thorpeness and Aldeburgh. Representative of receptors within the Suffolk Coast and Heaths AONB. Located within SCLCA LCA D4: Thorpeness to Aldeburgh.
7	South Coast Path recreational route off Aldeburgh Road (approximate grid reference: TM437582)	Representative of recreational users of the South Coast Path recreational route between the settlements of Aldeburgh and Snape. Representative of receptors within the Suffolk Coast and Heaths AONB. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
8	Aldeburgh Road (A1094), near to Park Farm (approximate grid	Representative of users of the local road network between the settlements of Aldeburgh and Friston. Representative of receptors on the boundary of the Suffolk Coast and Heaths AONB.

Viewpoint number	Location description	Reason for inclusion
	reference: TM425591)	Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
9	Sandlings Walk recreational route, south of Knodishall (approximate grid reference: TM433598)	Representative of recreational users of the Sandlings Walk recreational route to the south of the settlement of Knodishall. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
17	Suffolk Coast Path recreational route, east of Snape (approximate grid reference: TM408582)	Representative of recreational users of the Suffolk Coast Path recreational route to the east of the settlement of Snape. Representative of receptors within the Suffolk Coast and Heaths AONB. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
18	Saxmundham Road (B1119) and public footpath (Leiston-cum-Sizewell, route 3), on the edge of Leiston (approximate grid reference: TM432627)	Representative of users of the local road network and PRoW network on the edge of the settlement of Leiston. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands.
19	Public footpath (Friston 260, route 22), east of Friston (approximate grid reference: TM417601)	Representative of recreational users of the local PRoW network to the east of the settlement of Friston. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.

2.2.4.27 Table 2.2.2 details the locations proposed for the representative viewpoints for Site 1 Alternative, as shown on **Figure 2.2.9 Representative Viewpoints and Screened Zone of Theoretical Visibility Site 1**, and their reason for inclusion in the LVIA.

Table 2.2.2: Representative viewpoint locations for Site 1 Alternative

Viewpoint number	Location description	Reason for inclusion
1	Grove Road, north of Friston (approximate grid reference: TM416610)	Representative of users of the local road network, including Grove Road between the settlements of Friston and Knodishall.

Viewpoint number	Location description	Reason for inclusion
		Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands.
2	Public footpath (Knodishall 354, route 16), north-west of Friston (approximate grid reference: TM403612)	Representative of recreational users of the local PRoW network within the landscape to the north of Friston. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands.
4	Knodishall Common, west of Knodishall (approximate grid reference: TM430609)	Representative of recreational users within Knodishall Common and CRoW Access Land. Representative of the edge of the settlement of Knodishall. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
6	Suffolk Coast Path recreational route, south of Sizewell nuclear power station (approximate grid reference: TM475624)	Representative of recreational users of the Suffolk Coast Path recreational route between Sizewell and Thorpeness. Representative of receptors within the Suffolk Coast and Heaths AONB. Located within SCLCA LCA K3: Aldringham and Freston Sandlands
7	South Coast Path recreational route off Aldeburgh Road (approximate grid reference: TM437582)	Representative of recreational users of the South Coast Path recreational route between the settlements of Aldeburgh and Snape. Representative of receptors within the Suffolk Coast and Heaths AONB. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
8	Aldeburgh Road (A1094), near to Park Farm (approximate grid reference: TM425591)	Representative of users of the local road network between the settlements of Aldeburgh and Friston. Representative of receptors on the boundary of the Suffolk Coast and Heaths AONB. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
9	Sandlings Walk recreational route, south of Knodishall (approximate grid reference: TM433598)	Representative of recreational users of the Sandlings Walk recreational route to the south of the settlement of Knodishall. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
13	Aldringham Common and public footpath	Representative of recreational users of the local PRoW network, Aldringham Common and CRoW Act Access Land, to the east of the settlement of Aldringham.

Viewpoint number	Location description	Reason for inclusion
	(Aldringham-cum-Thorpe, route 3), east of Aldringham (approximate grid reference: TM456611)	Representative of receptors on the boundary of the Suffolk Coast and Heaths AONB. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
15	Sandy Lane, public bridleway (Leiston-cum-Sizewell, route 19), north-west of Sizewell (approximate grid reference: TM459632)	Representative of users of the local road network and recreational users along the local PRoW network. Representative of users of Leiston Common and CRoW Access Land. Representative of receptors within the Suffolk Coast and Heaths AONB. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
17	Suffolk Coast Path recreational route, east of Snape (approximate grid reference: TM408582)	Representative of recreational users of the Suffolk Coast Path recreational route to the east of the settlement of Snape. Representative of receptors within the Suffolk Coast and Heaths AONB. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
18	Saxmundham Road (B1119) and public footpath (Leiston-cum-Sizewell, route 3), on the edge of Leiston (approximate grid reference: TM432627)	Representative of users of the local road network and PRoW network on the edge of the settlement of Leiston. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands.
19	Public footpath (Friston 260, route 22), east of Friston (approximate grid reference: TM417601)	Representative of recreational users of the local PRoW network to the east of the settlement of Friston. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.

2.2.4.28 Table 2.2.3 details the locations proposed for the representative viewpoints for Site 3 Emerging Preference, as shown on **Figure 2.2.10 Representative Viewpoints and Screened Zone of Theoretical Visibility Site 3**, and their reason for inclusion in the LVIA.

Table 2.2.3: Representative viewpoint locations for Site 3 Emerging Preference

Viewpoint number	Location description	Reason for inclusion
1	Grove Road, north of Friston (approximate grid reference: TM416610	Representative of users of the local road network, including Grove Road between the settlements of Friston and Knodishall. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands.
2	Public footpath (Knodishall 354, route 16), north-west of Friston (approximate grid reference: TM403612)	Representative of recreational users of the local PRoW network within the landscape to the north of Friston. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands
3	Public footpath (Saxmunham 460, route 37), north of Saxmundham (approximate grid reference: TM381642)	Representative of recreational users of the local PRoW network between the settlements of Carlton and Saxmundham. Representative of users of Carlton Park, Kelsale, locally designated as a Park and Garden of Historic or Landscape Interest. Located within SCLCA LCA B4: Fromus Valley.
4	Knodishall Common, west of Knodishall (approximate grid reference: TM430609)	Representative of recreational users within Knodishall Common and CRoW Access Land. Representative of the edge of the settlement of Knodishall. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
5	Sailors' Path recreational route, south of Thorpeness (approximate grid reference: TM469587)	Representative of recreational users of the Sailors' Path recreational route between the settlements of Thorpeness and Aldeburgh. Representative of receptors within the Suffolk Coast and Heaths AONB. Located within SCLCA LCA D4: Thorpeness to Aldeburgh.
7	South Coast Path recreational route off Aldeburgh Road (approximate grid reference: TM437582)	Representative of recreational users of the South Coast Path recreational route between the settlements of Aldeburgh and Snape. Representative of receptors within the Suffolk Coast and Heaths AONB. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
8	Aldeburgh Road (A1094), near to Park Farm (approximate grid	Representative of users of the local road network between the settlements of Aldeburgh and Friston. Representative of receptors on the boundary of the Suffolk Coast and Heaths AONB.

Viewpoint number	Location description	Reason for inclusion
	reference: TM425591)	Located within SCLCA LCA K3: Aldringham and Freston Sandlands
9	Sandlings Walk recreational route, south of Knodishall (approximate grid reference: TM433598)	Representative of recreational users of the Sandlings Walk recreational route to the south of the settlement of Knodishall. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
10	Bigsbys Corner (B1121), south of Saxmundham (approximate grid reference: TM385624)	Representative of users of the local road network and local PRoW network between the settlements of Saxmundham and Benhall Green. Representative of users of the East Suffolk railway line between Saxmunham and Wickham Market. Located within SCLCA LCA B4: Fromus Valley
11	Public bridleway (Sternfield 491, route 29), east of Saxmundham (approximate grid reference: TM407628)	Representative of recreational users of the local PRoW network to the east of the settlement of Saxmunham. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands.
12	Clayhills Road and public footpath (Kelsale-cum-Carlton, route 33), east of Carlton (approximate grid reference: TM396641)	Representative of users of the local road network and recreational users of the local PRoW network to the east of the settlement of Carlton. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands.
16	Public footpath (Theberton 515, route 1), south-west of Theberton (approximate grid reference: TM424650)	Representative of recreational users of the local PRoW network to the south of Theberton Woods. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands.
17	Suffolk Coast Path recreational route, east of Snape (approximate grid reference: TM408582)	Representative of recreational users of the Suffolk Coast Path recreational route to the east of the settlement of Snape. Representative of receptors within the Suffolk Coast and Heaths AONB. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
18	Saxmundham Road (B1119) and public	Representative of users of the local road network and PRoW network on the edge of the settlement of Leiston.

Viewpoint number	Location description	Reason for inclusion
	footpath (Leiston-cum-Sizewell, route 3), on the edge of Leiston (approximate grid reference: TM432627)	Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands.
19	Public footpath (Friston 260, route 22), east of Friston (approximate grid reference: TM417601)	Representative of recreational users of the local PRoW network to the east of the settlement of Friston. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.

2.2.4.29 Table 2.2.4 details the locations proposed for the representative viewpoints for Site 3 Alternative (Option 1), as shown on **Figure 2.2.10 Representative Viewpoints and Screened Zone of Theoretical Visibility Site 3**, and their reason for inclusion in the LVIA.

Table 2.2.4: Representative viewpoint locations for Site 3 Alternative (Option 1)

Viewpoint number	Location description	Reason for inclusion
1	Grove Road, north of Friston (approximate grid reference: TM416610)	Representative of users of the local road network, including Grove Road between the settlements of Friston and Knodishall. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands.
2	Public footpath (Knodishall 354, route 16), north-west of Friston (approximate grid reference: TM403612)	Representative of recreational users of the local PRoW network within the landscape to the north of Friston. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands
3	Public footpath (Saxmunham 460, route 37), north of Saxmundham (approximate grid reference: TM381642)	Representative of recreational users of the local PRoW network between the settlements of Carlton and Saxmundham. Representative of users of Carlton Park, Kelsale, locally designated as a Park and Garden of Historic or Landscape Interest. Located within SCLCA LCA B4: Fromus Valley

Viewpoint number	Location description	Reason for inclusion
6	Suffolk Coast Path recreational route, south of Sizewell nuclear power station (approximate grid reference: TM475624)	Representative of recreational users of the Suffolk Coast Path recreational route between Sizewell and Thorpeness. Representative of receptors within the Suffolk Coast and Heaths AONB. Located within SCLCA LCA K3: Aldringham and Freston Sandlands
10	Bigsbys Corner (B1121), south of Saxmundham (approximate grid reference: TM385624)	Representative of users of the local road network and local PRoW network between the settlements of Saxmundham and Benhall Green. Representative of users of the East Suffolk railway line between Saxmunham and Wickham Market. Located within SCLCA LCA B4: Fromus Valley
11	Public bridleway (Sternfield 491, route 29), east of Saxmundham (approximate grid reference: TM407628)	Representative of recreational users of the local PRoW network to the east of the settlement of Saxmunham. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands
12	Clayhills Road and public footpath (Kelsale-cum-Carlton, route 33), east of Carlton (approximate grid reference: TM396641)	Representative of users of the local road network and recreational users of the local PRoW network to the east of the settlement of Carlton. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands
14	Leiston Abbey Scheduled Monument, north of Leiston (approximate grid reference: TM444640)	Representative of recreational receptors at Leiston Abbey Scheduled Monument, within CRoW Act Access Land to the north of the settlement of Leiston. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands.
15	Sandy Lane, public bridleway (Leiston-cum-Sizewell, route 19), north-west of Sizewell (approximate grid reference: TM459632)	Representative of users of the local road network and recreational users along the local PRoW network. Representative of users of Leiston Common and CRoW Access Land. Representative of receptors within the Suffolk Coast and Heaths AONB. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.

Viewpoint number	Location description	Reason for inclusion
16	Public footpath (Theberton 515, route 1), south-west of Theberton (approximate grid reference: TM424650)	Representative of recreational users of the local PRoW network to the south of Theberton Woods. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands.
17	Suffolk Coast Path recreational route, east of Snape (approximate grid reference: TM408582)	Representative of recreational users of the Suffolk Coast Path recreational route to the east of the settlement of Snape. Representative of receptors within the Suffolk Coast and Heaths AONB. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
18	Saxmundham Road (B1119) and public footpath (Leiston-cum-Sizewell, route 3), on the edge of Leiston (approximate grid reference: TM432627)	Representative of users of the local road network and PRoW network on the edge of the settlement of Leiston. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands.
19	Public footpath (Friston 260, route 22), east of Friston (approximate grid reference: TM417601)	Representative of recreational users of the local PRoW network to the east of the settlement of Friston. Located within SCLCA LCA K3: Aldringham and Freston Sandlands

2.2.4.30 Table 2.2.5 details the locations proposed for the representative viewpoints for Site 3 Alternative (Option 2), as shown on **Figure 2.2.10 Representative Viewpoints and Screened Zone of Theoretical Visibility Site 3**, and their reason for inclusion in the LVIA.

Table 2.2.5: Representative viewpoint locations for Site 3 Alternative (Option 2)

Viewpoint number	Location description	Reason for inclusion
1	Grove Road, north of Friston (approximate grid reference: TM416610)	Representative of users of the local road network, including Grove Road between the settlements of Friston and Knodishall. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands.

Viewpoint number	Location description	Reason for inclusion
2	Public footpath (Knodishall 354, route 16), north-west of Friston (approximate grid reference: TM403612)	Representative of recreational users of the local PRoW network within the landscape to the north of Friston. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands
3	Public footpath (Saxmunham 460, route 37), north of Saxmundham (approximate grid reference: TM381642)	Representative of recreational users of the local PRoW network between the settlements of Carlton and Saxmundham. Representative of users of Carlton Park, Kelsale, locally designated as a Park and Garden of Historic or Landscape Interest. Located within SCLCA LCA B4: Fromus Valley
4	Knodishall Common, west of Knodishall (approximate grid reference: TM430609)	Representative of recreational users within Knodishall Common and CRoW Access Land. Representative of the edge of the settlement of Knodishall. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
6	Suffolk Coast Path recreational route, south of Sizewell nuclear power station (approximate grid reference: TM475624)	Representative of recreational users of the Suffolk Coast Path recreational route between Sizewell and Thorpeness. Representative of receptors within the Suffolk Coast and Heaths AONB. Located within SCLCA LCA K3: Aldringham and Freston Sandlands
7	South Coast Path recreational route off Aldeburgh Road (approximate grid reference: TM437582)	Representative of recreational users of the South Coast Path recreational route between the settlements of Aldeburgh and Snape. Representative of receptors within the Suffolk Coast and Heaths AONB. Located within SCLCA LCA K3: Aldringham and Freston Sandlands
8	Aldeburgh Road (A1094), near to Park Farm (approximate grid reference: TM425591)	Representative of users of the local road network between the settlements of Aldeburgh and Friston. Representative of receptors on the boundary of the Suffolk Coast and Heaths AONB. Located within SCLCA LCA K3: Aldringham and Freston Sandlands
9	Sandlings Walk recreational route, south of Knodishall (approximate grid	Representative of recreational users of the Sandlings Walk recreational route to the south of the settlement of Knodishall.

Viewpoint number	Location description	Reason for inclusion
	reference: TM433598)	Located within SCLCA LCA K3: Aldringham and Freston Sandlands
10	Bigsbys Corner (B1121), south of Saxmundham (approximate grid reference: TM385624)	Representative of users of the local road network and local PRoW network between the settlements of Saxmundham and Benhall Green. Representative of users of the East Suffolk railway line between Saxmunham and Wickham Market. Located within SCLCA LCA B4: Fromus Valley
11	Public bridleway (Sternfield 491, route 29), east of Saxmundham (approximate grid reference: TM407628)	Representative of recreational users of the local PRoW network to the east of the settlement of Saxmunham. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands
12	Clayhills Road and public footpath (Kelsale-cum-Carlton, route 33), east of Carlton (approximate grid reference: TM396641)	Representative of users of the local road network and recreational users of the local PRoW network to the east of the settlement of Carlton. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands
13	Aldringham Common and public footpath (Aldringham-cum-Thorpe, route 3), east of Aldringham (approximate grid reference: TM456611)	Representative of recreational users of the local PRoW network, Aldringham Common and CRoW Act Access Land, to the east of the settlement of Aldringham. Representative of receptors on the boundary of the Suffolk Coast and Heaths AONB. Located within SCLCA LCA K3: Aldringham and Freston Sandlands
15	Sandy Lane, public bridleway (Leiston-cum-Sizewell, route 19), north-west of Sizewell (approximate grid reference: TM459632)	Representative of users of the local road network and recreational users along the local PRoW network. Representative of users of Leiston Common and CRoW Access Land. Representative of receptors within the Suffolk Coast and Heaths AONB. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
16	Public footpath (Theberton 515, route 1), south-west of Theberton (approximate grid	Representative of recreational users of the local PRoW network to the south of Theberton Woods. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands.

Viewpoint number	Location description	Reason for inclusion
	reference: TM424650)	
17	Suffolk Coast Path recreational route, east of Snape (approximate grid reference: TM408582)	Representative of recreational users of the Suffolk Coast Path recreational route to the east of the settlement of Snape. Representative of receptors within the Suffolk Coast and Heaths AONB. Located within SCLCA LCA K3: Aldringham and Freston Sandlands.
18	Saxmundham Road (B1119) and public footpath (Leiston-cum-Sizewell, route 3), on the edge of Leiston (approximate grid reference: TM432627)	Representative of users of the local road network and PRoW network on the edge of the settlement of Leiston. Located within SCLCA LCA L1: Heveningham and Knodishall Estate Claylands.
19	Public footpath (Friston 260, route 22), east of Friston (approximate grid reference: TM417601)	Representative of recreational users of the local PRoW network to the east of the settlement of Friston. Located within SCLCA LCA K3: Aldringham and Freston Sandlands

Visualisations

2.2.4.31 Visualisations will be produced, using the maximum development parameters, to illustrate the converter station from all the representative viewpoint locations where it is visible, to assist an understanding of the potential visual effects.

2.2.4.32 No visualisations are proposed for the landfall or underground HVAC or HVDC cable corridors because of the temporary nature of impacts predicted to arise during the construction phase of the Suffolk Onshore Scheme. There are also no visualisations proposed for the extension works to the proposed Friston substation as the works are considered to be minor.

2.2.4.33 The methodology for the preparation and presentation of the visualisations will follow the requirements set out in the Landscape Institute, 2019, *Technical Guidance Note 06-19: Visual Representation of Development Proposals*.

Planned Surveys

2.2.4.34 Field surveys of the converter station site, HVAC and HVDC corridors and the landfall will be undertaken by Chartered Landscape Architects.

2.2.4.35 An initial field survey has been undertaken in March 2022 to provide an understanding of the local area and potential landscape and visual receptors.

2.2.4.36 Subsequent field surveys will be completed after Scoping Opinions have been received and consultation has been conducted with relevant Local Planning Authorities (LPAs). These detailed surveys from publicly accessible areas will be used to undertake the landscape and visual assessments, and to capture photography from representative viewpoint locations used in the visual assessment and as supporting figures for the LVIA.

2.2.4.37 Field surveys will include site visits and photography during the winter season i.e., when vegetation cover is generally at its lowest (thus visibility is at its greatest), to enable an appreciation of the extent to which vegetation has a screening function within the landscape, particularly in relation to sensitive receptors, and to understand the likely mitigation requirements.

2.2.4.38 Surveys will be undertaken in line with UK Government guidelines relating to the Covid-19 pandemic and relevant Health and Safety procedures. At the time of writing there are no foreseeable limitations to the LVIA surveys because of Covid-19 restrictions.

Future Baseline

2.2.4.39 With regard to landscape baseline environment reporting, GLVIA3, states that: “The aim should be to describe the landscape as it is at the time but also to consider, if possible, what it may be like in the future, without the proposal.”

2.2.4.40 The LVIA within the ES will consider changes which may affect the future landscape in the absence of the development.

2.2.5 Embedded and Control & Management Measures

Embedded Measures

2.2.5.1 Embedded measures are steps taken during the design phase to help minimise potential effects, based on key sensitivities, constraints and opportunities identified through baseline study. Landscape and visual considerations have been important in informing the converter and landfall site selection process and in identifying potential cable route corridor options, and will continue to inform the form, location and routeing of the various elements throughout the design process.

2.2.5.2 Mitigation measures are those that seek to further reduce potential effects that could not be entirely designed out and are identified and informed by the detailed assessment stage. These include landscape reinstatement and landform and woodland screening and seek to help reduce the extent or significance of negative effects in the long term. In relation to the Suffolk Onshore Scheme, secondary mitigation measures are likely to include, reinstatement of hedgerows and other vegetation along the cable route and temporary access tracks, and landscape integration of the converter station through planting and landform design.

2.2.5.3 Landscape mitigation measures will be developed to support the landscape strategies and guidelines identified in published landscape character assessments. Details of landscape mitigation measures, such as planting types and species will be developed

in consultation with LPAs. Opportunities will also be sought to integrate ecological, drainage and other mitigation measures into an overall landscape and environmental mitigation strategy and masterplan for the Suffolk Onshore Scheme.

Control and Management Measures

2.2.5.4 An outline Code of Construction Practice (CoCP) is provided in **Appendix 1.4.A Outline Code of Construction Practice.** Measures relevant to the control and management of impacts that could affect the Landscape and Visual assessment are:

- LV01: The contractor(s) will retain vegetation where practicable. Where vegetation is lost and trees cannot be replaced in situ due to the restrictions associated with land rights required for operational safety, native shrub planting approved by National Grid will be used as a replacement, in accordance with the outline vegetation reinstatement plans included within the Landscape Ecological Management Plan (LEMP);
- LV02: The contractor(s) will apply the relevant protective principles set out in British Standard (BS) 5837:2012: Trees in relation to design, demolition and construction. This will be applied to trees within the Order Limits which will be preserved through the construction phase, and to trees outside of the Order Limits where such measures do not hinder or prevent the use of the relevant working width for construction. All works to high grade trees, including trees under Tree Preservation Orders and veteran trees, will be undertaken or supervised by a suitably qualified arboriculturist; and
- LV03: A five-year aftercare period will be established for all reinstatement and mitigation planting.
- GG07: A full record of condition will be carried out (photographic and descriptive) of the working areas that may be affected by the construction activities. This record will be available for comparison following reinstatement after the works have been completed to ensure that the standard of reinstatement at least meets that recorded in the pre-condition survey.
- GG08: Land used temporarily will be reinstated where practicable to its pre-construction condition and use. Hedgerows, fences and walls (including associated earthworks and boundary features) will be reinstated to a similar style and quality to those that were removed, with landowner agreement.
- GG09: Where sensitive features are to be retained within or immediately adjacent to the Order Limits, an appropriate protective area will be established using appropriate fencing and signage and will be inspected, repaired and replaced as necessary. The protective areas will be shown on the Retention and Reinstatement Plans contained within the LEMP.

2.2.5.5 Additional measures relating to landscape and visual would include the following:

- Limiting the working width of the cable construction corridor and consideration of HDD construction techniques to maintain sensitive landscape features such as mature trees.

- Separation and storage of subsoil and topsoil to ensure no degradation in quality and reinstatement undertaken as soon as possible after completion of construction of each section/area of works.
- Placement of topsoil to one side of the trench and subsoil to the other, with the additional height of the subsoil storage used on whichever side requires greater screening benefit.
- Reinstatement of hedgerows/field boundaries crossed by the route, with native (and species-rich where appropriate) species planted to reduce or mitigate effects on landscape character and the visual awareness of the cable route within and across the landscape in the short to medium term.

2.2.6 Potential for Significant Effects

2.2.6.1 The LVIA will consider the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project**.

2.2.6.2 The proposed scope of the landscape and visual assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

2.2.6.3 This section identifies the sources and impacts that would occur as a result of the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme.

2.2.6.4 The potential for the Suffolk Onshore Scheme to result in the potential significant effects described in this section takes into account the embedded and control and management measures described in section 5.

Sources of construction impacts

- construction compounds;
- temporary office accommodation and welfare facilities;
- access tracks;
- construction plant and vehicle movement;
- topsoil stripping and earthworks; and
- Introduction of localised lighting.

Sources of operational impacts

- permanent overground infrastructure, including converter station;
- permanent underground infrastructure, including HVDC and HVAC underground cables; and
- operational lighting at the converter station.

Sources of maintenance impacts

- vehicle movement to carry workers in and out of the converter station site along with new materials and equipment to replace the old; and
- access tracks with temporary vehicle movement for cable repairs.

Sources of decommissioning impacts

- decommissioning compounds and temporary office accommodation and welfare facilities;
- construction plant and vehicle movement associated with the removal of permanent above ground infrastructure including the converter station;
- redundant cables could be left in-situ, however where this is not possible construction plant and vehicle movement associated with the removal of cables to be disposed of; and
- reinstatement of converter station site.

Potential impacts

2.2.6.5 The siting of the landfall and converter station sites and the routeing of the underground HVDC and HVAC cable corridors has reduced the potential for significant landscape and visual effects, through seeking to avoid the more sensitive landscape features such as protected trees (e.g., Tree Preservation Orders) and proximity to settlement. Where the removal of landscape features along the HVDC and HVAC cable corridors are unavoidable such as hedgerows and arable land, these will be fully reinstated to the pre-existing condition as far as reasonably practical (secured through a CoCP and DCO Requirements) once installation of the cables is complete.

2.2.6.6 As a result, the LVIA of the landfall and underground cable corridors will be focused on the construction phase as operational effects are not considered to be significant. This is underpinned by professional judgement and past experience of similar HVDC link projects. Effects on the landscape and visual resource as a result of the introduction of the converter station will be assessed both at construction and operation (at year 1 of operation (winter) and year 15 of operation (summer) once any mitigation planting has established). Decommissioning and maintenance effects are considered to be similar to and no worse than those assessed during the construction phase of works.

2.2.6.7 The following table lists all sources of potential impacts that could lead to potential significant effects on landscape character and visual amenity during each stage of the Suffolk Onshore Scheme and identifies those that have less potential to result in a significant effect with an explanation. The impacts relate to the LVIA methodology (detailed at section 7) and are split into landscape character and visual amenity for each source.

2.2.6.8 Table 2.2.6 identifies the potential impacts that could result from the sources identified above.

Table 2.2.6: Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction, Maintenance and Decommissioning	Construction activity including construction compounds, temporary accommodation and access tracks, construction plant and vehicle movement, topsoil stripping and earthworks and introduction of localised lighting.	Temporary alteration to landscape character	Yes - Due to the short-term duration and temporary nature of activity, potential effects whilst have less potential to be significant will be considered within the LVIA.	**Scoped in**
		Temporary alteration to visual amenity	Yes - Due to the short-term duration and temporary nature of activity, potential effects whilst have less potential to be significant will be considered within the LVIA.	**Scoped in**
Operation	Operational converter station	Alteration to landscape character	Yes - Potential to result in a significant effect.	**Scoped in**
		Alteration to visual amenity	Yes - Potential to result in a significant effect.	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Operation	Introduction of operational lighting at the converter station	Alteration to landscape character and visual amenity as a result of operational lighting	No - There is less potential that significant effects will result on landscape character or visual amenity as any additional lighting will be limited to maintaining site security and safety and would be within the context existing settlement. Should the approach to lighting change, this aspect will be scoped into the landscape and visual assessments.	Scoped out
Operation	Operational extension to the proposed Friston substation (including extension to boundary of site and boundary fencing, installation of one new AIS bay and additional switch	Alteration to landscape character and visual amenity as a result of operational lighting	No - There is less potential that significant effects will result on landscape character or visual amenity as the extension to the proposed Friston	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
	gear and bus bars to be located within the substation)		substation will be minimal and within the context of existing energy infrastructure. Should the design of the proposals at the proposed Friston substation become more substantial this aspect will be scoped into the landscape and visual assessments.	
Operation	Operational HVDC and HVAC underground cables	Alteration to landscape character	No - Less potential to have significant effects on landscape character at operation. The landscape will be returned to previous land use and landscape components lost at construction will be reinstated as soon as reasonably	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			practical after construction.	
		Alteration to visual amenity	No - Less potential to have significant effects on visual amenity at operation. The landscape will be returned to previous land use and landscape components lost at construction will be reinstated as soon as reasonably practical after construction.	Scoped out

Impact Pathways with Receptors (Step 2)

2.2.6.9 This section identities whether there are any impact pathways from the impacts identified above that could give rise to potentially significant effects on the receptors within the study area.

Suffolk Converter Station Site 1 Emerging Preference

2.2.6.10 Table 2.2.7 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 1 Emerging Preference as shown on as shown on **Figure 2.1.4 Suffolk Site 1 Emerging Preference** and **Figure 2.1.9 Suffolk Site 1 Emerging Preference Option Area.**

Table 2.2.7: Impact pathways with receptors – Suffolk Site 1 Emerging Preference

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Temporary alteration to landscape character from the introduction of construction activity including compounds, temporary accommodation and access tracks, construction plant and vehicle movements, topsoil stripping and earthworks, storge of materials and lighting	SCLCA LCAs B3, B4, D3, D4, J4, K3, L1 and O1. TTLCA CCAs Thorpeness to Aldeburgh Coast, Alde Estuary and Dunwich to Sizewell Coast. SCASNE SCT 3.	Yes - The Suffolk Scoping Boundary lies within and near to multiple published LCAs, CCAs and SCT, of which there is the potential for temporary and short-term effects. Whilst less potential to result in significant effects at construction, they will be considered as part of the construction phase assessment.	**Scoped in for construction, maintenance and decommissioning**
	Suffolk Coast and Heaths AONB.	Yes - The Suffolk Scoping Boundary lies within the Suffolk Coast and Heaths AONB, of which there is the potential for temporary and short-term effects. Whilst less potential to result in significant effects at construction, they will be considered as part of the construction phase assessment.	**Scoped in for construction, maintenance and decommissioning**
Temporary alteration to visual amenity from the introduction of construction activity including compounds, temporary accommodation and access tracks, construction plant and vehicle movements, topsoil	Settlement, isolated dwellings, recreational facilities, recreational routes and access land, employees, occupiers of vehicles and railway line passengers.	Yes - The Suffolk Scoping Boundary is potentially visible from a range of visual receptors, of which there is the potential for significant effects at construction from close range receptors. However, due to the short duration and temporary nature of	**Scoped in for construction, maintenance and decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
stripping and earthworks, storge of materials and lighting		the works there is potential that the majority of visual effects at construction will not be significant.	
	Recreational users within the Suffolk Coast and Heaths AONB.	Yes -The Suffolk Scoping Boundary is potentially visible from recreational receptors within the Suffolk Coast and Heaths AONB, of which there is the potential for significant effects at construction from close range receptors. However, due to the short duration and temporary nature of the works there is potential that the majority of visual effects at construction will not be significant.	**Scoped in for construction, maintenance and decommissioning**
Permanent alteration to landscape character as a result of the operational converter station	SCLCA LCAs B3, B4, D3, D4, J4, K3 and L1. TTLCA CCAs Thorpeness to Aldeburgh Coast, Alde Estuary and Dunwich to Sizewell Coast.	Yes -The Suffolk Scoping Boundary lies within and near to multiple published LCAs and CCAs, of which there is the potential for significant effects at operation.	**Scoped in for operation**
	Suffolk Coast and Heaths AONB.	There is the potential for indirect effects to result on the setting of the Suffolk Coast and Heaths AONB as a result of the proximity of the operational converter station. Whilst less potential to result in significant effects at	

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
		operation, they will be considered as part of the operational phase assessment.	
	SCLCA LCA 01. SCASNE SCT 3.	No - The Suffolk Scoping Boundary does not lie within the LCA and SCT. Whilst there is the potential for indirect effects on the perceptual qualities of the LCA and SCT there is less potential that the effects would be significant.	Scoped out for operation
Permanent alteration to visual amenity as a result of the operational converter station	Settlement, isolated dwellings, recreational facilities, recreational routes and access land, employees, occupiers of vehicles and railway line passengers.	Yes -The Suffolk Scoping Boundary will be potentially visible from a range of visual receptors, of which there is a potential significant effect at operation.	**Scoped in for operation**
	Recreational users within the Suffolk Coast and Heaths AONB.	Yes -The Suffolk Scoping Boundary will be potentially visible from recreational receptors within the Suffolk Coast and Heaths AONB, of which there is a potential significant effect at operation.	**Scoped in for operation**

Suffolk Converter Station Site 1 Alternative

2.2.6.11 Table 2.2.8 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 1 Alternative Preference as shown on as shown on **Figure 2.1.7 Suffolk Site 1 Alternative** and **Figure 2.1.11 Suffolk Site 1 Alternative Option Area.**

Table 2.2.8: Impact pathways with receptors – Suffolk Site 1 Alternative

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Temporary alteration to landscape character from the introduction of construction activity including compounds, temporary accommodation and access tracks, construction plant and vehicle movements, topsoil stripping and earthworks, storge of materials and lighting	SCLCA LCAs B3, B4, D3, D4, J4, K3, L1 and O1. TTLCA CCAs Thorpeness to Aldeburgh Coast, Alde Estuary and Dunwich to Sizewell Coast. SCASNE SCT 3.	Yes -The Suffolk Scoping Boundary lies within and near to multiple published LCAs, CCAs and SCT, of which there is the potential for temporary and short-term effects. Whilst less potential to result in significant effects at construction, they will be considered as part of the construction phase assessment.	**Scoped in for construction, maintenance and decommissioning**
	Suffolk Coast and Heaths AONB.	Yes -The Suffolk Scoping Boundary lies within the Suffolk Coast and Heaths AONB, of which there is the potential for temporary and short-term effects. Whilst less potential to result in significant effects at construction, they will be considered as part of the construction phase assessment.	**Scoped in for construction, maintenance and decommissioning**
Temporary alteration to visual amenity from the introduction of construction activity including compounds, temporary accommodation and access tracks, construction plant and vehicle movements, topsoil	Settlement, isolated dwellings, recreational facilities, recreational routes and access land, employees, occupiers of vehicles and railway line passengers.	Yes -The Suffolk Scoping Boundary is potentially visible from a range of visual receptors, of which there is the potential for significant effects at construction from close range receptors. However, due to the short duration and temporary nature of	**Scoped in for construction, maintenance and decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
stripping and earthworks, storge of materials and lighting		the works there is potential that the majority of visual effects at construction will not be significant.	
	Recreational users within the Suffolk Coast and Heaths AONB.	Yes -The Suffolk Scoping Boundary is potentially visible from recreational receptors within the Suffolk Coast and Heaths AONB, of which there is the potential for significant effects at construction from close range receptors. However, due to the short duration and temporary nature of the works there is potential that the majority of visual effects at construction will not be significant.	**Scoped in for construction, maintenance and decommissioning**
Permanent alteration to landscape character as a result of the operational converter station	SCLCA LCAs B3, B4, D3, D4, J4, K3 and L1. TTLCA CCAs Thorpeness to Aldeburgh Coast, Alde Estuary and Dunwich to Sizewell Coast.	Yes -The Suffolk Scoping Boundary lies within and near to multiple published LCAs and CCAs, of which there is the potential for significant effects at operation.	**Scoped in for operation**
	Suffolk Coast and Heaths AONB.	No - There is the potential for indirect effects to result on the setting of the Suffolk Coast and Heaths AONB as a result of the proximity of the operational converter station. Whilst less potential to result in significant	

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
		effects at operation, they will be considered as part of the operational phase assessment.	
	SCLCA LCA 01. SCASNE SCT 3.	No - The Suffolk Scoping Boundary does not lie within the LCA and SCT. Whilst there is the potential for indirect effects on the perceptual qualities of the LCA and SCT there is less potential that the effects would be significant.	Scoped out for operation
Permanent alteration to visual amenity as a result of the operational converter station	Settlement, isolated dwellings, recreational facilities, recreational routes and access land, employees, occupiers of vehicles and railway line passengers.	Yes -The Suffolk Scoping Boundary will be potentially visible from a range of visual receptors, of which there is a potential significant effect at operation.	**Scoped in for operation**
	Recreational users within the Suffolk Coast and Heaths AONB.	Yes -The Suffolk Scoping Boundary will be potentially visible from recreational receptors within the Suffolk Coast and Heaths AONB, of which there is a potential significant effect at operation.	**Scoped in for operation**

Suffolk Converter Station Site 3 Emerging Preference

2.2.6.12 Table 2.2.9 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Emerging

Preference as shown on as shown on **Figure 2.1.5 Suffolk Site 3 Emerging Preference** and **Figure 2.1.10 Suffolk Site 3 Emerging Preference Option Area.**

Table 2.2.9: Impact pathways with receptors – Suffolk Site 3 Emerging Preference

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Temporary alteration to landscape character from the introduction of construction activity including compounds, temporary accommodation and access tracks, construction plant and vehicle movements, topsoil stripping and earthworks, storge of materials and lighting	SCLCA LCAs B3, B4, D3, D4, J4, K3, L1 and O1. TTLCA CCAs Thorpeness to Aldeburgh Coast, Alde Estuary and Dunwich to Sizewell Coast. SCASNE SCT 3.	Yes -The Suffolk Scoping Boundary lies within and near to multiple published LCAs, CCAs and SCT, of which there is the potential for temporary and short-term effects. Whilst less potential to result in significant effects at construction, they will be considered as part of the construction phase assessment.	**Scoped in for construction, maintenance and decommissioning**
	Suffolk Coast and Heaths AONB.	Yes -The Suffolk Scoping Boundary lies within the Suffolk Coast and Heaths AONB, of which there is the potential for temporary and short-term effects. Whilst less potential to result in significant effects at construction, they will be considered as part of the construction phase assessment.	**Scoped in for construction, maintenance and decommissioning**
Temporary alteration to visual amenity from the introduction of construction activity including compounds, temporary accommodation and	Settlement, isolated dwellings, recreational facilities, recreational routes and access land, employees, occupiers of vehicles and	Yes -The Suffolk Scoping Boundary is potentially visible from a range of visual receptors, of which there is the potential for significant effects at construction from close range	**Scoped in for construction, maintenance and decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
access tracks, construction plant and vehicle movements, topsoil stripping and earthworks, storge of materials and lighting	railway line passengers.	receptors. However, due to the short duration and temporary nature of the works there is potential that the majority of visual effects at construction will not be significant.	
	Recreational users within the Suffolk Coast and Heaths AONB.	Yes -The Suffolk Scoping Boundary is potentially visible from recreational receptors within the Suffolk Coast and Heaths AONB, of which there is the potential for significant effects at construction from close range receptors. However, due to the short duration and temporary nature of the works there is potential that the majority of visual effects at construction will not be significant.	**Scoped in for construction, maintenance and decommissioning**
Permanent alteration to landscape character as a result of the operational converter station	SCLCA LCAs B3, B4, D3, D4, J4, K3 and L1. TTLCA CCAs Thorpeness to Aldeburgh Coast, Alde Estuary and Dunwich to Sizewell Coast.	Yes -The Suffolk Scoping Boundary lies within and near to multiple published LCAs and CCAs, of which there is the potential for significant effects at operation.	**Scoped in for operation**
	Suffolk Coast and Heaths AONB.	No - There is not considered to be the potential for effects to result on the setting of the Suffolk Coast and Heaths AONB as a result of the	Scoped out for operation

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
		proximity of the operational converter station.	
	SCLCA LCA 01. SCASNE SCT 3.	No - The Suffolk Scoping Boundary does not lie within the LCA and SCT. Whilst there is the potential for indirect effects on the perceptual qualities of the LCA and SCT there is less potential that the effects would be significant.	Scoped out for operation
Permanent alteration to visual amenity as a result of the operational converter station	Settlement, isolated dwellings, recreational facilities, recreational routes and access land, employees, occupiers of vehicles and railway line passengers.	Yes -The Suffolk Scoping Boundary will be potentially visible from a range of visual receptors, of which there is a potential significant effect at operation.	**Scoped in for operation**
	Recreational users within the Suffolk Coast and Heaths AONB.	Yes -The Suffolk Scoping Boundary will be potentially visible from recreational receptors within the Suffolk Coast and Heaths AONB, of which there is a potential significant effect at operation.	**Scoped in for operation**

Suffolk Converter Station Site 3 Alternative (Option 1)

2.2.6.13 Table 2.2.10 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Alternative (Option 1) as shown on as shown on **Figure 2.1.7 Suffolk Site 3 Alternative (Option 1)** and **Figure 2.1.12 Suffolk Site 3 Alternative (option 1) Option Area**.

Table 2.2.10: Impact Pathways – Suffolk Site 3 Alternative (Option 1)

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Temporary alteration to landscape character from the introduction of construction activity including compounds, temporary accommodation and access tracks, construction plant and vehicle movements, topsoil stripping and earthworks, storge of materials and lighting	SCLCA LCAs B3, B4, D3, D4, J4, K3, L1 and O1. TTLCA CCAs Thorpeness to Aldeburgh Coast, Alde Estuary and Dunwich to Sizewell Coast. SCASNE SCT 3.	Yes -The Suffolk Scoping Boundary lies within and near to multiple published LCAs, CCAs and SCT, of which there is the potential for temporary and short-term effects. Whilst less potential to result in significant effects at construction, they will be considered as part of the construction phase assessment.	**Scoped in for construction, maintenance and decommissioning**
	Suffolk Coast and Heaths AONB.	Yes -The Suffolk Scoping Boundary lies within the Suffolk Coast and Heaths AONB, of which there is the potential for temporary and short-term effects. Whilst less potential to result in significant effects at construction, they will be considered as part of the construction phase assessment.	**Scoped in for construction, maintenance and decommissioning**
Temporary alteration to visual amenity from the introduction of construction activity including compounds, temporary accommodation and access tracks, construction plant and vehicle movements, topsoil	Settlement, isolated dwellings, recreational facilities, recreational routes and access land, employees, occupiers of vehicles and railway line passengers.	Yes -The Suffolk Scoping Boundary is potentially visible from a range of visual receptors, of which there is the potential for significant effects at construction from close range receptors. However, due to the short duration and temporary nature of	**Scoped in for construction, maintenance and decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
stripping and earthworks, storge of materials and lighting		the works there is potential that the majority of visual effects at construction will not be significant.	
	Recreational users within the Suffolk Coast and Heaths AONB.	Yes -The Suffolk Scoping Boundary is potentially visible from recreational receptors within the Suffolk Coast and Heaths AONB, of which there is the potential for significant effects at construction from close range receptors. However, due to the short duration and temporary nature of the works there is potential that the majority of visual effects at construction will not be significant.	**Scoped in for construction, maintenance and decommissioning**
Permanent alteration to landscape character as a result of the operational converter station	SCLCA LCAs B3, B4, D3, D4, J4, K3 and L1. TTLCA CCAs Thorpeness to Aldeburgh Coast, Alde Estuary and Dunwich to Sizewell Coast.	Yes -The Suffolk Scoping Boundary lies within and near to multiple published LCAs and CCAs, of which there is the potential for significant effects at operation.	**Scoped in for operation**
	Suffolk Coast and Heaths AONB.	No - There is not considered to be the potential for effects to result on the setting of the Suffolk Coast and Heaths AONB as a result of the proximity of the operational converter station.	Scoped out for operation

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
	SCLCA LCA 01. SCASNE SCT 3.	No - The Suffolk Scoping Boundary does not lie within the LCA and SCT. Whilst there is the potential for indirect effects on the perceptual qualities of the LCA and SCT there is less potential that the effects would be significant.	Scoped out for operation
Permanent alteration to visual amenity as a result of the operational converter station	Settlement, isolated dwellings, recreational facilities, recreational routes and access land, employees, occupiers of vehicles and railway line passengers.	Yes -The Suffolk Scoping Boundary will be potentially visible from a range of visual receptors, of which there is a potential significant effect at operation.	**Scoped in for operation**
	Recreational users within the Suffolk Coast and Heaths AONB.	Yes -The Suffolk Scoping Boundary will be potentially visible from recreational receptors within the Suffolk Coast and Heaths AONB, of which there is a potential significant effect at operation.	**Scoped in for operation**

Suffolk Converter Station Site 3 Alternative (Option 2)

2.2.6.14 Table 2.2.11 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Alternative (Option 2) as shown on as shown on **Figure 2.1.8 Suffolk Site 3 Alternative (Option 2)** and **Figure 2.1.13 Suffolk Site 3 Alternative (option 2) Option Area.**

Table 2.2.11: Impact pathways with receptors – Suffolk Site 3 Alternative (Option 2)

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Temporary alteration to landscape character from the introduction of construction activity including compounds, temporary accommodation and access tracks, construction plant and vehicle movements, topsoil stripping and earthworks, storge of materials and lighting	SCLCA LCAs B3, B4, D3, D4, J4, K3, L1 and O1. TTLCA CCAs Thorpeness to Aldeburgh Coast, Alde Estuary and Dunwich to Sizewell Coast. SCASNE SCT 3.	Yes -The Suffolk Scoping Boundary lies within and near to multiple published LCAs, CCAs and SCT, of which there is the potential for temporary and short-term effects. Whilst less potential to result in significant effects at construction, they will be considered as part of the construction phase assessment.	**Scoped in for construction, maintenance and decommissioning**
	Suffolk Coast and Heaths AONB.	Yes -The Suffolk Scoping Boundary lies within the Suffolk Coast and Heaths AONB, of which there is the potential for temporary and short-term effects. Whilst less potential to result in significant effects at construction, they will be considered as part of the construction phase assessment.	**Scoped in for construction, maintenance and decommissioning**
Temporary alteration to visual amenity from the introduction of construction activity including compounds, temporary accommodation and access tracks, construction plant and vehicle movements, topsoil	Settlement, isolated dwellings, recreational facilities, recreational routes and access land, employees, occupiers of vehicles and railway line passengers.	Yes -The Suffolk Scoping Boundary is potentially visible from a range of visual receptors, of which there is the potential for significant effects at construction from close range receptors. However, due to the short duration and temporary nature of	**Scoped in for construction, maintenance and decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
stripping and earthworks, storge of materials and lighting		the works there is potential that the majority of visual effects at construction will not be significant.	
	Recreational users within the Suffolk Coast and Heaths AONB.	Yes -The Suffolk Scoping Boundary is potentially visible from recreational receptors within the Suffolk Coast and Heaths AONB, of which there is the potential for significant effects at construction from close range receptors. However, due to the short duration and temporary nature of the works there is potential that the majority of visual effects at construction will not be significant.	**Scoped in for construction, maintenance and decommissioning**
Permanent alteration to landscape character as a result of the operational converter station	SCLCA LCAs B3, B4, D3, D4, J4, K3 and L1. TTLCA CCAs Thorpeness to Aldeburgh Coast, Alde Estuary and Dunwich to Sizewell Coast.	Yes -The Suffolk Scoping Boundary lies within and near to multiple published LCAs and CCAs, of which there is the potential for significant effects at operation.	**Scoped in for operation**
	Suffolk Coast and Heaths AONB.	No - There is not considered to be the potential for effects to result on the setting of the Suffolk Coast and Heaths AONB as a result of the proximity of the operational converter station.	Scoped out for operation

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
	SCLCA LCA 01. SCASNE SCT 3.	No - The Suffolk Scoping Boundary does not lie within the LCA and SCT. Whilst there is the potential for indirect effects on the perceptual qualities of the LCA and SCT there is less potential that the effects would be significant.	Scoped out for operation
Permanent alteration to visual amenity as a result of the operational converter station	Settlement, isolated dwellings, recreational facilities, recreational routes and access land, employees, occupiers of vehicles and railway line passengers.	Yes -The Suffolk Scoping Boundary will be potentially visible from a range of visual receptors, of which there is a potential significant effect at operation.	**Scoped in for operation**
	Recreational users within the Suffolk Coast and Heaths AONB.	Yes -The Suffolk Scoping Boundary will be potentially visible from recreational receptors within the Suffolk Coast and Heaths AONB, of which there is a potential significant effect at operation.	**Scoped in for operation**

2.2.7 Proposed Assessment Methodology

Proposed Data Sources

2.2.7.1 The following data sources are proposed to be used to inform the assessment:

- Ordnance Survey (OS) mapping, and aerial photography;
- OS Digital Terrain Model (DTM);
- Natural England ;

- Historic England ;
- National, and local planning policy;
- Published landscape character assessments; and
- Published documents by the Suffolk Coast and Heaths AONB Partnership.

Guidance

2.2.7.2 The landscape and visual assessment will be carried out in accordance with the following good practice guidance documents:

- Guidelines for Landscape and Visual Impact Assessment: Third edition (GLVIA3)[29];
- Assessing landscape value outside national designations - Technical Guidance Note 02/21[30] ;
- Design Principles for National Infrastructure[31] ;
- Infrastructure - Technical Guidance Note 04/20[32] ;
- Tranquillity – An overview – Technical Information Note 01/17[33]; and
- Visual Representation of Development Proposals – Technical Guidance Note 06/19[34].

2.2.7.3 *GLVIA3* places a strong emphasis on the importance of professional judgement in identifying and defining the significance of landscape and visual effects. The LVIA will be undertaken by Chartered Landscape Architects with experience in the assessment of similar types of HVDC link project. Professional judgement will be used in combination with structured methods and criteria to evaluate landscape and visual value and susceptibility, the resulting sensitivity, magnitude and significance of effect.

Proposed Assessment Methodology

2.2.7.4 The following section summarises the methodology for the LVIA which builds on the general assessment methodology presented in **Part 1, Chapter 5, EIA Approach and Methodology**. For clarity and in accordance with good practice, the assessment of

[29] Landscape Institute and Institute of Environmental Management and Assessment (2013). Guidelines for Landscape and Visual Impact Assessment, Third Edition. Abington Oxon: Rutledge

[30] Landscape Institute (2021). Assessing landscape value outside national designations - Technical Guidance Note 02/21. [online] Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2021/05/tgn-02-21-assessing-landscape-value-outside-national-designations.pdf

[31] National Infrastructure Commission Design Group (2020). Design Principles for National Infrastructure. [online] Available at: https://nic.org.uk/app/uploads/NIC-Design-Principles.pdf

[32] Landscape Institute (2020). Infrastructure - Technical Guidance Note 04/20. [online] Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2018/01/LI-Infrastructure-TGN-FINAL-200924.pdf

[33] Landscape Institute (2017). Tranquillity – An overview - Technical Information Note 01/17. [online] Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2017/02/Tranquillity-An-Overview-1-DH.pdf

[34] Landscape Institute (2019). Visual Representation of Development Proposals, Technical Guidance Note 06/19. [online] Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf

potential effects on landscape character and visual amenity, although closely related, are undertaken separately.

Sensitivity

Landscape receptors

2.2.7.5 Landscape receptors are described as components of the landscape that have the potential to be affected by the Suffolk Onshore Scheme. These can include overall character and key characteristics, individual elements or features and specific aesthetic or perceptual aspects. It is the interaction between the different components of the Project and these landscape receptors which has potential to result in landscape effects (both adverse and beneficial).

2.2.7.6 The sensitivity of the landscape receptor is a combination of the value of the landscape (undertaken as part of the baseline study) and the susceptibility to change of the receptor to the specific type of development being assessed.

2.2.7.7 Landscape value is frequently addressed by reference to international, national, regional and local designations, determined by statutory bodies and planning agencies. Absence of such a designation does not necessarily imply a lack of quality or value. Factors such as accessibility and local scarcity can render areas of nationally unremarkable quality, highly valuable as a local resource.

2.2.7.8 The evaluation of landscape value will be undertaken considering the following factors and classified as high, medium or low with evidence provided as to the basis of the evaluation. These are taken from the *Assessing landscape value outside national designations - Technical Guidance Note 02/21*.

- "Natural heritage – Landscape with clear evidence of ecological, geological, geomorphological or physiographic interest which contribute positively to the landscape.
- Cultural heritage – Landscape with clear evidence of archaeological, historical or cultural interest which contribute positively to the landscape.
- Landscape condition – Landscape which is in a good physical state both with regard to individual elements and overall landscape structure.
- Associations – Landscape which is connected with notable people, events and the arts.
- Distinctiveness – Landscape that has a strong sense of identity.
- Recreational – Landscape offering recreational opportunities where experience of landscape is important.
- Perceptual (scenic) – Landscape that appeals to the senses, primarily the visual sense.
- Perceptual (wildness and tranquillity) – Landscape with a strong perceptual value notably wildness, tranquillity and/or dark skies.
- Functional - Landscape which performs a clearly identifiable and valuable function, particularly in the healthy functioning of the landscape."

2.2.7.9 Landscape susceptibility relates to the ability of a particular landscape to accommodate the Suffolk Onshore Scheme. It is appraised through consideration of the baseline characteristics of the landscape, and in particular, the scale or complexity of a given landscape. The evaluation of landscape susceptibility will be defined as high, medium or low and will be supported by a clear explanation based upon the analysis of the landscape receptor and the extent to which it is able to accommodate the type of change proposed, specific to the Suffolk Onshore Scheme.

2.2.7.10 The overall sensitivity assessment of the landscape receptor is made by employing professional judgement to combine and analyse the identified value and susceptibility with overall levels given from high, medium to low. Table 2.2.12 below outlines indicators that inform landscape value, susceptibility and sensitivity. The basis of the assessment will be made clear in the evaluation of each landscape receptor.

Table 2.2.12: Sensitivity of landscape receptors

	Higher sensitivity ⟷	**Lower sensitivity**
Value	A designated landscape (National Park, Area of Outstanding National Beauty, National Scenic Area, World Heritage Site) or a landscape in very good condition, exceptional scenic quality and high recreational opportunities or a high degree of rarity.	Landscapes containing few if any notable elements/features, of poor condition or containing several detracting features and limited aesthetic qualities. Landscapes which are not formally designated.
Susceptibility	Attributes that make up the character of the landscape which offer very limited opportunities to accommodate change of the type proposed without fundamentally altering key characteristics.	Attributes that make up the character of the landscape which are tolerant of a large degree of the type of change proposed without fundamentally altering the key characteristics.

Visual receptors

2.2.7.11 Sensitivity of visual receptors is defined through appraisal of the viewing expectation, or value placed on the view as identified in the baseline study, and its susceptibility to change.

2.2.7.12 Value of the view is an appraisal of the value attached to views and is often informed by the appearance on Ordnance Survey or tourist maps and in guidebooks, literature or art or identified in policy. Value can also be indicated by the provision of parking or services and signage and interpretation. The nature and composition of the view and its scenic quality is also an indicator. The value of the view is classified as high, medium or low and will be supported by evidenced, professional judgements.

2.2.7.13 The susceptibility of visual receptors is a function of the occupation or activity of people experiencing the view and the extent to which their attention or interest is focused on the view and the visual amenity they experience at a particular location. For example, residents in their home, walkers whose interest may tend to be focused on the landscape or a particular view, or visitors at an attraction where views are an important part of the experience, may indicate a higher level of susceptibility. Whereas, receptors occupied in outdoor sport where views are not important or at their place of work could be considered less susceptible to change.

2.2.7.14 As with landscape susceptibility, judgements about the susceptibility of visual receptors are described as high, medium or low using consistent and reasoned judgements.

2.2.7.15 The overall sensitivity assessment of the visual receptor is determined by employing professional judgement to combine and analyse the identified value and susceptibility ratings. Overall visual sensitivity will be rates as high, medium or low. Table 2.2.13 below outlines indicators that inform value for the view, susceptibility and sensitivity of visual receptors. The basis of the assessment is made clear in the evaluation of each visual receptor.

Table 2.2.13: Sensitivity of visual receptors

	Higher sensitivity ⟷ **Lower sensitivity**	
Value	Views protected by designation, or nationally recognised, or recorded on maps/guidebooks or with cultural associations. Views that have high scenic qualities relating to the content and composition of the view.	Views which are not documented or protected with minimal or no cultural associations. Views that exhibit low scenic qualities relating to the content and composition of the view.
Susceptibility	Viewers whose attention or interest is focused on their surroundings.	People whose attention or interest is not focused on their surroundings and where the view is incidental to their enjoyment.

Magnitude of effect

Landscape

2.2.7.16 Landscape magnitude of effect refers to the extent to which the Suffolk Onshore Scheme will alter the existing characteristics of the landscape. It is an expression of the size or scale of change to the landscape, the geographical extent of the area influenced and its duration and reversibility. The variables involved are described below:

- the extent of existing landscape elements that will be lost, the proportion of the total extent that this represents and the contribution of that element to the character of the landscape;
- the extent to which aesthetic or perceptual aspects of the landscape are altered either by removal of existing components of the landscape or by addition of new ones;
- whether the change alters the key characteristics of the landscape, which are integral to its distinctive character;
- the geographic area over which the change will be felt (within the application boundary itself, the immediate setting, at the scale of the landscape character area, on a larger scale influencing several landscape character areas); and
- the duration of the change short term, medium term or long term (which is defined in **Part 1, Chapter 5, EIA Approach and Methodology**), and its reversibility (whether it is permanent, temporary or partially reversible).

2.2.7.17 An overall assessment of the magnitude of landscape effect resulting from the Suffolk Onshore Scheme on the landscape receptor is made combining the above judgements using evidence and professional judgement. The levels of magnitude of change are described as being very large, large, medium, small, negligible and are defined below in Table 2.2.14.

Table 2.2.14: Magnitude of effect – landscape receptors

Magnitude	Criteria
Very Large	Substantial alteration to the landscape receptor or may impact an extensive area or unique characteristics at a local level. May be longer term, permanent or reversible.
Large	Large alteration to the landscape receptor or may impact an extensive area or unique characteristics at a local level. May be longer term, permanent or reversible.
Medium	Partial alteration to the landscape receptor or may impact a wide area or characteristics at a local level. May be medium term, permanent or reversible.
Small	Slight alteration to the landscape receptor or may impact a restricted area and few key characteristics. May be short to medium term, permanent or reversible.
Negligible	Very slight alteration to the landscape receptor or may impact a limited area or no key characteristics. May be short term, permanent or reversible.
None	No change to the landscape receptor.

Visual

2.2.7.18 Visual magnitude of effect relates to the extent to which the Suffolk Onshore Scheme will alter the existing view and is an expression of the size or scale of change in the

view, the geographical extent of the area influenced and its duration and reversibility. The variables involved are described below:

- The scale of the change in the view with respect to the loss or addition of features in the view and changes in its composition, including the proportion of the view occupied by the Suffolk Onshore Scheme;
- The degree of contrast or integration of any new features or changes in the form, scale, composition and focal points of the view;
- The nature of the view of the Suffolk Onshore Scheme in relation to the amount of time over which it will be experienced and whether views will be full, partial or glimpsed;
- The angle of view in relation to the main activity of the receptor, distance of the viewpoint from the Suffolk Onshore Scheme and the extent of the area over which the changes will be visible; and
- The duration of the change short term, medium term or long term (which is defined in **Part 1, Chapter 5, EIA Approach and Methodology**) and its reversibility (whether it is permanent, temporary or partially reversible).

2.2.7.19 An overall assessment of the magnitude of visual effect resulting from the Suffolk Onshore Scheme on the visual receptor is made combining the above judgements using evidence and professional judgement. The levels of magnitude of change are described as being very large, large, medium, small, negligible and none are defined below.

Table 2.2.15: Magnitude of effect – visual receptors

Magnitude	Criteria
Very Large	A substantial change to the composition of the view or change that may be viewed in the foreground or directly. May be longer term, permanent or reversible.
Large	A pronounced change to the composition of the view or change that may be viewed in the foreground or directly. May be longer term, permanent or reversible.
Medium	A noticeable change to the composition of the view or change that may be viewed in the middle ground or indirectly. May be medium term, permanent or reversible.
Small	An unobtrusive change in the composition of the view or change that may be viewed in the background or obliquely. May be short to medium term, permanent or reversible.
Negligible	A barely perceptible change in the composition of the view or change that may be viewed in the background and/or very obliquely. May be short term, permanent or reversible.
None	No change to the view.

Significance of effects

2.2.7.20 Determination of the significance of landscape and visual effects will be undertaken by employing professional judgement and experience to combine and analyse the magnitude of change against the identified sensitivity of the receptor. The assessments will take account of direct and indirect change on existing landscape elements, features, key characteristics and evaluates the extent to which these will be lost or modified, in the context of their importance in determining the existing baseline character. The visual assessment will take into account potential changes to the visual composition, including the extent to which new features will distract or screen existing elements in the view or disrupt the scale, structure or focus of the existing view.

2.2.7.21 The levels of landscape and visual effects will be described with reference to the criteria outlined below in Table 2.2.16. For the purposes of this assessment, effects of moderate or above are generally considered to be significant.

Table 2.2.16: Significance of effect

Significance of effect	Landscape	Visual
Major Beneficial	Alterations that result in a considerable improvement of the existing landscape resource. Valued characteristic features would be restored or reintroduced.	Alterations that typically result in a pronounced improvement in the existing view.
Moderate Beneficial	Alterations that result in a partial improvement of the existing landscape resource. Valued characteristic features would be largely restored or reintroduced.	Alterations that typically result in a noticeable improvement in the existing view.
Minor Beneficial	Alterations that result in a slight improvement of the existing landscape resource. Characteristic features would be partially restored.	Alterations that typically result in a limited improvement in the existing view.
Negligible Beneficial	Alterations that result in a very slight improvement to the existing landscape resource, not uncharacteristic within the receiving landscape.	Alterations that typically result in a barely perceptible improvement in the existing view.
Neutral	No alteration to any of the components that contribute to the existing landscape resource.	No change to the existing view.
Negligible Adverse	Alterations that result in a very slight deterioration to the existing landscape resource, not uncharacteristic within the receiving landscape.	Alterations that typically result in a barely perceptible deterioration in the existing view.

Minor Adverse	Alterations that result in a slight deterioration of the existing landscape resource. Characteristic features would be partially lost.	Alterations that typically result in a limited deterioration in the existing view.
Moderate Adverse	Alterations that result in a partial deterioration of the existing landscape resource. Valued characteristic features would be largely lost.	Alterations that typically result in a noticeable deterioration in the existing view.
Major Adverse	Alterations that result in a considerable deterioration of the existing landscape resource. Valued characteristic features would be wholly lost.	Alterations that typically result in a pronounced deterioration in the existing view.

2.2.8 Conclusion

2.2.8.1 The LVIA will be undertaken in accordance with *GLVIA3* and current good practice guidance. The landscape assessment will consider potential effects on recognised National, Regional, County and District landscape character areas and relevant designations. The visual assessment will be based on a series of representative viewpoint locations which will be informed by detailed baseline study and defined in consultation with statutory consultees.

2.2.8.2 The LVIA will also consider the potential for cumulative effects resulting from the addition of the Suffolk Onshore Scheme in relation to other similar developments. Mitigation measures will also be developed and informed by the detailed baseline and assessment stages and will seek to minimise potential adverse effects. This will focus on the reinstatement of the cable corridors and integrating and partially screening views of the converter station.

2.2.8.3 As there is the potential for long-term landscape and visual effects associated with the converter station the LVIA will be included within the main ES. However, given the temporary and reversible effects associated with the HVAC and HVDC cable corridors, it is proposed that operational phase effects associated with the HVAC and HVDC cable corridors will be scoped out of the LVIA.

Proposed Scope of the Assessment

2.2.8.4 A summary of the proposed scope of the assessment is provided in Table 2.2.17.

Table 2.2.17: Proposed scope of the assessment

Receptor	Potential for significant effect	Project phase(s)	Proposed to be scoped in/out and for which option

SCLCA LCAs B3, B4, D3, D4, J4, K3, L1 and O1. TTLCA CCAs Thorpeness to Aldeburgh Coast, Alde Estuary and Dunwich to Sizewell Coast. SCASNE SCT 3	Temporary alteration to landscape character from construction activity and operations	Construction, Maintenance and Decommissioning	**Scoped in** **(All options)**
SCLCA LCAs B3, B4, D3, D4, J4, K3 and L1. TTLCA CCAs Thorpeness to Aldeburgh Coast, Alde Estuary and Dunwich to Sizewell Coast.	Alteration to landscape character from the operational converter station.	Operation	**Scoped in** **(All options)**
Suffolk Coast and Heaths AONB.	Temporary alteration to landscape character and visual amenity of recreational users from construction activity and operations.	Construction, Maintenance and Decommissioning	**Scoped in** **(All options)**
	Alteration to setting of AONB and to the landscape character of recreational users from the operational converter station	Operation	**Scoped in** **(Site 1 Emerging Preference and Site 1 Alternative)** Scoped out (Site 3 Emerging Preference, Site 3 Alternative (Option 1), Site 3 Alternative (Option 2))
	Alteration to setting of AONB and to visual amenity of recreational users from the operational converter station.	Operation	**Scoped in** **(All options)**
Settlement, isolated dwellings, recreational facilities,	Alteration to visual amenity from the introduction of construction activity and operations.	Construction, Maintenance and Decommissioning	**Scoped in** **(All options)**

recreational routes and access land, employees, occupiers of vehicles and railway line passengers.	Alteration to visual amenity from the operational converter station.	Operation	**Scoped in (All options)**
SCASNE SCT 3. SCLCA LCA 01.	Alteration to landscape character and perceptual qualities as a result of the operational converter station.	Operation	Scoped out (All options)

2.3 Ecology and Biodiversity

2.3.1 Introduction

2.3.1.1 This chapter presents how the Ecology and Biodiversity assessment will consider the potentially significant effects on heritage assets that may arise from the construction, and operation, maintenance and decommissioning of the Suffolk Onshore Scheme (as described in **Part 1, Chapter 4, Description of the Project**). This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an EIA.

2.3.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Suffolk Onshore Scheme Scoping Boundary hereafter referred to as the Suffolk Scoping Boundary is illustrated on **Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary**.

2.3.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project**
- **Part 1, Chapter 5, EIA Approach and Methodology;** and
- **Part 2, Chapter 1, Evolution of the Suffolk Onshore Scheme**.

2.3.1.4 This chapter is supported by the following figure:

- **Figure 2.3.1 Statutory Designated Ecological Features, Sheets 1-5**.

2.3.2 Regulatory and Planning Context

2.3.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. Key legislation, policy and guidance relevant to the assessment of potential effects on protected nature conservation sites, significant habitats, protected and/or, notable species as well as invasive non-native species associated with the construction, operation, maintenance and decommissioning of the Project is presented below.

Legislation

2.3.2.2 The below legislation will be considered when identifying potential constraints to the Suffolk Onshore Scheme, design options and mitigation. Compliance with the below legislation may require obtaining relevant protected species licences prior to implementation of the Project.

- The Conservation of Habitats and Species Regulations 2017[35] (as amended);
- The Natural Environment and Rural Communities (NERC) Act 2006[36];
- The Countryside and Rights of Way (CRoW) Act 2000[37];
- Wildlife and Countryside Act 1981 (as amended)[38]
- Environment Act 2021[39];
- Animal Welfare Act 2006[40];
- Protection of Badgers Act 1992[41];
- The Wild Mammals (Protection) Act 1996[42];
- The Hedgerow Regulations 1997[43]; and
- Invasive Alien Species (Enforcement and Permitting) Order 2019 (as amended)[44].

Planning Policy

National planning policy

2.3.2.3 The assessment will take account of the relevant National Policy Statements (NPSs) for energy: the Overarching National Policy Statement for Energy (EN-1) and the National Policy Statement for Electricity Networks (EN-5)[45]. These NPSs are, in the process of being updated and therefore relevant sections of the draft NPSs are also included below, where relevant.

2.3.2.4 Paragraph 4.3.1 of the Overarching National Policy Statement for Energy (EN-1) (2011)[46], states what the Secretary of State must, under the Conservation of Habitats and Species Regulations 2017, consider when granting a development consent order with regard to effects on internationally important wildlife sites and the need for Habitats Regulations Assessment. It also clarifies that information to inform the assessment

[35] Conservation of Habitats & Species Regulations 2017 [online]. Available at: https://www.legislation.gov.uk/uksi/2017/1012/contents/made [Accessed 13/07/2022].

[36] Natural Environment and Rural Communities Act 2006 [online]. Available at: https://www.legislation.gov.uk/ukpga/2006/16/contents [Accessed 13/07/2022].

[37] Countryside and Rights of Way Act 2000 [online]. Available at: https://www.legislation.gov.uk/ukpga/2000/37/contents [Accessed 13/07/2022].

[38] Wildlife and Countryside Act 1981 (as amended) [online]. Available at: https://www.legislation.gov.uk/ukpga/1981/69/contents [Accessed 13/07/2022].

[39] Environment Act 2021 [online]. Available at: https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted [Accessed 13/07/2022].

[40] Animal Welfare Act 2006 [online]. Available at: https://www.legislation.gov.uk/ukpga/2006/45/contents [Accessed 13/07/2022].

[41] Protection of Badgers Act 1992 [online]. Available at: https://www.legislation.gov.uk/ukpga/1992/51/contents [Accessed 13/07/2022].

[42] Wild Mammals (Protection) Act 1996 [online]. Available at: https://www.legislation.gov.uk/ukpga/1996/3/contents [Accessed 13/07/2022].

[43] The Hedgerow Regulations 1997 [online]. Available at: https://www.legislation.gov.uk/uksi/1997/1160/contents/made [Accessed 13/07/2022].

[44] The Invasive Alien Species (Enforcement and Permitting) Order 2019 (as amended) [online]. Available at: https://www.legislation.gov.uk/uksi/2019/527/2021-05-04 [Accessed 13/07/2022]

[45] Department of Energy & Climate Change (2011). National Policy Statement for Electricity Networks Infrastructure. [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47858/1942-national-policy-statement-electricity-networks.pdf [Accessed 13/07/2022]

[46] Department of Energy & Climate Change (2011). Overarching National Policy Statement for Energy (EN-1). [online] Available at: Overarching National Policy Statement for Energy (publishing.service.gov.uk) [Accessed 13/07/2022].

must be provided by the applicant. Part 5 section 5.3 of EN-1 sets out guidance on generic impacts relating to biodiversity for the applicant's assessment and decision-making on the application. The Draft Overarching National Policy Statement for Energy (EN-1) (2021)[47] includes guidance for biodiversity net gains in paragraphs 4.5.1 to 4.5.3 and generic impacts on biodiversity in Part 5.4. This guidance has also been considered within this chapter. Section 2.7 of EN-5 provides general information on biodiversity considerations for electricity networks, including that the applicant will need to consider whether the proposed line will cause such problems at any point along its length and take this into consideration in the preparation of the Environmental Impact Assessment (EIA) and ES. Particular consideration should be given to feeding and hunting grounds, migration corridors and breeding grounds.

Biodiversity Net Gain (BNG)

2.3.2.5 It is Government policy that planning decisions should minimise impacts on and provide net gain for biodiversity (National Planning Policy Framework 2021)[48]. In addition, the Environment Act 2021 includes provisions to make BNG a mandatory requirement within the planning system in England requiring all relevant developments to achieve a minimum 10% net gain in biodiversity units relative to the Site baseline biodiversity value, it is anticipated the secondary legislation mandating the need for 10% net gain will be in place by November 2023.

2.3.2.6 National Grid has committed to 10% Net Gain in Environmental value including as a minimum 10% BNG across all its construction projects. This is described in **Part 1, Chapter 1, Introduction**.

National planning policy framework

2.3.2.7 The National Planning Policy Framework[49] (NPPF) details the Government's planning policies for England and how these are expected to be applied. It states the commitment of the UK Government to minimising impacts on and providing net gains in biodiversity, contributing to the Government's commitment to halt the overall decline in biodiversity.

2.3.2.8 The NPPF specifies the obligations that Local Authorities and the UK Government have regarding statutory designated sites and protected species under UK and international legislation and how these are to be delivered in the planning system. Protected or notable habitats and species can be a material consideration in planning decisions and may therefore make some sites unsuitable for particular types of development, or if development is permitted, mitigation measures may be required to avoid or minimise impacts on certain habitats and species. Where impact is unavoidable, NPPF outlines that compensation may be required.

[47] Department for Business, Energy & Industrial Strategy (2021). Draft Overarching National Policy Statement for Energy (EN-1). [online] Available at: Draft Overarching National Policy Statement for Energy (publishing.service.gov.uk) [Accessed 13/07/2022].

[48] Ministry of Housing, Communities & Local Government (2021). [online] Available at: National Planning Policy Framework - GOV.UK (www.gov.uk) [Accessed 30/09/2022].

[49] Department for Levelling Up, Housing & Communities (2021). National Planning Policy Framework. London. [online] Available at: National Planning Policy Framework - Guidance - GOV.UK (www.gov.uk) [Accessed 13/07/2022].

Biodiversity 2020: A strategy for England's wildlife and ecosystem services

2.3.2.9 Biodiversity 2020[50] was published by DEFRA in 2011. The strategy builds on the Natural Environment White Paper: "The Natural Choice: securing the value of nature" (2011)[51], with an overall mission 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".

2.3.2.10 The strategy includes consideration of planning and development including commitments to (i) retain protection and improvement of the natural environment as core objectives for local planning and development management, (ii) support biodiversity offsetting pilots through a two-year test phase, until spring 2014, and the government's expectation that the planning system contributes to achieving no net loss of biodiversity.

Regional planning policy

2.3.2.11 The planning policies that relate to the study area are shown below. The policies listed below are taken from the following document.

- Suffolk Nature Strategy (2015)[52]
  - Recommendation 1: In line with Government's Biodiversity 2020 strategy vision, Outcome 1, by 2020 at least 50% of Suffolk's SSSIs will be in favourable condition, whilst maintaining at least 95% in favourable or recovering condition.
  - Recommendation 3: In line with Biodiversity 2020, Outcomes 1 & 3, we wish to see an overall improvement in the status of our wildlife and for further degradation to have been halted. Public bodies and statutory undertakers should ensure that, in exercising their functions, they have access and pay due regard to appropriate ecological evidence and advice so as to ensure that their duties under the relevant legislation are met.
  - Recommendation 15: New energy infrastructure should be sensitive to place. Relevant policies as well as national and local guidance, appropriate biological data and Suffolk's Landscape Character Assessment should be used to assess suitability of new energy infrastructures, and other developments, to particular places. A Strategic Renewable Energy Strategy, produced by 2018, will help ensure that all new energy infrastructures are appropriately sited.
  - Recommendation 22: Biodiversity offsetting must follow Government guidelines and the mitigation hierarchy, set out in the National Planning Policy Framework. Offsetting should only occur when all steps to avoid and mitigate impacts have been exhausted and should not be seen as a licence to damage sites where less damaging alternatives exist. Offsetting should not apply to internationally or nationally designated sites.

[50] Department for Environment, Food & Rural Affairs (2011). Biodiversity 2020: A strategy for England's wildlife and ecosystem services. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69446/pb13583-biodiversity-strategy-2020-111111.pdf [Accessed 13/07/2022].

[51] Department for Environment, Food & Rural Affairs (2011). The Natural Choice: securing the value of nature. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/228842/8082.pdf [Accessed 13/07/2022].

[52] Suffolk County Council (2015). Suffolk's Nature Strategy. [online] Available at: https://www.suffolk.gov.uk/assets/planning-waste-and-environment/suffolks-countryside-and-wildlife/Suffolks-Nature-Strategy-2015.pdf [Accessed 13/07/2022].

Local planning policy

2.3.2.12 The study area runs through the former Suffolk Coastal District Area in East Suffolk Therefore policies regarding biodiversity and the protection of natural resources from this region apply to the Suffolk Onshore Scheme.

2.3.2.13 The planning policies that relate to the Suffolk Onshore Shore Scheme are shown below. From the following documents:

- East Suffolk Coastal Local Plan (Adopted September 2020)[53]

  - Policy SCLP10.1: Biodiversity and Geodiversity

    "Development will be supported where it can be demonstrated that it maintains, restores or enhances the existing green infrastructure network and positively contributes towards biodiversity and/or geodiversity through the creation of new habitats and green infrastructure and improvement to linkages between habitats, such as wildlife corridors and habitat 'stepping stones'. All development should follow a hierarchy of seeking firstly to avoid impacts, mitigate for impacts so as to make them insignificant for biodiversity, or as a last resort compensate for losses that cannot be avoided or mitigated for. Adherence to the hierarchy should be demonstrated.

    Any proposal that adversely affects a European site, or causes significant harm to a Site of Special Scientific Interest, will not normally be granted permission.

    Any development with the potential to impact on a Special Protection Area, Special Area for Conservation or Ramsar site within or outside of the plan area will need to be supported by information to inform a Habitat Regulations Assessment, in accordance with the Conservation of Habitats and Species Regulations 2017, as amended (or subsequent revisions)."

  - Policy SCLP10.3: Environmental Quality

    "Development proposals will be expected to protect the quality of the environment and to minimise and, where possible, reduce all forms of pollution and contamination. Development proposals will be considered in relation to impacts on;

    a) Air quality, and the impact on receptors in Air Quality Management Areas;

    b) Soils and the loss of agricultural land;

    c) Land contamination and its effects on sensitive land uses;

    d) Water quality and the achievement of Water Framework Directive objectives;

    e) Light pollution; and

    f) Noise pollution. Proposals should seek to secure improvements in relation to the above where possible.

    The cumulative effect of development, in this regard, will be considered."

[53] East Suffolk Council (2020). Suffolk Coastal Local Plan. [online] Available at: https://www.eastsuffolk.gov.uk/assets/Planning/Planning-Policy-and-Local-Plans/Suffolk-Coastal-Local-Plan/Adopted-Suffolk-Coastal-Local-Plan/East-Suffolk-Council-Suffolk-Coastal-Local-Plan.pdf [Accessed 13/07/2022].

2.3.3 Study Area

2.3.3.1 The study area for ecological surveys includes the land within the Suffolk Onshore Scheme Scoping Boundary and appropriate Zones of Influence (ZoI), are described in the following sections.

2.3.3.2 The boundaries and zone for the ecology and biodiversity study area reflect standard industry good practice and the distances used in this scoping exercise that statutory consultees would typically expect to be considered for identification of features external to the Suffolk Onshore Scheme that could be affected. This is informed by published guidance and professional judgement.

2.3.3.3 The desk study included a search for:

- International statutory nature conservation sites (e.g. Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites) within 10km of the Suffolk Onshore Scheme Scoping Boundary and 30km for SACs designated for bats. Note that there are no SACs designated for bats within 30km of the Suffolk Onshore Scheme, the nearest being Paston Great Barn SAC over 70km from the Suffolk Onshore Scheme;
- National statutory nature conservation designations (e.g. Sites of Special Scientific Interest (SSSI), excluding geological SSSIs), National Nature Reserve (NNRs) and Local Nature Reserves (LNRs)) within 5km, also referencing Natural England Impact Risk Zones for SSSIs on MAGIC; and,
- Non-statutory nature conservation designations (e.g. Local Wildlife Sites (LWS) and Roadside Nature Reserves (RNR)) within 2km.
- Records of protected and notable species and notable habitats (e.g. Habitats of Principal Importance Section 41 (41) of the Natural Environment and Rural Communities (NERC) Act) have also been identified up to 1km (for most species) and 500m (for habitats and great crested newts) from the Suffolk Onshore Scheme Scoping Boundary. For the purposes of **Figure 2.3.1 Statutory Designated Ecological Features** within 2km of the Suffolk Onshore Scheme**.**

2.3.3.4 Only statutory designated sites up to 2km from the Suffolk Onshore Scheme Scoping Boundary have been shown but this will be updated and expanded for the Preliminary Environmental Information Report (PEIR).

2.3.4 Baseline Conditions

Data Sources

2.3.4.1 The known or predicted current and future ecological baseline conditions described in this section has been informed by the following data sources:

- Multi-Agency Geographic Information for the Countryside (MAGIC)[54] website;
- Aerial photography of the Site (2021 image capture);

[54] Department for Environment, Food and Rural Affairs. Multi-Agency Geographic Information for the Countryside (MAGIC) (2022). [online] Available at: https://magic.defra.gov.uk/

- Suffolk Biodiversity Information Service[55]; and,
- Local wildlife group and landowner data sets (e.g. Suffolk Wildlife Trust, Suffolk Bat Group, Suffolk Bird Group and RSPB).

Baseline

2.3.4.2 Previous survey reports from the local area and adjacent applications (e.g. East Anglia ONE North Limited[56], East Anglia TWO Limited[57], and The Sizewell C Project[58]will also be consulted.

Expected survey requirements

2.3.4.3 Completion of initial Phase 1 Habitat Survey (following the established JNCC methodology[59]) and Protected Species Scoping Surveys, will confirm the requirements for further surveys to support the ecology, biodiversity and nature conservation impact assessment, but these are likely to include the following:

- Botanical surveys including National Vegetation Classification Surveys following established Rodwell (2006)[60] methodology, including invasive non-native plant species, hedgerows and river habitats and corridors;
- Terrestrial invertebrate surveys;
- Aquatic invertebrate surveys if required (potential to be scoped out by use of HDD to avoid direct watercourse impacts);
- Reptile presence / absence surveys;
- Habitat Suitability Index (HSI) assessment[61] and Great Crested Newt eDNA surveys at waterbodies identified on and within 250m of the Suffolk Onshore Scheme (if District Level Licensing approach not or only partially pursued with Natural England);
- Great crested newt population size surveys (where applicable);
- Intertidal bird surveys

[55] Suffolk Biodiversity Information Service. [online] Accessed via: http://www.suffolkbis.org.uk/

[56] National Infrastructure Planning (2022). East Anglia ONE North Limited. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/projects/eastern/east-anglia-one-north-offshore-windfarm/?ipcsection=docs&stage=app [Accessed 19/07/2022].

[57] National Infrastructure Planning (2022). East Anglia TWO Limited. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/projects/eastern/east-anglia-two-offshore-windfarm/?ipcsection=docs&stage=app [Accessed 19/07/2002].

[58] National Infrastructure Planning (2022). The Sizewell C Project. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/projects/eastern/the-sizewell-c-project/?ipcsection=docs&stage=app [Accessed 19/07/2022].

[59] Joint Nature Conservation Committee (2016). Handbook for Phase 1 habitat survey. A technique for environmental audit. [online] Available at: https://data.jncc.gov.uk/data/9578d07b-e018-4c66-9c1b-47110f14df2a/Handbook-Phase1-HabitatSurvey-Revised-2016.pdf [Accessed 13/07/2022].

[60] Rodwell, J.S. on behalf of the Joint Nature Conservation Committee (2006). National Vegetation Classification: Users' Handbook. [online] Available at: https://data.jncc.gov.uk/data/a407ebfc-2859-49cf-9710-1bde9c8e28c7/JNCC-NVC-UsersHandbook-2006.pdf [Accessed 13/07/2022].

[61] Amphibian & Reptile Groups of the United Kingdom (2010). ARG UK Advice Note 5: Great Crested New Habitat Suitability Index. [online] Available at: https://www.arguk.org/info-advice/advice-notes/9-great-crested-newt-habitat-suitability-index-arg-advice-note-5/file [Accessed 13/07/2022].

- Breeding bird surveys (including targeted surveys for barn owl);
- Wintering bird surveys;
- Preliminary bat roost feature assessment of buildings and structures and tree climbing surveys for bats (where applicable);
- Bat activity surveys;
- Dusk emergence and dawn return surveys of buildings, structures and trees (if applicable). All bat surveys will follow BCT Good Practice Guidelines 3rd Edition[62] and Interim Guidance Note[63] (and any updated editions: 4th Edition expected late 2022);
- Badger surveys; and
- Riparian mammal surveys (otter (*Lutra lutra*) and water vole (*Arvicola amphibius*)), where watercourses are adjacent to the scheme and 100-200m upstream and downstream.

2.3.4.4 A Habitats Regulations Assessment (HRA), commencing with a Stage 1: Test of Likely Significant Effects and including a Stage 2: Appropriate Assessment Information Report if required) will also be produced in line with Planning Inspectorate Advice Note 10[64].

Summary of ecological receptors

2.3.4.5 The known or predicted ecological baseline conditions are summarised in the following sections by each receptor in turn.

Statutory designated sites

2.3.4.6 21 statutory sites designated for nature conservation have been identified within the stated desk study areas (10km for international 5km for national sites).

2.3.4.7 These sites are summaries in Table 2.3.1 and are shown on **Figure 2.3.1 Statutory Designated Ecological Features** within 2km of the Suffolk Onshore Scheme.

[62] Collins, J. on behalf of The Bat Conservation Trust (2016). Bat Surveys for Professional Ecologists. Good Practice Guidelines. 3rd Edition. [online] Available at: https://cdn.bats.org.uk/uploads/pdf/Resources/Bat_Survey_Guidelines_2016_NON_PRINTABLE.pdf?v=1542281971 [Accessed 13/07/2022].

[63] Bat Conservation Trust (2022). Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys. [online] Available at: https://cdn.bats.org.uk/uploads/pdf/Interim-guidance-note-on-NVAs-May-2022-FINAL.pdf?v=1653399882 [Accessed 13/07/2022].

[64] National Infrastructure Planning (2018). The Planning Inspectorate: Advice Note 10: Habitats Regulations Assessment relevant to nationally significant infrastructure projects. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-ten/ [Accessed 13/07/2022].

Table 2.3.1: Statutorily Designated Sites within 10km (international) and 5km (national) of the Suffolk Onshore Scheme

Site name	Designation	Description	Distance (km) and direction from closest point of the Site
Sandlings (3,406 ha)	SPA	The site is notified for its internationally important populations of woodlark and nightjar. The SPA is made up of lowland heathland, acid grassland and forestry plantations on sandy soils which once supported extensive heathland; the main conservation interest of which lies in the open areas such as young plantation and rotational clearfell which provide suitable breeding habitat.	Within Suffolk Scoping Boundary. Within the scoping boundary of: Site 3 Alternative Option 1, Site 3 Alternative Option 2 and Site 1 Alternative to the North near Sizewell Within the scoping boundary of: Site 3 Emerging Preference and Site 1 Emerging Preference to the south near Aldeburgh.
Outer Thames Estuary (393,612 ha)	SPA	The Outer Thames Estuary SPA was designated to protect the red-throated diver *Gavia stellata* population and its supporting habitats (subtidal sands) in favourable condition. The main part of the site is the outer part of the estuary (east of a line north from Sheerness, Kent to Shoebury Ness, Essex); a separate area extending south along the coast of east Norfolk (from Caister-on-Sea) to Woodbridge, Suffolk and lying mainly within the 12 nautical mile(nm) zone, except for two small areas which extend slightly into the 12nm zone offshore from about Lowestoft; and a third area lying slightly further north and partly within 12 nm, but also with a larger area extending well beyond the 12 nm zone).	Adjacent to the Suffolk Scoping Boundary Adjacent to the scoping boundary of: Site 3 Alternative Option 1, Site 3 Alternative Option 2 and Site 1 Alternative to the North near Sizewell Adjacent to the scoping boundary of: Site 3 Emerging Preference and Site 1 Emerging Preference to the south near Aldeburgh.
Minsmere-Walberswick (2,019 ha)	SPA	Minsmere – Walberswick SPA is located on the Suffolk coast south of Southwold in eastern England. It comprises two large marshes, the tidal Blyth estuary and associated habitats.	2km north of the Suffolk Scoping Boundary 2km north of Site 3 Alternative Option 1

		There are nationally important numbers of breeding and wintering birds. In particular, the reedbeds are of major importance for breeding Bittern *Botaurus stellaris* and Marsh Harrier *Circus aeruginosus*. A range of breeding waders (e.g. Avocets *Recurvirostra avosetta*) and heathland birds occur in other areas of the SPA. The shingle beaches support important numbers of breeding Little Tern *Sterna albifrons*, which feed substantially outside the SPA in adjacent marine waters. The site is also important for wintering Bitterns and raptors.	3.4 km north of Site 3 Alternative Option 2 and Site 1 Alternative 5.3 km north of Site 3 Emerging Preference and Site 1 Emerging Preference
Alde-Ore Estuary (2,404 ha)	SPA	The Alde-Ore Estuary SPA's scientific interests are outstanding and diverse. The sites contain a number of coastal formations and estuarine features including mud-flats, saltmarsh, vegetated shingle and coastal lagoons which are of special botanical and ornithological value.	100m south of Suffolk Scoping Boundary 2.4km south of Site 3 Alternative Option 1 1.2km south of Site 3 Alternative Option 2 100m south of Site 3 Emerging Preference and site 1 Emerging Preference 1.4km south of Site 1 Alternative
Southern North Sea (3,695,100 ha)	SAC	The Southern North Sea SAC is an area of importance for harbour porpoise. This site includes key winter and summer habitat for this species and covers an area over three times the size of Yorkshire, making it the largest SAC in UK and European waters at the point of designation in 2019. Alde, Ore and Butley Estuaries SAC's scientific interests are outstanding and diverse. The sites contain a number of coastal formations and estuarine features including mud-flats, saltmarsh, vegetated shingle and coastal lagoons which are of special botanical and ornithological value	Adjacent to the Suffolk Scoping Boundary Adjacent to the Site 3 Alternative Option 1, Site 3 Alternative Option 2 and Site 1 Alternative 670m east of Site 3 Emerging Preference and Site 1 Emerging Preference 100m south of Suffolk Scoping Boundary 2.4km south of Site 3 Alternative Option 1 1.2km south of Site 3 Alternative Option 2 100m south of Site 3 Emerging Preference

			and Site 1 Emerging Preference 1.4km south of Site 1 Alternative
Alde-Ore & Butley Estuaries (1633 ha)	SAC	Alde, Ore and Butley Estuaries SAC's scientific interests are outstanding and diverse. The sites contain a number of coastal formations and estuarine features including mud-flats, saltmarsh, vegetated shingle and coastal lagoons which are of special botanical and ornithological value	100m south of Suffolk Scoping Boundary 2.4km south of Site 3 Alternative Option 1 1.2km south of Site 3 Alternative Option 2 100m south of Site 3 Emerging Preference and Site 1 Emerging Preference 1.4km south of Site 1 Alternative
Orfordness-Shingle Street (888 ha)	SAC	Orfordness-Shingle Street's scientific interests are outstanding and diverse. The sites contain a number of coastal formations and estuarine features including mud-flats, saltmarsh, vegetated shingle and coastal lagoons which are of special botanical and ornithological value	2.8km south of the Suffolk Scoping Boundary 2.8km south of Site 3 Emerging Preference and Site 1 Emerging Preference 7.5km south-east of Site 3 Alternative Option 1 5km south-east of Site 3 Alternative Option 2 and Site 1 Alternative
Minsmere to Walberswick Heaths & Marshes (1257 ha)	SAC	Minsmere – Walberswick Heaths & Marshes SAC is located on the Suffolk coast south of Southwold in eastern England. It comprises two large marshes, the tidal Blyth estuary and associated habitats. This composite coastal site contains a complex mosaic of habitats, notably areas of marsh with dykes, extensive reedbeds, mud-flats, lagoons, shingle, woodland and areas of lowland heath. It supports the largest continuous stand of Common Reed *Phragmites australis* in England and Wales and demonstrates the nationally rare transition in grazing marsh ditch plants from brackish to fresh water.	2km north of Suffolk Scoping Boundary 2km north of Site 3 Alternative Option 1 3.3km north of Site 3 Alternative Option 2 and Site 1 Alternative 5.3km north of Site 3 Emerging Preference and Site 1 Emerging Preference

		SAC features are heathland, vegetated annual and perennial shingle habitats.	
Staverton Park & The Thicks, Wantisden (84 ha)	SAC	Staverton Park is an ancient park with a well-documented medieval history. It is composed of three main areas of woodland on sandy soil. The Park is an open canopy wood pasture, predominantly of over-mature pollard Oak *Quercus robur* but Holly *Ilex aquifolium*, Birch *Betula pubescens* and *B. pendula* and Rowan *Sorbus aucuparia* also occur. Some of these trees achieve great age.	9.8km south-west of Suffolk Scoping Boundary 9.8km south-west of Site 3 Emerging Preference and Site 1 Emerging Preference Over 10km south-west of Site 3 Alternative Option 1, Site 3 Alternative Option 2, and Site 1 Alternative.
Dew's Ponds	SAC	Rural site in East Suffolk, comprises 12 ponds in arable/grassland. The site is designated for great crested newts which are present in all 12 ponds.	7.3km north of Suffolk Scoping Boundary 7.3km north of Site 3 Alternative Option 1 8.6km north Site 3 Emerging Preference and Site 3 Alternative Option 2 Over 10km north of Site 1 Emerging Preference, and Site 1 Alternative
Alde-Ore Estuary (2547 ha)	Ramsar	Alde-Ore Estuary Ramsar is an estuary complex of three rivers comprising various habitats including intertidal mudflats, saltmarsh, a vegetated shingle spit, saline lagoons, and semi-intensified grazing marsh. The site supports nationally scarce plants and invertebrates and notable assemblages of breeding and wintering wetland birds.	100m south of Suffolk Scoping Boundary 2.4km south of Site 3 Alternative Option 1 1.2km south of Site 3 Alternative Option 2 100m south of Site 3 Emerging Preference and Site 1 Emerging Preference 1.4km south of Site 1 Alternative
Minsmere-Walberswick (2119 ha)	Ramsar	Minsmere-Walberswick Ramsar is a mosaic of coastal habitats consisting of shingle beaches, dunes, estuarine mudflats, grazing marshes, lagoons, reedbeds, and heathland. The marshes support the largest continuous stand of reedbed in England and Wales. The site	2km north of Suffolk Scoping Boundary 2km north of Site 3 Alternative Option 1 3.3km north of Site 3 Alternative Option 2 and Site 1 Alternative

		supports an outstanding diversity of breeding birds, including a number of nationally rare species which winter at the site, as well as rare species of marshland flora and insect fauna.	5.3km north of Site 3 Emerging Preference and Site 1 Emerging Preference
Leiston-Aldeburgh (535 ha)	SSSI	Leiston-Aldeburgh contains a rich mosaic of habitats including acid grassland, heath, scrub, woodland, fen, open water and vegetated shingle. This mix of habitats in close juxtaposition and the associated transition communities between habitats is unusual in the Suffolk Coast and Heaths. The variety of habitats support a diverse and abundant community of breeding and overwintering birds, a high number of dragonfly species and many scarce plants.	Within Suffolk Scoping Boundary Within all Emerging Preference and Alternative boundaries.
Alde-Ore Estuary (2534 ha)	SSSI	Sizewell Marshes are important for their large area of lowland, unimproved wet meadows which support outstanding assemblages of invertebrates and breeding birds. Several nationally scarce plants are also present. The site occupies a low-laying basin of deep fen peat. The water table is permanently high, with the area being prone to flooding, and there is an extensive network of ditches across the site.	100m south of Suffolk Scoping Boundary 2.4km south of Site 3 Alternative Option 1 1.2km south of Site 3 Alternative Option 2 100m south of Site 3 Emerging Preference and Site 1 Emerging Preference 1.4km south of Site 1 Alternative
Sizewell Marshes (105 ha)	SSSI	Sizewell Marshes are important for their large area of lowland, unimproved wet meadows which support outstanding assemblages of invertebrates and breeding birds. Several nationally scarce plants are also present. The site occupies a low-laying basin of deep fen peat. The water table is permanently high, with the area being prone to flooding, and there is an extensive network of ditches across the site.	Within Suffolk Scoping Boundary Within Site 3 Alternative Option 2 3.3km south of the Site 1 Emerging Preference and Site 3 Emerging Preference 250m north of Site 1 Alternative and Site 3 Alternative Option 2
Minsmere-Walberwick Heaths and Marshes (2306 ha)	SSSI	This composite site is situated on the coast of Suffolk between Southwold in the north and Sizewell in the south. It contains a complex series of habitats, notably mudflats, shingle beach, reedbeds, heathland and grazing marsh, which	1.4km north of Suffolk Scoping Boundary 5.3km north of Site 1 Emerging Preference and Site 3 Emerging Preference

		combine to create an area of exceptional scientific interest.	1.8km north of Site 1 Alternative and Site 3 Alternative Option 2 1.4km north of Site 3 Alternative Option 1
Iken Wood (5.3 ha)	SSSI	Iken Wood lies close to the banks of the River Alde and may well be the only ancient coppice wood on blown sand in Britain. It is the most interesting example of lowland coppice oakwood in Suffolk and has a distinctive flora typical of woods on light soils. The wood is almost entirely of the lowland hazel-pedunculate oak stand-type with a small area of invasive elmwood, which is unusual for such an acidic soil. Huge Oak *Quercus robur* standards are dominant with scattered Silver Birch *Betula pendula*, Holly *Ilex aquifolium* and Rowan *Sorbus aucuparia*.	3.5km south-west of the Suffolk Scoping Boundary 3.5km south-west of Site 1 Emerging Preference and Site 3 Emerging Preference 3.7km south-west of Site 1 Alternative 3.8km south-west of Site 3 Alternative Option 2 4.4km south-west of Site 3 Alternative Option 1
Sandlings Forest (2474 ha)	SSSI	The Sandlings Forest SSSI lies between Snape and Woodbridge and is comprised of the areas known as Tunstall Forest and Rendlesham Forest. The site is dominated by commercial forestry plantations on sandy soils which once supported extensive heathland. The plantations were first established between the 1920s and the 1940s. The initial plantations were largely of Scot's pine Pinus sylvestris but on second rotation have been replaced by Corsican pine *P. maritima ssp laricio*. Ten to twelve percent of trees are broadleaves. Small areas have been taken out of timber production and reversion to open, heathy habitat is being undertaken. Unplanted areas of heathland lie adjacent to the forest within separate SSSIs	3.6km south-west of the Suffolk Scoping Boundary 3.6km south-west of Site 1 Emerging Preference and Site 3 Emerging Preference 3.8km south-west of Site 1 Alternative 3.9km south-west of Site 3 Alternative Option 2 4.5km south-west of Site 3 Alternative Option 1
Blaxhall Heath (46 ha)	SSSI	Blaxhall Heath is one of the few fragments of the once extensive 'Sandlings' heath of coastal Suffolk and is a good example of this type of dry lowland heath. Substantial losses of lowland heath have occurred in the Sandling area and elsewhere in lowland England this century.	4.6km south-west of the Suffolk Scoping Boundary 4.6km south-west of the Site 1 Emerging Preference and Site 3 Emerging Preference.

			4.8 km south-west of Site 3 Alternative Option 2 and Site 1 Alternative Over 5km south-west of Site 3 Alternative Option 1
Gromford Meadow (1.7 ha)	SSSI	Gromford Meadow is a good example of an unimproved base-rich marsh on an alluvial soil with a high organic content. It borders the River Alde and is fed by springs. It is species-rich and contains a variety of characteristic fen meadow and marshland plants	2.6km south-west of Suffolk Scoping Boundary 2.6km south-west of all Sites.
Westleton Heath (9 ha)	NNR	Westleton Heath NNR is part of the best remaining tract of heathland in Suffolk.	4.6km north of Suffolk Scoping Boundary 4.6km north Site 3 Alternative Option 1 Over 5km north of Site 1 Emerging Preference, Site 3 Emerging Preference, Site 1 Alternative, and Site 3 Alternative Option 2
Orfordness-Havergate	NNR	The sites contain a number of coastal formations and estuarine features including mud-flats, saltmarsh, vegetated shingle and coastal lagoons which are of special botanical and ornithological value	2.9km from the Suffolk Scoping Boundary 2.9km south of Site 1 and Site 3 Emerging Preference 7.5km southwest of Site 3 Alternative Option 1 5km southwest of Site 3 Alternative Option 2 4.8km southwest of Site 1 Alternative
The Haven, Aldeburgh (20 ha)	NNR	The site covers the beach north of Aldeburgh and an area of lagoons and reedbeds which are protected as nature reserves	Within the Suffolk Scoping Boundary Within Site 1 and Site 3 Emerging Preference 3km west of Site 1 Alternative

	4km South of Site 3 Alternative Option 1 and Option 2

Non-statutorily designated sites

2.3.4.8 A desk-study is currently ongoing with Suffolk Biodiversity Information Centre and non-statutory wildlife sites may be identified through that process.

Table 2.3.2: Non-statutory designated sites currently identified within 2km of the Suffolk Onshore Scheme

Site name	Designation	Description	Distance (km) and direction from closest point of the site
North Warren	RSPB Reserve	The North Warren reserve lies on the Suffolk coast on the north edge of the town of Aldeburgh and to the south of Thorpeness. Ducks, swans and geese use the marshes in winter, while spring hosts breeding bitterns, marsh harriers, woodlarks and nightingales.	Suffolk Scoping Boundary overlaps with the Non-statutory Designated Site
Minsmere	RSPB Reserve	The Minsmere reserves reedbeds, wet grasslands and heathlands hose an assemblage of wading birds, nightjar, woodlark, marsh harrier, otters, water voles, otter and a range of invertebrates.	The Non-statutory Designated Site is 1.8km north of the Suffolk Scoping Boundary
Grove Wood/Old World Wood[65]	Ancient Woodland	No description available	With Suffolk Scoping Boundary
Great Wood[66]	Ancient Woodland	No description available	With Suffolk Scoping Boundary

Notable habitats

2.3.4.9 An extended Phase 1 Habitat Survey will be undertaken in order to establish the ecological value of the land within the Suffolk Onshore Scheme Scoping Boundary, and its potential to support notable and/or legally protected species.

[65] Suffolk Heritage Explorer (2002). Monument Record KND 010- Grove Wood / Old World Wood. [online] Available at: https://heritage.suffolk.gov.uk/Monument/MSF19483 [Accessed 19/07/2022].

[66] Suffolk Heritage Explorer (2002). Monument Record FRS 008- Great Wood. [online] Available at: https://heritage.suffolk.gov.uk/Monument/MSF19482 [Accessed 19/07/2022].

2.3.4.10 The survey will be carried out in line with the Phase 1 Habitat Survey method as set out by the Joint Nature Conservation Committee (JNCC) (2016)[67]. This survey would record the types and distribution of habitats throughout the graduate swathe. Information gained from the extended Phase 1 Habitat Survey would be important in assessing the ecological value of the land within the Suffolk Scoping Boundary and identifying the need for any further survey work.

2.3.4.11 A biodiversity net gain (BNG) assessment will be undertaken using Biodiversity Metric 3.1 – Technical Supplement[68] in accordance with the accompanying guidance and best practice principles. The calculation will be based on baseline habitat distinctiveness scores determined by the Phase 1 habitat surveys. Habitat condition will be assigned retrospectively using the information in the Phase 1 habitat survey based on the condition assessment criteria outlined in the Biodiversity Metric 3.1 – Technical Supplement and applying professional judgement.

2.3.4.12 While extended Phase 1 Habitat Surveys have only recently commenced (May 2022) review of online data sources, notably MAGIC[69], indicated that the following Habitats of Principal Importance (HoPI) are located either within or adjacent to (i.e. up to 500m from) the Suffolk Scoping Boundary as follows:

- Coastal vegetated shingle – present within the Suffolk Scoping Boundary along the beach between Aldeburgh and Thorpeness along 'The Haven' and outside of the Suffolk Scoping Boundary east of Sizewell Power Station.
- Coastal and floodplain grazing marsh – behind 'The Haven' situated within and outside of the boundary for the Site 1 and Site 3 Emerging Preference. Also, within the Scoping boundary north of Leiston around Leiston Common and Sizewell Belts. Additionally, outside of the site south of Hazlewood Common and part of Cliff Plantation.
- Reedbeds – outside of the site but within 500m, east of North Warren and south of The Meare.
- Coastal saltmarsh – present along Long Reach approximately 420m south of the Suffolk Scoping Boundary.
- Lowland dry acid grasslands – situated in North Warren adjacent to the Suffolk Scoping Boundary and South Warren within the Suffolk Scoping Boundary
- Lowland heathland – situated within the Suffolk Scoping Boundary within South Warren north-west of Aldeburgh. Also, within the Suffolk Scoping Boundary south-west of Sizewell around Halfway Cottages and within and adjacent to the Suffolk Scoping Boundary within Leiston Common.
- Lowland Fen – less than 100m south of the Suffolk Scoping Boundary east of Decoy Wood.

[67] Joint Nature Conservation Committee (2016). Handbook for Phase 1 habitat survey. A technique for environmental audit. [online] Available at: https://data.jncc.gov.uk/data/9578d07b-e018-4c66-9c1b-47110f14df2a/Handbook-Phase1-HabitatSurvey-Revised-2016.pdf [Accessed 13/07/2022].

[68] Natural England (2022). The Biodiversity Metric 3.1- Technical Supplement. [online] Available at: http://nepubprod.appspot.com/publication/6049804846366720 [Accessed 13/07/2022].

[69] Department for Environment, Food and Rural Affairs. Multi-Agency Geographic Information for the Countryside (MAGIC) (2022). [online] Available at: https://magic.defra.gov.uk/

2.3.4.13 There are two parcels of ancient woodland within the Suffolk Scoping Boundary both within the Site 1 and Site 3 Emerging Preference, namely Great Wood and Grove Wood.

2.3.4.14 Note that while some of these habitats are located directly within designated sites (being a reason for designation), a number are distributed outside. The distribution of HoPI is to be confirmed by detailed survey (Habitat Condition Assessment and (where required) National Vegetation Classification and Hedgerow Surveys) which will confirm extent and condition and also inform future Biodiversity Net Gain assessment. It will also confirm the presence of any uncommon arable plants.

Other habitats

2.3.4.15 Review of MAGIC indicates that the Suffolk Onshore Scheme is located within a patchwork of arable, woodland, pasture and residential land uses. Away from the designated sites and notable habitats described above, the Suffolk Scoping Boundary is likely to include a mix of these habitat types.

Invertebrates

2.3.4.16 The designated sites and notable habitats present within the Suffolk Onshore Scheme Scoping Boundary have potential to support a significant assemblage of notable invertebrates. In particular, Leiston-Aldeburgh SSSI which is within the Suffolk Scoping Boundary; the variety of water bodies and terrestrial habitats within the site provides suitable breeding and hunting areas for many species of dragonfly and damselfly, including the nationally scarce hairy dragonfly *Brachytron pratense*.

2.3.4.17 As part of the Extended Phase 1 Habitat Survey, the distribution of habitats with potential to support a significant assemblage of notable invertebrates will be recorded and assessed to determine the need for specific invertebrate survey.

Invasive non-native species

2.3.4.18 Suitable habitat is present across the Suffolk Onshore Scheme Scoping Boundary for a range of non-native invasive plant species. Rivers and wetlands are likely to be traversed during construction. The focus of invasive plant surveys to update the baseline will be on terrestrial and riparian species.

Great crested newt

2.3.4.19 A review of District Level Licencing and survey returns has highlighted 11 ponds within 500m of the Suffolk Scoping Boundary with an additional one pond on the border of the Scoping Boundary south-west of Theberton Woods (where the majority of GCN ponds are located) and one within site, west of Leiston Abbey where GCN are recorded as present.

2.3.4.20 Suitable aquatic habitat (e.g ponds and ditches) and terrestrial habitat (scrub, rough grassland, arable field margins etc) are present throughout the Suffolk Scoping Boundary.

2.3.4.21 A desk based search of waterbodies will be undertaken to identify ponds within 250m of the Suffolk Scoping Boundary once ponds are identified two different survey methods are used to determine the likely presence of great crested news e.g. HSI and

eDNA. However District Level Licensing approach (to be agreed with Natural England) may reduce or remove the need for detailed survey.

Reptiles

2.3.4.22 Habitats present within Suffolk Scoping Boundary are suitable for the four widespread species of reptile: slow worm (*Anguis fragilis*), common lizard (*Zootoca vivipara*), grass snake (*Natrix helvetica*) and adder (*Viper berus*).

2.3.4.23 The Site 1 and Site 3 Emerging Preference traverse the highest value habitats for reptiles including priority habitat lowland heathland at South Warren. The remaining key habitats likely to support reptiles and which are present within the Suffolk Scoping Boundary include arable field margins, scrub and coastal grazing marsh. No records of sand lizard or smooth snake were returned within the desk study.

2.3.4.24 Reptile surveys will be undertaken in suitable habitat as identified by the extended Phase 1 Habitat Survey.

Birds

2.3.4.25 There are a number of sites within and in close proximity to the Suffolk Scoping Boundary designated for an extensive assemblage of notable wintering, breeding and passage bird species.

2.3.4.26 Sandlings SPA is within the Suffolk Scoping Boundary in both the north-east and south-east close to the coast. This SPA is designated for breeding European nightjar *Caprimulgus europaeus* and breeding woodlark *Lullula arborea.* Adjacent to the Suffolk Scoping Boundary to the east is the Outer Thames Estuary SPA which is designated for wintering red-throated diver *Gavia stellata*. Also within 200m of the Suffolk Scoping Boundary to the south is Alde-Ore Estuary SPA and is designated for the following species or species assemblages:

- Marsh harrier *circus aeruginosus* (breeding)
- Pied avocet *Recurvirostra avosetta* (wintering and breeding)
- Ruff Philomachus pugnax (wintering)
- Sandwich tern *Sterna sandvicensis* (breeding)
- Little tern *Sternula albifrons* (breeding)
- Bittern *Botaurus stellaris* (wintering)
- Bewick's swan *Cygnus columbianus* (wintering)
- Hen harrier *circus cyaneus* (wintering)
- Golden plover *Pluvialis apricaria* (wintering)
- Short-eared owl *Asio flammeus* (wintering)
- Mediterranean gull *Larus melanocephalus* (breeding)
- Common tern *Sterna hirundo* (breeding)
- Arctic tern *Sterna paradisaea* (breeding)

- Lesser black-backed gull *Larus fuscus* (breeding)
- Redshank *Tringa totanus* (wintering)
- Shelduck *Tadorna tadorna* (wintering)
- Wigeon *Anas penelope* (wintering)
- Teal *Anas crecca* (wintering)
- Black-tailed godwit *Limosa limosa* (wintering)
- Gadwall *Anas strepera* (breeding)
- Shoveler *Anas clypeata* (breeding)
- Herring gull *Larus argentatus* (breeding)
- Oystercatcher *Haematopus ostralegus* (breeding)
- Ringed plover *Charadrius hiaticula* (breeding)
- Lapwing *Vanellus vanellus* (breeding and wintering)
- Black-headed gull *Chroicocephalus ridibundus* (breeding)
- Barn owl *Tyto alba* (breeding)
- Cormorant *Phalacrocorax carbo* (wintering)
- European white-fronted goose *Anser albifrons albifrons* (wintering)
- Brent goose *Branta bernicla* (wintering)
- Pintail *Ansa acuta* (wintering)
- Grey plover *Pluvialis squatarola* (wintering)
- Dunlin *Calidris alpina* (wintering)
- Curlew *Numenius arquata* (wintering)

2.3.4.27 While some of these species are likely to be primarily associated with the intertidal and saltmarsh habitats, it should be noted that some (especially golden plover, white-fronted goose and brent goose) may utilise inland habitats such as arable fields for winter foraging.

2.3.4.28 The habitats within the Suffolk Scoping Boundary contain a wide variety of habitats to support an assemblage of other notable bird species, in particular those associated with coastal floodplain and grazing marsh, scrub, woodland and arable habitats.

2.3.4.29 Along with a review of available bird record and reports relating to the area within 1km of the Suffolk Scoping Boundary (e.g. Wetland Bird Survey data, previous project reports, Suffolk bird reports, biological records and Suffolk Wildlife Trust data), an updated programme of bird surveys will be conducted to provide an updated baseline.

2.3.4.30 The baseline for birds will be sub-divided into the following assemblages (or an equivalents) for ease of reference, noting the baseline will overlap with that for designated sites;

- Non-breeding birds (intertidal);

- Non-breeding birds (terrestrial); and
- Breeding birds.

2.3.4.31 Wintering and breeding bird surveys have commenced in the coastal areas but two full seasons of non-breeding and breeding bird surveys will be undertaken prior to DCO submission. Surveys will include specific investigations for hobby, nightjar, woodlark and barn owl.

Bats

2.3.4.32 A review of MAGIC EPS mitigation licences and survey returns has returned 16 licence records of roosting bats both breeding and non-breeding within 6km of the Suffolk Scoping Boundary with an additional non-breeding roost within the Suffolk Scoping Boundary. The licence within the Suffolk Scoping Boundary consisted of a non-breeding roost for common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus,* Natterer's bat *myotis nattereri,* and noctule *Nyctalus noctula.*

2.3.4.33 EPS mitigation licences within 6km of the Suffolk Scoping Boundary cover breeding and non-breeding roosts for the following species, common pipistrelle, soprano pipistrelle, Natterer's bat, noctule, brown long-eared bat *Plecotus auritus*, Daubenton's bat *Myotis daubentonii*, whiskered bat *Myotis mystacinus*, Brant's bat *Myotis brandti*, serotine *Eptesicus serotinus* and barbastelle *Barbastella barbastellus*.

2.3.4.34 Potential roost features will be identified as part of the extended Phase 1 Habitat survey. Any trees or buildings with suitable features will require either aerial inspection surveys or if not safe to climb emergence/re-entry surveys. Bat activity transects will also be undertaken on all habitats on site where permeant infrastructure will be built along the route.

Hazel dormouse

2.3.4.35 A review of MAGIC EPS mitigation licences and survey returns has not returned any records of hazel dormouse (*Muscardinus avellanarius*) presence. Additionally, no records of hazel dormouse were returned within the desk study.

2.3.4.36 Suitable habitat for hazel dormouse in the form of woodlands and a network of connected hedgerows is present within Suffolk Onshore Scheme Scoping Boundary and will be assessed as part of the extended Phase 1 Habitat Surveys.

Riparian mammals (otter, water vole)

2.3.4.37 Water vole *Arvicola amphibius* prefer habitat running alongside water, primarily rivers, brooks, drainage and irrigation ditches. Such as those through Site 1 Emerging Preference and Site 3 Emerging Preference where it co-insides with Leiston-Aldeburgh SSSI west of The Haven and south of the Suffolk Scoping Boundary north of Long Reach. Additionally, The Hundred River flows through the Suffolk Scoping Boundary. No water vole records were returned within the desk study; however, suitable habitat will be assessed within the extended Phase 1 Habitat Survey.

2.3.4.38 There is also suitable habitat for otter *Lutra lutra* within the Suffolk Scoping Boundary as well as both north and south. Forty nine records of otter were returned within the desk study including in areas of North Warren, The Hundred River, Aldeburgh, Leiston and Thorpeness within and between the two potential cable routes as well as north of

the Suffolk Scoping Boundary in Sizewell Marshes and south of Suffolk Scoping Boundary in Hazelwood Marshes. A review of MAGIC EPS mitigation licences returned a single licence for otter west of the Alde-Ore Estuary SSSI approximately 3km south-west of the Suffolk Scoping Boundary. Suitable habitat for otter will also be assessed within the Phase 1 Habitat Survey.

Badger

2.3.4.39 Extensive suitable habitat for badger is present throughout the Suffolk Scoping Boundary, comprising woodland, arable fields and margins and scrub amongst others. Habitat is both suitable for foraging and for the excavation of setts, with sufficient habitat present to support a number of social groups.

2.3.4.40 The extended Phase 1 Habitat Surveys will provide initial information of the likely distribution of badger within the Suffolk Scoping Boundary to be followed by detailed badger surveys to inform routeing.

Future Baseline

2.3.4.41 Relative to the current baseline, the value of ecological features present are not expected to change significantly by the end of the construction period in 2030. Management of the habitats is unlikely to change over this period, and consequently no significant degradation or improvement of habitat condition is expected. Due to development pressure year on year within the wider landscape, protected and notable species and habitats are likely to remain priorities for conservation within future baseline scenarios.

2.3.5 Embedded and Control & Management Measures

Embedded Measures

2.3.5.1 Where feasible, trenchless techniques would be used at the landfalls to minimise disturbance to coastal habitats, acknowledging that the installation of cables using trenchless techniques has technological limitations that limit the lengths that can be achieved, limitations will in part be linked to the specific topography and geology of the individual sites, this was considered initially to ensure it was viable mitigation at all landfall search locations, but this will need to be further validated through detailed geotechnical surveys.

2.3.5.2 In some instances, the use of trenchless techniques can be used to avoid impacts on key constraints, for example where sites designated for their nature conservation value cannot be avoided. Other examples include crossing rivers or major infrastructure such as railway lines or motorways. These were considered in the routeing and siting process.

2.3.5.3 Further refinement of the Suffolk Onshore Scheme will be informed by the results of ecology and biodiversity surveys to avoid or minimise impacts on ecological receptors.

Control and Management Measures

2.3.5.4 An outline Code of Construction Practice (CoCP) is provided in **Appendix 1.4.A Outline Code of Construction Practice**. Measures relevant to the control and management of impacts that could affect the ecology and biodiversity assessment are:

- GG04 - The CEMP shall include measures to manage dust, waste, water, noise, vibration and soil during construction. The contractor(s) shall undertake daily site inspections to check conformance to the Management Plans.
- GG21 - Construction lighting will be of the lowest luminosity necessary to safely perform each task. It will be designed, positioned and directed to reduce the intrusion into adjacent properties, protected species and habitats.
- GG17 - Wash down of vehicles and equipment will take place in designated areas within construction compounds. Wash water will be prevented from passing untreated into watercourses and groundwater. Appropriate measures will include use of sediment traps.
- GG18 - Wheel washing will be provided at each main compound access point on to the highway. An adequate supply of water will be made available at these locations at all times. Road sweepers will be deployed on public roads where necessary to prevent excessive dust or mud deposits.
- B02 - The assumption will be that vegetation with the potential to support breeding birds will not be removed during the breeding bird season (March to August inclusive). If any works become necessary during the breeding bird season, works will be supervised by an Environmental Clerk of Works. Appropriate protection measures will be put in place should active nests be found. These will include exclusion zones around active nests until chicks fledge or nests become inactive as determined by monitoring by the Environmental Clerk of Works.
- B03 - Where there will be a risk of animal entrapment, a means of escape will be installed into all excavations left open overnight.
- B04 - To control the spread of invasive weeds in accordance with the Wildlife and Countryside Act 1981, any plant or machinery that has been used in areas infested with invasive species (both terrestrial and aquatic), such as Japanese knotweed and Himalayan balsam, will be thoroughly cleaned. Water used to clean vehicles will be controlled to prevent the spread of the plant (through seeds, rhizomes, fragments, etc.). The area will be cordoned off to prevent any inadvertent spreading.
- B05 - All habitats suitable for common reptiles will be subject to two-stage habitat manipulation that will take place between mid-March and mid-October. Firstly, vegetation will be cut to approximately 150mm (with the arisings removed) under the supervision of an Environmental Clerk of Works and the site left for a minimum of two days to allow reptiles to naturally disperse from the area. Secondly, vegetation will be cleared down to ground level under the supervision of an Environmental Clerk of Works. Vegetation will be cleared using appropriate equipment based on the type of vegetation to be removed, the area affected, and the risk of mortality or injuring reptiles. Construction works could commence immediately after completion of the second stage. Reptile hibernacula will be retained and protected during construction where practicable. If unavoidable, the

removal of vegetation and groundworks at hibernacula will be timed to avoid the hibernation season (late October to early March). Replacement hibernacula and refugia will be provided.

- B06 - Alternative roost structures (bat boxes) will be provided (with landowner consent) on retained trees within the Order Limits or areas outside of the Order Limits agreed with landowners. Three boxes will be provided for each tree with moderate bat roost potential to be felled. Five boxes will be provided for each tree with high bat roost potential to be felled.
- B07 - Where the works require the crossing or removal of hedgerows, the gap will be reduced to a width required for safe working. Where hedge removals are necessary, 'dead hedging' should be used, where practicable, in the interim periods to retain connectivity during construction. Dead hedging can comprise vegetation arisings or artificial provision, such as willow screening panels or Heras fencing covered in camouflage netting. New hedgerow planting will contain native, woody species of local provenance.

Habitat Re-instatement, restoration and compensation

2.3.5.5 Where temporary habitat removal is required, this will be re-instated as soon as practically possible through use of techniques such as re-instatement of temporarily stored turfs and topsoil. Where habitat re-instatement is not possible, restoration or compensatory habitat will be explored.

2.3.5.6 Long term habitat re-instatement, restoration and compensation will be detailed within a Landscape and Ecology Management Plan or equivalent, which will accompany the BNG assessment.

2.3.6 Potential for Significant Effects

2.3.6.1 The ecology and biodiversity assessment will consider the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project**.

2.3.6.2 The proposed scope of the ecology and biodiversity assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

2.3.6.3 This section identifies the sources and impacts that would occur as a result of the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme.

2.3.6.4 The potential for the Suffolk Onshore Scheme to result in likely significant effects described in this section takes into account the embedded and control and management measures described in section 5.

Sources of construction impacts

- construction of converter station and underground cables;

- construction of any temporary works areas;
- construction traffic movements; and
- presence of pollution from construction crews.

Sources of maintenance impacts

- presence of pollution from maintenance crews;
- temporary works areas; and
- traffic movements during maintenance works.

Sources of decommissioning impacts

- removal of converter station and underground cables;
- temporary works areas; and
- decommissioning traffic movements.

Potential impacts

2.3.6.5 Table 2.3.3 identifies the potential impacts that could result from the sources identified above.

Table 2.3.3: Source and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction and Maintenance	Construction of converter station and underground cables Construction of any temporary works areas Potential pollution from maintenance crews	Permanent habitat loss (terrestrial)	Yes -The converter station and associated infrastructure will result in an unavoidable permanent loss of habitat. Maintenance of the converter station, underground cables and overhead line may result in permanent or temporary loss of habitat but at a much smaller scale than construction.	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction and Maintenance	Construction of converter station and underground cables Construction of any temporary works areas Potential pollution from maintenance crews	Permanent habitat loss (intertidal)	Yes -No permanent infrastructure is to be installed above ground level within the intertidal zone. No day to day maintenance of underground cables would be required in the intertidal zone.	**Scoped in**
Construction and Maintenance	Construction of converter station and underground cables Construction of any temporary works areas Construction traffic movements Potential pollution from maintenance crews Traffic movements during maintenance works	Temporary habitat loss/disturbance (terrestrial)	Yes -Cable installation within the Suffolk Scoping Boundary will result in a degree of temporary habitat loss/disturbance to terrestrial habitat. Maintenance of the converter station, underground cables and overhead line may result in temporary loss of habitat or disturbance but at a much smaller scale than construction.	**Scoped in**
Construction and Maintenance	Construction of converter station and underground cables Construction of any temporary works areas Construction traffic movements Potential pollution from maintenance crews Traffic movements	Temporary habitat fragmentation / degradation (terrestrial)	Yes -Implementation of a construction working corridor may result in temporary fragmentation of habitat connectivity. Maintenance of the converter station, underground cables and overhead line may result in temporary fragmentation of habitat connectivity	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
	during maintenance works		but at a much smaller scale than construction.	
Construction and Maintenance	Construction of converter station and underground cables Construction of any temporary works areas Construction traffic movements Potential pollution from maintenance crews Traffic movements during maintenance works	Temporary habitat loss/ disturbance (intertidal)	Yes -Cable installation within the Suffolk Scoping Boundary will result in a degree of temporary habitat loss / disturbance to intertidal habitat Maintenance of underground cables could be required in the intertidal zone.	**Scoped in**
Construction and Maintenance	Construction of converter station and underground cables Construction of any temporary works areas Construction traffic movements Potential pollution from maintenance crews Traffic movements during maintenance works	Incidental mortality of protected or notable species	Yes -In the absence of mitigation, there is potential for construction and maintenance works to result in the accidental killing or injuring of protected or notable species, although maintenance would be at a much smaller scale than construction.	**Scoped in**
Construction and Maintenance	Construction of converter station and underground cables	Disturbance to protected or notable species (noise/ vibration, visual, lighting	Yes -In the absence of mitigation, there is potential for construction and maintenance works	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
	Construction of any temporary works areas Construction traffic movements Potential pollution from maintenance crews Traffic movements during maintenance works		to result in the accidental disturbance of protected or notable species, although maintenance would be at a much smaller scale than construction.	
Construction and Maintenance	Construction of converter station and underground cables Construction of any temporary works areas Construction traffic movements Potential pollution from maintenance crews Traffic movements during maintenance works	Pollution impacts (dust deposition, air quality, water)	Yes -In the absence of mitigation, there is potential for construction works and maintenance to result in pollution impact pathways upon habitats and species, although maintenance would be at a much smaller scale than construction.	**Scoped in**
Decommissioning	Decommissioning of converter station and underground cables Any temporary works areas Decommissioning traffic movements	Temporary habitat loss/ disturbance (intertidal)	Yes - Cable removal within the Suffolk Scoping Boundary will result in a degree of temporary habitat loss / disturbance to intertidal habitat	**Scoped in**
Decommissioning	Decommissioning of converter station and	Incidental mortality of	Yes - In the absence of mitigation, there is potential for	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
	underground cables Any temporary works areas Decommissioning traffic movements	protected or notable species	decommissioning works to result in the accidental killing or injuring of protected or notable species.	
Decommissioning	Decommissioning of converter station and underground cables Any temporary works areas Decommissioning traffic movements	Disturbance to protected or notable species (noise/ vibration, visual, lighting	Yes - In the absence of mitigation, there is potential for decommissioning works to result in the accidental disturbance of protected or notable species.	**Scoped in**
Decommissioning	Decommissioning of converter station and underground cables Any temporary works areas Decommissioning traffic movements	Pollution impacts (dust deposition, air quality, water)	Yes - In the absence of mitigation, there is potential for decommissioning works to result in pollution impact pathways upon habitats and species	**Scoped in**

Impact Pathways with Receptors (Step 2)

2.3.6.6 This section identities whether there are any impact pathways from the impacts identified above that could give rise to potentially significant effects on the receptors within the Suffolk Scoping Boundary.

Suffolk Converter Station Site 1 Emerging Preference

2.3.6.7 Table 2.3.4 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 1 Emerging Preference as shown on as shown on **Figure 2.1.4 Suffolk Site 1 Emerging Preference** and **Figure 2.1.9 Suffolk Site 1 Emerging Preference Option Area.**

Table 2.3.4:Impact pathways with receptors – Suffolk Site 1 Emerging Preference

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Permanent habitat loss (terrestrial)	Designated Sites Sandlings SPA Alde-Ore Estuary SPA Alde-Ore Estuary Ramsar Leiston-Aldeburgh SSSI North Warren RSPB Reserve	Yes -The cable installation route has the potential for direct habitat loss within designated sites. It is expected that any cable installation will result in only a temporary impact. However, until the proposed alignment and working methods are confirmed this impact pathway will be included as a possibility. No permanent habitat loss of a designated site will occur as a result of the converter station. It is however possible arable habitats utilised by birds associated with nearby designated sites (e.g. golden plover, white-fronted goose, brent goose) functionally linked to Alde-Ore Estuary SPA/Ramsar could be lost. Bird surveys will investigate use of these habitats by such species and inform any requirement for mitigation.	**Scoped in for Construction, Maintenance and Decommissioning**
	Notable Habitats Ancient Woodland – Grove/Old World Wood and Great Wood	Yes -Ancient woodland, coastal grazing marshes, hedgerows, arable field margins and other notable habitats could be impacted by cable installation. However, a combination of routeing, HDD (where possible) and habitat re-instatement and replacement will be employed as mitigation and reduce these impacts to temporary, where possible. Should ancient woodland be removed this would be assessed as permanent.	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
		The converter station would be located within an arable field so will not result in permanent loss of notable habitats.	
Temporary habitat loss disturbance (terrestrial)	Designated Sites Notable Habitats Sandlings SPA Alde-Ore Estuary SPA Alde-Ore Estuary Ramsar Leiston-Aldeburgh SSSI North Warren RSPB	Yes - It is designated sites as well as notable habitats will be temporary once additional mitigation has been employed (e.g. HDD, re-instatement) to be confirmed by design.	**Scoped in for Construction, Maintenance and Decommissioning**
	Invertebrates Great Crest Newt Reptiles Non-breeding Birds (Terrestrial) Breeding Birds Bats Badger Otter Water vole Hazel dormouse	Yes -Habitats with potential to support protected and notable species to be potentially impacted by cable installation or converter station construction will be subject to mitigation measures including route assessment, possible HDD, reinstatement and compensation	**Scoped in for Construction, Maintenance and Decommissioning**
Temporary habitat loss (connectivity)	Invertebrates Great Crest Newt Reptiles	Yes - Habitat connectivity may be impacted in the short term by cable installation but will be minimised through use of HDD where possible to avoid key habitats. Where	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
	Non-breeding Birds (Terrestrial) Breeding Birds Bats Badger Otter Water vole Hazel dormouse	unavoidable fragmentation or habitat degradation is unavoidable this will be a temporary effect until habitat re-instatement is established The converter station will likely be situated within arable fields, therefore minimising fragmentation and degradation of key habitats.	
Temporary habitat loss/ disturbance (intertidal)	Designated Sites Notable Habitats	Yes - Cable installation within the intertidal zone of the Outer Thames Estuary, and coastal grazing marsh of Leiston-Aldeburgh SSSI and is unlikely to be achievable through HDD alone and while mitigation through habitat re-instatement will take place it is unlikely that an effect can be avoided entirely.	**Scoped in for Construction, Maintenance and Decommissioning**
	Non-breeding birds (Intertidal) Breeding Birds	Yes - While intertidal cable installation will be temporary and where possible timed to avoid the most sensitive breeding and wintering periods, an assemblage of notable bird species highly likely to be present within and adjacent to the intertidal works zone	**Scoped in for Construction, Maintenance and Decommissioning**
Incidental mortality of protected or notable species	Invertebrates	No - It is unlikely that notable population assemblages will be significantly affected by direct mortality once mitigation measures are in place, as such populations will be linked to habitat.	Scoped out for all phases
	Great crested newt	Yes - While potential exists for great crested newt mortalities during construction, the overall favourable population status is to be maintained through	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
		either implementation of District Level or European Protected Species Mitigation licence.	
	Reptiles Breeding Birds Non-breeding Birds Bats Badger	Yes - Potential exists for unmitigated works to impact suitable protected and notable species habitat which may be relatively widespread along the cable corridor (i.e. arable field margins) and result in direct mortalities. If HDD or route selection cannot avoid suitable habitat, mitigation options include works Ecological Method Statement or Natural England mitigation licence to avoid direct mortalities. Potential also exists for the section of possible overhead powerline to affect breeding and non-breeding birds through collision risk.	**Scoped in for all during Construction, Maintenance and Decommissioning** **Additionally scoped in for breeding and non-breeding birds during Operation due to potential bird strike on new overhead line.**
	Dormouse	Yes - Hedgerows within the Suffolk Onshore Scheme Scoping Boundary may be suitable for dormouse and may be impacted by works if HDD not feasible and require mitigation (i.e. under Natural England mitigation licence). Until further assessment can confirm likely absence of dormouse, effect will be scoped in.	**Scoped in for Construction, Maintenance and Decommissioning**
	Riparian Mammals (otter and water vole)	Yes - It is expected that direct impacts on watercourses (and therefore water vole and otter) can be avoided through HDD techniques. Until routing and feasibility of HDD can be confirmed, there is a potential requirement for mitigation and	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
		these receptors remain scoped in.	
Disturbance to protected or notable species (noise/ vibration, visual, lighting	Great crested newt Non-breeding Birds (Intertidal) Non-breeding Birds (Terrestrial) Breeding Birds Bats Dormouse Badger Otter	Yes - Trees, hedgerows and other habitats within the Suffolk Onshore Scheme Scoping Boundary may be suitable for protected or notable species. If route selection cannot avoid disturbance impacts then mitigation (i.e. works under Ecological Method Statement or Natural England mitigation licence) could be required	**Scoped in for Construction, Maintenance and Decommissioning**
Pollution impacts (dust deposition, air quality, water)	Designates Sites Notable Habitats	Yes - Potential for pollution or other indirect impacts during construction on adjacent habitats and species will be mitigated though implementation of a Construction and Ecology Management Plan.	**Scoped in for Construction, Maintenance and Decommissioning**

Suffolk Converter Station Site 1 Alternative

2.3.6.8 Table 2.3.5 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 1 Alternative Preference as shown on as shown on **Figure 2.1.7 Suffolk Site 1 Alternative** and **Figure 2.1.11 Suffolk Site 1 Alternative Option Area.**

Table 2.3.5: Impact pathways with receptors – Suffolk Site 1 Alternative

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Permanent habitat loss (terrestrial)	Designated Sites Sandlings SPA Alde-Ore Estuary SPA	Yes -The cable installation route has the potential for direct habitat loss within designated sites. It is expected that any cable installation will result in only a temporary impact. However,	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
	Alde-Ore Estuary Ramsar Leiston-Aldeburgh SSSI North Warren RSPB	until route and working methods are confirmed this impact pathway will be included as a possibility. No permanent habitat loss of a designated site will occur as a result of the converter station. It is however possible arable habitats utilised by birds associated with nearby designated sites (e.g. golden plover, white-fronted goose, brent goose) functionally linked to Alde-Ore Estuary SPA/Ramsar could be lost. Bird surveys will investigate use of these habitats by such species and inform any requirement for mitigation.	
	Notable Habitats Ancient Woodland – Grove/Old World Wood and Great Wood	Yes - Ancient woodland (Great Wood and Grove Wood), coastal grazing marshes, hedgerows, arable field margins and other notable habitats could be impacted by cable installation. However, a combination of routeing, HDD where possible and habitat re-instatement and replacement will be employed as mitigation and reduce these impacts to temporary, where possible. Removal of ancient woodland would be assessed as permanent. The converter station would be located within an arable field so will not result in permanent loss of notable habitats.	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Temporary habitat loss disturbance (terrestrial)	Designated Sites Notable Habitats Sandlings SPA Alde-Ore Estuary SPA and Ramsar Leiston-Aldeburgh SSSI The Haven LNR North Warren RSPB	Yes - It is expected that impacts upon designated sites as well as notable habitats will be temporary once additional mitigation has been employed (e.g. HDD, re-instatement) to be confirmed by design.	**Scoped in for Construction, Maintenance and Decommissioning**
	Invertebrates Great Crest Newt Reptiles Non-breeding Birds (Terrestrial) Breeding Birds Bats Badger Otter Water vole Hazel dormouse	Yes - Habitats with potential to support protected and notable species to be potentially impacted by cable installation or converter station construction will be subject to mitigation measures including route assessment, possible HDD, reinstatement and compensation	**Scoped in for Construction, Maintenance and Decommissioning**
Temporary habitat loss (connectivity)	Invertebrates Great Crest Newt Reptiles Non-breeding Birds (Terrestrial) Breeding Birds Bats Badger Otter	Yes - Habitat connectivity may be impacted in the short term by cable installation but will be minimised through use of HDD where possible to avoid key habitats. Where fragmentation or habitat degradation is unavoidable this will be a temporary effect until habitat re-instatement is established.	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
	Water vole Hazel dormouse	The converter station will likely be situated within arable fields, therefore minimising fragmentation and degradation of key habitats.	
Temporary habitat loss/ disturbance (intertidal)	Designated Sites Notable Habitats Sandlings SPA Leiston-Aldeburgh SSSI North Warren RSPB Reserve	Yes -Cable installation within the intertidal zone may or may not be achievable through HDD alone and while mitigation through habitat re-instatement will take place it is unlikely that an effect can be avoided entirely. Current routing alternative options may avoid the need to HDD through Sandlings SPA Leiston-Aldeburgh SSSI, North Warren RSPBand so an effect may be avoided.	**Scoped in for Construction, Maintenance and Decommissioning**
	Non-breeding birds (Intertidal) Breeding Birds	Yes -While intertidal cable installation will be temporary and where possible timed to avoid the most sensitive breeding and wintering periods, an assemblage of notable bird species highly likely to be present within and adjacent to the intertidal works zone	**Scoped in for Construction, Maintenance and Decommissioning**
Incidental mortality of protected or notable species	Invertebrates	No - It is unlikely that notable population assemblages will be significantly affected by direct mortality once mitigation measures are in place, as such populations will be linked to habitat.	Scoped out for all phases
	Great crested newt	Yes -While potential exists for great crested newt mortalities during construction, the overall favourable population status is to be maintained through either implementation of District Level or European Protected Species Mitigation licence.	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
	Reptiles Breeding Birds Non-breeding Birds Bats Badger	Yes - Potential exists for unmitigated works to impact suitable protected and notable species habitat which may be relatively widespread along the cable corridor (i.e. arable field margins) and result in direct mortalities. If HDD or route selection cannot avoid suitable habitat, mitigation options include works Ecological Method Statement or Natural England mitigation licence to avoid direct mortalities. Potential also exists for the section of possible overhead powerline to affect breeding and non-breeding birds through collision risk.	**Scoped in for all during Construction, Maintenance and Decommissioning** **Additionally scoped in for breeding and non-breeding birds during Operation due to potential bird strike on new overhead line.**
	Dormouse	Yes - Hedgerows within the Suffolk Onshore Scheme Scoping Boundary may be suitable for dormouse and may be impacted by works if HDD not feasible and require mitigation (i.e. under Natural England mitigation licence). Until further assessment can confirm likely absence of dormouse, effect will be scoped in.	**Scoped in for Construction, Maintenance and Decommissioning**
	Riparian Mammals (otter and water vole)	Yes - It is expected that direct impacts on watercourses (and therefore water vole and otter) can be avoided through HDD techniques. Until routing and feasibility of HDD can be confirmed, there is a potential requirement for mitigation and these receptors remain scoped in.	**Scoped in for Construction, Maintenance and Decommissioning**
Disturbance to protected or notable species	Great crested newt	Yes -Trees, hedgerows and other habitats within the Suffolk Onshore Scheme	**Scoped in for Construction,**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
(noise/ vibration, visual, lighting	Non-breeding Birds (Intertidal) Non-breeding Birds (Terrestrial) Breeding Birds Bats Dormouse Badger Otter	Scoping Boundary may be suitable for protected or notable species. If route selection cannot avoid disturbance impacts then mitigation (i.e. works under Ecological Method Statement or Natural England mitigation licence) could be required	**Maintenance and Decommissioning**
Pollution impacts (dust deposition, air quality, water)	Designates Sites Notable Habitats	Yes -Potential for pollution or other indirect impacts during construction on adjacent habitats and species will be mitigated though implementation of a Construction and Ecology Management Plan.	**Scoped in for Construction, Maintenance and Decommissioning**

Suffolk Converter Station Site 3 Emerging Preference

2.3.6.9 Table 2.3.6 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Emerging Preference as shown on as shown on **Figure 2.1.5 Suffolk Site 3 Emerging Preference** and **Figure 2.1.10 Suffolk Site 3 Emerging Preference Option Area**.

Table 2.3.6: Impact pathways with receptors – Suffolk Site 3 Emerging Preference

Impact pathway	Source	Potential for significant effects	Proposed to be scoped in/out
Permanent habitat loss (terrestrial)	Designated Sites Sandlings SPA Alde-Ore Estuary SPA and Ramsar Leiston-Aldeburgh SSSI	Yes -The cable installation route has the potential for direct habitat loss within designated sites. It is expected that any cable installation will result in only a temporary impact. However, until route and working methods are confirmed this impact pathway will be included as a possibility.	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Source	Potential for significant effects	Proposed to be scoped in/out
	The Haven LNR North Warren RSPB	No permanent habitat loss of a designated site will occur as a result of the converter station. It is however possible arable habitats utilised by birds associated with nearby designated sites (e.g. golden plover, white-fronted goose, brent goose) functionally linked to Alde-Ore Estuary SPA/Ramsar could be lost. Bird surveys will investigate use of these habitats by such species and inform any requirement for mitigation.	
	Notable Habitats	Yes - Ancient woodland (Great Wood and Grove Wood), coastal grazing marshes, hedgerows, arable field margins and other notable habitats could be impacted by cable installation. However, a combination of routeing, HDD where possible and habitat re-instatement and replacement will be employed as mitigation and reduce these impacts to temporary, where possible. Removal of ancient woodland will be assessed as permanent. The converter station would be located within an arable field so will not result in permanent loss of notable habitats.	**Scoped in for Construction, Maintenance and Decommissioning**
Temporary habitat loss disturbance (terrestrial)	Designated Sites Notable Habitats Sandlings SPA	Yes - It is expected that impacts upon designated sites as well as notable habitats will be temporary once additional mitigation has been employed (e.g. HDD, re-instatement) to be confirmed by design.	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Source	Potential for significant effects	Proposed to be scoped in/out
	Alde-Ore Estuary SPA and Ramsar Leiston-Aldeburgh SSSI The Haven LNR North Warren RSPB		
	Invertebrates Great Crest Newt Reptiles Non-breeding Birds (Terrestrial) Breeding Birds Bats Badger Otter Water vole Hazel dormouse	Yes - Habitats with potential to support protected and notable species to be potentially impacted by cable installation or converter station construction will be subject to mitigation measures including route assessment, possible HDD, reinstatement and compensation.	**Scoped in for Construction, Maintenance and Decommissioning**
Temporary habitat loss (connectivity)	Invertebrates Great Crest Newt Reptiles Non-breeding Birds (Terrestrial) Breeding Birds Bats Badger Otter Water vole Hazel dormouse	Yes - Habitat connectivity may be impacted in the short term by cable installation but will be minimised through use of HDD where possible to avoid key habitats. Where fragmentation or habitat degradation is unavoidable this will be a temporary effect until habitat re-instatement is established. The converter station will likely be situated within arable fields, therefore minimising fragmentation and degradation of key habitats.	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Source	Potential for significant effects	Proposed to be scoped in/out
Temporary habitat loss/ disturbance (intertidal)	Designated Sites Notable Habitats Leiston-Aldeburgh SSSI North Warren RSPB Reserve The Haven LNR	Yes - Cable installation within the intertidal zone of Leiston-Aldeburgh SSSI, North Warren RSPB Reserve and The Haven LNR may or may not be achievable through HDD alone and while mitigation through habitat re-instatement will take place it is unlikely that an effect can be avoided entirely.	**Scoped in for Construction, Maintenance and Decommissioning**
	Non-breeding birds (Intertidal) Breeding Birds	Yes - While intertidal cable installation will be temporary and where possible timed to avoid the most sensitive breeding and wintering periods, an assemblage of notable bird species highly likely to be present within and adjacent to the intertidal works zone.	**Scoped in for Construction, Maintenance and Decommissioning**
Incidental mortality of protected or notable species	Invertebrates	No - It is unlikely that notable population assemblages will be significantly affected by direct mortality once mitigation measures are in place, as such populations will be linked to habitat.	Scoped out for all phases
	Great crested newt	Yes - While potential exists for great crested newt mortalities during construction, the overall favourable population status is to be maintained through either implementation of District Level or European Protected Species Mitigation licence.	**Scoped in for Construction, Maintenance and Decommissioning**
	Reptiles Breeding Birds Non-breeding Birds	Yes -Potential exists for unmitigated works to impact suitable protected and notable species habitat which may be relatively widespread along	**Scoped in for all during Construction, Maintenance and Decommissioning**

Impact pathway	Source	Potential for significant effects	Proposed to be scoped in/out
	Bats Badger	the cable corridor (i.e. arable field margins) and result in direct mortalities. If HDD or route selection cannot avoid suitable habitat, mitigation options include works Ecological Method Statement or Natural England mitigation licence to avoid direct mortalities. Potential also exists for the section of possible overhead powerline to affect breeding and non-breeding birds through collision risk.	**Additionally scoped in for breeding and non-breeding birds during Operation due to potential bird strike on new overhead line.**
	Dormouse	Yes -Hedgerows within the Suffolk Onshore Scheme Scoping Boundary may be suitable for dormouse and may be impacted by works if HDD not feasible and require mitigation (i.e. under Natural England mitigation licence). Until further assessment can confirm likely absence of dormouse, effect will be scoped in.	**Scoped in for Construction, Maintenance and Decommissioning**
	Riparian Mammals (otter and water vole)	Yes - It is expected that direct impacts on watercourses (and therefore water vole and otter) can be avoided through HDD techniques. Until routing and feasibility of HDD can be confirmed, there is a potential requirement for mitigation and these receptors remain scoped in.	**Scoped in for Construction, Maintenance and Decommissioning**
Disturbance to protected or notable species (noise/ vibration, visual, lighting	Great crested newt Non-breeding Birds (Intertidal) Non-breeding Birds (Terrestrial)	Yes -Trees, hedgerows and other habitats within the Suffolk Onshore Scheme Scoping Boundary may be suitable for protected or notable species. If route selection cannot avoid disturbance impacts then mitigation (i.e. works under	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Source	Potential for significant effects	Proposed to be scoped in/out
	Breeding Birds Bats Dormouse Badger Otter	Ecological Method Statement or Natural England mitigation licence) could be required	
Pollution impacts (dust deposition, air quality, water)	Designates Sites Notable Habitats	Yes - Potential for pollution or other indirect impacts during construction on adjacent habitats and species will be mitigated though implementation of a Construction and Ecology Management Plan.	**Scoped in for Construction, Maintenance and Decommissioning**

Suffolk Converter Station Site 3 Alternative (Option 1)

2.3.6.10 Table 2.3.7 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Alternative (Option 1) as shown on as shown on **Figure 2.1.12 Suffolk Site 3 Alternative (Option 1) Option Area** and **Figure 2.1.7 Suffolk Site 3 Alternative (Option 1)**.

Table 2.3.7: Impact pathways with receptors – Suffolk Site 3 Alternative (Option 1)

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Permanent habitat loss (terrestrial)	Designated Sites Sandlings SPA, Leiston-Aldeburgh SSSI North Warren RSPB Reserve Sizewell Marshes SSSI Alde-Ore Estuary SPA and Ramsar	Yes -The cable installation route has the potential for direct habitat loss within designated sites. It is expected that any cable installation will result in only a temporary impact. However, until route and working methods are confirmed this impact pathway will be included as a possibility. No permanent habitat loss of a designated site will occur as a result of the converter station. It is however possible arable habitats utilised by	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
		birds associated with nearby designated sites (e.g. golden plover, white-fronted goose, brent goose) functionally linked to Alde-Ore Estuary SPA/Ramsar could be lost. Bird surveys will investigate use of these habitats by such species and inform any requirement for mitigation.	
	Notable Habitats	Yes - Coastal grazing marshes, hedgerows, arable field margins and other notable habitats could be impacted by cable installation. However, a combination of routeing, HDD where possible and habitat re-instatement and replacement will be employed as mitigation and reduce these impacts to temporary, where possible. The converter station would be located within an arable field so will not result in permanent loss of notable habitats. No ancient woodland is present within the boundary of Site 3 Alternative Option 1, however there is an ancient woodland (Grove Wood/Old World Wood) adjacent to site.	**Scoped in for Construction, Maintenance and Decommissioning**
Temporary habitat loss disturbance (terrestrial)	Designated Sites Notable Habitats Sandlings SPA, Leiston-Aldeburgh SSSI	Yes - It is expected that impacts upon designated sites as well as notable habitats will be temporary once additional mitigation has been employed (e.g. HDD, re-instatement) to be confirmed by design.	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
	North Warren RSPB Reserve Sizewell Marshes SSSI Alde-Ore Estuary SPA/Ramsar		
	Invertebrates Great Crest Newt Reptiles Non-breeding Birds (Terrestrial) Breeding Birds Bats Badger Otter Water vole Hazel dormouse	Yes - Habitats with potential to support protected and notable species to be potentially impacted by cable installation or converter station construction will be subject to mitigation measures including route assessment, possible HDD, reinstatement and compensation.	**Scoped in for Construction, Maintenance and Decommissioning**
Temporary habitat loss (connectivity)	Invertebrates Great Crest Newt Reptiles Non-breeding Birds (Terrestrial) Breeding Birds Bats Badger Otter Water vole Hazel dormouse	Yes - Habitat connectivity may be impacted in the short term by cable installation but will be minimised through use of HDD where possible to avoid key habitats. Where fragmentation or habitat degradation is unavoidable this will be a temporary effect until habitat re-instatement is established. The converter station will likely be situated within arable fields, therefore minimising fragmentation and degradation of key habitats.	**Scoped in for Construction, Maintenance and Decommissioning**
Temporary habitat loss/	Designated Sites	Yes -Cable installation within the intertidal zone may or may not be achievable through	**Scoped in for Construction,**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
disturbance (intertidal)	Notable Habitats	HDD alone and while mitigation through habitat re-instatement will take place it is unlikely that an effect can be avoided entirely. Current potential routing around Sandlings SPA/Leiston-Aldeburgh SSSI/North Warren RSPB Reserve and Sizewell Marshes SSSI will avoid an effect on designated habitats within this site.	**Maintenance and Decommissioning**
	Non-breeding birds (Intertidal) Breeding Birds	Yes - While intertidal cable installation will be temporary and where possible timed to avoid the most sensitive breeding and wintering periods, an assemblage of notable bird species highly likely to be present within and adjacent to the intertidal works zone.	**Scoped in for Construction, Maintenance and Decommissioning**
Incidental mortality of protected or notable species	Invertebrates	No - It is unlikely that notable population assemblages will be significantly affected by direct mortality once mitigation measures are in place, as such populations will be linked to habitat.	Scoped out for all phases
	Great crested newt	Yes - While potential exists for great crested newt mortalities during construction, the overall favourable population status is to be maintained through either implementation of District Level or European Protected Species Mitigation licence.	**Scoped in for Construction, Maintenance and Decommissioning**
	Reptiles Breeding Birds Non-breeding Birds	Yes - Potential exists for unmitigated works to impact suitable protected and notable species habitat which may be relatively widespread along	**Scoped in for all during Construction, Maintenance and Decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
	Bats Badger	the cable corridor (i.e. arable field margins) and result in direct mortalities. If HDD or route selection cannot avoid suitable habitat, mitigation options include works Ecological Method Statement or Natural England mitigation licence to avoid direct mortalities. Potential also exists for the section of possible overhead powerline to affect breeding and non-breeding birds through collision risk.	**Additionally scoped in for breeding and non-breeding birds during Operation due to potential bird strike on new overhead line.**
	Dormouse	Yes - Hedgerows within the Suffolk Onshore Scheme Scoping Boundary may be suitable for dormouse and may be impacted by works if HDD not feasible and require mitigation (i.e. under Natural England mitigation licence). Until further assessment can confirm likely absence of dormouse, effect will be scoped in.	**Scoped in for Construction, Maintenance and Decommissioning**
	Riparian Mammals (otter and water vole)	Yes - It is expected that direct impacts on watercourses (and therefore water vole and otter) can be avoided through HDD techniques. Until routing and feasibility of HDD can be confirmed, there is a potential requirement for mitigation and these receptors remain scoped in.	**Scoped in for Construction, Maintenance and Decommissioning**
Disturbance to protected or notable species (noise/ vibration, visual, lighting	Great crested newt Non-breeding Birds (Intertidal)	Yes -Trees, hedgerows and other habitats within the Suffolk Onshore Scheme Scoping Boundary may be suitable for protected or notable species. If route selection cannot avoid disturbance impacts then	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
	Non-breeding Birds (Terrestrial) Breeding Birds Bats Dormouse Badger Otter	mitigation (i.e. works under Ecological Method Statement or Natural England mitigation licence) could be required	
Pollution impacts (dust deposition, air quality, water)	Designates Sites Notable Habitats Sandlings SPA, Leiston-Aldeburgh SSSI North Warren RSPB Reserve Sizewell Marshes SSSI Alde-Ore Estuary SPA/Ramsar	Yes - Potential for pollution or other indirect impacts during construction on adjacent habitats and species will be mitigated though implementation of a Construction and Ecology Management Plan.	**Scoped in for Construction, Maintenance and Decommissioning**

Suffolk Converter Station Site 3 Alternative (Option 2)

2.3.6.11 Table 2.3.8 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Alternative (Option 2) as shown on as shown on **Figure 2.1.13 Suffolk Site 3 Alternative (Option 2) Option Area and Figure 2.1.8 Suffolk Site 3 Alternative (Option 2).**

Table 2.3.8: Impact pathways with receptors– Suffolk Site 3 Alternative (Option 2)

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Permanent habitat loss (terrestrial)	Designated Sites Sandlings SPA Alde-Ore Estuary SPA and Ramsar North Warren RSPB Reserve Leiston-Aldeburgh SSSI	Yes -The cable installation route has the potential for direct habitat loss within the designated sites. It is expected that any cable installation will result in only a temporary impact. However, until route and working methods are confirmed this impact pathway will be included as a possibility. No permanent habitat loss of a designated site will occur as a result of the converter station. It is however possible arable habitats utilised by birds associated with nearby designated sites (e.g. golden plover, white-fronted goose, brent goose) functionally linked to Alde-Ore Estuary SPA and Ramsar could be lost. Bird surveys will investigate use of these habitats by such species and inform any requirement for mitigation.	**Scoped in for Construction, Maintenance and Decommissioning**
	Notable Habitats	Yes - Ancient Woodland (Grove wood and Great Wood), Coastal grazing marshes, hedgerows, arable field margins and other notable habitats could be impacted by cable installation. However, a combination of routeing, HDD where possible and habitat re-instatement and replacement will be employed as mitigation and reduce these impacts to temporary, where possible.	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
		Removal of ancient woodland will be assessed as permanent. The converter station would be located within an arable field so will not result in permanent loss of notable habitats.	
Temporary habitat loss disturbance (terrestrial)	Designated Sites Notable Habitats Sandlings SPA Alde-Ore Estuary SPA and Ramsar North Warren RSPB Reserve Leiston-Aldeburgh SSSI	Yes - It is expected that impacts upon designated sites as well as notable habitats will be temporary once additional mitigation has been employed (e.g. HDD, re-instatement) to be confirmed by design.	**Scoped in for Construction, Maintenance and Decommissioning**
	Invertebrates Great Crest Newt Reptiles Non-breeding Birds (Terrestrial) Breeding Birds Bats Badger Otter Water vole Hazel dormouse	Yes - Habitats with potential to support protected and notable species to be potentially impacted by cable installation or converter station construction will be subject to mitigation measures including route assessment, possible HDD, reinstatement and compensation.	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Temporary habitat loss (connectivity)	Invertebrates Great Crest Newt Reptiles Non-breeding Birds (Terrestrial) Breeding Birds Bats Badger Otter Water vole Hazel dormouse	Yes - Habitat connectivity may be impacted in the short term by cable installation but will be minimised through use of HDD where possible to avoid key habitats. Where fragmentation or habitat degradation is unavoidable this will be a temporary effect until habitat re-instatement is established. The converter station will likely be situated within arable fields, therefore minimising fragmentation and degradation of key habitats.	**Scoped in for Construction, Maintenance and Decommissioning**
Temporary habitat loss/ disturbance (intertidal)	Notable Habitats	Yes - Cable installation within the intertidal zone may or may not be achievable through HDD alone and while mitigation through habitat re-instatement will take place it is unlikely that an effect can be avoided entirely.	**Scoped in for Construction, Maintenance and Decommissioning**
	Non-breeding birds (Intertidal) Breeding Birds	Yes - While intertidal cable installation will be temporary and where possible timed to avoid the most sensitive breeding and wintering periods, an assemblage of notable bird species highly likely to be present within and adjacent to the intertidal works zone.	**Scoped in for Construction, Maintenance and Decommissioning**
Incidental mortality of protected or notable species	Invertebrates	No - It is unlikely that notable population assemblages will be significantly affected by direct mortality once mitigation measures are in place, as such populations will be linked to habitat.	Scoped out for all phases
	Great crested newt	Yes - While potential exists for great crested newt mortalities during construction, the	**Scoped in for Construction,**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
		overall favourable population status is to be maintained through either implementation of District Level or European Protected Species Mitigation licence.	**Maintenance and Decommissioning**
	Reptiles Breeding Birds Non-breeding Birds Bats Badger	Yes - Potential exists for unmitigated works to impact suitable protected and notable species habitat which may be relatively widespread along the cable corridor (i.e. arable field margins) and result in direct mortalities. If HDD or route selection cannot avoid suitable habitat, mitigation options include works Ecological Method Statement or Natural England mitigation licence to avoid direct mortalities. Potential also exists for the section of possible overhead powerline to affect breeding and non-breeding birds through collision risk.	**Scoped in for all during Construction, Maintenance and Decommissioning** **Additionally scoped in for breeding and non-breeding birds during Operation due to potential bird strike on new overhead line.**
	Dormouse	Yes - Hedgerows within the Suffolk Onshore Scheme Scoping Boundary may be suitable for dormouse and may be impacted by works if HDD not feasible and require mitigation (i.e. under Natural England mitigation licence). Until further assessment can confirm likely absence of dormouse, effect will be scoped in.	**Scoped in for Construction, Maintenance and Decommissioning**
	Riparian Mammals (otter and water vole)	Yes - It is expected that direct impacts on watercourses (and therefore water vole and otter) can be avoided through HDD techniques. Until routing and feasibility of HDD can be confirmed, there is a potential	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
		requirement for mitigation and these receptors remain scoped in.	
Disturbance to protected or notable species (noise/ vibration, visual, lighting	Great crested newt Non-breeding Birds (Intertidal) Non-breeding Birds (Terrestrial) Breeding Birds Bats Dormouse Badger Otter	Yes -Trees, hedgerows and other habitats within the Suffolk Onshore Scheme Scoping Boundary may be suitable for protected or notable species. If route selection cannot avoid disturbance impacts then mitigation (i.e. works under Ecological Method Statement or Natural England mitigation licence) could be required.	**Scoped in for Construction, Maintenance and Decommissioning**
Pollution impacts (dust deposition, air quality, water)	Designates Sites Notable Habitats Sandlings SPA Alde-Ore Estuary SPA and Ramsar North Warren RSPB Reserve Leiston-Aldeburgh SSSI Outer Thames Estuary SPA	Yes - Potential for pollution or other indirect impacts during construction on adjacent habitats and species will be mitigated though implementation of a Construction and Ecology Management Plan.	**Scoped in for Construction, Maintenance and Decommissioning**

2.3.7 Proposed Assessment Methodology

Proposed Data Sources

2.3.7.1 The following sources of information will be utilised to form the basis of the assessment of the likely significant effects on Ecology:

- Baseline data collected by site surveys for the Suffolk Onshore Scheme;
- Baseline data collected and publicly published with regards to other schemes in the area; and
- Biodiversity record data searches undertaken to inform baseline data.

Proposed Assessment Methodology

2.3.7.2 The approach used for the ecological impact assessment (EcIA) will be undertaken in accordance with best practice guidance as published in the CIEEM Guidelines[70] and summarised below:

- Ecological features that are both present and might be affected by the Suffolk Onshore Scheme are identified (both those likely to be present at the time works begin and those predicted to be present under a future baseline) through a combination of targeted desk-based study and field survey work to determine the relevant baseline conditions.
- The importance of the identified ecological features evaluated, placing their relative biodiversity and nature conservation value into geographic context. This is then used to define the relevant ecological features that need to be considered further within the assessment process.
- The changes or perturbations predicted to result as a consequence of the Suffolk Onshore Scheme (i.e. the potential impacts), and which could potentially affect relevant ecological features are identified and their nature described. Established good-practice, legislative requirements or other incorporated design measures to minimise or avoid impacts are also described and are taken into account.
- The likely effects (beneficial or adverse) on relevant ecological features are then assessed, and where possible quantified.
- Measures to avoid or reduce any predicted significant effects, if possible, are then developed in conjunction with other elements of the design (including mitigation for other environmental disciplines). If necessary, measures to compensate for effects on features of nature conservation importance are also included.
- Any residual effects of the Suffolk Onshore Scheme are reported; and
- Scope for ecological enhancement is considered.

2.3.7.3 The valuation of sites used established value systems (e.g. SSSIs are all of national importance) and reflected the geographical context of the valuation. The categories shown in Table 2.3.9 were applied to give geographic context.

[70] Chartered Institute of Ecology and Environmental Management (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.1 (Updated 2019). [online] Available at: https://cieem.net/wp-content/uploads/2018/08/ECIA-Guidelines-Sept-2019.pdf [Accessed 13/07/2022].

Table 2.3.9:Examples of criteria used to evaluate important ecological features in a defined geographical context

Geographical level at which ecological feature is important	Example of criteria
International (Very high)	An internationally important site, e.g. Special Protection Area (SPA), Special Area of Conservation (SAC) or Ramsar; a regularly occurring population of an internationally important species (listed on Annex IV of the Habitats Directive)
National (High)	A nationally designated site, e.g. SSSI, or a site considered worthy of such designation; a large regularly occurring population of a nationally important species
Regional (Medium)	An ecological feature identified in the local BAP. A smaller area of local BAP habitat which are essential to maintain the viability of a larger whole; non-statutory designated sites; a regularly occurring, locally significant number of a nationally important species. An ecological feature identified as of priority within Section 41 of the NERC Act 2006.
District (Low)	An ecological feature that is scarce within the district or borough or which appreciably enriches the district or borough habitat resource.
Local (Very low)	A good example of a common or widespread ecological feature in the local area.
Negligible	No or very limited ecological value.

2.3.7.4 The ecological surveys will confirm or identify the distribution and valuation of species and habitats.

2.3.7.5 The ‘zone of influence’ for the Suffolk Onshore Scheme is the area over which ecological features may be affected by changes as a result of the Suffolk Onshore Scheme and associated activities. The zone of influence will be different for each ecological receptor identified, dependent on each receptor’s sensitivity to change and will be determined using the maximum extents for study areas of each identified receptor. Where necessary, these will be appropriately revised as the Project evolves.

2.3.7.6 The ES will include consideration of options to avoid, reduce, mitigate, or, if necessary, compensate for any identified potential significant adverse effects to the point where any residual effects are not considered to be significant. In addition, opportunities will

be sought for the enhancement of biodiversity at both on and off-site locations as associated with the Suffolk Onshore Scheme.

2.3.7.7 In line with Section 1.2. in the CIEEM guidelines, the terminology used within the EcIA will draw a clear distinction between the terms ‘impact’ and ‘effect’. For the purposes of this EcIA these terms are defined as follows:

- Impact – actions resulting in changes to an ecological feature. For example, construction activities of a development removing a hedgerow; and
- Effect – outcome resulting from impact acting upon the conservation status or structure and function of an ecological feature. For example, the effects on a population of bats as a result of the loss of a bat roost.

2.3.7.8 When describing potential impacts (and where relevant the resultant effects) consideration will be given to the following characteristics likely to influence this (Sections 5.11-5.18 in the CIEEM guidelines):

- Positive / Negative – i.e. is the change likely to be in accordance with nature conservation objectives and policy:
- Positive – a change that improves the quality of the environment, or halts or slows an existing decline in quality e.g. increasing the extent of a habitat of conservation value; or
- Negative – a change that reduces the quality of the environment, e.g. destruction of habitat.
- Extent – the spatial or geographical area or distance over which the impact/effect occurs;
- Magnitude – the ‘size’, ‘amount’ or ‘intensity’ and ‘volume’ of an impact - this is described on a quantitative basis where possible;
- Duration – the time over which an impact is expected to last prior to recovery or replacement of the resource or feature. Consideration has been given to how this duration relates to relevant ecological characteristics such as a species’ lifecycle. However, it is not always appropriate to report the duration of impacts in these terms. The duration of an effect may be longer than the duration of an activity or impact;
- Timing and frequency – i.e. consideration of the point at which the impact occurs in relation to critical life-stages or seasons; and
- Reversibility – i.e. is the impact temporary or permanent. A temporary impact is one from which recovery is possible or for which effective mitigation is both possible and enforceable. A permanent effect is one from which recovery is either not possible or cannot be achieved within a reasonable timescale (in the context of the feature being assessed).

2.3.7.9 Cumulative effects will be assessed and are those occurring from several sources (also known as inter-relationships) and/or the combined effects of other developments in the area.

2.3.7.10 For each ecological feature only those characteristics relevant to understanding the ecological effect and determining the significance will be described. The determination

of the significance of effects has been made based on the predicted effect on the structure and function, or conservation status, of relevant ecological features, as follows:

- Not significant - no effect on structure and function, or conservation status; and
- Significant - structure and function, or conservation status is affected.

2.3.7.11 Sections 5.24 to 5.28 in the CIEEM guidance states that effects should be determined as being significant when:

"an effect either supports or undermines biodiversity conservation objectives for 'important ecological features' 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. A significant effect is an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project".

2.3.7.12 In broad terms, significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution).

2.3.7.13 Using this information and judgment, it is determined whether the effects will be significant or not on the integrity (of site / ecosystems) or conservation status (of habitats / species) of each ecological feature and the impact significance is determined at the appropriate geographical scale.

2.3.7.14 There are a number of approaches for determining the significance of effects on ecological features. Whilst the CIEEM guidelines recommend the avoidance of the use of the matrix approach for categorisation (major, moderate and minor), in order to provide consistency of terminology, the CIEEM assessment will be translated into the classification of effects scale, as outlined in Table 2.3.10.

Proposed Significance Criteria

2.3.7.15 The potential effects that are proposed to be scoped into or out of the assessment are summarised in Table 2.3.10.

Table 2.3.10: Relating CIEEM assessment terms to those used in other EIA chapters

Effect classification terminology used in other EIA chapters	Equivalent CIEEM assessment
Major beneficial (positive)	1) Permanent addition of, improvement to, or restoration of a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact positively affects the integrity or key characteristics of the resource.

Moderate beneficial (positive)	1) Temporary addition of, improvement to, or restoration of a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact positively affects the integrity or key characteristics of the resource.
Minor beneficial (positive)	1) Permanent addition of, improvement to, or restoration of a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.
Negligible beneficial (positive)	1) Temporary addition of, improvement to, or restoration of a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.
Negligible adverse (negative)	1) Temporary/reversible damage to a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.
Minor adverse (negative)	1) Permanent/irreversible damage to a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.
Moderate adverse (negative)	1) Temporary/reversible damage to a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact negatively affects the integrity or key characteristics of the resource.
Major adverse (negative)	1) Permanent/irreversible damage to a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact negatively affects the integrity or key characteristics of the resource.

2.3.8 Conclusion

2.3.8.1 The receptors and impact pathways identified in this report will be taken into account in the ecological impact assessment to accompany the ES, which will be undertaken in line with the methodology in section 7.

Proposed Scope of the Assessment

2.3.8.2 A summary of the proposed scope of the assessment is provided in Table 2.3.11.

Table 2.3.11: Proposed scope of the assessment

Receptor	Potential for significant effect	Project phase(s)	Proposed to be scoped in/out and for which option
Designated Sites	Permanent Habitat Loss (terrestrial)	Construction, Maintenance, Decommissioning	**Scoped in** **All emerging preferences and alternative options**
Sandlings SPA, Outer Thames Estuary SPA, Alde-Ore Estuary SPA and Ramsar, Leiston-Aldeburgh SSSI, The Haven LNR North Warren RSPB Reserve	Temporary Habitat Loss/Disturbance (terrestrial)	Construction, Maintenance, Decommissioning	**Scoped in** **All emerging preferences and alternative options**
	Temporary Habitat Loss/Disturbance (intertidal)	Construction, Maintenance, Decommissioning	**Scoped in** **All emerging preferences and alternative options**
	Pollution Impacts (dust, deposition, air quality, water)	Construction, Maintenance, Decommissioning	**Scoped in** **All emerging preferences and alternative options**
Notable Habitats Including Ancient Woodland – Great Wood and Grove / Old World Wood	Permanent Habitat Loss (terrestrial)	Construction, Maintenance, Decommissioning	**Scoped in** **All emerging preferences and alternative options**
	Temporary Habitat Loss/Disturbance (terrestrial)	Construction, Maintenance, Decommissioning	**Scoped in** **All emerging preferences and alternative options**
	Temporary Habitat Loss/Disturbance (intertidal)	Construction, Maintenance, Decommissioning	**Scoped in** **All emerging preferences and alternative options**
	Pollution Impacts (dust, deposition, air quality, water)	Construction, Maintenance, Decommissioning	**Scoped in** **All emerging preferences and alternative options**
Invertebrates	Incidental Mortality of Protected or Notable Species	Construction, Maintenance, Decommissioning	Scoped out All emerging preferences and alternative options
Invertebrates	Temporary Habitat Loss/Disturbance (terrestrial)	Construction, Maintenance, Decommissioning	**Scoped in** **All emerging preferences and alternative options**

Great crested newts Reptiles Non-breeding birds (terrestrial) Breeding birds Bats Badger Otter Water vole Hazel dormouse	Temporary Habitat Loss (connectivity)	Construction, Maintenance, Decommissioning	**Scoped in** **All emerging preferences and alternative options**
	Incidental Mortality of Protected or Notable Species	Construction, Maintenance, Decommissioning	**Scoped in (except invertebrates see above)** **All emerging preferences and alternative options**
	Disturbance to Protected or Notable Species (noise, vibration, visual, lighting)	Construction, Maintenance, Decommissioning	**Scoped in** **All emerging preferences and alternative options**
Non-breeding birds (intertidal) Breeding Birds	Temporary Habitat Loss/Disturbance (intertidal)	Construction, Maintenance, Decommissioning	**Scoped in** **All emerging preferences and alternative options**

2.4 Cultural Heritage

2.4.1 Introduction

2.4.1.1 This chapter presents how the Cultural Heritage assessment will consider the potentially significant effects that may arise from the construction, operation maintenance and decommissioning of the Suffolk Onshore Scheme (as described in **Part 1, Chapter 4, Description of the Project**). This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an Environmental Impact Assessment (EIA).

2.4.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Suffolk Onshore Scheme Scoping Boundary hereafter referred to as the Suffolk Scoping Boundary is illustrated on **Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary**.

2.4.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project**;
- **Part 1, Chapter 5, EIA Approach and Methodology**;
- **Part 2, Chapter 1, Evolution of the Suffolk Onshore Scheme**; and
- **Part 2, Chapter 5, Geology and Hydrogeology**.

2.4.1.4 This chapter is supported by the following figures:

- **Figure 2.4.1 Designated Cultural Heritage Assets within the Scoping Boundary and wider 1km Study Area**; and
- **Figure 2.4.2 Non-designated assets within the Scoping Boundary.**

2.4.1.5 This chapter is supported by the following Appendix:

- **Appendix 2.4.A Non-designated assets recorded on the Suffolk HER within the Scoping Boundary**

2.4.1.6 Cultural Heritage comprises above and below-ground archaeological assets, buildings or structures of historic interest, historic landscape features, and any other elements that are of cultural heritage interest

2.4.2 Regulatory and Planning Context

2.4.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. The key legislation, policy, and guidance relevant to the assessment of the potential effects on the historic environment

associated with the construction, operation, maintenance and decommissioning phases of the Project are presented below.

Legislation

- Planning (Listed Buildings and Conservation Areas) Act 1990[71]; and
- Ancient Monuments and Archaeological Areas Act 1979[72] (amended by the National Heritage Act 1983[73] and 2002[74].

Planning Policy

National planning policy

- NPS EN-1[75] with particular reference to Section 5.8 in relation to the significance, impact and recording of the historic environment. The historic environment is also covered in the section 5.9 of the Draft NPS EN-1 which is currently under review.;
- NPS EN-5[76] with particular reference to Paragraph 2.8.9 in relation to the archaeological consequences of electricity line installation. Potential impacts are also mentioned in sections 2.2.5 and 2.11.14 of the Draft NPS EN-5 which is currently under review.; and
- NPPF[77] with particular reference to Section 16: Conserving and Enhancing the Historic Environment.

National guidance

2.4.2.2 The following guidance is of relevance for cultural heritage:

- Planning Practice Guidance, Section 16: Conserving and enhancing the historic environment[78];
- Historic Environment Good Practice Advice in Planning Note 2. Managing Significance in Decision Taking in the Historic Environment. Historic England[79];

[71] Planning (Listed Buildings and Conservation Areas) Act 1990 [online]. Available at: https://www.legislation.gov.uk/ukpga/1990/9/contents

[72] Ancient Monument and Archaeological Areas Act 1979 [online]. Available at: https://www.legislation.gov.uk/ukpga/1979/46/contents

[73] National Heritage Act 1983 [online]. Available at: https://www.legislation.gov.uk/ukpga/1983/47/contents

[74] National Heritage Act 2002 [online]. Available at: https://www.legislation.gov.uk/ukpga/2002/14/contents

[75] Department of Energy and Climate Change (2011). Overarching National Policy Statement for Energy (EN-1). [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf

[76] Department of Energy and Climate Change (2011). National Policy Statement for Electricity Networks Infrastructure (EN-5). [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47858/1942-national-policy-statement-electricity-networks.pdf

[77] Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

[78] Ministry of Housing, Communities & Local Government (2019). Planning Practice Guidance: Historic Environment. [online] Available at: https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment#overview-historic-environment

[79] Historic England (2015). Historic Environment Good Practice Advice in Planning: 2. Managing Significance in Decision – Taking in the Historic Environment. [online] available at: https://historicengland.org.uk/images-books/publications/gpa2-managing-significance-in-decision-taking/gpa2/

- Historic Environment Good Practice Advice in Planning Note 3. The Setting of Heritage Assets. Historic England (2nd edition, 2017)[80];
- Historic Environment Statement of Heritage Significance: Analysing Significance in Heritage Assets. Historic England Advice Note 12. Historic England (2019)[81];
- Commercial Renewable Energy Development and the Historic Environment. Historic England Advice Note 15 (2021)[82];
- Chartered Institute for Archaeologists (CIfA) Standard and Guidance for Historic Environment Desk-Based Assessment[83];
- CIfA Code of Conduct[84]; and
- Institute of Environmental Management and Assessment (IEMA), the Institute of Historic Building Conservation (IHBC) and the Chartered Institute for Archaeologists (CIfA), Principles of Cultural Heritage Impact Assessment in the UK[85] .

Local planning policy

2.4.2.3 The Suffolk Onshore Scheme falls within the area covered by East Suffolk Council, with key policies linked to heritage covered by the East Suffolk Plan adopted in September 2020[86]. Policies include:

- Strategic Policy SP8 – Tourism, and how the Heritage Coastline, Cultural Heritage, and the Area of Outstanding Natural Beauty contributes to tourism and the economy;
- Strategic Policy SP15 – Landscape and Townscape. Relates to the protection and enhancement of the landscape of historic settlements and their surroundings.
- Development Management Policy DM21 – Aesthetic. Relates to the design of developments and how they can result in impacts on setting.

2.4.2.4 In addition to the East Suffolk policy set out above, East Suffolk Council also published a document entitled ‘Historic Environment: Supplementary Planning Document’ in

[80] Historic England (2017). Historic Environment Good Practice Advice in Planning Note 3 (second edition). The Setting of Heritage Assets. [online] Available at: https://historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/heag180-gpa3-setting-heritage-assets/

[81] Historic England (2019). Historic England Advice Note 12. Statements of Heritage Significance: Analysing Significance in Heritage Assets. [online] Available at: https://historicengland.org.uk/images-books/publications/statements-heritage-significance-advice-note-12/heag279-statements-heritage-significance/

[82] Historic England (2021). Historic Environment Good Practice Advice in Planning Note 15. Commercial Renewable Energy Development and the Historic Environment. [online] Available at: https://historicengland.org.uk/images-books/publications/commercial-renewable-energy-development-historic-environment-advice-note-15/heag302-commercial-renewable-energy-development-historic-environment/

[83] Chartered Institute for Archaeologists (2020). Standard and guidance for historic environment desk-based assessment. [online] Available at: https://www.archaeologists.net/sites/default/files/CIfAS%26GDBA_4.pdf#:~:text=STANDARD%20AND%20GUIDANCE%20for%20historic%20environment%20desk-based%20assessment,expand%20and%20explain%20general%20definitions%20in%20the%20Code.

[84] Chartered Institute of Archaeology (2019). Code of Conduct: Professional Ethics in Archaeology. [online] Available at: https://www.archaeologists.net/sites/default/files/Code%20of%20conduct.pdf

[85] Institute of Environmental Management & Assessment, in partnership with the Chartered Institute for Archaeologists and the Institute of Historic Building Conservation (2021). Principles of Cultural Heritage Impact Assessment in the UK.

[86] East Suffolk Council (2020). Suffolk Coastal Local Plan. [online] Available at: https://www.eastsuffolk.gov.uk/assets/Planning/Planning-Policy-and-Local-Plans/Suffolk-Coastal-Local-Plan/Adopted-Suffolk-Coastal-Local-Plan/East-Suffolk-Council-Suffolk-Coastal-Local-Plan.pdf

June 2021[87]. This provides further details on the Historic Environment in relation of development and includes both direct and non-direct impacts on both archaeology and built heritage.

2.4.3 Study Area

2.4.3.1 The study area is the area within which cultural heritage assets may experience effects as a result of the Suffolk Onshore Scheme during construction, maintenance, operation and decommissioning. Effects to heritage assets may arise as a result of physical impacts to their fabric or through changes to their setting.

2.4.3.2 For the purpose of this scoping report, the Suffolk Onshore Scheme Scoping Boundary which includes the proposed cable route has been used as the study area to capture information relating to archaeology and cultural heritage. The study area provides the necessary context for establishing the likely impacts arising from the Suffolk Onshore Scheme and the potential effects to cultural heritage assets. A second wider study area consisting of the Suffolk Scoping Boundary and a 1km buffer was used to identify designated assets within the surrounding landscape, in order to provide an initial assessment of potential impacts on designated assets.

2.4.4 Baseline Conditions

Data Sources

2.4.4.1 The cultural heritage baseline described in this section has been informed by the following data sources:

- Historic England National Designated Assets dataset[88];
- Suffolk HER;
- Data collected as part of other schemes in the area including geophysical survey data and evaluation reports produced as part of the SPR East Anglia 1 and East Anglia 2 projects[899091]; and
- Other readily available online sources.

[87] East Suffolk Council (2021). Historic Environment: Supplementary Planning Document. [online] Available at: https://www.eastsuffolk.gov.uk/assets/Planning/Planning-Policy-and-Local-Plans/Supplementary-documents/Historic-Environment-SPD/Historic-Environment-SPD-reduced.pdf

[88] Historic England. National Heritage List. [Online] Available at: https://historicengland.org.uk/listing/the-list

[89] Scottish Power and Renewables (2019). East Anglia TWO Offshore Windfarm, Chapter 24: Archaeology and Cultural Heritage. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010078/EN010078-001096-6.1.24%20EA2%20Environmental%20Statement%20Chapter%2024%20Archaeology%20and%20Cultural%20Heritage.pdf

[90] Scottish Power and Renewables (2019). East Anglia TWO Offshore Windfarm (Environmental Statement Volume 3), Appendix 24.4: Proposed Onshore Cable Corridor and Substation Sites – Geophysical Survey Report. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010078/EN010078-001538-6.3.24.4%20EA2%20ES%20Appendix%2024.4%20Geophysical%20Survey%20Report%20Part%201%20of%202.pdf

[91] Scottish Power and Renewables (2020). East Anglia One North and East Anglia TWO Offshore Windfarm: Pre-Construction Trial Trenching Report. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010078/EN010078-002659-ExAAS13D1V1EA1NEA2PreConstructionTrialTrenchingReport_378030_1.pdf

Baseline

2.4.4.2 A number of designed assets have been recorded within the Suffolk Scoping Boundary including two scheduled monuments and seven Grade II listed buildings. The scheduled monuments consist of two bowl barrows on Aldringham Green (1011378) and the second site of Leiston Abbey (1014520). The Grade II listed buildings recorded within the Suffolk Scoping Boundary include Aldringham Court (1393143), Billeaford Hall (1216081), and Gorsehill (1269753). The remaining Grade II listed buildings are farmsteads, or former farms, and consist of Little Moor Farm (1215743), Elm Tree Farm (1215788), High House Farm (1216049), and Hill Farmhouse (1231296).

2.4.4.3 A further two scheduled monuments have also been recorded in the wider 1 km study area. Both of these are prehistoric burial sites and consist of two bowl barrows in Square Plantation (1011376), and a bowl barrow on Aldringham Common some 300m east of Stone House (1011440).

2.4.4.4 Listed buildings outside of the Suffolk Scoping Boundary include one Grade I listed building, seven Grade II* listed buildings, and 85 Grade II listed buildings. The Grade I listed buildings is St Mary's Abbey Church which forms part of the Lieston Abbey complex (1215753). A number of the Grade II* listed buildings are also churches and include the Church of St Lawrence in Knodishall (1215745), the Church of St John Baptist in Saxmundham (1268184), the Church of St Mary Magdalen in Sternfield (1278252), and the Church of St Mary in Friston (1287864). The remaining Grade II* listed buildings include the Long Shop in Leiston (1287610), the Post Mill in Friston (1215741), and Buxlow Manon on the near Knodishall Green (1215749).

2.4.4.5 The majority of the Grade II listed buildings are located within the settlements which surrounds the Scoping Boundary, with concentrations in Leiston, Aldeburgh, Thorpness, Aldringham, Friston, Sternfield, and Saxmundham. Aldeburgh, Thorpeness, Leiston, and Saxmundaham are also Conservation Areas.

2.4.4.6 A limited number of Grade II Listed Buildings are also located in more rural settings outside of the main settlements. These are largely farmhouses, or former farmhouses/agricultural buildings.

2.4.4.7 A review of non-designated assets recorded on the Suffolk HER revealed a large number of heritage assets demonstrating evidence of human activity in the area from the early prehistoric period through to the modern period (see **Appendix 2.4.A Non-designated assets recorded on the Suffolk HER within the Scoping Boundary** for the full list of non-designated assets). Some of the earliest material identified includes microliths dating to the Mesolithic period recorded near the former Post Office in Aldringham (MSF24493), although lithic scatters have also been recorded in a number of other areas of the Suffolk Scoping Boundary (MSF21571 & MSF21595). While early prehistoric settlement activity is limited, Bronze Age activity has been recorded with a number of assets relating to burial practices recorded.

2.4.4.8 The Iron Age is better represented with a number of cropmarks recorded through aerial photography have suggesting extensive field systems and settlement activity dating from the Iron Age, and recent excavations undertaken as part of other infrastructure projects has also demonstrated extensive human activity throughout the Iron Age and Roman period. It is also possible that some of the undated cropmarks have earlier origins and date to the Bronze Age.

2.4.4.9 While early medieval sites are not well represented within the Suffolk Scoping Boundary, it is possible that many of the settlements that survive in the wider area have their origins in the early medieval period, and as a result remains dating to this period could lie buried beneath the more built-up areas. It is, however, also possible that some of the Iron Age/Roman sites could continue in use into the early medieval period, and recent works as part of the East Anglia projects[929394] have noted a number of sites which might date to this period.

2.4.4.10 The majority of assets dating to the medieval period are find spots or scatters of pottery which may represent waste material being spread on the agricultural fields which surrounded the settlements. It is, however, also possible that some of the more focused scatters might represent settlement activity associated with abandoned or shrunken settlements.

2.4.4.11 Most activity dating to the post-medieval within the Suffolk Scoping Boundary is associated with the agricultural land through which the study area is focused, although other non-designated assets include banks/flood defences, rabbit warrens, and features linked to industries including brink making.

2.4.4.12 The modern period is very well represented with a large number of non-designated dating to the Second World recorded near the coast as well as inland. These remains include pill boxes, anti-glider trenches, and other structures and features on the coast to repel enemy attack and invasion.

Future Baseline

2.4.4.13 The cultural heritage chapter within the Environmental Statement (ES) will include an outline of the likely evolution of the baseline environment without the implementation of the development as far as natural changes from the baseline scenario can be assessed.

2.4.5 Embedded and Control & Management Measures

Embedded Measures

2.4.5.1 While a number of designated assets have been noted within the Suffolk Scoping Boundary, all will be avoided by the Suffolk Onshore Scheme. As the design develops further and is better refined, additional mitigation measures could include further design intervention to avoid physical impacts on known heritage assets.

[92] Scottish Power and Renewables (2019). East Anglia TWO Offshore Windfarm, Chapter 24: Archaeology and Cultural Heritage. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010078/EN010078-001096-6.1.24%20EA2%20Environmental%20Statement%20Chapter%2024%20Archaeology%20and%20Cultural%20Heritage.pdf

[93] Scottish Power and Renewables (2019). East Anglia TWO Offshore Windfarm (Environmental Statement Volume 3), Appendix 24.4: Proposed Onshore Cable Corridor and Substation Sites – Geophysical Survey Report. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010078/EN010078-001538-6.3.24.4%20EA2%20ES%20Appendix%2024.4%20Geophysical%20Survey%20Report%20Part%201%20of%202.pdf

[94] Scottish Power and Renewables (2020). East Anglia One North and East Anglia TWO Offshore Windfarm: Pre-Construction Trial Trenching Report. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010078/EN010078-002659-ExAAS13D1V1EA1NEA2PreConstructionTrialTrenchingReport_378030_1.pdf

2.4.5.2 Impacts caused through change to the setting of heritage assets may be mitigated through detailed design and micro-siting of the converter station to avoid or minimise harm to heritage assets.

Control and Management Measures

2.4.5.3 If it is not possible to avoid heritage assets, mitigation will include (but not be limited to) detailed landscape/topographic survey, archaeological excavation of features being removed and archaeological monitoring/watching brief.

2.4.5.4 An outline Code of Construction Practice (CoCP) is provided in **Appendix 1.4.A Outline Code of Construction Practice**. Measures relevant to the control and management of impacts that could affect the Cultural Heritage assessment are:

- GG03: A Construction Environmental Management Plan (CEMP), a Landscape and Ecological Management Plan (LEMP) and a Construction Traffic Management Plan (CTMP) will be produced prior to construction;
- H01 Locations of known archaeological interest/value, or areas where archaeological work is planned, will be signposted/fenced off to avoid unintentional damage; and
- H02 Where a previously unknown heritage asset is discovered, or a known heritage asset proves to be more significant than foreseen at the time of application, the project will inform the local planning authority and will agree a solution that protects the significance of the new discovery, so far as is practicable, within the project parameters.

2.4.6 Potential for Significant Effects

2.4.6.1 The Cultural Heritage assessment will consider the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project**.

2.4.6.2 The proposed scope of the cultural heritage assessment is bet out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

2.4.6.3 This section identifies the sources and impacts that would occur as a result of the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme.

2.4.6.4 The potential for the Suffolk Onshore Scheme to result in the potential significant effects described in this section takes into account the embedded and control and management measures described in section 5.

Sources of construction impacts

2.4.6.5 Permanent sources of construction impacts resulting from the construction phase are likely to include:

- construction activities such as the excavation of trenches for cable installation, and the establishment of construction compounds; and
- impacts on the setting of heritage assets resulting from the converter station and sub-station

2.4.6.6 Temporary sources of construction impacts that will not last beyond the construction phase are likely to include:

- the presence and movement of construction plant that may alter the setting of heritage assets, including change arising from aural intrusion; and
- the presence of construction compounds introducing potential light and noise.

Sources of operational impacts

2.4.6.7 Permanent sources operational impacts are likely to include:

- the presence of new above ground infrastructure including the new converter station; and
- the presence of potential light and noise.

Sources of maintenance impacts

- Physical impacts resulting from intrusive maintenance works on the cable and converter station; and
- Temporary impacts on setting resulting from plant/machinery linked to maintenance works

Sources of decommissioning impacts

- the presence and movement of construction plant that may alter the setting of heritage assets, including change arising from aural intrusion; and
- the presence of construction compounds introducing potential light and noise.

Potential impacts

2.4.6.8 There is the potential for significant effects on a number of non-designated assets within the Suffolk Scoping Boundary. A full list of non-designated assets can be seen in **Appendix 2.4.A Non-designated assets recorded on the Suffolk HER within the Scoping Boundary** although it should be noted that significant effects are not expected on 'find spots' as 'find spots' represent features that have been recovered and therefore are no longer surviving *in situ*. It is also possible that at least some of the features have been excavated as part of earlier schemes so also no longer survive *in situ.*

2.4.6.9 There will be no physical impacts on the designated assets within the Suffolk Scoping Boundary as they will be avoided by the construction works. There is, however, the potential for temporary impacts on the setting of designated assets resulting from the construction of the cable.

2.4.6.10 Table 2.4.1 below identifies the potential impacts that could result from the sources identified above.

Table 2.4.1: Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction	Construction works linked to Suffolk Onshore Scheme	Physical impacts on non-designated heritage assets.	Yes -The Suffolk Onshore Scheme has the potential to result in a physical impact on non-designated assets.	**Scoped in**
Construction	Construction works linked to Suffolk Onshore Scheme	Temporary impacts on the setting of designated assets.	Yes -The Suffolk Onshore Scheme has the potential to result in temporary impacts on the setting of designated assets.	**Scoped in**
Construction	Construction compounds introducing light and noise pollution	Temporary impacts on the setting of designated assets.	Yes -The Suffolk Onshore Scheme has the potential to result in temporary impacts on the setting of designated assets.	**Scoped in**
Operation	Converter Station and potential sub-station extension at Friston	Impacts on the setting of designated assets.	Yes -The Suffolk Onshore Scheme has the potential to result in temporary impacts on the setting of designated assets	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Maintenance	Physical impacts resulting from maintenance works	Physical impacts on non-designated assets	No - Limited potential as all remains will have been removed during construction	Scoped out
Maintenance	Temporary impacts on setting resulting from plant/machinery	Temporary impacts on the setting of heritage assets	No - Limited potential as the machinery/plant being used will be minor in size.	Scoped out
Decommissioning	Physical impacts resulting from decommissioning works	Physical impacts on non-designated assets	No - Limited as all remains will have been removed during construction	Scoped out
Decommissioning	Temporary impacts on setting resulting from plant/machinery	Temporary impacts on the setting of heritage assets	No - Limited potential for significant impacts as the machinery/plant being used will be minor in size.	Scoped out
Decommissioning	Construction compounds introducing light and noise pollution	Temporary impacts on the setting of heritage assets.	No - Limited potential for significant impacts, and impacts will be temporary.	Scoped out

Impact Pathways with Receptors (Step 2)

2.4.6.11 This section identities whether there are any impact pathways from the impacts identified above that could give rise to potentially significant effects on the receptors within the Suffolk Onshore Scheme study area or areas (delete as appropriate).

Suffolk Converter Station Site 1 Emerging Preference

2.4.6.12 Table 2.4.2 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 1 Emerging Preference as shown on as shown on **Figure 2.1.4 Suffolk Site 1 Emerging Preference** and **Figure 2.1.9 Suffolk Site 1 Emerging Preference Option Area.**

Table 2.4.2: Impact pathways with receptors – Suffolk Site 1 Emerging Preference

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Temporary impacts on the setting of designated assets during construction	Designated Heritage Assets (mainly listed buildings)	Yes -Low due to the limited number of listed buildings near the proposed Converter Station, and the category of the listed buildings	**Scoped in**
Physical impacts on non-designated heritage assets during construction	Non-Designated Heritage Assets	Yes - High due to the number and size of non-designated assets in the area, as well as the nature of the non-designated assets.	**Scoped in**
Impacts on the setting of heritage assets resulting from the converter station and above ground infrastructure during construction and operation	Designated and Non-Designated Heritage Assets	Yes -Moderate due to the number of designated and non-designated assets in the surrounding area	**Scoped in**

Suffolk Converter Station Site 1 Alternative

2.4.6.13 Table 2.4.3 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 1 Alternative Preference as shown on as shown on **Figure 2.1.7 Suffolk Site 1 Alternative** and **Figure 2.1.11 Suffolk Site 1 Alternative Option Area.**

Table 2.4.3: Impact pathways with receptors – Suffolk Site 1 Alternative

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Temporary impacts on the setting of designated assets during construction	Designated Heritage Assets (mainly listed buildings)	Yes -Low due to the limited number of listed buildings near the proposed Converter Station, and the category of the listed buildings	**Scoped in**

Physical impacts on non-designated heritage assets during construction	Non-Designated Heritage Assets	Yes -High due to the number and size of non-designated assets in the area, as well as the nature of the non-designated assets.	**Scoped in**
Impacts on the setting of heritage assets resulting from the converter station and above ground infrastructure during construction and operation	Designated and Non-Designated Heritage Assets	Yes - Moderate due to the number of designated and non-designated assets in the surrounding area	**Scoped in**

Suffolk Converter Station Site 3 Emerging Preference

2.4.6.14 Table 2.4.4 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Emerging Preference as shown on as shown on **Figure 2.1.5 Suffolk Site 3 Emerging Preference** and **Figure 2.1.10 Suffolk Site 3 Emerging Preference Option Area.**

Table 2.4.4: Impact pathways with receptors – Suffolk Site 3 Emerging Preference

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Temporary impacts on the setting of designated assets during construction	Designated Heritage Assets (mainly listed buildings)	Yes - Low due to the limited number of listed buildings near the proposed Converter Station, and the category of the listed buildings	**Scoped in**
Physical impacts on non-designated heritage assets during construction	Non-Designated Heritage Assets	Yes - High due to the number and size of non-designated assets in the area, as well as the nature of the non-designated assets.	**Scoped in**
Impacts on the setting of heritage assets resulting from the converter station and above	Designated and Non-Designated Heritage Assets	Yes - Moderate due to the number of designated and non-designated assets in the surrounding area	**Scoped in**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
ground infrastructure during construction and operation			

Suffolk Converter Station Site 3 Alternative (Option 1)

2.4.6.15 Table 2.4.5 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Alternative (Option 1) as shown on as shown on **Figure 2.1.7 Suffolk Site 3 Alternative (Option 1)** and **Figure 2.1.12 Suffolk Site 3 Alternative (Option 1) Option Area**.

Table 2.4.5: Impact pathways with receptors – Suffolk Site 3 Alternative (Option 1)

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Temporary impacts on the setting of designated assets during construction	Designated Heritage Assets (mainly listed buildings)	Yes - Low due to the limited number of listed buildings near the proposed Converter Station, and the category of the listed buildings	**Scoped in**
Physical impacts on non-designated heritage assets during construction	Non-Designated Heritage Assets	Yes - High due to the number and size of non-designated assets in the area, as well as the nature of the non-designated assets.	**Scoped in**
Impacts on the setting of heritage assets resulting from the converter station and above ground infrastructure construction and operation	Designated and Non-Designated Heritage Assets	Yes - Moderate due to the number of designated and non-designated assets in the surrounding area	**Scoped in**

Suffolk Converter Station Site 3 Alternative (Option 2)

2.4.6.16 Table 2.4.6 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Alternative (Option

2) as shown on as shown on **Figure 2.1.8 Suffolk Site 3 Alternative (Option 2)** and **Figure 2.1.13 Suffolk Site 3 Alternative (Option 2) Option Area.**

Table 2.4.6: Impact pathways with receptors – Suffolk Site 3 Alternative (Option 2)

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Temporary impacts on the setting of designated assets during construction	Designated Heritage Assets (mainly listed buildings)	Yes - Low due to the limited number of listed buildings near the proposed Converter Station, and the category of the listed buildings	**Scoped in**
Physical impacts on non-designated heritage assets during construction	Non-Designated Heritage Assets	Yes - High due to the number and size of non-designated assets in the area, as well as the nature of the non-designated assets.	**Scoped in**
Impacts on the setting of heritage assets resulting from the converter station and above ground infrastructure during construction and operation	Designated and Non-Designated Heritage Assets	Yes - Moderate due to the number of designated and non-designated assets in the surrounding area	**Scoped in**

2.4.7 Proposed Assessment Methodology

2.4.7.1 An overview of the proposed assessment methodology is provided in **Part 1, Chapter 5, EIA Approach and Methodology.**

2.4.7.2 A cultural heritage Desk-Based Assessment (DBA) will be prepared in accordance with industry standards and best practice guidelines, namely the Chartered Institute for Archaeologists' Standard and Guidance for Historic Environment Desk-Based Assessment (2020), Historic England's Good Practice Advice in Planning Notes 2, 3 and 12 (2016; 2015; 2019 respectively), and any responses received as part of the scoping phase and consultation on the Project. The DBA will form an appendix to the Project Environmental Statement and will inform the Suffolk Cultural Heritage chapter. It will confirm whether any additional survey work is required to better determine the nature, extent and significance of buried archaeological remains within the construction footprint of the Suffolk Onshore Scheme.

2.4.7.3 While a 1km study area has been used for the scoping stage, as Order Limits had not been set, a refined study area of 0.5 km from the proposed Order Limits will be used to provide detailed baseline information for the assessment. A wider study area of 2 km will be used to identify assets which may have their setting affected. The study area for the assessment of setting will be limited to 2km in the area of Above Ground Infrastructure, such as the Converter Station and any extension to the proposed Friston Substation that might be required, due to the below ground nature of the majority of the development. The scope of the setting assessment will informed by the Zone of Theoretical Visibility (ZTV), although some assets beyond this distance and outside the ZTV may also be considered where elements of their setting extend closer to, or include, the Suffolk Onshore Scheme.

Proposed Data Sources

2.4.7.4 Desk-based research will be undertaken as part of the EIA. Additional information will be gathered from the following sources.

- Suffolk Historic Environment Records (HER);
- The National Heritage List for England (NHLE), held by Historic England, for designated assets;
- Local authority conservation area appraisal and management documents and their mapping;
- Historic landscape characterisation (HLC) mapping undertaken by local planning authorities;
- Aerial photographs held by Historic England, local authorities and other appropriate repositories and other readily available remote sensing results such as LiDAR data;
- Geological mapping and borehole information as held by the British Geological Survey; and
- Documentary, cartographic and other resources as deposited within local studies libraries, county libraries and archives, including historic Ordnance Survey maps, tithe, estate and other maps, and other relevant primary sources held at Suffolk Archives, together with local studies library information.

2.4.7.5 An archaeological walkover survey to assess known sites and to determine the potential for previously unrecorded heritage assets will also be undertaken. This will focus on the final alignment as well as any associated compounds, laydown areas, and Above Ground Infrastructure.

2.4.7.6 Information collected from these sources will be used to describe the known archaeology and built heritage of the 0.5km study area, and to assess the setting of heritage assets up to 2 km from above ground elements of the Project.

Assigning Value

2.4.7.7 The value of a heritage asset (its heritage significance) is guided by its designated status but is derived also from its heritage interest which may be archaeological,

architectural, artistic or historic (NPPF Annex 2, Glossary[95]). Each identified heritage asset can be assigned a value in accordance with the criteria set out in Table 2.4.7. Using professional judgement and the results of consultation, heritage assets are also assessed on an individual basis and regional variations and individual qualities are taken into account where applicable.

Table 2.4.7: Criteria for assessing the value of heritage assets

Value (significance)	Asset categories
High	World Heritage Sites Scheduled Monuments Grade I and II* listed buildings Registered battlefields Grade I and II* registered parks and gardens Conservation areas of demonstrable high value Non-designated heritage assets (archaeological sites, historic buildings, monuments, parks, gardens or landscapes) that can be shown to have demonstrable national or international importance Well preserved historic landscape character areas, exhibiting considerable coherence, time-depth or other critical factor(s)
Medium	Grade II listed buildings Conservation areas Grade II registered parks and gardens Conservation areas Non-designated heritage assets (archaeological sites, historic buildings, monuments, park, gardens or landscapes) that can be shown to have demonstrable regional importance Averagely preserved historic landscape character areas, exhibiting reasonable coherence, time-depth or other critical factor(s) Historic townscapes with historic integrity in that the assets that constitute their make-up are clearly legible
Low	Locally listed buildings Non-designated heritage assets (archaeological sites, historic buildings, monuments, park, gardens or landscapes) that can be shown to have demonstrable local importance Assets whose values are compromised by poor preservation or survival of contextual associations to justify inclusion into a higher grade

[95] Ministry of Housing, Communities and Local Government (2012). National Planning Policy Framework (NPPF) Annex 2: Glossary. Available at https://www.gov.uk/guidance/national-planning-policy-framework/annex-2-glossary

Value (significance)	Asset categories
	Historic landscape character areas whose value is limited by poor preservation and/ or poor survival of contextual associations
Not significant	Assets identified on national or regional databases, but which have no archaeological, architectural, artistic or historic value Assets whose values are compromised by poor preservation or survival of contextual associations to justify inclusion into a higher grade Landscape with no or little significant historical merit

Determining the Magnitude

2.4.7.8 Having identified the value of the heritage asset, the next stage in the assessment is to identify the level and degree of impact to an asset arising from the development. Impacts may arise during construction or operation and can be temporary or permanent. Impacts can occur to the physical fabric of the asset or affect its setting.

2.4.7.9 The level and degree of impact (impact rating) is assigned with reference to a four-point scale as set out in Table 2.4.8. In respect of cultural heritage an assessment of the level and degree of impact is made in consideration of any scheme design mitigation (embedded mitigation). If no impact on value is identified, no impact rating is given and no resulting effect reported.

Table 2.4.8: Factors influencing the assessment of magnitude of impacts.

Magnitude of Impact rating	Description of impact
Large	Changes such that the heritage value of the asset is totally altered or destroyed. Comprehensive change to elements of setting that would result in harm to the asset and our ability to understand and appreciate its heritage significance.
Medium	Change such that the heritage value of the asset is significantly altered or modified. Changes such that the setting of the asset is noticeably different, affecting significance and resulting in changes in our ability to understand and appreciate the heritage value of the asset.
Small	Changes such that the heritage value of the asset is slightly affected. Changes to the setting that have a slight impact on significance resulting in changes in our ability to understand and appreciate the heritage value of the asset.
Negligible	Changes to the asset that hardly affect heritage value. Changes to the setting of an asset that have little effect on

	significance and no real change in our ability to understand and appreciate the heritage value of the asset

Assessment of Effect

2.4.7.10 An assessment to classify the effect, having taken into consideration any embedded mitigation, is determined using the matrix at Table 2.4.9, which takes account of the value of the asset (Table 2.4.7) and the magnitude of impact (Table 2.4.8). Effects can be neutral, adverse or beneficial.

Table 2.4.9: Assessment of effect

Heritage Value (significance)		Very High	High	Medium	Low	Negligible
Impact Magnitude	**Large**	Major	Major	Major	Moderate	Minor
	Medium	Major	Moderate	Moderate	Minor	Negligible
	Small	Moderate	Moderate	Minor	Negligible	Negligible
	Negligible	Minor	Negligible	Negligible	Negligible	Negligible

2.4.7.11 The ES reports on the significance of effect in accordance with EIA methodology. Major and moderate effects are considered to be significant. Within the NPPF, impacts affecting the value of heritage assets are considered in terms of harm and there is a requirement to determine whether the level of harm amounts to 'substantial harm' or 'less than substantial harm'. This is also supported by the Overarching National Policy Statement for Energy (EN-1) which also notes that there should always be a presumption in favour of conservation as once lost assets cannot be replaced[96]. There is no direct correlation between the significance of effect as reported in the final ES and the level of harm caused to heritage significance. A major (significant) effect on a heritage asset would, however, more often be the basis by which to determine that the level of harm to the significance of the asset would be substantial. A moderate (significant) effect is unlikely to meet the test of substantial harm and would therefore more often be the basis by which to determine that the level of harm to the significance of the asset would be less than substantial. A minor or negligible (not significant) effect would still amount to a less than substantial harm, which triggers the statutory presumptions against development within s.66 of the Listed Buildings Act 1990; however, a neutral effect is classified as no harm. In all cases determining the level of harm to the significance of the asset arising from development impact is one of professional judgement

[96] Department of Energy and Climate Change (2011). National Policy Statement for Energy (EN-1). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf

2.4.8 Conclusion

2.4.8.1 From the review of data undertaken as part of the scoping exercise, a number of designated and non-designated assets have been recorded within, and immediately adjacent, to the Suffolk Onshore Scheme and associated study area.

2.4.8.2 Previous developments in the area, including a number of infrastructure schemes in the immediate surroundings, have also revealed previously unrecorded assets, including significant Early Medieval and Medieval remains.

2.4.8.3 While designated assets will be avoided as part of the development of the Suffolk Onshore Scheme, there is the potential for physical impacts on non-designated assets during the construction phase. Furthermore, there is the potential for impacts on the setting of designated and non-designated assets from the converter station.

2.4.8.4 As a result, an archaeology and cultural heritage chapter will be completed as part of the EIA. This will focus on assessing impacts to designated and non-designated assets, either through physical impacts from the Suffolk Onshore Scheme, or through change to their settings, during the construction and operational phases.

Proposed Scope of the Assessment

2.4.8.5 A summary of the proposed scope of the assessment is provided in Table 2.4.10.

Table 2.4.10: Proposed scope of the assessment

Receptor	Potential for significant effect	Project phase(s)	Proposed to be scoped in/out and for which option
Designated assets	Potential for significant effect from impacts on setting resulting from the converter station and any above ground infrastructure such as the possible extension at the proposed Friston sub-station.	Construction and Operation	**Scoped in for all options**
Non-designated assets	Potential for significant impacts resulting from construction works	Construction	**Scoped in for all options**
	Potential for significant effect from impacts on setting resulting from the converter station and any other above ground infrastructure	Operation	**Scoped in for all options**

2.5 Water Environment

2.5.1 Introduction

2.5.1.1 This chapter presents how the Water Environment assessment will consider the potentially significant effects on water environment receptors that may arise from the construction, and operation, maintenance and decommissioning of the Suffolk Onshore Scheme (as described in **Part 1, Chapter 4, Description of the Project**). This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an EIA.

2.5.1.2 The Project Scoping Boundary is illustrated **on Figure 1.1.1 Project Scoping Boundary** and the Suffolk Onshore Scheme Scoping Boundary, hereafter referred to as the Suffolk Scoping Boundary, is illustrated on **Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary**.

2.5.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project;**
- **Part 1, Chapter 5, EIA Approach and Methodology;**
- **Part 2, Chapter 1, Evolution of the Suffolk Onshore Scheme;** and
- **Part 2, Chapter 5, Geology and Hydrogeology**.

2.5.1.4 This chapter is supported by the following figure:

- **Figure 2.5.1 Water Environment Study Area and Existing Features**.

2.5.1.5 The assessment of potentially significant effects on groundwater receptors is presented in **Part 2, Chapter 6, Geology and Hydrogeology**.

2.5.1.6 The Water Environment Assessment will be supported by a Flood Risk Assessment (FRA) and Water Framework Directive (WFD) Screening Assessment. The scopes of these are not discussed in detail herein, but will be agreed with the relevant stakeholders

2.5.2 Regulatory and Planning Context

2.5.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. The key legislation, policy, and guidance relevant to the assessment of the potential effects on the water environment associated with the construction, operation, maintenance and decommissioning phases of the Project are presented below.

Legislation

2.5.2.2 The Water Environment (Water Framework Directive [WFD]) (England and Wales) Regulations 2003 (Her Majesty's Stationery Office (HMSO), 2003) implemented the Water Framework Directive in England and Wales and were amended by the Floods and Water (Amendment etc.) (EU Exit) Regulations 2019[97]. The 2019 Regulations, specifically Regulation 20, stipulate that the substance of the WFD regime that applied pre-EU Exit will continue to apply with only relatively minor amendments.

2.5.2.3 Part 5 of the Environment Act 2021 (HMSO, 2021)[98], brings together measures to strengthen and update the existing regulatory and long-term planning framework for water, helping to reduce environmental risks, including to water quality and land drainage. It also strengthens the regulation of water and sewerage undertakers by the newly established Office for Environmental Protection.

2.5.2.4 The Land Drainage Act 1991 (HMSO, 1991)[99] together with the Water Resources Act 1991[100] provide for the Environment Agency to prevent the obstruction of any main river through the construction of flow control structures, culverts or any other structure in a main river. Where culverting or other works have a potential to affect the flow regime on ordinary watercourses, consent is required from the Lead Local Flood Authority (LLFA) under the Flood and Water Management Act 2010 (HMSO, 2010)[101], which provides a comprehensive flood risk management framework for people, homes and businesses.

Planning Policy

National planning policy

2.5.2.5 National Policy Statement for Energy (EN-1) states that energy projects have the potential to have adverse effects on the water environment, noting that where significant effects are likely an assessment of the existing status of, and impacts of the proposed project on, water quality, water resources and physical characteristics of the water environment should be undertaken. The potential for the Project to result in significant effects on all these aspects of the water environment has been considered herein.

2.5.2.6 Flood risk is also a consideration and paragraph 5.7.4 of EN-1 states 'applications for energy projects of 1 hectare or greater in Flood Zone 1 in England and all proposals for energy projects located in Flood Zones 2 and 3 should be accompanied by a flood risk assessment (FRA). This should identify and assess the risk of all forms of flooding to and from the project and demonstrate how these flood risks will be managed, taking climate change into account'. The Project will be subject to an FRA that meets these criteria. EN-1 also sets out generic policy with respect to water quality and resources in section 5.16 and section 4.10 sets out policy on the pollution control framework.

[97] The Floods and Water (Amendments etc.) (EU Exit) Regulations 2019 [online]. Available at: https://www.legislation.gov.uk/ukdsi/2019/9780111176283/contents

[98] The Environment Act 2021 [online]. Available at: https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted

[99] The Land Drainage Act 1991 [online]. Available at: https://www.legislation.gov.uk/ukpga/1991/59/contents

[100] The Water Resources Act 1991 [online]. Available at: https://www.legislation.gov.uk/ukpga/1991/57/contents

[101] The Flood and Water Management Act 2010 [online]. Available at: https://www.legislation.gov.uk/ukpga/2010/29/contents

2.5.2.7 National Policy Statement for Electricity Networks Infrastructure (EN-5) contains paragraph 2.4.2 relating to the water environment, which has been considered within this chapter. This states that 'The resilience of the project to climate change should be assessed in the Environmental Statement (ES) accompanying an application. For example, future increased risk of flooding would be covered in any flood risk assessment'.

Local planning policy

2.5.2.8 Relevant policies from the East Suffolk Council Suffolk Coastal Local Plan, adopted September 2020, are listed below:

- SCLP9.3 - Coastal Change Management Area.
- SCLP9.5 – Flood Risk.
- SCLP9.6 – Sustainable Drainage Systems.
- SCLP10.3 – Environmental Quality.

2.5.2.9 Several standards and non-statutory guidelines, which provide details of assessment methodologies and mitigation techniques, will also be referenced to inform the assessment, including:

- Planning Inspectorate Advice Note 18: Water Framework Directive[102],
- Construction Industry Research and Information Association (CIRIA) publications (various dates)[103]; and
- Guidance for Pollution Prevention series[104].

2.5.3 Study Area

2.5.3.1 The study area for the EIA is proposed to include all land within the Suffolk Onshore Scheme Scoping Boundary, together with an additional 500m buffer from this boundary. The study area for the EIA is illustrated in **Figure 2.5.1 Water Environment Study Area and Existing Features**.

2.5.3.2 The FRA that will be prepared to inform the EIA, may cover a larger study area where necessary, for example assessing the potential for changes to baseline flood risk at the local catchment scale or within a floodplain cell which may cover areas up to several km^2. The Water Framework Directive Screening Assessment will include a study area that is set at the water body scale and include all those WFD waterbodies with the potential to be affected.

2.5.3.3 The study areas for assessing effects on geology and the groundwater environment are described in **Part 2, Chapter 6, Geology and Hydrogeology.**

[102] The Planning Inspectorate (2017). Advice Note 18: Water Framework Directive. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-18/

[103] CIRIA (various dates) accessible online: https://www.ciria.org/CIRIA/Bookshop/Free_Publications/Books/Free_CIRIA_Publications.aspx?hkey=ca8794b8-b1b3-4742-880d-6c7a27719afb

[104] NetRegs (2022). Guidance for Pollution Prevention (GPPs) – Full List. [online] Available at: https://www.netregs.org.uk/environmental-topics/guidance-for-pollution-prevention-gpp-documents/guidance-for-pollution-prevention-gpps-full-list/

2.5.4 Baseline Conditions

Data Sources

2.5.4.1 The water environment baseline described in this section has been informed by the following data sources:

- The Flood Estimation Handbook webservice;
- Ordnance Survey maps and aerial imagery;
- Environment Agency flood maps for rivers and the sea, surface water and reservoirs;
- Environment Agency Catchment Data Explorer that records WFD data;
- Anglian River Basin Management Plan; and
- Environment Agency Water Quality Data Archive that provides water quality data for monitored main rivers.

Baseline

2.5.4.2 The Suffolk Onshore Scheme is situated in the hydrological catchments of the Hundred River and the neighbouring River Fromus, which is a tributary of the River Alde. Small areas are within the headwaters of the Minsmere Old River and the Leiston Beck. All of these watercourses are designated main rivers and are waterbodies that are monitored under the WFD. The Hundred River and the Fromus rise to the north of Saxmunden. The River Fromus flows south, discharging to the River Alde near Snape. The Hundred River also follows a southerly flow path to drain to the coast south of Thorpeness. Within the study area these rivers have relatively narrow floodplains, designated as Environment Agency Flood Zone 3. However, near their discharges to the coast and the River Alde, floodplains are more extensive, with the Hundred River floodplain shown to be benefitting from flood defences. The Hundred River has a current (2019) ecological status of Moderate and is failing with regard to chemical status[105]. The Fromus waterbody has a current ecological status of Poor and is also failing with regard to chemical status. The Minsmere Old River and Leiston Beck both share an ecological status of moderate and are failing with regard to chemical status.

2.5.4.3 In addition to these main rivers, within the study area there are networks of ordinary watercourses, several of which are managed by the East Suffolk Internal Drainage Board (IDB), The board manages water levels in these watercourses and maintains them. .

2.5.4.4 Sites designated for their nature conservation interest, where surface waters play a key role in sustaining the designated interest features, are also important receptors. Details of these sites are provided in **Part 2, Chapter 3, Ecology and Biodiversity**. Assessment of effects on such sites will be undertaken in collaboration with ecology and groundwater specialists.

[105] Environment Agency (2022). Catchment Data Explorer – Suffolk Body Water. [online] Available at: https://environment.data.gov.uk/catchment-planning/WaterBody/GB650503520002

2.5.4.5 Additional baseline data to characterise the water environment within the study area will be collected as part of a desk study, with reference to published data sources, supplemented by data sets collected in consultation with the Environment Agency, Suffolk County Council in their role as the LLFA and East Suffolk IDB.

2.5.4.6 Field notes and photographs of water features, collected during ecological walkovers and surveys, will also be referenced, in addition to the high-resolution aerial imagery.

2.5.4.7 Baseline data collection will be undertaken on a risk basis, focusing on collecting data for receptors where source-pathway linkages are identified. For example, watercourses that are intended to be crossed by the cable route using open cut techniques and locations accommodating any above ground infrastructure (AGI). For watercourse receptors (where applicable) WFD status data will be collected to characterise existing qualities and status objectives, as well as any measures identified to achieve these objectives, as recorded in the Anglian River Basin Management Plan. Existing surface water interests (abstractions and discharges) will be identified with reference to Environment Agency consent/permit registers. Areas of fluvial/coastal floodplain will be described using Environment Agency flood mapping and modelling data. Existing flood defence assets will be identified with reference to Environment Agency asset records and the Lowestoft Ness to Felixstowe Landguard Point Shoreline Management Plan. Other sources of flood risk, such as from surface water, groundwater and artificial sources, will be characterised in consultation with the LLFA and East Suffolk IDB and with reference to relevant Strategic Flood Risk Assessments and other published sources.

Future Baseline

2.5.4.8 With regard to flood risk and drainage, future baseline conditions will be forecasted, drawing on current best practice guidelines. These will take into account the likely impacts of climate change on, river flows, rainfall intensities, and tidal flood levels / storm surge. These future conditions would be accounted for in the design of the Suffolk converter station where required to ensure future resilience to flooding. The likely effects of implementation of future cycles of WFD management plans on the ecological and chemical quality of waterbodies would be considered when assigning value to water environment resources and receptors.

2.5.5 Embedded and Control & Management Measures

Embedded Measures

2.5.5.1 The assessment of effects will take account of mitigation, including measures embedded into the Project's design, and good practice measures. Key measures are described below.

2.5.5.2 The Suffolk converter station would be situated to avoid areas of Flood Zone 2 and 3. This would ensure that Project infrastructure is safe from flooding and would also avoid permanent losses of floodplain storage or disruption to floodplain flow paths, so avoiding permanent impacts on offsite flood risk.

2.5.5.3 Sustainable Drainage System (SuDS) techniques would be utilised at the converter station to manage rainfall runoff in terms of both quantities and quality, as well as along

the cable swathe during construction. Suitable techniques will be selected, influenced by ground conditions and with reference to the drainage hierarchy set out in the National Planning Practice Guidance[106]. The drainage hierarchy promotes the use of SuDS and encourages infiltration to ground as a preference, or where this is not practicable, discharges to surface water bodies.

2.5.5.4 The surface water management systems adopted will achieve both attenuation and treatment of surface water runoff, avoiding increases in surface water flood risk and pollution of the receiving water environment.

2.5.5.5 Where the cable route crosses watercourses, appropriate construction techniques would be selected according to factors such as watercourse channel dimensions, flow conditions and environmental sensitivities. Main rivers may be crossed by trenchless techniques to avoid physical changes and impacts on flow and sediment transport regimes and hydromorphology. This technique would also reduce disturbance within the riparian corridor and the risks of the construction phase being detrimental to water quality.

2.5.5.6 Where watercourses are crossed temporarily to provide for construction access, similarly suitable crossing designs would be selected with the aim of reducing impacts.

Control and Management Measures

2.5.5.7 Where effects cannot be avoided through design, commitments would be made, and secured through the Development Consent Order (DCO), to control and manage effects.

2.5.5.8 An outline Code of Construction Practice (CoCP) is provided in **Appendix 1.4.A Outline Code of Construction Practice.** Measures relevant to the control and management of impacts that could affect flood risk and land drainage are:

- GG16: Commitments include controlling runoff for work site areas using a variety of methods including header drains, buffer zones around watercourses, on-site ditches, silt traps and bunding There would be no intentional discharge of site runoff to ditches, watercourses, drains or sewers without appropriate treatment and agreement of the appropriate authority. Fuels, oils, chemicals and any other potentially hazardous materials would be stored responsibly in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001, and all refuelling, oiling and greasing of construction plant and equipment would take place above drip trays and also away from watercourses and drains as far as is reasonably practicable.
- GG15: Appropriate spill kits would be easily accessible for these activities.
- GG18: Wheel washing will be provided at each main compound access point.
- GG17: Wash down of vehicles and equipment will take place in designated areas within construction compounds, with appropriate treatment provided e.g. sediment traps in order to prevent pollution of the water environment.

[106] Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (2021). Planning Practice Guidance. [online] Available at: https://www.gov.uk/government/collections/planning-practice-guidance

- GG23: An Emergency Action Plan will be developed for the construction phase which will outline procedures to be implemented in case of unplanned events, including but not limited to site flooding and pollution incidents.
- W03: At all watercourse crossings, widths of topsoil stripping would be reduced whilst still providing safe working widths and riparian vegetation and natural channel bed materials would be re-instated on completion of the works.
- W06: To manage potential flood risk impacts associated with works in the floodplain, temporary stores of spoil along the cable route corridor would be configured to avoid forming continuous barriers to floodplain flow conveyance.
- W01: Risks of sedimentation would be reduced using silt fencing or similar measures. Secondary consents under the Environmental Permitting Regulations and the Land Drainage Byelaws for qualifying works would also be secured by the appointed Contractor prior to the commencement of any works.

2.5.6 Potential for Significant Effects

2.5.6.1 The water environment assessment will consider the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project**.

2.5.6.2 The proposed scope of the water environment assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

2.5.6.3 This section identifies the sources and impacts that would occur as a result of the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme.

2.5.6.4 The potential for the Suffolk Onshore Scheme to result in the potential significant effects described in this section takes into account the embedded and control and management measures described in section 5.

Sources of construction impacts

2.5.6.5 Good practice measures within the CoCP would reduce the risk of pollution of the water environment during construction by removing pathways between sources and receptors for many construction activities.

2.5.6.6 However, potential for construction work to cause localised and temporary pollution effects would remain, for example caused by heavily silted runoff, or accidental spills of hydrocarbons and other construction materials.

2.5.6.7 At open cut watercourse crossings there would be temporary physical disturbance and temporary changes to watercourse flow regimes may also occur, for example, where over pumping is required during construction of the cable and access route watercourse crossings. Impacts would range in duration, but crossings may be in place in some locations for several months. Whilst crossing watercourses via trenchless techniques reduces physical disturbance and flow regime effects, the technique is not

entirely without pollution risk, which is associated with the potential for break out of drilling muds (bentonite). Trenchless techniques also have a water demand.

2.5.6.8 During construction there would be potential for impacts on land drainage regimes and associated surface water flood risk, due to changes in land surface permeabilities or local topography, e.g. where vegetation cover is stripped and earthworks are undertaken.

2.5.6.9 At work sites located in the floodplain there would be potential for localised impacts associated with storage of spoil reducing available floodplain storage or interrupting key floodplain flow paths.

2.5.6.10 These higher risk activities and associated receptors are proposed to be scoped into the Environmental Statement (ES), which will be informed by the findings of a supporting FRA. Effects on artesian water, springs and groundwater resources will be addressed in **Part 2, Chapter 6, Geology and Hydrogeology**.

2.5.6.11 The sources of construction impacts are:

- soil stripping earthworks and excavations;
- watercourse crossings for access and cable crossings (trenched);
- watercourse cable crossings (trenchless); and
- spoil storage in the floodplain.

Sources of operational impacts

2.5.6.12 During operation of the Project, there would be no sources of pollution with the potential to impact on surface waterbodies. This is because land within the cable construction working width would be reinstated following completion of the construction works.

2.5.6.13 There would be no untreated operational discharges to surface watercourses and rainfall runoff from the Suffolk Converter Station or any potential AGI associated with the HVAC connection would be sustainably attenuated and treated prior to discharge to the receiving water environment. Physico-chemical elements supporting WFD waterbody status would therefore be safeguarded. No likely significant effects are therefore anticipated, and it is proposed that water quality effects during operation are scoped out of the assessment.

2.5.6.14 Given the nature of the Project, there would be no permanent impacts on watercourse flow regimes or floodplains. There would be no new consumptive water uses, and the water quality of water receptors would not be degraded. Therefore, the potential for likely significant effects on existing water interests (surface water abstractions and discharges) and hydromorphology is negligible.

2.5.6.15 Regarding flood risk and land drainage, situating the Suffolk converter station outside of the floodplain and incorporating appropriate post construction surface water management and land drainage systems would result in negligible effects. All operational effects on water environment receptors are therefore proposed to be scoped out.

2.5.6.16 The sources of operational impacts are:

- operational runoff and discharges from above ground infrastructure (AGI); and

- loss of floodplain infrastructure from AGI.

Sources of maintenance impacts

2.5.6.17 Maintenance activities would fall under the Applicant's operational management procedures and, given the nature of the Project, maintenance activities are considered to pose a relatively low risk of causing likely significant effects on water environment receptors. Potential maintenance effects are considered to be as described for construction, albeit on a much more localised scale.

2.5.6.18 The sources of maintenance impacts are:

- soil stripping earthworks and excavations;
- watercourse crossings for access; and
- spoil storage in the floodplain.

Sources of decommissioning impacts

2.5.6.19 Whilst the detail of decommissioning would be subject to environmental management plans the impacts and sources are predicted to be the same as those identified for the construction of the Project.

2.5.6.20 The sources of decommissioning impacts are:

- soil stripping earthworks and excavations;
- watercourse crossings for access; and
- spoil storage in the floodplain.

Potential impacts

2.5.6.21 Table 2.5.1 identifies the potential impacts that could result from the sources identified above.

Table 2.5.1: Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction, and decommissioning	Soil stripping, earthworks and excavations	Pollution by silt, hydrocarbons and other construction materials	Yes	**Scoped in**
Construction	Watercourse crossings for access and	Physical disturbance, changes to flow regime	Yes	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
	cable route – open cut			
Construction	Watercourse crossings for cable route – trenchless	Pollution risks (bentonite breakout) and water consumption	Yes	**Scoped in**
Construction, and decommissioning	Soil stripping, earthworks and excavations	Increased runoff rates and volumes, disruption to land drainage regimes	Yes	**Scoped in**
Construction, decommissioning	Spoil storage in floodplain	Increased flood risk	Yes	**Scoped in**
Operation	Operational discharges and runoff from AGI	Pollution of watercourses	No – no impact pathway given treatment through SuDS provision	Scoped out
Operation	Operational discharges and runoff from AGI and loss of floodplain storage	Increased flood risk	No– no impact pathway given attenuation of runoff through SuDS provision	Scoped out
Operation	Operational infrastructure – AGI and watercourse crossings	Physical disturbance, impact to flow regimes	No – no impact pathway, there would be no physical disturbance	Scoped out
Maintenance	Maintenance activities	Pollution of watercourses and physical disturbance	Yes	**Scoped in**

Impact Pathways with Receptors (Step 2)

2.5.6.22 This section identities whether there are any impact pathways from the impacts identified above that could give rise to potentially significant effects on the receptors within the water environment study areas for each of the five options.

Suffolk Converter Station Site 1 Emerging Preference

2.5.6.23 Table 2.5.2 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 1 Emerging Preference as shown on as shown **on Figure 2.1.4 Suffolk Site 1 Emerging Preference** and **Figure 2.1.9 Suffolk Site 1 Emerging Preference Option Area**.

2.5.6.24 Water environment receptors in the Suffolk Site 1 Emerging Preference study area include a small reservoir, unnamed ordinary watercourses that are tributaries of the River Fromus and that drain to the coast, and land drainage ditches. There are also limited areas of floodplain at the coastal boundary of the study area.

Table 2.5.2: Impact pathways with receptors – Suffolk Site 1 Emerging Preference

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Pollution by silt, hydrocarbons and other construction materials and due to decommissioning activities	Hundred River, ordinary watercourses and ditches, reservoir	Yes	**Scoped in**
Temporary physical disturbance and change to flow regimes at watercourse crossings for access and cable route	Unnamed ordinary watercourses and ditches	Yes	**Scoped in**
Impact on land drainage regime during construction and operation due to soil stripping, earthworks and excavation	Unnamed ordinary watercourses and ditches, existing land uses	Yes	**Scoped in**
Temporary loss of floodplain storage / impediment of floodplain flows due to spoil storage during construction and decommissioning	Fluvial and coastal floodplain	Yes	**Scoped in**
Increased surface water runoff from converter station	Existing land uses and infrastructure	No– no impact pathway given attenuation of runoff	Scoped out

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
drainage during operation		through SuDS provision	
Increased flood risk due to permanent loss of floodplain storage / impediment of floodplain flows	Fluvial and coastal floodplain	No– no impact pathway, there would be no permanent works in the floodplain	Scoped out
Permanent physical disturbance and change to flow regimes	Unnamed ordinary watercourses	No– no impact pathway as cables would be buried	Scoped out
Pollution of watercourses and physical disturbance during maintenance	Unnamed ordinary watercourses, ditches, reservoir	No– no impact pathway for a significant effect given the likely nature and scale of maintenance activities	Scoped out

Suffolk Converter Station Site 1 Alternative

2.5.6.25 Table 2.5.3 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 1 Alternative Preference as shown on as shown on **Figure 2.1.7 Suffolk Site 1 Alternative** and **Figure 2.1.11 Suffolk Site 1 Alternative Option Area.**

2.5.6.26 Water environment receptors in the Suffolk Site 1 Alternative study area include the Hundred River and its tributaries. Areas of floodplain are very localised, with only very narrow extents of Flood Zone 3 at the coastal landfall site and associated with the Hundred River.

Table 2.5.3: Impact pathways with receptors – Suffolk Site 1 Alternative

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Pollution by silt, hydrocarbons and other construction materials and due to decommissioning activities	Hundred River and ordinary watercourse tributaries and ditches	Yes	**Scoped in**
Temporary physical disturbance and	Hundred River, ordinary	Yes	**Scoped in**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
change to flow regimes at watercourse crossings for access and cable route	watercourse tributaries and land drainage ditches		
Impact on land drainage regime during construction due to soil stripping, earthworks and excavation	Hundred River, ordinary watercourse tributaries land drainage ditches, existing land uses	Yes	**Scoped in**
Temporary loss of floodplain storage/impediment of floodplain flows due to spoil storage during construction and decommissioning	Coastal and fluvial floodplain	No– no impact pathway as areas of floodplain are very localised and could be avoided	Scoped out
Increased surface water runoff from converter station drainage during operation	Existing land uses and infrastructure	No– no impact pathway given attenuation of runoff through SuDS provision	Scoped out
Increased flood risk due to permanent loss of floodplain storage/impediment of floodplain flows	Coastal and fluvial floodplain	No– no impact pathway, there would be no permanent works in the floodplain	Scoped out
Permanent physical disturbance and change to flow regimes	Hundred River and ordinary watercourse tributaries	No– no impact pathway as cables would be buried	Scoped out
Pollution of watercourses and physical disturbance during maintenance	Hundred River and ordinary watercourse tributaries	No– no impact pathway for a significant effect given the likely nature and scale of maintenance activities	Scoped out

Suffolk Converter Station Site 3 Emerging Preference

2.5.6.27 Table 2.5.4 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Emerging Preference as shown on as shown on **Figure 2.1.5 Suffolk Site 3 Emerging Preference** and **Figure 2.1.10 Suffolk Site 3 Emerging Preference Option Area**.

Table 2.5.4:Impact pathways with receptors – Suffolk Site 3 Emerging Preference

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Pollution by silt, hydrocarbons and other construction materials and due to decommissioning activities	Hundred River, ordinary watercourses, reservoir	Yes	**Scoped in**
Temporary physical disturbance and change to flow regimes at watercourse crossings for access and cable route	Ordinary watercourses	Yes	**Scoped in**
Impact on land drainage regime during construction and decommissioning due to soil stripping, earthworks and excavation	Ordinary watercourses, existing land uses	Yes	**Scoped in**
Temporary loss of floodplain storage /impediment of floodplain flows due to spoil storage during construction and decommissioning	Fluvial and coastal floodplain	Yes	**Scoped In**
Increased surface water runoff from converter station drainage during operation	Existing land uses and infrastructure	No– no impact pathway given attenuation of runoff through SuDS provision	Scoped out

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Increased flood risk due to permanent loss of floodplain storage/impediment of floodplain flows	Fluvial and coastal floodplain	No– no impact pathway, there would be no permanent works in the floodplain	Scoped out
Permanent physical disturbance and change to flow regimes	Ordinary watercourses	No- no impact pathway as cables would be buried	Scoped out
Pollution of watercourses and physical disturbance during maintenance	Unnamed ordinary watercourses	No– no impact pathway for a significant effect given the likely nature and scale of maintenance activities	Scoped out

Suffolk Converter Station Site 3 Alternative (Option 1)

2.5.6.28 Table 2.5.5 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Alternative (Option 1) as shown on as shown on **Figure 2.1.7 Suffolk Site 3 Alternative (Option 1)** and **Figure 2.1.12 Suffolk Site 3 Alternative (Option 1) Option Area**.

2.5.6.29 Water environment receptors in the Suffolk Site 3 Alternative (Option 1) study area include the headwaters of the Hundred River and several tributaries, as well as the Leiston Beck that drains to the coast through the Sizewell Belts marshland. Areas of fluvial floodplain are localised, with narrow extents of Flood Zone 3 associated with the Hundred River. There are also some areas of floodplain at the coastal landfall site and associated with the Leiston Beck that drains to the coast via the marshland of the Sizewell Belts.

Table 2.5.5: Impact pathways with receptors – Suffolk Site 3 Alternative (Option 1)

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Pollution by silt, hydrocarbons and other construction materials and due to decommissioning activities	Hundred River, tributary of Leiston Beck and ordinary watercourse tributaries	Yes	**Scoped in**
Temporary physical disturbance and	Hundred River, Leiston Beck and	Yes	**Scoped in**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
change to flow regimes at watercourse crossings for access and cable route	ordinary watercourse tributaries		
Impact on land drainage regime during construction and decommissioning due to soil stripping, earthworks and excavation	Hundred River, Leiston Beck and ordinary watercourse tributaries, existing land uses	Yes	**Scoped in**
Temporary loss of floodplain storage/impediment of floodplain flows due to spoil storage during construction and decommissioning	Coastal and fluvial floodplains	Yes	**Scoped in**
Increased surface water runoff from converter station drainage during operation	Existing land uses and infrastructure	No- no impact pathway given attenuation of runoff through SuDS provision	Scoped out
Increased flood risk due to permanent loss of floodplain storage/impediment of floodplain flows	Fluvial and coastal floodplains	No– no impact pathway, there would be no permanent works in the floodplain	Scoped out
Permanent physical disturbance and change to flow regimes	Hundred River, Leiston Beck and ordinary watercourse tributaries	No– no impact pathway as cables would be buried	Scoped out
Pollution of watercourses and physical disturbance during maintenance	Hundred River, Leiston Beck and ordinary watercourse tributaries	No– no impact pathway for a significant effect given the likely nature and scale of maintenance activities	Scoped out

Suffolk Converter Station Site 3 Alternative (Option 2)

2.5.6.30 Table 2.5.6 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Alternative (Option 2) as shown on as shown **on Figure 2.1.8 Suffolk Site 3 Alternative (option 2)** and **Figure 2.1.13 Suffolk Site 3 Alternative (option 2) Option Area**.

2.5.6.31 Water environment receptors in the Suffolk Site 3 Alternative (Option 2) study area include the Hundred River and several of its tributaries. Areas of floodplain are very localised, with only very narrow extents of Flood Zone 3 at the coastal landfall site and associated with the Hundred River.

Table 2.5.6: Impact pathways with receptors – Suffolk Site 3 Alternative (Option 2)

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Pollution by silt, hydrocarbons and other construction materials and due to decommissioning activities	Hundred River and ordinary watercourse tributaries and ditches	Yes	**Scoped in**
Temporary physical disturbance and change to flow regimes at watercourse crossings for access and cable route	Hundred River and ordinary watercourse tributaries and ditches	Yes	**Scoped in**
Impact on land drainage regime during construction and decommissioning due to soil stripping, earthworks and excavation	Existing land uses and infrastructure	Yes	**Scoped in**
Temporary loss of floodplain storage/impediment of floodplain flow due to spoil storage during construction and decommissioning	Coastal and fluvial floodplain	No– no impact pathway as areas of floodplain are very localised and could be avoided	Scoped out
Increased surface water runoff from	Existing land uses and infrastructure	No – no impact pathway given	Scoped out

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
converter station drainage during operation		attenuation of runoff through SuDS provision	
Increased flood risk due to permanent loss of floodplain storage/impediment to floodplain flow	Coastal and fluvial floodplain	No – no impact pathway, there would be no permanent works in the floodplain	Scoped out
Permanent physical disturbance and change to flow regimes	Hundred River and ordinary watercourse tributaries	No – no impact pathway as cables would be buried	Scoped out
Pollution of watercourses and physical disturbance during maintenance	Hundred River and ordinary watercourse tributaries	No – no impact pathway for a significant effect given the likely nature and scale of maintenance activities	Scoped out

2.5.7 Proposed Assessment Methodology

2.5.7.1 An overview of the proposed assessment methodology is provided in **Part 1, Chapter 5, EIA Approach and Methodology.**

Proposed Data Sources

2.5.7.2 The assessment will be informed by several published data sets and reports, which will be referenced to describe the baseline qualities of surface water receptors. Key data sources include:

- Catchment data explorer database of Cycle 2 and 3 Water Framework Directive information (Environment Agency, 2020)
- River Basin Management Plan (Environment Agency, 2018)
- Long term flood risk map for England, the Flood Map for Planning and the Historic Flood Map (Environment Agency, 2022)
- Data from Environment Agency flood models
- Drainage and flood data from Local Authority Surface Water Management Plans and Strategic Flood Risk Assessments
- Water quality data from the Environment Agency archive (Environment Agency, 2018) and

- Data defining surface water catchment areas and hydrological properties (e.g. rainfall, slopes, and soil permeability) from the Flood Estimation Handbook webservice (CEH, 2008)

Proposed Assessment Methodology

2.5.7.3 The assessment will be based on guidance set out in Part 10 of Volume 11 of the Design Manual for Roads and Bridges (DMRB), LA113[107]. Whilst primarily intended for use in assessing the impacts of highways projects on the water environment, the methodology is widely accepted as suitable for assessing the effects of other types of linear infrastructure. This promotes assessment that is proportionate to the scale and nature of the proposals and that considers the sensitivity of the local water environment to change.

2.5.7.4 The method provides guidance on assigning value (sensitivity) to receptors (for example, watercourses, floodplains) as well as criteria for assigning impact magnitude. The criteria consider the scale/extent of the predicted change and the nature and duration of the impact. Tables 2.5.7 and 2.5.8 below present the receptor value and impact magnitude criteria.

Table 2.5.7: Criteria for assigned receptor value (sensitivity)

Value of resource or receptor	Criteria	Typical examples
Very high	Nationally significant attribute of high importance	Site protected/designated under European Commission (EC) or UK legislation (Special Area of Conservation, Special Protection Area, Site of Special Scientific Interest, Ramsar site) Watercourse having a Water Framework Directive (WFD) classification shown in a River Basin Management Plan (RBMP) and a Q95[108] > 1.0m^3/s. Watercourse in natural equilibrium exhibiting a range of morphological features (e.g. pools, riffles) that is free from any modification or human influence Essential infrastructure or highly vulnerable development
High	Locally significant attribute of high importance	Watercourse having a WFD classification shown in a RBMP and a Q95 <1.0m^3/s Very limited signs of modification or other human influences on morphology More vulnerable development

[107] Highways England (2020). Design Manual for Roads and Bridges. LA 113 Road Drainage and the Water Environment. [online] Available at: https://www.standardsforhighways.co.uk/prod/attachments/d6388f5f-2694-4986-ac46-b17b62c21727?inline=true

[108] Q95 is the flow in a watercourse that is equalled or exceeded for 95% of the time in any given year

Value of resource or receptor	Criteria	Typical examples
Medium	Of moderate quality and rarity	Watercourses not having a WFD classification shown in a RBMP and Q95 > 0.001m^3/s Watercourse showing signs of modifications and having a limited range of morphological features Less vulnerable development
Low	Lower quality, common place	Watercourses not having a WFD classification in a RBMP and a Q95 flow <0.001m^3/s A highly modified watercourse, changed by human pressures. No morphological diversity Water compatible development

Table 2.5.8: Criteria for assigning impact magnitude

Magnitude of impact*	Criteria	Typical examples
Large adverse	Results in loss of attribute and/or quality and integrity of the attribute	Loss or extensive change to a fishery Loss or extensive change to a designated nature conservation site Reduction in waterbody WFD classification Pollution of a public water supply or loss of a major commercial/industrial/agricultural supply Extensive change to channel planform, replacement of large extent of natural bed/bans with artificial material Increase in peak flood level (1% annual exceedance probability) of > 100mm
Medium adverse	Results in effect on integrity of attribute, or loss of part of attribute	Partial loss in productivity if a fishery Pollution of a non-potential source of abstraction Contribution to reduction in waterbody WFD classification Degradation (quality or reliability) of a potable, commercial or agricultural water supply Replacement of natural bed material or banks with artificial material over more than 3% of the water body's total length Increase in peak flood level (1% annual exceedance probability) of > 50mm
Small adverse	Results in some measurable change in attribute	Minor effects on water supplies Slight change from baseline conditions of channel bed/banks

Magnitude of impact*	Criteria	Typical examples
	quality or vulnerability	Increase in peak flood level > 10mm
Negligible	Results in effect on attribute of insufficient magnitude to affect the use or integrity	Negligible change in peak flood level (< 10mm) No measurable impact on WFD waterbodies or river channel planform
Small beneficial	Results in some positive effect on an attribute or a reduced risk of negative effect occurring	Creation of flood storage and reduction in peak flood level (1% AEP) > 10mm
Medium beneficial	Results in moderate improvement of attribute quality	Contribution to improvement waterbody WFD classification Improvements to morphological diversity at the local scale Creation of flood storage and reduction in peak flood level (1% AEP) > 50mm
Large beneficial	Results in major improvement of attribute quality	Removal of existing polluting discharge or removing likelihood of polluting discharges to a watercourse Major improvement to morphological diversity at reach scale e.g. through culvert removal Improvement in waterbody WFD classification Creation of flood storage and reduction in peak flood level (1% AEP) > 100mm
No change	No change, either beneficial or detrimental, to attribute quality	

*terminology has been adapted from that used in LA113, DMRB (National Highways, 2020)

2.5.7.5 The significance of an effect is derived using the matrix set out **Part 1, Chapter 5, EIA Approach and Methodology.**

2.5.7.6 Given the size of the Project and the presence of areas of Flood Zone 3 within the study area, an FRA will be produced in accordance with the Energy National Policy Statement and local flood risk management guidelines published by the LLFA. The FRA will consider flood risk from all relevant sources during both construction and operation, incorporating allowance for climate change in accordance with published guidance, where applicable. It will also include details of the measures proposed to adhere to local drainage and flood risk planning policies.

2.5.7.7 A WFD Screening Assessment will also be produced for the Project, guided by Planning Advice Note 18: The Water Framework Directive. The effects of the Project on the Anglian River Basin Management Plan and the waterbodies therein will be described, and the assessment will set out how the Project design has been developed

to align with the requirements of the Directive. A qualitative approach is proposed, and the assessment will identify how the Project design will avoid waterbody deterioration, as well as any other mitigation necessary.

2.5.8 Conclusion

2.5.8.1 There are a range of water environment receptors/features within the proposed study area and several impact pathways have been identified that have the potential to result in significant effects on these receptors. However, other attributes of the water environment are considered unlikely to be significantly affected due to a lack of source-pathway receptor linkage.

Proposed Scope of the Assessment

2.5.8.2 A summary of the proposed scope of the assessment is provided in in Table 2.5.9.

Table 2.5.9: Proposed scope of the assessment

Receptor	Potential for significant effect	Project phase(s)	Proposed to be scoped in/out and for which option
Hundred River and ordinary watercourses/land drains in Hundred River catchment	Pollution risk from earthworks, soil stripping	Construction and decommissioning	**Scoped in – options Site 1 Emerging preference and Alternative, Site 3 Alternative and Site 3 Option 2**
	Physical disturbance and impacts on flow regime for access and cable crossings	Construction and decommissioning	**Scoped in – options above**
	Permanent effects on water quality, flow regime and physical form	Operation and maintenance	Scoped out – options above
Ordinary watercourses/land drains in River Fromus catchment	Pollution risk from earthworks, soil stripping	Construction and decommissioning	**Scoped in – Site 1 emerging preference, Site 3 emerging preference**
	Physical disturbance and impacts on flow regime for access and cable crossings	Construction and decommissioning	**Scoped in – options above**

Receptor	Potential for significant effect	Project phase(s)	Proposed to be scoped in/out and for which option
	Permanent effects on water quality, flow regime and physical form	Operation and maintenance	Scoped out – options above
Leiston Beck	Pollution risk from earthworks, soil stripping	Construction and decommissioning	**Scoped in – Site 3 Alternative 1**
	Physical disturbance and impacts on flow regime for access and cable crossings	Construction and decommissioning	**Scoped in – Site 3 Alternative 1**
	Permanent effects on water quality, flow regime and physical form	Operation and maintenance	Scoped out – Site 3 Alternative 1
Fluvial and coastal floodplains	Temporary loss of floodplain storage due to soil storage	Construction and decommissioning	**Scoped in – all options except Site 1 Alternative and Site 3 Option 2**
	Permanent loss floodplain storage due to AGI	Operation and maintenance	Scoped out – all options
Existing land use and infrastructure	Temporary increase in run off and impacts on land drainage infrastructure	Construction and decommissioning	**Scoped in – all options**
	Permanent increases in surface water runoff from new areas of impermeable land cover at AGIs	Operation and maintenance	Scoped out – all options
Existing water interests	Reduced water availability to support abstractions and assimilate discharges	All phases	Scoped out – all options

2.6 Geology and Hydrogeology

2.6.1 Introduction

2.6.1.1 This chapter presents how the geology and hydrogeology assessment will consider the potentially significant effects that may arise from the construction, operation, maintenance, and decommissioning of the Suffolk Onshore Scheme (as described in **Part 1, Chapter 4, Description of the Project**). This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an EIA.

2.6.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Suffolk Onshore Scheme Scoping Boundary hereafter referred to as the Suffolk Scoping Boundary is illustrated on **Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary**.

2.6.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project**;
- **Part 1, Chapter 5, EIA Approach and Methodology**;
- **Part 2, Chapter 1, Evolution of the Suffolk Onshore Scheme**; and
- **Part 2, Chapter 5, Water Environment**

2.6.1.4 This chapter is supported by the following figures:

- **Figure 2.6.1 Superficial Geology;**
- **Figure 2.6.2 Bedrock Geology;**
- **Figure 2.6.3 Hydrogeology;** and
- **Figure 2.6.4 Potential Sources of Contamination**.

2.6.1.5 The Project has the potential for geology and hydrogeology effects through excavation/disturbance of potentially contaminated soil, creation of pathways for contamination during piling or foundation excavation, and changes to groundwater levels and flow (e.g. through dewatering).

2.6.1.6 For geology, the assessment will include potential effects relating to designated sites, mineral resources, and ground conditions (stability and contamination).

2.6.1.7 For hydrogeology the assessment will include potential effects relating to changes in groundwater levels or flow, or potential effects relating to contamination and changes in quality. It also includes potential effects on sufchalkrface water from changes in groundwater quality, levels or flow (i.e. where there is hydraulic continuity).

2.6.1.8 Effects on surface water, groundwater flooding and groundwater in terms of the Water Framework Directive are considered in **Part 2, Chapter 5, Water Environment**.

2.6.1.9 Ecological aspects including potential significant effects on Groundwater Dependant Terrestrial Ecosystems are considered in **Part 2, Chapter 3, Ecology and Biodiversity**. However, this chapter will identify where ground conditions and/or groundwater within the Scoping Boundary may impact the groundwater supporting these ecosystems in relation to groundwater quality, levels and flow.

2.6.1.10 Effects on agricultural soil resources and soil quality are considered within **Part 2, Chapter 7, Agriculture and Soils**.

2.6.2 Regulatory and Planning Context

2.6.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. Key legislation, policy and guidance relevant to the assessment of potential effects on geology and hydrogeology associated with the construction, operation, maintenance and decommissioning of the Project is presented below.

Legislation

Environmental Protection Act (1990)[109]

2.6.2.2 Part 2A of the Environmental Protection Act 1990[109] and associated Statutory Guidance is the primary legislation on contaminated land. It provides a framework for the assessment and, where necessary, the remediation of contaminated land. Part 2A focuses on the identification and remediation of land which in its current use poses an unacceptable risk to people or the environment.

2.6.2.3 The Statutory Guidance that accompanies the Environmental Protection Act 1990, include the Contaminated Land Statutory Guidance, 2012[110] which provide a definition of what constitutes “contaminated land” and sets out the responsibilities of the Local Authority and the Environment Agency in the identification and management of contaminated land. The regulations also include a definition of 'risk', where a risk is said to be a combination of "(*a) the likelihood that harm, or pollution of water, will occur as a result of contaminants in, on or under the land; and (b) the scale and seriousness of such harm or pollution if it did occur*".

Environmental Damage (Prevention and Remediation) Regulations (2015)[111]

2.6.2.4 The Environmental Damage (Prevention and Remediation) Regulations 2015[111] aim to prevent new land contamination that will damage water or health. The Regulations also include enforcement procedures, including criminal sanctions, for breaches of the Regulations.

[109] Environmental Protection Act 1990 [online]. Available at: https://www.legislation.gov.uk/ukpga/1990/43/contents [Accessed 16 June 2022]

[110] Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance, 2012 [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/223705/pb13735cont-land-guidance.pdf

[111] The Environmental Damage (Prevention and Remediation) (England) Regulations 2015 [online]. Available at: https://www.legislation.gov.uk/uksi/2015/810/contents/made [Accessed 16 June 2022]

Environmental Permitting (England and Wales) Regulations (2016)[112]

2.6.2.5 The Environmental Permitting (England and Wales) Regulations (2016)[112] include transposition of the EU Landfill Directive[113] into UK law. These Regulations cover sites that are covered by environmental permits, such as landfills, and how these are regulated. The Project may cross sites where there are permits currently held.

2.6.2.6 These Regulations also cover the licensing of surface waters and groundwater abstractions and protect water resources through Source Protection Zones (SPZs). The Project may require abstractions or discharges during construction.

Landfill Directive[113]

2.6.2.7 The Landfill Directive[113] was adopted by the European Community in 1999. Every Member State of the European Union (EU) was required to implement it from 16 July 2001. The Directive's overall objective is to prevent or reduce as far as possible the negative effects of landfilling on the environment, as well as any resulting risk to human health. It seeks to achieve this through specifying uniform technical standards at Community level. It also sets out requirements for the location, management, engineering, closure and monitoring for landfills. The Directive includes requirements relating to the characteristics of the waste to be landfilled. The Landfill Directive is currently implemented through the Environmental Permitting (England and Wales) Regulations 2016[112].

Water Resources Act (1991)[114]

2.6.2.8 The Water Resources Act (1991)[114] aims to maintain and improve the quality of controlled waters. Part II of the Act covers the licencing of surface water and groundwater abstractions.

The Water Environment (Water Framework Directive) Regulations (2017)[115]

2.6.2.9 The Water Framework Directive (WFD) (2017)[115] establish a framework for the protection of surface waters and groundwater and to prevent the deterioration of WFD water bodies.

2.6.2.10 A WFD assessment will be undertaken, this is described within **Part 2, Chapter 5, Water Environment.**

Environment Agency Groundwater Protection Position Statements (2018)[116]

2.6.2.11 The Environment Agency regulates activities that may impact groundwater resources, to prevent and limit pollution. This document is concerned with infrastructure schemes

[112] The Environmental Permitting (England and Wales) Regulations 2016 [online]. Available at: https://www.legislation.gov.uk/uksi/2016/1154/contents/made [Accessed 16 June 2022].

[113] The Landfill Directive Council Directive 1999/31/EC 1991 [online]. Available at: https://www.legislation.gov.uk/eudr/1999/31 [Accessed 16 June 2022].

[114] Water Resources Act 1991 [online]. Available at: https://www.legislation.gov.uk/ukpga/1991/57/contents [Accessed 16 June 2022].

[115] The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 [online]. Available at: https://www.legislation.gov.uk/uksi/2017/407/contents/made [Accessed 16 June 2022].

[116] Groundwater Protection Position Statements 2018 [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692989/Envirnment-Agency-approach-to-groundwater-protection.pdf [Accessed 16 June 2022].

of national or regional significance, that pass through SPZs or are below the water table in Principal or Secondary aquifers.

2.6.2.12 Section A of the policy (general principles) includes the following

- A1: Wherever legislation allows, the Environment Agency will use a tiered, risk-based approach to regulate activities that may impact groundwater resources and to prevent and limit pollution;
- A2: Development must be appropriate to the sensitivity of the site. Where the potential consequences of a development or activity are serious or irreversible the Environment Agency will adopt the precautionary principle to manage and protect groundwater. The Environment Agency will also apply this principle in the absence of adequate information with which to conduct an assessment; and
- A3: The Environment Agency encourages everyone whose activities may impact upon groundwater to consider the groundwater protection hierarchy in their strategic plans when proposing new development or activities. The aim is to avoid potentially polluting activities being located in the most sensitive locations for groundwater.'

2.6.2.13 Section C Infrastructure states the following:

- 'If national need for the provision and location of major developments overrides Environment Agency objections, the Environment Agency will raise its concerns and make every use of environmental impact assessment in addition to other measures to achieve environmental protection. Where developments receive approval against Environment Agency advice, it will apply section A - general protection position statements.'

Planning Policy

National planning policy

National Policy Statements (NPS)

2.6.2.14 NPS EN-1[117], in paragraph 5.10.9 it states that "Applicants should safeguard any mineral resources on the proposed site as far as possible, taking into account the long-term potential of the land use after any future decommissioning has taken place". Paragraph 5.10.22 also states "Where a proposed development has an impact upon a Mineral Safeguarding Area, the IPC should ensure that appropriate mitigation measures have been put in place to safeguard mineral resources".

2.6.2.15 NPS EN-1[117], in paragraph 5.3.7 it states that "development should aim to avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives, where significant harm cannot be avoided, then appropriate compensation measures should be sought".

[117] Department of Energy & Climate Change (2011). Overarching National Policy Statement for Energy (EN-1). [online] Available at: Overarching National Policy Statement for Energy (publishing.service.gov.uk) [Accessed 13/07/2022].

2.6.2.16 NPS EN-1[117], in paragraph 5.15.3, states that the Environmental Statement should in particular describe "*any impacts of the proposed project on… source protection zones (SPZs) around potable groundwater abstractions*"

2.6.2.17 NPS EN-1[117] is supported by National Policy Statement for Electricity Networks (EN-5)[118]. EN-5 contains paragraph 2.8.9 relating to geology and hydrogeology, which indicates that the IPC should consider for each specific project '*the environmental and archaeological consequences (undergrounding a 400kV line may mean disturbing a swathe of ground up to 40 metres across, which can disturb sensitive habitats, have an impact on soils and geology, and damage heritage assets, in many cases more than an overhead line would)*'.

The national planning policy framework

2.6.2.18 The National Planning Policy Framework119 (paragraphs 174, 183, 179, 210) relates to conserving and enhancing the natural and local environment and helping the sustainable use of minerals. The National Planning Policy is supported by the associated Planning Practice Guidance for the NPPF, including Land Affected by Contamination120, June 2014 (updated July 2019); Land Stability121, March 2014 (updated July 2019); Natural Environment122, January 2016 (updated July 2019).

Local planning policy

2.6.2.19 The local planning policy relevant to the scope of potential impacts relating to geology and hydrogeology is as follows:

Suffolk Minerals and Waste Local Plan[123]

- MP10 – Minerals Consultation and Safeguarding Areas

Suffolk Coastal Local Plan[124]

- SCLP10.1 – Biodiversity and Geodiversity
- SCLP10.3 – Environmental Quality

[118] Department of Energy and Climate Change (2011). National Policy Statement for Electricity Networks Infrastructure (EN-5). [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47858/1942-national-policy-statement-electricity-networks.pdf [Accessed 16 June 2022].

[119] Ministry of Housing Communities & Local Government (2021). National Planning Policy Framework. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

[120] Ministry of Housing Communities & Local Government (2019). Planning Practice Guidance: Land Affected by Contamination. [online] Available at: https://www.gov.uk/guidance/land-affected-by-contamination

[121] Ministry of Housing Communities & Local Government (2019). Planning Practice Guidance: Land Stability. [online] Available at: https://www.gov.uk/guidance/land-stability

[122] Ministry of Housing Communities & Local Government (2019). Planning Practice Guidance: Natural Environment. [online] Available at: https://www.gov.uk/guidance/natural-environment

[123] Suffolk County Council (2020). Suffolk Minerals and Waste Local Plan. [online] Available at: https://www.suffolk.gov.uk/assets/planning-waste-and-environment/Minerals-and-Waste-Policy/Minerals-and-Waste-SMWLP-Adopted/Chapters-1-to-18-SMWLP-Adopted-July-2020.pdf#:~:text=1.1%20The%20Suffolk%20Minerals%20%26%20Waste%20Local%20Plan,the%20same%20from%20other%20forms%20of%20competing%20development. [Accessed 30 June 2022].

[124] East Suffolk Council (2020). Suffolk Coastal Local Plan. [online] Available at: https://www.eastsuffolk.gov.uk/assets/Planning/Planning-Policy-and-Local-Plans/Suffolk-Coastal-Local-Plan/Adopted-Suffolk-Coastal-Local-Plan/East-Suffolk-Council-Suffolk-Coastal-Local-Plan.pdf [Accessed 30 June 2022].

Guidance and Advice Notes

2.6.2.20 The following core guidance documents provide the technical framework for applying a risk management process when dealing with land affected by contamination in a way that is consistent with government policies and legislation within the UK:

- Land Contamination: Risk Management (LCRM) [125];
- CIRIA 552: Contaminated Land Risk Assessment, A guide to good practice [126];
- BS 10175:2011+A2:2017 Investigation of potentially contaminated sites. Code of Practice[127]; and
- The Environment Agency's Guiding Principles for Managing and Reducing Land Contamination (GPLC2)[128].

2.6.3 Study Area

2.6.3.1 For the purpose of establishing the baseline conditions and defining the scope of the EIA, the study area has been defined as the Suffolk Scoping Boundary plus a 250m buffer for geology and up to a 500m buffer for hydrogeology. Given the scale and nature of the Project, this is considered a robust yet proportionate approach, and although not directly relevant for this development type, accords with the study area recommended in Guidance for the Safe Development of Housing on Land Affected by Contamination[129] .

2.6.3.2 The study area will be refined throughout the development of the Project, it is proposed that the study area for the EIA will be the proposed Order Limits plus the same buffer zones as described above.

2.6.4 Baseline Conditions

Data Sources

2.6.4.1 The Geology and Hydrogeology baseline described in this section has been informed by the following data sources:

- Britain from Above, historical aerial imagery archive[130],

[125] Environment Agency (2021). Land Contamination Risk Management. [online] Available at: https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm

[126] Rudland D., Lancefield R. and Mayell P. (2001). Contaminated land risk assessment, a guide to good practice (C552). CIRIA. p. 1-159.)

[127] British Standards Institution (2011). BS 10175:2011+A2;2017, Investigation of potentially contaminated sites – code of practice. BSI. P. 1-134..

[128] Environment Agency (2016). Managing and Reducing Land Contamination: Guiding Principles (GPLC). [online] Available at: https://www.gov.uk/government/publications/managing-and-reducing-land-contamination [Accessed 16 June 2022].

[129] The National House Building Council, The Environment Agency and The Chartered Institute of Environmental Health (2008). Guidance for the Safe Development of Housing on Land Affected by Contamination. [online] Available at: https://www.nhbc.co.uk/binaries/content/assets/nhbc/products-and-services/tech-advice-and-guidance/guidance-for-the-safe-development-of-housing-on-land-affected-by-contamination.pdf [Accessed 16 June 2022].

[130] Britain from Above (2022). [online] Available at: https://britainfromabove.org.uk/en [Accessed 30 June 2022]

- British Geological Survey (BGS) Sheet 191 Saxmundham[131], 1:50,000 scale solid and drift edition;
- BGS GeoIndex Viewer[132];
- BGS Hydrogeological Map of the Chalk and Lower Greensand of Kent, Sheet 3b[133];
- Coal Authority Interactive Map[134];
- Environment Agency (EA), Catchment Data Explorer[135];
- Environment Agency Report SC040016/R, New Groundwater Vulnerability Mapping Methodology in England and Wales[136;]
- GeoSuffolk, records of Regionally Important Geological Sites (RIGS), referred to in Suffolk as Local Geological Sites (LoGS) and Suffolk County Geodiversity Sites[137];
- Natural England, Designated Sites View[138];
- Multi-Agency Geographic Information for the Countryside (MAGIC) interactive map (DEFRA, 2022)[139]; and
- National Library of Scotland, georeferenced historical maps for the period 1885 - 1970, (NLS, 2022)[140].

Baseline

Geology

Superficial deposits

2.6.4.2 The superficial geology present beneath the Suffolk Scoping Boundary is variable, as shown on **Figure 2.6.1 Superficial Geology**.

[131] British Geological Survey (1996). Sheet 191, Saxmundham, 1:50,000 scale solid and drift, geological map, BGS, Keysworth.

[132] British Geological Survey (2022). Geoindex Onshore. [online] Available at: https://mapapps2.bgs.ac.uk/geoindex/home.html [Accessed 30 June 2022].

[133] British Geological Survey (1970). Sheet 3b: Hydrogeological Map of the Chalk and Lower Greensand of Kent – Folkestone Beds and Hythe Beds (1:126,720). BGS, Keysworth.

[134] The Coal Authority, Interactive Viewer (2022). [online] Available at: https://mapapps2.bgs.ac.uk/coalauthority/home.html [Accessed 30 June 2022].

[135] Environment Agency (2022). Catchment Data Explorer. [online] Available at: https://environment.data.gov.uk/catchment-planning/WaterBody/GB520503613602 [Accessed 30 June 2022].

[136] Environment Agency (2017). Groundwater vulnerability mapping methodology. [online] Available at: https://www.gov.uk/government/publications/updated-groundwater-vulnerability-maps-improvements-to-methodology-and-data [Accessed 30 June 2022].

[137] Geosuffolk (2022). Suffolk County Geodiversity Sites. [online] Available at: https://geosuffolk.co.uk/images/GeologySites/Suffolk_County_Geodiversity_Sites_2021.pdf [Accessed 30 June 2022].

[138] Natural England (2022). Designated Sites View. 2022 [online] Available at: https://designatedsites.naturalengland.org.uk/SiteSearch.aspx [Accessed 30 June 2022].

[139] Department for the Environment, Food and Rural Affairs (2022). Multi-Agency Geographic Information for the Countryside. [online] Available at: https://magic.defra.gov.uk/MagicMap.aspx [Accessed 30 June 2022].

[140] National Library of Scotland (2022). Map Images. [online] Available at: https://maps.nls.uk/geo/explore/side-by-side/#zoom=5&lat=56.00000&lon=-4.00000&layers=1&right=ESRIWorld [Access 30 June 2022].

2.6.4.3 Superficial deposits are present across the majority of the Suffolk Scoping Boundary and comprise the various lithologies of the Lowestoft Formation, described by the BGS[141] as "*chalky till, together with outwash sands and gravels, silts and clays*".

2.6.4.4 Predominantly in the west of the Suffolk Scoping Boundary the Lowestoft Formation is indicated to comprise "diamicton" (commonly referred to as 'boulder clay'). In the eastern part of the Suffolk Scoping Boundary the Lowestoft Formation comprises granular deposits of "sand and gravel", with limited areas of "clay and silt".

2.6.4.5 Elsewhere within the Suffolk Scoping Boundary there are also limited areas shown to be underlain by the following superficial deposits:

- In the southeast, adjacent to the coast, Tidal Flat Deposits, comprising "*consolidated soft silty clay, with layers of sand, gravel and peat*";
- Adjacent to the coastline a 'strip' of Marine Beach Deposits, comprising "*Shingle, sand, silt and clay*";
- Within the valley associated with the Hundred River deposits of Alluvium, comprising "normally soft to firm consolidated, compressible silty clay, but can contain layers of silt, sand, peat and basal gravel" is recorded;
- Within the valley floor of the Leiston Beck in the northeast of the Suffolk Scoping Boundary, deposits of Peat are recorded; and
- In the west of the Suffolk Scoping Boundary, within the valley formed by a tributary of the River Alde, a very limited area of Head, comprising "*gravel, sand and clay … locally with lenses of silt, clay or peat and organic material*" are recorded.

2.6.4.6 There are also some areas within the Suffolk Scoping Boundary where the BGS mapping indicates an absence of superficial deposits[132]. These areas are predominantly adjacent to the Hundred River in the vicinity of Knodishall and Aldringham, within the valley to the northeast of Leiston, and adjacent to 'Sizewell Gap' (south of Sizewell).

Bedrock geology

2.6.4.7 The bedrock geology present beneath the Suffolk Scoping Boundary is shown on **Figure 2.6.2 Bedrock Geology.**

2.6.4.8 The majority of the northern two-thirds of the Suffolk Scoping Boundary is shown to be underlain by bedrock of the Crag Formation, described by the BGS[141] as "*Sands, gravels, silts and clays. The sands are characteristically dark green [to] bright orange …The gravels in the lower part of the group are almost entirely composed of flint*". The BGS record that this Formation is up to 70m thick.

2.6.4.9 The majority of the southern third of the Suffolk Scoping Boundary is shown to be underlain by bedrock of the Chillesford Church Sand Member, described by the BGS[141] as "*well sorted, fine-to medium-grained, micaceous, buff to pale brown, quartz sand*". The BGS record that this Member is up to 13m thick.

[141] British Geological Survey (2022). The BGS Lexicon of Named Rock Units. [online] Available at: https://webapps.bgs.ac.uk/lexicon/ [Accessed 30 June 2022].

2.6.4.10 A smaller area adjacent to the coast in the south-east of the Suffolk Scoping Boundary is shown to be underlain by the Corraline Crag, described by the BGS as "*Carbonate-rich skeletal sands… Basal lag gravel rich in pebbles of phosphatic mudstone*". The BGS record that this stratum is up to 25m thick.

2.6.4.11 Very limited areas in the south-east and north of the Suffolk Scoping Boundary are underlain by the Chillesford Clay Member, described by the BGS as "*pale grey silty clay, with rare sand laminae*". The BGS record that this Member is up to 6m thick.

2.6.4.12 Underlying the Crag Formation, Corraline Crag and Chilesford Clay member in large parts of the Suffolk Scoping Boundary is the Thames Group, Lambeth Group, Ormesby Clay Formation and White Chalk Subgroup. There is the potential for some of these strata to be absent, with the White Chalk Subgroup and Crag Formation in direct contact.

Coal mining

2.6.4.13 The Coal Authority's interactive map viewer[134] indicates that the Suffolk Scoping Boundary is not located within a coal mining reporting area or a development high risk area. The interactive map shows that there are no recorded mine entries, fissures or breaklines, areas of historical recorded shallow mining, coal outcrops, coal mine abandonment plans or Development High Risk Areas within the Suffolk Scoping Boundary.

Geo-conservation

2.6.4.14 A review of the GeoSuffolk records[137] and DEFRA's MAGIC map[139] indicates that there are no Regionally Important Geological Sites (RIGS) (also referred to as Local Geological Sites [LoGS]), County Geo-Sites or geological Sites of Special Scientific Interest (SSSI) present within the Suffolk Scoping Boundary or wider study area.

2.6.4.15 The Leiston-Aldeburgh SSSI is located to the east of the Suffolk Scoping Boundary and Sizewell Marshes SSSIs are present in the northeast of the Suffolk Scoping Boundary, however neither of these SSSI are designated for geological reasons.

2.6.4.16 Alde-Ore Estuary SSSI and Ramsar is present immediately south of the Suffolk Scoping Boundary within the study area. This SSSI is designated[138] partly on the basis of its geological value, however both areas referred to in the designation (Orford Ness and cliffs at Gedgrave) are located approximately 9km to the south of the Suffolk Scoping Boundary.

Minerals

2.6.4.17 A review of the Suffolk County Council (SCC) Minerals and Waste Local Plan (MWLP)[123] indicates that approximately half of the Suffolk Scoping Boundary is located within a Mineral Consultation Area (MCA).

Radon

2.6.4.18 Based on the UK Radon maps[142] the study area is in an area where less than 1% of homes are above the action level and therefore it is considered there is a low risk to the Project from Radon in relation to geology and hydrogeology.

Hydrogeology

Aquifer Designation – Superficial

2.6.4.19 DEFRA's MAGIC map[139] indicates that the superficial deposits are classified as follows:

- Lowestoft Formation – Diamicton = Secondary Undifferentiated Aquifer
- Lowestoft Formation - Clay and Silt = Secondary B Aquifer
- Lowestoft Formation - Sand and Gravel = Secondary A Aquifer
- Marine Beach and Blown Sand Deposits = Secondary A Aquifer
- Alluvium = Secondary A Aquifer
- Tidal Flat Deposits and Head Deposits = Unproductive Strata
- Peat = Unproductive Strata

2.6.4.20 Secondary A Aquifers are described by the Environment Agency (EA) as "permeable layers that can support local water supplies, and may form an important source of base flow to rivers". Secondary B Aquifers are described by the EA as "mainly lower permeability layers that may store and yield limited amounts of groundwater through characteristics like thin cracks (called fissures) and openings or eroded layers". The Secondary Undifferentiated Aquifer classification is applied by the EA "where it is not possible to apply either a Secondary A or B definition because of the variable characteristics of the rock type. These have only a minor value"[143].

2.6.4.21 Unproductive Strata are described by the EA as "largely unable to provide usable water supplies and are unlikely to have surface water and wetland ecosystems dependent on them"[143].

2.6.4.22 Groundwater flow within the shallow aquifer is likely to be generally to the east/southeast towards the Hundred River and the sea. Groundwater levels and movement may exhibit some tidal influence in the eastern part of the Suffolk Scoping Boundary in proximity to the sea.

Aquifer designation – bedrock

2.6.4.23 The bedrock of the Crag Group, Chillesford Church Sand Member and White Chalk Subgroup is classified by the EA as a Principal Aquifer, defined by the EA as rock

[142] UK Radon (2022). Radon Maps. [online] Available at: https://www.ukradon.org/radonmaps/ [Accessed on 30 June 2022]

[143] Environment Agency (2017). Protect groundwater and prevent groundwater pollution. [online] Available at: https://www.gov.uk/government/publications/protect-groundwater-and-prevent-groundwater-pollution/protect-groundwater-and-prevent-groundwater-pollution [Accessed 30 June 2022].

layers that "*provide significant quantities of drinking water, and water for business needs. They may also support rivers, lakes and wetlands*"[143].

2.6.4.24 The bedrock deposits of the Chillesford Clay Member (limited extent only) and the Thames Ground are classified as Unproductive Strata and the Lambeth Group is classified as a Secondary A Aquifer.

2.6.4.25 The contours of "*Potentiometric surface of the Crag*" as shown on the relevant BGS' hydrogeological map[133], indicate that the piezometric surface within the Suffolk Scoping Boundary is likely to be between five and zero metres above Ordnance Datum (mAOD).

2.6.4.26 The groundwater in the different strata (superficial and bedrock) may therefore be in hydraulic continuity.

Groundwater vulnerability

2.6.4.27 DEFRA's MAGIC map[139] indicates that the groundwater in the north-western part of the Suffolk Scoping Boundary and the wider study area, i.e., approximately beneath areas where Lowestoft Formation Diamicton is present overlying the Crag Group, is of "Medium – High" vulnerability.

2.6.4.28 In the south-eastern part of the Suffolk Scoping Boundary and wider study area, i.e., where the Lowestoft Formation Clay and Silt, and Sand and Gravel overlie the Crag Group, the groundwater is shown to be of "Medium - Low" to "Medium – High" vulnerability.

2.6.4.29 The EA define High vulnerability as "*Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits*", and areas of Low vulnerability as "*Areas that provide the greatest protection to groundwater from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability*". Medium vulnerability is described as intermediate between Low and High vulnerability.

Groundwater source protection zones

2.6.4.30 Source Protection Zones in relation to the Suffolk Onshore Scheme are shown on **Figure 2.6.3 Hydrogeology**.

2.6.4.31 DEFRA's MAGIC map[139] indicates that the majority of the study area is located within a groundwater Source Protection Zone (SPZ) 3 that appears to be associated with groundwater abstractions in Leiston, Knodishall and Saxmundham which appears to be abstracting from the Crag Formation.

2.6.4.32 A small part of the study area, to the south of Knodishall, is located within an SPZ 2.

2.6.4.33 A SPZ1 is defined as the inner zone which is a 50-day travel time of a pollutant to the source. A SPZ2 Outer Zone is defined as a 400-day travel time of a pollutant to a source. A SPZ3 is defined as the total catchment, which is the area around a source within which all the groundwater ends at the abstraction point[144].

[144] Environment Agency (2019). Groundwater Source Protection Zones. [online] Available at: https://www.gov.uk/guidance/groundwater-source-protection-zones-spzs [Accessed 15 July 2022].

2.6.4.34 The map[139] also shows that the study area is not located within a groundwater Drinking Water Safeguard Zone (DWSZ) or a groundwater Nitrate Issues Priority Zone (NIPZ). The nearest groundwater DWSZ and NIPZ are located approximately 22km to the southwest and 44km to the northwest of the Suffolk Scoping Boundary, respectively.

Groundwater body

2.6.4.35 The EA's Catchment Data Explorer[135] indicates that groundwater beneath the Scoping Boundary and within the wider study area is part of the Waveney and East Suffolk Chalk and Crag groundwater body (ref: GB40501G400600). This groundwater body received an overall Water Framework Directive (WFD) classification of "Poor" in 2019. This classification can be further broken down into classifications of "Poor" for both chemical quality and quantitative status. The Chalk and the Crag are likely to be in direct continuity in some parts of the catchment, in large parts of the Suffolk Scoping Boundary they are separated by the Thames Group, Lambeth Group and Ormesby Clay.

Hydrology

2.6.4.36 The potential effects relating to hydrology are assessed within **Part 2, Chapter 5, Water Environment**, however where there is potential for groundwater to interact with and impact surface waters, those sensitive receptors are identified within this chapter in order to determine the potential effects from any contamination.

2.6.4.37 The Suffolk Scoping Boundary is situated within the catchments of the Hundred River, and the Leiston Beck, both of which are designated main rivers. The Hundred River flows generally to the southeast through / adjacent to the Suffolk Scoping Boundary before discharging into the sea at Thorpeness. The Leiston Beck flows generally northeast through the northeast part of the Suffolk Scoping Boundary before out falling to the sea at Minsmere.

2.6.4.38 The Environment Agency Catchment Data Explorer[135] indicates that both the Hundred River and Leiston Beck catchments were given a 'Moderate' Ecological Status and 'Fail' Chemical Status in 2019 due to an excess in organoboronic and mercury Compounds.

2.6.4.39 DEFRA's MAGIC map[139] indicates that the Suffolk Scoping Boundary is not located within a Drinking Water Protected Area for Surface Water.

Environmentally sensitive sites

2.6.4.40 A review of DEFRA's MAGIC map[139] indicates the following environmentally sensitive sites present within the study area:

- Leiston-Aldeburgh SSSI, located in the southeast of the study area. The Sandlings Special Protection Area (SPA) occupies approximately the northern half of the SSSI.
- Sizewell Marshes SSSI is present in the northeast of the Suffolk Scoping Boundary (area of coastal marshland) and the study area, located to the west of Sizewell Nuclear Power Station.
- Alde-Ore Estuary SSSI is present within the study area, approximately 100m south of the Suffolk Scoping Boundary, comprising marshland and estuary adjacent to

the River Alde. The Alde-Ore & Butley Estuaries Special Area of Conservation (SAC) and the Alde-Ore Estuary SPA occupy the same area as this SSSI. The estuary is also a wetland of international importance as designated by the Ramsar Convention.

- The Haven Local Nature Reserve (LNR) occupies a limited area of beach and coastal marshland in the southeast of the Suffolk Scoping Boundary, extending approximately 150m south into the study area.
- Two areas of ancient woodland are present in the south and southwest of the Suffolk Scoping Boundary.

Potentially contaminative land uses

2.6.4.41 Much of the Suffolk Scoping Boundary and wider study area appears to have remained as undeveloped agricultural land since the earliest available historical mapping from the National Library Scotland, dated 1885[140]. In these areas it is considered that there is a very low risk of significant sources of potential contamination.

2.6.4.42 There are however areas within the Suffolk Scoping Boundary and wider study area that have a history of potentially contaminative land use or where the current land use is potentially contaminative. Where identified, readily available information relating to these Potential Sources of Contamination (PSC) has been gathered and is presented in the table below with a corresponding Risk Rating for their potential for generation of significant contamination. The locations of these are presented on **Figure 2.6.4 Potential Sources of Contamination**.

Table 2.6.1: Potential sources of contamination

PSC number	Name	Location	Description	Risk ranking
PSC within Suffolk Scoping Boundary				
1	Farms	Many located across the study area	Present since the earliest mapping dated 1885. Typically comprise a farmhouse with outbuildings, barns, farmyard etc. Potential for on-site storage of agrichemicals and fuels.	Low
2	Historical Pits and Quarries	Many located across the study area	Present since the earliest mapping dated 1885. Former pits and quarries, typically limited in size. Most first recorded in the late 1800s / early 1900s and typically not recorded after 1950 and potentially infilled.	Low

3	Historical brickworks	Approximate NGR 644590 E, 263086 N. Northern edge of Leiston	Former brick works and brick pit. Recorded from earliest available mapping dated 1885 until the map dated 1892-1914. The pits appear to have been infilled based on Google Earth Aerial photography dated of the site from 2000. Part of the historical brickworks is classified as a historical landfill by the Environment Agency (see PSC13)	Low
4	Historical Allotment Gardens	Approximate NGRs 645735 E, 263320 N and 641360 E, 260610 N.	Historical allotment gardens recorded in late 1800s / early 1900s.	Very Low
5	Concrete batching plant	Approximate NGR 641335 E, 264365 N	Concrete surfaced yard, storage of aggregates.	Low
6	Former RAF Leiston Airfield	Approximate 700m radius around NGR 642990 E, 264331 N	Historical airfield, constructed 1942 - closed 1955. Sold off / returned to public 1950s - 1965. Airfield within the Suffolk Scoping Boundary comprises runways, hangars, grassed land between runways. Airfield uses within the wider study area comprise fuel storage and technical areas. Potential for hydrocarbons, radiological contaminants, inorganic compounds, unexploded ordnance, asbestos.	Moderate to high
7	Aldhurst Farm Landfill	Approximate NGR 644955 E, 263262 N	Located within historical pit/quarry. Historical landfill operated between 1990 and 2006 by Mike Taylor. Licenced to receive inert, industrial, commercial and domestic waste. Has a gas control system. Ref: EAHLD02429, WRC Ref: 3500/0567, WML: 70716. Site Ref: SC10, SFK/LS/092/10. The pit/quarry is first shown on map dated 1888-1913. By the Google Aerial imagery dated 2000 the pit appears to have been restored.	Moderate

8	Abbey Pit Landfill	Approximate NGR 645150, 263780	Located within historical pit/quarry. Historical landfill. Details of operational dates and wastes received not available. Mapping dated 1888-1913, first shows the pit/quarry. The earliest available Google Aerial imagery dated 2000, shows no evidence of the landfill or a pit/quarry. Ref: EAHLD03297. WRC Ref: 3500.0605. Site Ref: OFSSC10.	Moderate
9	Waste Water Treatment Works	Approximate NGR 645115 E, 263158 N	Waste Water Treatment Works (WWTW). Small-scale works with primary and secondary treatment[145], discharging to the Leiston Beck. Historical mapping indicates that the WWTW was constructed in the late 1800s/early 1900s and comprised a 'tank' and a probable settlement lagoon. The WWTW was further developed during the 1900s with a new inlet works and additional tanks in the area of the former lagoon. The 1949 – 1970 map records a small area of possible sludge bed/refuse heap in the north-eastern corner of the WWTW.	Low
10	Railway (including dismantled railway)	Crosses Suffolk Scoping Boundary and study area in the northwest and southeast.	Present since the earliest mapping dated 1885. Railway line appears to have been constructed approximately "at-grade". Line between Leiston and Aldeburgh appears to have closed during the second half of the 20th Century. However, the railway lines are still in place between Saxmundham and Leiston but appears to have been dismantled from Leiston onwards.	Low
11	Leiston Household Waste	East of Lover's Lane, Leiston, NGR	Household waste recycling centre, located entirely on hardstanding with no on site disposal. The site is licenced as a Household Waste	Low

[145] European Commission Urban Waste Water Website: United Kingdom (2022). [online] Available at: https://uwwtd.eu/United-Kingdom/treatment-plant/ukenanawtp000159/2018 [Accessed 30 June 2022].

	Recycling Centre	N645500, E263400	amenity Centre and the licence was first issued in 1994.	
PSCs within wider study area				
12	Carr's Pit Landfill	Located on western edge of former brick pit (PSC 3). Approximate NGR 644590 E, 263086 N.	Part of the historical brickworks (PSC3) and comprises a historical landfill operated between 1976 and 1987 by Henry Boot Ltd. Licenced to receive inert and commercial waste. Ref: EAHLD01884, WRC Ref: 3500/0617, Site Ref: 907/01/16/3	Moderate
13	Farms	Several located within wider study area. Present since the earliest mapping viewed dated 1885.	Typically comprise a farmhouse with outbuildings, barns, farmyard etc. Potential for on-site storage of agrichemicals and fuels.	Low
14.	Historical Pits and Quarries	Many located within wider study area. Present since the earliest mapping dated 1885.	Former pits and quarries, typically limited in size. Most first recorded in the late 1800s / early 1900s and typically not recorded after 1950 and potentially infilled.	Low
15	Electrical Substations x 3	Approximate NGRs 646610 E, 262710 N, 646860 E, 262850 N and, 643060 E, 261165 N	2 x large substations associated with Sizewell Nuclear Power Station – constructed on greenfield land between 2007 and 2019. Due to age of construction is considered unlikely to utilise Poly-Chlorinated Biphenyl (PCB) containing oils or oil-cooled cables (TPHs). Older substation at Coldfair Green constructed between 1970 and 2000 and may have used PCB containing oils.	Low
16	Brickworks	Approximate NGR 645310 E, 262180N	Historical brickworks present since the mapping dated 1888 to 1913 until the mid-20th Century where it is no longer shown.	Low

Future Baseline

2.6.4.43 There are no foreseeable significant changes anticipated in relation to geology, hydrogeology or land contamination either prior to, or during, the construction and operational phases. It is assumed that any man-made changes (i.e., new developments) would be appropriately permitted and operated to prevent the creation of potentially adverse ground conditions or impacts to controlled waters.

2.6.5 Embedded and Control & Management Measures

Embedded Measures

2.6.5.1 The Project has, wherever possible, avoided sensitive features, such as groundwater SPZ 1, through the options appraisal.

Control and Management Measures

2.6.5.2 For the purpose of assessing the effects of the Project, it has been assumed that best practice health and safety and environmental controls will be in place during constriction, in accordance with standard good practice across the construction industry.

2.6.5.3 The outline Code of Construction Practice (CoCP) contained within **Appendix 1.4.A Outline Code of Construction Practice** contains a list of relevant good practice measures which will be adopted, including the following key commitments relating to geology and hydrogeology:

- GH01: Intrusive ground investigations and assessment will be undertaken prior to construction which will inform appropriate geotechnical design in relation to the site/structure specific ground conditions including ground instability/adverse ground conditions.
- GH02: Construction methods such as appropriate piling techniques (if required) to minimise the risk of mixing of aquifer bodies through the creation of new pathways. This includes the provision of a Foundation Works Risk Assessment (FWRA), which would be undertaken once the proposed foundation solutions are known, in accordance with EA guidance ‘Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination’ (EA, 2001).
- GH03: Use of appropriate occupational health and safety measures e.g. Personal Protective Equipment (PPE), and statutory health and safety compliance (e.g. compliance with the Confined Spaces Regulations, 1997 in relation to ground gas from working in confined spaces/trenches) to minimise the risks associated with anticipated/unexpected contamination. Based on risk assessment informed by site specific information.
- GH04: Appropriate training of construction and maintenance workers in the handling and use of potentially hazardous substances and the associated risks.
- GH05: All use and storage of chemicals to be undertaken in accordance with EA Pollution Prevention Guideline (PGG) notes, and controlled and monitored under

the Construction and Environmental Management Plan (CEMP) and general construction site good environmental and waste management procedures

- GH06: The control of earthworks or materials movement (including any re-use of materials) under appropriate Environmental Permits, exemptions or CL:AIRE 'The definition of Waste: The development industry Code of Practice (2011).
- GH07: Any temporary dewatering activities during construction will be undertaken in accordance with EA guidance, and if required, an Abstraction Licence and Environmental Permit (for the discharge) and will be limited to the depth and time required to facilitate construction activities.
- GH09: A protocol for dealing within any unexpected contamination.

2.6.6 Potential for Significant Effects

2.6.6.1 The geology and hydrogeology assessment will consider the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project**.

2.6.6.2 The proposed scope of the geology and hydrogeology assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

2.6.6.3 This section identifies the sources and impacts that that are relevant to the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme.

2.6.6.4 The potential for the Suffolk Onshore Scheme to result in the potential significant effects described in this section takes into account the embedded and control and management measures described in section 5.

Sources of construction impacts

- existing contamination;
- excavation of trenchless crossings;
- dewatering activities;
- general construction activities such as foundations;
- discharge of groundwater from dewatering;
- damage to sensitive receptors from the built environment;
- introduction of new contamination; and
- ground gas.

Sources of operational impacts

- introduction of new contamination;

- introduction of impermeable surfaces; and
- ground gas.

Sources of maintenance impacts

- introduction of new contamination; and
- ground gas.

Sources of decommissioning impacts

2.6.6.5 It is considered that the sources of impacts during decommissioning would be of a similar nature to those considered during the construction phase. Decommissioning would also be undertaken in accordance with relevant environmental legislation current at the time and in accordance with any required licences and permits. Decommissioning activities would be subject to an environmental management plan that would identify and mitigate the potential impacts of decommissioning activities that could harm sensitive receptors.

Potential impacts

2.6.6.6 Table 2.6.2 identifies the potential impacts that could result from the sources identified above.

Table 2.6.2: Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction and decommissioning	Existing contamination	Human health exposure to potential contamination through ground disturbance during construction and decommissioning	Yes - Has the potential to result in significant effects	**Scoped in**
Construction and decommissioning	Existing contamination	Mobilisation of existing contamination during general construction/decommissioning, impacting on land and/or groundwater quality	Yes - Has the potential to result in significant effects	**Scoped in**
Construction	Excavation of trenchless Crossings	Connection of two aquifer units at trenchless crossings	No - Not likely to result in a significant effect due to the incorporation of the	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			mitigation by design.	
Construction	Dewatering activities	Changes to groundwater levels, quality and groundwater flow caused by dewatering	Yes -Potential to result in a significant effect	**Scoped in**
Construction, maintenance, and decommissioning	Construction activities	Introduction of new potential contaminants to the environment from leaks, spills, fuels and oils	No - Not likely to result in a significant effect due to the incorporation of the mitigation by design.	Scoped out
Construction	Discharge of groundwater from dewatering	Physical and chemical changes to groundwater	No - Not likely to result in a significant effect due to the incorporation of the mitigation by design.	Scoped out
Construction, operation, maintenance, and decommissioning	Ground gas	Ingress and accumulation of ground gas in buildings/confined spaces/trenches – resulting in explosion/asphyxiation/exposure	Yes - Potential to result in a significant effect	**Scoped in**
Construction	General construction	Construction activities and the built development (operational phase) can be affected by natural geological hazards (dissolution features/soft ground/landslides/aggressive ground conditions etc)	No - Not likely to result in a significant effect due to the incorporation of the mitigation by design.	Scoped out
Construction	Built Environment	Damage to/destruction of designated sites of geological importance	Yes - Potential to result in a significant effect	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction and Operation	Built Environment	Sterilisation of safeguarded minerals	Yes -The Suffolk Scoping Boundary is within a mineral consultation area therefore there is the potential to result in significant effects.	**Scoped in**
Operation and maintenance	Existing contamination	Human health exposure to existing contamination	No - Not likely to result in a significant effect due to the nature of the project and the incorporation of the mitigation by design.	Scoped out
Operation and maintenance	Introduction of new contamination	Introduction of new potential contaminants to the environment from leaks, spills, fuels and oils during the operational phase	No - Not likely to result in a significant effect given the nature of the project and in consideration of best practice measures and maintenance.	Scoped out
Operation	Introduction of impermeable surfaces	Changes to groundwater levels and/or recharge rates	No - Not likely to result in significant effects due to the small surface area of the built parts of the project.	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			Any new areas of hardstanding would be designed to meet current drainage standards (see **Part 2, Chapter 5, Water Environment**).	

Impact Pathways with Receptors (Step 2)

Suffolk Converter Station Site 1 Emerging Preference

2.6.6.7 Table 2.6.3 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 1 Emerging Preference as shown on as shown on **Figure 2.1.4 Suffolk Site 1 Emerging Preference** and **Figure 2.1.9 Suffolk Site 1 Emerging Preference Option Area**.

Table 2.6.3: Impact pathways with receptors – Suffolk Site 1 Emerging Preference

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Human health exposure to existing contamination through ground disturbance during construction and decommissioning	Site workers, neighbours	Yes -Potential for existing contamination within the study area to result in significant effects	**Scoped in for construction and decommissioning** Scoped out for operation and maintenance
Mobilisation of existing contamination during general construction, impacting on land and/or groundwater quality	Environmentally sensitive sites, groundwater, Groundwater Dependant Terrestrial Ecosystems	Yes -Potential for existing contamination within the study area to result in significant effects	**Scoped in for construction and decommissioning** Scoped out for operation and maintenance

	(GWDTE), surface water, land quality.		
Changes to groundwater levels, quality and groundwater flow direction caused by dewatering and discharge	Environmentally sensitive sites, groundwater, GWDTE, surface water	Yes -Potential for dewatering to be required within the study area which could result in significant effects	**Scoped in for construction** Scoped out for operation, decommissioning, and maintenance
Ingress and accumulation of ground gas in buildings/confined spaces/trenches (construction and operation) – resulting in explosion/asphyxiation/exposure	Construction/ maintenance workers, future users, built environment	Yes -Potential for gas generating strata within study area which could result in significant effects	**Scoped in for construction, operation, maintenance and decommissioning**
Damage to/destruction of designated sites of geological importance	Designated sites of geological importance	Yes -Designated sites located within the study area which could be damaged and could result in significant effects	**Scoped in for construction** Scoped out for operation, maintenance and decommissioning
Sterilisation of safeguarded minerals	Mineral reserves	Yes -Mineral reserves are present within the study area which could be damaged and result in significant effects.	**Scoped in for construction and operation** Scoped out for maintenance and decommissioning

Suffolk Converter Station Site 1 Alternative

2.6.6.8 Table 2.6.4 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 1 Alternative Preference as shown on as shown on **Figure 2.1.7 Suffolk Site 1 Alternative** and **Figure 2.1.11 Suffolk Site 1 Alternative Option Area**.

Table 2.6.4: Impact pathways with receptors – Suffolk Site 1 Alternative

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out

Human health exposure to existing contamination through ground disturbance during construction and decommissioning	Site workers, neighbours	Yes -Potential for existing contamination within the study area to result in significant effects	**Scoped in for construction and decommissioning** Scoped out for operation and maintenance
Mobilisation of existing contamination during general construction, impacting on land and/or groundwater quality	Environmentally sensitive sites, groundwater, GWDTE, surface water, land quality	Yes -Potential for existing contamination within the study area to result in significant effects	**Scoped in for construction and decommissioning** Scoped out for operation and maintenance
Changes to groundwater levels, quality and groundwater flow direction caused by dewatering and discharge	Environmentally sensitive sites, groundwater, GWDTE, surface water	Yes -Potential for dewatering to be required within the study area which could result in significant effects	**Scoped in for construction** Scoped out for operation, maintenance and decommissioning
Ingress and accumulation of ground gas in buildings/confined spaces/trenches (construction and operation) – resulting in explosion/asphyxiation/exposure	Construction/ maintenance workers, future users, built environment	Yes -Potential for gas generating within study area which could result in significant effects	**Scoped in for construction, operation, maintenance and decommissioning**
Sterilisation of safeguarded minerals	Mineral reserves	Yes -Mineral reserves are present within the study area which could be damaged and result in significant effects.	**Scoped in for construction and operation** Scoped out for maintenance and decommissioning

Suffolk Converter Station Site 3 Emerging Preference

2.6.6.9 Table 2.6.5 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Emerging Preference as shown on as shown on **Figure 2.1.5 Suffolk Site 3 Emerging Preference** and **Figure 2.1.10 Suffolk Site 3 Emerging Preference Option Area**.

Table 2.6.5: Impact pathways with receptors – Suffolk Site 3 Emerging Preference

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Human health exposure to existing contamination through ground disturbance during construction	Site workers, neighbours	Yes -Potential for existing contamination within the study area to result in significant effects	**Scoped in for construction and decommissioning** Scoped out for operation and maintenance
Mobilisation of existing contamination during general construction, impacting on land and/or groundwater quality	Environmentally sensitive sites, groundwater, GWDTE, surface water, land quality	Yes -Potential for existing contamination within the study area to result in significant effects	**Scoped in for construction and decommissioning** Scoped out for operation and maintenance
Changes to groundwater levels, quality and groundwater flow direction caused by dewatering and discharge	Environmentally sensitive sites, groundwater, GWDTE, surface water	Yes -Potential for dewatering to be required within the study area which could result in significant effects	**Scoped in for construction** Scoped out for operation, decommissioning and maintenance
Ingress and accumulation of ground gas in buildings/confined spaces/trenches (construction and operation) – resulting in explosion/asphyxiation/exposure	Construction/ maintenance workers, future users, built environment	Yes -Potential for gas generating within study area which could result in significant effects	**Scoped in for construction, operation, maintenance and decommissioning**
Damage to/destruction of designated sites of geological importance	Designated sites of geological importance	Yes -Designated sites located within the study area which could be damaged and could result in significant effects	**Scoped in for construction** Scoped out for operation, maintenance and decommissioning
Sterilisation of safeguarded minerals	Mineral reserves	Yes -Mineral reserves are present within the study area which could be	**Scoped in for construction and operation**

		damaged and result in significant effects.	Scoped out for maintenance and decommissioning

Suffolk Converter Station Site 3 Alternative (Option 1)

2.6.6.10 Table 2.6.5 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Alternative (Option 1) as shown on as shown on **Figure 2.1.7 Suffolk Site 3 Alternative (Option 1)** and **Figure 2.1.12 Suffolk Site 3 Alternative (Option 1).**

Table 2.6.6: Impact pathways with receptors – Suffolk Site 3 Alternative (Option 1)

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Human health exposure to existing contamination through ground disturbance during construction	Site workers, neighbours	Yes -Potential for existing contamination within the study area to result in significant effects	**Scoped in for construction and decommissioning** Scoped out for operation and maintenance
Mobilisation of existing contamination during general construction, impacting on land and/or groundwater quality	Environmentally sensitive sites, groundwater, GWDTE, surface water, land quality	Yes -Potential for existing contamination within the study area to result in significant effects	**Scoped in for construction and decommissioning** Scoped out for operation and maintenance
Changes to groundwater levels, quality and groundwater flow direction caused by dewatering and discharge	Environmentally sensitive sites, groundwater, GWDTE, surface water	Yes -Potential for dewatering to be required within the study area which could result in significant effects	**Scoped in for construction** Scoped out for operation, maintenance, and decommissioning
Ingress and accumulation of ground gas in buildings/confined spaces/trenches (construction and operation) – resulting in explosion/asphyxiation/exposure	Construction/ maintenance workers, future users, built environment	Yes -Potential for gas generating within study area which could	**Scoped in for construction, operation, maintenance and decommissioning**

		result in significant effects	
Sterilisation of safeguarded minerals	Mineral reserves	Yes -Mineral reserves are present within the study area which could be damaged and result in significant effects.	**Scoped in for construction and operation** Scoped out for maintenance and decommissioning

Suffolk Converter Station Site 3 Alternative (Option 2)

2.6.6.11 Table 2.6.6 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Alternative (Option 2) as shown on as shown on **Figure 2.1.8 Suffolk Site 3 Alternative (Option 2)** and **Figure 2.1.13 Suffolk Site 3 Alternative (Option 2) Option Area**.

Table 2.6.7: Impact pathways with receptors – Suffolk Site 3 Alternative (Option 2)

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Human health exposure to existing contamination through ground disturbance during construction	Site workers, neighbours	Yes -Potential for existing contamination within the study area to result in significant effects	**Scoped in for construction and decommissioning** Scoped out for operation and maintenance
Mobilisation of existing contamination during general construction, impacting on land and/or groundwater quality	Environmentally sensitive sites, groundwater, GWDTE, surface water, land quality	Yes -Potential for existing contamination within the study area to result in significant effects	**Scoped in for construction and decommissioning** Scoped out for operation and maintenance
Changes to groundwater levels, quality and groundwater flow direction caused by dewatering and discharge	Environmentally sensitive sites, groundwater, GWDTE, surface water	Yes -Potential for dewatering to be required within the study area which could result in significant effects	**Scoped in for construction** Scoped out for operation,

			decommissioning and maintenance
Ingress and accumulation of ground gas in buildings/confined spaces/trenches (construction and operation) – resulting in explosion/asphyxiation/exposure	Construction/ maintenance workers, future users, built environment	Yes -Potential for gas generating within study area which could result in significant effects	**Scoped in for construction, operation, maintenance and decommissioning**
Damage to/destruction of designated sites of geological importance	Designated sites of geological importance	Yes -Designated sites located within the study area which could be damaged and could result in significant effects	**Scoped in for construction** Scoped out for operation, maintenance and decommissioning
Sterilisation of safeguarded minerals	Mineral reserves	Yes -Mineral reserves are present within the study area which could be damaged and result in significant effects.	**Scoped in for construction and operation** Scoped out for maintenance and decommissioning

2.6.7 Proposed Assessment Methodology

2.6.7.1 The proposed generic project wide approach to the assessment methodologies is presented in **Part 1, Chapter 5, EIA Approach and Methodology**. However, whilst this has informed the approach used in this chapter, it is necessary to set out how this methodology will be applied and adapted as appropriate, to address the specific needs of the assessment in relation to geology and hydrogeology.

Proposed Data Sources

2.6.7.2 The following data sources are proposed to proposed to be used to inform the assessment

- Historical borehole records held by the BGS;
- Groundwater abstraction details as available from the EA and LPAs;
- Any relevant information regarding historical ground contamination that the LPAs hold; and
- Any relevant information held by the LPAs regarding geological sites.

Proposed Assessment Methodology

2.6.7.3 The methodology which has been followed for the work undertaken to date, and which will be developed during the EIA process, builds on the guidance set out earlier in this chapter for environmental effects assessed as likely to be significant. Therefore, to inform the ES, additional data gathering will be undertaken, building on the initial appraisal of baseline conditions provided in this scoping report and incorporating any additional information received from the Environment Agency and Local Authority (in response to requests for information), together with stakeholder responses from the Scoping Opinion.

2.6.7.4 The baseline information will be used to identify potential source-pathway-receptor linkages and inform a risk-based assessment of the effects of the project in relation to geology and hydrogeology. The risk based assessment will be undertaken following a tiered approach as supported by guidance provided in land contamination risk management (LCRM)[125], with progression through the different Tiers (Tier 1 Preliminary Risk Assessment, Tier 2 Generic Quantitative Risk Assessment and Tier 3 Detailed Quantitative Risk Assessment) dependent on the outcome of each previous Tier (therefore proportionate).

2.6.7.5 In the context of the length and size of the study area, and to provide a comprehensive yet proportionate assessment, an additional Tier (Tier 0) is proposed for the ES relating to geology and hydrogeology.

2.6.7.6 A Tier 0 assessment will be undertaken as a first stage screening of the Suffolk Scoping Boundary and study area to identify potential pollutant linkages and assign a risk rating based on potential for significant contamination to be present. Those sources which are assessed to have a moderate, high or very high potential risk of contamination will be taken forward for further assessment to ensure the assessment is targeted in areas where significant effects are most likely. Where a very low or low risk rating is assessed, these areas will not be taken forward for further assessment in the ES on the basis they have a low likelihood of significant effects. The potential risk of contamination will be identified based on the historical and current land use:

Table 2.6.8: Criteria for classifying potential for generating contamination

Classification score	Potential for generating contamination
Very Low	Land Use Examples: Residential, retail or office use, agriculture. Contamination Potential: Limited
Low	Land Use Examples: Recent small scale industrial and light industry Contamination Potential: Locally slightly elevated concentrations
Moderate	Land Use Examples: Railway yards, collieries, scrap yards, inert landfills Contamination Potential: Possible widespread slightly elevated concentrations and locally elevated
High	Land Use Examples: Heavy industry, non-hazardous landfills

	Contamination Potential: Possible widespread elevated concentrations
Very High	Land Use Examples: Hazardous waste landfills, gas works, chemical works Contamination Potential: Likely widespread elevated concentrations

2.6.7.7 Risks associated with unexpected contamination will be managed through the protocols and good practice measures identified within the CoCP.

2.6.7.8 In order to evaluate whether the presence of a source of contamination could potentially lead to harmful consequences, a source-pathway-receptor methodology is adopted, with the underlying principle that the identification of pollutant linkages consists of the following three elements

- A source/hazard (a substance or situation that has the potential to cause harm or pollution);
- A pathway (a means by which the hazard moves along / generates exposure); and
- A receptor/target (an entity that is vulnerable to the potential adverse effects of the hazard).

2.6.7.9 Whilst the contamination may be a hazard it would not constitute a risk unless a pathway and receptor are also present, and a pollutant linkage can be determined. Therefore, in assessing the potential for contamination to cause a significant effect: the extent and nature of the potential source or sources of contamination must be assessed; any pathways present must be identified; and sensitive receptors or resources identified and appraised to determine their value and sensitivity to contamination related impacts.

2.6.7.10 The methodology adopted in this chapter is qualitative with a progression from factual information (stated with reasonable certainty) regarding the baseline conditions, to appraisal informed by professional judgement and expression of opinions on the relative significance.

2.6.7.11 The risk assessment approach proposed in this methodology will be transposed into EIA classification as follows;

- For each potential effect the receptor sensitivity and impact magnitude will be assigned using the Tables 2.6.9 and 2.6.10 below, which will then be combined to give a significance of effect using the matrix provided in Table 2.6.11.

2.6.7.12 There is no equivalent published assessment methodology that relates to impacts relating to geology (e.g. geo-conservation). For consistency, a similar approach will be adopted to assess these effects (i.e. combination of receptor identification and associated sensitivity and magnitude of potential impacts) as stated above.

2.6.7.13 A Minerals Resource Assessment (MRA) will be completed, in accordance with the requirements of the mineral's local plans and with regard to Minerals Safeguarding

Practice Guidance[146]. The MRA will be used to inform the assessment in the geology and hydrogeology chapter in relation to minerals.

2.6.7.14 A source-pathway-receptor linkage approach, as detailed above, will also be applied to assessing the potential effects on groundwater which relate to the geological/hydrogeological settings between the Order Limits and identified groundwater abstractions and receptors, in accordance with the policy guidance outlined at the start of this chapter. Localised Hydrogeological Risk Assessment may also be required where dewatering is proposed. Assessment of the impacts on groundwater receptors will be undertaken based on the approach and methodology described in Environment Agency, Hydrogeological Impact Appraisal for dewatering guidance (2007).

2.6.7.15 The proposed assessment approach in this chapter is based on desk study information. 'Reasonable worst case' assumptions regarding the likely ground conditions will be made when assessing effects in the ES, determined from the desk study information.

Sensitivity of receptors

2.6.7.16 The criteria used to determine the value and sensitivity of receptors specific to geology and hydrogeology are set out in Table 2.6.9. These criteria are based on the generic criteria presented in **Part 1, Chapter 5, EIA Approach and Methodology**.

Table 2.6.9: Value/sensitivity criteria

Value/sensitivity	General criteria
Very High	Very high importance and rarity. International scale and limited potential for substitution **Geology**: Very rare and of international importance with no potential for replacement (e.g. UNESCO World Heritage Sites, UNESCO Global Geoparks, Site of Special Scientific Interest (SSSI) and Geological Conservation Review (GCR) where citations indicate features of international importance). Geology meeting international designation citation criteria which is not designated as such. **Minerals:** Existing Mineral sites **Contamination:** 1) human health: very high sensitivity land use such as residential or allotments;

[146] The Mineral Products Association, and The Planning Officer's Society (2019). Minerals Safeguarding Practice Guide. [online] Available at: https://mineralproducts.org/MPA/media/root/Publications/2019/MPA_POS_Minerals_Safeguarding_Guidance_Document.pdf

	2) surface water: Watercourse having a Water Framework Directive (WFD) classification shown in a River Basin Management Plan (RBMP) and Q95 ≥ 1.0 m3/s. Site protected/designated under EC or UK legislation (Special Areas of Conservation (SAC), Special Protection Areas (SPA), Sites of Special Scientific Interest (SSSI), Ramsar site) 3) groundwater: Principal aquifer providing a regionally important resource and regionally important public water supplies, Source Protection Zone (SPZ) 1 **Hydrogeology:** Principal aquifer providing a regionally important source and regionally important public water supplies. Groundwater quality associated with SPZ 1 associated with licensed abstractions. Water supplying GWDTEs with a high groundwater dependence with a high environmental importance and international or national value, such as Ramsar sites, Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Sites of Special Scientific Interest (SSSIs).
High	High importance and rarity. National scale and limited potential for substitution **Geology:** Rare and of national importance with little potential for replacement (e.g. geological SSSI, Area of Special Scientific Interest (ASSI), National Nature Reserves (NNR)). Geology meeting national designation citation criteria which is not designated as such. **Minerals:** Mineral preferred areas **Contamination:** 1) human health: high sensitivity land use such as public open space; 2) surface water: Watercourse having a WFD classification shown in a RBMP and Q95 <1.0m^3/s. 3) groundwater: Principal aquifer providing locally important resource or supporting a river ecosystem, SPZ2. **Hydrogeology:** Principal aquifer providing a locally important source and locally important public water supplies, SPZ 2. Water supplying GWDTEs with a moderate groundwater dependence with high environmental importance and international or national value, such as Ramsar sites, SACs, SPAs and SSSIs; or water feeding highly groundwater dependent GWDTE with a national non-statutory UK Biodiversity Action Plan (BAP) priority

Medium	Medium or high importance and rarity, regional scale, limited potential for substitution **Geology:** Regional importance with limited potential for replacement (e.g. RIGS). Geology meeting regional designation citation criteria which is not designated as such. **Minerals:** Mineral Safeguarded Areas and Mineral Consultation Area **Contamination**: 1) human health: medium sensitivity land use such as commercial or industrial; 2) surface water: Watercourses not having a WFD classification shown in a RBMP and Q95 >0.001m3/s. 3) groundwater: Secondary A Aquifers. extensive non-licensed private water abstractions (i.e. supplying ten or more properties or supplying large farming / animal estates). SPZ3. **Hydrogeology:** Secondary A aquifer. Groundwater flow and yield and quality associated with extensive non-licensed private water abstractions (i.e. supplying ten or more properties or supplying large farming / animal estates). Groundwater quality associated with SPZ2 (Outer Protection Zone) associated with licensed abstractions. Residential and commercial properties. Water supplying GWDTEs of low groundwater dependence with a high environmental importance and international or national value, such as Ramsar sites, SACs, SPAs and SSSIs; or water feeding moderately groundwater dependent GWDTE with a national non-statutory UK Biodiversity Action Plan (BAP) priority
Low	Low or medium importance and rarity, local scale **Geology:** Local importance / interest with potential for replacement (e.g. non designated geological exposures, former quarry's / mining sites). **Minerals:** Mineral present but outside of any MPS/MSA/MCA **Contamination:** 1) human health: low sensitivity land use such as highways and rail; 2) surface water: Watercourses not having a WFD classification shown in a RBMP and Q95 ≤0.001m3/s.

	3) groundwater: Secondary B or Secondary Undifferentiated aquifer. Small scale private water abstractions (i.e. supplying fewer than ten properties). **Hydrogeology:** Secondary B or Secondary Undifferentiated aquifer. Groundwater flow and yield and quality associated with small scale private water abstractions (i.e. feeding fewer than ten properties). Groundwater quality associated with SPZ3 (Source Catchment Protection Zone) associated with licensed abstractions and with licensed abstractions for which no SPZ is defined. Water supplying GWDTEs of low groundwater dependence with a national non-statutory UK BAP priority; or water supplying highly or moderately groundwater dependent GWDTE sites with no conservation designation.
Negligible	Very low importance and rarity, local scale **Geology:** No geological exposures, little / no local interest. **Mineral:** No mineral identified **Contamination:** 1) human health: undeveloped surplus land / no sensitive land use proposed; 2) surface water: not present 3) groundwater: Unproductive strata **Hydrogeology:** Very poor groundwater quality and/or very low permeability make exploitation of groundwater unfeasible. No active groundwater supply. Water supplying GWDTEs of low groundwater dependence with no designation or groundwater that supports a wetland not classified as a GWDTE, although may receive some minor contribution from groundwater

Impact magnitude

Table 2.6.10: Magnitude criteria

Magnitude	General criteria

Large	**Geology Adverse**: Permanent loss of geological feature / designation and/or quality and integrity, severe damage to key characteristics, features or elements.
	Contamination Adverse: Significant contamination identified, and contamination level significantly exceed human health and environmental assessment criteria with the potential for significant harm to be caused. Contamination heavily restricts future use of land **Contamination Benefit**: Substantial betterment of ground or groundwater quality/contamination conditions through remediation and/or mitigation.
	Hydrogeology Adverse: Major or irreversible change to groundwater aquifer(s) flow, water level, quality or available yield which endangers the resources currently available. Groundwater resource use / abstraction is irreparably impacted upon, with a major or total loss of an existing supply or supplies. Changes to water table level or quality would result in a major or total change in, or loss of, a groundwater dependent area, where the value of a site would be severely affected. Changes to groundwater aquifer(s) flow, water level and quality would result in major changes to groundwater baseflow contributions to surface water and/ or alterations in surface water quality. **Hydrogeology Beneficial**: Major increase in groundwater resource availability. Results in the achievement of Good Status for a WFD groundwater body or GWDTE which is currently failing its WFD objectives. Removal of existing or potential polluting discharge to groundwater
Medium	**Geology Adverse**: partial loss of geological feature / designation, potentially adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.
	Contamination Adverse: Contamination levels marginally exceed human health and environment assessment criteria. Control / remediation measures are required to reduce risks to human health / make land suitable for intended use. **Contamination Benefit**: Moderate Betterment of ground or groundwater quality/contamination conditions through remediation and/or mitigation.
	Hydrogeology Adverse: Moderate long term or temporary significant changes to groundwater aquifer(s) flow, water level, quality or available yield which results in moderate long term or temporarily significant decrease in resource availability. Groundwater resource use / abstraction is impacted slightly, but existing supplies remain sustainable. Changes to water table level or groundwater quality would result in partial change in or loss of a groundwater dependent area, where the value of the site would be affected, but not to a major degree. Changes to groundwater aquifer(s) flow, water level and quality would result in moderate changes

	to groundwater baseflow contributions to surface water and/ or alterations in surface water quality, resulting in a moderate shift from baseline conditions **Hydrogeology Beneficial**: Moderate increase in groundwater resource availability. Contributes, in combination with other effects, to the achievement of Good Status for a WFD groundwater body or GWDTE which is currently failing its WFD objectives. Significant reduction of existing or potential polluting discharge to groundwater.
Small	**Geology Adverse**: minor measurable change in geological feature / designation attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements.
	Contamination Adverse: Contamination levels below human health and environment assessment criteria and remediation is not required. Significant contamination is unlikely with a low risk to human health. Best practice measures can be required to minimise risks to human health; **Contamination Benefit**: Slight betterment of ground or groundwater quality/contamination conditions through remediation and/or mitigation.
	Hydrogeology Adverse: Minor changes to groundwater aquifer(s) flow, water level, quality or available yield leading to a noticeable change, confined largely to the Project area. Changes to water table level, groundwater quality and yield result in little discernible change to existing resource use. Changes to water table level or groundwater quality would result in minor change to groundwater dependent areas, but where the value of the site would not be affected. Changes to groundwater aquifer(s) flow, water level and quality would result in minor changes to groundwater baseflow contributions to surface water and / or alterations in surface water quality, resulting in a minor shift from baseline conditions. **Hydrogeology Beneficial**: Minor increase in groundwater resource availability. Leads to improvement of a WFD groundwater body which is currently failing its WFD objectives but insufficient effect to achieve Good Status. Minor reduction of existing or potential polluting discharge to groundwater.
Negligible	**Geology Adverse**: Very minor loss or detrimental alteration to one or more characteristics, features or elements of geological feature / designation. Overall integrity of resource not affected.
	Contamination: Contamination levels substantially below human health and environment assessment criteria and remediation is not required. No requirement for control measures to reduce risks to human health / make land suitable for intended use.

Hydrogeology Adverse: Very slight change from groundwater baseline conditions, approximating to 'no change' conditions. Dewatering effects create no or no noticeable effects.

Significance

Table 2.6.11: Significance matrix

		Value/sensitivity of receptor				
		Very High	**High**	**Medium**	**Low**	**Negligible**
Magnitude	**Large**	Major	Major/Moderate	Major/Moderate /Minor	Moderate/Minor	Minor/Negligible
	Medium	Major/Moderate	Major/Moderate	Moderate/Minor	Minor/Negligible	Negligible
	Small	Major/Moderate	Moderate/Minor	Moderate/Minor	Minor/Negligible	Negligible
	Negligible	Minor/Negligible	Minor/Negligible	Minor/Negligible	Negligible	Negligible

2.6.8 Conclusion

2.6.8.1 The Geology and Hydrogeology receptors that have been identified within the Scoping Boundary include human health, groundwater, surface waters, designated sites of geological importance, mineral reserves and land quality. The preliminary baseline assessment indicates that there is the potential for significant effects on these receptors, however with the implementation of both the embedded mitigation and good practice measures described, the significance of the potential effects can be reduced for certain impacts so that significant effects are unlikely. Where significant effects have been assessed as unlikely, those impacts are scoped out of further assessment. Where there is potential for significant effects, these impacts have been scoped into the ES and will be assessed further, in accordance with the methodology described. The impacts proposed to be scoped in and out of the assessment are summarised in Table 3.6.8.

Proposed Scope of the Assessment

2.6.8.2 A summary of the proposed scope of the assessment is provided in Table 2.6.12.

Table 2.6.12: Proposed scope of the assessment

Receptor	Potential significant effects	Project phase(s)	Proposed to be scoped in / out and for which option
Geology			
Built development	Damage to/destruction of the built development (operational phase) due to natural geological hazards (dissolution features/soft ground/landslides/aggressive ground conditions etc)	Construction, Operation, maintenance and decommissioning	Scoped out for all options
Designated sites of geological importance	Damage to/destruction of designated sites of geological importance	Construction	**Scoped in for Site 1 Emerging Preference, Site 3 Emerging Preference** Scoped out for Site 1 Alternative and Site 3 Alternative
		Operation, maintenance and decommissioning	Scoped out for all options
Mineral Reserves	Sterilisation of safeguarded minerals	Construction and Operation	**Scoped in for all options**
		Maintenance and decommissioning	Scoped out for all options
Contamination			
Site workers, neighbours	Human health exposure to existing potential contamination through ground disturbance during construction and decommissioning	Construction and decommissioning	**Scoped in for all options**
Environmentally sensitive sites, groundwater,	Mobilisation of existing contamination during general	Construction and decommissioning	**Scoped in for all options**

GWDTE, surface water, land quality	construction, impacting on land and/or groundwater quality	Operation and maintenance	Scoped out for all options
Environmentally sensitive sites, groundwater, GWDTE, surface water, land quality.	Introduction of new potential contaminants to the environment from leaks, spills, fuels and oils	Construction, operation, maintenance, and decommissioning	Scoped out for all options
Construction/ maintenance workers, future users, built environment	Ingress and accumulation of ground gas in buildings/confined spaces/trenches (construction and operation) – resulting in explosion/asphyxiation/exposure	Construction, operation maintenance, and decommissioning	**Scoped in for all options**
Site workers, maintenance workers, neighbours	Human health exposure to existing contamination during operation and maintenance	Operation and maintenance	Scoped out for all options
Hydrogeology			
Environmentally sensitive sites, groundwater, GWDTE, surface water	Mixing of aquifer bodies due to the connection of aquifer units at trenchless crossings	Construction, operation, maintenance and decommissioning	Scoped out for all options
Environmentally sensitive sites, groundwater, GWDTE, surface water	Changes to groundwater levels, quality and groundwater flow direction caused by dewatering	Construction	**Scoped in for all options**
		Operation, maintenance and decommissioning	Scoped out for all options
Environmentally sensitive sites, groundwater, GWDTE, surface water	Physical and chemical changes to groundwater from the discharge of groundwater from dewatering	Construction, operation, maintenance and decommissioning	Scoped out for all options
Environmentally sensitive sites, groundwater, GWDTE, surface water	Changes to groundwater levels and/or recharge rates from the introduction of impermeable surfaces	Construction, operation, maintenance and decommissioning	Scoped out for all options

2.7 Agriculture and Soils

2.7.1 Introduction

2.7.1.1 This chapter presents the Agriculture and Soils assessment which will consider the potentially significant effects that may arise from the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme (as described in **Part 1, Chapter 4, Description of the Project**) on agricultural and soil receptors. This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an EIA.

2.7.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Suffolk Onshore Scheme Scoping Boundary, hereafter referred to as the Suffolk Scoping Boundary, is illustrated on **Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary**.

2.7.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project**;
- **Part 1, Chapter 5, EIA Approach and Methodology**; and
- **Part 2, Chapter 1, Evolution of the Suffolk Onshore Scheme**.

2.7.1.4 This chapter is supported by the following figures:

- **Figure 2.7.1 Soilscape Mapping;**
- **Figure 2.7.2 Provisional Agricultural Land Classification Mapping;**
- **Figure 2.7.3 Detailed Agricultural Land Classification Mapping;** and
- **Figure 2.7.4 Environmental Stewardship Agreements and Woodland Grant Schemes.**

2.7.1.5 The receptors included within this chapter comprise:

- The presence and potential impact on best and most versatile (BMV) land (as defined by the Agricultural Land Classification (ALC) system), including land affected temporarily during construction and the land required permanently.
- The nature and potential impacts on landholdings in agricultural use, including land affected temporarily during construction and the land required permanently. This will cover issues of potential fragmentation, biosecurity risks and impacts on any land under agri-environmental, woodland or forestry schemes.

2.7.1.6 The assessment of potentially significant effects on agricultural and soil receptors will be supported by information presented in other chapters: **Part 2, Chapter 2, Ecology**

and Biodiversity; Part 2, Chapter 5, Water Environment; and **Part 2, Chapter 6, Geology and Hydrogeology.**

2.7.2 Regulatory and Planning Context

2.7.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. Key legislation, policy and guidance relevant to the assessment of potential effects on agriculture and soils associated with the construction, operation, maintenance and decommissioning of the Project is presented below.

Legislation

2.7.2.2 There is no primary legislation relevant to this topic.

Planning Policy

National planning policy

2.7.2.3 National Policy Statement (NPS) for Energy (EN-1)[147] contains paragraphs relating to agriculture and soils which have been considered within this chapter.

2.7.2.4 Paragraph 5.10.8 states that 'Applicants should seek to minimise impacts on the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) and preferably use land in areas of poorer quality (grades 3b, 4 and 5) except where this would be inconsistent with other sustainability considerations. Applicants should also identify any effects and seek to minimise impacts on soil quality taking into account any mitigation measures proposed'.

2.7.2.5 Paragraph 5.10.15 states that the Secretary of State (formerly the Infrastructure Planning Commission) should 'ensure that applicants do not site their scheme on the best and most versatile agricultural land without justification. It should give little weight to the loss of poorer quality agricultural land (in grades 3b, 4 and 5), except in areas (such as uplands) where particular agricultural practices may themselves contribute to the quality and character of the environment or the local economy'.

2.7.2.6 EN-1 is supported by the National Policy Statement for Electricity Networks Infrastructure (EN-5)[148] which contains paragraphs relating to agriculture and soils which have been considered within this chapter. Paragraph 1.7.5 states that, in relation to a presumption that electricity lines should be put underground, '*effects on soil, water, ecology and archaeology are likely to be negative, at least in the short term, requiring significant mitigation, but there is uncertainty around long term effects depending on the specific location and sensitivity of the receiving environment*'. This is reiterated in paragraph 2.8.9 (third bullet point).

[147] Department for Business, Energy & Industrial Strategy (2021). Draft Overarching National Policy Statement for Energy (EN-1). [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015233/en-1-draft-for-consultation.pdf

[148] Department of Energy and Climate Change (2011). National Policy Statement for Electricity Networks Infrastructure (EN-5). [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47858/1942-national-policy-statement-electricity-networks.pdf

Local planning policy

2.7.2.7 Relevant policies from the East Suffolk Council Suffolk Coastal Local Plan, adopted 23rd September 2020[149], will also be considered. These are listed below:

- SCLP2.3: Cross-boundary mitigation of effects on Protected Habitats
- SCLP9.3 Coastal Change Management Area
- SCLP10.1: Biodiversity and Geodiversity
- SCLP10.3: Environmental Quality

Guidance

2.7.2.8 Several standards and non-statutory guidelines, which provide details of assessment methodologies and mitigation techniques, will also be referenced to inform the assessment, including:

- Construction Code of Practice for the sustainable re-use of soils on construction sites[150];
- Technical Information Note (TIN) 049[151]. Agricultural Land Classification: protecting the best and most versatile agricultural land;
- Good Practice Guide for Handling Soils[152]; and
- A new perspective on land and soil in Environmental Impact Assessment[153].

2.7.3 Study Area

2.7.3.1 The study area for agriculture and soils comprises the land which would be directly affected by the Suffolk Onshore Scheme (through disturbance or temporary covering of the soils). This will be based on the proposed Order Limits in the ES but for the purposes of this Scoping Report the study area includes the land within the Suffolk Scoping Boundary. This is illustrated on **Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary**.

[149] East Suffolk Council (2020). Suffolk Coastal Local Plan. [online] Available at: https://www.eastsuffolk.gov.uk/assets/Planning/Planning-Policy-and-Local-Plans/Suffolk-Coastal-Local-Plan/Adopted-Suffolk-Coastal-Local-Plan/East-Suffolk-Council-Suffolk-Coastal-Local-Plan.pdf

[150] Department for Environment, Food and Rural Affairs (2009). Construction Code of Practice for the sustainable re-use of soils on construction sites. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/716510/pb13298-code-of-practice-090910.pdf#:~:text=1.%20This%20Code%20of%20Practice%20for%20the%20sustainable,It%20is%20particularly%20intended%20for%20use%20in%20England

[151] Natural England (2012). Technical Information Note TIN049. Agricultural Land Classification: protecting the best and most versatile agricultural land. [online] Available at: https://www.iow.gov.uk/azservices/documents/2782-FE14-Natural-England-TIN049-Agricultural-Land-Classification.pdf

[152] Ministry of Agriculture, Fisheries and Food (2000). Good Practice Guide for Handling Soils. [online] Available at: https://webarchive.nationalarchives.gov.uk/ukgwa/20090317221756/http://www.defra.gov.uk/farm/environment/land-use/soilguid/index.htm

[153] Institute of Environmental Management & Assessment (2022). A new perspective on land and soil in Environmental Impact Assessment.

2.7.4 Baseline Conditions

Data Sources

2.7.4.1 The agriculture and soils baseline assessment has been informed by a desk study which has drawn on the following key information sources:

- Ordnance Survey mapping and aerial photography to establish land use and settlement patterns;
- Soilscape mapping showing the distribution of main soil types was assessed on the Land Information System website[154];ALC mapping, including provisional and (where available) detailed ALC mapping from the MAGIC website[155]; and
- Extent of agri-environmental and woodland schemes from the MAGIC website.

Baseline

Soils

2.7.4.2 The solid geology underlying the study area is described as comprising of undifferentiated Neogene and Quaternary Rocks. This comprises gravel, sand, silt, and clay sedimentary bedrock formed up to 23 million years ago in the Quaternary and Neogene Periods. This solid geology is in the main overlain by diamicton till superficial deposits. This material was deposited around 3 million years ago in the Quaternary Period when the local environment was dominated by ice age conditions. Closer to the coast the superficial deposits are replaced by glacial sand and gravel formed up to 3 million years ago in the Quaternary Period.

2.7.4.3 The soil types present within the study area are comprised of three major types as seen on **Figure 2.7.1 Soilscape Mapping**. Along the eastern areas the soil is described as freely draining and slightly acidic sandy soils. Moving westwards the soils around Leiston are categorised as freely draining acid but base-rich highly fertile loamy soils. The north-western section of the proposed site around Saxmundham consists of slowly permeable, and seasonally wet slightly acid but base-rich loamy and clayey soils.

Agricultural land classification

2.7.4.4 **Figure 2.7.2 Provisional ALC Mapping** shows that the study area comprises Grades 2, 3, and 4 land. This mapping, at a scale of 1:250,000, does not distinguish between Grades 3a and 3b (and cannot be used to inform site-specific assessments) but provides an indication of the likely land classification.

2.7.4.5 There is some detailed ALC mapping available local to the study area, based on surveys undertaken between 1993 and 2016. The land around Sizewell, and fields to

[154] Cranfield University (2021). LandIS: The Land Information System. [online] Available at: https://www.cranfield.ac.uk/themes/environment-and-agrifood/landis

[155] Department for Environment, Food and Rural Affairs (2022). Multi-Agency Geographic Information for the Countryside (MAGIC). [online] Available at: https://magic.defra.gov.uk/.

the North near Minsmere have been mapped as a mix of Grade 3a, Grade 3b and Grade 4, with a small area of Grade 1 located east of Lover's Lane (as shown in **Figure 2.7.3 Detailed ALC Mapping**).

2.7.4.6 Climate is unlikely to pose an overall limitation on ALC grade in relation to the criteria set out in the ALC Guidelines[156] (MAFF, 1988). Climate does, however, have an important influence on the interactive limitations of soil wetness and soil droughtiness, which is the balance between rainfall and water losses from the soil. The site has both relatively low rainfall and a long growing season, acting to decrease the severity of any potential soil wetness limitation, but increasing the severity of any potential soil droughtiness limitation.

Land use

2.7.4.7 A desk-based study using aerial photographs has shown that the land use appears to be principally arable, with areas of urban development at Leiston, Saxmundham and Thorpness.

2.7.4.8 There are areas of land within the study area under Countryside Stewardship (Higher Tier) Agreements, and areas south and east of Leiston under Entry Level plus Higher Level Environmental Stewardship agreements. There are also further small areas within the study area under Higher Level Environmental Stewardship, as well as Organic Entry Level plus Higher Level Stewardship areas to the north. Five small areas of land across the proposed site are also under Woodland Grant schemes (see **Figure 2.7.4 Environmental Stewardship Agreements and Woodland Grant Schemes**).

Future Baseline

2.7.4.9 It is considered that the baseline in relation to soils and ALC grades will not change from that described within the timeframe for the construction of this Project. Whilst there may be potential changes in relation to climate change, including greater rainfall intensity and droughts, that could affect soil conditions, land grade and farming practices, it is likely that these would only be visible over longer time frames.

2.7.4.10 There could potentially be changes to land management practices and business approaches across the landowners/land managers.

2.7.5 Embedded and Control & Management Measures

Embedded Measures

2.7.5.1 The assessment of effects will take account of mitigation, including measures embedded into the Project's design and good practice measures. Key measures are described below.

2.7.5.2 The temporary nature of many construction activities and the subsequent restoration of the land and its return to the preconstruction use is likely to result in the avoidance of long-term impacts on agricultural and soil receptors.

[156] Ministry of Agriculture, Fisheries and Food (1988). Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land.

Control and Management Measures

2.7.5.3 Where effects cannot be avoided through design, commitments will be made and secured through Requirements in the DCO, to control and manage effects.

2.7.5.4 An outline Code of Construction Practice (CoCP) is provided in **Appendix 1.4.A Outline Code of Construction Practice**. Measures relevant to the control and management of impacts that could affect the assessment relating to agriculture and soils are:

- GG03: A CEMP, a LEMP and an CTMP will be produced prior to construction. The CEMP shall include measures to manage dust, waste, water, noise, vibration and soil during construction. The contractor(s) shall undertake daily site inspections to check conformance to the Management Plans.
- GG19: Earthworks and stockpiled soil will be protected by covering, seeding or using water suppression where appropriate.
- AS01: Soil management measures will be included within the CEMP. Measures would include but not be limited to the following:
  - details of the soil resources present;
  - how the topsoil and subsoil will be stripped and stockpiled;
  - suitable conditions for when soil handling will be undertaken, for example avoiding handling of waterlogged soil;
  - indicative soil storage locations;
  - how soil stockpiles will be designed taking into consideration site conditions and the nature/composition of the soil;
  - specific measures for managing sensitive soils;
  - suitable protective surfacing where soil stripping can be avoided, based on sensitivity of the environment and proposed works;
  - approach to reinstating soil that has been compacted, where required; and
  - details of measures required for soil restoration.
- AS02: Where land is being returned to agricultural use, the appropriate soil conditions (for example through the replacement of stripped layers and the removal of any compaction) will be recreated. This will be achieved to a depth of 1.2m (or the maximum natural soil depth if this is shallower) except over the buried cables where the reinstated soil depth will be approximately 0.9m.
- AS03: Access to and from residential, commercial, community and agricultural land uses will be maintained throughout the construction period or as agreed through landowner discussions. This may require signed diversions or temporary restrictions to access. The means of access to affected properties, facilities and land parcels will be communicated to affected parties at the start of the project, with any changes communicated in advance of the change being implemented. Where field-to-field access points require alteration as a result of construction, alternative field access will be provided in consultation with the landowner/occupier.

- AS04: Existing water supplies for livestock will be identified pre-construction. Where supplies will be lost or access compromised by construction works, temporary alternative supplies will be provided. Water supplies will be reinstated following construction.
- AS05: Consultation with affected landowners will be carried out to investigate the current extent of land drainage. A scheme of pre-construction land drainage will be designed with the intent of maintaining the efficiency of the existing land drainage system and to assist in maintaining the integrity of the working area during construction. The project may include a system of 'cut-off' drains which feed into a new header drain and the project will also take into account surface water runoff measures.
- AS06: Should animal bones be discovered during construction, which may indicate a potential burial site, works will cease, and advice will be sought from the Animal Health Regional Office on how to proceed, relevant to the origin and age of the materials found.
- AS07: All movement of plant and vehicles between fields will cease in the event of a notification by Defra of a disease outbreak in the vicinity of the site that requires the cessation of activities. Advice will be sought from Defra in order to develop suitable working methods required to reduce the biosecurity risk associated with the continuation of works.
- AS08: Clay bungs or other vertical barriers will be constructed within trench excavations where deemed necessary by a suitably experienced person, to prevent the creation of preferential drainage pathways.

2.7.6 Potential for Significant Effects

2.7.6.1 The agriculture and soils assessment will consider the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project**.

2.7.6.2 The proposed scope of the agricultural and soils assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

2.7.6.3 This section identifies the sources and impacts that would occur as a result of the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme.

2.7.6.4 The potential for the Suffolk Onshore Scheme to result in the potential significant effects described in this section takes into account the embedded and control and management measures described in section 5.

Sources of construction impacts

- temporary removal of land from agricultural production;

- disruption and disturbance to agricultural operations (from noise, fragmentation by fencing and disruption to water supplies or land drainage); and
- temporary disturbance to soils (potentially resulting in long-term changes to one or more soil functions).

Sources of operational impacts

- permanent removal of land from agricultural production;
- permanent loss of soils; and
- electric and magnetic fields (EMFs).

Sources of maintenance impacts

- temporary removal of land from agricultural production;
- temporary disruption and disturbance to agricultural operations (from noise, fragmentation by fencing and disruption to water supplies or land drainage); and
- temporary disturbance to soils (potentially resulting in long-term changes to one or more soil functions).

Sources of decommissioning impacts

- temporary removal of land from agricultural production;
- temporary disruption and disturbance to agricultural operations (from noise, fragmentation by fencing and disruption to water supplies or land drainage); and
- temporary disturbance to soils (potentially resulting in long-term changes to one or more soil functions).

Potential impacts

Soils and ALC

Soils and ALC during construction

2.7.6.5 During construction there would be a potential loss of BMV land (ALC Grades 1, 2 and 3a) from agricultural productivity. There would also be disturbance to soils, either from access for overhead line installation/removal or due to the excavation and soil stripping working areas for the underground cable trenches, pylon footings, converter station footprint and areas required temporarily (such as construction compounds). There would also be the potential for impacts on the ecosystem services the soils provide. The good practice measures set out within the Outline CoCP and the good practice soil management measures set out within the CEMP for soil handling, storage and reinstatement, would reduce the effects on soils.

2.7.6.6 By the end of construction, all land required temporarily would be reinstated minimising the risk of long-term effects on soils or ALC. However, until soil surveys have been undertaken to understand the sensitivity of the soils to handling, storage and reinstatement the construction effects on soils and ALC will be scoped into the ES.

Soils and ALC during operation

2.7.6.7 During operation, there would be a permanent loss of areas of agricultural land and associated soils for the permanent infrastructure. It is unlikely that this would give rise to a significant effect; however, the land grades and soil types affected would be confirmed through the assessment process and as such permanent impacts on soils and ALC will initially be scoped into the assessment. This would be informed by a survey following published guidelines[157]. However, if the site survey confirms that the permanent land affected is not BMV land or that the cumulative loss is below the magnitude threshold for a likely significant effect, then permanent loss of agricultural land during operation would be scoped out of the ES.

2.7.6.8 Any maintenance or repair works required which would result in disturbance to soils during operation of the project would be undertaken in accordance with good practice soil handling methods. No likely significant effects on soils or ALC during operational maintenance or repair activities are therefore concluded and this aspect is scoped out of the ES.

Land use

Land use during construction

2.7.6.9 During construction there would be potential impacts on agricultural operations due to disturbance (in particular where livestock are present), fragmentation, access restrictions or disruption to water supplies or land drainage. The measures set out within the Outline CoCP, including AS03, to maintain access throughout construction, would reduce the effects to agricultural land use. Effects on land drainage are covered in **Part 2, Chapter 5, Water Environment.**

2.7.6.10 By the end of the construction phase, all land required temporarily would be reinstated. As the footprint of the permanent infrastructure is limited and as impacts on agricultural operations will be dealt with through compensation agreements (which lies outside of the EIA process) it is considered that, on completion of the reinstatement of land required temporarily, there would be no significant effects on agricultural landholdings. Therefore, construction effects on land use are proposed to be scoped out of the ES.

Land use during operation

2.7.6.11 During operation, there would be limited effects on agricultural operations. Limited areas of agricultural land would be lost permanently and there is the potential for restrictions to activities immediately over or adjacent to buried cables or under overhead lines; however, these will be dealt with through compensation agreements (which lies outside of the EIA process). Any maintenance or repair works required which would result in disturbance to agricultural operations would be undertaken in accordance with good practice soil handling methods. Therefore, there are no likely significant effects on agricultural landholdings during operation and this aspect is proposed to be scoped out of the ES.

2.7.6.12 The majority of any financial consequences on individual landowners and farmers will be temporary, as most of the land will be reinstated by the end of the construction

[157] Ministry of Agriculture, Fisheries and Food (1988). Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land.

phase and any claims regarding compensation will be addressed outside of the EIA process. As such, potential economic effects on individual landowners and farmers are proposed to be scoped out of the ES.

2.7.6.13 During operation, there can be landowner concerns that (EMFs) can affect land use. However, paragraph 2.10.8 of EN-5 states that, in relation to EMFs, '*there is little evidence that exposure of crops, farm animals or natural ecosystems to transmission line EMFs has any agriculturally significant consequences*'. National Grid will be undertaking a walkover of the Indicative Alignment to identify land use and activities that may require additional clearance of the conductors. Land uses include intensive activities involving horses, such as riding schools, stud farms and areas habitually used for loading or unloading horse boxes. With these measures in place, there would be no likely significant effects during operation on land use from EMF or microshocks, and this is proposed to be scoped out of the ES.

2.7.6.14 National Grid will provide the relevant information on EMFs in a separate document submitted as part of the application for development consent. This document will demonstrate compliance in accordance with the ICNIRP guidelines and paragraph 2.10.9 of EN-5.

Soils, ALC and land use during decommissioning

2.7.6.15 Decommissioning of the Project would consider all the relevant environmental legislation and technology available at the time. Decommissioning activities would be subject to an environmental management plan that would identify and mitigate the potential impacts of decommissioning activities that could harm sensitive receptors.

2.7.6.16 It is considered likely that the impacts associated with decommissioning would be similar to those identified during the construction phase, with land taken permanently returned to agricultural use where practicable.

2.7.6.17 Table 2.7.1 identifies the potential impacts that could result from the sources identified above.

Table 2.7.1: Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction	Temporary removal of land from agricultural production	Reduction in agricultural productivity	No - No potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
		Temporary loss of BMV land	Yes - Unlikely to be significant effects due to inclusion of best practice construction methods set out within the Outline	**Scoped in (to be reviewed once soil surveys are complete).**

			CoCP. Soil surveys will be undertaken to confirm this.	
Construction	Temporary disruption and disturbance to agricultural operations (from noise, fragmentation and disruption to water supplies and land drainage	Reduction in agricultural productivity	No - No potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
Construction	Temporary disturbance to soils	Changes to one or more soil functions	Yes - Unlikely to be significant effects due to inclusion of best practice construction methods set out within the Outline CoCP. Soil surveys will be undertaken to confirm this.	**Scoped in (to be reviewed once soil surveys are complete).**
Operation	Permanent removal of land from agricultural production	Reduction in agricultural productivity	No - No potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
		Permanent loss of BMV land	Yes - Unlikely to be significant effects due to inclusion of best practice construction methods set out within the Outline CoCP. Soil surveys will be undertaken to confirm this.	**Scoped in (to be reviewed once soil surveys are complete).**
Operation	Permanent loss of soils	Changes to one or more soil functions	Yes - Unlikely to be significant effects due to inclusion of best practice construction methods set out within the Outline CoCP. Soil surveys will be undertaken to confirm this.	**Scoped in (to be reviewed once soil surveys are complete).**
Operation	EMFs	EMFs impacting crops and livestock	No - Little evidence to indicate EMFs have a significant effect.	Scoped out

Maintenance	Temporary removal of land from agricultural production	Reduction in agricultural productivity	No - No potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
		Temporary loss of BMV land	Yes - Unlikely to be significant effects due to inclusion of best practice construction methods set out within the Outline CoCP. Soil surveys will be undertaken to confirm this.	**Scoped in (to be reviewed once soil surveys are complete).**
Maintenance	Temporary disruption and disturbance to agricultural operations (from noise, fragmentation and disruption to water supplies and land drainage	Reduction in agricultural productivity	No - No potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
Maintenance	Temporary disturbance to soils	Changes to one or more soil functions	Yes - Unlikely to be significant effects due to inclusion of best practice construction methods set out within the Outline CoCP. Soil surveys will be undertaken to confirm this.	**Scoped in (to be reviewed once soil surveys are complete).**
Decommissioning	Temporary removal of land from agricultural production	Reduction in agricultural productivity	No - No potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
		Temporary loss of BMV land	Yes - Unlikely to be significant effects due to inclusion of best practice construction methods set out within the Outline CoCP. Soil surveys will be undertaken to confirm this.	**Scoped in (to be reviewed once soil surveys are complete).**

Decommissioning	Temporary disruption and disturbance to agricultural operations (from noise, fragmentation and disruption to water supplies and land drainage	Reduction in agricultural productivity	No - No potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
Decommissioning	Temporary disturbance to soils	Changes to one or more soil functions	Yes - Unlikely to be significant effects due to inclusion of best practice construction methods set out within the Outline CoCP. Soil surveys will be undertaken to confirm this.	**Scoped in (to be reviewed once soil surveys are complete).**

Impact Pathways with Receptors (Step 2)

2.7.6.18 This section identities whether there are any impact pathways associated with all 5 options from the impacts identified above that could give rise to potentially significant effects on the receptors within the agricultural and soils study area or area.

2.7.6.19 Table 2.7.2 provides a summary of the impact pathways identified and the matters scoped into and out of the assessment for all options as shown on:

- **Figure 2.1.4 Suffolk Site 1 Emerging Preference** and **Figure 2.1.9 Suffolk Site 1 Emerging Preference Option Area**;
- **Figure 2.1.5 Suffolk Site 3 Emerging Preference** and **Figure 2.1.10 Suffolk Site 3 Emerging Preference Option Area**;
- **Figure 2.1.6 Suffolk Site 1 Alternative** and **Figure 2.1.11 Suffolk Site 1 Alternative Option Area**;
- **Figure 2.1.7 Suffolk Site 3 Alternative (Option 1)** and **Figure 2.1.12 Suffolk Site 3 Alternative (Option 1) Option Area**; and
- **Figure 2.1.8 Suffolk Site 3 Alternative (Option 2)** and **Figure 2.1.13 Suffolk Site 3 Alternative (Option 2) Option Area**.

Table 2.7.2: Impact pathways with receptors – all options

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Temporary removal of land from	BMV land	Yes -Land required temporarily to be returned to preconstruction	**Scoped in**

agricultural production during construction		condition through adherence to CoCP measures. Unlikely to be significant effect; to be confirmed once extent of BMV land and soil characteristics understood from surveys.	
	Agricultural landholdings	No - No potential for a significant effect relating to land area or disturbance/ disruption due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
Permanent removal of land from agricultural production during operation	BMV land	Yes -Soil handling and re-use to be undertaken through adherence to CoCP measures. Unlikely to be significant effect; to be confirmed once extent of BMV land and soil characteristics understood from surveys.	**Scoped in**
	Agricultural landholdings	No - No potential for a significant effect relating to land area or disturbance/ disruption due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
Temporary disturbance to soils during construction	Soil quality and associated ecosystem services	Yes -Land required temporarily to be returned to preconstruction condition through adherence to CoCP measures. Unlikely to be significant effect; to be confirmed once soil characteristics and resilience understood from surveys.	**Scoped in**
Permanent loss of soils during operation	Soil quality and associated ecosystem services	Yes -Soil handling and re-use to be undertaken through adherence to CoCP measures. Unlikely to be significant effect; to be confirmed once soil characteristics and resilience understood from surveys.	**Scoped in**
EMFs during operation	Agricultural operations	No - Little evidence to indicate EMFs have a significant effect.	Scoped out

Temporary removal of land from agricultural production due to maintenance activities	Reduction in agricultural productivity	No - No potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
	BMV land	Yes - Unlikely to be significant effects due to inclusion of best practice construction methods set out within the Outline CoCP. Soil surveys will be undertaken to confirm this.	**Scoped in**
Temporary disruption and disturbance due to maintenance activities	Reduction in agricultural productivity	No - No potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
Temporary disturbance to soils during decommissioning activities	Soil quality and associated ecosystem services	Yes -Land required temporarily to be returned to preconstruction condition through adherence to CoCP measures. Unlikely to be significant effect; to be confirmed once soil characteristics and resilience understood from surveys.	**Scoped in**
Temporary removal of land from agricultural production due to decommissioning activities	Reduction in agricultural productivity	No - No potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
Temporary disruption and disturbance due to decommissioning activities	Reduction in agricultural productivity	No - No potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out

2.7.7 Proposed Assessment Methodology

2.7.7.1 An overview of the proposed assessment methodology is provided in **Part 1, Chapter 5, EIA Approach and Methodology.**

Proposed Data Sources

2.7.7.2 The following data sources are proposed to be used to inform the assessment:

- Soil surveys (as required);

- Ordnance Survey mapping and aerial photography to establish land use and settlement patterns;
- Soilscape mapping showing the distribution of main soil types was assessed on the Land Information System website; ALC mapping, including provisional and (where available) detailed ALC mapping from the MAGIC website ; and
- Extent of agri-environmental and woodland schemes from the MAGIC website.

Proposed Assessment Methodology

2.7.7.3 The assessment will be based on guidance set out by the Institute of Environmental Management and Assessment on how land and soil should be assessed in Environmental Impact Assessment[158]. This recently published guidance and the sensitivity and magnitude tables have been based on guidance set out in LA109[159] Geology and Soils of the Design Manual for Roads and Bridges (DMRB) which has traditionally been used to assess the impacts of both highways' projects and other linear infrastructure projects on agriculture and soil receptors.

2.7.7.4 The IEMA guidance seeks to move practice away from a narrow focus on quantifying and financially compensating impacts on agricultural land and advocates a new and wider approach to assessing the soil functions, ecosystem services and natural capital provided by land and soils.

2.7.7.5 The sensitivity of receptors will be assessed based on the criteria set out in Table 2.7.3 below.

Table 2.7.3: Sensitivity of receptor criteria

Receptor sensitivity (in-situ soils)	Soil resource and soil functions
Very High	***Biomass production***: ALC Grades 1 & 2 ***Ecological habitat, soil biodiversity and platform for landscape***: Soils supporting protected features within a European site (e.g., SAC, SPA, Ramsar); Peat soils; Soils supporting a National Park, or Ancient Woodland ***Soil carbon***: Peat soils Soils with potential for ecological/landscape restoration ***Soil hydrology***: Very important catchment pathway for water flows and flood risk management ***Archaeology, Cultural heritage, Community benefits and Geodiversity***: SAMs and adjacent areas; World Heritage and European designated sites; Soils with known archaeological interest; Soils supporting

[158] Institute of Environmental Management and Assessment (2022). A new perspective on land and soil in Environmental Impact Assessment.

[159] Highways England (2020). Design Manual for Roads and Bridges. LA 109 Geology and Soils. [online] Available at: https://www.standardsforhighways.co.uk/prod/attachments/adca4c7d-4037-4907-b633-76eaed30b9c0?inline=true

	community/recreational/educational access to land covered by National Park designation ***Source of materials***: Important surface mineral reserves that would be sterilised (i.e., without future access)
High	***Biomass production***: ALC Grade 3a ***Ecological habitat, soil biodiversity and platform for landscape***: Soils supporting protected features within a UK designated site (e.g., UNESCO Geoparks, SSSI or AONB, Special Landscape Area and Geological Conservation Review sites); Native Forest and woodland soils; Unaltered soils supporting semi-natural vegetation ***Soil carbon***: Organo-mineral soils (e.g. peaty soils) ***Soil hydrology***: Important catchment pathway for water flows and flood risk management ***Archaeology, Cultural heritage, Community benefits and Geodiversity***: Soils with probable but as yet unproven (prior to being revealed by construction) archaeological interest; Historic parks and gardens; RIGS; Soils supporting community/recreational/educational access to RIGS and AONBs; ***Source of materials***: Surface mineral reserves that would be sterilised (i.e., without future access)
Medium	***Biomass production***: ALC Grade 3b ***Ecological habitat, soil biodiversity and platform for landscape***: Soils supporting protected or valued features within non-statutory designated sites (e.g. Local Nature Reserves (LNR), Local Geological Sites (LGSs), Sites of Nature Conservation Importance (SNCIs), Special Landscape Areas; Non-Native Forest and woodland soils ***Soil carbon***: Mineral soils ***Soil hydrology***: Important minor catchment pathway for water flows and flood risk management ***Archaeology, Cultural heritage, Community benefits and Geodiversity***: Soils with possible but as yet unproven (prior to being revealed by construction) archaeological interest; Soils supporting community/recreational/educational access to land ***Source of materials***: Surface mineral reserves that would remain accessible for extraction
Low	***Biomass production***: ALC Grade 4 and 5 ***Ecological habitat, soil biodiversity and platform for landscape***: Soils supporting valued features within non-designated notable or priority habitats/landscapes. Agricultural soils ***Soil carbon***: Mineral soils ***Soil hydrology***: Pathway for local water flows and flood risk management ***Archaeology, Cultural heritage, Community benefits and Geodiversity***: Soils supporting no notable cultural heritage, geodiversity nor community benefits; Soils supporting limited community/recreational/educational access to land

	Source of materials: Surface mineral reserves that would remain accessible for extraction
Negligible	As for low sensitivity, but with only indirect, tenuous, and unproven links between sources of impact and soil functions

2.7.7.6 The magnitude of impacts will be assessed based on the criteria set out in Table 2.7.4 below.

Table 2.7.4: Magnitude criteria

Magnitude of impact (change)	Description of impacts restricting proposed land use
Large	Permanent, irreversible loss of one or more soil functions or soil volumes (including permanent sealing or land quality downgrading), over an area of more than 20ha or loss of soil-related features set out in Table 3.7.3 above, as advised by other topic specialists in EIA team (including effects from 'temporary developments'*) or Potential for permanent improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of more than 20ha, or gain in soil-related features set out in Table 3.7.3 above, as advised by other topic specialists in EIA team (including effects from 'temporary developments'*)
Medium	Permanent, irreversible loss of one or more soil functions or soil volumes, over an area of between 5 and 20ha or loss of soil-related features set out in Table 3.7.3 above, as advised by other topic specialists in EIA team (including effects from 'Temporary Developments'*) or Potential for improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of between 5 and 20ha, or gain in soil-related features set out in Table 3.7.3 above, as advised by other topic specialists in EIA team
Small	Permanent, irreversible loss over less than 5ha or a temporary, reversible loss of one or more soil functions or soil volumes), or temporary, reversible loss of soil-related features set out in Table 3.7.3 above, as advised by other topic specialists in EIA team or Potential for permanent improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of less than 5ha or a temporary improvement in one or more soil functions due to remediation or restoration or off-site improvement, or temporary gain in soil-related features set out in Table 3.7.3 above, as advised by other topic specialists in EIA team

Negligible	No discernible loss or reduction or improvement of soil functions or soil volumes that restrict current or proposed land use

*Temporary developments can result in a permanent impact if resulting disturbance or land use change causes permanent damage to soils

2.7.7.7 The significance of an effect is then derived using the matrix set out in **Part 1, Chapter 5, EIA Approach and Methodology**.

2.7.8 Conclusion

2.7.8.1 The Suffolk Onshore Scheme has the potential to affect agriculture and soil receptors as a result of the temporary and permanent removal of land from agricultural production including BMV land), disturbance to soils and disruption to agricultural operations. A suite of measures is set out in the Outline CoCP which seek to minimise the potential impacts on these receptors. Soil and ALC surveys will be undertaken in key areas where there would be permanent loss of land and sections of undergrounded cable to further inform the assessment.

Proposed Scope of the Assessment

2.7.8.2 A summary of the proposed scoped of the assessment is provided in Table 2.7.5.

Table 2.7.5: Proposed scope of the assessment

Receptor	Potential for significant effect	Project phase(s)	Proposed to be scoped in/out and for which option
Temporary loss of BMV land	No likely significant effect; extent to be confirmed through ALC surveys	Construction, Maintenance, Decommissioning	**Scoped in for all options**
Permanent loss of BMV land	Potential for permanent loss of BMV land; extent to be confirmed through ALC surveys	Operation	**Scoped in for all options**
Soil quality and associated ecosystem services	No likely significant effect; to be confirmed through ALC surveys	Construction, Maintenance, Decommissioning	**Scoped in for all options**
Temporary loss of BMV land; Soil quality and associated	No likely significant effect	Operation	**Scoped in for all options**

ecosystem services			
Agricultural landholdings and effects of EMFs	No likely significant effect	Operation	Scoped out for all options
Removal of land from agricultural use	No likely significant effect	Construction, Operation, Maintenance, Decommissioning	Scoped out for all options

2.8 Traffic and Transport

2.8.1 Introduction

2.8.1.1 This chapter presents how the Traffic and Transport assessment will consider the potentially significant effects on heritage assets that may arise from the construction, and operation, maintenance and decommissioning of the Suffolk Onshore Scheme (as described in **Part 1, Chapter 4, Description of the Project**). This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an EIA.

2.8.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Suffolk Onshore Scheme Scoping Boundary hereafter referred to as the Suffolk Scoping Boundary is illustrated on **Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary**.

2.8.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project**;
- **Part 1, Chapter 5, EIA Approach and Methodology**; and
- **Part 2, Chapter 1, Evolution of the Suffolk Onshore Scheme**.

2.8.1.4 This chapter is supported by the following figure:

- **Figure 2.8.1 Proposed Study Area in Suffolk (Traffic & Transport**).

2.8.2 Regulatory and Planning Policy Context

2.8.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. Key legislation, policy and guidance relevant to the assessment of potential effects on traffic and transport associated with the construction, operation, maintenance and decommissioning of the Project is presented below.

Legislation

2.8.2.2 There is no transport specific legislation relevant to the proposals.

Planning Policy

National planning policy

National Policy Statement for Energy (NPS EN-1, 2011)

2.8.2.3 The NPS for Energy (EN-1) was published in 2011 and provides the basis for decisions regarding nationally significant energy infrastructure. Section 5.14 outlines the planning policy for traffic and transport, including guidance on undertaking relevant parts of the EIA. The most relevant paragraphs for this purpose are 5.13.3 to 5.13.5 which are set out as follows:

- Paragraph 5.13.3, which states that if a project is likely to have significant transport implications a Transport Assessment should be included with the ES;
- Paragraph 5.13.4, which states that where appropriate, a Travel Plan to include demand management measures to mitigate transport impacts should be prepared; and
- Paragraph 5.13.5, which states that where additional transport infrastructure is proposed, this should be discussed with the relevant network providers (in terms of the possibility of co-funding by Government for any third-party benefits).

2.8.2.4 In addition, Section 3.1 relates to Infrastructure Planning Commission (IPC) decision making which includes the following:

- Paragraph 3.1.1, the UK needs all the types of energy infrastructure covered by this NPS in order to achieve energy security at the same time as dramatically reducing greenhouse gas emissions;
- Paragraph 3.1.2, it is for industry to propose new energy infrastructure projects within the strategic framework set by Government. The Government does not consider it appropriate for planning policy to set targets for or limits on different technologies;
- Paragraph 3.1.3, the IPC should therefore assess all applications for development consent for the types of infrastructure covered by the energy NPSs on the basis that the Government has demonstrated that there is a need for those types of infrastructure and that the scale and urgency of that need is as described for each of them in this Part; and
- Paragraph 3.1.4, the IPC should give substantial weight to the contribution which projects would make towards satisfying this need when considering applications for development consent under the Planning Act 2008.

2.8.2.5 The NPS EN-1 is currently under review and an updated draft was published for consultation in September 2021, where the above paragraphs are proposed to be relocated to Section 5.14, supported by the following proposed updates:

- Paragraph 5.14.4, which also states that the assessment should consider any possible disruption to services and infrastructure (such as road, rail and airports); and

- Paragraph 5.14.8, which states that the Secretary of State (SoS) should only consider preventing or refusing development on highways grounds if there would be an unacceptable impact on highway safety, or residual cumulative impacts on the road network would be severe.

National Policy Statement for Electricity Networks Infrastructure (NPS EN-5, 2011)

2.8.2.6 The NPS for Electricity Networks Infrastructure (EN-5) was published in 2011 and sets out the policies relating to electricity networks infrastructure for consideration in conjunction with NPS EN-1.

2.8.2.7 The NPS EN-5 is currently under review and an updated draft was published for consultation in September 2021. While the adopted document does not refer to transport or highways requirements, the most relevant paragraphs are set out as follows:

- Paragraph 2.2.2, which discusses the factors that inform site selection for the proposed infrastructure; and
- Paragraph 2.2.3 and 2.2.4, which considers the land requirements to gain access for the purposes of installation and maintenance of networks.

National planning policy framework (July 2021)

2.8.2.8 The Government's National Planning Policy Framework (NPPF) was originally published in March 2012 and later revised in July 2021, outlining the Government's planning policies and how they are expected to be applied. The TA will set out the key guidance points of relevance to this application.

2.8.2.9 The most relevant paragraphs in the context of transport are set out below:

- Paragraph 104 outlines that 'transport issues should be considered from the earliest of stages of plan-making and development proposals'; this is to ensure that:
  - The potential impacts of development on transport networks can be addressed;
  - Opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;
  - Opportunities to promote walking, cycling and public transport use are identified and pursued;
  - The environmental impacts of traffic and transport infrastructure can be identified, assessed and considered – including appropriate opportunities for mitigation and for net gains in environmental quality; and
  - Patterns of movement, streets, parking and other transport considerations are integral to the design of schemes and contribute to making high quality places.
- Paragraph 110 outlines the key considerations when assessing sites to be allocated for development in plans or specific development applications. These are:

- Appropriate opportunities to promote sustainable transport modes can be (or have been) taken up, given the type of development and its location;
- Safe and suitable access to the Order limits can be achieved for all users;
- The design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance; and
- Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

- Paragraph 111 states that development should only be prevented or refused on highways grounds where there would be an unacceptable impact on highway safety, or the residual cumulative impacts of development on the road network would be severe.
- Within this context, paragraph 112 states that applications for development should:
  - Give priority first to pedestrian and cycle movements and then, as far as possible, facilitate access to high quality public transport;
  - Address the needs of people with disabilities and reduced mobility in relation to all modes of transport;
  - Create places that are safe, secure and attractive, which minimise the scope for conflicts between pedestrians, cyclists and vehicles;
  - Allow for the efficient delivery of goods, and access by service and emergency vehicles; and
  - Be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.
- As outlined in Paragraph 113, all developments that generate significant amounts of movement should be required to provide a Travel Plan, and the application should be supported by a Transport Statement or TA so that the likely impacts of the proposal can be assessed.

National planning practice guidance (2014)

2.8.2.10 The Government's Planning Practice Guidance; Travel Plans, TAs and Transport Statements in Decision Taking (2014) provides advice on when TAs and Transport Statements are required, and what they should contain. The most relevant paragraphs are summarised below:

- Paragraph 002 states that Travel Plans, TAs and Transport Statements are all ways of assessing and mitigating the negative transport impacts of development in order to promote sustainable development. They are required for all developments which generate significant amounts of movements;
- Paragraphs 004 and 005 state that TAs should primarily focus on evaluating the potential transport impacts of a development proposal and may propose mitigation measures to promote sustainable development in order to avoid unacceptable or "severe" impacts where necessary;

- Paragraph 006 states that TAs support national planning policy and can positively contribute to encouraging sustainable travel, reducing traffic generation and detrimental impacts, reducing carbon emissions and climate impacts, creating accessible, connected and inclusive communities, improving health outcomes and quality of life, improving road safety and reducing the need for new development to increase existing road capacity of provide new roads;
- Paragraph 007 states that TAs should be established at an early stage and be tailored to local circumstances, as well as proportionate to the size and scope of the proposed development. In addition, they should be brought forward through collaborative ongoing working between the local planning authority/transport authority, transport operators, rail network operators, as well as National Highways where there may be implications for the strategic road network and other relevant bodies; and
- Paragraphs 013 to 015 provide further details of when TAs are required, how the need and scope of a TA should be established and what information should be included.

Guidelines for the environmental assessment of road traffic (1993)

2.8.2.11 Institute of Environmental Management and Assessment (IEMA) Guidelines for the Environmental Assessment of Road Traffic (1993) provides guidance on examining the environmental impacts of developments in terms of traffic and transportation.

Local planning policy

2.8.2.12 Local planning policy relating to transport and pertinent to the Suffolk Onshore Scheme is set out below.

Suffolk's Local Transport Plan (2011 – 2031)

2.8.2.13 The Local Transport Plan was prepared by Suffolk County Council (SCC) with an aim to provide a clear vision for the future of transport across the county up to 2031. The document outlines policies and provides a four-year implementation plan to manage and enhance the local transport network; the key aims and strategy focus on:

- The challenge of maintaining the highway network in good condition;
- Tackling congestion in the larger towns by more efficient management of traffic, reducing the demand for car travel and promoting more sustainable means of travel;
- Improved connectivity and accessibility in rural areas;
- Seeking improvement to the A11, A12 and A14 trunk roads connecting businesses in Suffolk to each other and to their markets;
- Seeking improvement to the rail network for freight and passengers;
- Relief for our market towns suffering from high levels of through traffic; and
- Recognising that securing high speed broadband throughout Suffolk is very important at present in addressing accessibility and connectivity issues throughout Suffolk and supporting business growth.

2.8.2.14 The Local Transport Plan (LTP) recognises the potential of promoting transport systems with the aim of reducing carbon emissions. In addition, the LTP supports the County's Sustainable Community Strategy to meet the following objectives:

- Creating a prosperous and vibrant economy;
- Improving learning and skills for the future;
- Creating the greenest county; and
- Providing safe, healthy and inclusive communities.

2.8.2.15 The key measures proposed within the Implementation Plan are region, mode and route specific.

East Suffolk Council – Suffolk Coastal Local Plan (2020)

2.8.2.16 The Local Authority was created from a merger of the former Suffolk Coastal and Waveney district, and as such there are two adopted Local Plans within East Suffolk. The Study area is located within the former Suffolk Coastal district and subject to decision making with reference to the relevant Local Plan adopted in September 2020.

2.8.2.17 The Local Plan sets out a vision and a framework for the future development of the area, addressing needs and opportunities for housing, the economy, community facilities and infrastructure, as well as the basis for conserving and enhancing the natural and historic environment, mitigating and adapting to climate change, and achieving well designed places. Chapter 7 of the document sets out the Council's strategy for transport and infrastructure provision in the district and the relevant policies, which focuses on sustainable transport (Policy SCLP7.1) and parking (Policy SCLP7.2).

2.8.3 Study Area

2.8.3.1 At this stage, a total of five options are considered for the proposal, with the proposed study area therefore comprising the land requirement for all options collectively, including directly linked transport infrastructure adjacent to the land required for all options, and the inclusion of the village of Leiston, which is surrounded by the proposal options.

2.8.3.2 The proposed study area in Suffolk is defined by **Figure 1.1.2 Suffolk Scoping Boundary** and also includes additional parts of the highway network and the pedestrian/ cycle network including Public Rights of Way (PRoW) which may potentially be affected by the Suffolk Onshore Scheme. The proposed study area for traffic and transport is shown on **Figure 2.8.1 Proposed Study Area in Suffolk (Traffic & Transport)**.

2.8.3.3 The extent of the proposed study area for assessment in terms of highway impact will be subject to discussion, and agreement of this study area will be sought, with Suffolk County Council (SCC) as the local highway authority. Therefore, the proposed study area will be updated as required when the ES is prepared.

2.8.3.4 The proposed study area includes the following parts of the highway network for consideration:

- A1094 Saxmundham Road between Church Common and Aldeburgh;
- B1119 Church Hill/Saxmundham Road/Waterloo Avenue;
- B1122 Abbey Road;
- B1069 Snape Road;
- B1353 Aldringham Lane;
- B1122 Aldeburgh Road/Leiston Road
- All roads within and connected to the village of Leiston;
- Road links to Sizewell nuclear power stations and the Beach View Holiday Park;
- All roads within and connected to the village of Thorpeness including Thorpe Road;
- All roads within the west portion of Aldeburgh, from the roundabout junction of A1094 Saxmundham Road with B1122 Leiston Road;
- All roads within and connected to the village of Friston including B1121 Saxmundham Road; and
- Grove Road from Friston to the western edge of Saxmundham.

2.8.3.5 The following key local junctions along the perimeter of the Study Area will be considered:

- Junction of B1122 with Moat Road;
- Junction of Hawthorn Road with Moat Road;
- Junction of Hawthorn Road with Harrow Lane;
- Junction of Hawthorn Road with access road towards the Concrete Plant and Cakes and Ale Holiday Park;
- Junction of the B1121 with Clayhills Road;
- Junction of B1121 with Sandy Lane;
- Junction of the A1094 with the B1121;
- Junction of the A1094 with the B1069; and
- Roundabout junction of the A1094 with the B1122.

2.8.3.6 The proposed study area also includes the following walking and cycling routes (including PRoW) which will be considered:

- National Cycle Network Route 42, which runs from southwest to northeast across the centre of the Study Area;
- A significant number of PRoW, as set out within the SCC definitive map. The PRoW are located within the parishes of Leiston-cum-Sizewell, Theberton, Knodishall, Friston, Aldringham-cum-Thorpe, Aldeburgh, Sternfield, Saxmundham, and Snape;

- Promoted Route: Sandlings Walk from Ipswich to Lowestoft, which runs from north to south and across the east of the Leiston; and
- Suffolk Coast Path.

2.8.3.7 The specific transport and highways assets are set out and listed in the Baseline Conditions by Option. As a preferred option is taken forward, these assets will become subject to the assessment, with agreement from SCC.

2.8.4 Baseline Conditions

Data Sources

2.8.4.1 The traffic and transport baseline conditions described in this section have been informed by a review of the following data sources:

- Publicly available mapping and aerial imagery from Google Maps;
- Publicly available information on websites for public transport operators and online resources for promoted recreational routes; and
- Data held within the AECOM WebGIS platform, with transport infrastructure information, including routes and labelling for PRoW routes.

Baseline

Site 1 Emerging Preference

Highway network

2.8.4.2 The proposed Option Area includes portions of a number of main local highways. The most prominent is the A1094 to the west of Aldeburgh. This route operates with a single lane in each direction and is the main route between Aldeburgh and the A12(T). The portion of the A1094 within the Option Area provides access to a number of farms and operates with the national speed limit.

2.8.4.3 The Option Area includes a portion of the B1122 Leiston Road which runs from Aldeburgh to the south towards Aldringham and Leiston in the north. The portion of the B1122 within the Option Area provides access to a farm access and operates with a 30mph speed limit. The B1122 is not linked with any other main routes within the Option Area itself.

2.8.4.4 Thorpe Road is a coastal road linking Aldeburgh in the south with Thorpeness to the north. The route, which operates with the national speed limit, does not include any connectivity with any other routes within the Option Area.

2.8.4.5 The B1069 Snape Road bisects the centre of the Option Area and connects the A1094 to the south with the village of Knodishall Common to the north. Grove Road is also a north-south route through the Option Area, running northwards from the village of Friston. School Road forms a junction with Grove Road and runs eastwards towards Knodishall. Both Grove Road and School Road are unclassified with single lane carriageways subject to the national speed limit within the Option Area.

2.8.4.6 The Option Area includes a network of unmade tracks that provide agricultural access, some of which are connected to each other, as well as the A1094 and B1069 via a series of access points. The northwest perimeter of the Option Area also abuts the B1121 which runs from Sternfield to Friston and operates with a 30mph speed limit.

Public transport network

2.8.4.7 There are bus stops in both directions on the B1122 Linden Road at the south of the Option Area. The bus routes that operate along the B1122 are 64, 65 and 522. The 522 service operates between Saxmundham and Aldeburgh, with services operating from 07:00 and 17:00, at a frequency of one service per hour in each direction. The 64 service runs from Ipswich to Aldeburgh via Leiston between 06:00 and 20:00 at a frequency of one service per hour in each direction. The 65 service runs from Ipswich to Leiston via Woodbridge between 06:00 and 15:30 on an hourly frequency in each direction.

2.8.4.8 The B1121 along the southwest perimeter of the Option Area is used by bus route 521 between Aldeburgh and Halesworth. The service operates four times per day in each direction and can be accessed from stops at Friston to the west of the Option Area, and Sandy Lane further to the west.

2.8.4.9 There are no rail services within the Option Area, although Saxmundham railway station is located circa. 2.5km to the northwest of the Option Area. The station operates services between Lowestoft and Ipswich at one service per hour in each direction. There is a branch railway line between Saxmundham and Leiston, although this is solely for service access to Sizewell power station.

Active travel network

2.8.4.10 There is a significant number of bridleways and shared walking and cycling routes within the Option Area. The specific links within the Option Area are set out, with PROW ID, Route Code and Type of PROW as follows:

- 6318 E-103/006/0 Footpath
- 6333 E-103/016/0 Footpath
- 6334 E-103/019/0 Footpath
- 6335 E-103/020/0 Footpath
- 7442 E-260/001/0 Footpath
- 7445 E-260/007/0 Footpath
- 7446 E-260/008/0 Footpath
- 7972 E-354/004/0 Footpath
- 7973 E-354/019/0 Footpath
- 7974 E-354/005/0 Footpath
- 7975 E-354/006/0 Footpath
- 7976 E-354/007/0 Footpath
- 7977 E-354/007/A Footpath
- 7978 E-354/008/0 Footpath

- 7447 E-260/009/0 Footpath
- 7449 E-260/012/0 Bridleway
- 7450 E-260/012/A Bridleway
- 7452 E-260/013/A Footpath
- 7455 E-260/017/0 Footpath
- 7969 E-354/001/0 Bridleway
- 7970 E-354/002/0 Bridleway
- 7971 E-354/003/0 Footpath
- 7986 E-354/016/0 Footpath
- 7988 E-354/018/0 Footpath
- 7989 E-354/018/A Footpath
- 7990 E-354/020/0 Bridleway
- 7991 E-354/022/0 Footpath
- 10027 E-103/001/0 Footpath
- 14032 E-354/036/0 Bridleway

2.8.4.11 National Cycle Network Route 42, which runs from southwest to northeast direction across the west of the Option Area. The Suffolk Coast Path crosses the southeast of the Option Area, beyond the northern edge of Aldeburgh. Sandlings Walk, which is a promoted route from Ipswich to Lowestoft, runs east to west across the study area.

Site 1 Alternative

Highway network

2.8.4.12 The Option Area includes portions highways across rural land from the southwest perimeter of Knodishall, southeast perimeter of Leiston and leading towards land to the south of the Sizewell power station. The Option Area includes Sizewell Gap to the east, which is an unclassified road linking Leiston to Sizewell, that acts as a link road with ample visibility provided at junctions, including wide junction bellmouths along its length, and a footway along the southern side of the road.

2.8.4.13 Sizewell Gap provides a link onto Lovers Lane and the B1122 Abbey Road which run to the north of Leiston. The A1122 Abbey Road provides connections with Theberton in the north and Leiston to the south.

2.8.4.14 Within the centre, the Option Area includes extents and the junction of the B1353 and B1122 Aldeburgh Road at the southeast of Aldringham. The junction includes a slip lane from the B1122 southeast bound onto the B1353, and each link on the junction is provided with flared lanes. The two links, within the Option Area, operate with 30mph speed limits.

2.8.4.15 The B1069 Snape Road within the southwest of the Option Area, connects the A1094 with the village of Knodishall Common. The route has a single lane in each direction, without kerb lines or footway, and is a national speed limit route. Grove Road is also a

north-south route through the Option Area, running northwards from the village of Friston. School Road forms a junction with Grove Road and runs eastwards towards Knodishall Both Grove Road and School Road are unclassified with single lane carriageways subject to the national speed limit within the Option Area.

2.8.4.16 The Option Area includes a network of unmade tracks that provide agricultural access, some of which are connected to each other, as well as the A1094 and B1069 via a series of access points. The northwest perimeter of the Option Area also abuts the B1121 which runs from Sternfield to Friston and operates with a 30mph speed limit.

Public transport network

2.8.4.17 The bus stop and route serving the B1121 is the 521 service between Aldeburgh and Halesworth. The service operates four times per day in each direction and can be accessed from the Parrot & Punchbowl and Church Lane stops at the east of the Option Area.

2.8.4.18 There are three services operating on the B1122, the 64, 65 and 522. The 64 service runs from Ipswich to Aldeburgh via Leiston between 06:00 and 20:00 at a frequency of one service per hour in each direction. The 65 service runs from Ipswich to Leiston via Woodbridge between 06:00 and 15:30 on an hourly frequency in each direction. The 522 service operates between Saxmundham and Aldeburgh, with services operating from 07:00 and 17:00, at a frequency of one service per hour in each direction. The 522 bus route also operates along the B1119 at the northwest perimeter of the Option Area, with access points within Saxmundham, including from the Waitrose store on this road.

2.8.4.19 There are no rail services within the Option Area, although Saxmundham railway station is located circa. 2.5km to the northwest of the Option Area. The station operates services between Lowestoft and Ipswich at one service per hour in each direction. There is a branch railway line between Saxmundham and Leiston, although this is solely for service access to Sizewell power station.

Active travel network

2.8.4.20 There is a significant number of bridleways and shared walking and cycling routes within the Option Area. The specific links within the Option Area are set out, with PROW ID, Route Code and Type of PROW as follows:

- 6349 E-106/008/0 Footpath
- 16991 E-260/030/0 Footpath
- 6370 E-106/028/0 Footpath
- 7988 E-354/018/0 Footpath
- 8036 E-363/024/0 Footpath
- 7452 E-260/013/A Footpath
- 7989 E-354/018/A Footpath
- 7972 E-354/004/0 Footpath
- 8026 E-363/016/0 Footpath
- 6314 E-106/001/0 Footpath

- 7971 E-354/003/0 Footpath
- 7990 E-354/020/0 Bridleway
- 7450 E-260/012/A Bridleway
- 8041 E-363/029/0 Footpath
- 7976 E-354/007/0 Footpath
- 8034 E-363/022/0 Footpath
- 6347 E-106/006/0 Bridleway
- 8024 E-363/014/A Footpath
- 7975 E-354/006/0 Footpath
- 6407 E-106/067/0 Footpath
- 7455 E-260/017/0 Footpath
- 7970 E-354/002/0 Bridleway
- 8040 E-363/028/0 Bridleway
- 6338 E-106/003/0 Footpath
- 16992 E-260/031/0 Footpath
- 7969 E-354/001/0 Bridleway
- 8035 E-363/023/0 Footpath
- 7447 E-260/009/0 Footpath
- 8038 E-363/026/0 Bridleway
- 14032 E-354/036/0 Bridleway
- 8037 E-363/025/0 Footpath
- 8039 E-363/027/0 Bridleway
- 7991 E-354/022/0 Footpath
- 8031 E-363/019/0 Bridleway
- 6362 E-106/026/0 Byway Open to All Traffic
- 7449 E-260/012/0 Bridleway
- 7977 E-354/007/A Footpath
- 7974 E-354/005/0 Footpath
- 7986 E-354/016/0 Footpath
- 7978 E-354/008/0 Footpath
- 7446 E-260/008/0 Footpath
- 8033 E-363/021/0 Footpath
- 6405 E-106/065/0 Footpath
- 7445 E-260/007/0 Footpath
- 7973 E-354/019/0 Footpath
- 8025 E-363/015/0 Bridleway
- 6369 E-106/027/0 Bridleway

- 8023 E-363/014/0
  Footpath

2.8.4.21 National Cycle Network Route 42, which runs from southwest to northeast direction across the west of the Option Area. The Suffolk Coast Path crosses the Option Area, at Sizewell. Sandlings Walk, which is a promoted route from Ipswich to Lowestoft, runs east to west across the study area, with a further portion running north to south at Sizewell.

Site 3 Emerging Preference

Highway network

2.8.4.22 The proposed Option Area includes five main portions of the surrounding highway network. The most prominent is the A1094 to the west of Aldeburgh. This route operates single lanes in each direction and is the main route between Aldeburgh and the A12(T). The portion of the A1094 within the Option Area includes a number of farm accesses and operates with the national speed limit.

2.8.4.23 The Option Area includes a small portion of the B1122 Leiston Road which runs from Aldeburgh to the south towards Aldringham and Leiston in the north. The portion of the B1122 within the Option Area provides access to a farm access and operates with a 30mph speed limit. The B1122 is not linked with any other main routes within the Option Area.

2.8.4.24 Thorpe Road is a coastal road to the west of the Option Area which links Aldeburgh in the south with Thorpeness to the north. The route, which operates with the national speed limit, does not include connectivity with any other key routes within the Option Area.

2.8.4.25 The B1069 Snape Road bisects the centre of the Option Area and connects the A1094 to the south with the village of Knodishall Common to the north. Grove Road is also a north-south route through the centre Option Area, running northwards from the village of Friston. Grove Road is unclassified and is a single lane carriageway, subject to a 30mph speed limit to the south and the national speed limit towards the north portion of the Option Area. School Road also forms a junction with Grove Road and runs eastwards towards Knodishall. There are a number of unmade tracks which provide agricultural access within the centre of the Option Area via the A1094 and the B1069.

2.8.4.26 The northwest section of the Option Area includes several minor rural roads which provide agricultural access. The northwest perimeter of the Option Area also interacts with the B1119 and B1121 routes, which run from Saxmundham to Leiston and Sternfield to Friston respectively. The B1121 operates with a 30mph speed limit whereas the B1119 is subject to the national speed limit, at the extents abutting the study area.

Public transport network

2.8.4.27 There are bus stops in both directions on the B1122 Linden Road at the south of the Option Area. The bus routes that operate along the B1122 are 64, 65 and 522. The 522 service operates between Saxmundham and Aldeburgh, with services operating from 07:00 and 17:00, at a frequency of one service per hour in each direction. The 64 service runs from Ipswich to Aldeburgh via Leiston between 06:00 and 20:00 at a

frequency of one service per hour in each direction. The 65 service runs from Ipswich to Leiston via Woodbridge between 06:00 and 15:30 on an hourly frequency in each direction.

2.8.4.28 The B1121 along the southwest perimeter of the Option Area is used by bus route 521 between Aldeburgh and Halesworth. The service operates four times per day in each direction and can be accessed from stops at Friston to the west of the Option Area, and Sandy Lane further to the west. The 522 bus route also operates along the B1119 at the northern perimeter of the Option Road, with access points within Saxmundham, including from the Waitrose store on this road.

2.8.4.29 There are no rail services within the Option Area, although Saxmundham railway station circa. 900m to the northwest of the Option Area. The station operates services between Lowestoft and Ipswich at one service per hour in each direction. There is a branch railway line between Saxmundham and Leiston, although this is solely for service access to Sizewell power station.

Active travel network

2.8.4.30 There is a significant number of bridleways and shared walking and cycling routes within the Option Area. The specific links within the Option Area are set out, with PROW ID, Route Code and Type of PROW as follows:

- 8904 E-491/006/0 Footpath
- 7988 E-354/018/0 Footpath
- 7971 E-354/003/0 Footpath
- 8907 E-491/012/0 Bridleway
- 8903 E-491/005/0 Footpath
- 7990 E-354/020/0 Bridleway
- 7450 E-260/012/A Bridleway
- 7976 E-354/007/0 Footpath
- 7975 E-354/006/0 Footpath
- 7455 E-260/017/0 Footpath
- 7979 E-354/009/0 Footpath
- 7452 E-260/013/A Footpath
- 7989 E-354/018/A Footpath
- 7972 E-354/004/0 Footpath
- 14032 E-354/036/0 Bridleway
- 7464 E-260/029/0 Bridleway
- 7991 E-354/022/0 Footpath
- 7453 E-260/015/0 Footpath
- 7449 E-260/012/0 Bridleway
- 7977 E-354/007/A Footpath
- 7986 E-354/016/0 Footpath
- 7978 E-354/008/0 Footpath

- 7970 E-354/002/0 Bridleway
- 8902 E-491/004/0 Footpath
- 16992 E-260/031/0 Footpath
- 7969 E-354/001/0 Bridleway
- 7454 E-260/016/0 Footpath
- 7997 E-354/031/0 Footpath
- 7447 E-260/009/0 Footpath
- 10027 E-103/001/0 Footpath
- 8906 E-491/010/0 Bridleway
- 7456 E-260/018/0 Footpath
- 7446 E-260/008/0 Footpath
- 7457 E-260/020/0 Footpath
- 6333 E-103/016/0 Footpath
- 7445 E-260/007/0 Footpath
- 7973 E-354/019/0 Footpath
- 6318 E-103/006/0 Footpath
- 12866 E-260/026/0 Bridleway
- 8644 E-460/023/0 Footpath
- 6334 E-103/019/0 Footpath

2.8.4.31 National Cycle Network Route 42, which runs from southwest to northeast direction across the centre of the Option Area. The Suffolk Coast Path crosses the Option Area, north of Aldeburgh. Sandlings Walk, which is a promoted route from Ipswich to Lowestoft, runs east to west across the south of the study area.

Site 3 Alternative (Option 1)

Highway network

2.8.4.32 The Option Area includes portions of highways across rural land from the northern perimeters of Leiston and Knodishall, leading towards land to the south of the Sizewell power station. The Option Area includes Sizewell Gap, which is an unclassified road linking Leiston to Sizewell, that acts as a link road, with ample visibility provided at junctions, including wide junction bellmouths along its length, and a footway along the southern side of the road.

2.8.4.33 Sizewell Gap provides a link onto Lovers Lane and the B1122 Abbey Road which run to the north of Leiston. The A1122 Abbey Road provides connections with Theberton in the north and Leiston to the south.

2.8.4.34 The north of the Option Area is bisected by a series of routes including Abbey Lane, Harrow Lane, The Green and Workhouse Lane, which are rural lanes which operate national speed limit. To the west, a portion of the B1119 crosses the Option Area, and runs from Saxmundham to Leiston and operates with the national speed limit, at the

extent within the study area. The Option Area also includes a number of other unmade tracks that provide agricultural access.

2.8.4.35 The Option Area also includes portions of highways predominantly on the perimeter, including the B1121 to the southwest which runs from Sternfield to Friston. The B1121 operates with a 30 mph speed limit at the extents abutting the study area.

2.8.4.36 At the south-western portion of the Option Area, Grove Road is a north-south route which runs southwards towards the village of Friston. The road is unclassified and is a single lane carriageway with a national speed limit on the portion within the Option Area.

Public transport network

2.8.4.37 The bus stop and route serving the B1121 is the 521 service between Aldeburgh and Halesworth. The service operates four times per day in each direction and can be accessed from the Parrot & Punchbowl and Church Lane stops at the east of the Option Area.

2.8.4.38 There are three services operating on the B1122, the 64, 65 and 522. The 64 service runs from Ipswich to Aldeburgh via Leiston between 06:00 and 20:00 at a frequency of one service per hour in each direction. The 65 service runs from Ipswich to Leiston via Woodbridge between 06:00 and 15:30 on an hourly frequency in each direction. The 522 service operates between Saxmundham and Aldeburgh, with services operating from 07:00 and 17:00, at a frequency of one service per hour in each direction. The 522 bus route also operates along the B1119 to the west of the Option Area, with access points within Saxmundham, including from the Waitrose store on this road.

2.8.4.39 There are no rail services within the Option Area, although Saxmundham railway station is located circa. 900m to the west of the Option Area. The station operates services between Lowestoft and Ipswich at one service per hour in each direction. There is a branch railway line between Saxmundham and Leiston, although this is solely for service access to Sizewell power station.

Active travel network

2.8.4.40 There is a significant number of bridleways and shared walking and cycling routes within the Option Area. The specific links within the Option Area are set out, with PROW ID, Route Code and Type of PROW as follows:

- 9045 E-515/001/0 Footpath
- 6370 E-106/028/0 Footpath
- 8904 E-491/006/0 Footpath
- 8042 E-363/030/0 Footpath
- 7459 E-260/022/0 Footpath
- 7998 E-354/032/0 Bridleway
- 8037 E-363/025/0 Footpath
- 8039 E-363/027/0 Bridleway
- 7464 E-260/029/0 Bridleway
- 8031 E-363/019/0 Bridleway

- 8036 E-363/024/0 Footpath
- 8907 E-491/012/0 Bridleway
- 8022 E-363/013/0 Bridleway
- 8903 E-491/005/0 Footpath
- 7976 E-354/007/0 Footpath
- 7975 E-354/006/0 Footpath
- 7455 E-260/017/0 Footpath
- 7979 E-354/009/0 Footpath
- 8040 E-363/028/0 Bridleway
- 8902 E-491/004/0 Footpath
- 8030 E-363/018/0 Footpath
- 8035 E-363/023/0 Footpath
- 7454 E-260/016/0 Footpath
- 8038 E-363/026/0 Bridleway
- 8906 E-491/010/0 Bridleway
- 7456 E-260/018/0 Footpath
- 7453 E-260/015/0 Footpath
- 6362 E-106/026/0 Byway Open to All Traffic
- 7977 E-354/007/A Footpath
- 8015 E-363/006/0 Footpath
- 7986 E-354/016/0 Footpath
- 7978 E-354/008/0 Footpath
- 7457 E-260/020/0 Footpath
- 8033 E-363/021/0 Footpath
- 8019 E-363/010/0 Footpath
- 8905 E-491/008/0 Footpath
- 8644 E-460/023/0 Footpath
- 6369 E-106/027/0 Bridleway

2.8.4.41 National Cycle Network Route 42, which runs from southwest to northeast direction across the centre of the Option Area. The Suffolk Coast Path crosses the Option Area, at Sizewell. Sandlings Walk, which is a promoted route from Ipswich to Lowestoft, also crosses the Option Area at Sizewell.

Site 3 Alternative (Option 2)

Highway network

2.8.4.42 The Option Area includes portions of highways across rural land from the southwest perimeter of Knodishall and southeast perimeter of Leiston, leading towards land to the south of the Sizewell power station. The Option Area to the east includes Sizewell Gap, which is an unclassified road linking Leiston to Sizewell, that acts as a link road with ample visibility provided at junctions, including wide junction bellmouths along its length, and a footway along the southern side of the road.

2.8.4.43 Sizewell Gap provides a link onto Lovers Lane and the B1122 Abbey Road which run to the north of Leiston. The A1122 Abbey Road provides connections with Theberton in the north and Leiston to the south.

2.8.4.44 Within the centre, the Option Area includes extents and the junction of the B1353 and B1122 Aldeburgh Road at the southeast of Aldringham. The junction includes a slip lane from the B1122 southeast bound onto the B1353, and each link on the junction is provided with flared lanes. The two links, within the Option Area, operate with 30mph speed limits.

2.8.4.45 The B1069 Snape Road also bisects the centre of the Option Area and connects the A1094 to the south with the village of Knodishall Common to the north. Grove Road is also a north-south route through the centre Option Area, running northwards from the village of Friston. Grove Road is unclassified and is a single lane carriageway, subject to a 30mph speed limit to the south and the national speed limit towards the north portion of the Option Area. School Road also forms a junction with Grove Road and runs eastwards towards Knodishall. There are a number of unmade tracks which provide agricultural access within the centre of the Option Area via the A1094 to the south and the B1069.

2.8.4.46 The northwest section of the Option Area includes several minor rural roads which provide agricultural access. The northwest perimeter of the Option Area also interacts with the B1119 and B1121 routes, which run from Saxmundham to Leiston and Sternfield to Friston respectively. The B1121 operates with a 30mph speed limit whereas the B1119 is subject to the national speed limit, at the extents abutting the study area.

Public transport network

2.8.4.47 There are three services operating on the B1122, the 64, 65 and 522. The 64 service runs from Ipswich to Aldeburgh via Leiston between 06:00 and 20:00 at a frequency of one service per hour in each direction. The 65 service runs from Ipswich to Leiston via Woodbridge between 06:00 and 15:30 on an hourly frequency in each direction. The 522 service operates between Saxmundham and Aldeburgh, with services operating from 07:00 and 17:00, at a frequency of one service per hour in each direction. The 522 bus route also operates along the B1119 at the northwest perimeter of the Option Area, with access points within Saxmundham, including from the Waitrose store on this road.

2.8.4.48 The B1121 towards the western perimeter of the Option Area is used by bus route 521 between Aldeburgh and Halesworth. The service operates four times per day in each

direction and can be accessed from stops at Friston to the west of the Option Area, and Sandy Lane further to the west.

2.8.4.49 There are no rail services within the Option Area, although Saxmundham railway station is located circa. 900m to the west of the Option Area. The station operates services between Lowestoft and Ipswich at one service per hour in each direction. There is a branch railway line between Saxmundham and Leiston, although this is solely for service access to Sizewell power station.

Active travel network

2.8.4.50 There is a significant number of bridleways and shared walking and cycling routes within the Option Area. The specific links within the Option Area are set out, with PROW ID, Route Code and Type of PROW as follows:

- 6349 E-106/008/0 Footpath
- 16991 E-260/030/0 Footpath
- 6370 E-106/028/0 Footpath
- 8904 E-491/006/0 Footpath
- 7988 E-354/018/0 Footpath
- 8036 E-363/024/0 Footpath
- 7971 E-354/003/0 Footpath
- 8907 E-491/012/0 Bridleway
- 8903 E-491/005/0 Footpath
- 7990 E-354/020/0 Bridleway
- 7450 E-260/012/A Bridleway
- 8041 E-363/029/0 Footpath
- 7976 E-354/007/0 Footpath
- 8034 E-363/022/0 Footpath
- 8906 E-491/010/0 Bridleway
- 7456 E-260/018/0 Footpath
- 8023 E-363/014/0 Footpath
- 7452 E-260/013/A Footpath
- 7989 E-354/018/A Footpath
- 7972 E-354/004/0 Footpath
- 8026 E-363/016/0 Footpath
- 6314 E-106/001/0 Footpath
- 14032 E-354/036/0 Bridleway
- 8037 E-363/025/0 Footpath
- 8039 E-363/027/0 Bridleway
- 7464 E-260/029/0 Bridleway
- 7991 E-354/022/0 Footpath
- 8031 E-363/019/0 Bridleway

- 6347 E-106/006/0 Bridleway
- 8024 E-363/014/A Footpath
- 7975 E-354/006/0 Footpath
- 6407 E-106/067/0 Footpath
- 7455 E-260/017/0 Footpath
- 7979 E-354/009/0 Footpath
- 7970 E-354/002/0 Bridleway
- 8040 E-363/028/0 Bridleway
- 8902 E-491/004/0 Footpath
- 6338 E-106/003/0 Footpath
- 16992 E-260/031/0 Footpath
- 7969 E-354/001/0 Bridleway
- 8035 E-363/023/0 Footpath
- 7454 E-260/016/0 Footpath
- 7997 E-354/031/0 Footpath
- 7447 E-260/009/0 Footpath
- 8038 E-363/026/0 Bridleway
- 10027 E-103/001/0 Footpath
- 7453 E-260/015/0 Footpath
- 6362 E-106/026/0 Byway Open to All Traffic
- 7449 E-260/012/0 Bridleway
- 7977 E-354/007/A Footpath
- 7986 E-354/016/0 Footpath
- 7978 E-354/008/0 Footpath
- 7446 E-260/008/0 Footpath
- 7457 E-260/020/0 Footpath
- 8033 E-363/021/0 Footpath
- 6405 E-106/065/0 Footpath
- 6333 E-103/016/0 Footpath
- 7445 E-260/007/0 Footpath
- 7973 E-354/019/0 Footpath
- 12866 E-260/026/0 Bridleway
- 8025 E-363/015/0 Bridleway
- 8644 E-460/023/0 Footpath
- 6369 E-106/027/0 Bridleway

2.8.4.51 National Cycle Network Route 42, which runs from southwest to northeast direction across the centre of the Option Area. The Suffolk Coast Path crosses the Option Area, at Sizewell. Sandlings Walk, which is a promoted route from Ipswich to Lowestoft, also

crosses the Option Area at Sizewell, and across the southernmost portion of the area, between Knoddishall Common and the A1094 route.

Future Baseline

2.8.4.52 The ES will consider future baseline conditions for the land within the proposed study area for the relevant assessment year. For example, base traffic flows will be factored up to the future base year using growth factors derived from TEMPro v7.2 for the relevant areas impacted by the Suffolk Onshore Scheme. In addition, consideration will be given to any committed developments or highway schemes that are due to be under construction or operational during the future baseline year; see **Part 2, Chapter 13, Cumulative Effects** for further details.

2.8.5 Embedded and Control & Management Measures

Embedded Measures

2.8.5.1 The Project will need to comply with design safety standards including NETS SQSS and the suite of National Grid policies and processes which contains details on design standards required to be met when designing, constructing and operating its projects.

2.8.5.2 The proposed High Voltage Direct Cable (HVDC) cable route will typically be installed within a 40m wide working width. The exception to this is where environmental or engineering constraints mean additional land is required such as where the proposed HVDC route is required to cross obstacles such as roads, watercourses or railway lines using a trenchless technique. In these locations working width may be required to be larger in order to accommodate the larger construction equipment required to undertake installation works.

2.8.5.3 Trenchless methods will typically be utilised where obstacles (watercourses, roads, railway lines, flood defences or other utilities) require to be crossed. This would involve the installation of ducts below the obstacle. The cables would then be pulled through the ducts. This method is designed to avoid any potential impacts on the railway network.

2.8.5.4 The specific proposed construction method for the selected Option will be set out in further detail within the ES chapter.

Control and Management Measures

2.8.5.5 In addition to the embedded design mitigation measures, a number of control and management measures will be implemented as detailed in the outline Code of Construction Practice (CoCP). This will include the preparation of a Framework Construction Traffic Management Plan (CTMP).

2.8.5.6 The Outline CoCP which is contained in **Appendix 1.4.A Outline Code of Construction Practice** contains a list of relevant good practice measures, including the following key commitments relating to traffic and transport:

- GG03: A Construction Traffic Management Plan (CTMP) will be produced prior to construction.

- GG12: Appropriate site layout and housekeeping measures will be implemented by the contractor(s) at all construction sites. This will include but not be limited to:
  - Managing staff/vehicles entering or leaving site, especially at the beginning and end of the working day; and
  - Managing potential off-site contractor and visitor parking.
- GG13: Vehicles will be correctly maintained and operated in accordance with the manufacturers recommendations and in a responsible manner. All plant and vehicles will be required to switch off their engines when not in use and when it is safe to do so. In addition, plant and vehicles will conform to relevant applicable standards for the vehicle type.
- TT01: The CTMP will set out measures to reduce route and journey mileage to and from, as well as around site, and prevent nuisance to the residents, businesses and the wider community caused by parking, vehicle movements and access restrictions. It will also provide suitable control for the means of access and egress to the public highway and set out measures for the maintenance and upkeep of the public highway. The plan will also identify access for emergency vehicles. It will also set out measures to reduce safety risks through construction vehicle and driver quality standards.
- TT02: The contractor(s) will implement a monitoring and reporting system to check compliance with the measures set out within the CTMP. This will include the need for a GPS tracking system to be fitted to Heavy Goods Vehicles to check for compliance with authorised construction routes. The contractor(s) will also be expected to monitor the number of construction vehicles between the site and the strategic road network. Deviations from the authorised routes or changes to traffic levels that are higher than the CTMP assumptions will require discussion of the need for additional mitigation measures with highways authorities.
- TT03: All designated Public Rights of Way (PRoW) will be identified, and any potential temporary closures applied for/detailed in the DCO. All designated PRoW crossing the working area will be managed with access only closed for short periods while construction activities occur. Any required temporary diversions will be clearly marked at both ends with signage explaining the diversion, the duration of the diversion and a contact number for any concerns.

2.8.5.7 In addition to the above, construction vehicles will be managed at any road/rail/pedestrian/cycle crossing points and further details will be provided within the Framework CTMP.

2.8.6 Potential for Significant Effects

2.8.6.1 The traffic and transport assessment will consider the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project**.

2.8.6.2 The proposed scope of the traffic and transport assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

2.8.6.3 This section identifies the sources and impacts that would occur as a result of the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme.

2.8.6.4 The potential for the Suffolk Onshore Scheme to result in the potential significant effects described in this section takes into account the embedded and control and management measures describe in section 5.

2.8.6.5 The nature of the Suffolk Onshore Scheme is such that the greatest impact is likely to occur during the construction phase and this will be the focus of the assessment of transport effects presented in the ES.

2.8.6.6 During the operational and maintenance phase, the Suffolk Onshore Scheme will be manned by a limited number of operatives across the site, with additional infrequent trips associated with maintenance/inspections or repairs when required. Staff vehicles and those used for maintenance are primarily expected to be pickup trucks and vans, with HGVs rarely accessing the site. Therefore, due to the low level of trips likely to be generated, it is proposed to exclude operational and maintenance phase transport effects from the EIA. Further detail of the operational and maintenance phase transport arrangements will be set out in the ES and Transport Assessment to support this approach.

2.8.6.7 In the event that the Project is decommissioned, there is expected to be fewer HGV, LGV and construction worker arrivals and departures associated with the decommissioning phase of the Suffolk Onshore Scheme than during the construction phase. It is therefore considered reasonable to assume that the impacts will be the same as, or not greater than, the construction phase. Therefore, and given that the exact timing of this scenario is unknown, it is proposed to adopt the assessment of the construction phase to determine the anticipated impact of the Suffolk Onshore Scheme during its decommissioning phase. Further detail of the decommissioning stage transport arrangements will be set out in the ES and Transport Assessment to support this approach.

2.8.6.8 It is recognised that a potential source of impacts arises from hazardous loads. These include the transport of explosives, gases, flammable liquid/solids, oxidising/toxic substances, radioactive material or corrosive substances. SF6 Gas will be required for the circuit breakers, oil for the transformers, and other mixed, non-SF6 gases will be used in the Gas Insulated Switchgear. These inputs are expected to be predominantly required during the construction and decommissioning phases and the transport of hazardous loads will be considered accordingly within the ES and Transport Assessment.

2.8.6.9 Although the Suffolk Onshore Scheme is located near to a number of settlements including Leiston, Saxmundham and Aldeburgh, the majority of staff and/or visitors (associated with each phase) are expected to travel by vehicle as opposed to on foot, by bicycle or by public transport for logistical reasons e.g. due to travel distance or the requirement to carry equipment. Therefore, this has not been detailed in this Scoping Report although for completeness these modes will be reviewed within the Transport Assessment.

2.8.6.10 Vehicular access during each phase is anticipated to be taken from the A and B routes including the A1094 from Benhall to Aldeburgh, which is a link from the A12. The B1121, B1119 and B1122 also provide the main vehicle routes into the Study Area. Further details on proposed access to the Suffolk Onshore Scheme will be included within the ES and the Transport Assessment which will be submitted with the DCO application.

2.8.6.11 The ES and Transport Assessment will assess the peak construction period, which will include Heavy Goods Vehicle (HGV) movements, Light Goods Vehicle (LGV) movements and vehicle movements associated with construction worker arrivals and departures. Construction traffic forecasts will be confirmed in the ES and Transport Assessment.

Sources of construction impacts

2.8.6.12 A summary of the potential sources of construction impacts (traffic and transport) is as follows:

- Construction works e.g. where these require temporary traffic management, or result in temporary diversions or closures to the highway network or pedestrian/cycle routes including PRoW;
- Construction routes e.g. where these interact with the existing transport networks (road/rail/pedestrian/cycle) such as at vehicle crossing points; and
- Construction vehicles:
  - HGVs;
  - LGVs;
  - Construction staff vehicles; and
  - Abnormal loads.

Sources of operational impacts

2.8.6.13 A summary of the potential sources of operational impacts (traffic and transport) is as follows:

- Operational staff vehicles.

Sources of maintenance impacts

2.8.6.14 A summary of the potential sources of maintenance impacts (traffic and transport) is as follows:

- Maintenance staff vehicles relating to monthly visual inspections, and rolling three year maintenance cycle; and
- Repair staff vehicles (including LGVs) relating to refurbishment and repair works, including the transportation of materials for such works.

Sources of decommissioning impacts

2.8.6.15 The potential sources of decommissioning impacts (traffic and transport) are considered to be the same as those set out above for the construction phase, albeit these would relate to the decommissioning phase.

Potential impacts

2.8.6.16 A summary of the potential impacts of the Suffolk Onshore Scheme is set out below in Table 2.8.1. The potential impacts and proposal to scope in / out is consistent across all of the Options.

Table 2.8.1: Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction	Construction works, routes and vehicles	Additional severance to pedestrians and cyclists	Yes	**Scoped in**
Construction	Construction works, routes and vehicles	Additional delay to drivers	Yes	**Scoped in**
Construction	Construction works, routes and vehicles	Additional delay to pedestrians	Yes	**Scoped in**
Construction	Construction works, routes and vehicles	Decline in pedestrian and cyclist amenity	Yes	**Scoped in**
Construction	Construction works, routes and vehicles	Additional fear and intimidation to pedestrians and cyclists	Yes	**Scoped in**
Construction	Construction works, routes and vehicles	Decline in road safety	Yes	**Scoped in**
Construction	Construction works, routes and vehicles	Results in PRoW Diversions and/or Closures	Yes	**Scoped in**
Construction	Construction vehicles	Additional hazardous loads	Yes	**Scoped in**
Operation	Operational staff vehicles	Additional severance to pedestrians and cyclists	No - (limited traffic movements)	Scoped out

Operation	Operational staff vehicles	Additional delay to drivers	No - (limited traffic movements)	Scoped out
Operation	Operational staff vehicles	Additional delay to pedestrians	No - (limited traffic movements)	Scoped out
Operation	Operational staff vehicles	Decline in pedestrian and cyclist amenity	No - (limited traffic movements)	Scoped out
Operation	Operational staff vehicles	Decline in road safety	No - (limited traffic movements)	Scoped out
Operation	Operational staff vehicles	Results in PRoW Diversions and/or Closures	No - (limited traffic movements)	Scoped out
Operation	Operational staff vehicles	Additional hazardous loads	No - (few expected)	Scoped out
Maintenance	Maintenance and repair staff vehicles	Additional severance to pedestrians and cyclists	No - (limited traffic movements)	Scoped out
Maintenance	Maintenance and repair staff vehicles	Additional delay to drivers	No - (limited traffic movements)	Scoped out
Maintenance	Maintenance and repair staff vehicles	Additional delay to pedestrians	No - (limited traffic movements)	Scoped out
Maintenance	Maintenance and repair staff vehicles	Decline in pedestrian and cyclist amenity	No - (limited traffic movements)	Scoped out
Maintenance	Maintenance and repair staff vehicles	Decline in road safety	No - (limited traffic movements)	Scoped out
Maintenance	Maintenance and repair staff vehicles	Results in PRoW Diversions and/or Closures	No - (limited traffic movements)	Scoped out
Maintenance	Maintenance and repair staff vehicles	Additional hazardous loads	No - (few expected)	Scoped out
Decommissioning	Decommissioning works, routes and vehicles	Additional severance to pedestrians and cyclists	Yes	**Scoped in** (to be inferred by assessment of construction)

Decommissioning	Decommissioning works, routes and vehicles	Additional delay to drivers	Yes	**Scoped in** (to be inferred by assessment of construction)
Decommissioning	Decommissioning works, routes and vehicles	Additional delay to pedestrians	Yes	**Scoped in** (to be inferred by assessment of construction)
Decommissioning	Decommissioning works, routes and vehicles	Decline in pedestrian and cyclist amenity	Yes	**Scoped in** (to be inferred by assessment of construction)
Decommissioning	Decommissioning works, routes and vehicles	Additional fear and intimidation to pedestrians and cyclists	Yes	**Scoped in** (to be inferred by assessment of construction)
Decommissioning	Decommissioning works, routes and vehicles	Decline in road safety	Yes	**Scoped in** (to be inferred by assessment of construction)
Decommissioning	Decommissioning works, routes and vehicles	Results in PRoW Diversions and/or Closures	Yes	**Scoped in** (to be inferred by assessment of construction)
Decommissioning	Decommissioning vehicles	Additional hazardous loads	Yes	**Scoped in** (to be inferred by assessment of construction)

Impact Pathways with Receptors (Step 2)

2.8.6.17 This section identities whether there are any impact pathways from the impacts identified above that could give rise to potentially significant effects on the receptors within each of the options that comprise the proposed study area. Further details of the road links, junctions, PRoW and national/regional walking and cycling routes relevant to each Option Area are set out within section 4.

Suffolk Converter Station Site 1 Emerging Preference

2.8.6.18 Table 2.8.2 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 1 Emerging Preference as shown on as shown on **Figure 2.1.4 Suffolk Site 1 Emerging Preference** and **Figure 2.1.9 Suffolk Site 1 Emerging Preference Option Area.**

Table 2.8.2: Impact pathways with receptors – Suffolk Site 1 Emerging Preference

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Construction and decommissioning Additional severance to pedestrians and cyclists	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	Yes	**Scoped in**
Construction and decommissioning Additional delay to drivers	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	No – footpaths and bridleways not utilised by drivers so no impact pathway	Scoped out
	National/regional walking and cycling routes	No – walking and cycling routes not utilised by drivers so no impact pathway	Scoped out
Construction and decommissioning Additional delay to pedestrians	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking routes	Yes	**Scoped in**
Construction and decommissioning Decline in pedestrian and cyclist amenity	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	Yes	**Scoped in**
Construction and decommissioning Additional fear and intimidation to	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**

pedestrians and cyclists	National/regional walking and cycling routes	Yes	**Scoped in**
Construction and decommissioning Decline in road safety	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	No – no collision data available for footpaths and bridleways (not utilised by vehicles so no impact)	Scoped out
	National/regional walking and cycling routes	No – no collision data available for walking and cycling routes (not utilised by vehicles so no impact)	Scoped out
Construction and decommissioning Results in PRoW Diversions and/or Closures	Road links	No – this impact pathway relates solely to PRoW, not applicable to this receptor type	Scoped out
	Road junctions	No – this impact pathway relates solely to PRoW, not applicable to this receptor type	Scoped out
	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	No – this impact pathway relates solely to PRoW, not applicable to this receptor type	Scoped out
Construction and decommissioning Additional hazardous loads	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	No – footpaths and bridleways not utilised by vehicles or hazardous loads so no impact	Scoped out
	National/regional walking and cycling routes	No – walking and cycling routes not utilised by vehicles or	Scoped out

		hazardous loads so no impact	

Suffolk Converter Station Site 1 Alternative

2.8.6.19 Table 2.8.3 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 1 Alternative Preference as shown on as shown on **Figure 2.1.7 Suffolk Site 1 Alternative** and **Figure 2.1.11 Suffolk Site 1 Alternative Option Area.**

Table 2.8.3: Impact pathways with receptors – Suffolk Site 1 Alternative

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Construction and decommissioning Additional severance to pedestrians and cyclists	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	Yes	**Scoped in**
Construction and decommissioning Additional delay to drivers	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	No – footpaths and bridleways not utilised by drivers so no impact	Scoped out
	National/regional walking and cycling routes	No – walking and cycling routes not utilised by drivers so no impact	Scoped out
Construction and decommissioning Additional delay to pedestrians	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking routes	Yes	**Scoped in**
Construction and decommissioning	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**

Decline in pedestrian and cyclist amenity	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	Yes	**Scoped in**
Construction and decommissioning Additional fear and intimidation to pedestrians and cyclists	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	Yes	**Scoped in**
Construction and decommissioning Decline in road safety	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	No – no collision data available for footpaths and bridleways (not utilised by vehicles so no impact)	Scoped out
	National/regional walking and cycling routes	No – no collision data available for walking and cycling routes (not utilised by vehicles so no impact)	Scoped out
Construction and decommissioning Results in PRoW Diversions and/or Closures	Road links	No – this impact pathway relates solely to PRoW, not applicable to this receptor type	Scoped out
	Road junctions	No – this impact pathway relates solely to PRoW, not applicable to this receptor type	Scoped out
	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	No – this impact pathway relates solely to PRoW, not applicable to this receptor type	Scoped out
	Road links	Yes	**Scoped in**

Construction and decommissioning Additional hazardous loads	Road junctions	Yes	**Scoped in**
	PRoW	No – footpaths and bridleways not utilised by vehicles or hazardous loads so no impact	Scoped out
	National/regional walking and cycling routes	No – walking and cycling routes not utilised by vehicles or hazardous loads so no impact	Scoped out

Suffolk Converter Station Site 3 Emerging Preference

2.8.6.20 Table 2.8.4 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Emerging Preference as shown on as shown on **Figure 2.1.5 Suffolk Site 3 Emerging Preference** and **Figure 2.1.10 Suffolk Site 3 Emerging Preference Option Area.**

Table 2.8.4: Impact pathways with receptors – Suffolk Site 3 Emerging Preference

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Construction and decommissioning Additional severance to pedestrians and cyclists	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	Yes	**Scoped in**
Construction and decommissioning Additional delay to drivers	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	No – footpaths and bridleways not utilised by drivers so no impact	Scoped out
	National/regional walking and cycling routes	No – walking and cycling routes not utilised by drivers so no impact	Scoped out
	Road links	Yes	**Scoped in**

Construction and decommissioning Additional delay to pedestrians	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking routes	Yes	**Scoped in**
Construction and decommissioning Decline in pedestrian and cyclist amenity	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	Yes	**Scoped in**
Construction and decommissioning Additional fear and intimidation to pedestrians and cyclists	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	Yes	**Scoped in**
Construction and decommissioning Decline in road safety	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	No – no collision data available for footpaths and bridleways (not utilised by vehicles so no impact)	Scoped out
	National/regional walking and cycling routes	No – no collision data available for walking and cycling routes (not utilised by vehicles so no impact)	Scoped out
Construction and decommissioning Results in PRoW Diversions and/or Closures	Road links	No – this impact pathway relates solely to PRoW, not applicable to this receptor type	Scoped out
	Road junctions	No – this impact pathway relates solely to PRoW, not applicable to this receptor type	Scoped out

	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	No – this impact pathway relates solely to PRoW, not applicable to this receptor type	Scoped out
Construction and decommissioning Additional hazardous loads	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	No – footpaths and bridleways not utilised by vehicles or hazardous loads so no impact	Scoped out
	National/regional walking and cycling routes	No – walking and cycling routes not utilised by vehicles or hazardous loads so no impact	Scoped out

Suffolk Converter Station Site 3 Alternative (Option 1)

2.8.6.21 Table 2.8.5 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Alternative (Option 1) as shown on as shown on **Figure 2.1.7 Suffolk Site 3 Alternative (Option 1)** and **Figure 2.1.12 Suffolk Site 3 Alternative (Option 1) Option Area**.

Table 2.8.5: Impact pathways with receptors – Suffolk Site 3 Alternative (Option 1)

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Construction and decommissioning Additional severance to pedestrians and cyclists	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	Yes	**Scoped in**
Construction and decommissioning Additional delay to drivers	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	No – footpaths and bridleways not	Scoped out

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
		utilised by drivers so no impact	
	National/regional walking and cycling routes	No – walking and cycling routes not utilised by drivers so no impact	Scoped out
Construction and decommissioning Additional delay to pedestrians	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking routes	Yes	**Scoped in**
Construction and decommissioning Decline in pedestrian and cyclist amenity	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	Yes	**Scoped in**
Construction and decommissioning Additional fear and intimidation to pedestrians and cyclists	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	Yes	**Scoped in**
Construction and decommissioning Decline in road safety	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	No – no collision data available for footpaths and bridleways (not utilised by vehicles so no impact)	Scoped out
	National/regional walking and cycling routes	No – no collision data available for walking and cycling routes (not utilised by vehicles so no impact)	Scoped out
	Road links	No – this impact pathway relates	Scoped out

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Construction and decommissioning Results in PRoW Diversions and/or Closures		solely to PRoW, not applicable to this receptor type	
	Road junctions	No – this impact pathway relates solely to PRoW, not applicable to this receptor type	Scoped out
	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	No – this impact pathway relates solely to PRoW, not applicable to this receptor type	Scoped out
Construction and decommissioning Additional hazardous loads	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	No – footpaths and bridleways not utilised by vehicles or hazardous loads so no impact	Scoped out
	National/regional walking and cycling routes	No – walking and cycling routes not utilised by vehicles or hazardous loads so no impact	Scoped out

Suffolk Converter Station Site 3 Alternative (Option 2)

2.8.6.22 Table 2.8.6 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Alternative (Option 2) as shown on as shown on **Figure 2.1.8 Suffolk Site 3 Alternative (Option 2)** and **Figure 2.1.13 Suffolk Site 3 Alternative (Option 2) Option Area.**

Table 2.8.6: Impact pathways with receptors– Suffolk Site 3 Alternative (Option 2)

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Construction and decommissioning	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Additional severance to pedestrians and cyclists	National/regional walking and cycling routes	Yes	**Scoped in**
Construction and decommissioning Additional delay to drivers	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	No – footpaths and bridleways not utilised by drivers so no impact	Scoped out
	National/regional walking and cycling routes	No – walking and cycling routes not utilised by drivers so no impact	Scoped out
Construction and decommissioning Additional delay to pedestrians	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking routes	Yes	**Scoped in**
Construction and decommissioning Decline in pedestrian and cyclist amenity	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	Yes	**Scoped in**
Construction and decommissioning Additional fear and intimidation to pedestrians and cyclists	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	Yes	**Scoped in**
Construction and decommissioning Decline in road safety	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	No – no collision data available for footpaths and bridleways (not	Scoped out

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
		utilised by vehicles so no impact)	
	National/regional walking and cycling routes	No – no collision data available for walking and cycling routes (not utilised by vehicles so no impact)	Scoped out
Construction and decommissioning Results in PRoW Diversions and/or Closures	Road links	No – this impact pathway relates solely to PRoW, not applicable to this receptor type	Scoped out
	Road junctions	No – this impact pathway relates solely to PRoW, not applicable to this receptor type	Scoped out
	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	No – this impact pathway relates solely to PRoW, not applicable to this receptor type	Scoped out
Construction and decommissioning Additional hazardous loads	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	No – footpaths and bridleways not utilised by vehicles or hazardous loads so no impact	Scoped out
	National/regional walking and cycling routes	No – walking and cycling routes not utilised by vehicles or hazardous loads so no impact	Scoped out

2.8.7 Proposed Assessment Methodology

Proposed Data Sources

2.8.7.1 To inform the assessment of the Suffolk Onshore Scheme, information from a number of sources will be collected. The sources which will be used are set out below:

- Local travel and network information from various sources including SCC and local rail and bus operators;
- Personal Injury Accident (PIA) data from SCC;
- OS/Architectural Base Mapping to ascertain an accurate geographical representation of the areas in the vicinity of the Suffolk Onshore Scheme;
- Highway boundary information from SCC;
- Mode share data from the 2011 Census (or 2021 data if available and considered appropriate given the context of COVID-19); and
- Various traffic count and speed survey data where required (see below).

2.8.7.2 Peak hour traffic flows will be identified from historic data held by SCC with respect to the A1094, B1069, B1119, B1121, B1122, B1353, and the unclassified routes of Sizewell Gap, Lovers Lane, Abbey Lane that provides links across the northern portion of the Study Area, from the edge of Saxmundham to Leiston and Sizewell. The data would be requested from traffic survey company databases if available. If suitable data is not available traffic counts will be undertaken at locations in the vicinity of the Suffolk Onshore Scheme to determine the baseline traffic conditions on the surrounding highway network. The extent of the traffic data and scope for any traffic surveys that may be required will be agreed with the Highway Authority (Suffolk County Council), as a statutory consultee, where possible.

2.8.7.3 To determine the impact of the Suffolk Onshore Scheme, a number of scenarios will be assessed using the information collated above. The scenarios considered appropriate for assessment are:

- Baseline (2022) – AM, PM and Daily; and
- Peak Construction Year (to be confirmed) With and Without Development – AM, PM and Daily.

2.8.7.4 The proposed construction period for the Suffolk Onshore Scheme is 2026 to 2030, and the peak construction year will be identified when the ES is prepared as this is not currently known.

2.8.7.5 The Transport Assessment Scoping Report will be formally presented to SCC as a statutory consultee in order to seek to agree the scope of the Transport Assessment. In the event that junction capacity analysis is required, this will be discussed and agreed with SCC where necessary.

Proposed Assessment Methodology

2.8.7.6 In accordance with the Institute of Environmental Management and Assessment (IEMA) Guidelines for the Environmental Assessment of Road Traffic (1993) for

assessing the environmental impacts of road traffic as well as professional judgement, the following criteria will be considered in this assessment.

- Severance;
- Pedestrian delay;
- Pedestrian and cyclist amenity;
- Fear and intimidation;
- Driver delay;
- Highway safety;
- PRoW diversions and/or closures; and
- Hazardous and dangerous loads.

2.8.7.7 The IEMA guidelines set out two rules in identifying potential links for analysis:

- Rule 1: include highway links where traffic flows will increase by more than 30% (or the number of HGVs will increase by more than 30%); and
- Rule 2: include any other specifically sensitive areas (e.g. accident black spots, conservation areas, hospitals, links with high pedestrian flows etc) where traffic flows have increased by 10% or more.

2.8.7.8 Based on this, it is proposed to assess links where traffic flows are expected to increase by 30% or more. However, it is not proposed to assess links where there is expected to be a less than a 30% increase in traffic flows as a result of the Suffolk Onshore Scheme, unless any specifically sensitive areas are identified. In addition, it is proposed to assign a very low magnitude of change as there is expected to be fewer than 30 additional vehicle trips per hour during each of the development peak hours as a result of the Suffolk Onshore Scheme, irrespective of the proportional increase in traffic flows.

2.8.7.9 In addition to the above, potential traffic-related effects will also be considered by other topics, including (and not limited to) the following examples:

- Potential effects of construction traffic on sites of ecological and nature conservation value are considered in **Part 2, Chapter 3, Ecology and Biodiversity**;
- Potential effects of construction traffic on air quality are considered in **Part 2, Chapter 9, Air Quality**;
- Potential effects of construction traffic on noise and vibration are considered in **Part 2, Chapter 10, Noise and Vibration**; and
- Potential effects of construction traffic on tourists, visitor attractions and other businesses are considered in **Part 2, Chapter 11, Socio Recreation and Tourism**.

2.8.7.10 The type of traffic which is anticipated to be generated by the Suffolk Onshore Scheme will be categorised as follows; primarily general traffic, LGVs, HGVs and Abnormal Indivisible Loads (AILs). The vehicle routeing and movement associated with the

Project's construction will be considered in detail and will be discussed through consultation with the relevant Highway Authority (Suffolk County Council).

2.8.7.11 Once the locations and volumes of the proposed traffic have been identified it will be necessary to identify those receptors that may be impacted upon, due to the increase in vehicle movements. This will be done by identifying the percentage increase in vehicular activity along the identified construction routes following the collection of traffic data. The Automatic Traffic Counts (ATCs) will be used to derive baseline Annual Average Daily Traffic (AADT) for individual links, subdivided into 24 hour and 18 hour counts for total traffic and HGVs.

2.8.7.12 Typically, when assessing the impacts of traffic effects, there are a range of particular groups and locations which may be sensitive to changes in traffic conditions compliant with the criteria previously outlined.

2.8.7.13 These are outlined in the IEMA Guidance as 'Affected Parties', as follows:

- People at home;
- People in workplaces;
- Sensitive groups including children, elderly and disabled;
- Sensitive locations, e.g. hospitals, churches, schools, historic buildings;
- People walking;
- People cycling;
- Open spaces, recreational sites, shopping areas;
- Sites of ecological/nature conservation value; and
- Sites of tourist/visitor attraction.

2.8.7.14 The IEMA guidance states that this list of affected parties is not exhaustive. One affected party that is not on the list but will nevertheless be considered in this assessment is 'other road users'. All of the affected parties have one thing in common which is that their potential exposure to changes in traffic volumes comes about through their proximity to a construction traffic route.

2.8.7.15 It is important to note that the IEMA methodology does not consider the duration of effect, especially whether it is temporary (construction and decommissioning) or permanent (operational traffic). As such, effects that, using this methodology, may appear to be significant, may be considered not significant if the effect is temporary or infrequent (occurring only occasionally during construction for example).

2.8.7.16 To calculate the trip distribution of workers travelling to and from the proposed construction compounds each day, a simple gravity model will be developed (based on 2011 Census data, given that relevant 2021 Census data is not currently available). Construction traffic associated with the Suffolk Onshore Scheme will be distributed onto the local highway network to calculate the resultant percentage increase on each link.

2.8.7.17 Assessments will be undertaken at the peak of construction, and this may cover more than one year as the peak year for traffic volumes can vary along various routes depending on which section of the Suffolk Onshore Scheme they serve.

2.8.7.18 Currently, it is anticipated that construction may take approximately two years. If historical data is utilised, base traffic flows will be factored up to the future base year in order to establish baseline flows and then factored up further to the identified peak year of construction. Growth factors will be derived from TEMPro v7.2 for the relevant areas impacted by the Suffolk Onshore Scheme. Meanwhile, the peak construction traffic flows will be derived by analysing construction traffic data and construction programmes provided by Design Engineers.

Transport Assessment

2.8.7.19 The ability of the highway network to accommodate the development traffic will be assessed and reported in a Transport Assessment (TA) which will form a technical annex to the ES Chapter. The TA will include information on:

- A review of relevant national, regional and local policies;
- Description of the existing baseline conditions – a description of the roads, railway lines, footpaths, bridleways and cycle paths crossed by the route and/or impacted by the works. The requirement to carry out any surveys on these routes will be agreed with the relevant planning authority;
- A review of the road safety data for the most recent five-year period within the proposed study area;
- Description of the Project and Suffolk Onshore Scheme setting out timescales for construction, identification of route sections, typical working width layout, compound locations, access routes to compounds, construction methods for individual railway and road crossings (where required);
- Traffic generation of compounds and any other relevant sites for construction staff with a profile of arrivals and departures for the day and HGV traffic with a profile of arrivals and departures for the day;
- Distribution and assignment of trips to the network with construction traffic distributed based on a simple gravity model of worker catchment area and HGVs assigned from the A road network;
- Mitigation measures; and
- Summary and conclusions.

Defining Significance

2.8.7.20 The significance of effect is determined through consideration of two elements; the magnitude of the impact and the sensitivity of the receptor. The following sections outline the approach that would be used to determine these factors.

Sensitivity, value, or importance

2.8.7.21 The general criteria for defining the importance or sensitivity of receptors are set out in Table 2.8.7. Key factors influencing this include:

- The value of the receptor or resource based upon empirical and/or intrinsic factors, for example considering any legal or policy protection afforded which is indicative of the receptor or resources' value internationally, nationally or locally; and
- The sensitivity of the receptor or resource to change, for example is the receptor likely to acclimatise to the change. This will consider legal and policy thresholds which are indicative of the ability of the resources to absorb change.

Table 2.8.7: Categorising the overall sensitivity of receptors

Receptor sensitivity	Receptor examples
Very High	Highway Links and Junctions: More than two sensitive users present (e.g. schools, play areas, care/retirement homes, disabled parking bays, hospitals, places of worship, historic buildings) Walk/Cycle Links including PRoW: Heavily trafficked highway with on-road pedestrian/cycle route
High	Highway Links and Junctions: Two sensitive users present (e.g. schools, play areas, care/retirement homes, disabled parking bays, hospitals, places of worship, historic buildings) Walk/Cycle Links including PRoW: Lightly trafficked highway with on-road pedestrian/cycle route
Medium	Highway Links and Junctions (at least one of the following): • One sensitive user present (e.g. schools, play areas, care/retirement homes, disabled parking bays, hospitals, places of worship, historic buildings) • Many residential properties with direct frontage to highway link being used as construction route • Pedestrians using footways, PRoW and/or crossings on highway link • Cyclists using on-road designated cycle routes along highway link Walk/Cycle Links including PRoW: Heavily trafficked highway with off-road pedestrian/cycle route
Low	Highway Links and Junctions (at least one of the following): • Few residential properties with direct frontage to the highway link being used as a construction traffic route • Workplaces with direct frontage to highway link being used as construction route • Cyclists using off-road designated cycle routes along highway link Walk/Cycle Links including PRoW: Lightly trafficked highway with off-road pedestrian/cycle route

Receptor sensitivity	Receptor examples
Neutral	Highway Links and Junctions: No receptors along link Walk/Cycle Links including PRoW: Pedestrian/cycle route not running alongside highway

2.8.7.22 An assessment of the railway network is proposed to be scoped out from the Traffic and Transport chapter given that trenchless methods will be employed when installing cables to avoid any potential impacts on the railway, and that any vehicle crossing points of the railway (if required) will be managed to ensure operational rail safety. It is also notable that the only extents of railway within the Study Area are part of a branch line that provides service access to Sizewell and does not admit passengers.

Magnitude

2.8.7.23 The IEMA guidelines state that the magnitude of each impact should be determined as the predicted deviation from the baseline conditions.

2.8.7.24 This assessment will consider a range of potential effects that could be experienced during the construction stage of the Suffolk Onshore Scheme and this section identifies how magnitude will be considered for each.

2.8.7.25 **Severance** is defined in the IEMA guidelines as the "*perceived division that can occur with a community when it becomes separated by a major traffic artery*". The term is used to describe a complex series of factors that separate people from places and other people. Severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by the road itself. It can also relate to quite minor traffic flows if they impede pedestrian access to essential facilities. The assessment will consider both total traffic and the proportion of HGVs. The guidance for thresholds of magnitude is taken from DMRB Volume 11, Section 3, Part 8.

2.8.7.26 **Pedestrian Delay** is considered to be affected by the changes in volume, composition or speed of traffic, in terms of their respective impacts on the ability of pedestrians to cross roads. In general, increases in traffic levels and/or traffic speeds are likely to lead to greater increases in pedestrian delay. Effects are only likely to be realised when the total two-way traffic on the carriageway exceeds 1,400 vehicles per hour (IEMA Guidelines).

2.8.7.27 **Pedestrian and Cyclist Amenity** is broadly defined as "the relative pleasantness of a journey and is considered to be affected by traffic flow, traffic composition and pavement width/separation from traffic". The guidance suggests that a tentative threshold for judging the significance of changes in pedestrian and cycle amenity would be where the traffic flow is halved or doubled.

2.8.7.28 **Fear and Intimidation** occurs through a combination of traffic flow, speed, proportion of HGVs and the proximity of the above to people or receptors on highway links. These indicators are often heightened by a perceived lack of protection or buffers from the highway or through narrow or non-existent footways. The assessment will consider each road on a case by case basis, however there are indicative thresholds provided in the IEMA guidelines which are presented in Table 2.8.8 below.

2.8.7.29 **Driver Delay** is an effect cited in the IEMA guidance and relates to incremental increases in traffic (as outlined in Table 2.8.8 below). As a further consideration, where any temporary road closures or traffic management is likely to be in place to enable the construction of the Suffolk Onshore Scheme, any additional potential delay caused by these resultant diversion routes will be reported.

2.8.7.30 **Highway Safety** considers Personal Injury Collision (PIC) data obtained for the most recent five-year period available at junctions and links along the proposed construction traffic routes. These will be used to assess whether the additional traffic during construction of the Suffolk Onshore Scheme would be likely to have a detrimental effect of road safety.

2.8.7.31 **PRoW Diversions and/or Closures** will be considered on the basis of the type of impact i.e. whether a temporary PRoW closure or diversion is proposed, as well as any increases in pedestrian journey length following a closure/ diversion and how long any potential disruption to an existing route would occur for. The assessment will consider the indicative thresholds presented in Table 2.8.9 below which have been derived based on professional judgement.

2.8.7.32 With regard to **Hazardous and Dangerous Loads**, the guidance indicates that "the Statement should include a risk or catastrophe analysis to illustrate the potential for an accident to happen and the likely effect of such an event". Analysis of the road network within the proposed study area and understanding of the Suffolk Onshore Scheme works indicates that there are no particular features, such as a significant vertical drop immediately beyond the carriageway, which would suggest that the transfer of materials poses a particular risk beyond that which would be expected on the general highway network. However, there will be a requirement to transport gas and oil during the Project (particularly during the construction and decommissioning phases) which are categorised as Hazardous and Dangerous Loads (see Section 2.8.6).

2.8.7.33 In view of the above, the impacts of Hazardous and Dangerous Loads will be considered within the ES, in the form of a qualitative risk assessment to establish the likelihood and extent of such effects. The projected impacts of the Suffolk Onshore Scheme will be measured separately, dependent upon the receptor, for the construction and decommissioning periods. The Framework CTMP and the ES will include details of measures that will be employed to ensure the safe vehicular transport of components to and from the Suffolk Onshore Scheme.

2.8.7.34 Tables 2.8.8 and 2.8.9 summarise the criteria that will be used to assess the magnitude of effect (based on increases i.e. 'adverse' effects), along with the thresholds that will be used to determine whether effects are considered large, medium, small and negligible. Depending on the baseline information available, the various thresholds identified for the proportional increases in traffic flow relate to peak hour flows and daily flows (whichever is highest). Within these tables, neither the sensitivity of receptors, nor the duration of effects, is taken into consideration. These tables are formed using IEMA Guidelines and professional judgement.

Table 2.8.8: Categorising the overall magnitude of effect of a highway link or junction

Impact	Negligible	Small	Medium	Large
Severance	Increase in total traffic flows of 29% or under (or increase in HGV flows under 10%).	Increase in total traffic flows of 30-59% (or increase in HGV flows of between 20%-39%).	Increase in total traffic flows of 60%-89% (or increase in HGV flows between 40%-89%).	Increase in total traffic flows or HGV flows of 90% and above.
Pedestrian Delay	Total traffic flows under 1,400 per hour.	Where traffic flows exceed 1,400 vehicles per hour the severity of the impact will be determined based on the thresholds identified above for severance.		
Pedestrian and Cycle Amenity	Increase in total traffic flows of 49% or under.	Increase in total traffic flows of 50-69%.	Increase in total traffic flows of 70%-99%.	Increase in total traffic flows of 100% or above.
Fear and Intimidation	Increase in total traffic flows or HGV flows of 29% or under (or increase in HGV flows under 10%).	Increase in total traffic flows of 30-59% (or increase in HGV flows of between 10%-39%).	Increase in total traffic flows of 60%-89% (or increase in HGV flows between 40%-89%).	Increase in total traffic flows or HGV flows of 90% and above.
Driver Delay	Increase in total traffic flow of less than 29%.	Increase in total traffic flow of between 30% and 59%.	Increase in total traffic flow of between 60% and 89%.	Increase in traffic flow of 90% and above.
Highway Safety	Increase in total traffic flows of 30% or under (or increase in HGV flows under 10%).	All links estimated to experience increases in total traffic flows above 30% or increases in HGV flows above 10% are analysed further on a case by case basis.		
Hazardous Loads	Based on the probability of a personal injury collision, categorised as fatal or serious, involving a hazardous load occurring.			

2.8.7.35 An assessment of national/regional walking and cycling routes, as well as PRoW will also be carried out where these are directly affected by construction works or intersected by a construction route (for example), including in terms of severance, pedestrian delay, pedestrian and cycle amenity and for fear and intimidation, by reviewing the thresholds as identified in Table 2.8.8 above where relevant. In terms of PRoW diversions and/or closures, the following thresholds are proposed to identify magnitude of effect based on professional judgement.

Table 2.8.9: Categorising the overall magnitude of effect of a PRoW diversion and/or closure

Impact	Negligible	Small	Medium	Large
PRoW Diversions and/or Closures	A temporary PRoW diversion (no closure) with either no increase in pedestrian journey length or an increase in pedestrian journey length for one to five days.	A temporary PRoW diversion (no closure) with an increase in pedestrian journey length for one to four weeks.	A short term PRoW closure (for less than four weeks in any 12 month period) without a diversion route; OR A temporary PRoW diversion (no closure) with an increase in pedestrian journey length for more than four weeks.	A short term PRoW closure (for more than four weeks in any 12 month period) without a diversion route.

2.8.7.36 Tables 2.8.8 and 2.8.9 above set out the proposed magnitude thresholds for the respective environmental effects that will be considered in the ES. With the exception of PRoW Diversion and Closure effects, all effects have a proposed magnitude that does not, initially, consider the duration over which an effect is likely to be experienced.

2.8.7.37 Duration is considered when assessing the overall significance of residual effects, noting that the DMRB Volume 11 Section 2 Part 5 states in Paragraph 1.47:

"Recognition should be made that permanent impacts will be more significant than those of a temporary nature. For example, the impact may only occur during a single phase of the project construction and may be temporary. Alternatively, the impact may be long-term or irreversible and hence permanent. It is, therefore, important that the assessment distinguishes between permanent and temporary impacts".

2.8.7.38 All of the traffic and transport effects associated with the construction and decommissioning of the Suffolk Onshore Scheme would be temporary effects. Some temporary effects would be likely to last longer than others, and these will be clearly reported in the ES. Following the quantified assessment, residual effects will be reported taking into account professional judgement on the duration over which effects are likely to be experienced.

Significance

2.8.7.39 In order to determine the effect on specific receptors, both the sensitivity of receptors and the magnitude of impact, as outlined above, are considered. Table 2.8.10 below shows the matrix that has been used to determine the effect category. Effects which are classified as **major** or **moderate** are considered to be significant (shown in **bold**).

Table 2.8.10: Significance matrix

Magnitude of Effect	Receptor Sensitivity				
	Very High	High	Medium	Low	Neutral
Large	**Major**	**Major/ Moderate**	**Major/ Moderate/ Minor**	**Moderate**/ Minor	Minor/ Negligible
Medium	**Major/ Moderate**	**Major/ Moderate**	**Moderate**/ Minor	Minor/ Negligible	Negligible
Small	**Major/ Moderate/ Minor**	**Moderate**/ Minor	**Moderate**/ Minor	Minor/ Negligible	Negligible
Negligible	Minor/ Negligible	Minor/ Negligible	Minor/ Negligible	Negligible	Negligible

2.8.8 Conclusion

2.8.8.1 This scoping chapter presents the potential for effects in respect of the traffic and transport that may arise from the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme. This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an EIA.

2.8.8.2 The proposed scope of assessment is set out in the following section for each of the five options.

Proposed Scope of the Assessment

2.8.8.3 A summary of the proposed scope of the assessment for Site 1 Emerging Preference is provided in Table 2.8.11.

Table 2.8.11: Proposed scope of the assessment for Site 1 Emerging Preference

Receptor	Potential for significant effect	Project phase(s)	Proposed to be scoped in/out for Site 1 Emerging Preference
Road links	Severance	Construction and decommissioning	**Scoped in**

	Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation Driver Delay Highway Safety Hazardous Loads	Operation and maintenance	Scoped out
Road junctions	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation Driver Delay Highway Safety Hazardous Loads	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out
PRoW	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation PRoW Diversions and/or Closures	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out
National/regional walking and cycle routes	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out

2.8.8.4 A summary of the proposed scope of the assessment for Site 1 Alternative is provided in Table 2.8.12.

Table 2.8.12: Proposed scope of the assessment for Site 1 Alternative

Receptor	Potential for significant effect	Project phase(s)	Proposed to be scoped in/out for Site 1 Alternative
Road links	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out

	Driver Delay Highway Safety Hazardous Loads		
Road junctions	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation Driver Delay Highway Safety Hazardous Loads	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out
PRoW	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation PRoW Diversions and/or Closures	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out
National/regional walking and cycle routes	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out

2.8.8.5 A summary of the proposed scope of assessment for Site 3 Emerging Preference is provided in Table 2.8.13.

Table 2.8.13: Proposed scope of the assessment for Site 3 Emerging Preference

Receptor	Potential for significant effect	Project phase(s)	Proposed to be scoped in/out for Site 3 Emerging Preference
Road links	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation Driver Delay Highway Safety Hazardous Loads	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out

Road junctions	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation Driver Delay Highway Safety Hazardous Loads	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out
PRoW	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation PRoW Diversions and/or Closures	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out
National/regional walking and cycle routes	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out

2.8.8.6 A summary of the proposed scope of assessment for Site 3 Alternative (Option 1) is provided in Table 2.8.14.

Table 2.8.14: Proposed scope of the assessment for Site 3 Alternative (Option 1)

Receptor	Potential for significant effect	Project phase(s)	Proposed to be scoped in/out for Site 3 Alternative (Option 1)
Road links	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation Driver Delay Highway Safety Hazardous Loads	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out
Road junctions	Severance	Construction and decommissioning	**Scoped in**

	Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation Driver Delay Highway Safety Hazardous Loads	Operation and maintenance	Scoped out
PRoW	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation PRoW Diversions and/or Closures	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out
National/regional walking and cycle routes	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out

2.8.8.7 A summary of the proposed scope of assessment for Site 3 Alternative (Option 2) is provided in Table 2.8.15.

Table 2.8.15: Proposed scope of the assessment for Site 3 Alternative (Option 2)

Receptor	Potential for significant effect	Project Phase(s)	Proposed to be scoped in/out for Site 3 Alternative (Option 2)
Road links	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation Driver Delay Highway Safety Hazardous Loads	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out
Road junctions	Severance Pedestrian Delay Pedestrian and Cycle Amenity	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out

	Fear and Intimidation Driver Delay Highway Safety Hazardous Loads		
PRoW	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation PRoW Diversions and/or Closures	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out
National/regional walking and cycle routes	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out

2.9 Air Quality

2.9.1 Introduction

2.9.1.1 This chapter presents how the air quality assessment will consider the potentially significant effects on air quality that may arise from the construction, and operation, maintenance and decommissioning of the Suffolk Onshore Scheme (as described in **Part 1, Chapter 4, Description of the Project**). This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an Environmental Impact Assessment (EIA).

2.9.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Suffolk Onshore Scheme Scoping Boundary hereafter referred to as the Suffolk Scoping Boundary is illustrated on **Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary**.

2.9.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Project Description**;
- **Part 1, Chapter 5, EIA Approach and Methodology**; and
- **Part 2, Chapter 1, Evolution of the Suffolk Onshore Scheme.**

2.9.2 Regulatory and Planning Context

2.9.2.1 **Part 1, Chapter 2, Regulatory and Planning Contex**t describes the overall regulatory and planning policy context for the Project. Key legislation, policy and guidance relevant to the assessment of potential effects on air quality associated with the construction, operation, maintenance and decommissioning of the Project is presented below.

Legislation

- EU Framework Directive 96/62/EC[160];
- Directive 2008/50/EC on ambient air quality and cleaner air for Europe[161];
- Part IV of the Environment Act (1995, amended 2021)[162];

[160] Council Directive 96/62/EC (1996). Ambient Air Quality Assessment and Management [online]. Available at: https://www.legislation.gov.uk/eudr/1996/62

[161] Directive 2008/50/EC of the European Parliament and of the Council (2008). Ambient Air Quality and Cleaner Air for Europe [online]. Available at: https://www.legislation.gov.uk/eudr/2008/50/introduction

[162] Environment Act 1995 (amended 2021) [online]. Available at: https://www.legislation.gov.uk/ukpga/2021/30/part/4/enacted

- Air Quality Standards Regulations[163];
- The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007)[164]; and
- The Non-Road Mobile Machinery (Type-Approval and Emission of Gaseous and Particulate Pollutants) Regulations 2018[165].

Planning Policy

National Planning Policy

- Overarching National Policy Statement for Energy (EN-1)[166] – Section 5.2 of EN-1 suggests that if a project is likely to have adverse effects on air quality an assessment of the impacts should be included in the Environmental Statement (ES). Paragraph 5.2.7 puts forth a number of aspects associated with the assessment of air quality that should be included in the ES, for example, "existing air quality levels and the relative change in air quality from existing levels"; and
- National Planning Policy Framework (Revised) (NPPF)[167].

Local Planning Policy

- East Suffolk Council- Suffolk Coastal Local Plan[168]; and
- East Suffolk Air Quality Strategy 2021[169].

Guidance

- National Planning Policy Guidance (update) (NPPG)[170];
- Institute of Air Quality Management Guidance on the assessment of dust from demolition and construction, 2014[171];

[163] The Air Quality Standards Regulations 2010 [online]. Available at: https://www.legislation.gov.uk/uksi/2010/1001/contents

[164] Department for Environment, Food and Rural Affairs (2007). The Air Quality Strategy for England, Scotland, Wales and Northern Ireland. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69336/pb12654-air-quality-strategy-vol1-070712.pdf

[165] The Non-Road Mobile Machinery (Type-Approval and Emission of Gaseous and Particulate Pollutants) Regulations 2018. [online] Available at: https://www.legislation.gov.uk/uksi/2018/764/made

[166] Department of Energy and Climate Change (2011). Overarching National Policy Statement for Energy (EN-1). [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf

[167] Ministry of Housing Communities and Local Government (2021). National Planning Policy Framework. [online] Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2

[168] East Suffolk Council (2020). Suffolk Coastal Local Plan. [online] Available at: https://www.eastsuffolk.gov.uk/assets/Planning/Planning-Policy-and-Local-Plans/Suffolk-Coastal-Local-Plan/Adopted-Suffolk-Coastal-Local-Plan/East-Suffolk-Council-Suffolk-Coastal-Local-Plan.pdf

[169] East Suffolk Council (2021). East Suffolk Air Quality Strategy. [onlne] Available at: https://www.eastsuffolk.gov.uk/assets/Environment/Environmental-Protection/Air-Quality/AQ-Strategy-2021.pdf

[170] Department for Levelling Up, Housing and Communities, and Ministry of Housing, Communities & Local Government (2019). Planning Practice Guidance – Air Quality. [online] Available at: https://www.gov.uk/guidance/air-quality--3

[171] Institute of Air Quality Management (2014). Guidance on the assessment of dust from demolition and construction. Institute of Air Quality Management, London. V.1.1.

- Institute of Air Quality Management and Environmental Protection UK: Land-use Planning & Development Control: Planning for Air Quality. v1.2. Institute of Air Quality Management, London[172]; and
- Local Air Quality Management Technical Guidance (LAQM.TG(16))[173].

2.9.3 Study Area

2.9.3.1 The Institute of Air Quality Management (IAQM) construction dust guidance[171] requires that construction dust impacts are assessed up to 350m from the locations of demolition, construction and earthworks activities for human receptors and up to 50m for ecological receptors. Construction activities are assumed to take place anywhere within the Suffolk Scoping Boundary, therefore as a worst-case approach, the construction dust study area will include up to 350m from the edge of the Suffolk Scoping Boundary. The construction phase Study Area also includes the first 50m of any road within 500m from the main site entrance(s) used by the site construction vehicles, as per IAQM construction dust guidance[171].

2.9.3.2 The number of vehicles associated with the construction phase of the Suffolk Onshore Scheme is not yet confirmed; however, it is anticipated that detailed assessment of construction vehicle emissions will be scoped out as traffic flows are expected to be below the IAQM screening criteria[172]. This will be confirmed upon receipt and screening of construction traffic data. If construction Heavy Duty Vehicle (HDV) flows are expected to be greater than 100 Annual Average Daily Traffic (AADT) flows on a road during the construction phase or 25 AADT within an Air Quality Management Area (AQMA), then exhaust emissions from construction vehicles will be modelled at receptors within 200m of these roads.

2.9.3.3 The IAQM development control guidance[172] details its own indicative criteria with respect to change as a result of a project's operational phase that, if met, highlight the need for an assessment, rather than necessarily defining the boundaries of a study area. The criteria are:

- A change in Light Duty Vehicle (LDV) flows of >100 AADT within or adjacent to an AQMA, or >500 AADT elsewhere;
- A change in HDV flows of >25 AADT within or adjacent to an AQMA, or >100 AADT elsewhere;
- Where a road is realigned by 5m or more and is within an AQMA;
- Where a junction is added or removed close to existing receptors; and
- Where there are one or more substantial combustion processes where there is a risk of impacts at relevant receptors.

2.9.3.4 The same screening criteria will be used to define the study area should the operational phase be scoped in for assessment. However, operational phase traffic flows are expected to be below these screening criteria and therefore it is proposed to scope out

[172] Institute of Air Quality Management and Environmental Protection UK (2017). Land-use Planning & Development Control: Planning for Air Quality. Institute of Air Quality Management, London. V.1.2.

[173] Department for Environment, Food and Rural Affairs (2018). Local Air Quality Management Technical Guidance (TG16). [online] Available at: https://www.scottishairquality.scot/sites/default/files/publications/2022-08/LAQM-TG16-April-21-v1.pdf

the assessment of operational vehicle emissions as air quality impacts will be negligible.

2.9.4 Baseline Conditions

Data Sources

2.9.4.1 Baseline data has been collated to determine the existing air quality conditions in the area that is likely to be affected by the Suffolk Onshore Scheme. A review of the existing baseline will be undertaken to establish an understanding of the baseline air quality environment, to identify areas that are likely to be sensitive to changes in emissions as a result of the Suffolk Onshore Scheme. The air quality environment baseline described in this section has been informed by the following data sources:

- Defra UK Air website[174] – to establish predicted background concentrations for Nitrogen Dioxide (NO_2), Particulate Matter less than 10 microns in diameter (PM_{10}) and Particulate Matter less than 2.5 microns in diameter ($PM_{2.5}$).
- Local authority websites and annual Air Quality Status Reports – to determine existing AQMAs and local air quality monitoring results:
- East Suffolk Council website[175];
- Suffolk County Council website[176]; and
- East Suffolk Council Air Quality Annual Status Report[177].
- MAGIC website[178] – to identify ecological sites within the air quality Study Area.

Baseline

2.9.4.2 As required by Part IV of the Environment Act (1995), all local authorities produce Annual Status Reports (ASRs) each year. The most recently available reports for East Suffolk is the 2021 ASR[177] which summarises air quality within their areas during 2020.

2.9.4.3 A review of the most recently published ASR[177] confirmed that exceedances of the NO_2 annual mean objective set in the AQS have been identified, resulting in the current declaration of the following AQMAs:

- Woodbridge AQMA – declared in 2006, due to be revoked;
- Stratford St Andrew AQMA – declared in 2014.

2.9.4.4 The Suffolk Scoping Boundary area is not located close to or within either of the East Suffolk Council AQMAs.

[174] Department of Environment, Food and Rural Affairs (2022). UK Air – An Information Resource. [online] Available at: https://uk-air.defra.gov.uk/

[175] East Suffolk Council (2022). East Suffolk Council website. [online] Available at: https://www.eastsuffolk.gov.uk/

[176] Suffolk County Council (2022). Suffolk County Council website. [online] Available at: https://www.suffolk.gov.uk/

[177] East Suffolk Council (2021). 2021 Air Quality Annual Status Report. [online] Available at: https://www.eastsuffolk.gov.uk/assets/Environment/Environmental-Protection/Air-Quality/East-Suffolk-Council-ASR-2021.pdf

[178] Department for Environment, Food and Rural Affairs (2022). Multi-Agency Geographic Information for the Countryside. [online] Available at: https://magic.defra.gov.uk/

2.9.4.5 The closest monitoring location to the Suffolk Scoping Boundary is diffusion tube site FAR2abc which is a triplicate site in Farnham monitored by East Suffolk Council. The annual average NO_2 concentration at this site is well below the AQS objective for the last five years of monitoring.

2.9.4.6 A review of the available modelled background concentrations for the Suffolk Scoping Boundary and surrounding area has been carried out using Defra predicted annual mean background concentrations provided in 1km x 1km grid squares. Background concentrations for 2022 are well below the relevant objective values for all pollutants.

Future Baseline

2.9.4.7 Background pollutant concentrations and are predicted to decrease in future years, along with air pollutant concentrations from vehicle emissions sources due to improvements in technologies and increased emissions standards. This is supported by trends observed from local authority monitoring data and future predicted Defra background map concentrations.

2.9.5 Embedded and Control & Management Measures

Embedded Measures

2.9.5.1 The routeing and siting of the Suffolk Onshore Scheme has been evolved to avoid settlement areas as far as possible.

Control and Management Measures

2.9.5.2 Construction phase mitigation measures will be proposed as a function of the dust soiling and human health risk ratings allocated by following the IAQM construction dust guidance[171]. The IAQM construction dust guidance[171] also details an extensive list of potential mitigation measures by construction activity. Appropriate mitigation measures identified from the construction dust risk assessment will be secured through a Code of Construction Practice (CoCP), that will be secured as a requirement in the draft Development Consent Order (DCO).

2.9.5.3 An outline Code of Construction Practice (CoCP) is provided in **Appendix 1.4.A Outline Code of Construction Practice**. The Outline CoCP contains a list of relevant good practice measures, including the following key commitments relating to air quality:

- GG04: The CEMP shall include measures to manage dust, waste, water, noise, vibration and soil during construction. The contractor(s) shall undertake daily site inspections to check conformance to the Management Plans.
- GG10: Any activity carried out or equipment located within a construction compound that may produce a noticeable nuisance, including but not limited to dust, noise, vibration and lighting, will be located away from sensitive receptors such as residential properties or ecological sites where practicable.
- GG13: Plant and vehicles will conform to relevant applicable standards for the vehicle type as follows:

- Euro 4 (NOx) for petrol cars, vans and minibuses;
- Euro 6 (NOx and PM) for diesel cars, vans and minibuses; and
- Euro VI (NOx and PM) for lorries, buses, coaches and Heavy Goods Vehicles (excluding specialist abnormal indivisible loads).
- Vehicles will be correctly maintained and operated in accordance with manufacturer's recommendations and in a responsible manner. All plant and vehicles will be required to switch off their engines when not in use and when it is safe to do so.
- GG14: Materials and equipment will not be moved or handled unnecessarily. When loading and unloading materials from vehicles, including cable drums and excavated materials, drop heights will be limited.
- GG18: Wheel washing will be provided at each main compound access point on to the highway. An adequate supply of water will be made available at these locations at all times. Road sweepers will be deployed on public roads where necessary to prevent excessive dust or mud deposits.
- GG19: Earthworks and stockpiled soil will be protected by covering, seeding or using water suppression where appropriate.
- GG20: Bonfires and the burning of waste material will be prohibited.
- TT01: The CTMP will set out measures to reduce route and journey mileage to and from and around site, and prevent nuisance to the residents, businesses and the wider community caused by parking, vehicle movements and access restrictions. It will also provide suitable control for the means of access and egress to the public highway and set out measures for the maintenance and upkeep of the public highway. The plan will also identify access for emergency vehicles. It will also set out measures to reduce safety risks through construction vehicle and driver quality standards and measures to manage abnormal loads.

2.9.5.4 During construction, mitigation measures will be employed to ensure that dust emissions are minimised to a negligible impact, such as:

- Site management (logging of incidents/complaints);
- Monitoring (site inspections, soiling checks, compliance with Dust Management plan, etc);
- Preparing and maintaining the site (locate dust causing activities away from receptors, barriers, cleaning, enclosed specific operations with high potential for dust production, cover stockpiles, etc);
- Operating vehicle/machinery and sustainable travel (comply with NRMM standards, no idling, use mains electricity, travel plan etc);
- Operations (employ dust suppression, use enclosed chutes, minimise drop heights, etc);
- Demolition measures (damp down, avoid explosive blasting, soft strip interiors before demolition, etc);

- Earthworks measures (revegetate promptly, use hessian mulches and cover with topsoil, etc);
- Construction measures (avoid scabbling, keep aggregates damp, ensure fine powder materials are delivered enclosed and stored in silos, ensure bags are sealed after use); and
- Trackout measures (wash access and local roads, avid dry sweeping of large areas, ensure vehicle-borne materials are covered, install hard surface haul routes, wheel washing, etc).

2.9.5.5 Construction dust mitigation measures are considered tertiary mitigation i.e., actions that are standard best practices used to manage commonly occurring environmental effects.

2.9.6 Potential for Significant Effects

2.9.6.1 The air quality assessment will consider the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project**.

2.9.6.2 The proposed scope of the air quality assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

2.9.6.3 This section identifies the sources and impacts that would occur as a result of the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme.

2.9.6.4 The potential for the Suffolk Onshore Scheme to result in the potential significant effects described in this section takes into account the embedded and control and management measures described in section.

Sources of construction impacts

2.9.6.5 Construction phase activities associated with the Project such as earthworks and trackout (the transport of dust and dirt from the construction site onto the public road network) can give rise to adverse impacts from fugitive emissions of dust such as nuisance and health impacts if left unmitigated. A construction dust risk assessment is therefore required to identify the risk and determine the appropriate mitigation measures to mitigate construction dust impacts. Additionally, the movement of materials and waste to and from the site by construction vehicles can lead to adverse impacts from increased exhaust emissions of air pollutants, such as nitrogen dioxide and particulate matter.

2.9.6.6 There may also be increases in NO_2, PM_{10} and $PM_{2.5}$ concentrations due to emissions from non-road mobile machinery (NRMM) used during construction. However, it is proposed for construction vehicle emissions to be scoped out and this will be confirmed with relevant consultees following screening of construction traffic flow data.

2.9.6.7 The potential sources of construction impacts are therefore:

- Construction activities such as earthworks and trackout resulting in emissions of dust;
- Emissions from NRMM; and
- Emissions from construction traffic.

Sources of operational impacts

2.9.6.8 Traffic trips associated with the operation of the Project are anticipated to be below the IAQM indicative criteria[172] for potential significant effects. Therefore, air quality impacts associated with operational phase vehicle emissions will be negligible and are proposed to be scoped out of further assessment.

2.9.6.9 There are no other operational phase emissions sources or air quality impacts associated with the Project anticipated for inclusion in the air quality assessment.

Sources of maintenance impacts

2.9.6.10 Traffic trips associated with the maintenance of the Project are anticipated to be below the IAQM indicative criteria[172] for potential significant effects. Therefore, air quality impacts associated with operational phase vehicle emissions will be negligible and are proposed to be scoped out of further assessment.

2.9.6.11 Any potential NRMM emissions or dust generating activities associated with maintenance would be transient and temporary in nature, therefore there are no other maintenance emissions sources or air quality impacts associated with the Project anticipated for inclusion in the air quality assessment.

Sources of decommissioning impacts

2.9.6.12 The decommissioning phase of the Project will be assessed following the same approach as construction to consider any dust impacts associated with demolition and potential impacts from vehicle emissions. Therefore the potential sources of decommissioning impacts are:

- decommissioning activities such as earthworks and trackout resulting in emissions of dust;
- emissions from NRMM; and
- emissions from decommissioning traffic.

Potential impacts

2.9.6.13 The most common air quality impacts that may arise during demolition and construction activities are;

- dust deposition, resulting in the soiling of surfaces and reduction in amenity; and
- elevated PM_{10} concentrations, as a result of dust generating activities on site.

2.9.6.14 These impacts may affect human and ecological receptors. The IAQM construction dust guidance[171] defines a human receptor as:

"any location where a person or property may experience the adverse effects of airborne dust or dust soiling, or exposure to PM_{10} over a time period relevant to the Air Quality Objectives. In terms of annoyance effects, this will most commonly relate to dwellings, but may also refer to other premises such as buildings housing cultural heritage collections (e.g. museums and galleries), vehicle showrooms, food manufacturers, electronics manufacturers, amenity areas and horticultural operations (e.g. salad or soft-fruit production)."

2.9.6.15 An ecological receptor is defined as:

"any sensitive habitat affected by dust soiling. This includes the direct impacts on vegetation or aquatic ecosystems of dust deposition, and the indirect impacts on fauna (e.g. on foraging habitats)".

2.9.6.16 The potential for dust emissions will be assessed for each activity that is likely to take place and considers three separate dust effects:

- Annoyance due to dust soiling;
- Harm to ecological receptors; and
- The risk of health effects due to a significant increase in exposure to PM_{10}.

2.9.6.17 Construction dust impacts are likely to be temporary in nature and have the potential to be well controlled through best practice mitigation measures.

2.9.6.18 Table 2.9.1 identifies the potential impact that could result from the sources identified above.

Table 2.9.1:Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction	Construction activities such as earthworks and trackout resulting in emissions of dust	Dust deposition and human health impacts	Yes - Negligible	**Scoped in**
	Emissions from NRMM	Change in local air pollutant concentrations	No - Not significant due to temporary and transient nature and incorporation of best practice measures (CoCP)	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
	Emissions from construction traffic	Change in local air pollutant concentrations	No - Not significant due to traffic numbers anticipated to be below IAQM screening criteria	Scoped out
Operation	Operational traffic vehicle emissions	Change in local air pollutant concentrations	No - Not significant due to traffic numbers anticipated to be below IAQM screening criteria	Scoped out
Maintenance	Maintenance traffic vehicle emissions	Change in local air pollutant concentrations	No - Not significant due to traffic numbers anticipated to be below IAQM screening criteria	Scoped out
Decommissioning	Decommissioning activities such as earthworks and trackout resulting in emissions of dust	Dust deposition and human health impacts	Yes - Negligible	**Scoped in**
	Emissions from NRMM	Change in local air pollutant concentrations	No - Not significant due to temporary and transient nature and incorporation of best practice measures (CoCP)	Scoped out
	Emissions from decommissioning traffic	Change in local air pollutant concentrations	No - Not significant due to traffic numbers anticipated to	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			be below IAQM screening criteria	

Impact Pathways with Receptors (Step 2)

2.9.6.19 This section identities whether there are any impact pathways from the impacts identified above that could give rise to potentially significant effects on the receptors within the air quality study area.

2.9.6.20 It should be noted that potential air quality impacts associated with the Project are anticipated to be the same for all options as construction dust impacts would be mitigated to negligible effect following a dust risk assessment and vehicle emissions are proposed to be scoped out as not significant.

2.9.6.21 Table 2.9.2 identifies the potential impact pathways with receptors for all options as shown on:

- **Figure 2.1.4 Suffolk Site 1 Emerging Preference** and **Figure 2.1.9 Suffolk Site 1 Emerging Preference Option Area**;
- **Figure 2.1.5 Suffolk Site 3 Emerging Preference** and **Figure 2.1.10 Suffolk Site 3 Emerging Preference Option Area**;
- **Figure 2.1.6 Suffolk Site 1 Alternative** and **Figure 2.1.11 Suffolk Site 1 Alternative Option Area**;
- **Figure 2.1.7 Suffolk Site 3 Alternative (Option 1)** and **Figure 2.1.12 Suffolk Site 3 Alternative (Option 1) Option Area**; and
- **Figure 2.1.8 Suffolk Site 3 Alternative (Option 2)** and **Figure 2.1.13 Suffolk Site 3 Alternative (Option 2) Option Area**.

Table 2.9.2: Impact pathways with receptors

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Dust deposition and human health impacts during construction	Nearby Air Quality Sensitive Receptors	Yes - Negligible	**Scoped in**
Change in local air pollutant concentrations	Nearby Air Quality Sensitive Receptors	No - Not significant due to traffic numbers anticipated to be below IAQM screening criteria	Scoped out

2.9.7 Proposed Assessment Methodology

2.9.7.1 Detailed technical assessment methodologies are presented in **Part 1, Chapter 5, EIA Approach and Methodology**. This section provides on overview of the methodologies used in the assessment of air quality from the Project.

Proposed Data Sources

2.9.7.2 No additional data sources are proposed other than those outlined in section 4. Should detailed dispersion modelling of vehicle emissions be required following the screening of construction traffic data then one year of meteorological data would be obtained from a nearby met station for the base year.

Proposed Assessment Methodology

Construction dust assessment

2.9.7.3 There is the potential for fugitive dust emissions to occur as a result of construction phase activities. These will be assessed in accordance with the methodology outlined in the IAQM construction dust guidance[171].

2.9.7.4 If there are no ecological receptors within 50m or human receptors within 350m of the Suffolk Onshore Scheme boundary, or within 50m of the haul routes (up to 500m from the site entrance(s)) then the need for a construction dust assessment is to be screened out. However, if there are receptors within in these distances then an assessment should be carried out. Initial review of the study area has identified that receptors are present and therefore a construction dust risk assessment is required.

2.9.7.5 A site is allocated a risk category based on two factors:

- The scale and nature of the works, which determines the magnitude of dust arising as: small, medium or large; and
- The sensitivity of the area to dust impacts, which can be defined as low, medium or high sensitivity.

2.9.7.6 The two factors are combined to determine the risk of dust impacts without mitigation applied.

2.9.7.7 The relevant criteria to define the potential magnitude of dust emission includes the following factors detailed in Table 2.9.3

Table 2.9.3: Dust emission magnitude criteria

Magnitude	Criteria
Small	Demolition volume under 20,000m^3 less than 10m above ground level, total site area less than 2,500m^2, soil type with large grain size, total material moved less than 20,000 tonnes, construction material with low potential for dust release, less than 10 HDV trips per day, unpaved road length less than 50m etc.

Medium	Demolition activities 10m-20m above ground level, moderately dusty soil type, potentially dusty construction material, total material moved 20,000-100,000 tonnes, 10 to 50 HDV trips per day, unpaved road length 50-100m etc.
Large	On-site crushing and screening demolition, demolition activities greater than 20m above ground level, total site area greater than 10,000m^2, more than 10 heavy earth moving vehicles active at any one time, more than 10,000 tonnes of material moved, on site concrete batching, sandblasting, more than 50 HDV trips per day, unpaved road length greater than 100m etc.

2.9.7.8 The influencing factors to define receptor sensitivity to dust impacts are detailed in Table 2.9.4.

Table 2.9.4: Receptor sensitivity criteria

Sensitivity	Criteria
High	Where human receptors expected to be present continuously for extended periods of time e.g. residential properties, hospitals, schools and care homes. Internationally or nationally designated ecological sites.
Medium	Where users would expect to enjoy a reasonable level of amenity and value could be diminished by dust soiling e.g. parks and places of work. Nationally designated ecological sites.
Low	Where enjoyment of amenity would not reasonably be expected and exposure would be for limited periods e.g. footpaths, shopping streets and car parks. Locally designated ecological sites.

2.9.7.9 The IAQM construction dust guidance[171] categorises the unmitigated risk of dust impacts on human health and amenity (rather than ascribe a significance of effect) as a means of identifying the level of dust emissions mitigation required to ensure that residual impacts are 'not significant'. A higher dust risk rating requires more stringent mitigation measures in order to limit residual effects.

Vehicle emissions assessment

2.9.7.10 Assessment of vehicle emissions will be undertaken should the screening of traffic data meet the criteria set out by IAQM development control guidance[172].

2.9.7.11 If these criteria are not exceeded, then the IAQM development control guidance[172] considers air quality impacts associated with a scheme in terms of traffic emissions to be negligible and no further assessment is required

2.9.7.12 Should screening of the relevant data indicate that any of the above criteria are met, then potential impacts at sensitive receptor locations can be assessed by calculating the change in NO_2 and particulate matter concentrations as a result of the Project.

Detailed dispersion modelling would be undertaken using Atmospheric Dispersion Modelling Software (ADMS) to predict pollutant concentrations at worst case receptor locations within 200m of affected vehicle routes and compared against relevant AQS objectives. The significance of predicted impacts can then be determined in accordance with the methodology outlined in the IAQM development control guidance[172].

2.9.7.1 The significance of impacts would be assessed dependent upon the percentage change in concentration between the without and with Project scenarios, relative to the relevant air quality objectives, as presented in Table 2.9.5.

Table 2.9.5: IAQM impact descriptors for individual receptors

Long term average concentration at receptor in assessment year	% change in concentration relative to air quality assessment level (AQAL)			
	1	2-5	6-10	>10
75% or less of AQAL	Negligible	Negligible	Slight	Moderate
76 - 94% of AQAL	Negligible	Slight	Moderate	Moderate
95 - 102% of AQAL	Slight	Moderate	Moderate	Substantial
103 - 109% of AQAL	Moderate	Moderate	Substantial	Substantial
110% or more of AQAL	Moderate	Substantial	Substantial	Substantial

2.9.8 Conclusion

2.9.8.1 With regards to air quality impacts associated with the Suffolk Onshore Scheme, the assessment of construction dust is scoped into the assessment. It is proposed that construction traffic vehicle emissions are scoped out of the assessment due to the number of vehicles anticipated to be below the IAQM screening criteria[172], subject to confirmation upon receipt of construction traffic data.

Proposed Scope of the Assessment

2.9.8.2 A summary of the proposed scope of the assessment is provided in Table 2.9.6.

Table 2.9.6: Proposed scope of the assessment

Receptor	Potential for significant effects	Project phase(s)	Proposed to be scoped in/out and for which option
Nearby Air Quality	Dust deposition	Construction and Decommissioning	**Scoped in for all options**

Sensitive Receptors			
Nearby Air Quality Sensitive Receptors	Human health dust impacts	Construction and Decommissioning	**Scoped in for all options**
Nearby Air Quality Sensitive Receptors	Increase in vehicle emissions	Construction, Operational, Maintenance and Decommissioning	Scoped out for all options
Nearby Air Quality Sensitive Receptors	Emissions from NRMM	Construction and Decommissioning	Scoped out for all options

2.10 Noise and Vibration

2.10.1 Introduction

2.10.1.1 This chapter presents how the noise and vibration assessment will consider the potentially significant effects that may arise from the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme (as described in **Part 1, Chapter 4, Description of the Project**). This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an EIA.

2.10.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Suffolk Onshore Scheme Scoping Boundary hereafter referred to as the Suffolk Scoping Boundary is illustrated on **Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary**.

2.10.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project**;
- **Part 1, Chapter 5, EIA Approach and Methodology**; and
- **Part 2, Chapter 1, Evolution of the Suffolk Onshore Scheme**.

2.10.1.4 This chapter is supported by the following figure:

- **Figure 2.10.1 – Noise and Vibration Baseline – Suffolk**.

2.10.1.5 The potential effects of noise and vibration on ecological receptors and heritage assets are considered in **Part 2, Chapter 3, Ecology and Biodiversity**, and **Part 2, Chapter 4, Cultural Heritage**, respectively.

2.10.2 Regulatory and Planning Context

2.10.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. Key legislation, policy and guidance relevant to the assessment of potential effects on noise and vibration associated with the construction, operation, maintenance and decommissioning of the Project is presented below.

Legislation

2.10.2.2 The below legislation will be considered when identifying potential constraints to the Suffolk Onshore Scheme, design options and mitigation.

- The Control of Pollution Act 1974[179]; and
- Environmental Protection Act 1990[180].

Planning Policy

National Planning Policy

2.10.2.3 The assessment will take account of the relevant National Policy Statements (NPSs) for energy: the Overarching National Policy Statement for Energy (EN-1)[181] and the National Policy Statement for Electricity Networks (EN-5)[182]. These NPSs are, as of June 2022, in the process of being updated and therefore relevant sections of the draft NPSs are also included below, where relevant.

2.10.2.4 EN-1 states that 'where noise impacts are likely to arise from the proposed development, the applicant should include the following in the noise assessment' including a description of the noise generating aspects leading to noise impacts, noise sensitive properties that may be affected, an assessment of the effect of predicted changes in the noise environment at noise sensitive properties and measures to be employed in mitigating noise.

2.10.2.5 EN-5 contains the following guidance relating to noise which has been considered within this chapter:

'The IPC should ensure that relevant assessment methodologies have been used in the evidence presented to them, and that the appropriate mitigation options have been considered and adopted. Where the applicant can demonstrate that appropriate mitigation measures will be put in place, the residual noise impacts are unlikely to be significant.'

2.10.2.6 The National Planning Policy Framework (NPPF) (2012; revised in 2021)[183] details the Government's planning policies for England and how these are expected to be applied. The NPPF includes statements relating to noise and the requirement to take it into account in the planning process. Section 174 indicates that the planning system should contribute to and enhance the natural and local environment by:

'preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.'

2.10.2.7 Section 185 is specifically related to noise, requiring planning policy decisions to:

[179] Control of Pollution Act 1974 [online]. Available at: https://www.legislation.gov.uk/ukpga/1974/40 [Accessed July 2022].
[180] Environmental Protection Act 1990 [online]. Available at: https://www.legislation.gov.uk/ukpga/1990/43/contents [Accessed July 2022]

[181] Department of Energy and Climate Change (2011). Overarching National Policy Statement for Energy (EN-1). [online] Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure

[182] Department of Energy and Climate Change (2011). National Policy Statement for Electricity Networks Infrastructure (EN-5). [online] Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure

[183] Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework. [online] Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2

- mitigate and reduce to a minimum, potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life; and
- identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason

2.10.2.8 The terms 'significant adverse effect' and 'adverse effect' reflect the terminology used in the Noise Policy Statement for England, 2010 (NPSE)[184] which sets out the long-term vision of Government noise policy:

'to promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.'

2.10.2.9 The NPSE outlines three aims for the effective management and control of environmental, neighbour and neighbourhood noise:

- avoid significant adverse impacts on health and quality of life;
- mitigate and minimise adverse impacts on health and quality of life; and
- where possible, contribute to the improvement of health and quality of life.

2.10.2.10 In its aims, the NPSE uses the key phrases "significant adverse" and "adverse". The NPSE states in its explanatory note that there are two established concepts that are currently being applied to noise impacts, which are:

- NOEL – No Observed Effect Level. This is the level below which no effect can be detected.
- LOAEL – Lowest Observed Adverse Effect Level. This is the level above which adverse effects on health and quality of life can be detected.

2.10.2.11 The NPSE then extends this concept to include:

- SOAEL – Significant Observed Adverse Effect Level. This is the level above which significant adverse effects on health and quality of life occur.

2.10.2.12 The NPSE notes that it is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to vary for different noise sources, receptors and times. It is for the project to identify relevant SOAELs taking account of the sources of exposure and receptors.

2.10.2.13 The NPPF and NPSE do not, therefore, provide absolute limits on noise that are acceptable or unacceptable in a given situation. It does however, set out the need to use planning decisions, including through the use of conditions, to avoid or mitigate adverse impacts on health and quality of life resulting from noise. The Planning Practice Guidance for Noise (PPGN)[185] advises on how planning can manage potential noise impacts. In this guidance it advises that local planning authorities' plan making

[184] Department for Environment, food and Rural Affairs (2010). Noise Policy Statement for England. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69533/pb13750-noise-policy.pdf

[185] Department for Levelling Up, Housing and Communities, and Ministry of Housing, Communities and Local Government (2019). Planning Practice Guidance – Noise. [online] Available at: https://www.gov.uk/guidance/noise--2 [Accessed July 2022].

and decision taking should take account of the acoustic environment and in doing so consider:

- whether or not a significant adverse effect is occurring or likely to occur;
- whether or not an adverse effect is occurring or likely to occur; and
- whether or not a good standard of amenity can be achieved.

2.10.2.14 PPGN provides a noise exposure hierarchy explaining how effects of noise can be categorised, as reproduced in Table 2.10.1.

Table 2.10.1: PPGN noise exposure hierarchy

Response	Example of outcomes	Increasing effect level	Action
Not present	No effect	No Observed Effect	No specific measures required
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response.		
	Lowest Observed Effect Level (LOAEL)		
Present and intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a small actual or perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
	Significant Observed Effect Level (SOAEL)		
Present and disruptive	The noise causes a material change in behaviour, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite,	Unacceptable Adverse Effect	Prevent

Response	Example of outcomes	Increasing effect level	Action
	significant, medically definable harm, e.g. auditory and non-auditory.		

Local planning policy

2.10.2.15 Relevant policies from the East Suffolk Council Suffolk Coastal Local Plan, adopted September 2020[186]. These are reproduced in Table 2.10.2.

Table 2.10.2: Local planning policies applicable to Suffolk Onshore Scheme

Document	Planning policy	Purpose
Suffolk Coastal Local Plan, Adopted September 2020	SCLP10.3: Environmental Quality	Development proposals will be expected to protect the quality of the environment and to minimise and, where possible, reduce all forms of pollution and contamination. Development proposals will be considered in relation to impacts on; a) Air quality, and the impact on receptors in Air Quality Management Areas; b) Soils and the loss of agricultural land; c) Land contamination and its effects on sensitive land uses; d) Water quality and the achievement of Water Framework Directive objectives; e) Light pollution; and f) Noise pollution. Proposals should seek to secure improvements in relation to the above where possible. The cumulative effect of development, in this regard, will be considered.
	SCLP11.2: Residential Amenity	When considering the impact of development on residential amenity, the Council will have regard to the following: a) Privacy/overlooking; b) Outlook; c) Access to daylight and sunlight; d) Noise and disturbance; e) The resulting physical relationship with other properties; f) Light spillage; g) Air quality and other forms of pollution; and

[186] East Suffolk Council (2020). Suffolk Coastal Local Plan. [online] Available at: https://eastsuffolk.inconsult.uk/consult.ti/suffolkcoastallocalplan2020/viewCompoundDoc?docid=11955764&partid=11958292

	h) Safety and security. Development will provide for adequate living conditions for future occupiers and will not cause an unacceptable loss of amenity for existing or future occupiers of development in the vicinity.

2.10.3 Study Area

2.10.3.1 This section describes the study areas for each aspect of the noise and vibration assessment. The study areas for each aspect of the noise and vibration assessment are shown in **Figure 2.10.1 Noise and Vibration Baseline – Suffolk**.

Construction Noise Study Area

2.10.3.2 The study area for construction noise impacts within the ES will consider noise sensitive receptors (NSRs) within 300m of the Suffolk Onshore Scoping Boundary, excluding construction traffic on the public highway which is assessed separately. This is based on guidance in British Standard 5228-1:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites – Part 1: Noise' (BS 5228-1)[187], which states that caution is needed when making construction noise predictions beyond 300m due to meteorological effects, particularly when a soft ground correction factor has been applied. A 300m construction noise study area is also advocated by DMRB LA 111 (Highways England, 2020)[188]. This will be refined as the Suffolk Onshore Scheme develops.

Construction Traffic Noise Study Area

2.10.3.3 The construction traffic routes are not currently defined at this stage. However, noise from construction traffic on the existing road network will be assessed for each applicable road based on guidance from DMRB LA 111 (Highways England, 2020). The assessment principally considers the change in Basic Noise Level (BNL) of each road, calculated in line with the methodology described in technical memorandum Calculation of Road Traffic Noise (CRTN)[189], with a subsequent assessment of the impacts on NSRs within 50m of routes where a change in BNL of at least 1dB is identified due to construction traffic.

Construction Vibration Study Area

2.10.3.4 The proposed study area for construction vibration impacts, based on guidance from BS 5228-2:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration' (BS 5228-2)[190] and DMRB LA 111, will

[187] British Standards Institute (2008). BS 5228-1:2009+A1:2014 - Code of practice for noise and vibration control on construction and open sites: Noise.

[188] Highways England (2020). Design Manual for Roads and Bridges - LA 111 Noise and Vibration. [online] Available at: https://www.standardsforhighways.co.uk/prod/attachments/cc8cfcf7-c235-4052-8d32-d5398796b364?inline=true

[189] Department of Transport and Welsh Office (1988). Calculation of Road Traffic Noise. London. HMSO

[190] British Standards Institute (2008). BS 5228-1:2009+A1:2014 - Code of practice for noise and vibration control on construction and open sites: Noise.

consider NSRs within 100m of the Suffolk Scoping Boundary. This will be refined as the Suffolk Onshore Scheme develops.

Operational Noise Study Area

2.10.3.5 The study area for operational noise impacts from the proposed converter station and substation is 1000m from the Suffolk converter station Site Option Areas and proposed Friston substation/extension, based on guidance from ISO 9613:1996 'Acoustics – Attenuation of sound during propagation outdoors – Part 2: General Method of calculation' (ISO 9613)[191]. There will be particular emphasis on the NSRs closest to the converter station and/or Substation. This will be refined as the Suffolk Onshore Scheme develops.

2.10.3.6 The AC connection between the proposed converter station the National Grid connection point at the proposed Friston substation will be via underground cables. Noise from underground cables are proposed to be scoped out since their operation does not generate material levels noise.

Operational Vibration Study Area

2.10.3.7 There are no material sources of operational vibration proposed as part of the Suffolk Onshore Scheme. Operational vibration is therefore proposed to be scoped out of further assessment.

2.10.4 Baseline Conditions

Data Sources

2.10.4.1 The noise and vibration baseline described in this section has been informed by the following data sources Defra strategic noise mapping (2017) [192];

- Ordnance Survey mapping;
- East Anglia ONE NORTH Offshore Windfarm Environmental Statement Volume, Chapter 25 – Noise and Vibration.
- East Anglia TWO Offshore Windfarm Environmental Statement Volume, Chapter 25 – Noise and Vibration.

2.10.4.2 Pertinent baseline information is provided in **Figure 2.10.1 Noise and Vibration Baseline – Suffolk**.

[191] International Standards Organisation (1996). ISO 9613:1996 Acoustics – Attenuation of sound during propagation outdoors – Part 2: General Method of calculation.

[192] Department for Environment, Food and Rural Affairs (2019). Strategic noise mapping: explaining which noise sources were included in the 2017 noise maps. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/902825/strategic-noise-mapping-round3.pdf

Baseline

2.10.4.3 The study area includes a mix of predominantly residential and rural environments. The noise climate is therefore expected to be relatively quiet away from main transport routes.

2.10.4.4 The main sources of noise are likely to include road traffic from the A12 to the west and, the A1094 which runs between the A12 at Friday Street to the west and Aldeburgh to the east. There will also be lower levels of traffic on local roads. Away from road traffic sources, ambient sound levels would be expected to be lower. There is also a train line running east-west through the Suffolk Onshore Scoping Boundary between Saxmundham in the west and Leiston in the east. Sizewell nuclear power station is the only major industrial facility in the area, albeit, outside just of the study area, approximately 500m to the north-east of the Suffolk Onshore Scoping Boundary.

2.10.4.5 There are built-up residential areas at:

- Saxmundham to the west;
- Friston to the south;
- Goldfair Green to the south;
- Aldeburgh to the southeast;
- Sizewell to the northeast; and
- Leiston to the northeast.

2.10.4.6 There are also a relatively large number of isolated NSRs and small settlements within the study area located between the main built-up residential areas identified above.

2.10.4.7 Defra strategic noise mapping indicates that ambient noise levels are moderate to high in the vicinity of the A12 and A1094 but reduce to relatively low levels beyond approximately 300m from the roads.

2.10.4.8 There are no Noise Important Areas (NIA) on the existing local public highway along routes within which may be used for construction traffic associated with the Suffolk Onshore Scheme. NIAs are determined via strategic noise maps and highlight the residential areas experiencing the highest 1% of noise levels from road and rail sources in England.

2.10.4.9 There are however NIAs in the wider area on main transport routes (e.g. The A12 at Farnham and Little Glemham to the southwest) which are not likely to be significantly affected by the Suffolk Onshore Scheme.

2.10.4.10 With regards to background sound levels, which are applicable to the assessment of operational noise, the 2018 noise survey data indicates that background sound levels at the nearest NSRs are likely to be in the order of 32 to 37 dB $L_{A90,T}$ during daytime periods, and 24 to 36 dB $L_{A90,T}$ during night-time periods (further noise surveys will be conducted as part of this Suffolk Onshore Scheme). These sound levels are typical for a rural area.

2.10.4.11 With regards to the vibration baseline, it is assumed that existing vibration levels are negligible in the study area.

Future Baseline

2.10.4.12 The future baseline has the potential to change in isolated areas due to proposed infrastructure projects in the area; principally the East Anglia One North and East Anglia Two Offshore Windfarms, with the proposed Friston substation farming part of that application. Baseline noise surveys would likely be conducted prior to commencing of the operation or construction of the substation and as such consideration will be given to pre-development background noise levels in the assessment of operational noise from additional plant required at Friston in relation to the Suffolk Onshore Scheme in order to control cumulative effects.

2.10.5 Embedded and Control & Management Measures

Embedded Measures

Construction noise and vibration

2.10.5.1 Where feasible, the Suffolk Onshore Scheme has avoided NSRs, such as settlements, through routeing and siting.

Operational noise

2.10.5.2 At this stage, the proposed converter station and substation have not yet been designed. However, they will be designed to meet applicable noise limits at nearby NSRs using readily available techniques. This will include consideration of plant selection, site layout, screening, and enclosures, as may be considered appropriate. Additionally, the converter station and substation siting has avoided NSR, such as settlements, through the optioneering process.

2.10.5.3 Similarly, the AC connection between the proposed converter station the substation will be via underground cables. Underground cables do not generate material levels of noise.

2.10.5.4 There are no material sources of vibration from the operation of the converter station and substation. There are, however, sources of low levels of vibration including transformers and cooling plant. Such plant would be expected to be installed on anti-vibration mountings and levels of vibration would not be expected to be perceptible, even in close proximity to the equipment.

Control and Management Measures

Construction noise control and management measures

2.10.5.5 An outline Code of Construction Practice (CoCP) is provided **in Appendix 1.4.A Outline Code of Construction Practice**. Measures relevant to the control and management of impacts that could affect the noise and vibration assessment are:

- GG04 - The CEMP shall include measures to manage dust, waste, water, noise, vibration and soil during construction. The contractor(s) shall undertake daily site inspections to check conformance to the Management Plans.

- GG06 - Construction workers will undergo training to increase their awareness of environmental issues as applicable to their role on the project. Topics will include but are not limited to:
  - working hours and noise and vibration reducing measures; and
  - agreed traffic routes, access points, etc.
- GG11 - Any activity carried out or equipment located within a construction compound that may produce a noticeable nuisance, including but not limited to dust, noise, vibration and lighting, will be located away from sensitive receptors such as residential properties or ecological sites where practicable.
- GG26 - Members of the community and local businesses will be kept informed regularly of the works through active community liaison. This will include notification of noisy activities, heavy traffic periods and start and end dates of key phasing. A contact number will be provided which members of the public can use to raise any concerns or complaints about the project. All construction-related complaints will be logged by the contractor(s) in a complaints register, together with a record of the responses given and actions taken.
- NV01 - Construction working will be undertaken within the agreed working hours set out within the Development Consent Order (DCO). Best practicable means to reduce construction noise will be set out within the CEMP.

2.10.5.6 In developing the noise control measures to be used, the following hierarchy will be followed:

- Control at source – for example the selection of quieter equipment;
- The choice of location for equipment on site;
- Control of working hours; and
- The provision of acoustic enclosures around equipment or barriers around work sites.

2.10.5.7 As per the hierarchy above, the first source of control for noise pollution is to control at the source. To this end, where reasonably practicable, efforts will be made to use equipment that reduces the noise produced where located in close proximity to NSRs.

2.10.5.8 Where works may be required to be undertaken outside of the core hours, the local planning authority will be notified in advance along with any neighbouring receptors.

Operational noise control and management Measures

2.10.5.9 It is anticipated that further detailed assessment of operational noise from the proposed converter station and substation, once the design has been finalised, detailing specific mitigation measures, would be secured via DCO Requirement.

Operational vibration control and management measures

2.10.5.10 There are no material sources of operational vibration proposed as part of the Project. Some converter station and substation plant would include rotating and moving parts, such as the fans of cooling equipment. However, levels of vibration generated by such plant is low and applicable plant, including transformers, would be expected to be

mounted on suitable anti-vibration mounts. These are primarily to protect the plant itself from potential vibration impacts but also serve to attenuate vibration generated by the plant. Vibration would therefore not be expected to be perceptible even in very close proximity to plant.

2.10.6 Potential for Significant Effects

2.10.6.1 The noise and vibration assessment will consider the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project**.

2.10.6.2 The proposed scope of the noise and vibration assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

2.10.6.3 This section identifies the sources and impacts that would occur as a result of the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme.

2.10.6.4 The potential for the Suffolk Onshore Scheme to result in the potential significant effects described in this section takes into account the embedded and control and management measures described in section 5.

Sources of construction impacts

- noise effects from construction activities;
- vibration effects from construction activities; and
- noise effects from construction traffic.

Sources of operational impacts

- noise effects from the converter station; and
- noise effects from the substation.

Sources of maintenance impacts

- noise and vibration effects from maintenance activities.

Sources of decommissioning impacts

- noise and vibration effects from decommissioning activities.

Potential impacts

2.10.6.5 Table 2.10.3 identifies the potential impacts that could result from the sources identified above.

Table 2.10.3:Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction	Noise from construction activities	Construction noise at NSRs	Yes -There will be potential significant effects due to construction noise at NSRs within the study area. However, this depends on the nature and the duration of activities, the distance between the noise source and the NSR, and the good practice measures employed to reduce noise.	**Scoped in**
Construction	Vibration from construction activities	Construction vibration at NSRs	Yes -There will be potential significant effects on human receptors (i.e. nuisance) due to construction vibration at NSRs within the study area. The level of significance will depend on the nature and the duration of activities, the distance between the source of vibration and the NSR, and the good practice measures employed to reduce vibration. However, the duration of such activities would be expected to be relatively short at any one location, and, together with the implementation of good practice measures, significant	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			effects from such works are not expected.	
Construction	Vibration from construction activities	Construction vibration at structures	Yes -Construction vibration would not be expected to cause damage to buildings or structures unless very high levels of vibration are generated. Such levels would only be expected to occur where vibration generating activities occur very close to structures, within several meters, and specific control measures would be in place in such instances.	**Scoped in**
Construction	Noise from construction traffic	Construction traffic noise at NSRs	Yes -There is the potential for significant effects at NSRs close to construction traffic routes depending on the number of construction vehicle movements and existing traffic flows along proposed routes.	**Scoped in**
Construction	Vibration from construction traffic	Construction traffic vibration at NSRs	No - Vibration from traffic on the public highway is caused by irregularities in the road surface. Where the road surface is free from irregulates, such as potholes, significant vibration	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			effects would not be expected, even at relatively short distances. This is confirmed by the Design Manual for Roads and Bridges LA 111 Noise and Vibration (2020) (DRMB).	
Operation	converter station and substation	Operational noise at NSRs	Yes -There are a number of potential sources of audible noise from converter station and substation. Each of these has its own characteristic frequency spectrum and pattern of occurrence due to the nature of the noise-generating mechanisms involved. The primary sources of noise are likely to be transformers, cooling equipment, alternating current (AC) and direct current (DC) switch gear, and AC filters and voltage smoothing equipment. Transformer noise is almost constant, with a hum occurring at exact harmonics of the supply frequency; 100Hz and 200Hz components are usually dominant. Transformers	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			generally run continuously except for occasional maintenance and fault outages. Transformer coolers typically emit a broadband noise; however, their operation depends on temperature and loading.	
Operation			No - Switchgear noise is generated, in the main, by the operation of circuit breakers, for which the noise emissions are ‘impulsive’ in character (i.e. of short duration). Switchgear operations would be very infrequent. Modern switchgear of the Sulphur Hexafluoride (SF6) type operates with a dull ‘thud’. Switchgear would operate infrequently and is therefore proposed to be scoped out. Auxiliary plant may comprise standby diesel generators and air compressors to provide emergency back-up power to cooling plant. When present and operating, these may contribute to the broadband noise	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			climate. They do not run continuously, and in any case, would be housed in a building or outdoor acoustic enclosure. Noise from such assets is therefore not considered significant, given its emergency function and as such is proposed to be scoped out.	
Operation		Operational vibration at NSRs	No - There are no material sources of operational vibration proposed as part of the Project. Some converter station plant would include rotating and moving parts, such as the fans of cooling equipment. However, levels of vibration generated by such plant is low and all plant, including transformers, would be expected to be mounted on suitable anti-vibration mounts. These are primarily to protect the plant itself from potential vibration impacts but also serve to attenuate vibration generated by the plant. Vibration would therefore not be expected to be perceptible even in	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			very close proximity to plant.	
Operation	Maintenance activities	Operational noise and vibration at NSRs	Yes -Maintenance of the underground cables and the converter station would be infrequent, localised, and would follow good practice measures for the reduction of noise and vibration where required. Noise and vibration effects from maintenance activities would be expected to be no worse, and typically less than, the effects of during the construction phase.	**Scoped in**
Operation	Underground cables	Operational noise and vibration at NSRs	No - Underground cables are practically quiet. Operational noise from underground cables is scoped out of the ES	Scoped out
Operation	Operational road traffic	Operational road traffic noise and vibration at NSRs	No - The Suffolk Onshore Scheme is not likely to generate significant levels of additional road traffic during operation, with a low level of manned activity at the converter station site and occasional maintenance activities.	Scoped out
Decommissioning	Decommissioning activities	Decommissioning noise and vibration at NSRs	Yes - Decommissioning of the underground cables and the	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			converter station would follow good practice measures for the reduction of noise and vibration where required. Noise and vibration effects from decommissioning activities would be expected to be similar to the effects of during the construction phase.	

Impact Pathways with Receptors (Step 2)

2.10.6.6 Table 2.10.4 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Onshore Scheme for all options as shown on:

- **Figure 2.1.4 Suffolk Site 1 Emerging Preference** and **Figure 2.1.9 Suffolk Site 1 Emerging Preference Option Area**;
- **Figure 2.1.5 Suffolk Site 3 Emerging Preference** and **Figure 2.1.10 Suffolk Site 3 Emerging Preference Option Area**;
- **Figure 2.1.6 Suffolk Site 1 Alternative** and **Figure 2.1.11 Suffolk Site 1 Alternative Option Area**;
- **Figure 2.1.7 Suffolk Site 3 Alternative (Option 1)** and **Figure 2.1.12 Suffolk Site 3 Alternative (Option 1) Option Area**; and
- **Figure 2.1.8 Suffolk Site 3 Alternative (Option 2)** and **Figure 2.1.13 Suffolk Site 3 Alternative (Option 2) Option Area.**

Table 2.10.4: Impact pathways with receptors – all options

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Disturbance from construction noise	Residential and non-	Yes -There will be potential significant effects due to construction noise at	**Scoped in**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
	residential NSR	NSRs within the study area. However, this depends on the nature and the duration of activities, the distance between the noise source and the NSR, and the good practice measures employed to reduce noise.	
Disturbance from construction vibration	Residential and non-residential NSR	Yes -There will be potential significant effects on human receptors (i.e. nuisance) due to construction vibration at NSRs within the study area. The level of significance will depend on the nature and the duration of activities, the distance between the source of vibration and the NSR, and the good practice measures employed to reduce vibration. However, the duration of such activities would be expected to be relatively short at any one location, and, together with the implementation of good practice measures, significant effects from such works are not expected.	**Scoped in**
Structural damage from construction vibration	Structures	Yes -Construction vibration would not be expected to cause damage to buildings or structures unless very high levels of vibration are generated. Such levels would only be expected to occur where vibration generating activities occur very close to structures, within several meters, and specific control measures would be in place in such instances.	**Scoped in**
Disturbance from construction traffic noise	Residential and non-residential NSR	Yes -There is the potential for significant effects at NSRs close to construction traffic routes depending on the number of construction vehicle movements and existing traffic flows along proposed routes.	**Scoped in**
Disturbance from construction traffic vibration	Residential and non-residential NSR	No - Vibration from traffic on the public highway is caused by irregularities in the road surface. Where the road surface is free from irregulates, such as potholes, significant vibration effects would not be expected, even at	Scoped out

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
		relatively short distances. This is confirmed by the Design Manual for Roads and Bridges LA 111 Noise and Vibration (2020) (DRMB).	
Disturbance from operational noise from Proposed (converter station and Substation)	Residential and non-residential NSR	Yes -There are a number of potential sources of audible noise from converter stations and substations. Each of these has its own characteristic frequency spectrum and pattern of occurrence due to the nature of the noise-generating mechanisms involved. The primary sources of noise are likely to be transformers, cooling equipment, alternating current (AC) and direct current (DC) switch gear, and AC filters and voltage smoothing equipment. Transformer noise is almost constant, with a hum occurring at exact harmonics of the supply frequency; 100Hz and 200Hz components are usually dominant. Transformers generally run continuously except for occasional maintenance and fault outages. Transformer coolers typically emit a broadband noise; however, their operation depends on temperature and loading.	**Scoped in**
Disturbance from operational vibration	Residential and non-residential NSR	No - There are no material sources of operational vibration proposed as part of the Project. Some converter station plant would include rotating and moving parts, such as the fans of cooling equipment. However, levels of vibration generated by such plant is low and all plant, including transformers, would be expected to be mounted on suitable anti-vibration mounts. These are primarily to protect the plant itself from potential vibration impacts but also serve to attenuate vibration generated by the plant. Vibration would therefore not be expected to be perceptible even in very close proximity to plant.	Scoped out

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Disturbance from operational traffic noise	Residential and non-residential NSR	No - The Suffolk Onshore Scheme is not likely to generate significant levels of additional road traffic during operation, with a low level of manned activity at the converter station site and occasional maintenance activities.	Scoped out
Disturbance from noise and vibration from maintenance activities	Residential and non-residential NSR	Yes -Maintenance of the underground cables and the converter station would be infrequent, localised, and would follow good practice measures for the reduction of noise and vibration where required. Noise and vibration effects from maintenance activities would be expected to be no worse, and typically less than, the effects of during the construction phase.	**Scoped in**
Disturbance from decommissioning noise and vibration	Residential and non-residential NSR	Yes -Decommissioning of the underground cables and the converter station would follow good practice measures for the reduction of noise and vibration where required. Noise and vibration effects from decommissioning activities would be expected to be similar to the effects of during the construction phase.	**Scoped in**

2.10.7 Proposed Assessment Methodology

2.10.7.1 The assessment methodology for the EIA is outlined in **Part 1, Chapter 5, EIA Approach and Methodology**. This section provides on overview of the methodologies proposed to be used in the assessment of noise and vibration from the Suffolk Onshore Scheme.

Proposed Data Sources

2.10.7.2 The following data sources would be used in the noise and vibration assessment:

- AddressBase Plus data;
- Noise survey data;
- Project design information;
- Construction programme, schedule, and plant data (if available);

- Baseline and construction traffic data;
- Topography data;
- Converter station plant and/or specification data (if available).

2.10.7.3 Where detailed data is not available at the time of the ES, suitable assumptions will be made and documented. In terms of construction data, information would be based on the methodologies used in similar projects. With regards to the converter station, it is unlikely that a full design will be available at the time of the ES. As such, the ES will serve to determine noise limits for the proposed converter station via the noise survey data. It is anticipated that further detailed assessment of operational noise from the proposed converter station, once the design has been finalised, detailing specific mitigation measures, would be secured via DCO Requirement to meet the determined noise criteria.

Ascribing Sensitivity

2.10.7.4 NSRs are determined partly on property type, for example residential properties are of a higher sensitivity than factories and offices.

2.10.7.5 Although all residential NSRs are sensitive to noise and vibration, there are also cases where the sensitivity of an NSR may depend on the pre-existing noise climate. For example, NSRs falling with NIAs (existing high noise areas) may be more sensitive to increases in noise than those outside NIAs. Consideration will be given to such instances as part of the assessment of construction traffic noise impacts.

2.10.7.6 The sensitivity of residential NSRs is factored into the assessment criteria for noise and vibration impacts through the various guidance documents. The significance of effects at residential NSR is therefore directly related to magnitude of effect. However, additional consideration of sensitivity may be required in certain cases for non-residential NSRs. Consideration would also be given to the times that the specific NSR is expected to be used (e.g. if daytime only). The criteria used to determine the value and sensitivity of non-residential NSRs specific to noise and vibration are set out in Table 2.10.5. These values are based on standard practice.

Table 2.10.5: Criteria for determining value/sensitivity (Non-Residential NSRs)

Sensitivity/value	Criteria
Very High	Schools and education premises, hospitals, clinics.
High	Care Homes, places of worship, community centres, libraries.
Medium	Areas primarily used for leisure activities including PRoWs, sports facilities, and sites of historic or cultural importance, camp sites, hotels, gardens, parks.
Low	Offices, cafes/bars with external areas.
Negligible	Industrial or retail premises

Ascribing Impact Magnitude

Construction noise

2.10.7.7 Construction noise impacts will be assessed in accordance with BS 5228-1 and will take account of the guidance of DMRB.

2.10.7.8 Construction noise levels will be calculated at NSRs within the study area in accordance with the methodology described in Annex F of BS 5228-1. The predicted construction noise levels at NSRs will be compared against applicable noise thresholds as detailed in Section E.3.2 of BS 5228-1 (the 'ABC' method) together with temporal criteria as detailed in DMRB. Given the rural area of the majority of the Suffolk Onshore Scheme area, the lower threshold values (Category 'A') would be applied as a worst-case assessment to all residential NSR in lieu of baseline noise monitoring for construction impacts.

2.10.7.9 The lowest observed adverse effect level (LOAEL) and the significant adverse effect level (SOAEL) will be established in accordance with Table 2.10.6.

Table 2.10.6: Construction noise effect levels at residential receptors

Time period	LOAEL	SOAEL
Weekdays 7:00am to 7:00pm, and Saturdays 7:00am to 1:00pm	50dB $L_{Aeq,T}$	65dB $L_{Aeq,T}$
Weekdays 7:00pm to 11:00pm, Saturdays 1:00pm to 11:00pm, and Sundays 7:00am to 11:00pm	50dB $L_{Aeq,T}$	55dB $L_{Aeq,T}$
Night-time 11:00pm to 7:00am	40dB $L_{Aeq,T}$	45dB $L_{Aeq,T}$

Construction vibration

2.10.7.10 Construction vibration levels will be calculated and assessed in accordance with the methodologies described in BS 5228-2 and will take account of the guidance of DMRB. No vibration baseline study is proposed.

2.10.7.11 Vibration levels from construction activities will be calculated in accordance with the methodology described in Annex E of BS 5228-2. Predicted vibration levels will be compared against applicable guidance values for both potential annoyance to human receptors together with temporal criteria detailed in DMRB.

2.10.7.12 Construction vibration effect threshold levels, including applicable LOAEL and SOAEL, are shown Table 2.10.7.

Table 2.10.7:Construction vibration effect magnitudes at residential receptors

Magnitude	Vibration level mm/s PPV*	Effect

Negligible	0.14	Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration
Small	0.3	Vibration might be just perceptible in residential environments (LOAEL)
Medium	1.0	It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents (SOAEL)
Large	10	Vibration is likely to be intolerable for any more than a very brief exposure to this level in most building environments
	* Peak Particle Velocity	

Construction traffic noise

2.10.7.13 Noise from construction traffic on the public highway will be calculated in accordance with CRTN and assessed against the criteria detailed in DMRB. The BNL from roads within the construction traffic study area will be calculated in accordance with CRTN for the do-nothing and do-something scenarios in the construction year. The calculated BNL values will be compared to determine the magnitude of the impact as detailed in Table 2.10.8.

Table 2.10.8: Magnitude of impact from construction traffic at residential receptors

Magnitude	Increase in BNL of closest public road used for construction traffic (dB)
Large	Greater than or equal to 5.0
Medium	Greater than or equal to 3.0 and less than 5.0
Small	Greater than or equal to 1.0 and less than 3.0
Negligible	Less than 1.0

Operational converter station and substation noise

2.10.7.14 The assessment of operational noise will follow the methodology stated in BS 4142:2014+A1:2019 ‘Methods for rating and assessing industrial and commercial sound’ (BS 4142)[193].

2.10.7.15 Noise limits will be determined based on background sound level surveys at locations representative of nearby NSR. Surveys will be conducted in accordance with the requirements of BS 4142 and in general accordance with the methodology detailed in

[193] British Standards Institute (2019). BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound. BSI

BS 7445-1:2003 ‘Description and measurement of environmental noise. Guide to quantities and procedures’ (BS 7445)[194].

2.10.7.16 BS 4142 assesses the potential significance of effects by comparing the 'rating sound level' of an industrial source to the typically representative ‘background sound level’ at the location of nearby receptors. The sound rating is a combination of the specific sound level at the NSR and any applicable penalties that may be required for acoustic character, such as tonality or impulsivity.

2.10.7.17 The specific sound level at nearby NSR will be predicted by incorporating the available converter station design information in a computer noise model, based on the methodology detailed in ISO 9613.

2.10.7.18 The predicted sound rating levels will be compared against the relevant noise limits determined from the baseline sound level survey data. The lower the rating level is relative to the measured background sound level, the less likely it is that there will be an adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

2.10.7.19 When considering context, BS 4142 references BS 8233:2014 ‘Guidance on sound insulation and noise reduction for buildings’ (BS 8233)[195] as providing context where background and rating noise levels are low. BS 8233 recommends internal sound levels in habitable spaces such as living rooms and bedrooms.

2.10.7.20 As noted above, it is anticipated that further detailed assessment of operational noise from the proposed converter station, once the design has been finalised, detailing specific mitigation measures would be secured via a condition attached to the outline planning permission, if granted. The assessment will therefore focus on setting of noise limits such that adverse impacts are avoided. It is standard practice to set the limit for operational noise such that the sound rating level does not exceed the background sound level, such that the impact is negligible (defined in BS 4142 as ‘low’). The magnitude impacts for operational noise are detailed in Table 2.10.9.

Table 2.10.9: Magnitude of impact from operational converter station and substation noise

Magnitude	Comparison of sound rating level and background sound level
Large	Rating level > 10dB above the background sound level
Medium	Rating level between 5 and 9 dB above background sound level
Small	Rating level between 0 and 4 dB above background sound level
Negligible	Rating level below background sound level

[194] British Standards Institute (2003). BS 7445-1:2003 Description and measurement of environmental noise. Guide to quantities and procedures. BSI

[195] British Standards Institute (2014). BS 8233:2014 Guidance on sound insulation and noise reduction for buildings. BSI

Maintenance noise and vibration

2.10.7.21 Noise and vibration effects from maintenance activities during operation will be assessed as per construction noise and vibration impacts, as described above.

Decommissioning noise and vibration

2.10.7.22 Noise and vibration effects from decommissioning activities during operation will be assessed as per construction noise and vibration impacts, as described above.

Ascribing Significance of Effect

Construction, maintenance, and decommissioning noise and vibration – residential receptors

2.10.7.23 Noise and vibration from construction, maintenance, and decommissioning activities, and construction traffic noise will constitute a significant adverse effect where it is determined that a Large or Medium magnitude of impact will occur at a residential NSR for a duration exceeding:

- 10 or more days or nights in any 15 consecutive days or nights; or
- a total number of days exceeding 40 in any six consecutive months.

Operational noise and vibration – residential receptors

2.10.7.24 Operational noise impacts will constitute a significant adverse effect where it is determined that a Large or Medium magnitude of impact will occur at residential NSRs.

Significance of effect at non-residential NSR

2.10.7.25 With regards to non-residential receptors, the significance of effect will be determined via the matrix shown in Table 2.10.10, taking account of the sensitivity of the NSR and the impact magnitude. For construction impacts, the duration of impact will also be taken into account, as above.

Table 2.10.10:Significance matrix at non-residential NSR

		NSR sensitivity:				
		Very High	**High**	**Medium**	**Low**	**Negligible**
Impact magnitude	**Large**	Major	Major	Major	Moderate	Minor
	Medium	Major	Moderate	Moderate	Minor	Negligible
	Small	Moderate	Moderate	Minor	Negligible	Negligible
	Negligible	Minor	Negligible	Negligible	Negligible	Negligible

2.10.7.26 Major and moderate effects are typically considered to be significant, whilst minor and negligible effects are considered to be not significant. However, professional judgement will also be applied in reaching conclusions as to the significance of effects.

2.10.8 Conclusion

2.10.8.1 This chapter has considered the scoping of noise and vibration impacts during the construction, operation, and decommissioning of the Suffolk Onshore Scheme and describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an EIA.

Proposed Scope of the Assessment

2.10.8.2 A summary of the proposed scope of assessment is provided in Table 2.10.11.

Table 2.10.11: Proposed scope of the assessment

Receptor	Potential for significant effect	Project phase(s)	Proposed to be scoped in/out and for which option
Nearby NSRs	Construction noise	Construction	**Scoped in for all options**
Nearby NSRs and structures	Construction vibration	Construction	**Scoped in for all options**
Nearby NSRs	Construction traffic noise	Construction	**Scoped in for all options**
Nearby NSRs	Operational converter station and substation noise	Operation	**Scoped in for all options**
Nearby NSRs	Operational vibration	Operation	Scoped out for all options
Nearby NSRs	Operational road traffic	Operation	Scoped out for all options
Nearby NSRs	Operational maintenance noise and vibration	Operation	**Scoped in for all options**
Nearby NSRs	Decommissioning noise and vibration	Decommissioning	**Scoped in for all options**

2.11 Socio-economics, Recreation and Tourism

2.11.1 Introduction

2.11.1.1 This chapter presents how the socio-economics, recreation and tourism assessment will consider the potentially significant effects that may arise from the construction, and operation, maintenance and decommissioning of the Suffolk Onshore Scheme (as described in **Part 1, Chapter 4, Description of the Project**). This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an Environmental Impact Assessment (EIA).

2.11.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Suffolk Onshore Scheme Scoping Boundary hereafter referred to as the Suffolk Scoping Boundary is illustrated on **Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary**.

2.11.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description for the Project**;
- **Part 1, Chapter 5, EIA Approach and Methodology**; and
- **Part 2, Chapter 1, Evolution of the Suffolk Onshore Scheme.**

2.11.1.4 This chapter is supported by the following figure:

- **Figure 2.11.1 Suffolk Onshore Scheme Socio-economic Recreation and Tourism Study Areas and Receptors.**

2.11.1.5 The assessment will consider potentially significant socio-economic, recreation and tourism effects on the following receptors:

- Employment (including training and apprenticeship opportunities);
- Users of recreational routes and Public Rights of Way (PRoW);
- Local communities that could be affected by community severance; and
- Residential properties, local businesses, visitor attractions, community facilities, open space and development land.

2.11.2 Regulatory and Planning Context

2.11.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. There is no legislation of relevance to the assessment of socio-economics, recreation and tourism effects. Detailed below is a

summary of planning policy of relevance to socio-economics, recreation and tourism. It includes relevant paragraphs of the Overarching National Policy Statement for Energy (EN1)[196]; the National Policy Statement for Electricity Networks Infrastructure (EN-5)[197]; the National Planning Policy Framework (NPPF)[198]; and National Planning Practice Guidance (NPPG)[199], as well as relevant local planning policy.

Legislation

2.11.2.2 No legislation of relevance to socio-economic, recreation and tourism effects.

Planning Policy

National planning policy

National Policy Statement for Energy (EN-1)

2.11.2.3 Paragraphs 5.12.2 – 5.12.5 of the Overarching National Policy Statement for Energy (EN-1)[196] details requirements for NSIP applications to consider all relevant socio-economic impacts, and to highlight that socio-economic impacts may be linked to other impacts (for example links between visual impacts and tourism and local businesses). Socio-economic impacts may include:

- "the creation of jobs and training opportunities;
- the provision of additional local services;
- effects on tourism;
- the impact of a changing influx of workers during the different construction, operation and decommissioning phases…There could also be effects on social cohesion depending on how populations and service provision change as a result of the development; and
- cumulative effects."

National Policy Statement for Energy (EN-5)

2.11.2.4 The National Policy Statement for Electricity Networks Infrastructure (EN-5)[197] supplements EN-1, with additional guidance specific to the development of electricity networks infrastructure. This document makes no reference to socio-economics, recreation or tourism.

[196] Department of Energy and Climate Change (2011). Overarching National Policy Statement for Energy (EN-1). [online] Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure

[197] Department of Energy and Climate Change (2011). National Policy Statement for Electricity Networks Infrastructure (EN-5). [online] Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure

[198] Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

[199] Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (2021). Planning Practice Guidance. [online] Available at: https://www.gov.uk/government/collections/planning-practice-guidance

National planning policy framework

2.11.2.5 The National Planning Policy Framework (NPPF)[198] sets out various policies with respect to the social and economic objectives of the planning system.

- Paragraph 8 outlines the economic objective of the planning system 'to help build a strong, responsive, and competitive economy by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity'.
- Paragraph 100 states 'decisions should protect and enhance public rights of way'.

National planning practice guidance

2.11.2.6 The National Planning Practice Guidance (NPPG)[199] provides guidance including on: planning and the economy and to consider the existing and potential future needs of the population in terms of economic development, jobs and employment opportunities; and on open space, sports and recreation facilities, public rights of way and local green space. The contents of the NPPG are not materially relevant to the assessment of socio-economic, recreation and tourism effects as the content does not influence the undertaking of the assessment of effects.

Local planning policy

2.11.2.7 Local planning policy to the socio-economic, recreation and tourism assessment includes:

- Suffolk County Council (SCC) Energy Infrastructure Policy[200];
- Suffolk Coastal Local Plan, 2020[201], including:
  - Policy SCLP3.1: Strategy for Growth;
  - Policy SCLP3.4: Proposals for Major Energy Infrastructure Projects;
  - Policy SCLP6.1: Tourism;
  - Policy SCLP8.2: Open Space; and
- Leiston Neighbourhood Plan[202].

2.11.2.8 Additional planning guidance documents relevant to the socio-economic, recreation and tourism assessment includes:

- New Anglia Local Enterprise Partnership (LEP), Norfolk and Suffolk Economic Strategy[203];

[200] Suffolk County Council (2021). Suffolk County Council's Energy Infrastructure Policy. [online] Available at: https://www.suffolk.gov.uk/assets/planning-waste-and-environment/major-infrastructure-projects/SCC-Energy-Policy.pdf

[201] East Suffolk Council (2020). Suffolk Coastal Local Plan. [online] Available at: https://eastsuffolk.inconsult.uk/consult.ti/suffolkcoastallocalplan2020/viewCompoundDoc?docid=11955764&partid=11958292

[202] Leiston-cum-Sizewell Town Council (2017). Leiston Neighbourhood Plan 2015-2029. [online] Available at: https://www.eastsuffolk.gov.uk/assets/Planning/Neighbourhood-Planning/Designated-Neighbourhood-Areas/Leiston/Leiston-NP-Made-Version-March-2017.pdf

[203] New Anglia (2022). Norfolk and Suffolk Economic Strategy. [online] Available at: https://newanglia.co.uk/wp-content/uploads/2022/01/FINAL-Norfolk-and-Suffolk-economic-strategy-Jan-2022.pdf

- New Anglia LEP, Local Energy East Strategy[204];
- New Anglia LEP Economic Recovery Restart Plan[205];
- New Anglia LEP Visitor Economy Recovery Plan[206]; and
- New Anglia LEP Energy Sector Recovery and Resilience Plan[207].

2.11.3 Study Area

2.11.3.1 The study area for socio-economic, recreation and tourism varies depending on the likely spatial extent of the effect under consideration.

2.11.3.2 The Scoping Report sets out potential effects with respect to the Suffolk Scoping Boundary (as set out in **Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary**).

2.11.3.3 Effects on employment will be considered within the local authority of East Suffolk, the local authority that the Suffolk Scoping Boundary falls within.

2.11.3.4 Effects on users of recreational routes and PRoW will consider impacts on routes and PRoW likely to be affected by alterations in their use. This will include all routes located within 500m of the Suffolk Scoping Boundary.

2.11.3.5 The study area for local communities that could be affected by community severance will consider communities that may potentially be directly and indirectly affected by the Suffolk Onshore Scheme. These will include communities directly connected by recreational routes and PRoW. The communities that could be impacted are within 1km of the Suffolk Scoping Boundary and which is illustrated on **Figure 2.11.1 Suffolk Onshore Scheme Socio-economic Recreation and Tourism Study Areas and Receptors**.

2.11.3.6 The study area for residential properties, local businesses, visitor attractions relevant for tourism, community facilities, open space and development land will consider receptors that could be directly or indirectly affected by the Suffolk Onshore Scheme. The receptors that could be impacted are within 500m of the Suffolk Scoping Boundary **Figure 2.11.1 Suffolk Onshore Scheme Socio-economic Recreation and Tourism Study Areas and Receptors**. Potential significant effects included within the Landscape and Visual chapter will also be reviewed and receptors beyond 500m will be considered should significant amenity impacts be identified.

[204] New Anglia (2018). Local Energy East Strategy. [online] Available at: https://newanglia.co.uk/wp-content/uploads/2020/04/LEE-Strategy-LOW-RES.pdf

[205] New Anglia (2020). Economic Recovery Restart Plan. [online] Available at: https://newanglia.co.uk/wp-content/uploads/2020/11/Recovery-Plan-Progress-Report-autumn-2020-FINAL.pdf

[206] New Anglia (2020). A Recovery Plan for the Visitor Economy. [online] Available at: https://newanglia.co.uk/wp-content/uploads/2020/07/New-Anglia_Norfolk-Suffolk-Unlimited_Visitor-Economy-Recovery-FOR-WEB.pdf

[207] New Anglia (2020). Energy Sector Recovery and Resilience Plan. [online] Available at: https://newanglia.co.uk/wp-content/uploads/2021/05/New-Anglia-LEP-Energy-Recovery-and-Resilience-Plan-V5.pdf

2.11.4 Baseline Conditions

Data Sources

2.11.4.1 The socio-economic, recreation and tourism assessment baseline environment described in this section has been informed by the following data sources:

- Office of National Statistics (ONS), (2021), Mid-Year Population Estimates[208];
- ONS, (2021), Claimant count by sex and age (May 2022)[209];
- ONS, (2021), Annual Population Survey (January 2021to December 2021)[210]; and
- Ministry of Housing, Community and Local Government (MHCLG), (2020), English Indices of Deprivation (2019)[211].

2.11.4.2 The baseline for recreational routes and PRoW is based on:

- SCC Definitive Map and Statement of public rights of way[212]; and
- Sustrans National Cycle Network route map[213].

2.11.4.3 The baseline for private assets is based on desk research with reference to:

- East Suffolk Policies Map[214]

2.11.4.4 The baseline for development land is based on:

- Suffolk Coastal Local Plan; and
- SCC planning applications portals.

Baseline

2.11.4.5 The Suffolk Scoping Boundary is located within the East Suffolk local authority. In 2020, East Suffolk had an estimated population of approximately 250,300.

[208] Office for National Statistics (2021). Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2020. [online] Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/latest

[209] Office for National Statistics (2022). CLA02: Claimant Count by age group (Experimental Statistics). [online] Available at: https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/outofworkbenefits/datasets/cla02claimantcountbyagegroup

[210] Office for National Statistics (2021). Annual Population Survey (January 2020 to December 2020). [online] Available at: https://www.nomisweb.co.uk/datasets/apsnew

[211] Ministry of Housing, Communities & Local Government (2019). English Indices of Deprivation 2019. [online] Available at: https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019

[212] Suffolk County Council (2022). Definitive Map and Statement of public rights of way. [online] Available at: https://www.suffolk.gov.uk/roads-and-transport/public-rights-of-way-in-suffolk/view-definitive-maps-of-public-rights-of-way/ [Accessed July 2022].

[213] Ordnance Survey Maps (2022). Map of the National Cycle Network. [online] Available at: https://explore.osmaps.com/?lat=52.229585&lon=1.342731&style=Standard&zoom=7.5461&overlays=os-ncn-layer&type=2d&placesCategory= [Accessed April 2022].

[214] East Suffolk Council (2020). Suffolk Coastal Local Plan - Policies Map. [online] Available at: https://www.eastsuffolk.gov.uk/assets/Planning/Planning-Policy-and-Local-Plans/Suffolk-Coastal-Local-Plan/Adopted-Suffolk-Coastal-Local-Plan/Policies-Maps-Part-1-inc.-Erratum-updated-February-2021.pdf

2.11.4.6 The Suffolk Scoping Boundary comprises predominantly agricultural land as well as a number of isolated residential properties. There are a number of towns and villages which lie outside of, but close to the Suffolk Scoping Boundary. These include:

- Aldeburgh town which lies adjacent to the south of the Suffolk Scoping Boundary;
- Leiston town is located adjacent to the inner boundary of the Suffolk Scoping Boundary
- Saxmundham town is adjacent to the western border of the Suffolk Scoping Boundary;
- Aldringham village is adjacent to the inner boundary of the Suffolk Scoping Boundary;
- Knodishall village is adjacent to the inner boundary of the Suffolk Scoping Boundary;
- Friston village is adjacent to the Suffolk Scoping Boundary to the south west;
- Sizewell village is adjacent to the northeast of the Suffolk Scoping Boundary; and
- Benhall is a village located approximately 500m to the west of the Suffolk Scoping Boundary;
- Theberton village is approximately 800m to the north of the Suffolk Scoping Boundary;

2.11.4.7 Approximately 6.8% of Lower Layer Super Output Areas (LSOAs) located in East Suffolk are ranked within the most deprived decile of LSOAs in England. Out of the 317 local authorities in England, East Suffolk is ranked as the 146th most deprived.

Employment and labour market

2.11.4.8 In 2020, the proportion of the population of East Suffolk that was of working-age (16-64 years) was 55.6% which was lower than the proportion for the East region (60.6%) and England and Wales (62.2%).

2.11.4.9 In 2021, the economic activity rate among the working age population in East Suffolk of 79.1% was lower than the East average (81.1%), but slightly higher than England and Wales (78.9%).

2.11.4.10 In the same year, the unemployment rate among the working age population in East Suffolk was 4.1%. This was higher than the East average (3.9%) but lower than across England and Wales (4.6%). The claimant count (as a proportion of residents aged 16-64 years), recorded in May 2022, was 3.0% in East Suffolk. This is broadly in line with the count in the East (3.1%) but lower than across England and Wales (3.9%).

2.11.4.11 In 2021 the proportion of the population that held a higher level NVQ Level 4+ qualification in East Suffolk (39.4%) was broadly in line with the proportion across the East (39.5%), but lower than across England and Wales (42.9%). The proportion of the population with no formal qualifications in East Suffolk (5.5%) was lower than both the East region (5.7%) and England and Wales (6.5%).

Recreational routes and PRoW

2.11.4.12 The study area for recreational routes and PROW is intersected by a number of recreational routes and PRoW, including National Cycle Network Route 42 (NCR 42), an on-road cycle route running between Friston and Leiston Abbey.

Residential properties

2.11.4.13 Residential areas in the communities of Aldeburgh, Aldringham, Knodishall, Friston, Behall Green, Saxmundham, Leiston, and Sizewell listed in paragraph 2.11.4.6 are located within the study area. The remainder of the study area for residential properties comprises a sparsely populated rural area and contains some dispersed private properties and farm buildings.

Business premises

2.11.4.14 There are a large number of businesses located within the study area.

2.11.4.15 A number of isolated businesses located within the Suffolk Scoping Boundary including Breedon Saxmundham Concrete Plant and Happy Days Retro Vacations near Saxmundham, Redhouse Christmas Barn and a holiday rental property near Benhall, a number of holiday rental properties and Aldringham Tea Room to the south of Aldringham, and Aldeburgh Golf Club northwest of Aldeburgh.

2.11.4.16 There are further businesses located within the settlements of Aldeburgh, Aldringham, Knodishall, Friston, Benhall, Saxmundham, Leiston, and Sizewell listed in paragraph 2.11.4.6.

Visitor attractions

2.11.4.17 The Scallop at Aldeburgh Beach lies within the southern portion of the Suffolk Scoping Boundary and within the study area. The Red House in Aldeburgh, a museum, lies with 100m to the south of the Suffolk Scoping Boundary. Leiston Abbey lies within 300m to north of the Suffolk Scoping Boundary.

Community facilities

2.11.4.18 There are a large number of community facilities within the study area. They are all located within settlements surrounding the Suffolk Scoping Boundary and are listed in Table 2.11.1.

Table 2.11.1: Community facilities within the study area

Settlement	Community facility	Type
Aldringham	Aldringham Care Home	Care home
Friston	Friston Village Hall	Community asset
Leiston	Summerhill School	Education

	Aylward Park School	Education
	Suffolk New College – On The Coast	Education
	Alde Valley Academy	Education
	Leiston Community Centre	Community asset
	Waterloo Centre	Community asset
	Leiston Library	Community asset
	The Leiston Surgery	Health and wellbeing
	Leiston Fire Station	Emergency services
	Leiston Leisure Centre	Sports and leisure
	Sizewell Sports and Social Club	Sports and leisure
Knodishall	Knodishall Village Hall	Community asset
	Coldfair Green County Primary School	Education
Leiston Abbey	Leiston Old Abbey Residential Home	Care home
	Pro Corda Leiston Abbey	Education

Open Space

2.11.4.19 There are a number of open spaces and publicly accessible greenspaces within the study area which are listed in Table 2.11.2.

Table 2.11.2: Open spaces within the study area

Settlement	Open space
Leiston	Leiston Park
	Leiston Allotments
	Leiston Primary School playing fields
Knodishall	Knodishall Playground
	Knodishall Common

Aldeburgh	Aldeburgh Beach
	Church Field Road open space
	Kemps Field
Saxmundham	Saxmundham Park
Friston	Friston Playground

Development land

2.11.4.20 There are four residential site allocations in the Suffolk Coastal Local Plan located within the study area:

- Allocation for up to 10 dwellings on the Land to the rear of Rose Hill (Policy SCLP12.27) - to the south east of the Suffolk Scoping Boundary near Aldeburgh;
- Allocation for up to 40 dwellings on the Land to the East of Aldeburgh Road (Policy SCLP12.42), also to the south east of the Suffolk Scoping Boundary near Aldringham;
- Allocation for up to 40 dwellings on the Land North-East of Street Farm in Saxmundham (Policy SCLP12.30) to the west of the Suffolk Scoping Boundary;
- Allocation for up to 16 dwellings on the Land at School Road in Knodishall (Policy SCLP12.55) located 500m north of the Suffolk Scoping Boundary.

2.11.4.21 In addition, there is one planning application for the development of a site to provide 15 dwellings in Leiston located approximately 400m of the inner boundary of the Suffolk Scoping Boundary (DC/22/1770/AM). The application is awaiting a decision.

Future Baseline

2.11.4.22 ONS population projections[215] show over the 10-year period from 2022 to 2032 the population across East Suffolk is expected to grow by 5.3% to approximately 268,800 people. This increase is greater than the projected rate of increase in the East (4.0%) and across England as a whole (4.0%) over the same period.

2.11.4.23 The future baseline for residential properties, businesses, community facilities, open spaces, visitor attractions and development land over the medium-term is highly uncertain. Due to this uncertainty, for the purposes of this assessment, it is assumed the future baseline for the Suffolk Onshore Scheme study area would be unchanged from the current baseline to the completion of the Suffolk Onshore Scheme, except where new development is expected to be delivered in line with allocated and planned development sites as set out above.

[215] Office for National Statistics (2018). Population Projections. [online] Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections

2.11.5 Embedded and Control & Management Measures

Embedded Measures

2.11.5.1 Mitigation measures will be included in the design (Mitigation by Design) where practicable to help avoid, prevent or reduce effects on the environment. The Suffolk Onshore Scheme has been routed and sited to avoid residential areas where possible.

Control and Management Measures

2.11.5.2 An outline Code of Construction Practice (CoCP) is provided in **Appendix 1.4.A Outline Code of Construction Practice**. Measures relevant to the control and management of impacts that could affect the socio-economics, recreation and tourism assessment are:

- GG03: A Construction Environmental Management Plan (CEMP), a Landscape and Ecological Management Plan (LEMP) and a Construction Traffic Management Plan (CTMP) will be produced prior to construction;
- GG05: A suitably experienced Environmental Manager will be appointed for the duration of the construction phase. In addition, a qualified and experienced Environmental Clerk of Works will be available during the construction phase to advise, supervise and report on the delivery of the mitigation methods and controls outlined in the CEMP. The Environmental Clerk of Works will monitor that the works proceed in accordance with relevant environmental DCO requirements and adhere to the required good practice and mitigation measures;
- GG08: Land used temporarily will be reinstated where practicable to its pre-construction condition and use. Hedgerows, fences and walls (including associated earthworks and boundary features) will be reinstated to a similar style and quality to those that were removed, with landowner agreement; and
- GG26: Members of the community and local businesses will be kept informed regularly of the works through active community liaison. This will include notification of noisy activities, heavy traffic periods and start and end dates of key phasing. A contact number will be provided which members of the public can use to raise any concerns or complaints about the project. All construction-related complaints will be logged by the contractor(s) in a complaints register, together with a record of the responses given and actions taken.

2.11.5.3 Where possible, measures would be implemented to ensure accessibility to recreational routes and PRoWs, community facilities and healthcare facilities, residential properties, businesses, visitor attractions and development land is maintained. This will be achieved through the use of best practice measures, including with regard to phasing of construction works and if necessary, providing diversions for users. Severance will also be reduced through careful siting of construction compounds and lay down areas, and careful planning of construction activities through consultation with landowners. Where temporary or permanent disruption to PRoW or other recreational routes is unavoidable, suitable diversions would be agreed with the relevant local planning authorities and implemented where required.

2.11.5.4 Direct impacts to land use would be managed through negotiations with stakeholders including landowners and owners of businesses to mitigate impact.

2.11.6 Potential for Significant Effects

2.11.6.1 The socio-economics, recreation and tourism assessment will consider the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project**.

2.11.6.2 The proposed scope of the socio-economics recreation and tourism assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

2.11.6.3 This section identifies the sources and impacts that would occur as a result of the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme.

2.11.6.4 The potential for the Suffolk Onshore Scheme to result in the potential significant effects described in this section takes into account the embedded and control and management measures described in section 5.

Sources of construction impacts

- generation of construction-related employment, training and apprenticeship opportunities, both directly at work sites and indirectly in the supply chain;
- generation of Gross value added (GVA);
- potential temporary closure or diversions to PRoW and recreational routes;
- potential temporary severance of access to community facilities for residents; and
- potential temporary adverse land take or amenity impacts on residential properties, local businesses, visitor attractions, community facilities, open space or development land.

Sources of operational impacts

- potential permanent closure or diversions to PRoW and recreational routes;
- potential permanent severance of access to community facilities for residents;
- potential permanent adverse land take or amenity impacts on residential properties, local businesses, visitor attractions, community facilities, open space or development land;
- potential creation of permanent operational phase employment, training and apprenticeship opportunities, both directly at work sites and indirectly in the supply chain; and
- potential generation of Gross value added (GVA) during the operational phase.

Sources of maintenance impacts

2.11.6.5 The sources of maintenance impacts are assessed to be the same as those listed as sources of construction impacts.

Sources of decommissioning impacts

2.11.6.6 The sources of decommissioning impacts are assessed to be the same as those listed as sources of construction impacts.

Potential impacts

2.11.6.7 Table 2.11.3 below identifies the potential impact that could result from the sources identified above.

Table 2.11.3: Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction, maintenance and decommissioning	Generation of construction-related employment, training and apprenticeship opportunities, both directly at work sites and indirectly in the supply chain.	Generation of construction-related employment, training and apprenticeship opportunities, both directly at work sites and indirectly in the supply chain in East Suffolk.	Yes -The Suffolk Onshore Scheme will generate direct and indirect temporary employment, training and apprenticeship opportunities both on Site and in the supply chain during the construction, maintenance and decommissioning phases.	**Scoped in**
	Generation of Gross value added (GVA)	Generation of Gross value added (GVA) in East Suffolk,	Yes -The employment and wider economic activity created during the construction maintenance and decommissioning phases will generate GVA within the local	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			East Suffolk economies.	
	Potential temporary closure or diversions to PRoW and recreational routes.	Potential temporary closure or diversions to PRoW and recreational routes within 500m of the Suffolk Scoping Boundary causing disruption to users.	Yes -Disruption to PRoW or other recreational routes during the construction maintenance and decommissioning phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Scoped in**
	Potential temporary severance of access to community facilities	Potential temporary severance of access to community facilities within 1km of the Suffolk Scoping Boundary for local residents, leading to deterioration of social cohesion and affecting mental health.	Yes -Disruption to PRoW or other recreational routes affecting access to facilities would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Scoped in**
	Potential temporary land take or amenity impacts on residential properties, local businesses, visitor attractions, community facilities, open space or development land.	Potential temporary land take or amenity impacts on residential properties, local businesses, visitor attractions, community facilities, open space or development land within 500m of the	Yes -A number of residential properties, local businesses, visitor attractions, community facilities, open spaces and development land allocations have been identified within the study area	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
		Suffolk Scoping Boundary.	which could be impacted by land take or amenity impacts.	
Operation	Potential permanent closure or diversions to PRoW and recreational routes.	Potential permanent closure or diversions to PRoW and recreational routes within 500 m of the Suffolk Scoping Boundary.	Yes -Disruption to PRoW or other recreational routes during the operation phase would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Scoped in**
	Potential permanent severance of access to community facilities.	Potential permanent severance of access to community facilities within 1km of the Suffolk Scoping Boundary for local residents, leading to deterioration of social cohesion and affecting mental health.	Yes -Disruption to PRoW or other recreational routes affecting access to facilities would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Scoped in**
	Potential permanent adverse land take or amenity impacts on residential properties, local businesses, visitor attractions, community facilities, open space or	Potential permanent land take or amenity impacts on residential properties, local businesses, visitor attractions, community facilities, open space or development land within 500m of the	Yes -A number of residential properties, local businesses, visitor attractions, community facilities, open spaces and development land allocations have been identified within the study area	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
	development land.	Suffolk Scoping Boundary.	which could be impacted by land take or amenity impacts.	
	Creation of permanent operational phase employment, training and apprenticeship opportunities, both directly at work sites and indirectly in the supply chain.	Creation of permanent operational phase employment, training and apprenticeship opportunities, both directly at work sites and indirectly in East Suffolk.	No - The scale of operational employment generated is likely to be very limited.	Scoped out
	Generation of Gross value added (GVA) during the operational phase.	Generation of Gross value added (GVA) in East Suffolk during the operational phase.	No - The scale of operational employment generated is likely to be very limited and therefore any effect on GVA will be small.	Scoped out

Impact Pathways with Receptors (Step 2)

2.11.6.8 This section identities whether there are any impact pathways from the impacts identified above that could give rise to potentially significant effects on the receptors within the socioeconomics, recreation and tourism study areas.

Suffolk Converter Station Site 1 Emerging Preference

2.11.6.9 Table 2.11.4 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 1 Emerging Preference as shown on as shown on **Figure 2.1.4 Suffolk Site 1 Emerging Preference** and **Figure 2.1.9 Suffolk Site 1 Emerging Preference Option Area.**

Table 2.11.4: Impact pathways with receptors – Suffolk Site 1 Emerging Preference

Impact	Receptors	Potential for significant effects	Proposed to be scoped in/out
Generation of employment, training and apprenticeship opportunities, both directly at work sites and indirectly in the supply chain in East Suffolk.	Employment levels within East Suffolk.	Yes -The Suffolk Onshore Scheme will generate direct and indirect temporary employment, training and apprenticeship opportunities both on Site and in the supply chain during the construction, maintenance and decommissioning phases. No - The scale of operational employment generated is likely to be very limited.	**Proposed to be scoped in for construction, maintenance and decommissioning** Scoped out for operation
Generation of Gross value added (GVA) in East Suffolk.	Local economy within East Suffolk.	Yes -The employment and wider economic activity created during the construction maintenance and decommissioning phases will generate GVA within the local East Suffolk economy. No - The scale of operational employment generated is likely to be very limited and therefore any effect on GVA will be small.	**Proposed to be scoped in for construction, maintenance and decommissioning** Scoped out for operation
Potential temporary or permanent closure or diversions to PRoW and recreational routes within 500m of the Suffolk Scoping Boundary.	Users of PRoW and recreational routes within 500m of Suffolk Scoping Boundary.	Yes -Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions	**Proposed to be scoped in for all project phases**

Impact	Receptors	Potential for significant effects	Proposed to be scoped in/out
		would be agreed with SCC.	
Potential temporary or permanent severance of access to community facilities within 1km of the Suffolk Scoping Boundary.	Local communities within 1km of the Suffolk Scoping Boundary, including Aldeburgh, Aldringham, Knodishall and Friston.	Yes - As above, disruption to PRoW or other recreational routes would be avoided as far as possible at all phases. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all project phases**
Potential temporary or permanent land take or amenity impacts on residential properties, local businesses, visitor attractions, community facilities, open space or development land within 500m of the Suffolk Scoping Boundary.	Residential properties within 500m of the Suffolk Scoping Boundary including those located in Aldeburgh, Aldringham, Knodishall and Friston.	Yes - A number of residential properties, local businesses, visitor attractions, community facilities, open spaces and development land allocations have been identified within the study area.	**Proposed to be scoped in for all project phases**
	Businesses within 500m of the Suffolk Scoping Boundary including those located in Aldeburgh, Aldringham, Knodishall and Friston.		
	Visitor attractions within 500m of the Suffolk Scoping Boundary including The Scallop at Aldeburgh Beach and The Red House in Aldeburgh.		
	Community facilities within 500m of the Suffolk Scoping Boundary		

Impact	Receptors	Potential for significant effects	Proposed to be scoped in/out
	including, Aldringham Care Home, Friston Village Hall, Knodishall Village Hall, Coldfair Green County Primary School.		
	Development land within 500m of the Suffolk Scoping Boundary including Land to the rear of Rose Hill, Land to the East of Aldeburgh Road and Land at School Road.		
	Open space within 500m of the Suffolk Scoping Boundary including Knodishall Playground, Knodishall Common, Aldeburgh Beach, Church Field Road open space, Kemps Field and Friston Playground.		

Suffolk Converter Station Site 1 Alternative

2.11.6.10 Table 2.11.5 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 1 Alternative Preference as shown on as shown on **Figure 2.1.7 Suffolk Site 1 Alternative** and **Figure 2.1.11 Suffolk Site 1 Alternative Option Area** and.

Table 2.11.5: Impact Pathways with receptors– Suffolk Site 1 Alternative

Impact	Receptors	Potential for significant effects	Proposed to be scoped in/out
Generation of employment, training and apprenticeship opportunities, both directly at work sites and indirectly in the supply chain in East Suffolk.	Employment levels within East Suffolk.	Yes -The Suffolk Onshore Scheme will generate direct and indirect temporary employment, training and apprenticeship opportunities both on Site and in the supply chain during the construction, maintenance and decommissioning phases. No - The scale of operational employment generated is likely to be very limited.	**Proposed to be scoped in for construction, maintenance and decommissioning** Scoped out for operation
Generation of Gross value added (GVA) in East Suffolk.	Local economy within East Suffolk.	Yes -The employment and wider economic activity created during the construction maintenance and decommissioning phases will generate GVA within the local East Suffolk economy. The scale of operational employment generated is likely to be very limited and therefore any effect on GVA will be small.	**Proposed to be scoped in for construction, maintenance and decommissioning** Scoped out for operation
Potential temporary or permanent closure or diversions to PRoW and recreational routes within 500m of the Suffolk Scoping Boundary.	Users of PRoW and recreational routes within 500m of Suffolk Scoping Boundary.	Yes -Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions	**Proposed to be scoped in for all project phases**

Impact	Receptors	Potential for significant effects	Proposed to be scoped in/out
		would be agreed with SCC.	
Potential temporary or permanent severance of access to community facilities within 1km of the Suffolk Scoping Boundary.	Local communities within 1km of the Suffolk Scoping Boundary including Sizewell, Leiston, Aldringham, Knodishall and Friston.	Yes - As above, disruption to PRoW or other recreational routes would be avoided as far as possible at all phases. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all project phases**
Potential temporary or permanent land take or amenity impacts on residential properties, local businesses, visitor attractions, community facilities, open space or development land within 500m of the Suffolk Scoping Boundary.	Residential properties within 500m of the Suffolk Scoping Boundary including those located in Sizewell, Leiston, Aldringham, Knodishall and Friston.	Yes - A number of residential properties, local businesses, community facilities, open spaces and development land allocations have been identified within the study area.	**Proposed to be scoped in for all project phases**
	Businesses within 500m of the Suffolk Scoping Boundary including those located in Sizewell, Leiston, Aldringham, Knodishall and Friston.		
	Community facilities within 500m of the Suffolk Scoping Boundary including Aldringham Care Home, Friston Village Hall, Alde Valley Academy, Suffolk New College, Leiston Leisure Centre,		

Impact	Receptors	Potential for significant effects	Proposed to be scoped in/out
	Sizewell Sports and Social Club, Knodishall Village Hall and Coldfair Green County Primary School.		
	Development land within 500m of the Suffolk Scoping Boundary including Land at School Road and Land to the East of Aldeburgh Road.		
	Open space within 500m of the Suffolk Scoping Boundary including Friston Playground, Knodishall Playground, Knodishall Common, Leiston Allotments and Leiston Primary School playing fields.		
	Visitor attractions within 500m of the Suffolk Scoping Boundary		

Suffolk Converter Station Site 3 Emerging Preference

2.11.6.11 Table 2.11.6 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Emerging Preference as shown on as shown on and **Figure 2.1.5 Suffolk Site 3 Emerging Preference** and **Figure 2.1.10 Suffolk Site 3 Emerging Preference Option Area**

Table 2.11.6: Impact pathways with receptors – Suffolk Site 3 Emerging Preference

Impact	Receptors	Potential for significant effects	Proposed to be scoped in/out
Generation of employment, training and apprenticeship opportunities, both directly at work sites and indirectly in the supply chain in East Suffolk.	Employment levels within East Suffolk.	Yes -The Suffolk Onshore Scheme will generate direct and indirect temporary employment, training and apprenticeship opportunities both on Site and in the supply chain during the construction, maintenance and decommissioning phases. No - The scale of operational employment generated is likely to be very limited.	**Proposed to be scoped in for construction, maintenance and decommissioning** Scoped out for operation
Generation of Gross value added (GVA) in East Suffolk.	Local economy within East Suffolk.	Yes -The employment and wider economic activity created during the construction maintenance and decommissioning phases will generate GVA within the local East Suffolk economy. No - The scale of operational employment generated is likely to be very limited and therefore any effect on GVA will be small.	**Proposed to be scoped in for construction, maintenance and decommissioning** Scoped out for operation
Potential temporary or permanent closure or diversions to PRoW and recreational routes within 500m of the	Users of PRoW and recreational routes within 500m of Suffolk Scoping Boundary.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions	**Proposed to be scoped in for all project phases**

Impact	Receptors	Potential for significant effects	Proposed to be scoped in/out
Suffolk Scoping Boundary.		would be agreed with SCC.	
Potential temporary or permanent severance of access to community facilities within 1km of the Suffolk Scoping Boundary.	Local communities within 1km of the Suffolk Scoping Boundary including Benhall, Saxmundham, Friston, Knodishall, Aldringham and Aldeburgh.	Yes - As above, disruption to PRoW or other recreational routes would be avoided as far as possible at all phases. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all project phases**
Potential temporary or permanent land take or amenity impacts on residential properties, local businesses, visitor attractions, community facilities, open space or development land within 500m of the Suffolk Scoping Boundary.	Residential properties within 500m of the Suffolk Scoping Boundary including those located in Saxmundham, Friston, Knodishall, Aldringham and Aldeburgh.	Yes - A number of residential properties, local businesses, visitor attractions, community facilities, open spaces and development land allocations have been identified within the study area.	**Proposed to be scoped in for all project phases**
	Businesses within 500m of the Suffolk Scoping Boundary including those located in Saxmundham, Friston, Knodishall, Aldringham and Aldeburgh.		
	Visitor attractions within 500m of the Suffolk Scoping Boundary including The Scallop at Aldeburgh Beach and The Red House in Aldeburgh.		

Impact	Receptors	Potential for significant effects	Proposed to be scoped in/out
	Community facilities within 500m of the Suffolk Scoping Boundary including Aldringham Care Home, Friston Village Hall, Knodishall Village Hall and Coldfair Green County Primary School.		
	Development land within 500m of the Suffolk Scoping Boundary including Land to the rear of Rose Hill, Land to the East of Aldeburgh Road, Land at School Road and Land North-East of Street Farm		
	Open space within 500m of the Suffolk Scoping Boundary including Knodishall Playground, Knodishall Common, Aldeburgh Beach, Church Field Road open space, Kemps Field, Friston Playground and Saxmundam Park.		

Suffolk Converter Station Site 3 Alternative (Option 1)

2.11.6.12 Table 2.11.7 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Alternative (Option 1) as shown on as shown on **Figure 2.1.7 Suffolk Site 3**

Alternative (Option 1) and **Figure 2.1.12 Suffolk Site 3 Alternative (Option 1) Option Area**.

Table 2.11.7: Impact pathways with receptors – Suffolk Site 3 Alternative (Option1)

Impact	Receptors	Potential for significant effects	Proposed to be scoped in/out
Generation of employment, training and apprenticeship opportunities, both directly at work sites and indirectly in the supply chain in East Suffolk	Employment levels within East Suffolk.	Yes -The Suffolk Onshore Scheme will generate direct and indirect temporary employment, training and apprenticeship opportunities both on Site and in the supply chain during the construction, maintenance and decommissioning phases. No - The scale of operational employment generated is likely to be very limited.	**Proposed to be scoped in for construction, maintenance and decommissioning** Scoped out for operation
Generation of Gross value added (GVA) in East Suffolk.	Local economy within East Suffolk.	Yes -The employment and wider economic activity created during the construction maintenance and decommissioning phases will generate GVA within the local East Suffolk economy. No - The scale of operational employment generated is likely to be very limited and therefore any effect on GVA will be small.	**Proposed to be scoped in for construction, maintenance and decommissioning** Scoped out for operation
Potential temporary or permanent closure or diversions to PRoW and recreational	Users of PRoW and recreational routes within 500m of Suffolk Scoping Boundary.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as	**Proposed to be scoped in for all project phases**

Impact	Receptors	Potential for significant effects	Proposed to be scoped in/out
routes within 500m of the Suffolk Scoping Boundary.		far as possible. Where necessary, suitable diversions would be agreed with SCC.	
Potential temporary or permanent severance of access to community facilities within 1km of the Suffolk Scoping Boundary.	Local communities within 1km of the Suffolk Scoping Boundary including Sizewell, Leiston, Saxmundham, Benhall, Kondishall and Friston.	Yes - As above, disruption to PRoW or other recreational routes would be avoided as far as possible at all phases. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all project phases**
Potential temporary or permanent land take or amenity impacts on residential properties, local businesses, visitor attractions, community facilities, open space or development land within 500m of the Suffolk Scoping Boundary.	Residential properties within 500m of the Suffolk Scoping Boundary including those located in Sizewell, Leiston, Saxmundham and Friston.	Yes -A number of residential properties, local businesses, visitor attractions, community facilities, open spaces and development land allocations have been identified within the study area.	**Proposed to be scoped in for all project phases**
	Businesses within 500m of the Suffolk Scoping Boundary including those located in Sizewell, Leiston, Saxmundham and Friston.		
	Visitor attractions within 500m of the Suffolk Scoping Boundary including Leiston Abbey.		
	Community facilities within 500m of the Suffolk Scoping Boundary including Friston Village Hall, Summerhill School, Aylward		

Impact	Receptors	Potential for significant effects	Proposed to be scoped in/out
	Park School, Suffolk New College, Leiston Community Centre, Waterloo Centre, Leiston Library, The Leiston Surgery, Leiston Fire Station, Sizewell Sports and Social Club, Leiston Old Abbey Residential Home and Pro Corda Leiston Abbey.		
	Development land within 500m of the Suffolk Scoping Boundary including Land North-East of Street Farm and planning application DC/22/1770/AM.		
	Open space within 500m of the Suffolk Scoping Boundary including, Leiston Park, Leiston Allotments, Leiston Primary School Playing Fields, Saxmundam Park and Friston Playground.		

Suffolk Converter Station Site 3 Alternative (Option 2)

2.11.6.13 Table 2.11.8 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Suffolk Site 3 Alternative (Option 2) as shown on as shown on **Figure 2.1.8 Suffolk Site 3 Alternative (Option 2)** and **Figure 2.1.13 Suffolk Site 3 Alternative (Option 2) Option Area** and

Table 2.11.8: Impact pathways with receptors– Suffolk Site 3 Alternative (Option 2)

Impact	Receptors	Potential for significant effects	Proposed to be scoped in/out
Generation of employment, training and apprenticeship opportunities, both directly at work sites and indirectly in the supply chain in East Suffolk	Employment levels within East Suffolk.	Yes -The Suffolk Onshore Scheme will generate direct and indirect temporary employment, training and apprenticeship opportunities both on Site and in the supply chain during the construction, maintenance and decommissioning phases. No - The scale of operational employment generated is likely to be very limited.	**Proposed to be scoped in for construction, maintenance and decommissioning** Scoped out for operation
Generation of Gross value added (GVA) in East Suffolk.	Local economy within East Suffolk.	Yes -The employment and wider economic activity created during the construction maintenance and decommissioning phases will generate GVA within the local East Suffolk economy. No - The scale of operational employment generated is likely to be very limited and therefore any effect on GVA will be small.	**Proposed to be scoped in for construction, maintenance and decommissioning** Scoped out for operation
Potential temporary or permanent closure or diversions to PRoW and recreational routes within 500m of the	Users of PRoW and recreational routes within 500m of Suffolk Scoping Boundary.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions	**Proposed to be scoped in for all project phases**

Impact	Receptors	Potential for significant effects	Proposed to be scoped in/out
Suffolk Scoping Boundary.		would be agreed with SCC.	
Potential temporary or permanent severance of access to community facilities within 1km of the Suffolk Scoping Boundary.	Local communities within 1km of the Suffolk Scoping Boundary including Saxmunham, Benhall, Friston, Knodishall, Aldringham, Leiston and Sizewell.	Yes - As above, disruption to PRoW or other recreational routes would be avoided as far as possible at all phases. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all project phases**
Potential temporary or permanent land take or amenity impacts on residential properties, local businesses, visitor attractions, community facilities, open space or development land within 500m of the Suffolk Scoping Boundary.	Residential properties within 500m of the Suffolk Scoping Boundary including those located in Saxmunham, Friston, Knodishall, Aldringham, Leiston and Sizewell.	Yes -A number of residential properties, local businesses, community facilities, open spaces and development land allocations have been identified within the study area.	**Proposed to be scoped in for all project phases**
	Businesses within 500m of the Suffolk Scoping Boundary including those located in Saxmundham, Friston, Knodishall, Aldringham, Leiston and Sizewell.		
	Community facilities within 500m of the Suffolk Scoping Boundary including Aldringham Care Home, Friston		

Impact	Receptors	Potential for significant effects	Proposed to be scoped in/out
	Village Hall, Alde Valley Academy, Suffolk New College, Leiston Leisure Centre, Sizewell Sports and Social Club, Knodishall Village Hall and Coldfair Green County Primary School.		
	Development land within 500m of the Suffolk Scoping Boundary including Land at School Road, Land to the East of Aldeburgh Road and Land North-East of Street Farm.		
	Open space within 500m of the Suffolk Scoping Boundary including Leiston Allotments, Leiston Primary School playing fields, Knodishall Playground, Knodishall Common, Saxmundham Park and Friston Playground.		
	Visitor attractions within 500m of the Suffolk Scoping Boundary		

2.11.7 Proposed Assessment Methodology

2.11.7.1 The assessment methodology for the EIA is outlined in **Part 1, Chapter 5, EIA Approach and Methodology.**

Proposed Data Sources

2.11.7.2 A desk-based baseline assessment will be undertaken using a rage of sources to provide a description of the socio-economic conditions within the socio -economic and land use study areas set out above. This will be done using established statistical sources, and in consultation with stakeholders, where relevant. Relevant policy will be reviewed at the local regional and national levels to identify the key issues of relevance to the Project.

Proposed Assessment Methodology

2.11.7.3 An assessment of potential impacts will be undertaken to determine the effect of the Suffolk Onshore Scheme on the baseline socio-economic conditions. The methodology for assessing socio-economic impacts will follow standard EIA guidance and will entail:

- Assessment of the likely scale, permanence and significance of effects associated with socio-economics, recreation & tourism receptors; and
- An assessment of the potential cumulative impacts with other projects within the surrounding area.

2.11.7.4 The assessment of potential socio-economic impacts will use policy thresholds and expert judgment to assess the scale and nature of the impacts of the Project against baseline conditions. For socio-economics, recreation and tourism there is no accepted definition of what constitutes a significant (or not significant) socio-economic effect. It is however recognised that effects are categorised based upon the relationship between the scale (or magnitude) of effect and the sensitivity (or value) of the affected resource or receptor.

2.11.7.5 As such, the socio-economics, recreation and tourism effects will be assessed on the basis of:

- *Consideration of sensitivity to impact*: specific values in terms of sensitivity are not attributed to socio-economic resources/receptors due to their diverse nature and scale, however the assessment takes account of the qualitative (rather than quantitative) 'sensitivity' of each receptor and, in particular, their ability to respond to change based on recent rates of change and turnover (if appropriate); and
- *Scale of impact*: this entails consideration of the size of the impact on people or business in the context of the area in which effects will be experienced.

2.11.7.6 The assessment aims to be objective and quantify effects as far as possible. However, some effects can only be evaluated on a qualitative basis. Effects are proposed to be defined as follows:

- *Beneficial classifications of effect*: indicate an advantageous or beneficial effect on an area, which may be minor, moderate, or major in effect;
- *Negligible classifications of effect*: indicate imperceptible effects on an area;
- *Adverse classifications of effect*: indicate a disadvantageous or adverse effect on an area, which may be minor, moderate or major in effect; and
- *No effect classifications*: indicate that there are no effects on an area.

2.11.7.7 Based on consideration of the above, where an effect is assessed as being beneficial or adverse, the scale of the effect are proposed to be assigned using the below criteria:

- *Minor*: a small number of receptors are beneficially or adversely affected. The effect will make a small measurable positive or negative difference on receptors at the relevant area(s) of effect;
- *Moderate*: a noticeable number of receptors are beneficially or adversely affected. The effect will make a measurable positive or negative difference on receptors at the relevant area(s) of effect; and
- *Major*: all or a large number of receptors are beneficially or adversely affected. The effect will make a measurable positive or negative difference on receptors at the relevant area(s) of effect.

2.11.7.8 Those effects which are found to be moderate or major are considered to be 'significant' and those which are minor or negligible are 'not significant'.

2.11.7.9 Duration of impact will also be considered, with more weight given to reversible long-term or permanent changes than to temporary ones. Temporary impacts are considered to be those associated with the construction works. Long-term reversible impacts are generally those associated with the completed and operational development.

Assumptions and Limitations

2.11.7.10 The commercial agreement for land, including productive land, between the proponent and land owners is beyond the scope of this assessment and the future Environmental Statement (ES) documentation.

2.11.7.11 The approximately four year construction period is expected to require a peak workforce across the Suffolk Onshore, Kent Onshore and Offshore Schemes of between 300-400 workers. A proportion of these workers are likely to live locally to the site, while a proportion will travel to the site to work. More detail on the average and peak number of workers expected to work on each of the Offshore and Onshore Schemes across the construction period, and the proportion of workers who will be expected to live locally to the site will be set out in the Preliminary Environmental Information Report.

2.11.8 Conclusion

2.11.8.1 This chapter of the Scoping Report has set out the proposed scope and methodology for the ES assessment of socio-economic effects arising from the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme. The socio-economic, recreation and tourism receptors that have been identified within the respective study areas surrounding the Suffolk Onshore Scheme include local communities, the local economy within East Suffolk, users of PRoW and open space, residential and business properties, visitor attractions, development land, and community facilities within the respective study areas. The preliminary baseline assessment indicates that there is the potential for significant effects on these receptors.

Proposed Scope of the Assessment

2.11.8.2 A summary of the proposed scope of the assessment is provided in Table 2.11.9

Table 2.11.9: Proposed scope of the assessment

Receptor	Potential for significant effect	Project phase(s)	Proposed to be scoped in/out and for which option
Employment levels within East Suffolk	The Suffolk Onshore Scheme will generate direct and indirect temporary employment, training and apprenticeship opportunities both on Site and in the supply chain during the construction, maintenance and decommissioning phases. The scale of operational employment generated is likely to be very limited.	Construction, maintenance and decommissioning	**Scoped in for all options**
		Operation	Scoped out for all options
Local economy within East Suffolk	The employment and wider economic activity created during the construction maintenance and decommissioning phases will generate GVA within the local East Suffolk economy. The scale of operational employment generated is likely to be very limited	Construction, maintenance and decommissioning	**Scoped in for all options**
		Operation	Scoped out for all options

	and therefore any effect on GVA will be small.		
Users of PRoW and recreational routes within 500 m of the Suffolk Scoping Boundary.	Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	Construction, maintenance and decommissioning	**Scoped in for all options**
		Operation	**Scoped in for all options**
Local communities within 1 km of Suffolk Scoping Boundary.	As above, disruption to PRoW or other recreational routes would be avoided as far as possible at all phases. Where necessary, suitable diversions would be agreed with SCC.	Construction, maintenance and decommissioning	**Scoped in for all options**
		Operation	**Scoped in for all options**
Residential properties within 500m of the Suffolk Scoping Boundary.	A number of residential properties, local businesses, community facilities, open spaces and development land allocations have been identified within the study area.	Construction, maintenance and decommissioning	**Scoped in for all options**
Businesses within 500m of the Suffolk Scoping Boundary		Operation	**Scoped in for all options**
Community facilities within 500m of the Suffolk Scoping Boundary			
Development land within 500m of the Suffolk Scoping Boundary			
Open space within 500m of the Suffolk Scoping Boundary			

Visitor attractions within 500m of the Suffolk Scoping Boundary	Visitor attractions have been identified in the study area for Site 1 – Emerging Preference, Site 3 – Emerging Preference and Site 3 – Alternative (Option 1).	Construction, maintenance and decommissioning	**Scoped in for all options**
		Operation	**Scoped in for all options**

2.12 Health and Wellbeing

2.12.1 Introduction

2.12.1.1 This chapter presents how the Health and Wellbeing assessment will consider the potential effects that may arise from the construction, and operation, maintenance and decommissioning of the Suffolk Onshore Scheme (as described in **Part 1, Chapter 4, Description of the Project**). This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential effects to be considered within the assessment, and how the potential effects will be assessed for the purpose of an EIA.

2.12.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Suffolk Onshore Scheme Scoping Boundary (hereafter referred to as the Suffolk Scoping Boundary) is illustrated on **Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary**.

2.12.1.3 The assessment will consider potential health and wellbeing effects on the following receptors:

- Quality of life and safety of local residents, workers and visitors;
- Users of recreational routes and Public Rights of Way (PRoW);
- Users of open space;
- Users of local community services and social infrastructure; and
- Local communities that could be affected by community severance.

2.12.1.4 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project;**
- **Part 1, Chapter 5, EIA Approach and Methodology;**
- **Part 2, Chapter 1, Evolution of the Suffolk Onshore Scheme;**
- **Part 2, Chapter 2, Landscape and Visual;**
- **Part 2, Chapter 6, Geology and Hydrogeology;**
- **Part 2, Chapter 8, Traffic and Transport;**
- **Part 2, Chapter 9, Air Quality;**
- **Part 2, Chapter 10, Noise and Vibration**; and
- **Part 2, Chapter 11, Socio-economics Recreation and Tourism**

2.12.1.5 This chapter is supported by the following figure:

- **Figure 2.12.1 Suffolk Onshore Scheme Health and Wellbeing Study Areas and Receptors.**

2.12.2 Regulatory and Planning Context

2.12.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. Key legislation, policy and guidance relevant to the assessment of potential effects on health and wellbeing associated with the construction, operation, maintenance and decommissioning of the Project is presented below.

Legislation

2.12.2.2 Relevant legislation includes the Planning Act 2008[216] provides the legislative basis for, and defines, the application process under which a Development Consent Order (DCO) is sought.

2.12.2.3 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017; and The Marine Works (Environmental Impact Assessment) Regulations 2007[217] also require the EIA for infrastructure projects to consider potential impacts on health and wellbeing.

Planning Policy

National planning policy

National Policy Statement for Energy (EN-1)

2.12.2.4 Paragraphs 4.3.1 – 4.3.5 of the Overarching National Policy Statement for Energy (NPS EN-1)[196] details requirements for National Policy Statement (NPS) applications to consider all relevant impacts to health and wellbeing.

National Policy Statement for Energy (EN-5)

2.12.2.5 The NPS for Electricity Networks Infrastructure (NPS EN-5)[197] supplements EN-1, with additional guidance specific to the development for electricity networks infrastructure. This document provides guidance on the effects of electro-magnetic fields (EMFs) and their impact on health.

National Planning Policy Framework (NPPF)

2.12.2.6 The National Planning Policy Framework (NPPF)[218] sets out various policies with respect to the health and wellbeing objectives of the planning system. Chapter 8 on 'Promoting healthy and safe communities' outlines the health and community

[216] The Planning Act 2008 [online]. Available at: https://www.legislation.gov.uk/ukpga/2008/29/contents

[217] Department of Energy and Climate Change (2011). National Policy Statement for Electricity Networks Infrastructure (EN-5). [online] Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure

[218] Ministry of Housing Communities & Local Government (2021). National Planning Policy Framework. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

objectives of the NPPF, including the management of PRoW access to open spaces and access to community amenities.

National planning practice guidance

2.12.2.7 The National Planning Practice Guidance (NPPG)[219] provides additional guidance to the NPPF. Guidance of particular relevance to health includes Paragraphs 92 to 103 which set out how the design and use of the built and natural environment are major determinants of health and wellbeing, and how in turn positive planning can contribute to healthier communities.

Additional national guidance

2.12.2.8 Additional national guidance relevant to health and wellbeing includes:

- Design Manual for Roads and Bridges (DMRB) Document LA112[220];
- NHS Healthy Urban Development Unit (HUDU)[221] Rapid Health Impact Assessment (HIA) Tool;
- Public Health England (PHE) Guidance:Spatial Planning for Health: An evidence resource for designing healthier places[222];
- PHE Strategy 2020 to 2025[223];
- The Marmot Review: Fair Society Healthy Lives (2010)[224];
- Health Equity in England 10 Years On (2020)[225]; and
- Build Back Fairer – The Covid-19 Marmot Review (2020)[226].

Local planning policy

2.12.2.9 Local planning policy and guidance of relevance to the socio-economic, recreation and tourism assessment includes:

[219] Department for Levelling Up, Housing and Communities, and Ministry of Housing Communities & Local Government (2019). Planning Practice Guidance. [online] Available at: https://www.gov.uk/government/collections/planning-practice-guidance

[220] Highways England (2020). Design Manual for Roads and Bridges: LA112 - Population and human health. v.11. Design Manual for Roads and Bridges, Volume 11, Section 3, Part 6. Population and human health. LA112.

[221] NHS London Healthy Urban Development Unit (2019). Rapid Health Impact Assessment Tool. [online] Available at: https://www.healthyurbandevelopment.nhs.uk/wp-content/uploads/2019/10/HUDU-Rapid-HIA-Tool-October-2019.pdf#:~:text=The%20Rapid%20HIA%20tool%20The%20tool%20is%20designed,renewal%20programmes%20and%20outline%20and%20detailed%20planning%20applications.

[222] Public Health England (2017). Spatial Planning for Health: An evidence resource for designing healthier places. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/729727/spatial_planning_for_health.pdf

[223] Public Health England (2019). PHE Strategy 2020 to 2025. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/831562/PHE_Strategy_2020-25.pdf

[224] Marmot, M. (2010). Fair Society, Healthy Lives: The Marmot Review. Strategic Review of Health Inequalities in England Post 2010. [online] Available at: https://www.parliament.uk/globalassets/documents/fair-society-healthy-lives-full-report.pdf

[225] Marmot, M., Allen, J., Boyce, T., Goldblatt, P., and Morrison, J. (2020). Health Equity in England: The Marmot Review 10 Years On. [online] Available at: https://www.health.org.uk/publications/reports/the-marmot-review-10-years-on

[226] Marmot, M., Allen, J., Goldblatt, P., Morrison, J., and Herd, E. (2020). Build Back Fairer: The COVID-19 Marmot Review. [online] Available at: https://www.health.org.uk/publications/build-back-fairer-the-covid-19-marmot-review

- New Anglia LEP, Local Energy East Strategy227;
- Suffolk County Council (SCC) Energy Infrastructure Policy228;
- Suffolk Coastal Local Plan, 2020229, including:
  - Policy SCLP3.4: Proposals for Major Energy Infrastructure Projects; and
  - Policy SCLP8.2: Open Space.
- Leiston Neighbourhood Plan; and230
- Draft East Suffolk Cycling and Walking Strategy231.

2.12.3 Study Area

2.12.3.1 The study area for the health and wellbeing assessment will vary by the type of impact being assessed, these include:

- The human health profile baseline study area will comprise a local ward area comprising the wards in which the Suffolk Onshore Scheme is located, within which there is a high likelihood that effects arising from the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme could be experienced: Aldeburgh and Leiston ward and Saxmundam ward in East Suffolk. Where data is not available at the ward level, local authority level data will be provided for East Suffolk district.
- The study areas for assessing the health and wellbeing impacts of the Suffolk Onshore Scheme will be influenced by the geographic extent of the relevant technical assessments, these include:
  - **Part 2, Chapter 2, Landscape and Visual**;
  - **Part 2, Chapter 6, Geology and Hydrogeology**;
  - **Part 2, Chapter 8, Transport and Transport**;
  - **Part 2, Chapter 9, Air Quality**;
  - **Part 2, Chapter 10, Noise and Vibration**; and
  - **Part 2, Chapter 11, Socio-economics, Recreation and Tourism**.

2.12.3.2 The assessment will refer to the study areas identified by the relevant EIA chapters.

[227] New Anglia (2018). Local Energy East Strategy. [online] Available at: https://newanglia.co.uk/wp-content/uploads/2020/04/LEE-Strategy-LOW-RES.pdf

[228] Suffolk County Council (2021). Suffolk County Council's Energy Infrastructure Policy. [online] Available at: https://www.suffolk.gov.uk/assets/planning-waste-and-environment/major-infrastructure-projects/SCC-Energy-Policy.pdf

[229] East Suffolk Council (2020). Suffolk Coastal Local Plan. [online] Available at: https://eastsuffolk.inconsult.uk/consult.ti/suffolkcoastallocalplan2020/viewCompoundDoc?docid=11955764&partid=11958292

[230] Leiston-cum-Sizewell Town Council (2017). Leiston Neighbourhood Plan 2015-2029. [online] Available at: https://www.eastsuffolk.gov.uk/assets/Planning/Neighbourhood-Planning/Designated-Neighbourhood-Areas/Leiston/Leiston-NP-Made-Version-March-2017.pdf

[231] East Suffolk Council (2021). Draft East Suffolk Cycling and Walking Strategy. [online] Available at: https://storymaps.arcgis.com/stories/cbc57e4a9cc24eeea7d174fb34b1bf0e

2.12.4 Baseline Conditions

Data Sources

2.12.4.1 This overview of community health indicators is based on the following public data sources:

- Office for National Statistics (ONS). Mid-year sub-national population estimate data (2020)[232];
- ONS 2011 Census Data[233];
- PHE Local Health Data[234]; and
- ONS Claimant Count Data[235].

Baseline

2.12.4.2 Table 2.12.1 sets out a summary of key health indicators across the local ward and local authority study areas, compared to regional (East) and national (England) averages.

Table 2.12.1: Community health profile

	Local wards	East Suffolk/Suffolk Coastal*	East of England	England
Population (2020)	16,990	250,373	6,269,161	56,550,138
Population aged under 16 (%) (2020)	16.0%	16.7%	19.4%	19.2%
Population aged over 65 (%) (2020)	30.9%	27.7%	20.0%	18.5%
Unemployment rate	4.2%	3.9%	5.3%	6.3%
Unemployment (% working age population claiming out of work benefits)	2.7%	2.8%	3.0%	3.8%

[232] Office for National Statistics (2020). Sub-national population projections for England. [online] Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/subnationalpopulationprojectionsforengland/2018based

[233] Office for National Statistics (2012). Census 2011. [online] Available at: https://www.ons.gov.uk/census/2011census

[234] Office for Health Improvement and Disparities (2019). Local Health. [online] Available at: https://www.gov.uk/government/collections/local-health-public-health-data-and-mapping-tool-for-small-areas

[235] Office for National Statistics (2022). CLA02: Claimant Count by age group (Experimental Statistics). [online] Available at: https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/outofworkbenefits/datasets/cla02claimantcountbyagegroup

General Health – bad or very bad (%)	5.9%	4.5%	4.7%	5.5%
Long term health problem or disability (%)	23.0%	18.5%	16.7%	17.6%
Life Expectancy at Birth (males) (2018-2020)	N/a	80.4	80.2	79.4
Life Expectancy at Birth (females) (2018-2020)	N/a	83.8	83.8	83.1
Inequality in Life Expectancy at Birth (males 2018-2020)	N/a	7.3	7.9	9.7
Inequality in Life Expectancy at Birth (females 2018-2020)	N/a	5.4	6.2	7.9
Obese children (Year 6) (%)	N/a	15.8%	19.1%	21.0%
Under 75 mortality rate from all causes (2018-2020) (per 100,000 people)	N/a	297.6	303.5	336.5

*Prior to 2015 the Suffolk Onshore Scheme was located in Suffolk Coastal Local Authority.

Future Baseline

2.12.4.3 ONS population projections[236] show over the 10-year period from 2022 to 2032 the population across East Suffolk is expected to grow by 5.3% to approximately 268,800 people. This increase is greater than the projected rate of increase in the East (4.0%) and across England as a whole (4.0%) over the same period.

2.12.4.4 Due to the broad range of individual and environmental determinants that can influence physical and mental health outcomes, the future community health baseline over the medium-term is highly uncertain. Due to this uncertainty, for the purposes of this assessment, it is assumed the future baseline for the Suffolk Onshore Scheme study area would be unchanged from the current baseline to the completion of the Suffolk Onshore Scheme.

[236] Office for National Statistics (2018). Population Projections. [online] Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections

2.12.5 Embedded and Control & Management Measures

Embedded Measures

2.12.5.1 The Suffolk Onshore Scheme has been routed and sited to avoid residential areas where possible.

2.12.5.2 The design of the Suffolk Onshore Scheme will be compliant with the guidelines and policies relating to electromagnetic fields stated in NPS EN-5, including the International Commission on Non-Ionizing Radiation Protection guidelines (1998).

Control and Management Measures

2.12.5.3 An outline Code of Construction Practice (CoCP) for the Suffolk Onshore Scheme is provided in **Appendix 1.4.A Outline Code of Construction Practice**. Measures outlined in the CoCP which are relevant to the control and management of impacts that could affect health and wellbeing are:

- GG02GG03: A Construction Environmental Management Plan (CEMP), a Landscape and Ecological Management Plan (LEMP) and a Construction Traffic Management Plan (CTMP) will be produced prior to construction;
- GG05: A suitably experienced Environmental Manager will be appointed for the duration of the construction phase . In addition, a qualified and experienced Environmental Clerk of Works (ECoW) will be available during the construction phase to advise, supervise and report on the delivery of the mitigation methods and controls as outlined in the CEMP. The ECoW will monitor the works to ensure these proceed in accordance with the relevant environmental measures as set out in the DCO application and its Environmental Statement (ES) and adhere to the required best practice and mitigation measures as set out in the relevant applicable guidelines;
- GG06: Construction workers will undergo specific training to increase their awareness of environmentally sensitive sites across the Project as applicable to their role. Topics will include, but will not be limited to, the following:
  - pollution prevention and pollution incident response;
  - dust management and control measures;
  - working hours and noise and vibration reduction measures;
  - working with potentially contaminated materials;
  - waste management and storage; and
  - flood risk response actions;
- GG11: Any activity carried out or equipment located within a construction compound that may produce a noticeable nuisance, including but not limited to dust, noise, vibration and lighting will be located away from sensitive receptors such as residential properties or ecological sites as far as practicable;
- GG13: Plant and vehicles will conform to relevant applicable standards for the vehicle type as follows:

- Euro 4 (NOx) for petrol cars, vans and minibuses;
- Euro 6 (NOx and PM) for diesel cars, vans and minibuses; and
- Euro VI (NOx and PM) for lorries, buses, coaches and Heavy Goods Vehicles (excluding specialist abnormal indivisible loads).
- Vehicles will be correctly maintained and operated in accordance with manufacturer's recommendations and in a responsible manner. All plant and vehicles will be required to switch off their engines when not in use and when it is safe to do so;

- GG20: Bonfires and the burning of waste material on-site will be prohibited;
- GG21: Construction lighting will be of the lowest luminosity necessary to safely perform each task. It will be designed, positioned and directed to reduce the intrusion into adjacent properties, protected species and habitats;
- GG23: An Emergency Action Plan will be developed for the construction phase which will outline procedures to be implemented in case of unplanned emergency events including but not limited to site flooding and pollution incidents; and
- GG26: Members of the community and local businesses will be kept informed regularly of the planned and ongoing works through active community liaison. This will include notification of noisy activities, heavy traffic periods and start and end dates of key phasing. A contact number will be provided which members of the public can use to raise any concerns or complaints about the Project. All construction-related complaints will be logged by the appointed contractor(s) in a complaints register, together with a record of the responses given and actions taken.

2.12.6 Potential for Significant Effects

2.12.6.1 The health and wellbeing assessment will consider the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project.**

2.12.6.2 The proposed scope of the health and wellbeing assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

2.12.6.3 This section identifies the sources and impacts that would occur as a result of the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme.

2.12.6.4 The potential for the Suffolk Onshore Scheme to result in potential effects described in this section takes into account the embedded and control and management measures described in section 5.

Sources of construction impacts

- Potential temporary and permanent impacts on the quality of life and safety of local residents, visitors and workers arising from construction of the Suffolk Onshore Scheme related to air quality, noise, landscape amenity and traffic and transport;
- Potential temporary and permanent impacts related to accessibility of PRoW recreational routes and open space, impacting local residents, visitor and workers' accessibility to these active travel routes;
- Potential temporary and permanent accessibility impacts on PRoW and recreational routes impacting local resident access to local community services and social infrastructure; and
- Potential temporary and permanent impacts on community cohesion arising from impacts to accessibility and community engagement work impacting local residents.

Sources of operational impacts

- Potential permanent accessibility impacts on PRoW and recreational routes and open space, impacting local residents, visitor and worker accessibility to active travel routes and open space;
- Potential permanent accessibility impacts on PRoW and recreational routes impacting local resident access to local community services and social infrastructure;
- Potential permanent impacts on community cohesion arising from permanent accessibility impacts; and
- Potential permanent quality of life impacts on residents and visitors arising from noise disturbance; and
- Potential permanent impacts on local residents arising from the generation of electro-magnetic fields (EMFs).

Sources of maintenance impacts

2.12.6.5 The sources of maintenance impacts are assessed to be the same as those listed as sources of construction impacts.

Sources of decommissioning impacts

2.12.6.6 The sources of decommissioning impacts are assessed to be the same as those listed as sources of construction impacts.

Potential impacts

2.12.6.7 Table 2.12.2 below identifies the potential impacts that could result from the sources identified above.

Table 2.12.2: Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction, maintenance and decommissioning	Potential temporary and permanent impacts of construction, maintenance and decommissioning on air quality, noise, landscape amenity and traffic and transport.	Potential temporary quality of life and safety impacts on local residents, workers and visitors within the relevant technical assessment study areas.	Yes -Potential health related effects experienced during construction, maintenance and decommissioning of the Suffolk Onshore Scheme would be determined through the topic specific assessments, but are expected to include air quality, noise and vibration, landscape amenity and traffic and transport effects.	**Scoped in**
	Potential temporary closure or diversions to PRoW and recreational routes.	Potential temporary closure or diversions to PRoW and recreational routes within 500m of the Suffolk Scoping Boundary causing disruption to users.	Yes -Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Scoped in**
	Potential temporary and permanent severance of access to open space.	Potential temporary severance of access to open space within 500m	Yes -As above, disruption to PRoW or other recreational routes and access to open	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
		of the Suffolk Scoping Boundary for local residents, workers and visitors affecting mental health.	space during all phases of the would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	
	Potential temporary and permanent severance of access to community services and social infrastructure.	Potential temporary closure or diversions to PRoW and recreational routes within 500m of the Suffolk Scoping Boundary impacting on local residents' access to local community services and social infrastructure.	Yes -As above, disruption to PRoW, other recreational routes or roads offering access to community services and social infrastructure during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Scoped in**
	Potential temporary and permanent severance of access to local communities.	Potential temporary severance of access to local communities within 1km of the Suffolk Scoping Boundary for local residents, leading to deterioration of community cohesion and	Yes -As above, disruption to PRoW or other recreational routes which facilitate community cohesion during construction, maintenance and decommissioning phases of the Suffolk Onshore Scheme would be avoided as far as possible.	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
		affecting mental health.	Where necessary, suitable diversions would be agreed with SCC.	
Operation	Potential permanent closure or diversions to PRoW and recreational routes.	Potential permanent closure or diversions to PRoW and recreational routes within 500 m of the Suffolk Scoping Boundary.	Yes -Disruption to PRoW or other recreational routes affecting access to facilities would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Scoped in**
	Potential permanent severance of access to open space.	Potential permanent severance of access to open space within 500m of the Suffolk Scoping Boundary for local residents, workers and visitors affecting mental health.	Yes -Disruption to PRoW or other recreational routes affecting access to facilities would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Scoped in**
	Potential permanent severance of access to community services and social infrastructure.	Potential permanent severance of access to community services and social infrastructure within 1km of	Yes -Disruption to PRoW or other recreational routes affecting access to facilities would be avoided as far as possible. Where	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
		the Suffolk Scoping Boundary for local residents, leading to deterioration of social cohesion and affecting mental health.	necessary, suitable diversions would be agreed with SCC.	
	Potential permanent severance of access to local communities.	Potential permanent severance of access to local communities within 1km of the Suffolk Scoping Boundary for local residents, leading to deterioration of community cohesion and affecting mental health.	Yes -Disruption to PRoW or other recreational routes affecting access to facilities would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Scoped in**
	Potential permanent impacts of operational noise.	Potential permanent quality of life impacts on residents and visitors within 1km of the Suffolk Scoping Boundary.	Yes -Potential health related effects experienced during the operation of the Suffolk Onshore Scheme would be determined through the topic specific assessments but are expected to	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			include noise effects.	
	Potential permanent impacts of operation associated with the generation of EMFs.	Potential permanent impacts on local residents and workers associated with the generation of EMFs.	No - The Applicant will ensure that policies and procedures are in place at the design phase to ensure that all equipment will comply with public EMF exposure limits.	Scoped out

Impact Pathways with Receptors (Step 2)

2.12.6.8 This section identities whether there are any impact pathways from the impacts identified above that could give rise to potential effects on the receptors within the health and wellbeing study areas.

2.12.6.9 Table 2.12.3 to Table 2.12.7 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment of health and wellbeing for the Suffolk Onshore Scheme as shown on **Figure 1.1.2 Suffolk Onshore Scheme Scoping Boundary** and for each of the five options.

2.12.6.10 Table 2.12.3 summarises the impact pathways for Suffolk Site 1 Emerging Preference as shown on **Figure 2.1.4 Suffolk Site 1 Emerging Preference** and **Figure 2.1.9 Suffolk Site 1 Emerging Preference Option Area**.

Table 2.12.3: Impact pathways with receptors – Suffolk Site 1 Emerging Preference

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Potential temporary and permanent quality of life and safety impacts on local residents, workers and visitors within the relevant technical assessment study areas.	Local residents, workers and visitors within the relevant technical assessment study areas. This may include receptors within Aldeburgh, Aldringham, Knodishall and Friston.	Yes - Potential health related effects experienced as a result of the Suffolk Onshore Scheme would be determined through the topic specific assessments, but	**Proposed to be scoped in for all phases**

		are expected to include air quality, noise and vibration, landscape amenity and traffic and transport effects during the construction, maintenance and decommissioning phase, and noise and vibration during the operational phase.	
Potential temporary and permanent closure or diversions to PRoW and recreational routes within 500m of the Suffolk Scoping Boundary.	Users of PRoW and recreational routes within 500m of Suffolk Scoping Boundary.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all phases**
Potential temporary severance of access to open space within 500m of the Suffolk Scoping Boundary for local residents, workers and visitors.	Users of open space within 500m of Suffolk Scoping Boundary including Knodishall Playground, Knodishall Common, Aldeburgh Beach, Church Field Road open space, Kemps Field and Friston Playground.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all phases**
Potential temporary and permanent closure or diversions to PRoW and recreational routes within 500m of the Suffolk Scoping Boundary impacting on local	Community facilities within 500m of the Suffolk Scoping Boundary including, Aldringham Care Home, Friston Village Hall, Knodishall Village Hall, Coldfair Green County Primary School.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all phases**

residents' access to local community services and social infrastructure.			
Potential temporary and permanent severance of access to local communities within 1km of the Suffolk Scoping Boundary for local resident.	Local communities within 1km of the Suffolk Scoping Boundary, including Aldeburgh, Aldringham, Knodishall and Friston.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all phases**

2.12.6.11 Table 2.12.4 summarises the impact pathways for Suffolk Site 1 Alternative as shown on **Figure 2.1.6 Suffolk Site 1 Alternative** and **Figure 2.1.11 Suffolk Site 1 Alternative Option Area**.

Table 2.12.4: Impact pathways with receptors – Suffolk Site 1 Alternative

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Potential temporary and permanent quality of life and safety impacts on local residents, workers and visitors within the relevant technical assessment study areas.	Local residents, workers and visitors within the relevant technical assessment study areas. This may include receptors within Sizewell, Leiston, Aldringham, Knodishall and Friston.	Yes - Potential health related effects experienced as a result of the Suffolk Onshore Scheme would be determined through the topic specific assessments, but are expected to include air quality, noise and vibration, landscape amenity and traffic and transport effects during the construction, maintenance and decommissioning phase, and noise and vibration during the operational phase.	**Proposed to be scoped in for all phases**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Potential temporary and permanent closure or diversions to PRoW and recreational routes within 500m of the Suffolk Scoping Boundary.	Users of PRoW and recreational routes within 500m of Suffolk Scoping Boundary.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all phases**
Potential temporary and permanent severance of access to open space within 500m of the Suffolk Scoping Boundary for local residents, workers and visitors.	Users of open space within 500m of Suffolk Scoping Boundary including Friston Playground, Knodishall Playground, Knodishall Common, Leiston Allotments and Leiston Primary School playing fields.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all phases**
Potential temporary and permanent closure or diversions to PRoW and recreational routes within 500m of the Suffolk Scoping Boundary impacting on local residents' access to local community services and social infrastructure.	Community facilities within 500m of the Suffolk Scoping Boundary including, Aldringham Care Home, Friston Village Hall, Alde Valley Academy, Suffolk New College, Leiston Leisure Centre, Sizewell Sports and Social Club, Knodishall Village Hall and Coldfair Green County Primary School.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all phases**
Potential temporary and permanent severance of access	Local communities within 1km of the Suffolk Scoping	Yes - Disruption to PRoW or other recreational routes	**Proposed to be scoped in for all phases**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
to local communities within 1km of the Suffolk Scoping Boundary for local resident.	Boundary, including Sizewell, Leiston, Aldringham, Knodishall and Friston.	during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	

2.12.6.12 Table 2.12.5 summarises the impact pathways for Suffolk Site 3 Emerging Preference as shown on **Figure 2.1.5 Suffolk Site 3 Emerging Preference** and **Figure 2.1.10 Suffolk Site 3 Emerging Preference Option Area**.

Table 2.12.5: Impact pathways with receptors – Suffolk Site 3 Emerging Preference

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Potential temporary and permanent quality of life and safety impacts on local residents, workers and visitors within the relevant technical assessment study areas.	Local residents, workers and visitors within the relevant technical assessment study areas. This may include receptors within Benhall, Saxmundham, Friston, Knodishall, Aldringham and Aldeburgh.	Yes - Potential health related effects experienced as a result of the Suffolk Onshore Scheme would be determined through the topic specific assessments, but are expected to include air quality, noise and vibration, landscape amenity and traffic and transport effects during the construction, maintenance and decommissioning phase, and noise and vibration during the operational phase.	**Proposed to be scoped in for all phases**
Potential temporary or permanent closure or diversions to PRoW and recreational routes within 500m	Users of PRoW and recreational routes within 500m of Suffolk Scoping Boundary.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary,	**Proposed to be scoped in for all phases**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
of the Suffolk Scoping Boundary.		suitable diversions would be agreed with SCC.	
Potential temporary and permanent severance of access to open space within 500m of the Suffolk Scoping Boundary for local residents, workers and visitors.	Users of open space within 500m of Suffolk Scoping Boundary including Knodishall Playground, Knodishall Common, Aldeburgh Beach, Church Field Road open space, Kemps Field, Friston Playground and Saxmundam Park.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all phases**
Potential temporary and permanent closure or diversions to PRoW and recreational routes within 500m of the Suffolk Scoping Boundary impacting on local residents' access to local community services and social infrastructure.	Community facilities within 500m of the Suffolk Scoping Boundary including, Aldringham Care Home, Friston Village Hall, Knodishall Village Hall and Coldfair Green County Primary School.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all phases**
Potential temporary and permanent severance of access to local communities within 1km of the Suffolk Scoping Boundary for local resident.	Local communities within 1km of the Suffolk Scoping Boundary, including Benhall, Saxmundham, Friston, Knodishall, Aldringham and Aldeburgh.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all phases**

2.12.6.13 Table 2.12.6 summarises the impact pathways for Suffolk Site 3 Alternative (Option 1) as shown on **Figure 2.1.7 Suffolk Site 3 Alternative (Option 1)** and **Figure 2.1.12 Suffolk Site 3 Alternative (Option 1) Option Area**.

Table 2.12.6: Impact pathways with receptors– Suffolk Site 3 Alternative (Option 1)

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Potential temporary and permanent quality of life and safety impacts on local residents, workers and visitors within the relevant technical assessment study areas.	Local residents, workers and visitors within the relevant technical assessment study areas. This may include receptors within Sizewell, Leiston, Saxmundham, Benhall, Kondishall and Friston.	Yes - Potential health related effects experienced as a result of the Suffolk Onshore Scheme would be determined through the topic specific assessments, but are expected to include air quality, noise and vibration, landscape amenity and traffic and transport effects during the construction, maintenance and decommissioning phase, and noise and vibration during the operational phase.	**Proposed to be scoped in for all phases**
Potential temporary and permanent closure or diversions to PRoW and recreational routes within 500m of the Suffolk Scoping Boundary.	Users of PRoW and recreational routes within 500m of Suffolk Scoping Boundary.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all phases**
Potential temporary and permanent severance of access to open space within 500m of the Suffolk Scoping Boundary for local residents, workers and visitors.	Users of open space within 500m of Suffolk Scoping Boundary including Leiston Park, Leiston Allotments, Leiston Primary School Playing Fields, Saxmundam Park and Friston Playground.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all phases**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Potential temporary and permanent closure or diversions to PRoW and recreational routes within 500m of the Suffolk Scoping Boundary impacting on local residents' access to local community services and social infrastructure.	Community facilities within 500m of the Suffolk Scoping Boundary including, Friston Village Hall, Summerhill School, Aylward Park School, Suffolk New College, Leiston Community Centre, Waterloo Centre, Leiston Library, The Leiston Surgery, Leiston Fire Station, Sizewell Sports and Social Club, Leiston Old Abbey Residential Home and Pro Corda Leiston Abbey.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all phases**
Potential temporary and permanent severance of access to local communities within 1km of the Suffolk Scoping Boundary for local resident.	Local communities within 1km of the Suffolk Scoping Boundary, including Sizewell, Leiston, Saxmundham, Benhall, Kondishall and Friston.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all phases**

2.12.6.14 Table 2.12.7 summarises the impact pathways for Suffolk Site 3 Alternative (Option 2) as shown on **Figure 2.1.8 Suffolk Site 3 Alternative (Option 2**) and **Figure 2.1.13 Suffolk Site 3 Alternative (Option 1) Option Area**.

Table 2.12.7: Impact pathways with receptors – Suffolk Site 3 Alternative (Option 2)

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Potential temporary and permanent quality of life and safety impacts on local residents, workers and visitors within the relevant technical assessment study areas.	Local residents, workers and visitors within the relevant technical assessment study areas. This may include receptors within Saxmunham, Benhall, Friston, Knodishall, Aldringham, Leiston and Sizewell.	Yes - Potential health related effects experienced as a result of the Suffolk Onshore Scheme would be determined through the topic specific assessments, but are expected to include air quality, noise and vibration, landscape amenity and traffic and transport effects during the construction, maintenance and decommissioning phase, and noise and vibration during the operational phase.	**Proposed to be scoped in for all phases**
Potential temporary and permanent closure or diversions to PRoW and recreational routes within 500m of the Suffolk Scoping Boundary.	Users of PRoW and recreational routes within 500m of Suffolk Scoping Boundary.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all phases**
Potential temporary and permanent severance of access to open space within 500m of the Suffolk Scoping Boundary for local residents, workers and visitors.	Users of open space within 500m of Suffolk Scoping Boundary including, Leiston Allotments, Leiston Primary School playing fields, Knodishall Playground, Knodishall Common, Saxmundham Park	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all phases**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
	and Friston Playground.		
Potential temporary and permanent closure or diversions to PRoW and recreational routes within 500m of the Suffolk Scoping Boundary impacting on local residents' access to local community services and social infrastructure.	Community facilities within 500m of the Suffolk Scoping Boundary including, Aldringham Care Home, Friston Village Hall, Alde Valley Academy, Suffolk New College, Leiston Leisure Centre, Sizewell Sports and Social Club, Knodishall Village Hall and Coldfair Green County Primary School.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all phases**
Potential temporary and permanent severance of access to local communities within 1km of the Suffolk Scoping Boundary for local resident.	Local communities within 1km of the Suffolk Scoping Boundary, including Saxmunham, Benhall, Friston, Knodishall, Aldringham, Leiston and Sizewell.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	**Proposed to be scoped in for all phases**

2.12.7 Proposed Assessment Methodology

2.12.7.1 There is no consolidated methodology or practice for the assessment of effects on human health and wellbeing. Best practice principles are provided in the NHS England's Healthy Urban Development Unit's Rapid Health Impact Assessment (HIA) Toolkit 2019 and this toolkit will form the basis of the approach to assessing the impacts on health arising from the Suffolk Onshore Scheme.

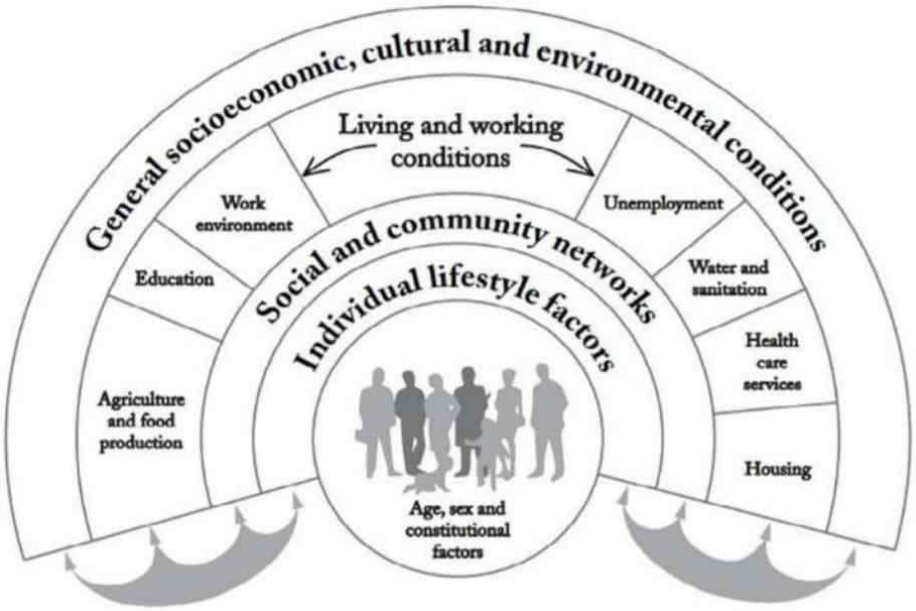
2.12.7.2 The World Health Organisation (WHO) Europe defines health as 'a state of complete physical, mental and social wellbeing and not merely the absence of disease or

infirmity'[237]. Public health therefore encompasses general wellbeing, not just the absence of illness.

2.12.7.3 The health and wellbeing of individuals is determined by a broad range of individual constitutional and behavioural factors, as well as broader environmental, social and economic factors. Some factors are direct and obvious, others are indirect.

2.12.7.4 Dahlgreen and Whitehead's model of the main determinants of health illustrates the breadth of possible influences on health, as show in Image 2.12.1. At the centre of the illustration are factors that are largely fixed – including individual age, sex, constitutional and genetic factors. Outside of this are factors generally described as the wider or broader determinants of health. The model emphasises interactions between the layers. Moving outwards from the centre, individual lifestyle choices are embedded in social norms and community networks, and in living and working conditions, which in turn are shaped by and related to the wider socioeconomic and cultural environment.

Image 2.12.1 Determinants of health

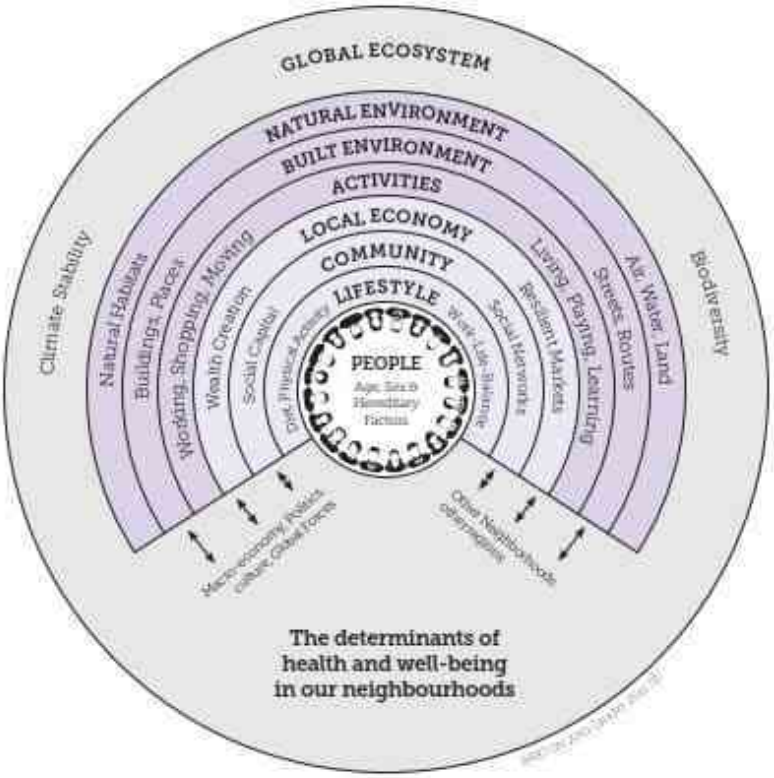


Source: Dahlgreen and Whitehead, 1993

2.12.7.5 This model has been developed to show elements of the built environment and communities that are the key determinants of health, as shown in Image 2.12.2.

[237] World Health Organisation (2018). Health inequities and their causes. [online] Available at: https://www.who.int/news-room/facts-in-pictures/detail/health-inequities-and-their-causes

Image 2.12.2 Determinants of health in neighbourhoods



Source: Barton and Grant, 2006

2.12.7.6 Within a population there can also be health inequalities, defined by the WHO as "differences in health status or in the distribution of health determinants between different population groups. For example, differences in mobility between elderly people and younger populations or differences in mortality rates between people from different social classes"[238].

Baseline

2.12.7.7 Relevant policy will be reviewed at the local, regional and national levels to identify the key issues of relevance to the Suffolk Onshore Scheme.

2.12.7.8 A baseline assessment will be undertaken using a range of sources to provide a description of the health conditions within the health study areas as set out above. This will be done using established statistical sources and desk based research.

Assessment of Potential Effects

2.12.7.9 As set out above the factors contributing to individual health and wellbeing are broad, and the health of existing and new residents, workers and visitors will be largely

[238] World Health Organisation (2018). Health inequities and their causes. [online] Available at: https://www.who.int/news-room/facts-in-pictures/detail/health-inequities-and-their-causes

determined by individual age and constitutional factors and lifestyle factors unrelated to the Suffolk Onshore Scheme.

2.12.7.10 Taking account of these factors, the health assessment will use relevant guidance set out in the framework for assessment set out by the *NHS HUDU Planning for Health Rapid HIA Tool* to consider how the Suffolk Onshore Scheme could influence health – including how it could influence health inequalities, during the construction, maintenance, operational and decommissioning phases.

2.12.7.11 The HUDU assessment tool identifies eleven broad determinants that are likely to be influenced by specific development proposals and can be influenced through design and management measures, against which the likely impacts of new developments can be assessed. Of these, the following five broad determinants are relevant to the potential health impacts arising from the Scheme:

- Access to health and social care services and other social infrastructure;
- Access to open space and nature;
- Air quality, noise and neighbourhood amenity;
- Accessibility and active travel; and
- Social cohesion and inclusive design.

2.12.7.12 Due to the diverse nature of health determinants and outcomes which are assessed, and the difficulty of quantifying these with respect to health outcomes, NHS HUDU guidance does not provide a methodology for assessing the significance of effects. In line with this, the assessment of likely health impacts of the Suffolk Onshore Scheme will be described qualitatively, based on professional judgement and best practice guidance, and effects will be assessed as 'positive', 'negative', 'neutral' or 'uncertain', using the criteria set out in Table 2.12.8.

2.12.7.13 Where an impact is identified, actions will be proposed to mitigate any negative impact on health, or to realise opportunities to create health benefits. It should be noted that in many cases, mitigation will be embedded within the design of the Suffolk Onshore Scheme, and the implementation of this will be an underlying assumption of the assessment.

Table 2.12.8: Health assessment impact categories

Impact category	Description
Positive	A beneficial impact is identified
Neutral	No discernible health impact is identified
Negative	An adverse impact is identified
Uncertain	Where uncertainty exists as to the overall impact

2.12.7.14 The assessment will draw on the findings of related technical assessments, as listed in section 2. The geographical extent of health effects will be determined by the assessments set out in those related chapters.

2.12.8 Conclusion

Summary

2.12.8.1 This chapter of the Scoping Report has set out the proposed scope and methodology for the ES assessment of health and wellbeing effects arising from the construction, operation, maintenance and decommissioning of the Suffolk Onshore Scheme. The socio-economic, recreation and tourism receptors that have been identified within the respective study areas surrounding the Suffolk Onshore Scheme include local communities, residents and workers, as well as visitors and users of PRoW, open space and community facilities within the respective study areas.

Proposed Scope of the Assessment

2.12.8.2 A summary of the proposed scope of the assessment is provided in Table 2.12.9.

Table 2.12.9: Proposed scope of the assessment

Receptor	Potential for significant effects	Project phase(s)	Proposed to be scoped in/out and for which option
Local residents, workers and visitors within the relevant technical assessment study areas.	Potential health related effects experienced as a result of the Suffolk Onshore Scheme would be determined through the topic specific assessments, but are expected to include air quality, noise and vibration, landscape amenity and traffic and transport effects during the construction, maintenance and decommissioning phase, and noise and vibration during the operational phase.	Construction, maintenance and decommissioning	**Scoped in for all options**
		Operation	**Scoped in for all options**
Users of PRoW and recreational routes within 500m of Suffolk Scoping Boundary.	Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	Construction, maintenance and decommissioning	**Scoped in for all options**
		Operation	**Scoped in for all options**

Users of open space within 500m of Suffolk Scoping Boundary.	Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	Construction, maintenance and decommissioning	**Scoped in for all options**
		Operation	**Scoped in for all options**
Community facilities within 500m of the Suffolk Scoping Boundary.	Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	Construction, maintenance and decommissioning	**Scoped in for all options**
		Operation	**Scoped in for all options**
Local communities within 1km of the Suffolk Scoping Boundary.	Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with SCC.	Construction, maintenance and decommissioning	**Scoped in for all options**
		Operation	**Scoped in for all options**
Local residents and workers in close proximity to the Suffolk Scoping Boundary.	The Applicant will ensure that policies and procedures are in place at the design phase to ensure that all equipment will comply with public EMF exposure limits.	Construction, maintenance and decommissioning	Scoped out for all options
		Operation	Scoped out for all options

2.13 Cumulative Effects

2.13.1 Introduction

2.13.1.1 This chapter presents how the intra-project and inter-project cumulative effects assessment will consider the potentially significant cumulative effects that may arise from the Suffolk Onshore Scheme. A description of intra-project and inter-project cumulative effects is presented in **Part 1, Chapter 5, EIA Approach and Methodology**.

2.13.1.2 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project;**
- **Part 1, Chapter 5, EIA Approach and Methodology;** and
- **Part 2, Technical Chapters 2-12**.

2.13.1.3 This chapter is supported by the following figures:

- **Figure 2.13.1 Zone of Influence for the Suffolk Onshore Scheme;**
- **Figure 2.13.2 All Projects and Development Plans located within the Zone of Influence for the Suffolk Onshore Scheme;** and
- **Figure 2.13.3 Projects proposed to be taken forward to Stage 2 for the Suffolk Onshore Scheme**.

2.13.2 Intra-Project

2.13.2.1 The proposed method for assessing the intra-project cumulative effects is presented in **Part 1, Chapter 5, EIA Approach and Methodology**. This describes a proposed three staged approach that will be used to assess whether the culmination of effects on an individual receptor is likely to lead to an overall effect of greater significance.

2.13.2.2 The first stage (pre-screening) in the process is to identify whether individual or groups of receptors could be affected by more than one type of effect (usually where they are considered by more than one technical chapter).

2.13.2.3 Where multiple types of effects are considered within one chapter, the findings are not proposed to be presented within the Intra-Project Cumulative Effects Chapter. This is likely to be:

- effects on ecological receptors as the Ecology and Biodiversity Chapter will identify all potential types of effects on ecological receptors; and
- effects on Human Health as the Human Health Chapter will identify all potential types of effect.

2.13.2.4 Where this first stage identifies that either:

- there is only one type of effect for a particular receptor; or
- only one topic has identified effects on that receptor,

- it is considered that there will be no potential for an intra-project effects and receptors will not be taken through to the next stage (screening) of the assessment.

2.13.2.5 An initial pre-screening assessment is presented in Table 2.13.1 showing how the receptor groups are likely to interact between chapters. This will be revisited as part of the ES to ensure all receptors considered within the ES are taken through this pre-screening assessment.

Table 2.13.1: Pre-screening stage

Receptors	Technical chapters+										
	2	3	4	5	6	7	8	9	10	11	12
Landscape elements	✓		✓								
Residential receptors	✓							✓	✓	✓	
Commercial receptors									✓	✓	
Designated Sites	✓	✓			✓			✓	✓	✓	
Ecological receptors	✓	✓						✓			
Notable Habitats (terrestrial and aquatic)	✓	✓		✓				✓			
Designated heritage assets			✓								
Non-designated heritage assets			✓								
Water resources (existing abstractions and discharges)				✓	✓						
Watercourses and waterbodies				✓	✓						
Flood risk receptors				✓							
BMV Agricultural Land						✓					
Agricultural holdings						✓					
Soil						✓				✓	
Public rights of way	✓						✓			✓	
Cycle Routes	✓						✓				
Roads							✓				
Communities	✓				✓				✓	✓	
Geology					✓						
Mineral Reserves					✓						
Groundwater					✓						
Human Health					✓						✓

+ Chapter numbers refer to the Scoping Technical Chapters: Chapter 2 Landscape and Visual (Part 2.2); Chapter 3 Ecology and Biodiversity (Part 2.3); Chapter 4 Cultural Heritage (Part 2.4), Chapter 5 Water Environment (Part 2.5); Chapter 6 Geology and Hydrogeology, (Part 2.6); Chapter 7 Agriculture and Soils (Part 2.7); Chapter 8 Traffic and Transport (Part 2.8); Chapter 9 Air Quality (Part 2.9); Chapter 10 Noise and Vibration (Part 2.10) and Chapter 11 Socioeconomic Recreation and Tourism (Part 2.11); and Human Health (Part 2.12)

2.13.3 Inter-Project

2.13.3.1 The proposed method for assessing the inter-project cumulative effects is presented in **Part 1, Chapter 5, EIA Approach and Methodology**. The following section sets out the methodology for Stage 1 and Stage 2 in relation to the Suffolk Onshore Scheme.

Stage 1

2.13.3.2 Stage 1 of the approach outlined in PINS Advice Note Seventeen requires a 'long list' of other developments to be identified, as well as high level information, such as the location/application boundary. This initial long list is provided in **Appendix 1.5.A Inter Project Cumulative Effects Long List** and will be continually reviewed and updated as required.

Establishing the ZOI

2.13.3.3 The first step in identifying the long list is to establish the Zone of Influence (ZOI) for the Suffolk Onshore Scheme. **Part 1, Chapter 5, EIA Approach and Methodology** describes how the ZOI has been defined based on the largest study area of the technical chapters.

2.13.3.4 The study areas proposed for technical chapters 2-12 are summarised in Table 2.13.2. The rationale for these study areas are explained in section 3 of the relevant technical topic chapters 2-12.

Table 2.13.2: Study areas for environmental topics

Environmental topic	Study areas
Ecology and Biodiversity	10km
Landscape and Visual	3km
Historic Environment	1km
Water Environment, Geology and Hydrogeology, Air Quality	<0.5km
Noise and Vibration, Geology, Agriculture and Soils, Traffic and Transport*	<0.25km

*at this stage construction traffic routes are not yet known, however it is not anticipated that construction traffic routes ultimately assessed within the ES routes would extend beyond 10km due to the proximity of the strategic road network. This will be reviewed once construction traffic routes are known.

2.13.3.5 The largest topic study area has been identified as 10km from the Suffolk Onshore Scheme Scoping Boundary, therefore a ZOI of 20km from the Suffolk Onshore Scheme Scoping Boundary has been set to establish the long list of developments. This is illustrated on **Figure 2.13.1 Zone of Influence for the Suffolk Onshore Scheme**.

2.13.3.6 This will be kept under review of the Project develops and the long list updated as required.

Identify the long list of 'Other Developments'

2.13.3.7 A long list of other projects within the ZOI has been established and is presented in **Appendix 1.5.A Inter Project Cumulative Effects Long List** and on **Figure 2.13.2 Long List Projects within the Suffolk Onshore Scheme Zone of Influence**. This has been established using the guidance provided in Advice Note Seventeen and the 'other developments' have been categorised into three Tiers as described in **Part 1, Chapter 5, EIA Approach and Methodology**. The long list has been established by a search of the Planning Inspectorate's Programme of Projects (undertaken in July 2022) and planning applications held on the following relevant planning authority websites:

- East Suffolk District Council
- Mid Suffolk District Council

2.13.3.8 Allocated sites in Local Plans or other Development Plans which were not yet subject to planning applications have also been identified on the long list.

2.13.3.9 Minor planning applications have been excluded from the assessment, as these relate to projects of small scale and local significance. These projects are highly unlikely to give rise to significant cumulative environmental effects over and above the Suffolk Onshore Scheme in isolation.

Stage 2

2.13.3.10 The long list is presented **in Appendix 1.5.A Inter Project Cumulative Effects Long List** and those projects relevant to the Suffolk Onshore Scheme are illustrated on **Figure 2.13.2 Long List Projects within the Suffolk Onshore Scheme Zone of Influence.** The projects included on the long list were then screened as to the nature and scale of development to identify whether they would be likely to result in a potential for a significant cumulative effect with the Suffolk Onshore Scheme.

2.13.3.11 The long list of projects to be proposed to be taken forward to Stage 2 are listed in Table 2.13.3 below and illustrated on **Figure 2.13.3 Projects proposed to be taken to Stage 2 for the Suffolk Onshore Scheme.**

Table 2.13.3: Projects proposed to be taken forward for Stage 2

ID	Application ref (where applicable)	Planning authority	Project and location	Description	Tier	Distance from Project Scoping Boundary (km)
1	EN10012	PINS	Development Consent Order for the Sizewell C Nuclear Power Station	The Sizewell C Project	Tier 1	0.72
6	EN010078	PINS	East Anglia TWO Offshore	An offshore wind farm which could consist of	Tier 1	1.62

			Windfarm - Southern North Sea approx. 32.6km from the Suffolk Coast. Onshore cable route connecting to onshore substation	up to 75 turbines, generators and associated infrastructure, with an installed capacity of up to 900MW		
7	N/A	PINS	Nautilus - Offshore interconnector between UK and Belgium	Proposed second Interconnector between Great Britain and Belgium. It would create a new 1.4 gigawatts (GW) high voltage direct current (HVDC) electricity link	Tier 2	0.66
202	DC/20/4846 /EIA	East Suffolk	B-17 Solar Farm Parham Airfield Parham Suffolk	EIA Screening Opinion - Proposed Solar Energy Scheme	Tier 2	6.53
221	DC/20/3142 /FUL	East Suffolk	High Lodge Leisure Darsham Road Hinton Blythburgh Saxmundham Suffolk IP17 3QT	Redevelopment of golf course and vacant paddock land for the siting of 170 holiday lodges, 3 tree houses, new Facilities Building, Maintenance and Housekeeping Building, car parking and associated highway works.	Tier 1	4.69
228	DC/21/3254 /FUL	East Suffolk	Land and buildings at Croft Farm Hulver Lane Snape Suffolk IP17 1QU	Change of use for agricultural land and part of an existing agricultural building to a touring caravan site for up to 30 caravans and associated facilities including toilets, showers and a guest reception.	Tier 1	2.29
233	DC/21/5550 /FUL	East Suffolk	Land at Park Farm Loudham Hall Road Loudham Woodbridge Suffolk IP13 0NW	Erection of a solar photovoltaic (PV) array, with a total export capacity of up to 21 MW. Each of the solar panels will be mounted on a fixed panel system. The	Tier 1	10.79

				panels are covered by high transparency solar glass with an anti-reflective coating which minimises glare and glint, while aiding in the maximum absorption of the available sunlight. The panels are dark grey/blue in colour and are mounted on a frame of anodized aluminium alloy and galvanized steel.		
234	DC/19/4987 /EIA	East Suffolk	Land at Rock Barracks Heath Road Woodbridge Suffolk IP12 3LZ	EIA Screening Opinion - Photovoltaic PV Solar Park of approximately 1.5MW along with associated PV equipment.	Tier 2	13.87
245	DC/21/4044 /EIA	East Suffolk	Land south of Darsham Station Main Road Darsham Suffolk	EIA Screening Opinion - Proposed residential development of up to 110 dwellings	Tier 2	4.85
248	DC/21/1001 /FUL	East Suffolk	Land to the north and south of New Road east of Silverlace Green Parham Suffolk	Construction and operation of a solar farm together with all associated works, equipment and necessary infrastructure	Tier 1	7.81
253	DC/21/2387 /EIA	East Suffolk	Land west of Sandpit House and Sewage Pumping Station Loudham Hall Road Pettistree Suffolk	EIA Screening Opinion - Proposed development of a 21 MWp Solar PV Development	Tier 2	7.38
263	DC/22/2276 /EIA	East Suffolk	Proposed reservoir at Grange Farm Yoxford Road Westelton Suffolk	EIA Screen Opinion - Proposed Reservoir.	Tier 1	3.94
266	DC/18/2794 /EIA	East Suffolk	Saxmundham to Peasenhall Water Mains	Installation of approximately 7.7 kilometres of 250mm	Tier 1	6.74

			Installation Suffolk	diameter pipeline between Lodgewood Water Tower in Peasenhall and Saxmundham Water Tower.		
269	DC/17/4188 /EIA	East Suffolk	Site SSP12 Rendlesham Suffolk	Screening opinion - erection of up to 75 dwellings.	Tier 2	10.40
270	DC/19/1637 /FUL	East Suffolk	Sizewell B Power Station Complex and adjoining land Sizewell Power Station Road Sizewell Leiston Suffolk IP16 4UR	1. In outline, comprising a Visitor Centre (maximum 2,000sq.m GEA) and a maximum of 9,500sq.m (GEA) of floorspace to provide administration, storage, welfare and canteen facilities with all matters reserved apart from access. 2. In full, for the demolition of the existing Outage Store, Laydown Area, Operations Training Centre, Technical Training Facility, Visitor Centre, and Rosery Cottage garage; removal of technical training and pool car park (63 spaces), Coronation Wood car park (21 spaces), Visitor Centre car park (16 spaces) and northern outage car park (576 spaces); meantime use of the Technical Training Centre as an interim Visitor Centre followed by its demolition; and erection of new (all floorspace in GEA) Outage Store (2,778sq.m), Laydown Area (11,990sq.m) including New Western Access Road,	Tier 1	0.72

				Yardman's Office (23sq.m), Training Centre (4,032sq.m), Rosery Cottage garage (30sq.m), Replacement Car Park (2,363sq.m) providing 112 spaces, and Outage Car Park (15,525sq.m) providing (576 spaces) including new access road (and alternative access to bridleway), footpath and amended junction at Sizewell Gap; and associated landscaping earthworks/recontouring, tree felling and boundary treatment.		
271	DC/20/4646/FUL	East Suffolk	Sizewell B Sizewell Power Station Complex and adjoining Land Sizewell Power Station Road Sizewell Leiston Suffolk IP16 4UR	Hybrid application seeking outline planning permission, with all matters reserved, for up to 9,500 square metres Gross External Area (GEA) to provide administration, storage, welfare and canteen facilities and a visitor centre of up to 1,000 square metres GEA. Detailed planning permission is sought for demolition of some existing structures and redevelopment to include a training centre and interim visitor centre, an outage store, lay down area, car and cycle parking, landscaping, associated infrastructure (including utilities, plant and highway	Tier 1	0.72

				works), tree felling and other relevant works.		
272	DC/21/5408 /EIA	East Suffolk	Sizewell C Sizewell Power Station Road Sizewell Leiston Suffolk	Formal screening opinion pursuant to Regulation 6 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended)1 (herein referred to as the EIA Regulations) in relation to a proposed development on land north of the Sizewell B Power station, Sizewell, Leiston. The proposed development comprises two types of geotechnical trials, these being: (i) ground anchor trials; and (ii) deep soil mixing trials, both located within the proposed Sizewell C power stations main platform area (herein referred to as the Proposed Development). The trials will be undertaken to inform the geotechnical design development for the enabling works of the proposed Sizewell C power station. The Proposed Development is located within the ESC's administrative boundary.	Tier 1	0.72
277	DC/21/5515 /FUL	East Suffolk	Town Farm Town Farm Lane Kelsale Cum Carlton Saxmundham Suffolk IP17 2RJ	Erection of 21 MW Solar PV Development with associated equipment and ecological improvement works on Land at Town Farm, Town Hall Lane,	Tier 1	3.13

				Kelsale cum Carlton, IP17 2RJ		
278	DC/21/2943 /EIA	East Suffolk	Town Farm Town Farm Lane Kelsale Cum Carlton Suffolk	Screening Opinion - The erection of a 21MWp Solar PV Development	Tier 2	2.98
279	DC/21/4643 /EIA	East Suffolk	UKZ139 BC Wissett Solar Farm Grays Lane Wissett Suffolk	EIA Screening Opinion - Proposed solar photovoltaic (PV) farm, with battery energy storage	Tier 2	16.04
285	DC/21/0002 2	Mid Suffolk	Brundish Manor The Street Brundish Woodbridge Suffolk IP13 8BL	Full Planning Application - Change of Use of land and siting 180No (45kw) photovoltaic array in paddock.	Tier 1	15.23
287	N/A	East Suffolk	EuroLink - Offshore interconnector between UK and The Netherlands	Proposed second link to the Netherlands of 1.4GW by 2030. Current proposal for interconnector / hybrid - windconnector	Tier 3	0
288	N/A	East Suffolk	East Anglia Green	The East Anglia Green Energy Enablement (GREEN) project is a proposal to build a new high voltage network of 150km line reinforcement between Norwich, Bramford and Tilbury.	Tier 3	24

2.13.4 Conclusion

2.13.4.1 As outlined above inter and intra cumulative effects are proposed to be scoped into the EIA and the results will be presented in the Environmental Statement (ES). **Appendix 1.5.A Inter-Project Cumulative Effects Long List** considers each scoped in environmental discipline, the ZOI and whether effects associated with each of the developments could interact with the effects associated with this project. Table 2.13.3 outlines the proposed short-listed developments that further information including, design, location, programme, operation and decommissioning information and reported environmental effects will be gathered for, to inform which of those developments will be assessed as part of the inter-project cumulative effects assessment.

Sea Link

Environmental Impact Assessment Scoping Report
Volume 1 Main Text
Part 3 Kent Onshore Scheme

October 2022



nationalgrid

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3.1 Evolution of the Kent Onshore Scheme

3.1.1 Introduction

3.1.1.1 The current stage of Project design is the result of an iterative process that commenced at project inception when the initial need to reinforce the network in the South East of England was identified in 2019.

3.1.1.2 **Part 1 Chapter 3 Main Alternatives Considered** describes National Grid's approach to options appraisal and summarises both the strategic options that have been considered for the Project and the routeing and siting process. This chapter provides a more detailed summary of the routeing and siting appraisal relevant to the evolution of the Kent Onshore Scheme, from the point at which a preferred strategic option was selected to definition of the Kent Onshore Scheme Scoping Boundary as illustrated on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary**.

3.1.1.3 This chapter should be read in conjunction with:

- **Part 1 Chapter 3 Main Alternatives Considered**;
- **Part 2 Chapter 1 Evolution of the Suffolk Onshore Scheme**; and
- **Part 4 Chapter 1 Evolution of the Offshore Scheme**.

3.1.1.4 This chapter is supported by the following figure:

- **Figure 3.1.1 Evolution of the Kent Onshore Scheme**.

3.1.2 Network Connection Point

3.1.2.1 The preferred strategic option identified Richborough substation as the network connection point in Kent as described in **Part 1, Chapter 3, Main Alternatives Considered**. This was used as the basis for defining the routeing and siting study area and the identification of landfall areas of search, converter station site option areas and terrestrial route corridors in Kent.

3.1.3 Study Area

3.1.3.1 The routeing and siting study area in Kent extended from Herne Bay on the north Kent coast to Kingsdown on the east Kent Coast and, inland, to the settlement of Wingham. The routeing and siting study area is illustrated on **Figure 1.3.1 Routeing and Siting Study Area**.

3.1.4 Landfall Areas of Search

Areas of Search

3.1.4.1 Six landfall areas of search were identified in Kent, which were split geographically across Pegwell Bay, Broadstairs, and the north Kent coast. These are illustrated on **Figure 1.3.3 Kent Landfall Areas of Search**. One area of search (K1) was identified within Pegwell Bay, which stretched from the settlement of Ramsgate to the settlement of Deal. One area (K1a) was identified at Broadstairs at North Foreland between the settlements of Margate and Broadstairs. Four areas of search (K2, K3, K4 and K5) were identified along the north Kent coast between the settlements of Herne Bay and Birchington.

Summary of Appraisal Outcomes

Terrestrial constraints

3.1.4.2 Landfall area of search K1 in Pegwell Bay is broadly split into two. The area to the north of the mouth of River Stour, where the intertidal area is wide (approximately 2km) and the area to the south of the mouth of the River Stour where the intertidal area gradually narrows towards the south.

3.1.4.3 The whole of the landfall area of search is designated as the Thanet Coast and Sandwich Bay Ramsar and SPA, Sandwich Bay SAC and Sandwich Bay to Hacklinge Marshes SSSI. These designations are unavoidable at this landfall area, albeit the width of the designations narrow towards the south due to the narrowing of the intertidal area. There would therefore potentially be more opportunity to avoid direct impacts on the designated sites through the use of trenchless installation methods (subject to confirmation through further studies and ground investigations). Sandwich Bay and Pegwell Bay National Nature Reserve (NNR) is located within this landfall area but could be avoided by landing the cable to the south of the River Stour.

3.1.4.4 Five Golf courses are present within this landfall area. From north to south these are Ebbsfleet, Stonelees, Princes, Royal St George's and Royal Cinque Ports.

3.1.4.5 To the south of the River Stour there are extensive areas of terrestrial flood zone which is not avoidable. Access to this same area is also limited.

3.1.4.6 Landfall K1a is located at North Foreland to the north of Broadstairs. The whole of the landfall area is designated as the Thanet Coast and Sandwich Bay Ramsar and SPA, Thanet Coast SAC, SSSI and Marine Conservation Zone. Whilst all these designated sites would be unavoidable trenchless installation methods could be used to avoid direct effects (subject to confirmation through further studies and ground investigations). Due to the width of both the SAC and MCZ designations, potential direct effects on these sites are unlikely to be avoidable with the use of trenchless installation methods (subject to confirmation through further studies and ground investigations).

3.1.4.7 North Foreland Golf Course is located at this landfall area of search and would be unavoidable.

3.1.4.8 Joss Bay which is a recreational beach location is located within this landfall area of search but could be avoided.

3.1.4.9 Landfalls K2 and K3 are located on the north Kent coast between the settlements of Birchington and Reculver. Thanet Coast and Sandwich Bay Ramsar and SPA and Thanet Coast SSSI and MCZ are unavoidable across both landfall areas of search, but Thanet Coast SAC is avoidable within K3.

3.1.4.10 Both areas are within extensive areas of Flood Zone and access to both landfall areas of search is limited and constrained by the presence of the railway line with no existing access across the railway.

3.1.4.11 Landfall areas of search K4 and K5 are located between the settlements of Reculver and Herne Bay. Thanet Coast and Sandwich Bay Ramsar and SPA and Thanet Coast SSSI are unavoidable across both areas of search. Thanet Coast MCZ is unavoidable within K4 but could be avoided within K5. Other than at the Thanet Coast MCZ, trenchless installation methods (subject to confirmation through further studies and ground investigations) could potentially be used to avoid directly impacting on these designated sites.

3.1.4.12 Reculver Country Park is unavoidable within K4 and K5 is significantly constrained by the settlement of Herne Bay.

Summary of Relevant Marine Alignments

3.1.4.13 It was considered likely that marine alignments to landfall area of search K1 would potentially need to route within Goodwin Sands SAC due to the requirement to cross other marine cables close to this location within sufficient water depth for navigational safety. A landfall to the north of the River Stour would result in direct impacts on the Pegwell Bay designated sites, however it was considered likely that this would be limited to a short term temporary impact and that the more sensitive saltmarsh habitats could be avoided by using trenchless installation methods (subject to confirmation through further studies and ground investigations).

3.1.4.14 The marine approach to landfall area K1a was considered to be relatively unconstrainted, although the landfall area of search overlapped with Joss Bay which is a recreational beach location, meaning there could be a greater temporary reactional impact during construction at this landfall location.

3.1.4.15 All marine approaches to landfall areas of search K2 to K5 would need to route through the Outer Thames Estuary SPA. Due to shipping and navigation constraints in conjunction with the bathymetry of the area it was also not possible to identify feasible marine corridors and subsequent alignments to the west of Margate Long Sands SAC. All marine alignments that approached the landfall areas of search K2 to K5 would need to cross Margate and Long Sands SAC. Due to the benthic interest features that support the designation of this site there is the potential for marine alignments to landfall areas of search K2 to K5 to result in permanent habitat loss within this site.

3.1.4.16 Significant constraints were also identified on the marine route alignments approaching landfalls on the north Kent coast from a physical environment perspective, as it was considered unlikely that an area of mobile sandbank could be avoided. This would present an exposure and engineering risk. It is also likely that routes through this area would interact with key anchorage areas offshore at Margate.

Overall Summary

3.1.4.17 Landfall area of search K1 is constrained by the marine approach associated with the potential interaction with Goodwin Sands MCZ, however it was considered likely that potential effects at the landfall on the designated sites for nature conservation would be limited to short term temporary impacts. Landfall areas to both the north and the south of the mouth of the Stour would be constrained by the golf courses. Construction access would be constrained for landfalls to the south of the river and there would also be more interaction with the Flood Zone.

3.1.4.18 The marine approach to landfall area of search K1a is relatively unconstrained, and it was also considered likely that any impacts on the designated sites for nature conservation would be temporary and short term. The North Foreland golf course would be unavoidable, whilst Joss Bay is avoidable within this search area, it is an important recreational receptor.

3.1.4.19 The marine approaches to the landfalls on the north Kent Coast (K2 to K5) were considered to be significantly constrained by the potential for permanent habitat loss within Margate and Long Sands SAC and the technical and engineering risks associated with potential cable exposure. Terrestrially K5 was significantly constrained by the settlement with Herne Bay and areas K2,K3 and K4 by access.

3.1.5 Converter Station Site Option Areas

Option Areas

3.1.5.1 Two converter site option areas were identified within the routeing and siting study area. Area A is located adjacent to and encompassed by Richborough Energy Park and Area B is located to the north and south of the A299 and adjacent to Manston Business Park. These are illustrated on **Figure 1.3.6 Kent Converter Site Option Areas**.

Summary of Appraisal Outcomes

3.1.5.2 Richborough Energy Park and Richborough Port are located within Area A which provides an opportunity to site the converter station within an area adjacent to similar infrastructure or industrial land uses. Part of the Sandwich Bay to Hacklinge Marshes SSSI extends into this area but converter station siting could avoid this designation. Part of this area is within the Flood Zones 2 and 3 but there are opportunities to site a converter station outside of these zones. The network connection point (Richborough substation) is located within this area therefore minimising the length of HVAC connection back to the network.

3.1.5.3 There is one designated site within Area B, an Anglo-Saxon cemetery and associated remains at Monkton Scheduled Monument; this is located immediately adjacent to the south of the A299, to the north of Monkton. The area contains Manston Business Park, Columbus Avenue Industrial Estate, and an area with larger scale agricultural buildings. Manston airport is located to the southeast. Whilst the existing development in this area is not related to energy there are opportunities to site a converter station adjacent to these other industries. Area B is located further from the network

connection point at Richborough substation and development of a converter station site in this area would require approximately 5km of HVAC connection.

3.1.6 Route Corridors

Route Corridors

3.1.6.1 Seven route corridors were identified, three corridors (green, red, and blue) from landfall area of search K1, one corridor (green) from landfall area of search K1a and three corridors from the landfall areas of search on the north Kent coast (blue corridor from K2, red corridor from K3 and a green corridor from K4). No corridor was identified from landfall area of search K5 due to the terrestrial constraints. These corridors are illustrated on **Figure 1.3.10 Kent Terrestrial Route Corridors**.

Summary of Appraisal Outcomes

3.1.6.2 Of the three corridors that connect with the Pegwell Bay K1 landfall area of search, the red and blue corridors are significantly constrained from a traffic and access perspective, with key issues including access to the east of the River Stour and weight restrictions on local roads around the Sandwich Bay Estate and Royal St George and Royal Cinque Ports golf courses.

3.1.6.3 All three of these corridors interact with several coastal nature conservation designations at the landfall as described in section 3.4.4 with the blue corridor having the potential for the smallest direct interaction.

3.1.6.4 Both the red and the blue corridors extend across a large area of Flood Zone and would require several watercourses associated with the River Stour to be crossed. The blue corridor would require crossing the River Stour at a point where is it designated as a Ramsar, SAC, SPA and SSSI; although, if feasible, the river could be crossed using trenchless techniques (subject to confirmation through further studies and ground investigations).

3.1.6.5 Both the green and red corridors intersect with golf courses; however it is proposed that a trenchless technique, if feasible (subject to confirmation through further studies and ground investigations), would be used at these locations to minimise disturbance.

3.1.6.6 The green corridor which connects to the landfall area of search K1a at Broadstairs crosses a linear belt of development between the settlements of Margate and Ramsgate. This would require routeing the cable along either Star Lane or Farley Road, both of which are heavily constrained by several connected planning allocations for housing as well as a proposed extension to the cemetery. These constraints span the entire corridor west of the Westwood Industrial Estate and these factors significantly constrain this corridor.

3.1.6.7 The three corridors connecting the landfall areas of search located on the north Kent coast (K2, K3 and K4) were all significantly constrained from a traffic and access perspective, due to a weight restricted bridge, sensitive receptors, and carriageway widths that are inadequate to allow two-way HGV movements. It is likely that extensive mitigation would be required, even during temporary construction work to facilitate safe access and to minimise other environmental effects (congestion, delays) that could

arise because of additional HGV construction traffic on poorly suited roads. Careful routeing of the cables could avoid access issues around the Minster Marshes.

3.1.6.8 The green and red corridors interact extensively with areas of Flood Zones 2 and 3 and both had a high number of watercourse crossings in comparison to the blue corridor.

3.1.6.9 There are several scheduled monuments located within each of these three corridors, however the blue corridor is the most constrained, with a combination of scheduled monuments and a proposed planning allocation in the south of Birchington, creating a pinch point that reduces the ability to route away from and around these sites.

3.1.7 Identification of the Preferred Option

3.1.7.1 The evolution of the Kent Onshore Scheme is illustrated on **Figure 3.1.1 Evolution of the Kent Onshore Scheme, Sheets 1 to 4**.

3.1.7.2 The landfall areas of search, converter site option areas, route corridors and nearshore marine alignments considered at the routeing and siting stage are shown on **Figure 3.1.1 Evolution of the Kent Onshore Scheme Sheet 1 of 4**.

3.1.7.3 The marine alignments to the north Kent coast are significantly constrained due to exposure risks to the cable and the potential for permanent habitat loss within Margate and Long Sands SAC. This is shown on **Figure 3.1.1 Evolution of the Kent Onshore Scheme Sheet 2 of 4**.

3.1.7.4 The terrestrial green corridor from landfall K1a was considered to be significantly constrained due to the linear belt of settlement which would require the cables to be installed within the public highway for a section and the planning allocations within this corridor. All three corridors from the landfalls along the north Kent coast (green, red and blue) were considered to be significantly constrained due to traffic and access and needing to cross the railway to obtain access to the landfall. This is shown on **Figure 3.1.1 Evolution of the Kent Onshore Scheme Sheet 3 of 4**.

3.1.7.5 All three corridors that connect with the Pegwell bay landfall area of search K1 interact with sites designated for their nature conservation value; whilst the blue corridor minimises that interaction, it is the longest corridor of the three and would require a crossing of the River Stour at a point where is it designated as a Ramsar, SAC, SPA and SSSI. Access to the red corridor is limited and this corridor would also require a crossing of the River Stour. Both the red and green corridors would require a crossing of a golf course. Whilst the green corridor interacts with a larger area of the designated sites for nature conservation this is likely to be temporary and short term and this corridor represents the most direct connection to either of the converter site option areas and has fewer river and road crossings. Converter site option Area A facilitates the siting of a converter station close to existing similar infrastructure and minimises the lengths of both HVDC cable from a landfall in Pegwell Bay and the HVAC connection back to the network at Richborough Substation compared to Area B. This is illustrated on **Figure 3.1.1 Evolution of the Kent Onshore Scheme Sheet 4 of 4**.

3.1.7.6 Landfall K1, Pegwell Bay green corridor to converter station area A was identified as the preferred solution for the Kent Onshore Scheme.

3.1.8 Stakeholder Feedback and Option Refinement

3.1.8.1 Following engagement with other developers who have subsequently submitted planning applications for other energy developments within Richborough Energy Park, a backcheck and review was undertaken, as the proposed developments significantly constrained the Project being able to connect into the existing network at Richborough substation. As a result, an alternative connection was identified that directly connected onto the existing Richborough to Canterbury 400kV overhead line. A backcheck and review was undertaken of the routeing and siting options in Kent based on this revised connection point and, following this review, the conclusions on the landfall option area, cable corridors and converter station site option area all remained unchanged.

3.1.9 Kent Onshore Scheme Description

3.1.9.1 The Kent Onshore Scheme is illustrated on **Figure 3.1.2 Kent Onshore Scheme** and comprises of:

- HVAC connection, either by overhead line or underground cable, from the existing Richborough to Canterbury 400kV overhead line to a converter station site;
- A new converter station; and
- A HVDC underground cable from the new converter station to a landfall in Pegwell Bay.

3.1.9.2 The graduated swathes shown on **Figure 3.1.2 Kent Onshore Scheme** illustrate the area within the preferred corridors, where, based on the current understanding of baseline conditions the HVAC connection, converter station site and underground HVDC cables are likely to be routed/sited. These will be refined further through both technical and environmental surveys and stakeholder and public feedback.

3.1.9.3 For the purpose of this Scoping Report, **Figure 1.1.1 Project Scoping Boundary** and **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary** encompasses all elements shown on **Figure 3.1.2 Kent Onshore Scheme**. The proposed scope has been based off these scoping boundaries rather than the graduated swathes and the Project as described in **Part 1, Chapter 4, Description of the Project**.

3.2 Landscape and Visual

3.2.1 Introduction

3.2.1.1 This chapter presents how the landscape and visual impact assessment (LVIA) will consider the potentially significant effects on landscape and visual amenity that may arise from the construction and operation, maintenance and decommissioning of the Kent Onshore Scheme (as described in **Part 1, Chapter 4, Description of the Project**). This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an Environmental Impact Assessment (EIA).

3.2.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Kent Onshore Scheme Scoping Boundary hereafter referred to as the Kent Scoping Boundary is illustrated on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary**.

3.2.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project**;
- **Part 1, Chapter 5, EIA Approach and Methodology**; and
- **Part 3, Chapter 1, Evolution of the Kent Onshore Scheme**.

3.2.1.4 This chapter is supported by the following figures:

- **Figure 3.2.1 Topography**;
- **Figure 3.2.2 Landscape Context and Designations**;
- **Figure 3.2.3 Landscape and Seascape Character – National and County**;
- **Figure 3.2.4 Landscape Character – District**;
- **Figure 3.2.5 Bare Earth Zone of Theoretical Visibility**; and
- **Figure 3.2.6 Representative Viewpoint Locations and Screened Zone of Theoretical Visibility**.

3.2.1.5 This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an EIA.

3.2.1.6 Landscape and visual effects are interrelated with other environmental effects but will be assessed separately. Landscape effects associated with the Kent Onshore Scheme relate to the changes to the fabric, character and quality of the landscape and how it is experienced. Visual effects relate closely to changes to the landscape, but also

concern changes in people's views as a result of the introduction of the Kent Onshore Scheme.

3.2.2 Regulatory and Planning Context

3.2.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. Key legislation, policy and guidance relevant to the assessment of potential effects on landscape and visual amenity associated with the construction, operation, maintenance and decommissioning of the Project is presented below.

Legislation

3.2.2.2 At an International and National level, the following legislation is relevant to landscape and visual matters and will be referred to within the LVIA in the Environmental Statement (ES):

- The European Landscape Convention[1].

Planning Policy

National planning policy

3.2.2.3 At National level, the following policy is relevant to landscape and visual matters and will be referred to within the LVIA in the ES:

- Overarching National Policy Statement for Energy – EN-1[2];
- National Policy Statement for Electricity Networks Infrastructure – EN-5[3];
- National Planning Policy Framework[4]; and
- Planning Practice Guidance – Natural Environment[5].

3.2.2.4 The relevant sections of the Overarching National Policy Statement for Energy to landscape and visual matters include:

- 4.5: Criteria for “good design” for energy infrastructure;
- 5.3: Biodiversity and geological conservation;
- 5.7: Historic environment;

[1] Council of Europe (2020). Council of Europe Landscape Convention (ETS No. 176). [online] Available at: https://www.coe.int/en/web/conventions/full-list?module=treaty-detail&treatynum=176

[2] Department of Energy and Climate Change (2011). Overarching National Policy Statement for Energy (EN-1). [online] Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure

[3] Department of Energy and Climate Change (2011). National Policy Statement for Electricity Networks Infrastructure (EN-5). [online] Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure

[4] Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework. [online] Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2

[5] Department for Levelling Up, House and Communities and Ministry of Housing, Communities and Local Government (2019). Planning Practice Guidance – Natural Environment. [online] Available at: https://www.gov.uk/guidance/natural-environment

- 5.9: Landscape and visual; and
- 5.10: Land use including open space, green infrastructure & Green Belt.
- The relevant sections of the National Policy Statement for Electricity Networks Infrastructure to landscape and visual matters include:
- 2.5: Consideration of good design;
- 2.7: Biodiversity and Geological Conservation; and
- 2.8: Landscape and Visual.

3.2.2.5 The draft Overarching National Policy Statement for Energy (EN-1) (September 2021) and draft National Policy Statement for Electricity Networks Infrastructure (EN-5) (September 2021) will be referred to if they become adopted during the lifespan of the Kent Onshore Scheme.

Local planning policy

3.2.2.6 The Kent Onshore Scheme lies within the jurisdiction of Kent County Council. County planning guidance which is relevant to a study of landscape and visual matters and will inform the LVIA in the ES are as follows:

- Kent Historic Landscape Characterisation[6];
- Kent Design Guide[7]; and
- Kent Environment Strategy[8].

3.2.2.7 The Kent Onshore Scheme Scoping Boundary (refer to **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary**) lies within the jurisdiction of Thanet District Council and Dover District Council. Local planning policy for Thanet District Council consists of the Thanet Local Plan (adopted July 2020)[9]. Local Plan policies which are relevant to landscape and visual matters and will inform the LVIA in the ES include:

- SP24: Development in the Countryside;
- SP26: Landscape Character Areas;
- SP27: Green Infrastructure;
- SP28: Protection of the International and European Designated Sites;
- SP30: Biodiversity and Geodiversity Assets;
- Policy SP36: Conservation and Enhancement of Thanet's Historic Environment;

[6] Kent County Council (2001). Kent Historic Landscape Characterisation (volume 1). [online] Available at: https://www.kent.gov.uk/__data/assets/pdf_file/0014/56210/Kent-Historic-Landscape-Character-volume-1.pdf#:~:text=KENT%20HISTORIC%20LANDSCAPE%20CHARACTERISATION%20the%20landscape%20of%20this,the%20county%20until%20the%20spread%20of%20the%20railways.

[7] Kent County Council (2006). Kent Design Guide. [online] Available at: https://www.kent.gov.uk/about-the-council/strategies-and-policies/regeneration-policies/kent-design-guide

[8] Kent County Council (2018). Kent Environment Strategy. [online] Available at: https://www.kent.gov.uk/__data/assets/pdf_file/0008/89351/Kent-environment-strategy-impact-report-2018.pdf#:~:text=The%20Kent%20Environment%20Strategy%20provides%20a%20strategic%20framework,activities%20that%20would%20most%20benefit%20from%20partnership%20working.

[9] Thanet District Council (2020). Thanet District Local Plan. [online] Available at: https://www.thanet.gov.uk/info-pages/local-plan-updates/

- Policy GI06: Landscaping and Green Infrastructure;
- Policy QD01: Sustainable Design;
- Policy QD02: General Design Principles; and
- Policy CC07: Richborough.

3.2.2.8 There are no additional planning guidance documents relevant to landscape and visual matters published by Thanet District Council.

3.2.2.9 Local planning policy for Dover District Council consists of the *Dover District Core Strategy* (adopted February 2010)[10]. Local Plan policies which are relevant to landscape and visual matters and will inform the LVIA in the ES include:

- Policy CP6: Infrastructure;
- Policy CP7: Green Infrastructure Network;
- Policy DM15: Protection of the Countryside;
- Policy DM16: Landscape Character; and
- Policy DM25: Open Space.

3.2.2.10 A number of saved policies from the *Dover District Local Plan* (adopted 2002)[11], are also relevant to landscape and visual matters:

- Policy CO8: Development which would adversely affect a hedgerow; and
- Policy AY7: Open Space and Landscaping.

3.2.2.11 Dover District Council are producing a new Local Plan and have consulted on the Regulation 18 stage *Draft Dover District Local Plan*. Once adopted, the new Local Plan will become the statutory development plan for the Dover District. The Regulation 19 (pre-submission) version is expected in Spring/Summer 2022, which will be relevant to the ES.

3.2.2.12 Additional planning guidance documents relevant to landscape and visual matters published by Dover District Council are set out as follows:

- Dover District Council Green Infrastructure Strategy[12]; and
- Thanet Coast SPA Mitigation Strategy[13].

3.2.1.1 Where relevant to landscape and visual matters, the following neighbourhood plans within the study area will inform the LVIA:

[10] Dover District Council (2010). Core Strategy. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/Adopted-Development-Plans/Core-Strategy.aspx

[11] Dover District Council (2002). Dover District Local Plan 2002. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/Adopted-Development-Plans/Dover-District-Local-Plan-2002.aspx

[12] Dover District Council (2014). Dover District Council Green Infrastructure Strategy. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/PDF/Dover-District-Council-Green-Infrastructure-Strategy.pdf

[13] Dover District Council (2012). Thanet Coast SPA Mitigation Strategy. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/PDF/Thanet-Coast-SPA-Mitigation-Strategy.pdf

- Ash Parish Council Neighbourhood Development Plan 2018-2037[14].

3.2.3 Study Area

3.2.3.1 An initial study area of 3km from the Kent Scoping Boundary has been identified for the landscape and visual assessment and will be referred to as the study area within this chapter from now on. It is judged that significant landscape or visual effects will be unlikely beyond this study area. The LVIA study area is shown on **Figures 3.2.1 – 3.2.6**.

3.2.3.2 The extent of the study area has been informed by a review of the maximum parameters of the Kent Onshore Scheme, desk-based research, the appraisal work undertaken to date to inform the routeing and siting phase of the Kent Onshore Scheme, knowledge of the area alongside a targeted site visit and professional judgement. The study area will be further refined at the detailed assessment stage to ensure a proportional approach, focused on potential significant effects.

3.2.4 Baseline Conditions

3.2.4.1 The following section provides a summary of the baseline environmental conditions within the Kent Scoping Boundary, using the sources of information outlined below.

Data Sources

3.2.4.2 The landscape and visual baseline environment described in this section has been informed by the following data sources:

- Ordnance Survey (OS) mapping, and aerial photography;
- OS Digital Terrain Model (DTM);
- Natural England;
- Historic England;
- National, and local planning policy; and
- Published landscape character assessments.

Baseline Environment

3.2.4.3 An initial study of the baseline environment has been undertaken through desk-based research and a targeted site visit to establish the existing conditions of the landscape and visual resources of the study area as defined in section 3, to inform the previous options appraisal process, and the ongoing design development of the Kent Onshore Scheme.

[14] Ash Parish Council (2021). Ash Parish Council Neighbourhood Development Plan 2018-2037. [online] Available at: https://ashparishcouncil.gov.uk/wp-content/uploads/2021/11/Ash-NDP-Plan-Final-Sept-2021.pdf

3.2.4.4 Desk-based research has involved a review of mapping and aerial photography, planning and policy documents, landscape character assessments, and other sources of information relevant to the baseline environment of the study area.

3.2.4.5 The description of the baseline environment within the LVIA in the ES will provide a description of the identified landscape and visual receptors, indicating their key characteristics and value, against which the potential change arising from the Kent Onshore Scheme will be assessed.

3.2.4.6 Consultation will be held with relevant LPAs and statutory consultees early in the LVIA process. This will help to inform detailed baseline survey and data collection; refinement of the location of representative viewpoints that will form the basis of the visual assessment; and, to agree the approach to mitigation measures and landscape reinstatement.

Relevant designations

3.2.4.7 There are no landscape specific designations within the study area other than Tree Preservation Orders (TPOs), which are not located within the Kent Scoping Boundary.

3.2.4.8 The emerging preference area for the converter station, landfall and HVDC and HVAC corridors fall within the following designations:

- Thanet Coast Special Area of Conservation (SAC);
- Thanet Coast & Sandwich Bay Special Protection Area (SPA);
- Thanet Coast & Sandwich Bay Ramsar Site;
- Sandwich Bay to Hacklinge Marshes Site of Special Scientific Interest (SSSI);
- Sandwich & Pegwell Bay National Nature Reserve (NNR);
- Pegwell Bay Country Park; and
- Coastal Margin Access Land (shown on Ordnance Survey mapping).

3.2.4.9 The study area also includes the following designations:

- Prince's Beachlands Local Nature Reserve (LNR);
- Countryside Rights of Way (CRoW) Section 15 Land;
- Listed buildings (refer to Chapter 3.4, Cultural Heritage); and
- Richborough Castle and Minster Abbey Scheduled Monuments.

3.2.4.10 Whilst effects on these designated areas will not be assessed in the LVIA as they will be considered in other discipline specific chapters, they will inform judgements of landscape value and in the case of Pegwell Bay Country Park, are also an important recreational resource, views from which will be considered as part of the visual assessment.

3.2.4.11 Local designations include Open Space immediately to the east of the emerging HVAC corridor area (designated within *Dover District Core Strategy*). Local Wildlife Sites fall within the emerging HVAC corridor area (designated within *Thanet District Local Plan*).

Landscape character

3.2.4.12 The National, County and District landscape character context of the study area is shown on **Figure 3.2.3 Landscape and Seascape Character – National and County** and **Figure 3.2.4 Landscape Character – District**. At the National level, the study area falls within part of the North Kent Plain National Character Area (NCA)[15], as identified by Natural England.

3.2.4.13 At a County level, landscape character is defined by *The Landscape Assessment of Kent*[16], published by Kent County Council. The study area comprises the following Kent Character Areas (KCAs):

- Thanet;
- The Wantsum and Lower Stour Marshes; and
- East Kent Horticultural Belt.
- At a District level, landscape character is partially defined by the *Thanet District Council Landscape Character Assessment* (TDLCA)[17]. The study area comprises the following Landscape Character Areas (LCAs) and Local Character Areas:
- LCA A: Chalk Plateau - Local Character Area A1: Manston Chalk Plateau;
- LCA B: Chalk Slopes - Local Character Area B1: Wantsum North Slopes;
- LCA C: Undulating Chalk Farmland - Local Character Area C1: St Nicholas at Wade Undulating Chalk Farmland and Local Character Area C2: Central Thanet Undulating Chalk Farmland;
- LCA E: Marshes - Local Character Area E1: Stour Marshes;
- LCA F: Undeveloped Coast – Local Character Area F1: Pegwell Bay; and
- LCA G: Developed Coast – Local Character Area G1: Ramsgate and Broadstairs Cliffs.

3.2.4.14 At a District level, landscape character is partially defined by the *Dover District Council* Landscape *Character Assessment* (DDLCA)[18]. The study area comprises the following Landscape Character Types (LCTs) and LCAs:

- LCT A: River Valleys and Marshes and LCA A2: Ash Levels;
- LCT B: Developed River Valley and LCA B1: Great Stour Sandwich Corridor;
- LCT C: Coastal Marshes and Dunes and LCA C1: Sandwich Bay;

[15] Natural England (2015). National Character Area Profile: 113. North Kent Plain (NE357). [online] Available at: http://publications.naturalengland.org.uk/publication/2900242

[16] Kent County Council (2004). The Landscape Assessment of Kent. [online] Available at: https://www.kent.gov.uk/__data/assets/pdf_file/0014/12461/Landscape-Assessment-of-Kent-October-2004_Part1.pdf#:~:text=The%20Landscape%20Assessment%20of%20Kent%20is%20a%20landscape,sensitivity%20to%20promote%20a%20vision%20for%20each%20area.

[17] Thanet District Council (2017). Thanet District Council Landscape Character Assessment. [online] Available at: https://www.thanet.gov.uk/wp-content/uploads/2020/05/Thanet-LCA-Final-Report-09.081.5-with-plans.pdf

[18] Dover District Council (2020). Dover District Council Landscape Character Assessment. [online] Available at: https://www.doverdistrictlocalplan.co.uk/uploads/pdfs/landscape-character-assessment-2020.pdf

- LCT D: Horticultural Belt and LCA D1: Preston; and
- LCT H: Defensive Hills and LCA H1: Richborough Bluff.

Seascape character

3.2.4.15 The National seascape character context of the study area is shown on **Figure 3.2.3 Landscape and Seascape Character – National and County**. At a National level, seascape character is defined by the Seascape Character Area Assessment East Inshore and East Offshore Marine Plan Areas[19], published by the Marine Management Organisation. The study area comprises the following South East Marine Character Areas (MCAs)[20]:

- 11: Goodwin Sands and North Dover Strait.

Visual receptors

3.2.4.16 Visual receptors that have potential to experience views of all or some of the Kent Onshore Scheme including the landfall, underground HVDC cable corridor, converter station and underground or overground HVAC connection include:

- Settlement (east to west) including south-western edge of Ramsgate, Cliffsend, Ebbsfleet, Richborough, Manston, Minster and Lower Goldstone;
- Isolated and small clusters of dwellings and farmsteads dispersed across the landscape;
- Recreational facilities including at Stoneless Golf Centre, St Augustine's Golf Centre, Prince's Golf Club and Pegwell Bay Country Park;
- Recreational routes and access land including Public Rights of Way (PRoW), the England Coast Path, several recreational routes such as the Thanet Coastal Path and Stour Valley Walk, Coastal Margin Access Land, National Cycle Network (NCN) routes including NCN 15 and NCN 1;
- Employers working at Richborough Energy Park;
- Occupiers of vehicles travelling on A-roads (A256, A299), B-roads and unclassified roads within the study area; and
- Passengers on the Kent Coast Line and Ashford-Ramsgate railway lines.

Representative viewpoint locations

3.2.4.17 The visual assessment will be based on a series of representative viewpoints. These viewpoints have been chosen to provide a representative cross section of receptor types and locations within the study area, focused on those with the potential for

[19] Marine Management Organisation (2012). Seascape character area assessment East Inshore and East Offshore marine plan areas. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/312481/east_seascape.pdf.

[20] Marine Management Organisation (2012). Seascape Character Assessment for the South East Inshore marine plan area, Section 3.3.1, Profile for MCA 11: Goodwin Sands and North Dover Strait. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/750229/South_East_-_Seascape_character_assessment_report.pdf.

significant effects. The representative viewpoint locations have been informed by desk-based work and field work undertaken in May 2022.

3.2.4.18 The chosen representative viewpoint locations for the converter station have also been informed by a Screened Zone of Theoretical Visibility (ZTV) plan, as shown on **Figure 3.2.5 Bare Earth Zone of Theoretical Visibility** and **Figure 3.2.6: Representative Viewpoint Locations and Screened Zone of Theoretical Visibility**. The ZTV has been run for the converter station only, although as the design evolves it will be updated as the location and extent of permanent above ground infrastructure is finalised.

3.2.4.19 The ZTV has been generated using a 'bare ground' 5m OS digital terrain model (DTM) and is based on a maximum height of 30m, located in the centre of the emerging preference area for the converter station. The screening from woodland and buildings is based on the following factors:

- existing buildings have been incorporated into the DTM from OS MasterMap with assigned individual heights and OS Open Map Local (where OS MasterMap data was not available) with an assumed height of 7.5m.
- woodland from the National Forest Inventory (NFI) has also been incorporated into the DTM with an assumed height of 10m.

3.2.4.20 The ZTV indicates areas from where it may be possible to view part of or the entire converter station site. However, the use of the ZTV needs to be qualified by the following considerations:

- the ZTV is limited by the detail of the digital terrain model data used and does not take account of local topographic variations;
- some areas of theoretical visibility may comprise woodland or other vegetation (not accounted for in the NFI) or agricultural land, where there is effectively no public access and the likelihood of views being experienced is consequently low; and
- the ZTV does not take account of the likely orientation of a viewer, such as the direction of travel and there is no allowance for reduction of visibility with distance, weather or light.

3.2.4.21 These limitations mean that the ZTV tends to overestimate the extent of the visibility, both in terms of the area from which the Kent Onshore Scheme is visible and the extent of the converter station site, which is visible. Consequently, the ZTV should be considered as a tool to identify areas of potential visibility for further targeted survey and assessment, and not a measure of the visual effect.

3.2.4.22 Table 3.2.1 details the locations proposed for the representative viewpoints for the Kent Onshore Scheme and their reason for inclusion in the LVIA.

Table 3.2.1: Representative viewpoint locations for the Kent Onshore Scheme

Viewpoint number	Location description	Reason for inclusion
1	Public footpath (0173/TE39/1), north of Richborough Energy Park (approximate grid reference: TR329639)	Representative of recreational receptors including PRoW and users of the local road network, including along Brook Lane and the A256 corridor. Representative of users of the local railway network along the Kent Coast Line and Ashford-Ramsgate railway lines. Located within TDLCA Local Character Area E1: Stour Marshes, in close proximity to the boundary of Local Character Area B1: Wantsum North Slopes.
2	Ebbsfleet Lane, west of Stoneless Golf Centre (approximate grid reference: TR333629)	Representative of users of the local road network, including Ebbsfleet Lane and the A256 route. Representative of residential receptors in scattered properties and recreational users at Stonelees Golf Centre. Located within TDLCA Local Character Area E1: Stour Marshes, in close proximity to Local Character Area B1: Wantsum North Slopes.
3	Pegwell Bay Country Park along England Coast Path, north-east of Richborough Energy Park (approximate grid reference: TR343631)	Representative of recreational users within Pegwell Bay Country Park, users of England Coast Path and users along NCN route 15. Located within TDLCA Local Character Area F1: Pegwell Bay, close to the boundary of Local Character Area E1: Stour Marshes.
4	Saxon Shore Way, west of Richborough Energy Park (approximate grid reference: TR332617)	Representative of recreational users along Saxon Shore Way recreational route and receptors at work within Richborough Energy Park. Located on the boundary of DDLCA LCA A2: Ash Levels and LCA B1: Great Stour Sandwich Corridor.
5	Public footpath (0173/TE32/1), south of Minster (approximate grid reference: TR304639)	Representative of recreational receptors including PRoW and users of the local railway network along the Kent Coast Line and Ashford-Ramsgate railway lines. Representative of residential receptors on the southern edge of the settlement of Minster. Located within TDLCA Local Character Area E1: Stour Marshes, in close proximity to the boundary of Local Character Area B1: Wantsum North Slopes.
6	Saxon Shore Way, adjacent to the River Stour (approximate grid	Representative of recreational users along Saxon Shore Way recreational route. Located on the boundary of TDLCA Local Character Area E1: Stour Marshes and DDLCA LCA A2: Ash Levels.

Viewpoint number	Location description	Reason for inclusion
	reference: TR294631)	
7	Public bridleway (O173/TE29/1), north of Minster (approximate grid reference: TR306655)	Representative of recreational users including PRoW and users of the local road network, including the A299 route. Representative of residential receptors on the northern edge of the settlement of Minster. Located on the boundary of TDLCA Local Character Area B1: Wantsum North Slopes and Local Character Area A1: Manston Chalk Plateau.
8	Thorne Hill, just south of the A299 road corridor (approximate grid reference: TR327654)	Representative of scattered residential receptors to the east of the settlement of Minster and roads users including from Way Hill, Thorne Hill and the A299 corridor. Located within TDLCA Local Character Area A1: Manston Chalk Plateau, in close proximity to Local Character Area B1: Wantsum North Slopes.
9	Traffic free-cycle route along Chalk Hill (NCN route 15), west of Ramsgate (approximate grid reference: TR361646)	Representative of recreational users along Chalk Hill and NCN route 15. Representative of the south-western residential edge of the settlement of Ramsgate. Located within TDLCA Local Character Area B1: Wantsum North Slopes.
10	England Coast Path, West Cliff, Ramsgate (approximate grid reference: TR370641)	Representative of recreational users along the England Coast Path, at West Cliff, Ramsgate. Located on the edge of TDLCA LCA G1: Ramsgate and Broadstairs Cliffs.
11	Stour Valley Walk, east of Richborough Energy Park (approximate grid reference: TR351615)	Representative of recreational users along the Stour Valley Walk recreational route, within Coastal Margin Access Land and users of Prince's Golf Club. Located within DDLCA LCA C1: Sandwich Bay.
12	Public footpath (0009/EE43/1), north of Richborough Castle (approximate grid reference: TR324603)	Representative of recreational users including users of PRoW and CRoW Act Section 15 Land visiting Richborough Castle and road users along Castle Road. Representative of residential receptors within the settlement of Richborough and users of the local railway network along the Kent Coast Line railway line. Located within DDLCA LCA H1: Richborough Bluff, in close proximity to the boundaries of LCA A2: Ash Levels and LCA B1: Great Stour Sandwich Corridor.

Viewpoint number	Location description	Reason for inclusion
13	Richborough Road, between Lower Goldstone and Richborough (approximate grid reference: TR307609)	Representative of users of the local road network along Richborough Road and users of NCN route 1. Representative of scattered residential receptors between the settlements of Lower Goldstone and Richborough. Located within DDLCA LCA D1: Preston, in close proximity to LCA A2: Ash Levels.

Visualisations

3.2.4.23 Visualisations will be produced, using the maximum development parameters, to illustrate the converter station from all the representative viewpoint locations where it is visible, to assist an understanding of the potential visual effects.

3.2.4.24 No visualisations are proposed for the landfall or underground HVAC or HVDC cable corridors because of the temporary nature of impacts predicted to arise during the construction phase of the Kent Onshore Scheme.

3.2.4.25 If the HVAC connection is overground rather than underground, visualisations from the representative viewpoints will include these works to assist an understanding of the potential visual effects at operation.

3.2.4.26 The methodology for the preparation and presentation of the visualisations will follow the requirements set out in the Landscape Institute, 2019, Technical Guidance Note 06-19: Visual Representation of Development Proposals.

Planned surveys

3.2.4.27 Field surveys of the converter station site, HVAC connection and HVDC corridors and the landfall will be undertaken by Chartered Landscape Architects.

3.2.4.28 An initial field survey has been undertaken in May 2022 to identify the potential landscape and visual receptors and to establish a proportionate study area which is appropriate to identify potentially significant effects.

3.2.4.29 Subsequent field surveys will be completed after Scoping Opinion has been received and consultation has been conducted with relevant Local Planning Authorities (LPAs). These detailed surveys from publicly accessible areas will be used to undertake the landscape and visual assessments, and to capture photography from representative viewpoint locations used in the visual assessment and as supporting figures for the LVIA.

3.2.4.30 Field surveys will include site visits and photography during the winter season i.e., when vegetation cover is generally at its lowest (thus visibility is at its greatest), to enable an appreciation of the extent to which vegetation has a screening function within the landscape, particularly in relation to sensitive receptors, and to understand the likely mitigation requirements.

3.2.4.31 Surveys will be undertaken in line with UK Government guidelines relating to the Covid-19 pandemic and relevant Health and Safety procedures. At the time of writing there are no foreseeable limitations to the LVIA surveys because of Covid-19 restrictions.

Future Baseline

3.2.4.32 With regard to landscape baseline environment reporting, GLVIA3, states that: “The aim should be to describe the landscape as it is at the time but also to consider, if possible, what it may be like in the future, without the proposal.”

3.2.4.33 The LVIA within the ES will consider changes which may affect the future landscape in the absence of the development.

3.2.5 Embedded and Control & Management Measures

Embedded Measures

3.2.5.1 Embedded measures are steps taken during the design phase to help minimise potential effects, based on key sensitivities, constraints and opportunities identified through baseline study. Landscape and visual considerations have been important in informing the converter and landfall site selection process and in identifying potential cable route corridor options, and will continue to inform the form, location and routeing of the various elements throughout the design process.

3.2.5.2 Mitigation measures are those that seek to further reduce potential effects that could not be entirely designed out and are identified and informed by the detailed assessment stage. These include landscape reinstatement and landform and woodland screening and seek to help reduce the extent or significance of negative effects in the long term. In relation to the Kent Onshore Scheme, secondary mitigation measures are likely to include, reinstatement of hedgerows and other vegetation along the cable route and temporary access tracks, and landscape integration of the converter station through planting and landform design.

3.2.5.3 Landscape mitigation measures will be developed to support the landscape strategies and guidelines identified in published landscape character assessments. Details of landscape mitigation measures, such as planting types and species will be developed in consultation with LPAs. Opportunities will also be sought to integrate ecological, drainage and other mitigation measures into an overall landscape and environmental mitigation strategy and masterplan for the Kent Onshore Scheme.

Control and Management Measures

3.2.5.4 An outline Code of Construction Practice (CoCP) is provided in **Appendix 1.4.A Outline Code of Construction Practice**. Measures relevant to the control and management of impacts that could affect the landscape and visual impact assessment are:

- LV01: The contractor(s) will retain vegetation where practicable. Where vegetation is lost and trees cannot be replaced in situ due to the restrictions associated with land rights required for operational safety, native shrub planting approved by National Grid will be used as a replacement, in accordance with the outline vegetation reinstatement plans included within the Landscape Ecological Management Plan (LEMP).
- LV02: The contractor(s) will apply the relevant protective principles set out in British Standard (BS) 5837:2012: Trees in relation to design, demolition and construction. This will be applied to trees within the Order Limits which will be preserved through the construction phase, and to trees outside of the Order Limits where such measures do not hinder or prevent the use of the relevant working width for construction. All works to high grade trees, including trees under Tree Preservation Orders and veteran trees, will be undertaken or supervised by a suitably qualified arboriculturist.
- LV03: A five-year aftercare period will be established for all reinstatement and mitigation planting.

- GG07: A full record of condition will be carried out (photographic and descriptive) of the working areas that may be affected by the construction activities. This record will be available for comparison following reinstatement after the works have been completed to ensure that the standard of reinstatement at least meets that recorded in the pre-condition survey.
- GG08: Land used temporarily will be reinstated where practicable to its pre-construction condition and use. Hedgerows, fences and walls (including associated earthworks and boundary features) will be reinstated to a similar style and quality to those that were removed, with landowner agreement.
- GG09: Where sensitive features are to be retained within or immediately adjacent to the Order Limits, an appropriate protective area will be established using appropriate fencing and signage and will be inspected, repaired and replaced as necessary. The protective areas will be shown on the Retention and Reinstatement Plans contained within the LEMP.

3.2.5.5 Additional measures relating to landscape and visual would include the following:

- limiting the working width of the cable construction corridor and consideration of HDD construction techniques to maintain sensitive landscape features such as mature trees;
- separation and storage of subsoil and topsoil to ensure no degradation in quality and reinstatement undertaken as soon as possible after completion of construction of each section/area of works;
- placement of topsoil to one side of the trench and subsoil to the other, with the additional height of the subsoil storage used on whichever side requires greater screening benefit; and
- reinstatement of hedgerows/field boundaries crossed by the route, with native (and species-rich where appropriate) species planted to reduce or mitigate effects on landscape character and the visual awareness of the cable route within and across the landscape in the short to medium term.

3.2.6 Potential for Significant Effects

3.2.6.1 The LVIA will consider the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project**.

3.2.6.2 The proposed scope of the landscape and visual assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

3.2.6.3 This section identifies the sources and impacts that would occur as a result of the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme.

3.2.6.4 The potential for the Kent Onshore Scheme to result in the potential significant effects described in this section takes into account the embedded and control and management measures described in section 5.

Sources of construction impacts

- construction compounds;
- temporary accommodation;
- access tracks;
- construction plant and vehicle movement;
- topsoil stripping and earthworks; and
- introduction of localised lighting.

Sources of operational impacts

- permanent overground infrastructure, including converter station and HVAC overhead line (to be decided);
- permanent underground infrastructure, including HVDC underground cable (and HVAC if decision to be underground); and
- operational lighting at the converter station.

Sources of maintenance impacts

- vehicle movement to carry workers in and out of the converter station site along with new materials and equipment to replace the old;
- occasional movement of vehicles along the overhead HVAC connection for an annual inspection (from the ground or helicopter) and for vegetation management, telecommunications and fibre optic maintenance;
- activity along the overhead HVAC connection should refurbishment be required; and
- access tracks with temporary vehicle movement for cable repairs.

Sources of decommissioning impacts

- decommissioning compounds and temporary office accommodation and welfare facilities;
- construction plant and vehicle movement associated with the removal of permanent above ground infrastructure including the converter station;
- redundant cables could be left in-situ, however where this is not possible construction plant and vehicle movement associated with the removal of cables to be disposed of; and
- reinstatement of converter station site.

Potential impacts

3.2.6.5 The siting of the landfall and converter station sites and the routeing of the underground HVDC and underground or overground HVAC cable corridors has reduced the potential for significant landscape and visual effects, through seeking to avoid the more sensitive landscape features such as protected trees (e.g., Tree Preservation Orders) and proximity to settlement. Where the removal of landscape features along the HVDC and HVAC cable corridors are unavoidable such as hedgerows and arable land, these will be fully reinstated to the pre-existing condition as far as reasonably practical (secured through a CoCP and DCO Requirements) once installation of the cables is complete.

3.2.6.6 As a result, the LVIA of the landfall and underground cable corridors will be focused on the construction phase as operational effects are not considered to be significant. This is underpinned by professional judgement and past experience of similar HVDC link projects. Effects on the landscape and visual resource as a result of the introduction of the converter station and if the HVAC corridor is an overhead connection, will be assessed both at construction and operation (at year 1 of operation (winter) and year 15 of operation (summer) once any mitigation planting has established). Decommissioning and maintenance effects are considered to be similar to and no worse than those assessed during the construction phase of works.

3.2.6.7 The following table lists all sources of potential impacts that could lead to potential significant effects on landscape character and visual amenity during each stage of the Kent Onshore Scheme and identifies those that have less potential to result in a significant effect with an explanation. The impacts relate to the LVIA methodology (detailed at section 7) and are split into landscape character and visual amenity for each source.

3.2.6.8 Table 3.2.2 identifies the potential impact that could result from the sources identified above.

Table 3.2.2: Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction, Maintenance and Decommissioning	Construction activity including construction compounds, temporary accommodation and access tracks, construction plant and vehicle	Temporary alteration to landscape character	Yes - Due to the short-term duration and temporary nature of activity, potential effects whilst have less potential to be significant will be considered within the LVIA.	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
	movement, topsoil stripping and earthworks and introduction of localised lighting.	Temporary alteration to visual amenity	Yes - Due to the short-term duration and temporary nature of activity, potential effects whilst have less potential to be significant will be considered within the LVIA.	**Scoped in**
Operation	Operational converter station	Alteration to landscape character	Yes - Potential to result in a significant effect.	**Scoped in**
		Alteration to visual amenity	Yes - Potential to result in a significant effect.	**Scoped in**
Operation	Introduction of operational lighting at the converter station	Alteration to landscape character and visual amenity as a result of operational lighting	No - There is less potential that significant effects will result on landscape character or visual amenity as any additional lighting will be limited to maintaining site security and safety and would be within the context of existing lighting at Richborough Energy Park and adjacent development. Should the approach to lighting change, this aspect will be scoped into the landscape	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			and visual assessments.	
Operation	Operational HVAC overhead line (to be decided)	Alteration to landscape character	Yes - Whilst the introduction of an overhead line HVAC connection has less potential to result in significant effects on landscape character at operation given the existing context of overhead lines and vertical structures, it will be scoped into the landscape assessment to ensure that potential effects on wirescape are appropriately covered.	**Scoped in**
		Alteration to visual amenity	No - The introduction of an overhead line HVAC connection has less potential to result in significant effects on visual amenity at operation given the existing context of vertical structures, including a wind turbine, communication masts and	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			numerous overhead lines terminating at Richborough substation. However, in order to ensure that potential effects on the additional wirescape are adequately covered, it will be scoped into the visual assessment.	
Operation	Operational HVDC underground cable (and HVAC if decision to be underground)	Alteration to landscape character	No - Less potential to have significant effects on landscape character at operation. The landscape will be returned to previous land use and landscape components lost at construction will be reinstated as soon as reasonably practical after construction.	Scoped out
		Alteration to visual amenity	No - Less potential to have significant effects on visual amenity at operation. The landscape will be returned to previous land use and landscape	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			components lost at construction will be reinstated as soon as reasonably practical after construction.	

Impact Pathways with Receptors (Step 2)

3.2.6.9 This section identities whether there are any impact pathways from the impacts identified above that could give rise to potentially significant effects on the receptors within the study area.

3.2.6.10 Table 3.2.3 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Kent Onshore Scheme as shown on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary** and **Figure 3.1.2 Kent Onshore Scheme.**

Table 3.2.3: Impact pathways with receptors

Impact pathway	Receptors	Potential for significant effect	Proposed to be scoped in/out
Temporary alteration to landscape character from the introduction of construction activity including compounds, temporary accommodation and access tracks, construction plant and vehicle movements, topsoil stripping and earthworks, storge of materials and lighting	TDLCA Local Character Areas A1, B1, E1, F1, G1 and DDLCA LCA A2, B1, C1, D1 and H1.	Yes - The Kent Scoping Boundary lies within and near to multiple published LCAs, of which there is the potential for temporary and short-term effects. Whilst less potential to result in significant effects at construction, they will be considered as part of the construction phase assessment.	**Scoped in for construction, maintenance and decommissioning**

Impact pathway	Receptors	Potential for significant effect	Proposed to be scoped in/out
Temporary alteration to visual amenity from the introduction of construction activity including compounds, temporary accommodation and access tracks, construction plant and vehicle movements, topsoil stripping and earthworks, storge of materials and lighting	Settlement, isolated dwellings, recreational facilities, recreational routes and access land, employees, occupiers of vehicles and railway line passengers.	Yes - The Kent Scoping Boundary is potentially visible from a range of visual receptors, of which there is the potential for significant effects at construction from close range receptors. However, due to the short duration and temporary nature of the works there is potential that the majority of visual effects at construction will not be significant.	**Scoped in for construction, maintenance and decommissioning**
Permanent alteration to landscape character as a result of the operational converter station and HVAC connection if above ground	TDLCA Local Character Areas B1, E1, F1, G1 and DDLCA LCA A2 and C1.	Yes - The Kent Scoping Boundary lies within multiple published LCAs, of which there is the potential for significant effects at operation.	**Scoped in for operation**
Permanent alteration to landscape character and perceptual qualities as a result of the operational converter station	TDLCA Local Character Areas A1 and DDLCA LCAs B1, D1 and H1.	No - The Kent Scoping Boundary does not lie within these LCAs. Whilst there is the potential for indirect effects on the perceptual qualities of these LCAs there is less potential that the effects would be significant.	Scoped out for operation

Impact pathway	Receptors	Potential for significant effect	Proposed to be scoped in/out
Temporary and permanent alteration to landscape character and perceptual qualities as a result of the construction and operation of the converter station, HVDC and HVAC.	TDLCA Local Character Areas C1 and C2	No - There is no theoretical visibility between any aspect of the Kent Scoping Boundary during construction and operation and consequently there are not considered to be any effects on this LCA.	Scoped out for construction, maintenance, operation and decommissioning
Alteration to visual amenity from the operational converter station and HVAC connection if above ground.	Settlement, isolated dwellings, recreational facilities, recreational routes and access land, employees, occupiers of vehicles and railway line passengers.	Yes - The Kent Scoping Boundary will be potentially visible from a range of visual receptors, of which there is a potential significant effect at operation.	**Scoped in for operation**

3.2.7 Proposed Assessment Methodology

Proposed Data Sources

3.2.7.1 The following data sources are proposed to be used to inform the assessment:

- Ordnance Survey (OS) mapping, and aerial photography;
- OS Digital Terrain Model (DTM);
- Natural England;
- Historic England;
- National, and local planning policy; and
- Published landscape character assessments.

Guidance

3.2.7.2 The landscape and visual assessment will be carried out in accordance with the following good practice and guidance documents:

- Guidelines for Landscape and Visual Impact Assessment: Third edition (GLVIA3)[21];
- Assessing landscape value outside national designations - Technical Guidance Note 02/21[22];
- Design Principles for National Infrastructure[23];
- Infrastructure - Technical Guidance Note 04/20[24];
- Tranquillity – An overview – Technical Information Note 01/17[25]; and
- Visual Representation of Development Proposals – Technical Guidance Note 06/19[26] .

3.2.7.3 *GLVIA3* places a strong emphasis on the importance of professional judgement in identifying and defining the significance of landscape and visual effects. The LVIA will be undertaken by Chartered Landscape Architects with experience in the assessment of similar types of HVDC link project. Professional judgement will be used in combination with structured methods and criteria to evaluate landscape and visual value and susceptibility, the resulting sensitivity, magnitude and significance of effect.

Proposed Assessment Methodology

3.2.7.4 The following section summarises the methodology for the LVIA which builds on the general assessment methodology presented in **Part 1, Chapter 5, EIA Approach and Method**. For clarity and in accordance with good practice, the assessment of potential effects on landscape character and visual amenity, although closely related, are undertaken separately.

Sensitivity

Landscape receptors

3.2.7.5 Landscape receptors are described as components of the landscape that have the potential to be affected by the Kent Onshore Scheme. These can include overall character and key characteristics, individual elements or features and specific aesthetic or perceptual aspects. It is the interaction between the different components of the Project and these landscape receptors which has potential to result in landscape effects (both adverse and beneficial).

[21] Landscape Institute and Institute of Environmental Management and Assessment (2013). Guidelines for Landscape and Visual Impact Assessment, Third Edition. Landscapes Institute.

[22] Landscape Institute (2021). Technical Guidance Note 02/21 - Assessing landscape value outside national designations. [online] Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2021/05/tgn-02-21-assessing-landscape-value-outside-national-designations.pdf

[23] National Infrastructure Commission Design Group (2020). Design Principles for National Infrastructure. [online] Available at: https://nic.org.uk/app/uploads/NIC-Design-Principles.pdf

[24] Landscape Institute (2020). Infrastructure - Technical Guidance Note 04/2020. [online] Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2018/01/LI-Infrastructure-TGN-FINAL-200924.pdf

[25] Landscape Institute (2017). Tranquillity – An overview, Technical Information Note 01/17. [online] Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2017/02/Tranquillity-An-Overview-1-DH.pdf

[26] Landscape Institute (2019). Visual Representation of Development Proposals, Technical Guidance Note 06/19. [online] Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf

3.2.7.6 The sensitivity of the landscape receptor is a combination of the value of the landscape (undertaken as part of the baseline study) and the susceptibility to change of the receptor to the specific type of development being assessed.

3.2.7.7 Landscape value is frequently addressed by reference to international, national, regional and local designations, determined by statutory bodies and planning agencies. Absence of such a designation does not necessarily imply a lack of quality or value. Factors such as accessibility and local scarcity can render areas of nationally unremarkable quality, highly valuable as a local resource.

3.2.7.8 The evaluation of landscape value will be undertaken considering the following factors and classified as high, medium or low with evidence provided as to the basis of the evaluation. These are taken from the *Assessing landscape value outside national designations - Technical Guidance Note 02/21*.

- "Natural heritage – Landscape with clear evidence of ecological, geological, geomorphological or physiographic interest which contribute positively to the landscape.
- Cultural heritage – Landscape with clear evidence of archaeological, historical or cultural interest which contribute positively to the landscape.
- Landscape condition – Landscape which is in a good physical state both with regard to individual elements and overall landscape structure.
- Associations – Landscape which is connected with notable people, events and the arts.
- Distinctiveness – Landscape that has a strong sense of identity.
- Recreational – Landscape offering recreational opportunities where experience of landscape is important.
- Perceptual (scenic) – Landscape that appeals to the senses, primarily the visual sense.
- Perceptual (wildness and tranquillity) – Landscape with a strong perceptual value notably wildness, tranquillity and/or dark skies.
- Functional - Landscape which performs a clearly identifiable and valuable function, particularly in the healthy functioning of the landscape."

3.2.7.9 Landscape susceptibility relates to the ability of a particular landscape to accommodate the Kent Onshore Scheme. It is appraised through consideration of the baseline characteristics of the landscape, and in particular, the scale or complexity of a given landscape. The evaluation of landscape susceptibility will be defined as high, medium or low and will be supported by a clear explanation based upon the analysis of the landscape receptor and the extent to which it is able to accommodate the type of change proposed, specific to the Kent Onshore Scheme.

3.2.7.10 The overall sensitivity assessment of the landscape receptor is made by employing professional judgement to combine and analyse the identified value and susceptibility with overall levels given from high, medium to low. Table 3.2.4 below outlines indicators that inform landscape value, susceptibility and sensitivity. The basis of the assessment will be made clear in the evaluation of each landscape receptor.

Table 3.2.4: Sensitivity of landscape receptors

	Higher sensitivity	Lower sensitivity
Value	A designated landscape (National Park, Area of Outstanding National Beauty, National Scenic Area, World Heritage Site) or a landscape in very good condition, exceptional scenic quality and high recreational opportunities or a high degree of rarity.	Landscapes containing few if any notable elements/features, of poor condition or containing several detracting features and limited aesthetic qualities. Landscapes which are not formally designated.
Susceptibility	Attributes that make up the character of the landscape which offer very limited opportunities to accommodate change of the type proposed without fundamentally altering key characteristics.	Attributes that make up the character of the landscape which are tolerant of a large degree of the type of change proposed without fundamentally altering the key characteristics.

Visual receptors

3.2.7.11 Sensitivity of visual receptors is defined through appraisal of the viewing expectation, or value placed on the view as identified in the baseline study, and its susceptibility to change.

3.2.7.12 Value of the view is an appraisal of the value attached to views and is often informed by the appearance on Ordnance Survey or tourist maps and in guidebooks, literature or art or identified in policy. Value can also be indicated by the provision of parking or services and signage and interpretation. The nature and composition of the view and its scenic quality is also an indicator. The value of the view is classified as high, medium or low and will be supported by evidenced, professional judgements.

3.2.7.13 The susceptibility of visual receptors is a function of the occupation or activity of people experiencing the view and the extent to which their attention or interest is focused on the view and the visual amenity they experience at a particular location. For example, residents in their home, walkers whose interest may tend to be focused on the landscape or a particular view, or visitors at an attraction where views are an important part of the experience, may indicate a higher level of susceptibility. Whereas, receptors occupied in outdoor sport where views are not important or at their place of work could be considered less susceptible to change.

3.2.7.14 As with landscape susceptibility, judgements about the susceptibility of visual receptors are described as high, medium or low using consistent and reasoned judgements.

3.2.7.15 The overall sensitivity assessment of the visual receptor is determined by employing professional judgement to combine and analyse the identified value and susceptibility ratings. Overall visual sensitivity will be rates as high, medium or low. Table 3.2.5 below outlines indicators that inform value for the view, susceptibility and sensitivity of visual receptors. The basis of the assessment is made clear in the evaluation of each visual receptor.

Table 3.2.5: Sensitivity of visual receptors

	Higher sensitivity ⟷ Lower sensitivity	
Value	Views protected by designation, or nationally recognised, or recorded on maps/guidebooks or with cultural associations. Views that have high scenic qualities relating to the content and composition of the view.	Views which are not documented or protected with minimal or no cultural associations. Views that exhibit low scenic qualities relating to the content and composition of the view.
Susceptibility	Viewers whose attention or interest is focused on their surroundings.	People whose attention or interest is not focused on their surroundings and where the view is incidental to their enjoyment.

Magnitude of effect

Landscape

3.2.7.16 Landscape magnitude of effect refers to the extent to which the Kent Onshore Scheme will alter the existing characteristics of the landscape. It is an expression of the size or scale of change to the landscape, the geographical extent of the area influenced and its duration and reversibility. The variables involved are described below:

- the extent of existing landscape elements that will be lost, the proportion of the total extent that this represents and the contribution of that element to the character of the landscape;
- the extent to which aesthetic or perceptual aspects of the landscape are altered either by removal of existing components of the landscape or by addition of new ones;
- whether the change alters the key characteristics of the landscape, which are integral to its distinctive character;
- the geographic area over which the change will be felt (within the application boundary itself, the immediate setting, at the scale of the landscape character area, on a larger scale influencing several landscape character areas); and

- the duration of the change short term, medium term or long term (which is defined in **Part 1, Chapter 5, EIA Approach and Method**), and its reversibility (whether it is permanent, temporary or partially reversible).

3.2.7.17 An overall assessment of the magnitude of landscape effect resulting from the Kent Onshore Scheme on the landscape receptor is made combining the above judgements using evidence and professional judgement. The levels of magnitude of change are described as being very large, large, medium, small, negligible and are defined below in Table 3.2.6.

Table 3.2.6: Magnitude of effect – landscape receptors

Magnitude	Criteria
Very Large	Substantial alteration to the landscape receptor or may impact an extensive area or unique characteristics at a local level. May be longer term, permanent or reversible.
Large	Large alteration to the landscape receptor or may impact an extensive area or unique characteristics at a local level. May be longer term, permanent or reversible.
Medium	Partial alteration to the landscape receptor or may impact a wide area or characteristics at a local level. May be medium term, permanent or reversible.
Small	Slight alteration to the landscape receptor or may impact a restricted area and few key characteristics. May be short to medium term, permanent or reversible.
Negligible	Very slight alteration to the landscape receptor or may impact a limited area or no key characteristics. May be short term, permanent or reversible.
None	No change to the landscape receptor.

Visual

3.2.7.18 Visual magnitude of effect relates to the extent to which the Kent Onshore Scheme will alter the existing view and is an expression of the size or scale of change in the view, the geographical extent of the area influenced and its duration and reversibility. The variables involved are described below:

- the scale of the change in the view with respect to the loss or addition of features in the view and changes in its composition, including the proportion of the view occupied by the Kent Onshore Scheme;
- the degree of contrast or integration of any new features or changes in the form, scale, composition and focal points of the view;
- the nature of the view of the Kent Onshore Scheme in relation to the amount of time over which it will be experienced and whether views will be full, partial or glimpsed;

- the angle of view in relation to the main activity of the receptor, distance of the viewpoint from the Kent Onshore Scheme and the extent of the area over which the changes will be visible; and
- the duration of the change short term, medium term or long term (which is defined in **Part 1, Chapter 5, EIA Approach and Method**) and its reversibility (whether it is permanent, temporary or partially reversible).

3.2.7.19 An overall assessment of the magnitude of visual effect resulting from the Kent Onshore Scheme on the visual receptor is made combining the above judgements using evidence and professional judgement. The levels of magnitude of change are described as being very large, large, medium, small, negligible and none are defined below.

Table 3.2.7:Magnitude of effect – visual receptors

Magnitude	Criteria
Very Large	A substantial change to the composition of the view or change that may be viewed in the foreground or directly. May be longer term, permanent or reversible.
Large	A pronounced change to the composition of the view or change that may be viewed in the foreground or directly. May be longer term, permanent or reversible.
Medium	A noticeable change to the composition of the view or change that may be viewed in the middle ground or indirectly. May be medium term, permanent or reversible.
Small	An unobtrusive change in the composition of the view or change that may be viewed in the background or obliquely. May be short to medium term, permanent or reversible.
Negligible	A barely perceptible change in the composition of the view or change that may be viewed in the background and/or very obliquely. May be short term, permanent or reversible.
None	No change to the view.

Significance of Effects

3.2.7.20 Determination of the significance of landscape and visual effects will be undertaken by employing professional judgement and experience to combine and analyse the magnitude of change against the identified sensitivity of the receptor. The assessments will take account of direct and indirect change on existing landscape elements, features, key characteristics and evaluates the extent to which these will be lost or modified, in the context of their importance in determining the existing baseline character. The visual assessment will take into account potential changes to the visual composition, including the extent to which new features will distract or screen existing elements in the view or disrupt the scale, structure or focus of the existing view.

3.2.7.21 The levels of landscape and visual effects will be described with reference to the criteria outlined below in Table 3.2.8. For the purposes of this assessment, effects of moderate or above are generally considered to be significant.

Table 3.2.8: Significance of effect

Significance of effect	Landscape	Visual
Major Beneficial	Alterations that result in a considerable improvement of the existing landscape resource. Valued characteristic features would be restored or reintroduced.	Alterations that typically result in a pronounced improvement in the existing view.
Moderate Beneficial	Alterations that result in a partial improvement of the existing landscape resource. Valued characteristic features would be largely restored or reintroduced.	Alterations that typically result in a noticeable improvement in the existing view.
Minor Beneficial	Alterations that result in a slight improvement of the existing landscape resource. Characteristic features would be partially restored.	Alterations that typically result in a limited improvement in the existing view.
Negligible Beneficial	Alterations that result in a very slight improvement to the existing landscape resource, not uncharacteristic within the receiving landscape.	Alterations that typically result in a barely perceptible improvement in the existing view.
Neutral	No alteration to any of the components that contribute to the existing landscape resource.	No change to the existing view.
Negligible Adverse	Alterations that result in a very slight deterioration to the existing landscape resource, not uncharacteristic within the receiving landscape.	Alterations that typically result in a barely perceptible deterioration in the existing view.
Minor Adverse	Alterations that result in a slight deterioration of the existing landscape resource. Characteristic features would be partially lost.	Alterations that typically result in a limited deterioration in the existing view.
Moderate Adverse	Alterations that result in a partial deterioration of the existing landscape resource. Valued characteristic features would be largely lost.	Alterations that typically result in a noticeable deterioration in the existing view.

Major Adverse	Alterations that result in a considerable deterioration of the existing landscape resource. Valued characteristic features would be wholly lost.	Alterations that typically result in a pronounced deterioration in the existing view.

3.2.8 Conclusion

3.2.8.1 The LVIA will be undertaken in accordance with GLVIA3 and current good practice guidance. The landscape assessment will consider potential effects on recognised National, County and Local landscape character areas and relevant designations. The visual assessment will be based on a series of representative viewpoint locations which will be informed by detailed baseline study and defined in consultation with statutory consultees.

3.2.8.2 The LVIA will also consider the potential for cumulative effects resulting from the addition of the Kent Onshore Scheme in relation to other similar developments. Mitigation measures will also be developed and informed by the detailed baseline and assessment stages and will seek to minimise potential adverse effects. This will focus on the reinstatement of the cable corridors and integrating and partially screening views of the converter station.

3.2.8.3 As there is the potential for long-term landscape and visual effects associated with the converter station the LVIA will be included within the main ES. However, given the temporary and reversible effects associated with the HVAC and HVDC cable corridors, it is proposed that operational phase effects associated with the HVAC and HVDC cable corridors will be scoped out of the LVIA. If the HVAC corridor requires an above ground solution, this will also be scoped into the operational phase assessment of the LVIA.

Proposed Scope of the Assessment

3.2.8.4 A summary of the proposed scope of the assessment is provided in Table 3.2.9.

Table 3.2.9: Proposed scope of the assessment

Receptors	Potential for significant effect	Project phase(s)	Proposed to be scoped in/out
TDLCA Local Character Areas A1, B1, E1, F1, G1 and DDLCA LCA A2, B1, C1, D1 and H1.	Temporary alteration to landscape character from construction activity and operations.	Construction Maintenance Decommissioning	**Scoped in**
TDLCA Local Character Areas	Alteration to landscape character from the	Operation	**Scoped in**

B1, E1, F1, G1 and DDLCA LCA A2 and B1.	operational converter station and HVAC if above ground connection.		
Settlement, isolated dwellings, recreational facilities, recreational routes and access land, employees, occupiers of vehicles and railway line passengers.	Alteration to visual amenity from the introduction of construction activity and operations.	Construction Maintenance Decommissioning	**Scoped in**
	Alteration to visual amenity from the operational converter station and HVAC if above ground connection.	Operation	**Scoped in**
TDLCA Local Character Area A1 and DDLCA LCAs D1 and H1.	Alteration to landscape character and perceptual qualities as a result of the operational converter station.	Operation	Scoped out
TDLCA Local Character Area C1 and C2.	Alteration to landscape character and perceptual qualities as a result of the construction and operation of the converter station, HVDC and HVAC.	Construction, Operation, Maintenance and Decommissioning	Scoped out

3.3 Ecology and Biodiversity

3.3.1 Introduction

3.3.1.1 This chapter presents how the Ecology and Biodiversity assessment will consider the potentially significant effects that may arise from the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme (as described in **Part 1, Chapter 4, Description of the Project**) upon terrestrial ecology and biodiversity. T This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an Environmental Impact Assessment (EIA).

3.3.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Kent Onshore Scheme Scoping Boundary hereafter referred to as the Kent Scoping Boundary is illustrated on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary**.

3.3.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project**;
- **Part 1, Chapter 5, EIA Approach and Methodology**; and
- **Part 3, Chapter 1, Evolution of the Kent Onshore Scheme**.

3.3.1.4 This chapter is supported by the following figure:

- **Figure 3.3.1 Statutory Designated Ecological Features**.

3.3.2 Regulatory and Planning Context

3.3.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. Key legislation, policy and guidance relevant to the assessment of potential effects on protected nature conservation sites, significant habitats, protected and/or, notable species as well as invasive non-native species associated with the construction, operation, maintenance and decommissioning of the Project is presented below.

Legislation

3.3.2.2 The below legislation will be considered when identifying potential constraints to the Kent Onshore Scheme, design options and mitigation. Compliance with the above legislation may require obtaining relevant protected species licences prior to the implementation of the Project.

- The Conservation of Habitats and Species Regulations 2017[27] (as amended);
- The Natural Environment and Rural Communities (NERC) Act 2006[28];
- The Countryside and Rights of Way (CRoW) Act 2000[29];
- Wildlife and Countryside Act 1981 (as amended)[30]
- Environment Act 2021[31];
- Animal Welfare Act 2006[32];
- Protection of Badgers Act 1992[33];
- The Wild Mammals (Protection) Act 1996[34];
- The Hedgerow Regulations 1997[35]; and
- Invasive Alien Species (Enforcement and Permitting) Order 2019 (as amended)[36].

Planning Policy

National planning policy

3.3.2.3 The assessment will take account of the relevant National Policy Statements (NPSs) for energy: the Overarching National Policy Statement for Energy (EN-1) and the National Policy Statement for Electricity Networks (EN-5)[37]. These NPSs are in the process of being updated and therefore relevant sections of the draft NPSs are also included below, where relevant.

3.3.2.4 Paragraph 4.3.1 of the Overarching National Policy Statement for Energy (EN-1) (2011)[38], states what the Secretary of State must, under the Conservation of Habitats and Species Regulations 2017, consider when granting a development consent order with regard to effects on internationally important wildlife sites and the need for Habitats Regulations Assessment. It also clarifies that information to inform the assessment

[27] Conservation of Habitats & Species Regulations 2017 [online]. Available at: https://www.legislation.gov.uk/uksi/2017/1012/contents/made [Accessed 13/07/2022].

[28] Natural Environment and Rural Communities Act 2006 [online]. Available at: https://www.legislation.gov.uk/ukpga/2006/16/contents [Accessed 13/07/2022].

[29] Countryside and Rights of Way Act 2000 [online]. Available at: https://www.legislation.gov.uk/ukpga/2000/37/contents [Accessed 13/07/2022].

[30] Wildlife and Countryside Act 1981 (as amended) 1981 [online]. Available at: https://www.legislation.gov.uk/ukpga/1981/69/contents [Accessed 13/07/2022].

[31] Environment Act 2021 [online]. Available at: https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted [Accessed 13/07/2022].

[32] Animal Welfare Act 2006 [online] Available at: https://www.legislation.gov.uk/ukpga/2006/45/contents [Accessed 13/07/2022].

[33] Protection of Badgers Act 1992 [online]. Available at: https://www.legislation.gov.uk/ukpga/1992/51/contents [Accessed 13/07/2022].

[34] Wild Mammals (Protection) Act 1996 [online]. Available at: https://www.legislation.gov.uk/ukpga/1996/3/contents [Accessed 13/07/2022].

[35] The Hedgerow Regulations 1997 [online]. Available at: https://www.legislation.gov.uk/uksi/1997/1160/contents/made [Accessed 13/07/2022].

[36] The Invasive Alien Species (Enforcement and Permitting) Order 2019 [online]. Available at: https://www.legislation.gov.uk/uksi/2019/527/2021-05-04 [Accessed 13/07/2022].

[37] Department of Energy & Climate Change (2011). National Policy Statement for Electricity Networks Infrastructure. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47858/1942-national-policy-statement-electricity-networks.pdf [Accessed 13/07/2022].

[38] Department of Energy and Climate Change (2011). Overarching National Policy Statement for Energy (EN-1). [online] Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure

must be provided by the applicant. Part 5 section 5.3 of EN-1 sets out guidance on generic impacts relating to biodiversity for the applicant's assessment and decision-making on the application. The Draft Overarching National Policy Statement for Energy (EN-1) (2021)[39] includes guidance for biodiversity net gains in paragraphs 4.5.1 to 4.5.3 and generic impacts on biodiversity in Part 5.4. This guidance has also been considered within this chapter. Section 2.7 of EN-5 provides general information on biodiversity considerations for electricity networks, including that the applicant will need to consider whether the proposed line will cause such problems at any point along its length and take this into consideration in the preparation of the Environmental Impact Assessment (EIA) and ES. Particular consideration should be given to feeding and hunting grounds, migration corridors and breeding grounds.

National planning policy framework

3.3.2.5 The National Planning Policy Framework[40] (NPPF) details the Government's planning policies for England and how these are expected to be applied. It states the commitment of the UK Government to minimising impacts on and providing net gains in biodiversity, contributing to the Government's commitment to halt the overall decline in biodiversity.

3.3.2.6 The NPPF specifies the obligations that Local Authorities and the UK Government have regarding statutory designated sites and protected species under UK and international legislation and how these are to be delivered in the planning system. Protected or notable habitats and species can be a material consideration in planning decisions and may therefore make some sites unsuitable for particular types of development, or if development is permitted, mitigation measures may be required to avoid or minimise impacts on certain habitats and species. Where impact is unavoidable, NPPF outlines that compensation may be required.

Biodiversity Net Gain BNG

3.3.2.7 It is Government policy that planning decisions should minimise impacts on and provide net gain for biodiversity (National Planning Policy Framework 2021)[41]. In addition, the Environment Act 2021 includes provisions to make BNG a mandatory requirement within the planning system in England requiring all relevant developments to achieve a minimum 10% net gain in biodiversity units relative to the Site baseline biodiversity value, it is anticipated the secondary legislation mandating the need for 10% net gain will be in place by November 2023.

3.3.2.8 National Grid has committed to 10% Net Gain in Environmental value including as a minimum 10% BNG across all its construction projects. This is described in **Part 1, Chapter 1, Introduction**.

[39] Department for Business, Energy & Industrial Strategy (2021). Draft Overarching National Policy Statement for Energy (EN-1). [online] Available at: Draft Overarching National Policy Statement for Energy (publishing.service.gov.uk) [Accessed 13/07/2022].

[40] Department for Levelling Up, Housing & Communities (2021). National Planning Policy Framework. London. [online] Available at: National Planning Policy Framework - Guidance - GOV.UK (www.gov.uk) [Accessed 13/07/2022].

[41] Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework. [online] Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2

Biodiversity 2020: A strategy for England's wildlife and ecosystem services

3.3.2.9 Biodiversity 2020[43] was published by DEFRA in 2011. The strategy builds on the Natural Environment White Paper: "The Natural Choice: securing the value of nature" (2011)[44], with an overall mission 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".*

3.3.2.10 The strategy includes consideration of planning and development including commitments to (i) retain protection and improvement of the natural environment as core objectives for local planning and development management, (ii) support biodiversity offsetting pilots through a two-year test phase, until spring 2014, and the government's expectation that the planning system contributes to achieving no net loss of biodiversity.

Regional planning policy

3.3.2.11 The planning policies that relate to the study area are shown below. The policies listed below are taken from the following documents;

- Kent Environment Strategy (2016)[45];
  - 4 – Monitoring and Evaluation

    4.1. Establish and monitor key performance indicators.

    4.2 Evaluate progress and identify future risks, opportunities and actions aligned to Kent Environmental Strategy priorities to inform current and future action.
  - 5 – Conserve and enhance the quality and supply of the county of Kent's natural and historical resources and assets.

    5.1 - Establish a coherent, landscape-led approach to decision making through identification of the natural and historic features that underpin landscape character and a strategic approach to assessment of character and trends in landscape condition.

    5.2 - Improve and increase functional habitat networks on land and in the sea, identifying opportunities and protecting and enhancing our natural and historic environment and landscape character through planning and decision making.

    5.3 - Identify and take forward opportunities for sustainable water management to improve quality and quantity of our water environment and resources
  - 8 - Influence future sustainable growth for the county of Kent.

[43] Department for Environment, Food & Rural Affairs (2011). Biodiversity 2020: A strategy for England's wildlife and ecosystem services. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69446/pb13583-biodiversity-strategy-2020-111111.pdf

[44] Department for Environment, Food & Rural Affairs (2011). The Natural Choice: securing the value of nature. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/228842/8082.pdf [Accessed 13/07/2022].

[45] Kent County Council (2016). Kent Environment Strategy. A Strategy for Environment, Health and Economy. [online] Available at: https://www.kent.gov.uk/about-the-council/strategies-and-policies/environment-waste-and-planning-policies/environmental-policies/kent-environment-strategy [Accessed 13/07/2022].

8.2 - Mitigate the impacts and address the ambitions identified through the Growth and Infrastructure Framework and local plans, such as sustainable and alternative transport options, green infrastructure, energy, water and flooding.

- 9 – Improve the county of Kent's environmental, social and economic resilience to environmental change.

  9.3 - Improve water management and build flood resilience, maximising opportunities to deliver multiple benefits for our environment and residents into the future

- Kent Nature Partnership Biodiversity Strategy 2020 to 2045 (2020)[46]. Objectives for terrestrial ecosystems, habitats and species for 2045.
  - 20.84% high value semi-natural habitat (74,750 ha) well managed for nature (from the 2015 baseline of 14.6% and 54,640 ha).
  - An ecological network of semi-natural habitat (high and low value) covering 30% of Kent (112,000 ha) (from the 2015 baseline of 27% and 100,872 ha).
  - 75% Sites of Special Scientific Interest restored to favourable condition, securing their wildlife value for the long term (from the 2019 baseline of 68%).
  - Over half of Local Wildlife Sites in good management, securing their local wildlife value for the long term (from the 2019 baseline of 43%).
  - More, bigger and less fragmented areas of wildlife-rich habitat outside the protected sites network for wildlife, with an increase in the overall extent of all priority habitats to ensure greater connectivity and resilience to climate change.
  - New development to better provide for a greener urban environment, through increased urban tree planting, the inclusion of integral wildlife niches, and green building and landscape design.
  - Protect and restore existing trees, hedgerow and woodland, whilst increasing the county's tree cover with the right trees in the right places, which supports the recovery of wildlife, delivers natural climate solutions and enriches people's lives.
  - Kent-specific threatened and iconic species of terrestrial animals and plants are recovering, including those that support ecosystem services.

3.3.2.12 Additionally, the objectives of Kent's Plan Bee: Kent County Council's Pollinator Action Plan (2021)[47] are provided as planning guidance.

- Objective 1 - For Kent County Council to manage the land it owns or controls or can influence in a way which can benefit pollinators' forage and habitat.
  - putting in place, where it can, revised grass-cutting and pollinator-friendly planting regimes. It is reviewing how it reinstates land and manages it generally on road verges, in maintained schools and parks and all other parts of its estate.

[46] Kent Nature Partnership (2020). Kent Nature Partnership Biodiversity Strategy 2020 to 2045. [online] Available at: https://democracy.kent.gov.uk/documents/s96710/20-00025%20-%20Kent%20Biodiversity%20Strategy%20March%202020.pdf [Accessed 13/07/2022].

[47] Kent County Council (2021). Kent's Plan Bee. Kent County Council's Pollinator Action Plan. [online] Available at: https://www.kent.gov.uk/__data/assets/pdf_file/0018/103905/Kents-Plan-Bee.pdf [Accessed 13/07/2022].

- reviewing the use of pesticides in its estate and seeking to end the use of the controversial neonicotinoid sprays.
- finding ways to create corridors for wildlife throughout the landscape within and adjacent to its estate.
- identifying, promoting and arranging where possible, appropriate training for staff involved in land management (including parks, highways, estate management and grounds maintenance) to better their understanding of the needs of pollinators and how they can help them in the course of their work (where they are not already doing that).
- looking for opportunities to 'green' its buildings and assets with pollinator friendly planting and such things as bee hotels (space people can make for solitary bees to nest).

- Objective 2 - For Kent County Council to use the planning system to protect pollinators and improve the habitats on which they rely.
  - looking to support the connection of landscapes to each other.
  - looking to develop approaches within KCC's planning services that will help to protect pollinator habitats.
  - using the Kent Design Guide, Kent Planning Officers Group and other appropriate
  - means to work with Kent's district planning authorities to encourage developments that improve pollinator habitats.
  - working with community groups, district and borough councils and through the Kent Association of Local Councils to map pollinator features at a community level in order to help people to take action.
  - looking to understand and better articulate the economic value of pollinators to Kent.
  - looking at how it might develop a pollinator impact assessment tool to inform planning decisions.

Local planning policy

3.3.2.13 The study area runs through both Thanet Borough Council at the north end of the Kent Onshore Scheme, and Dover Borough Council, in the south of the Kent Onshore Scheme, and as such the policies of both bodies regarding biodiversity and the protection of natural resources apply to the entire Site.

3.3.2.14 The planning policies that relate to the Kent Onshore Scheme are shown below for both policies set in place by Thanet Borough Council and by Dover Borough Council. The policies are taken from the following documents;

- Thanet Local Plan, Adopted 2020[48] and other policy documents;
  - Policy SP25 - Safeguarding the Identity of Thanet's Settlements - Within the Green Wedges new development (including changes of use) will only be

[48] Thanet District Council (2020). Thanet District Council Local Plan. [online] Available at: https://www.thanet.gov.uk/wp-content/uploads/2018/03/LP-adjusted.pdf [Accessed 13/07/2022].

permitted if it can be demonstrated that the development is 1) not detrimental or contrary to the following aims to:

a) Safeguard areas of open countryside in order to maintain physical separation and avoid coalescence of the towns, retaining their individual character and distinctiveness (for example by the expansion of isolated groups of houses or other development).

b) Conserve, protect and enhance the essentially rural and unspoilt character, and distinctive landscape qualities of the countryside that separates the urban areas, for the enjoyment and amenity of those living in, and visiting, Thanet.

c) Increase access and usability without compromising the integrity of the Green Wedges.

Or is

2) essential to be located within the Green Wedges. Open sports and recreational uses will be permitted subject to there being no overriding conflict with other policies, the wider objectives of this plan and the stated aims of this policy. If granted, any associated built development must be kept to a minimum, essential, small in scale and be necessary to support the open use. It should also be well related to adjacent urban edge and sensitively located to retain openness of the area. Proposals for policy compliant development that include measures that will create or enhance wildlife habitats and biodiversity within the Green Wedges or will improve the quality of the Green Wedges by providing high quality public amenity space will be supported.

Policy SP27 – Green Infrastructure network and enhance it by integrating new multifunctional Green Infrastructure provision in the design of developments. Opportunities to improve Thanet's Green Infrastructure network by protecting and enhancing existing Green Infrastructure assets and the connections between and providing new Green Infrastructure assets should be identified early in the design process for major developments, together with consideration of how they will be managed and maintained in the long term.

Development proposals will, where appropriate, be required to make a positive contribution to the conservation, enhancement and management of biodiversity and geodiversity assets resulting in a net gain for biodiversity assets through the following measures:

1) the restoration / enhancement of existing habitats,

2) the creation of wildlife habitats where appropriate, by including opportunities for increasing biodiversity in the design of new development

3) the creation of linkages between sites to create local and regional ecological networks,

4) the enhancement of significant features of nature conservation value on development sites,

5) protect and enhance valued soils,

6) mitigating against the loss of farmland bird habitats.

Sites should be assessed for the potential presence of biodiversity assets and protected species. For sites where important biodiversity assets, including protected species and habitats including SPA functional land, or other notable species, may be affected, an ecological assessment will be required to assess the impact of the Kent Onshore Scheme on the relevant species or habitats. Planning permission will not be granted for development if it results in significant harm to biodiversity and geodiversity assets, which cannot be adequately mitigated or as a last resort compensated for, to the satisfaction of the appropriate authority.

- Policy SP30 – Biodiversity and Geodiversity Assets - The Council will support proposals that enhance, maintain and protect the identified Biodiversity Opportunities Areas, particularly where proposals increase the biodiversity value of the site.
- SP31 – Biodiversity Opportunity Areas - Development which would have a detrimental impact on locally designated wildlife sites will not be permitted unless suitable mitigation can be provided either on or off site within Thanet. Exceptionally, where a strategic need for a project is identified which outweighs the importance of the locally designated sites and cannot be located elsewhere, an equivalent area of habitat will be created elsewhere at a suitable location well related to other existing habitats.

Wherever possible and appropriate, new developments will provide a net environmental gain in accordance with Policy SP30, and include measures to enhance and improve wildlife connectivity to designated wildlife sites.

- Dover District Council Core Strategy (2010)[49];
- Draft Dover District Local Plan (Reg 18) Sustainability Appraisal (2020)[50];
  - Strategic Policy 16: Protecting the District's Hierarchy of Designated Environment Sites - Development that will have an adverse effect on the integrity of European designated protected sites, including the Dover to Kingsdown Cliffs SAC, the Lydden and Temple Ewell Downs SAC, the Thanet Coast and Sandwich Bay SPA, the Thanet Coast and Sandwich Bay Ramsar Site and the Sandwich Bay SAC, alone or in combination with other plans or projects, will not be permitted. Any proposal capable of affecting the designated interest features of these European Sites will be required to be subject to Habitats Regulations Assessment screening. Development within 500m of the Thanet Coast and Sandwich Bay SPA and Ramsar sites will only be permitted where a project level assessment has demonstrated in accordance with the Habitat Regulations, that any proposal will not adversely affect the integrity of these sites with specific regard to non-physical disturbance.

    Wintering bird surveys will be required for sites with high and moderate suitability to support Thanet Coast and Sandwich Bay SPA qualifying bird species in order to determine their individual and cumulative importance for these species and

[49] Dover District Council (2010). Dover District Local Development Framework Core Strategy. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/PDF/Adopted-Core-Strategy.pdf [Accessed 13/07/2022].

[50] Land Use Consultants Ltd. On behalf of Dover District Council (2020). Draft Dover District Local Plan (Reg 18) Sustainability Appraisal. [online] Available at: https://www.doverdistrictlocalplan.co.uk/uploads/pdfs/sustainability-appraisal-of-the-draft-local-plan-2020.pdf [Accessed 13/07/2022].

inform mitigation proposals. In the unlikely but possible event that cumulative numbers of SPA birds affected are likely to exceed thresholds of significance (greater than 1% of the associated European Site), appropriate mitigation in the form of habitat creation and management in perpetuity, either on-site or through provision of strategic sites for these species elsewhere within Dover District, will be required.

Development that will have an adverse effect on nationally designated sites, including the Heritage Coasts, Marine Conservation Zones, Sites of Special Scientific Interest and National Nature Reserves of the District, will not be permitted unless the benefits, in terms of other objectives including overriding public interest, clearly outweigh the impacts on the special features of the site and broader nature conservation interests and there is no alternative acceptable solution.

Development should avoid significant harm to locally identified biodiversity assets, including Local Wildlife Sites and Local Nature Reserves as well as priority and locally important habitats and protected species.

Where harm to designated sites cannot be avoided, appropriate mitigation will be required in line with a timetable to be agreed with the Local Authority. Normally any mitigation measures will be required to be delivered on-site, unless special circumstances dictate that off-site compensation is more appropriate. A financial contribution - in lieu of on-site mitigation - will only be considered in very exceptional circumstances and where it is demonstrated that the proposed mitigation is deliverable and effective.

Proposals that conserve or enhance biodiversity will be supported. All development should take opportunities to help connect and improve the wider ecological networks. The integrity of the existing network of green infrastructure, including the hierarchy of protected sites and Biodiversity Opportunity Areas should be protected and enhanced. Opportunities for the management, restoration and creation of habitats in line with the targets set out in the Kent Biodiversity Strategy for the Biodiversity Opportunity Areas (BOAs) in the district and the Dover District Green Infrastructure Strategy will be supported.

Development which would result in the loss of deterioration of irreplaceable habitats, including ancient woodland and ancient or veteran trees, will only be permitted in exceptional circumstances where the public benefit would clearly outweigh the loss or deterioration and where a suitable compensation strategy exists.

Proposals should safeguard features of nature conservation interest and should include measures to retain, conserve and enhance habitats, including internationally, nationally and locally designated sites, priority habitats, networks of ecological interest, ancient woodland, water features, hedgerows, beaches, wetland pastures and foreshores, as corridors and stepping-stones for wildlife.

- Strategic Policy 17: Green Infrastructure and Biodiversity - Development proposals must provide a minimum of 10% biodiversity net gain. Proposals for biodiversity net gain must:

  a) be provided as part of the development within the development site boundary. Only if it can be demonstrated that ecologically meaningful biodiversity net gain

cannot be achieved within the site boundary will the Council consider off-site alternatives or financial contributions towards a biodiversity off-setting project within the District;

b) be provided above the agreed pre-development ecological baseline of the site, for both area and linear habitats;

c) focus on local priorities and be informed by the Local Nature Recovery Strategy, Dover District Green Infrastructure Strategy and the Kent Biodiversity Strategy;

d) be secured for a minimum of 30 years,

e) be informed by a comprehensive understanding of habitats and species associated with the site, to include survey and assessment work carried out by suitably qualified professionals and relevant information from the Kent and Medway Biological Records Centre; and

f) follow the mitigation hierarchy and demonstrate by appropriate project design, evidence of adequate avoidance and mitigation measures. Where harm to wildlife habitats cannot be avoided or adequately mitigated, appropriate compensation measures will be sought. Biodiversity net gain must be in addition to any form of compensation.

Planning applications must be supported by a Biodiversity Net Gain Plan and supporting reports with information to demonstrate how 10% biodiversity net gain will be achieved, including:

g) Use of the most up-to-date DEFRA metric calculation, including breakdown of stages;

h) an assessment of the likely effects of the development and changes to the ecological baseline;

i) details of the ecological assessments to include both qualitative and quantitative evidence;

j) details of the design and location of the proposals; and

k) details of how the net gain proposals will be implemented, managed and maintained.

Biodiversity net gain proposals will be secured by condition and/or legal agreement. This will include a requirement to cover the Council's costs associated with the long-term monitoring of the biodiversity net gain proposals.

Applications for change of use in order to create biodiversity sites in appropriate locations, including biodiversity off-setting sites and sites within Local Nature Recovery Strategies will be supported.

- All proposals for new residential development of greater than 10 dwellings will be required to:

  a) Comply with the Strategic Access Management and Monitoring (SAMM) Plan for the Thanet Coast and Sandwich Bay SPA in order to mitigate against the in-combination effects of new development, through the pathway of recreational pressure, on the Thanet Coast and Sandwich Bay SPA; and

b) make a financial contribution to provide such monitoring measures as will be set out in the SAMM Plan.

In addition, all proposals for new residential development within a 9km Zone of Influence radius of the SPA will also be required to make a financial contribution towards mitigation measures.

Such contributions will be set by a tariff system to be set out in the Local Plan and reviewed every 10 years, or sooner if monitoring reveals issues which are not being addressed by the mitigation measures. Contributions will be based on a tariff system and collected by the S106 agreement mechanism.

Developments for other uses that would increase recreational activity causing disturbance to qualifying species, including but not limited to holiday accommodation, hotels and leisure uses, will be assessed on a case by case basis under the Habitat Regulations and may be required to make full or partial contributions towards the SAMM Plan if appropriate.

- Draft Dover District Local Plan (Reg 18) Habitats Regulations Assessment (2021)[51];
- Dover District Council Green Infrastructure Strategy (2014)[52]; and
- Thanet Coast SPA Mitigation Strategy (2012)[53].

3.3.3 Study Area

3.3.3.1 The study area for ecological surveys includes the land within the Kent Onshore Scheme Scoping Boundary and appropriate Zones of Influence (ZoI), are described in the following sections.

3.3.3.2 The boundaries and zones for the ecology and biodiversity study area reflect standard industry good practice and the distances used in this scoping exercise that statutory consultees would typically expect to be considered for identification of features external to the Kent Onshore Scheme that could be affected. This is informed by published guidance and professional judgement.

3.3.3.3 The desk study included a search for:

- international statutory nature conservation sites (e.g. Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites) within 10km of the Kent Scoping Boundary or SACs designated for bats within 30km of the Kent Scoping Boundary. Note that there are no SACs designated for bats within 30km of the Kent Onshore Scheme.
- national statutory nature conservation designations (e.g. Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNRs) and Local Nature Reserves

[51] Land Use Consultants Ltd. On behalf of Dover District Council (2020). Draft Dover District Local Plan (Reg 18) Habitats Regulations. [online] Available at: https://www.doverdistrictlocalplan.co.uk/uploads/pdfs/habitat-regulation-assessment-of-the-draft-local-plan-2020.pdf

[52] Dover District Council (2014). Green Infrastructure Strategy. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/PDF/Dover-District-Council-Green-Infrastructure-Strategy.pdf [Accessed 13/07/2022].

[53] Dover District Council (2012). Thanet Coast SPA Mitigation Strategy. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/PDF/Thanet-Coast-SPA-Mitigation-Strategy.pdf [Accessed 13/07/2022].

(LNRs)) within 5km, also referencing Natural England Impact Risk Zones for SSSIs on MAGIC; and

- non-statutory nature conservation designations (e.g. Local Wildlife Sites and Roadside Nature Reserves) within 2km.

3.3.3.4 Records of protected and notable species and notable habitats (e.g. Habitats of Principal Importance Section 41 (41) of the Natural Environment and Rural Communities (NERC) Act) have also been identified up to 1km (for most species) 6km for bats and 500m (for habitats and great crested newts) from the Kent Onshore Scheme Scoping Boundary. For the purposes of **Figure 3.3.1 Statutory Designated Ecological Features** only statutory designated sites up to 5km (for SSSIs) and 10km (for European sites) from the Kent Onshore Scheme Scoping Boundary have been shown but this will be updated and expanded for the Preliminary Environmental Information Report (PEIR).

3.3.4 Baseline Conditions

Data Sources

3.3.4.1 The known or predicted current and future ecological baseline conditions described in this section has been informed by the following data sources:

- Multi-Agency Geographic Information for the Countryside (MAGIC)[54] website;
- Aerial photography of the Site (2021 image capture);
- Kent and Medway Biological Records Centre[55]; and
- Local wildlife group and landowner data sets (e.g. Kent Wildlife Trust, Kent bat group, Kent Ornithological Society).

3.3.4.2 Previous survey reports from the local area and adjacent applications (e.g. Nemo Link, Richborough Connection Project[56], Manston Airport[57] and Thanet Extension Offshore Windfarm[58]

[54] Department for Environment, Food and Rural Affairs (2022). Multi-Agency Geographic Information for the Countryside (MAGIC). [online] Aailable at: https://magic.defra.gov.uk/

[55] Kent & Medway Biological Records Centre (2022). Kent's Local Environment Records Centre. [online] Available at: https://www.kmbrc.org.uk/

[56] Planning Inspectorate (2018). Richborough Connection Project. Reports for Application Submission. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/projects/south-east/richborough-connection-project/?ipcsection=docs&stage=app&filter1=Environmental+Statement [Accessed 13/07/2022].

[57] Planning Inspectorate (2022). Manston Airport. Reports for Application Submission. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/projects/south-east/manston-airport/?ipcsection=docs&stage=app&filter1=Environmental+Statement [Accessed 13/07/2022].

[58] Planning Inspectorate (2020). Thanet Extension Offshore Wind Farm. Reports for Application Submission. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/projects/south-east/thanet-extension-offshore-wind-farm/?ipcsection=docs&stage=app&filter1=Environmental+Statement [Accessed 13/07/2022].

Expected Survey Requirements

3.3.4.3 Completion of initial Phase 1 Habitat Survey (following the established JNCC methodology[59]) and Protected Species Scoping Surveys, will confirm the requirements for further surveys to support the ecology, biodiversity and nature conservation impact assessment, but these are likely to include the following:

- Botanical surveys including National Vegetation Classification Surveys following established Rodwell (2006)[60] methodology, including invasive non-native plant species, hedgerows and river habitats and corridors;
- Terrestrial invertebrate surveys;
- Aquatic invertebrate surveys if required (potential to be scoped out by use of HDD to avoid direct watercourse impacts);
- Reptile presence / absence surveys utilising a combination of morning and afternoon survey visits;
- Habitat Suitability Index (HSI) assessment[61] and Great Crested Newt eDNA surveys at waterbodies identified on and within 250m of the Kent Onshore Scheme (if District Level Licensing approach not or only partially pursued with Natural England);
- Great crested newt population size surveys (where applicable);
- Intertidal bird surveys (focused at proposed landfall at Pegwell Bay) following a modified Wetland Bird Surveys (WeBS) Core and Low Tide Count methodology[6263]
- Wintering bird surveys (WeBS methodology as above);
- Breeding bird surveys following a modified CBC methodology[64] (including targeted surveys for barn owl). Targeted species surveys will follow individual methods within Gilbert *et al.* 1998[65];
- Preliminary bat roost feature assessment of buildings and structures and tree climbing surveys for bats (where applicable)
- Bat activity surveys;

[59] Joint Nature Conservation Committee (2016). Handbook for Phase 1 habitat survey. A technique for environmental audit. [online] Available at: https://data.jncc.gov.uk/data/9578d07b-e018-4c66-9c1b-47110f14df2a/Handbook-Phase1-HabitatSurvey-Revised-2016.pdf [Accessed 13/07/2022].

[60] Rodwell, J.S. on behalf of the Joint Nature Conservation Committee (2006). National Vegetation Classification: Users' Handbook. [online] Available at: https://data.jncc.gov.uk/data/a407ebfc-2859-49cf-9710-1bde9c8e28c7/JNCC-NVC-UsersHandbook-2006.pdf [Accessed 13/07/2022].

[61] Amphibian & Reptile Groups of the United Kingdom (2010). ARG UK Advice Note 5: Great Crested New Habitat Suitability Index. [online] Available at: https://www.arguk.org/info-advice/advice-notes/9-great-crested-newt-habitat-suitability-index-arg-advice-note-5/file [Accessed 13/07/2022].

[62] British Trust for Ornithology (2017). Wetland Bird Survey: Survey Methods, Analysis & Interpretation. [online] Available at: https://www.bto.org/sites/default/files/webs_methods.pdf [Accessed 13/07/2022].

[63] British Trust for Ornithology (n.d.). Wetland Bird Survey - Low Tide Count Methods. [online] Available at: https://www.bto.org/our-science/projects/wetland-bird-survey/taking-part/low-tide-counts-methods [Accessed 13/07/2022].

[64] Marchant, J. (1983). Common Bird Census Instructions. British Trust for Ornithology. Tring. [online] Available at: https://www.bto.org/sites/default/files/u31/downloads/details/CBC-instructions-g100.pdf [Accessed 13/07/2022].

[65] Gilbert, G., Gibbons, D., and Evans, J. (1998). Bird Monitoring Methods: A Manual of Techniques for Key UK Species. RSPB; Pelagic Publishing. ISBN: 9781907807220

- Dusk emergence and dawn return surveys of buildings, structures and trees (if applicable). All bat surveys will follow BCT Good Practice Guidelines 3rd Edition[66] and Interim Guidance Note[67] (and any updated editions: 4th Edition expected late 2022);
- Badger surveys in all suitable habitats within the Kent Onshore Scheme and up to 30m outside of the Kent Scoping Boundary; as well as dedicated winter surveys and
- Riparian mammal surveys (otter (*Lutra lutra*), water vole (*Arvicola amphibius*)) and beaver (*Castor fiber*), where watercourses are crossed by the Kent Onshore Scheme or are adjacent to the Kent Onshore Scheme and 100-200m upstream and downstream.

3.3.4.4 A Habitats Regulations Assessment (HRA), commencing with a Stage 1: Screening and including a Stage 2: Appropriate Assessment (if required) will also be produced in line with Planning Inspectorate Advice Note 10[68].

Summary of Ecological Receptors

3.3.4.5 The known or predicted ecological baseline conditions are summarised in the following sections by each receptor in turn.

Statutory designated sites

3.3.4.6 Thirteen statutory sites designated for nature conservation have been identified within the stated desk study areas (10km for international and 5km for national sites).

3.3.4.7 These sites are summarised in Table 3.3.1 and the closest sites (those within 2km) are shown on **Figure 3.3.1 Statutory Designated Ecological Features**.

[66] Collins, J. (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London. [online] Available at: https://cdn.bats.org.uk/uploads/pdf/Resources/Bat_Survey_Guidelines_2016_NON_PRINTABLE.pdf?v=1542281971 [Accessed 13/07/2022].

[67] Bat Conservation Trust (2022). Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys. [online] Available at: https://cdn.bats.org.uk/uploads/pdf/Interim-guidance-note-on-NVAs-May-2022-FINAL.pdf?v=1653399882 [Accessed 13/07/2022].

[68] National Infrastructure Planning (2018). The Planning Inspectorate: Advice Note 10: Habitats Regulations Assessment relevant to nationally significant infrastructure projects. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-ten/ [Accessed 13/07/2022].

Table 3.3.1: Statutorily designated sites within 10km (international) and 5km (national) of the Kent Onshore Scheme

Table 3.3.1: Statutorily designated sites within 10km (international) and 5km (national) of the Kent Onshore Scheme

Site name	Designation	Description	Distance (km) and direction from closest point of the Kent Onshore Scheme
Thanet Coast & Sandwich Bay (2,169 hectares)	Ramsar	Designated for a range of habitats including salt marsh, sand dunes and arable fields. A significant assemblage of bird species including ringed plover (*Chadradius hiaticula*), golden plover (*Pluvialis apricaria*) and greenshank (*Tringa nebularia*) is present on site, as is a reintroduced population of sand lizard (*Lacerta agilis*).	Kent Scoping Boundary overlaps with the Designated Site
Thanet Coast & Sandwich Bay (1881.6 hectares)	Special Protection Area	Site is designated for the succession of sand dunes as well as the chalk coastline and salt marsh on Site. The overwintering assemblage of birds including grey plover (*Pluvialis squatarola*), sandling (*Calidris alba*) and ringed plover (*Chadradius hiaticula*) is also significant	Kent Scoping Boundary overlaps with the Designated Site
Sandwich Bay (1136.7 hectares)	Special Area of Conservation	Site is designated by the succession of sand dunes from embryonic sand dunes to willow dune slacks.	Kent Scoping Boundary overlaps with the Designated Site
Thanet Coast (2815.99 hectares)	Special Area of Conservation	Site is designated for the offshore chalk reefs and submerged or partially submerged caverns that support *Pseuendoclonium submarinum* (a green alga) and a number of *Lyngbya* species (a blue-green alga), both of which are only found in Thanet.	Designated Site is located 2.1km northeast of the Kent Scoping Boundary

Stodmarsh SAC (566.03 hectares)	Special Area of Conservation	Designated for a of Desmoulin's whorl snail (*Vertigo moulinsiana*) lives beside ditches within pasture on the floodplain of the River Stour.	Designated Site is located 5.8km to the west, and upstream, of the Kent Scoping Boundary
Margate and Long Sands (64876.9ha)	Special Area of Conservation	Site is designated for sandbanks which are slightly covered by seawater all the time. Located north of the Thanet coast of Kent and extends in a north-easterly direction to the outer reaches of the Thames Estuary.	Designated Site is located 7.4km to the north of the Kent Scoping Boundary. A marine site and therefore not likely to be any effect from the Kent Onshore Scheme.
Outer Thames Estuary (392,400ha)	Special Protection Area	The Outer Thames Estuary SPA is classified for the protection of the largest aggregation of wintering red-throated diver (Gavia stellata) in the UK, an estimated population of 6,466 individuals, which is 38% of the wintering population of Great Britain. It also protects foraging areas for common tern (Sterna hirundo) and little tern (Sternula albifrons) during the breeding season.	Designated Site is located 6km to the north of the Kent Scoping Boundary. A marine site and therefore not likely to be any effect from the Kent Onshore Scheme.
Stodmarsh SPA (483.59 hectares)	Special Protection Area	Wetland of international importance comprising open waterbodies, reedbeds, grazing marsh and alder carr. It is designated for non-breeding great bittern , non-breeding hen harrier, breeding and passage gadwall and non-breeding northern shoveler as well as breeding and wintering bird assemblages.	Designated Site is located 6.3km to the west, and upstream, of the Kent Scoping Boundary
Stodmarsh Ramsar (483.59 hectares)	Ramsar	Stodmarsh has a range of wetland habitats including open water, reedbeds, grazing marsh and alder (*Alnus glutinosa*) carr. The site supports a number of uncommon wetland invertebrates and plants and provides breeding and wintering habitats for important assemblages of	Designated Site is located 6.3km to the west, and upstream, of the Kent Scoping Boundary

		wetland bird species, particularly waterfowl. The flora of the site includes the rare sharp leaved pondweed (*Potamogeton acutifolius*), which is considered critically endangered by the GB Red Book, as well as the vulnerable whorled water-milfoil (*Myriophyllum verticillatum*), rootless duckweed (*Wolffia arrhiza*) and *Carex divisa*.	
Sandwich Bay to Hacklinge Marshes (1790.1ha)	Site of Special Scientific Interest	Site is designated for the succession of sand dunes as well as the chalk coastline and salt marsh on Site. A range of invertebrate species that are geographically restricted to sand dunes and salt marsh. The overwintering assemblage of birds including grey plover (*Pluvialis squatarola*), sandling (*Calidris alba*) and ringed plover (*Chadradius hiaticula*) are also significant	Kent Scoping Boundary overlaps with the Designated Site
Thanet Coast (31.5ha)	Site of Special Scientific Interest	This site, extending almost uninterrupted from Swalecliffe to Ramsgate, comprises mainly unstable cliff and foreshore (including shingle, sand and mudflats), with smaller areas of saltmarsh, coastal lagoons, coastal gill woodland and cliff-top grassland. There are a number of biological, geological and geomorphological features of interest within the site	The Designated Site is located 3.4km northwest of the Kent Scoping Boundary
Sandwich & Pegwell Bay (629.3ha)	National Nature Reserve	Sandwich and Pegwell Bay National Nature Reserve with chalk cliffs, mud flats, saltmarsh and sand dune habitats that is internationally important for waders and wildfowl both on migration and over-winter.	Kent Scoping Boundary overlaps with the Designated Site
Princes Beachlands (6ha)	Local Nature Reserve	Site is designated for its mosaic of habitats that have international importance for migrating birds.	Kent Scoping Boundary Site is located 1.2km to the

	south of the Designated Site

Non-statutory designated sites

3.3.4.8 One non-statutory site designated for nature conservation has been identified within 2km of the Kent Onshore Scheme Scoping Boundary: Ash Level and South Richborough Pasture. This site is a Local Wildlife Site (LWS) (Table 3.3.2) designated for biodiversity value at a local level and is known to have supporting value to a wide variety of protected and ecologically important species and, or habitats. A desk-study is currently ongoing with Kent and Medway Biological Records Centre and further non-statutory wildlife sites may be identified through that process.

Table 3.3.2: Non-statutory designated sites currently identified within 2km of the Kent Onshore Scheme

Site name	Designation	Description	Distance (km) and direction from closest point of the Site
Ash Level and South Richborough Pasture (1039.26ha)	Local Wildlife Site	The site comprises an extensive area of low-lying agricultural land with interconnecting dyke systems, mostly situated to the south of the River Stour. The area is crossed by old drove roads edged with well-established hedgerows of hawthorn and blackthorn and containing the occasional oak. Old counter walls with their unimproved grassland also form an important feature.	Designated Site is located within the Kent Scoping Boundary

Notable habitats

3.3.4.9 An extended Phase 1 Habitat Survey will be undertaken in order to establish the ecological value of the land within the Kent Scoping Boundary, and its potential to support notable and/or legally protected species.

3.3.4.10 The survey will be carried out in line with the Phase 1 Habitat Survey method as set out by the Joint Nature Conservation Committee (JNCC) (2016)[69]. This survey would record the types and distribution of habitats throughout the graduate swathe.

[69] Joint Nature Conservation Committee (2016). Handbook for Phase 1 habitat survey. A technique for environmental audit. [online] Available at: https://data.jncc.gov.uk/data/9578d07b-e018-4c66-9c1b-47110f14df2a/Handbook-Phase1-HabitatSurvey-Revised-2016.pdf [Accessed 13/07/2022].

Information gained from the extended Phase 1 Habitat Survey would be important in assessing the ecological value of the land within the Kent Scoping Boundary and identifying the need for any further survey work.

3.3.4.11 A biodiversity net gain (BNG) assessment will be undertaken using Biodiversity Metric 3.1 – Technical Supplement[70] in accordance with the accompanying guidance and best practice principles. The calculation will be based on baseline habitat distinctiveness scores determined by the Phase 1 habitat surveys. Habitat condition will be assigned retrospectively using the information in the Phase 1 habitat survey based on the condition assessment criteria outlined in the Biodiversity Metric 3.1 – Technical Supplement and applying professional judgement.

3.3.4.12 While extended Phase 1 Habitat Surveys have only recently commenced , review of online data sources, notably MAGIC[71] and survey reports from adjacent projects (the Thanet Windfarm Extension, Richborough Connection Project, Manston Airport or Nemo Link indicates that the following Habitats of Principal Importance (HoPI) are located either within or adjacent to (i.e. up to 500m from) the Kent Scoping Boundary as follows:

- Sand dunes / coastal saltmarsh / mudflats – present along the Pegwell Bay foreshore
- Coastal grazing marshes – distributed within and to the south of the graduated swathe, including both along the Pegwell Bay shore and also inland
- Reedbeds – situated along Pegwell Bay but also along the River Stour and likely smaller parcels present within the Kent Scoping Boundary
- Woodland - thirteen blocks of woodland listed as Priority Habitat by Section 41 of the Natural Environment within 500m of the Kent Scoping Boundary. Additionally, there are nine blocks of priority woodland habitat within the footprint of the Kent Scoping Boundary.
- Hedgerows / arable field margins – likely present throughout the Kent Scoping Boundary; the extent and distribution of such habitats meeting HoPI is to be determined.
- Standing water – ephemeral ponds with at least one pond present in Pegwell Bay Country Park and a network of ditches present throughout the Kent Scoping Boundary; and
- Running water – the River Stour is present within the western end of the Kent Scoping Boundary

3.3.4.13 There are no parcels of ancient woodland habitat within 500m of the Kent Scoping Boundary.

3.3.4.14 Note that while some of these habitats are located directly within designated sites (being a reason for designation), a number are distributed outside. The distribution of HoPI is to be confirmed by detailed survey (Habitat Condition Assessment and (where

[70] Natural England (2022). The Biodiversity Metric 3.1- Technical Supplement. [online] Available at: http://nepubprod.appspot.com/publication/6049804846366720 [Accessed 13/07/2022].

[71] Department for Environment, Food and Rural Affairs (2022). Multi-Agency Geographic Information for the Countryside (MAGIC). [online] Available at: https://magic.defra.gov.uk/

required) National Vegetation Classification and Hedgerow Surveys) which will confirm extent and condition and also inform future Biodiversity Net Gain assessment.

Other habitats

3.3.4.15 Review of MAGIC and previous survey reports from other recent or ongoing schemes (the Thanet Windfarm Extension , Richborough Connection Project, Manston Airport or Nemo Link) indicates that the Kent Onshore Scheme is located within a patchwork of arable, woodland, pasture and residential land uses. Away from the designated sites and notable habitats described above, the Kent Scoping Boundary is likely to include a mix of these habitat types.

Invertebrates

3.3.4.16 The designated sites and notable habitats present within the Kent Scoping Boundary have potential to support a significant assemblage of notable invertebrates. In particular, the Sandwich Bay and Hacklinge Marshes SSSI within the Kent Scoping Boundary is noted for its invertebrate interest.

3.3.4.17 The majority of these species, including Carthusian snail (*Monacha cartusiana*), restharrow moth (*Aplasta ononaria*) and grey bush cricket (*Platycleis albopunctata*) are only associated with warm, dry conditions (i.e. potentially sand dunes). The SSSI also contains the only population in the UK of the sandhill pigmy moth (*Stigmella zelleriella*) within the damp hollows of the SSSI.

3.3.4.18 The habitats most likely to support notable invertebrates include grazing marsh and semi-improved grasslands, as well as hedgerows, particularly for those moth larvae that rely on a limited number of larval food plants. The sandhill pigmy moth feeds only on creeping willow (*Salix repens*) which only grows on coastal heath or on well-developed dune slacks.

3.3.4.19 As part of the extended Phase 1 Habitat Survey, the distribution of habitats with potential to support a significant assemblage of notable invertebrates will be recorded and assessed to determine the need for specific invertebrate survey.

Invasive non-native species

3.3.4.20 Suitable habitat is present across the Kent Scoping Boundary for a range of non-native invasive plant species. Several watercourses are likely to be traversed during construction. The focus of invasive plant surveys to update the baseline will be on terrestrial and riparian species.

3.3.4.21 Waterbodies and watercourses are likely to be suitable for invasive fauna such as marsh frog (*Pelophylax ridibundus*) and American mink (*Neovison vison*) which may impact the distribution of native species.

Great crested newt

3.3.4.22 A review of MAGIC European Protected Species (EPS) mitigation licences and survey returns[72] has not returned any records of great crested newt presence within 500m of the Kent Scoping Boundary. No evidence of great crested newt presence was found during surveys to inform either the Thanet Windfarm Extension , Richborough Connection Project, Manston Airport or Nemo Link (Nemo Link, 2013). Distribution maps (Kent Reptile and Amphibian Group, undated) also indicate an absence of great crested newt from the study area.

3.3.4.23 Suitable aquatic habitat (e.g ponds and ditches) and terrestrial habitat (scrub, rough grassland, arable field margins etc) are present throughout the Kent Scoping Boundary. It is possible (though unlikely) that great crested newt have either colonised habitats in the intervening years or are present but unrecorded in the surrounding area.

Reptiles

3.3.4.24 Habitats present within the Kent Scoping Boundary are suitable for the four widespread species of reptile; slow worm (*Anguis fragilis*), common lizard (*Zootoca vivipara*), grass snake (*Natrix helvetica*) and adder (*Viper berus*). A reintroduction attempt of sand lizard (*Lacerta agilis*) within the Sandwich Bay area was carried out in 2004 (Vantenfall Windpower, 2018) and the population may still be present within the surrounding area.

3.3.4.25 The highest value habitats for reptiles (e.g. coastal dunes and heathland) will be avoided through routeing of the Kent Onshore Scheme. The remaining key habitats likely to support reptiles and present within the Kent Scoping Boundary include arable field margins, scrub and coastal grassing marsh. Sand lizards are restricted to sand dunes and heathland habitat and hence, there is unlikely to be suitable habitat within the graduated swathe for sand lizards.

Birds

3.3.4.26 There are a number of sites within and adjacent to the Kent Scoping Boundary designated for an extensive assemblage of notable wintering, breeding and passage bird species, especially those associated with intertidal habitats.

3.3.4.27 Designated sites within or adjacent to the Kent Scoping Boundary (primarily Thanet Coast and Sandwich Bay SPA, Thanet Coast and Sandwich Bay Ramsar, Sandwich Bay and Hacklinge Marshes SSSI) are designated for the following species or species assemblages:

- European golden plover (non-breeding);
- little tern (*Sterna albifrons*) (breeding);

[72] Specifically the layers 'GCN Pond Survey 2017-19 data', 'GCN Class Survey Licence Returns' and 'Granted European Protected Species Applications for GCN'

Natural England (2022). Great Crested Newt eDNA Habitat Suitability Index Pond Surveys for District Level Licensing 2017, 2018, 2019. [online] Available at: https://www.data.gov.uk/dataset/8643f1b9-b419-4ee8-8e9c-18200e0edc31/great-crested-newt-edna-habitat-suitability-index-pond-surveys-for-district-level-licensing-2017-2018-2019

Natural England (2022). Great Crested Newt Class Survey Licence Return. [online] Available at: https://www.data.gov.uk/dataset/5e3d32c2-200a-4ed2-982c-be0c5ea3bc0f/great-crested-newt-class-survey-licence-returns-england

Natural England (2022). Granted European Protected Species Applications. [online] Available at: https://www.data.gov.uk/dataset/6b517c86-5bc6-425a-b696-5a18c7d6e818/granted-european-protected-species-applications

- ruddy turnstone (*Arenaria interpres*) (non-breeding);
- grey plover (non-breeding);
- ringed plover (non-breeding);
- sanderling (non-breeding); and
- assemblages of breeding birds - lowland open waters and their margins.

3.3.4.28 While some of these species are likely to be primarily associated with the intertidal and saltmarsh habitats, it should be noted that some (especially golden plover) may utilise inland habitats such as arable fields for winter foraging. Conversely some of the species populations may no longer meet the criteria for the designated sites (e.g. little tern may not have bred at Pegwell Bay since 1996 (Vantenfall Windpower, 2018)).

3.3.4.29 The habitats within the Kent Scoping Boundary contain a wide variety of habitats to support an assemblage of other notable bird species, in particular those associated with coastal grazing marsh, scrub, woodland and arable habitats.

3.3.4.30 Along with a review of available bird record and reports relating to the area within 1km of the Kent Scoping Boundary (e.g. Wetland Bird Survey data, previous project reports, Kent bird reports, biological records and Kent Wildlife Trust data), an updated programme of bird surveys will be conducted to provide an updated baseline.

3.3.4.31 The baseline for birds will be sub-divided into the following assemblages (or an equivalents) for ease of reference, noting the baseline will overlap with that for designated sites;

- Non-breeding birds (intertidal);
- Non-breeding birds (terrestrial); and
- Breeding birds.

3.3.4.32 The project programme is such that two full non-breeding and breeding bird seasons of survey can be undertaken to inform the DCO.

Bats

3.3.4.33 A review of MAGIC EPS mitigation licences and survey returns has not returned any records of roosting bats, although roosts are likely to be present in the study area within any suitable buildings and trees.

3.3.4.34 The habitats across the Kent Scoping Boundary are suitable for an assemblage of foraging and commuting bats. Reports for previous projects within 1km of the Kent Scoping Boundary (Vattenfall Wind Power Ltd (2018) have recorded an assemblage of at least seven species including ‘rarer’ (Wray S, Wells D, Long E, & Mitchell-Jones T (2010)) species; Nathusius’s pipistrelle (*Pipistrellus nathusii*), serotine (*Eptescius serotinus*) and Leisler’s bat (*Nyctalus leisleri*).

Hazel dormouse

3.3.4.35 A review of MAGIC EPS mitigation licences and survey returns has not returned any records of hazel dormouse (*Muscardinus avellanarius*) presence. No evidence of hazel dormouse presence was found during surveys to inform both the Thanet Windfarm

Extension, or Nemo Link (Vantenfall Windpower, 2018, Nemo Link, 2013). Distribution data from the Kent mammal atlas (Young, et al 2015) also appears to show dormouse as absent.

3.3.4.36 Suitable habitat for hazel dormouse in the form of woodlands and a network of connected hedgerows is present within Kent Scoping Boundary (primarily at the western extent near the converter option area) and will be assessed as part of the extended Phase 1 Habitat Surveys.

Riparian mammals (otter, water vole and beaver)

3.3.4.37 Water voles (*Arvicola amphibius*) prefer habitat running alongside water, primarily rivers, brooks, drainage and irrigation ditches. Within the study area a number of ditches (including those within golf courses, from initial extended Phase 1 Habitat Survey results) had a suitable bank profile to support water voles, as well as a diverse riparian plant community that act as a foraging resource for this species. Water vole presence in the area (network of drainage and irrigation ditches) has been confirmed as part of previous schemes investigation (Vantenfall Windpower, 2018) and indicated through distribution data from the Kent mammal atlas (Young, et al 2015).

3.3.4.38 Suitable habitat for otter is less extensive within the Kent Scoping Boundary but includes the River Stour and suitable terrestrial habitats nearby (e.g woodlands).

3.3.4.39 It is anticipated that it will be necessary to investigate the status of both species through a review of existing records for these species and surveys of suitable watercourse and associated habitats. Otter have been seen in the River Stour (River Stour Drainage Board, 2015) though were not confirmed through within the Kent Scoping Boundary as part previous schemes (Vantenfall Windpower, 2018, Nemo Link, 2013).

3.3.4.40 As part of early consultation with the Environment Agency, survey for beaver (C*astor fiber*) has also been requested on the basis that they are present in parts of East Kent and in 2021 the government declared their intention to make beavers a native species that would classify from protection under the Wildlife & Countryside Act (1981) as amended.

Badger

3.3.4.41 Extensive suitable habitat for badger is present throughout the Kent Scoping Boundary, comprising woodland, arable fields and margins and scrub amongst others. Habitat is both suitable for foraging and for the excavation of setts, with sufficient habitat present to support a number of social groups.

3.3.4.42 The extended Phase 1 Habitat Surveys will provide initial information of the likely distribution of badger within the graduated swathe to be followed by detailed badger surveys to inform routeing.

Future baseline

3.3.4.43 Relative to the current baseline, the value of ecological features present are not expected to change significantly by the end of the construction period in 2030. Management of the habitats is unlikely to change over this period, and consequently no significant degradation or improvement of habitat condition is expected. Due to development pressure year on year within the wider landscape, protected and notable

species and habitats are likely to remain priorities for conservation within future baseline scenarios.

3.3.5 Embedded and Control & Management Measures

Embedded Measures

3.3.5.1 The Kent Onshore Scheme has been routed and sited to avoid designated sites and the most sensitive habitats as far as possible. Further refinement of the Kent Onshore Scheme will be informed by the results of ecology and biodiversity surveys to avoid or minimise impacts on ecological receptors.

Control and Management Measures

3.3.5.2 An outline Code of Construction Practice (CoCP) is provided in **Appendix 1.4.A Outline Code of Construction Practice**. Measures relevant to the control and management of impacts that could affect the ecology and biodiversity assessment are:

- GG04 - The CEMP shall include measures to manage dust, waste, water, noise, vibration and soil during construction. The contractor(s) shall undertake daily site inspections to check conformance to the Management Plans.
- GG21 - Construction lighting will be of the lowest luminosity necessary to safely perform each task. It will be designed, positioned and directed to reduce the intrusion into adjacent properties, protected species and habitats.
- GG17 - Wash down of vehicles and equipment will take place in designated areas within construction compounds. Wash water will be prevented from passing untreated into watercourses and groundwater. Appropriate measures will include use of sediment traps.
- GG18 - Wheel washing will be provided at each main compound access point on to the highway. An adequate supply of water will be made available at these locations at all times. Road sweepers will be deployed on public roads where necessary to prevent excessive dust or mud deposits.
- B02 - The assumption will be that vegetation with the potential to support breeding birds will not be removed during the breeding bird season (March to August inclusive). If any works become necessary during the breeding bird season, works will be supervised by an Environmental Clerk of Works. Appropriate protection measures will be put in place should active nests be found. These will include exclusion zones around active nests until chicks fledge or nests become inactive as determined by monitoring by the Environmental Clerk of Works.
- B03 - Where there will be a risk of animal entrapment, a means of escape will be installed into all excavations left open overnight.
- B04 - To control the spread of invasive weeds in accordance with the Wildlife and Countryside Act 1981, any plant or machinery that has been used in areas infested with invasive species (both terrestrial and aquatic), such as Japanese knotweed and Himalayan balsam, will be thoroughly cleaned. Water used to clean vehicles will be controlled to prevent the spread of the plant (through seeds,

rhizomes, fragments, etc.). The area will be cordoned off to prevent any inadvertent spreading.

- B05 - All habitats suitable for common reptiles will be subject to two-stage habitat manipulation that will take place between mid-March and mid-October. Firstly, vegetation will be cut to approximately 150mm (with the arisings removed) under the supervision of an Environmental Clerk of Works and the site left for a minimum of two days to allow reptiles to naturally disperse from the area. Secondly, vegetation will be cleared down to ground level under the supervision of an Environmental Clerk of Works. Vegetation will be cleared using appropriate equipment based on the type of vegetation to be removed, the area affected, and the risk of mortality or injuring reptiles. Construction works could commence immediately after completion of the second stage. Reptile hibernacula will be retained and protected during construction where practicable. If unavoidable, the removal of vegetation and groundworks at hibernacula will be timed to avoid the hibernation season (late October to early March). Replacement hibernacula and refugia will be provided.
- B06 - Alternative roost structures (bat boxes) will be provided (with landowner consent) on retained trees within the Order Limits or areas outside of the Order Limits agreed with landowners. Three boxes will be provided for each tree with moderate bat roost potential to be felled. Five boxes will be provided for each tree with high bat roost potential to be felled.
- B07 - Where the works require the crossing or removal of hedgerows, the gap will be reduced to a width required for safe working. Where hedge removals are necessary, ‘dead hedging’ should be used, where practicable, in the interim periods to retain connectivity during construction. Dead hedging can comprise vegetation arisings or artificial provision, such as willow screening panels or Heras fencing covered in camouflage netting. New hedgerow planting will contain native, woody species of local provenance.

Habitat Re-instatement, restoration and compensation

3.3.5.3 Where temporary habitat removal is required, this will be re-instated as soon as practically possible through use of techniques such as re-instatement of temporarily stored turfs and topsoil. Where habitat re-instatement is not possible, restoration or compensatory habitat will be explored.

3.3.5.4 Long term habitat re-instatement, restoration and compensation will be detailed within a Landscape and Ecology Management Plan or equivalent, which will accompany the BNG assessment.

3.3.6 Potential for Significant Effects

3.3.6.1 The ecology and biodiversity assessment will consider the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project**.

3.3.6.2 The proposed scope of the ecology and biodiversity assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

3.3.6.3 This section identifies the sources and impacts that would occur as a result of the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme.

3.3.6.4 The potential for the Kent Onshore Scheme to result in the likely significant effects identified in Table 3.3.3 and 3.3.4 below take into account the embedded and control and management measures described in section 5.

Sources of construction impacts

- construction of converter station and underground cables/overhead line;
- construction of any temporary works areas; and
- construction traffic movements;

Sources of operational impacts

- presence of overhead line.

Sources of maintenance impacts

- potential pollution from maintenance crews;
- temporary works areas; and
- traffic movements during maintenance works.

Sources of decommissioning impacts

- removal of converter station and underground/overhead cables;
- temporary works areas; and
- decommissioning traffic movements.

Potential impacts

3.3.6.5 Table 3.3.3 below presents the potential impacts and whether they are proposed to be scoped in or scoped out.

3.3.6.6 The extent of unplanned maintenance and repairs is unknown; however, these works are likely to be similar to construction works albeit at a smaller scale. Therefore, for the purposes of this assessment maintenance works have been assessed as a worst case scenario within the construction impacts.

3.3.6.7 Table 3.3.3 identifies the potential impacts that could result from the sources identified above.

Table 3.3.3: Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction and Maintenance	Construction of converter station and underground cables/overhead line Construction of any temporary works areas Potential pollution from maintenance crews Traffic movements during maintenance works	Permanent habitat loss (terrestrial)	Yes - The converter station and associated infrastructure will result in an unavoidable permanent loss of habitat. Maintenance of the converter station, underground cables and overhead line may result in permanent or temporary loss of habitat but at a much smaller scale than construction.	**Scoped in**
Construction and Maintenance	Construction of converter station and underground cables/overhead line Construction of any temporary works areas Potential pollution from maintenance crews Traffic movements during maintenance works	Permanent habitat loss (intertidal)	No - permanent infrastructure is to be installed above ground level within the intertidal zone. No day to day maintenance of underground cables would be required in the intertidal zone.	Scoped out
Construction and Maintenance	Construction of converter station and underground cables/overhead line Construction of any temporary works areas	Temporary habitat loss/disturbance (terrestrial)	Yes - Cable installation within the Kent Scoping Boundary will result in a degree of temporary habitat loss/disturbance to terrestrial habitat. Maintenance of the converter station, underground cables	**Scoped in**

	Construction traffic movements Potential pollution from maintenance crews Traffic movements during maintenance works		and overhead line may result in temporary loss of habitat or disturbance but at a much smaller scale than construction.	
Construction and Maintenance	Construction of converter station and underground cables/overhead line Construction of any temporary works areas Construction traffic movements Potential pollution from maintenance crews Traffic movements during maintenance works	Temporary habitat fragmentation / degradation (terrestrial)	Yes - Implementation of a construction working corridor may result in temporary fragmentation of habitat connectivity. Maintenance of the converter station, underground cables and overhead line may result in temporary fragmentation of habitat connectivity but at a much smaller scale than construction.	**Scoped in**
Construction and Maintenance	Construction of converter station and underground cables/overhead line Construction of any temporary works areas Construction traffic movements Potential pollution from maintenance crews Traffic movements during maintenance works	Temporary habitat loss/ disturbance (intertidal)	Yes - Cable installation within the Kent Scoping Boundary will result in a degree of temporary habitat loss / disturbance to intertidal habitat No maintenance of underground cables will be required in the intertidal zone.	**Scoped in**
Construction and Maintenance	Construction of converter station and underground	Incidental mortality of protected or notable species	Yes - In the absence of mitigation, there is potential for construction and maintenance works to	**Scoped in**

	cables/overhead line Construction of any temporary works areas Construction traffic movements Potential pollution from maintenance crews Traffic movements during maintenance works		result in the accidental killing or injuring of protected or notable species, although maintenance would be at a much smaller scale than construction.	
Construction and Maintenance	Construction of converter station and underground cables/overhead line Construction of any temporary works areas Construction traffic movements Potential pollution from maintenance crews Traffic movements during maintenance works	Disturbance to protected or notable species (noise/ vibration, visual, lighting	Yes - In the absence of mitigation, there is potential for construction and maintenance works to result in the accidental disturbance of protected or notable species, although maintenance would be at a much smaller scale than construction.	**Scoped in**
Construction and Maintenance	Construction of converter station and underground cables/overhead line Construction of any temporary works areas Construction traffic movements Potential pollution from maintenance crews Traffic movements during maintenance works	Pollution impacts (dust deposition, air quality, water)	Yes - In the absence of mitigation, there is potential for construction works and maintenance to result in pollution impact pathways upon habitats and species, although maintenance would be at a much smaller scale than construction.	**Scoped in**

Operation	Temporary works areas Traffic movements during maintenance works	Temporary habitat loss/ disturbance (terrestrial)	No - It is unlikely significant additional habitat loss would occur through operation, though periodic maintenance to either the converter or underground cables could require localised habitat removal (see construction and maintenance).	Scoped out
Operation	Temporary works areas Traffic movements during maintenance works	Temporary habitat loss/ disturbance (intertidal)	No - It is unlikely that the installed cable would result in disturbance to intertidal habitats during operation aside from that during periodic maintenance (see construction and maintenance).	Scoped out
Operation	Temporary works areas Traffic movements during maintenance works	Disturbance to protected or notable species (noise/ vibration, visual, lighting	Yes - The operational converter station could be a source of indirect disturbance impacts on adjacent habitats and species. It is unlikely that the installed cable would result in disturbance aside from that during periodic maintenance (see construction and maintenance).	**Scoped in**
Operation	Presence of overhead lines	Collision risk	Yes - The Kent Onshore Scheme may include a potential section of new overhead power line. As such, there is a potential risk of increased birdstrike, particularly for larger birds less able to navigate powerlines.	**Scoped in**

Operation	Presence pollution from maintenance crews	Pollution impacts (dust deposition, air quality, water)	Yes - The operational converter station is unlikely to be a source of pollution pathway impacts on adjacent habitats and species but will be confirmed by detailed assessment. It is unlikely that the installed cable would result in a pollution pathway risk aside from during periodic maintenance if unmitigated (see construction and maintenance).	**Scoped in**
Decommissioning	Decommissioning of converter station and underground cables/overhead line Any temporary works areas Decommissioning traffic movements	Temporary habitat loss/ disturbance (intertidal)	Yes - Cable installation within the graduated swathe will result in a degree of temporary habitat loss / disturbance to intertidal habitat	**Scoped in**
Decommissioning	Decommissioning of converter station and underground cables/overhead line Any temporary works areas Decommissioning traffic movements	Incidental mortality of protected or notable species	Yes - In the absence of mitigation, there is potential for construction works to result in the accidental killing or injuring of protected or notable species.	**Scoped in**
Decommissioning	Decommissioning of converter station and underground cables/overhead line	Disturbance to protected or notable species (noise/ vibration, visual, lighting	Yes - In the absence of mitigation, there is potential for construction works to result in the accidental disturbance of	**Scoped in**

	Any temporary works areas Decommissioning traffic movements		protected or notable species.	
Decommissioning	Decommissioning of converter station and underground cables/overhead line Any temporary works areas Decommissioning traffic movements	Pollution impacts (dust deposition, air quality, water)	Yes - In the absence of mitigation, there is potential for construction works to result in pollution impact pathways upon habitats and species	**Scoped in**

Impact Pathways with Receptors (Step 2)

3.3.6.8 This section identities whether there are any impact pathways from the impacts identified above that could give rise to potentially significant effects on the receptors within the Kent Onshore Scheme study areas.

3.3.6.9 The impact pathways have been split out for the two components of the Kent Onshore Scheme, the cable installation route, which will primarily result in temporary impacts during installation, and the operational phase with the converter station as a permanent structure.

3.3.6.10 Table 3.3.4 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Kent Onshore Scheme as shown on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary** and **Figure 3.1.2 Kent Onshore Scheme**.

Table 3.3.4: Impact pathways with receptors

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Permanent habitat loss (terrestrial)	Designated Sites Thanet Coast & Sandwich Bay SPA, Thanet Coast & Sandwich Bay Ramsar, Sandwich Bay SAC,	Yes - The cable installation route has the potential for direct habitat loss within designated sites, all of which cover the same area. It is expected that any cable installation will result in only a temporary impact. However, until route and working methods are confirmed this	**Scoped in for Construction, Maintenance and Decommissioning** Margate and Long Sands SAC and Outer Thames Estuary SPA can be scoped out of this assessment as they are marine sites and the Kent

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
	Sandwich & Pegwell Bay NNR, Sandwich Bay to Hacklinge Marshes SSSI	impact pathway will be included as a possibility. No permanent habitat loss of a designated site will occur as a result of the converter station. It is however possible arable habitats utilised by birds associated with nearby designated sites (e.g. golden plover) could be lost. Bird surveys will investigate use of these habitats by such species and inform any requirement for mitigation.	Onshore Scheme does not present an impact pathway. These sites will be considered in the Offshore Scheme. Stodmarsh SAC and Thanet Coast SAC can also be screened out in the absence of an impact pathway. Stodmarsh is upstream of the Kent Onshore Scheme and is designated for sedentary species. Additionally, Thanet coast is designated for reefs and sea caves which will be outside of the Kent Onshore Scheme boundary and therefore no impact pathway.
	Notable Habitats	Hedgerows, arable field margins and other notable habitats could be impacted by cable installation. However, a combination of routeing, HDD where possible and habitat re-instatement and replacement will be employed as mitigation and reduce these impacts to temporary. These impacts will therefore be assessed as temporary rather than permanent. The converter station would be located within an arable field so will not result in permanent loss of notable habitats.	Scoped out for all phases
Temporary habitat loss disturbance (terrestrial)	Designated Sites Notable Habitats Thanet Coast & Sandwich Bay SPA,	Yes - It is expected that impacts upon designated sites, all of which cover the same area and notable habitats outside of these designations will be	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
	Thanet Coast & Sandwich Bay Ramsar, Sandwich Bay SAC, Sandwich & Pegwell Bay NNR, Sandwich Bay to Hacklinge Marshes SSSI	temporary once additional mitigation has been employed (e.g. HDD, re-instatement) to be confirmed by design.	
	Invertebrates Great Crest Newt Reptiles Non-breeding Birds (Terrestrial) Breeding Birds Bats Badger	Yes - Habitats with potential to support protected and notable species to be potentially impacted by cable installation or converter station construction will be subject to mitigation measures including route assessment, possible HDD, reinstatement and compensation	**Scoped in for Construction, Maintenance and Decommissioning**
Temporary habitat loss (connectivity)	Invertebrates Great Crest Newt Reptiles Non-breeding Birds (Terrestrial) Breeding Birds Bats Badger	Yes - Habitat connectivity may be impacted in the short term by cable installation but will be minimised through use of HDD where possible to avoid key habitats. Where unavoidable fragmentation or habitat degradation is unavoidable this will be a temporary effect until habitat re-instatement is established The converter station will likely be situated within arable fields, therefore minimising fragmentation and degradation of key habitats.	**Scoped in for Construction, Maintenance and Decommissioning**
Temporary habitat loss/ disturbance (intertidal)	Designated Sites Notable Habitats Thanet Coast & Sandwich Bay SPA, Thanet Coast & Sandwich Bay	Yes - Designated sites (shown to the left), all of which cover the same area may be impacted by the works. There is a commitment to undertake the cable installation within the intertidal zone and saltmarshes	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
	Ramsar, Sandwich Bay SAC, Sandwich & Pegwell Bay NNR, Sandwich Bay to Hacklinge Marshes SSSI	through HDD an assessment will need to take place to ensure that the HDD route includes all designated sites and notable habitats and therefore this is scoped in at present.	
	Non-breeding birds (Intertidal) Breeding Birds	Yes - While intertidal cable installation will be temporary works occurring in the most sensitive breeding and wintering periods, will require mitigation, due to an assemblage of notable bird species highly likely to be present within and adjacent to the intertidal works zone.	**Scoped in for Construction, Maintenance and Decommissioning**
Incidental mortality of protected or notable species	Invertebrates	No - It is unlikely that notable population assemblages will be significantly affected by direct mortality once mitigation measures are in place, as such populations will be linked to habitat.	Scoped out for all phases
	Great crested newt	Yes - While potential exists for great crested newt mortalities during construction, the overall favourable population status is to be maintained through either implementation of District Level or European Protected Species Mitigation licence.	**Scoped in for Construction, Maintenance and Decommissioning**
	Reptiles Breeding Birds Non-breeding Birds Bats Badger	Yes - Potential exists for unmitigated works to impact suitable protected and notable species habitat which may be relatively widespread along the cable corridor (i.e. arable field margins) and result in direct mortalities. If HDD or route selection cannot avoid suitable habitat, mitigation options include works Ecological Method	**Scoped in for all during Construction, Maintenance and Decommissioning** **Additionally scoped in for breeding and non-breeding birds during Operation due to potential bird strike on new overhead line.**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
		Statement or Natural England mitigation licence to avoid direct mortalities. Potential also exists for the section of possible overhead powerline to affect breeding and non-breeding birds through collision risk.	
	Dormouse	Yes - Hedgerows within the Kent Onshore Scheme Scoping Boundary may be suitable for dormouse and may be impacted by works if HDD not feasible and require mitigation (i.e. under Natural England mitigation licence). Until further assessment can confirm likely absence of dormouse, effect will be scoped in.	**Scoped in for Construction, Maintenance and Decommissioning**
	Riparian Mammals (otter and water vole)	Yes - It is expected that direct impacts on watercourses (and therefore water vole and otter) can be avoided through HDD techniques. Until routing and feasibility of HDD can be confirmed, there is a potential requirement for mitigation and these receptors remain scoped in.	**Scoped in for Construction, Maintenance and Decommissioning**
Disturbance to protected or notable species (noise/ vibration, visual, lighting	Great crested newt Non-breeding Birds (Intertidal) Non-breeding Birds (Terrestrial) Breeding Birds Bats Dormouse Badge Otter	Yes - Trees, hedgerows and other habitats within the Kent Onshore Scheme Scoping Boundary may be suitable for protected or notable species. If route selection cannot avoid disturbance impacts then mitigation (i.e. works under Ecological Method Statement or Natural England mitigation licence) could be required	**Scoped in for Construction, Maintenance and Decommissioning**
Pollution impacts (dust deposition, air quality, water)	Designates Sites Notable Habitats Thanet Coast & Sandwich Bay	Yes - Potential for pollution or other indirect impacts during construction on adjacent habitats and species will be mitigated though	**Scoped in for Construction, Maintenance and Decommissioning**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
	SPA, Thanet Coast & Sandwich Bay Ramsar, Sandwich Bay SAC, Sandwich & Pegwell Bay NNR, Sandwich Bay to Hacklinge Marshes SSSI	implementation of a Construction and Ecology Management Plan.	

3.3.7 Proposed Assessment Methodology

Proposed Data Sources

3.3.7.1 The following sources of information will be utilized to form the basis of the assessment of the likely significant effects on Ecology:

- Baseline data collected by site surveys for the Kent Onshore Scheme
- Baseline data collected and publicly published with regards to other schemes in the area
- Biodiversity record data searches undertaken to inform baseline data.

Assessment Methodology

3.3.7.2 The approach used for the ecological impact assessment (EcIA) will be undertaken in accordance with best practice guidance as published in the CIEEM Guidelines[73] and summarised below:

- ecological features that are both present and might be affected by the Kent Onshore Scheme are identified (both those likely to be present at the time works begin and those predicted to be present under a future baseline) through a combination of targeted desk-based study and field survey work to determine the relevant baseline conditions.
- the importance of the identified ecological features evaluated, placing their relative biodiversity and nature conservation value into geographic context. This is then used to define the relevant ecological features that need to be considered further within the assessment process.
- the changes or perturbations predicted to result as a consequence of the Kent Onshore Scheme (i.e. the potential impacts), and which could potentially affect relevant ecological features are identified and their nature described. Established

[73] Chartered Institute of Ecology and Environmental Management (2019). Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine. Version 1.1. [online] Available at: https://cieem.net/wp-content/uploads/2018/08/ECIA-Guidelines-Sept-2019.pdf [Accessed 13/07/2022].

good-practice, legislative requirements or other incorporated design measures to minimise or avoid impacts are also described and are taken into account.

- the likely effects (beneficial or adverse) on relevant ecological features are then assessed, and where possible quantified.
- measures to avoid or reduce any predicted significant effects, if possible, are then developed in conjunction with other elements of the design (including mitigation for other environmental disciplines). If necessary, measures to compensate for effects on features of nature conservation importance are also included.
- any residual effects of the Kent Onshore Scheme are reported; and
- scope for ecological enhancement is considered.

3.3.7.3 The valuation of sites used established value systems (e.g. SSSIs are all of national importance) and reflected the geographical context of the valuation. The categories shown in Table 3.3.5 were applied to give geographic context.

Table 3.3.5: Examples of criteria used to evaluate important ecological features in a defined geographical context

Geographical level at which ecological feature is important	Example of criteria
International (Very high)	An internationally important site, e.g. Special Protection Area (SPA), Special Area of Conservation (SAC) or Ramsar; a regularly occurring population of an internationally important species (listed on Annex IV of the Habitats Directive)
National (High)	A nationally designated site, e.g. SSSI, or a site considered worthy of such designation; a large regularly occurring population of a nationally important species
Regional (Medium)	An ecological feature identified in the local BAP. A smaller area of local BAP habitat which are essential to maintain the viability of a larger whole; non-statutory designated sites; a regularly occurring, locally significant number of a nationally important species. An ecological feature identified as of priority within Section 41 of the NERC Act 2006.
District (Low)	An ecological feature that is scarce within the district or borough or which appreciably enriches the district or borough habitat resource.
Local (Very low)	A good example of a common or widespread ecological feature in the local area.
Negligible	No or very limited ecological value.

3.3.7.4 The ecological surveys will confirm or identify the distribution and valuation of species and habitats.

3.3.7.5 The 'zone of influence' for the Kent Onshore Scheme is the area over which ecological features may be affected by changes as a result of the Kent Onshore Scheme and associated activities. The zone of influence will be different for each ecological receptor identified, dependent on each receptor's sensitivity to change and will be determined using the maximum extents for study areas of each identified receptor. Where necessary, these will be appropriately revised as the Project evolves.

3.3.7.6 The ES will include consideration of options to avoid, reduce, mitigate, or, if necessary, compensate for any identified potential significant adverse effects to the point where any residual effects are not considered to be significant. In addition, opportunities will be sought for the enhancement of biodiversity at both on and off-site locations as associated with the Kent Onshore Scheme.

3.3.7.7 In line with Section 1.2. in the CIEEM guidelines, the terminology used within the EcIA will draw a clear distinction between the terms 'impact' and 'effect'. For the purposes of this EcIA these terms are defined as follows:

- Impact – actions resulting in changes to an ecological feature. For example, construction activities of a development removing a hedgerow; and
- Effect – outcome resulting from impact acting upon the conservation status or structure and function of an ecological feature. For example, the effects on a population of bats as a result of the loss of a bat roost.

3.3.7.8 When describing potential impacts (and where relevant the resultant effects) consideration will be given to the following characteristics likely to influence this (Sections 5.11-5.18 in the CIEEM guidelines):

- Positive / Negative – i.e. is the change likely to be in accordance with nature conservation objectives and policy:
- Positive – a change that improves the quality of the environment, or halts or slows an existing decline in quality e.g. increasing the extent of a habitat of conservation value; or
- Negative – a change that reduces the quality of the environment, e.g. destruction of habitat.
- Extent – the spatial or geographical area or distance over which the impact/effect occurs;
- Magnitude – the 'size', 'amount' or 'intensity' and 'volume' of an impact - this is described on a quantitative basis where possible;
- Duration – the time over which an impact is expected to last prior to recovery or replacement of the resource or feature. Consideration has been given to how this duration relates to relevant ecological characteristics such as a species' lifecycle. However, it is not always appropriate to report the duration of impacts in these terms. The duration of an effect may be longer than the duration of an activity or impact;
- Timing and frequency – i.e. consideration of the point at which the impact occurs in relation to critical life-stages or seasons; and

- Reversibility – i.e. is the impact temporary or permanent. A temporary impact is one from which recovery is possible or for which effective mitigation is both possible and enforceable. A permanent effect is one from which recovery is either not possible or cannot be achieved within a reasonable timescale (in the context of the feature being assessed).

3.3.7.9 Cumulative effects will be assessed and are those occurring from several sources (also known as inter-relationships) and/or the combined effects of other developments in the area.

3.3.7.10 For each ecological feature only those characteristics relevant to understanding the ecological effect and determining the significance will be described. The determination of the significance of effects has been made based on the predicted effect on the structure and function, or conservation status, of relevant ecological features, as follows:

- Not significant - no effect on structure and function, or conservation status; and
- Significant - structure and function, or conservation status is affected.

3.3.7.11 Sections 5.24 to 5.28 in the CIEEM guidance states that effects should be determined as being significant when:

"an effect either supports or undermines biodiversity conservation objectives for 'important ecological features' 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. A significant effect is an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project".

3.3.7.12 In broad terms, significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution).

3.3.7.13 Using this information and judgment, it is determined whether the effects will be significant or not on the integrity (of site / ecosystems) or conservation status (of habitats / species) of each ecological feature and the impact significance is determined at the appropriate geographical scale.

3.3.7.14 There are a number of approaches for determining the significance of effects on ecological features. Whilst the CIEEM guidelines recommend the avoidance of the use of the matrix approach for categorisation (major, moderate and minor), in order to provide consistency of terminology, the CIEEM assessment will be translated into the classification of effects scale, as outlined in Table 3.3.6.

Proposed Significant Criteria

3.3.7.15 The potential effects that are proposed to be scoped into or out of the assessment are summarised in Table 3.3.6.

Table 3.3.6: Relating CIEEM assessment terms to those used in other EIA chapters

Effect classification terminology used in other EIA chapters	Equivalent CIEEM assessment
Major beneficial (positive)	1) Permanent addition of, improvement to, or restoration of a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact positively affects the integrity or key characteristics of the resource.
Moderate beneficial (positive)	1) Temporary addition of, improvement to, or restoration of a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact positively affects the integrity or key characteristics of the resource.
Minor beneficial (positive)	1) Permanent addition of, improvement to, or restoration of a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.
Negligible beneficial (positive)	1) Temporary addition of, improvement to, or restoration of a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.
Negligible adverse (negative)	1) Temporary/reversible damage to a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.
Minor adverse (negative)	1) Permanent/irreversible damage to a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.
Moderate adverse (negative)	1) Temporary/reversible damage to a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact negatively affects the integrity or key characteristics of the resource.
Major adverse (negative)	1) Permanent/irreversible damage to a biodiversity resource; and

	2) the extent, magnitude, frequency, and/or timing of an impact negatively affects the integrity or key characteristics of the resource.

3.3.8 Conclusion

3.3.8.1 The receptors and impact pathways identified in this report will be taken into account in the ecological impact assessment to accompany the ES, which will be undertaken in line with the methodology in section 7.

Proposed Scope of the Assessment

3.3.8.2 A summary of the proposed scope of the assessment is provided in Table 3.3.7.

Table 3.3.7: Proposed scope of the assessment

Receptor	Potential for significant effect	Project phase(s)	Proposed to be scoped in/out
Designated Sites Thanet Coast & Sandwich Bay SPA, Thanet Coast & Sandwich Bay Ramsar, Sandwich Bay SAC, Sandwich & Pegwell Bay NNR, Sandwich Bay to Hacklinge Marshes SSSI, all of which cover the same area	Potential for permanent habitat loss, fragmentation / modification (including functionally linked habitat)	Construction, Maintenance, Decommissioning	**Scoped in**
	Temporary habitat loss and disturbance (including functionally-linked habitat)	Construction, Maintenance, Decommissioning	**Scoped in**
	Indirect Pollution impacts (dust deposition, air quality, water)	Construction, Maintenance, Decommissioning	**Scoped in**
Notable and Other Habitats	Potential for permanent habitat loss, fragmentation / modification	Construction, Maintenance, Decommissioning	**Scoped in**
	Temporary habitat loss and disturbance	Construction, Maintenance, Decommissioning	**Scoped in**
	Indirect pollution impacts (dust	Construction, Maintenance,	**Scoped in**

	deposition, air quality, water)	Decommissioning	
Invertebrates	Potential for permanent habitat loss, fragmentation / modification	Construction, Maintenance, Decommissioning	**Scoped in**
	Temporary habitat loss and disturbance	Construction, Maintenance, Decommissioning	**Scoped in**
	Incidental mortality of protected or notable species	All phases	Scoped out
Great Crested Newts	Potential for permanent habitat loss, fragmentation / modification	Construction, Maintenance, Decommissioning	**Scoped in**
	Temporary habitat loss and disturbance	Construction, Maintenance, Decommissioning	**Scoped in**
	Incidental mortality of protected or notable species	Construction, Maintenance, Decommissioning	**Scoped in**
Reptiles	Potential for permanent habitat loss, fragmentation / modification	Construction, Maintenance, Decommissioning	**Scoped in**
	Temporary habitat loss and disturbance	Construction, Maintenance, Decommissioning	**Scoped in**
	Incidental mortality of protected or notable species	Construction, Maintenance, Decommissioning	**Scoped in**
Non-breeding Birds (Intertidal)	Potential for permanent habitat loss, fragmentation / modification	Construction, Maintenance, Decommissioning	**Scoped In**
	Temporary habitat loss and disturbance	Construction, Maintenance, Decommissioning	**Scoped in**
	Incidental mortality of protected or notable species	Construction, Maintenance, Decommissioning	Scoped out

	Incidental mortality of protected or notable species during operation due to presence of new powerlines	Operation	**Scoped in**
	Disturbance to protected or notable species (noise/ vibration, visual, lighting)	Construction, Maintenance, Decommissioning	**Scoped in**
Non-breeding Birds (Terrestrial)	Potential for permanent habitat loss, fragmentation / modification	Construction, Maintenance, Decommissioning	**Scoped in**
	Temporary habitat loss and disturbance	Construction, Maintenance, Decommissioning	**Scoped in**
	Incidental mortality of protected or notable species	Construction/ Maintenance/ Decommissioning	Scoped out
	Disturbance to protected or notable species (noise/ vibration, visual, lighting)	Construction, Maintenance, Decommissioning	**Scoped in**
Breeding Birds	Potential for permanent habitat loss, fragmentation / modification	Construction, Maintenance, Decommissioning	**Scoped in**
	Temporary habitat loss and disturbance	Construction, Maintenance, Decommissioning	**Scoped in**
	Incidental mortality of protected or notable species	Construction, Maintenance, Decommissioning	**Scoped in**
	Disturbance to protected or notable species (noise/ vibration, visual, lighting)	Construction, Maintenance, Decommissioning	**Scoped in**
Bats	Potential for permanent habitat	Construction, Maintenance, Decommissioning	**Scoped in**

	loss, fragmentation / modification		
	Temporary habitat loss and disturbance	Construction, Maintenance, Decommissioning	**Scoped in**
	Incidental mortality of protected or notable species	Construction, Maintenance, Decommissioning	**Scoped in**
	Disturbance to protected or notable species (noise/ vibration, visual, lighting)	Construction, Maintenance, Decommissioning	**Scoped in**
Dormouse	Potential for permanent habitat loss, fragmentation / modification	Construction, Maintenance, Decommissioning	**Scoped in**
	Temporary habitat loss and disturbance during construction	Construction, Maintenance, Decommissioning	**Scoped in**
	Incidental mortality of protected or notable species during construction	Construction, Maintenance, Decommissioning	**Scoped in**
	Disturbance to protected or notable species (noise/ vibration, visual, lighting)	Construction, Maintenance, Decommissioning	**Scoped in**
Badgers	Potential for permanent habitat loss, fragmentation / modification during construction	Construction, Maintenance, Decommissioning	**Scoped in**
	Temporary habitat loss and disturbance during construction	Construction, Maintenance, Decommissioning	**Scoped in**
	Incidental mortality of protected or notable species during construction	Construction, Maintenance, Decommissioning	**Scoped in**
	Disturbance to protected or notable species (noise/	Construction, Maintenance, Decommissioning	**Scoped in**

	vibration, visual, lighting)		
Riparian Mammals (Otter and Water Vole and Beaver)	Potential for permanent habitat loss, fragmentation / modification	Construction, Maintenance, Decommissioning	**Scoped in**
	Temporary habitat loss and disturbance	Construction, Maintenance, Decommissioning	**Scoped in**
	Incidental mortality of protected or notable species	Construction, Maintenance, Decommissioning	Scoped out
	Disturbance to protected or notable species (noise/ vibration, visual, lighting)	Construction, Maintenance, Decommissioning	**Scoped in**

3.4 Cultural Heritage

3.4.1 Introduction

3.4.1.1 This chapter presents how the Cultural Heritage assessment will consider the potentially significant effects that may arise from the construction, operation maintenance and decommissioning of the Kent Onshore Scheme (as described **in Part 1, Chapter 4, Description of the Project**). This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an Environmental Impact Assessment (EIA).

3.4.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Kent Onshore Scheme Scoping Boundary hereafter referred to as the Kent Scoping Boundary is illustrated on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary**.

3.4.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Project Description**;
- **Part 1, Chapter 5, EIA Approach and Methodology**;
- **Part 3, Chapter 1, Evolution of the Kent Onshore Scheme**; and
- **Part 3, Chapter 5, Geology and Hydrogeology**.

3.4.1.4 This chapter is supported by the following figures:

- **Figure 3.4.1 Designated Cultural Heritage Assets within the Scoping Boundary and wider 1 km Study Area**; and
- **Figure 3.4.2 Non-designated Cultural Heritage Assets within the Scoping Boundary**

3.4.1.5 This chapter is supported by the following Appendicies:

- **Appendix 3.4.A: Non-designated assets recorded on the Kent HER within the Scoping Boundary**.

3.4.1.6 Cultural Heritage comprises above and below-ground archaeological assets, buildings or structures of historic interest, historic landscape features, and any other elements that are of cultural heritage interest.

3.4.2 Regulatory and Planning Context

3.4.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. The key legislation, policy, and guidance relevant to the assessment of the potential effects on the historic environment

associated with the construction, operation, maintenance and decommissioning phases of the Project are presented below.

Legislation

- Planning (Listed Buildings and Conservation Areas) Act 1990[74] and
- Ancient Monuments and Archaeological Areas Act 1979 [75] (amended by the National Heritage Act 1983[76] and 2002[77].

Planning Policy

National planning policy

- NPS EN-1[78] with particular reference to Section 5.8 in relation to the significance, impact and recording of the historic environment. The historic environment is also covered in the section 5.9 of the Draft NPS EN-1 which is currently under review.;
- NPS EN-5[79] with particular reference to Paragraph 2.8.9 in relation to the archaeological consequences of electricity line installation. Potential impacts are also mentioned in sections 2.2.5 and 2.11.14 of the Draft NPS EN-5 which is currently under review.; and
- NPPF[80] with particular reference to Section 16: Conserving and Enhancing the Historic Environment.

National guidance

3.4.2.2 The following guidance is of relevance for cultural heritage:

- Planning Practice Guidance, Section 16: Conserving and enhancing the historic environment[81] ;
- Historic Environment Good Practice Advice in Planning Note 2. Managing Significance in Decision Taking in the Historic Environment. Historic England[82] ;

[74] Planning (Listed Buildings and Conservation Areas) Act 1990 [online]. Available at: https://www.legislation.gov.uk/ukpga/1990/9/contents

[75] Ancient Monument and Archaeological Areas Act 1979 [online]. Available at: https://www.legislation.gov.uk/ukpga/1979/46/contents.

[76] National Heritage Act 1983 [online]. Available at: https://www.legislation.gov.uk/ukpga/1983/47/contents

[77] National Heritage Act 2002 [online]. Available at: https://www.legislation.gov.uk/ukpga/2002/14/contents

[78] Department of Energy and Climate Change (2011). Overarching National Policy Statement for Energy (EN-1). [online] Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure

[79] Department of Energy and Climate Change (2011). National Policy Statement for Electricity Networks Infrastructure (EN-5). [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47858/1942-national-policy-statement-electricity-networks.pdf

[80] Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework. [online] Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2

[81] Ministry of Housing, Communities & Local Government (2019). Planning Practice Guidance: Historic Environment. [online] Available at: https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment#overview-historic-environment

[82] Historic England (2015). Historic Environment Good Practice Advice in Planning Note 2 – Managing Significance in Decision Taking. [online] Available at: https://historicengland.org.uk/images-books/publications/gpa2-managing-significance-in-decision-taking/gpa2/

- Historic Environment Good Practice Advice in Planning Note 3. The Setting of Heritage Assets. Historic England (2nd edition, 2017)[83] ;
- Historic Environment Statement of Heritage Significance: Analysing Significance in Heritage Assets. Historic England Advice Note 12. Historic England (2019)[84] ;
- Commercial Renewable Energy Development and the Historic Environment. Historic England Advice Note 15 (2021)[85];
- Chartered Institute for Archaeologists (CIfA) Standard and Guidance for Historic Environment Desk-Based Assessment[86] ;
- CIfA Code of Conduct[87] ; and
- Institute of Environmental Management and Assessment (IEMA), the Institute of Historic Building Conservation (IHBC) and the Chartered Institute for Archaeologists (CIfA), Principles of Cultural Heritage Impact Assessment in the UK[88] .

Local planning policy

3.4.2.3 A search of Kent County Council website did not identify any County-wise policy or guidance associated with cultural heritage or the historic environment.

3.4.2.4 Thanet District Council Local Plan[89] was adopted in July 2020. The relevant key policies are:

- Policy SP36 - Conservation and Enhancement of Thanet's Historic Environment;
- Policy HE01 – Archaeology;
- Policy HE02 - Development in Conservation Areas;
- Policy HE03 - Heritage Assets;
- Policy HE04 - Historic Parks and Gardens; and
- Policy HE05 - Works to a Heritage Asset to Address Climate Change.

[83] Historic England (2017). Historic Environment Good Practice Advice in Planning Note 3 (second edition) - The Setting of Heritage Assets. [online] Available at: https://historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/heag180-gpa3-setting-heritage-assets/

[84] Historic England (2019). Historic England Advice Note 12. Statements of Heritage Significance: Analysing Significance in Heritage Assets. [online] Available at: https://historicengland.org.uk/images-books/publications/statements-heritage-significance-advice-note-12/heag279-statements-heritage-significance/

[85] Historic England (2021). Historic Environment Good Practice Advice in Planning Note 15. Commercial Renewable Energy Development and the Historic Environment. [online] Available at: https://historicengland.org.uk/images-books/publications/commercial-renewable-energy-development-historic-environment-advice-note-15/heag302-commercial-renewable-energy-development-historic-environment/

[86] Chartered Institute for Archaeologists (2020). Standard and guidance for historic environment desk-based assessment. [online] Available at: https://www.archaeologists.net/sites/default/files/CIfAS%26GDBA_4.pdf#:~:text=STANDARD%20AND%20GUIDANCE%20for%20historic%20environment%20desk-based%20assessment,expand%20and%20explain%20general%20definitions%20in%20the%20Code.

[87] Chartered Institute of Archaeology (2019). Code of Conduct: Professional Ethics in Archaeology. [online] Available at: https://www.archaeologists.net/sites/default/files/Code%20of%20conduct.pdf

[88] Institute of Environmental Management & Assessment, in partnership with the Chartered Institute for Archaeologists and the Institute of Historic Building Conservation (2021). Principles of Cultural Heritage Impact Assessment in the UK.

[89] Thanet District Council (2020). Thanet District Council Local Plan. [online] Available at: https://www.thanet.gov.uk/wp-content/uploads/2018/03/LP-adjusted.pdf [Accessed 13/07/2022].

3.4.2.5 The Dover Adopted Core strategy[90] was adopted in 2010. It is due to be replaced by the Dover District Local Plan (details below) but remains in use until that is adopted. While the historic environment is considered, the only heritage policy is:

- Policy DM 19 Historic Parks and Gardens.

3.4.2.6 The Dover District Local Plan[91] is still to be adopted. However, the key policies are as follows:

- Strategic Policy 18: Protecting the District's Historic Environment;
- DM Policy 44: Designated and Non-designated Heritage Assets;
- DM Policy 45: Conservation Areas;
- DM Policy 46: Archaeology;
- DM Policy 47: Dover Western Heights; and
- DM Policy 48: Historic Parks and Gardens.

3.4.3 Study Area

3.4.3.1 The study area is the area within which cultural heritage assets may experience effects as a result of the Kent Onshore Scheme during construction, operation, maintenance, and decommissioning. Effects to heritage assets may arise as a result of physical impacts to their fabric or through changes to their setting.

3.4.3.2 For the purpose of this Scoping Report, the Kent Onshore Scheme Scoping Boundary has been used as the study area to capture information relating to archaeology and cultural heritage. The study area provides the necessary context for establishing the likely impacts arising from the Kent Onshore Scheme and the potential effects to cultural heritage assets. A second wider study area consisting of the Kent Scoping Boundary and a 1km buffer was used to identify designated assets within the surrounding landscape, in order to provide an initial assessment of potential impacts on designated assets.

3.4.4 Baseline Conditions

3.4.4.1 The following section provides a summary of the baseline environmental conditions within the Kent Scoping Boundary, using the sources of information outlined below.

Data Sources

3.4.4.2 The cultural heritage baseline described in this section has been informed by the following data sources:

[90] Dover District Council (2010). Dover District Local Development Framework Core Strategy. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/PDF/Adopted-Core-Strategy.pdf [Accessed 13/07/2022].

[91] Dover District Council (2002). Dover District Local Plan 2002. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/Adopted-Development-Plans/Dover-District-Local-Plan-2002.aspx

- The Cultural Heritage baseline described in this section has been informed by the following data sources: Historic England National Designated Assets dataset[92];
- Kent HER; and
- Other readily available online sources.

Baseline

3.4.4.3 There is only one designated asset within the Scoping Boundary, this being the Grade II listed St. Augustine's Cross near Cliffs End and St. Augustine's Golf Club (LB 1266551). Designated assets within the wider 1 km study area include one scheduled monument, 34 listed buildings, and one conservation areas.

3.4.4.4 The scheduled monument consists of the monastic grange and pre-Conquest nunnery at Minster Abbey (1016850).

3.4.4.5 There are two Grade I, and 32 Grade II listed buildings. The Grade I* buildings are Minster Abbey (1223807), and the Church of St Mary (1224116), both of which are located in the village to Minster. The Grade II listed buildings mostly comprise farms and houses, but structures such as cast-iron lamp standards are also listed. Many of the listed buildings are located in the settlement of Minster which is also a conservation area.

3.4.4.6 A total of 190 heritage assets were recorded within the Kent Scoping Boundary on the Kent HER (see **Appendix 3.4.A Non-designated assets recorded on the Kent HER within the Scoping Boundary).** The earliest dated site within the study area is the find spot of a Lower Palaeolithic (500,000 to 150,000 BC) stone tool. Changes in sea level, as well as the reclamation of the land, has altered the coastline in the study area meaning there is the potential for former coastal areas/palaeo-environmental remains to survive buried under the current land surface. The line of the Wantsum Channel falls within the Kent Scoping Boundary, and there is the potential for evidence dating from the prehistoric period onwards to survive along the course of this former navigable channel.

3.4.4.7 Other sites of early prehistoric date are also largely limited to find spots, although ditches and pits of Neolithic date (4000 to 2200 BC) have also been recorded. Features of Bronze Age date (2200 to 700 BC) include settlement activity, field systems and round barrows. Extensive evidence for activity has been identified during developer-lead excavations over the last 15 years including the East Kent Access Scheme, part of which included the construction of the A256 which crosses the Kent Scoping Boundary between Cliffs End and Richborough Port. A number of finds have also been made, including a hoard.

3.4.4.8 There is more evidence dating to the Iron Age (700 BC to AD 43), particularly in the later phase of the period leading into the transition into the Roman period (AD43 – AD410). Settlement evidence across the study area increased in these periods, with many enclosure ditches for settlements, containing individual buildings, and field systems recorded. A large number of finds of Iron Age coins are also present. Settlement continued into the Roman period, with settlement focussed around the

[92] Historic England (2022). National Heritage List. [Online] Available at: https://historicengland.org.uk/listing/the-list

Roman scheduled monuments. Other notable sites include Minster Roman villa and a Roman road.

3.4.4.9 Evidence from the early medieval period (AD410 to 1066) is much more limited. Apart from the scheduled nunnery, remains consist of funerary evidence, including a cemetery, a second possible cemetery and isolated burials. Settlement activity is limited to Anglo-Saxon activity within the scheduled Richborough Castle, sunken floored buildings excavated as part of the East Kent Access Route and a possible farmstead. Sites of medieval date (1066 to 1540) are largely related to agricultural activity, including evidence of farmsteads and ridge and furrow. Sea defences of medieval date are also recorded.

3.4.4.10 Post-medieval (1540 to 1900) sites are largely made up of built heritage assets, including farms, houses and churches, many of which are designated as listed buildings. Other evidence includes industrial sites, such as gravel pits, quarries, salt working, and chalk pits. Transport links were also enhanced in the post-medieval period, with the construction of the Stonar Cut canal, and railway lines, such as the Ashford and Margate railway line and the Deal Branch railway. Assets of modern date (1900 to present) are overwhelmingly related to the defence of the area during World War II, with home defences such as pillboxes, coastal batteries and anti-tank and anti-aircraft defences recorded in large numbers. Buildings, or the sites of buildings, from this period also include hospitals, stores and military depots. Evidence of aerial attack in the area includes bomb craters and an aircraft crash site. Sites not related to World War II include a light railway and other industrial sites.

Future Baseline

3.4.4.11 The cultural heritage chapter within the Environmental Statement (ES) will include an outline of the likely evolution of the baseline environment without the implementation of the development as far as natural changes from the baseline scenario can be assessed.

3.4.5 Embedded and Control & Management Measures

Embedded Measures

3.4.5.1 There is only a single asset within the Kent Scoping Boundary, this being the Grade II listed St. Augustine's Cross which is located near Cliffs End and St. Augustine's Golf Club (LB 1266551), which will be avoid by the Kent Onshore Scheme. As the design develops further and is better refined, additional mitigation measures could include further design intervention to avoid physical impacts on known heritage assets.

3.4.5.2 Impacts caused through change to the setting of heritage assets may be mitigated through detailed design and micro-siting of the converter station to avoid or minimise harm to heritage assets.

Control and Management Measures

3.4.5.3 If it is not possible to avoid heritage assets, mitigation will include (but not be limited to) detailed landscape/topographic survey, archaeological excavation of features being removed and archaeological monitoring/watching brief.

3.4.5.4 An outline Code of Construction Practice (CoCP) is provided in **Appendix 1.4.A Outline Code of Construction Practice**. Measures relevant to the control and management of impacts that could affect the Cultural Heritage assessment are:

- GG03: A Construction Environmental Management Plan (CEMP), a Landscape and Ecological Management Plan (LEMP) and a Construction Traffic Management Plan (CTMP) will be produced prior to construction.
- H01 Locations of known archaeological interest/value, or areas where archaeological work is planned, will be signposted/fenced off to avoid unintentional damage.
- H02 Where a previously unknown heritage asset is discovered, or a known heritage asset proves to be more significant than foreseen at the time of application, the project will inform the local planning authority and will agree a solution that protects the significance of the new discovery, so far as is practicable, within the project parameters.

3.4.6 Potential for Significant Effects

3.4.6.1 The cultural heritage assessment will consider the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project**.

3.4.6.2 The proposed scope of the cultural heritage assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

3.4.6.3 This section identifies the sources and impacts that would occur as a result of the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme.

3.4.6.4 The potential for the Kent Onshore Scheme to result in the potential significant effects described in this section takes into account the embedded and control and management measures described in section 5.

Sources of construction impacts

3.4.6.5 Permanent construction impacts resulting from the construction phase are likely to include:

- construction activities such as the excavation of trenches for cable installation, and the establishment of construction compounds;
- the presence of construction compounds introducing potential light and noise; and
- impacts on the setting of heritage assets resulting from the converter station and sub-station, as well as the AC connector if an overhead option is progressed for this element of work.

Sources of operational impacts

- the presence of new above ground infrastructure including the new converter station; and
- the presence of potential light and noise.

Sources of maintenance impacts

- physical impacts resulting from intrusive maintenance works on the cable and converter station; and
- temporary impacts on setting resulting from plant/machinery linked to maintenance works.

Sources of decommissioning impacts

- the presence and movement of construction plant that may alter the setting of heritage assets, including change arising from aural intrusion; and
- the presence of construction compounds introducing potential light and noise.

Potential impacts

3.4.6.6 There is the potential for significant effects on a number of non-designated assets within the Scoping Boundary. A full list of non-designated assets can be seen in **Appendix 3.4.A,** although it should be noted that significant effects are not expected on 'find spots' as 'find spots' represent features that have been recovered and therefore are no longer surviving *in situ*. It is also possible that at least some of the features have been excavated as part of earlier schemes so also no longer survive *in situ*.

3.4.6.7 There will be no physical impacts on the single designated assets within the Scoping Boundary as it will be avoided by the construction works. There is, however, the potential for temporary impacts on the setting of designated assets resulting from the construction of the cable.

3.4.6.8 Table 3.4.1 below identifies the potential for impacts that could result from the sources identified above.

Table 3.4.1: Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in / out
Construction	Construction works linked to Kent Onshore Scheme	Physical impacts on non-designated heritage assets.	Yes - The Kent Onshore Scheme has the potential to result in a physical impact on non-designated assets.	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in / out
Construction	Construction works linked to Kent Onshore Scheme	Temporary impacts on the setting of designated assets.	Yes - The Kent Onshore Scheme has the potential to result in temporary impacts on the setting of designated assets.	**Scoped in**
Construction	Construction compounds introducing light and noise pollution	Temporary impacts on the setting of designated assets.	Yes - The Kent Onshore Scheme has the potential to result in temporary impacts on the setting of designated assets.	**Scoped in**
Operation	Converter Station and OHL that might be required	Impacts on the setting of designated and non-designated assets.	Yes - The Kent Onshore Scheme has the potential to result in temporary impacts on the setting of designated assets	**Scoped in**
Maintenance	Physical impacts resulting from maintenance works	Physical impacts on non-designated assets	No – Limited potential as all remains will have been removed during construction	Scoped out
Maintenance	Temporary impacts on setting resulting from plant/machinery	Temporary impacts on the setting of heritage assets	No - Limited potential as the machinery/plant being used will be minor in size.	Scoped out
Decommissioning	Physical impacts resulting from decommissioning works	Physical impacts on non-designated assets	No - Limited as all remains will have been removed during construction	Scoped out
Decommissioning	Temporary impacts on setting resulting from plant/machinery	Temporary impacts on the setting of heritage assets	No - Limited potential for significant impacts as the machinery/plant being used will be minor in size.	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in / out
Decommissioning	Construction compounds introducing light and noise pollution	Temporary impacts on the setting of heritage assets.	No - Limited potential for significant impacts, and impacts will be temporary.	Scoped out

Impact Pathways with Receptors (Step 2)

3.4.6.9 This section identities whether there are any impact pathways from the impacts identified above that could give rise to potentially significant effects on the receptors within the Kent Onshore Scheme study area.

3.4.6.10 Table 3.4.2 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Kent Onshore Scheme as shown on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary** and **Figure 3.1.2 Kent Onshore Scheme.**

Table 3.4.2: Impact Pathways with receptors

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Temporary impacts on the setting of designated assets	Designated Heritage Assets	Yes - Moderate due to the number of designated assets in the area	**Scoped in**
Physical impacts on non-designated heritage assets	Non-Designated Heritage Assets	Yes - High due to the number and size of non-designated assets in the area, as well as the nature of the non-designated assets.	**Scoped in**
Impacts on the setting of heritage assets resulting from the converter station and above ground infrastructure	Designated and Non-Designated Heritage Assets	Yes - Moderate due to the number of designated and non-designated assets in the surrounding area	**Scoped in**

3.4.7 Proposed Assessment Methodology

3.4.7.1 An overview of the proposed assessment methodology is provided in **Part 1 Chapter 5, EIA Approach and Method.**

3.4.7.2 A cultural heritage Desk-Based Assessment (DBA) will be prepared in accordance with industry standards and best practice guidelines, namely the Chartered Institute for Archaeologists' Standard and Guidance for Historic Environment Desk-Based Assessment (2020), Historic England's Good Practice Advice in Planning Notes 2, 3 and 12 (2016; 2015; 2019 respectively), and any responses received as part of the Scoping Opinion and consultation on the Project. The DBA will form an appendix to the Project Environmental Statement and will inform the Kent Onshore Scheme Cultural Heritage chapter. It will confirm whether any additional survey work is required to better determine the nature, extent and significance of buried archaeological remains within the construction footprint of the Kent Onshore Scheme.

3.4.7.3 While a 1km study area has been used for the scoping stage, a refined study area of 0.5 km from the proposed Order Limits will be used to provide detailed baseline information for the assessment. A wider study area of 2 km from the proposed Order Limits will be used to identify assets which may have their setting affected. The study area for the assessment of setting will be limited to 2 km in the area of Above Ground Infrastructure, such as the Converter Station and the section of overhead line (if taken forwards), due to the below ground nature of the development. The scope of the setting assessment will be informed by the Zone of Theoretical Visibility (ZTV), although some

assets beyond this distance and outside the ZTV may also be considered where elements of their setting extend closer to, or include, the Kent Onshore Scheme.

Proposed Data Sources

3.4.7.4 Desk-based research will be undertaken as part of the EIA. Additional information will be gathered from the following sources:

- Kent Historic Environment Records (HER);
- The National Heritage List for England (NHLE), held by Historic England, for designated assets;
- local authority conservation area appraisal and management documents and their mapping;
- historic landscape characterisation (HLC) mapping undertaken by local planning authorities;
- aerial photographs held by Historic England, local authorities and other appropriate repositories and other readily available remote sensing results such as LiDAR data;
- geological mapping and borehole information as held by the British Geological Survey; and
- documentary, cartographic and other resources as deposited within local studies libraries, county libraries and archives, including historic Ordnance Survey maps, tithe, estate and other maps, and other relevant primary sources held at Kent Archives, together with local studies library information.

3.4.7.5 An archaeological walkover survey to assess known sites and to determine the potential for previously unrecorded heritage assets will also be undertaken. This will focus on the final alignment as well as any associated compounds, laydown areas, and Above Ground Infrastructure.

3.4.7.6 Information collected from these sources will be used to describe the known archaeology and built heritage of the 0.5km study area, and to assess the setting of heritage assets up to 2 km from the proposed Order Limits of the Kent Onshore Scheme.

Assigning Value

3.4.7.7 The value of a heritage asset (its heritage significance) is guided by its designated status but is derived also from its heritage interest which may be archaeological, architectural, artistic or historic (NPPF Annex 2, Glossary[93]). Each identified heritage asset can be assigned a value in accordance with the criteria set out in Table 3.4.3. Using professional judgement and the results of consultation, heritage assets are also assessed on an individual basis and regional variations and individual qualities are taken into account where applicable.

[93] Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework. [online] Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2

Table 3.4.3: Criteria for assessing the value of heritage assets

Value (significance)	Asset categories
High	World Heritage Sites Scheduled Monuments Grade I and II* listed buildings Registered battlefields Grade I and II* registered parks and gardens Conservation areas of demonstrable high value Non-designated heritage assets (archaeological sites, historic buildings, monuments, parks, gardens or landscapes) that can be shown to have demonstrable national or international importance Well preserved historic landscape character areas, exhibiting considerable coherence, time-depth or other critical factor(s)
Medium	Grade II listed buildings Conservation areas Grade II registered parks and gardens Conservation areas Non-designated heritage assets (archaeological sites, historic buildings, monuments, park, gardens or landscapes) that can be shown to have demonstrable regional importance Averagely preserved historic landscape character areas, exhibiting reasonable coherence, time-depth or other critical factor(s) Historic townscapes with historic integrity in that the assets that constitute their make-up are clearly legible
Low	Locally listed buildings Non-designated heritage assets (archaeological sites, historic buildings, monuments, park, gardens or landscapes) that can be shown to have demonstrable local importance Assets whose values are compromised by poor preservation or survival of contextual associations to justify inclusion into a higher grade Historic landscape character areas whose value is limited by poor preservation and/ or poor survival of contextual associations
Not significant	Assets identified on national or regional databases, but which have no archaeological, architectural, artistic or historic value Assets whose values are compromised by poor preservation or survival of contextual associations to justify inclusion into a higher grade Landscape with no or little significant historical merit

Determining the Magnitude

3.4.7.8 Having identified the value of the heritage asset, the next stage in the assessment is to identify the level and degree of impact to an asset arising from the development. Impacts may arise during construction or operation and can be temporary or permanent. Impacts can occur to the physical fabric of the asset or affect its setting.

3.4.7.9 The level and degree of impact (magnitude of impact rating) is assigned with reference to a four-point scale as set out in Table 3.4.4. In respect of cultural heritage an assessment of the level and degree of impact is made in consideration of any mitigation measures (embedded, control and management and mitigation measures. If no impact on value is identified, no impact rating is given and no resulting effect reported.

Table 3.4.4: Factors influencing the assessment of magnitude of impacts.

Magnitude of impact rating	Description of impact
Large	Changes such that the heritage value of the asset is totally altered or destroyed. Comprehensive change to elements of setting that would result in harm to the asset and our ability to understand and appreciate its heritage significance.
Medium	Change such that the heritage value of the asset is significantly altered or modified. Changes such that the setting of the asset is noticeably different, affecting significance and resulting in changes in our ability to understand and appreciate the heritage value of the asset.
Small	Changes such that the heritage value of the asset is slightly affected. Changes to the setting that have a slight impact on significance resulting in changes in our ability to understand and appreciate the heritage value of the asset.
Negligible	Changes to the asset that hardly affect heritage value. Changes to the setting of an asset that have little effect on significance and no real change in our ability to understand and appreciate the heritage value of the asset

Assessing the Significance of Effect

3.4.7.10 An assessment to classify the effect, having taken into consideration mitigation, will be determined using the matrix at Table 3.4.5, which takes account of the value of the asset (Table 3.4.3) and the magnitude of impact (Table 3.4.4). Effects can be neutral, adverse or beneficial.

Table 3.4.5: Assessment of effect

Heritage value (significance)		Very High	High	Medium	Low	Negligible
Impact magnitude:	**Large**	Major	Major	Major	Moderate	Minor
	Medium	Major	Moderate	Moderate	Minor	Negligible
	Small	Moderate	Moderate	Minor	Negligible	Negligible
	Negligible	Minor	Negligible	Negligible	Negligible	Negligible

3.4.7.11 The ES will report on the significance of effect in accordance with the proposed methodology described above. Major and moderate effects are considered to be significant. Within the NPPF, impacts affecting the value of heritage assets are considered in terms of harm and there is a requirement to determine whether the level of harm amounts to 'substantial harm' or 'less than substantial harm'. This is also supported by the Overarching National Policy Statement for Energy (EN-1) which also notes that there should always be a presumption in favour of conservation as once lost assets cannot be replaced[94]. There is no direct correlation between the significance of effect as reported in the final ES and the level of harm caused to heritage significance. A major (significant) effect on a heritage asset would, however, more often be the basis by which to determine that the level of harm to the significance of the asset would be substantial. A moderate (significant) effect is unlikely to meet the test of substantial harm and would therefore more often be the basis by which to determine that the level of harm to the significance of the asset would be less than substantial. A minor or negligible (not significant) effect would still amount to a less than substantial harm, which triggers the statutory presumptions against development within s.66 of the Listed Buildings Act 1990; however, a neutral effect is classified as no harm. In all cases determining the level of harm to the significance of the asset arising from development impact is one of professional judgement.

3.4.8 Conclusion

3.4.8.1 From the review of data undertaken as part of the scoping exercise, a number of designated and non-designated assets have been recorded within, and immediately adjacent, to the Kent Onshore Scheme and associated study area.

3.4.8.2 Previous developments in the area, including the East Kent Access Road scheme have also revealed previously unrecorded assets, while changes in land use, land reclamation, and silting of watercourses also means there is the potential for paleoenvironmental remains to survive in sections of the route.

3.4.8.3 While designated assets will be avoided as part of the development of the Kent Onshore Scheme, there is the potential for physical impacts on non-designated assets

[94] Department of Energy and Climate Change (2011). Overarching National Policy Statement for Energy (EN-1). [online] Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure

during the construction phase. Furthermore, there is the potential for impacts on the setting of designated and non-designated assets from the converter station.

3.4.8.4 As a result, an archaeology and cultural heritage chapter will be completed as part of the EIA. This will focus on assessing impacts to designated and non-designated assets, either through physical impacts from the Kent Onshore Scheme, or through change to their settings, during the construction and operational phases.

Proposed scope of the assessment

3.4.8.5 A summary of the proposed scope of the assessment is provided in Table 3.4.6.

Table 3.4.6: Proposed scope of the assessment

Receptor	Potential significant effect	Project phase(s)	Proposed to be scoped in/out
Designated assets	Potential for significant effect from impacts on setting resulting from the converter station and any above ground infrastructure	Operational	**Scoped in**
Non-designated assets	Potential for significant impacts resulting from construction works	Construction	**Scoped in**
	Potential for significant effect from impacts on setting resulting from the converter station and any above ground infrastructure	Operational	**Scoped in**

3.5 Water environment

3.5.1 Introduction

3.5.1.1 This chapter presents how the water environment assessment will consider the potentially significant effects on surface water receptors that may arise from the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme (as described in **Part 1, Chapter 4, Description of the Project**). This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an EIA.

3.5.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Kent Onshore Scheme Scoping Boundary hereafter referred to as the Kent Scoping Boundary, is illustrated on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary**.

3.5.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project**;
- **Part 1, Chapter 5, EIA Approach and Methodology**;
- **Part 3, Chapter 1, Evolution of the Kent Onshore Scheme**; and
- **Part 3, Chapter 5, Geology and Hydrogeology**.

3.5.1.4 This chapter is supported by the following figure:

- **Figure 3.5.1 Water Environment Study Area and Existing Features**.

3.5.1.5 The assessment of potentially significant effects on groundwater receptors is presented in **Part 3, Chapter 5, Geology and Hydrogeology**.

3.5.1.6 The water environment Assessment will be supported by a Flood Risk Assessment (FRA) and Water Framework Directive (WFD) Screening Assessment. The scopes of these are not discussed in detail herein, but will be agreed with the relevant stakeholders.

3.5.2 Regulatory and Planning Context

3.5.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. The key legislation, policy, and guidance relevant to the assessment of the potential effects on the water environment associated with the construction, operation, maintenance and decommissioning phases of the Project are presented below.

Legislation

3.5.2.2 The Water Environment (Water Framework Directive [WFD]) (England and Wales) Regulations 2003 (Her Majesty's Stationery Office (HMSO), 2003) implemented the Water Framework Directive in England and Wales and were amended by the Floods and Water (Amendment etc.) (EU Exit) Regulations 2019[95]. The 2019 Regulations, specifically Regulation 20, stipulate that the substance of the WFD regime that applied pre-EU Exit will continue to apply with only relatively minor amendments.

3.5.2.3 Part 5 of the Environment Act 2021 (HMSO, 2021)[96], brings together measures to strengthen and update the existing regulatory and long-term planning framework for water, helping to reduce environmental risks, including to water quality and land drainage. It also strengthens the regulation of water and sewerage undertakers by the newly established Office for Environmental Protection.

3.5.2.4 The Land Drainage Act 1991 (HMSO, 1991)[97] together with the Water Resources Act 1991[98] provide for the Environment Agency to prevent the obstruction of any main river through the construction of flow control structures, culverts or any other structure in a main river. Where culverting or other works have a potential to affect the flow regime on ordinary watercourses, consent is required from the Lead Local Flood Authority (LLFA) under the Flood and Water Management Act 2010 (HMSO, 2010)[99], which provides a more comprehensive flood risk management framework for people, homes and businesses.

Planning Policy

National planning policy

3.5.2.5 National Policy Statement for Energy (EN-1)[100] states that energy projects have the potential to have adverse effects on the water environment, noting that where significant effects are likely an assessment of the existing status of, and impacts of the proposed project on, water quality, water resources and physical characteristics of the water environment should be undertaken. The potential for the Project to result in significant effects on all these aspects of the water environment has been considered herein.

3.5.2.6 Flood risk is also a consideration and paragraph 5.7.4 of EN-1 states 'applications for energy projects of 1 hectare or greater in Flood Zone 1 in England and all proposals for energy projects located in Flood Zones 2 and 3… should be accompanied by a flood risk assessment (FRA). This should identify and assess the risk of all forms of flooding to and from the project and demonstrate how these flood risks will be managed, taking climate change into account'. The Project will be subject to an FRA

[95] The Floods and Water (Amendments etc.) (EU Exit) Regulations 2019 [online]. Available at: https://www.legislation.gov.uk/ukdsi/2019/9780111176283/contents

[96] The Environment Act 2021 [online]. Available at: https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted

[97] The Land Drainage Act 1991 [online]. Available at: https://www.legislation.gov.uk/ukpga/1991/59/contents

[98] The Water Resources Act 1991 [online]. Available at: https://www.legislation.gov.uk/ukpga/1991/57/contents

[99] The Flood and Water Management Act 2010 [online]. Available at: https://www.legislation.gov.uk/ukpga/2010/29/contents

[100] Department of Energy and Climate Change (2011). Overarching National Policy Statement for Energy (EN-1). [online] Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure

that meets these criteria. EN-1 also sets out generic policy with respect to water quality and resources in section 5.16 and section 4.10 sets out policy on the pollution control framework.

3.5.2.7 National Policy Statement for Electricity Networks Infrastructure (EN-5)[101] contains paragraph 2.4.2 relating to the water environment, which has been considered within this chapter. This states that 'The resilience of the project to climate change should be assessed in the Environmental Statement (ES) accompanying an application. For example, future increased risk of flooding would be covered in any flood risk assessment'.

Local planning policy

3.5.2.8 Relevant policies from the Dover District Council Core Strategy, adopted February 2010[102]and the Dover District Local Plan (adopted 2002), will also be considered. These are listed below:

- WE8 – River and tidal flooding; and
- WE9 – Coastal defences

3.5.2.9 Several standards and non-statutory guidelines, which provide details of assessment methodologies and mitigation techniques, will also be referenced to inform the assessment, including:

- Planning Inspectorate Advice Note 18: Water Framework Directive[103],
- Construction Industry Research and Information Association (CIRIA) publications (various dates)[104]; and
- Guidance for Pollution Prevention series[105].

3.5.3 Study Area

3.5.3.1 The study area for the EIA is proposed to include all land within the Kent Onshore Scheme Scoping Boundary, together with an additional 500m buffer from this boundary. The study area for the EIA is illustrated in **Figure 3.5.1 Water Environment Study Area and Existing Features**.

3.5.3.2 The FRA that will be prepared to inform the EIA, may cover a larger study area where necessary, for example assessing the potential for changes to baseline flood risk at the local catchment scale or within a floodplain cell which may covers areas up to a several km^2. The Water Framework Directive Screening Assessment will include a

[101] Department of Energy and Climate Change (2011). National Policy Statement for Electricity Networks Infrastructure (EN-5). [online] Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure

[102] Dover District Council (2010). Dover District Local Development Framework Core Strategy. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/PDF/Adopted-Core-Strategy.pdf [Accessed 13/07/2022].

[103] The Planning Inspectorate (2017). Advice Note 18: Water Framework Directive. [online] Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-18/

[104] Construction Industry Research and Information Association (2022). CIRIA Publications. [online] Available at: https://www.ciria.org/CIRIA/Bookshop/Free_Publications/Books/Free_CIRIA_Publications.aspx?hkey=ca8794b8-b1b3-4742-880d-6c7a27719afb

[105] NetRegs (2022). Guidance for Pollution Prevention (GPPs) – Full List. [online] Available at: https://www.netregs.org.uk/environmental-topics/guidance-for-pollution-prevention-gpp-documents/guidance-for-pollution-prevention-gpps-full-list/

study area that is set at the water body scale and include all those WFD waterbodies with the potential to be affected.

3.5.3.3 The study areas for assessing effects on geology and the groundwater environment are described in **Part 3, Chapter 6, Geology and Hydrogeology**.

3.5.4 Baseline Conditions

Data Sources

3.5.4.1 The water environment baseline described in this section has been informed by the following data sources:

- Environment Agency online flood maps;
- The South East River Basin Management Plan;
- The EA Catchment Data Explorer; and
- River Stour (Kent) IDB online mapping.

Baseline

3.5.4.2 The Kent Onshore Scheme is situated in the hydrological catchment of the River Stour. The River Stour is a designated main river that rises as the Great Stour in Lenham and flows towards and through Canterbury, where it becomes tidal, finally discharging to the sea at Pegwell Bay. The river has extensive areas of floodplain, designated as Environment Agency Flood Zone 3, with some areas mapped as benefitting from flood defences. The river is a designated WFD waterbody, with a current (2019) ecological status of Moderate and which is failing with regard to chemical status[106].

3.5.4.3 In addition to the River Stour, within the study area there are networks of watercourses that drain the Stour Marshes and which are managed by the River Stour (Kent) Internal Drainage Board (IDB). Key watercourses include the Minster Stream to the north and the Richborough Stream to the south of the Stour. The Stour Marshes constitute a WFD Operational management catchment, within which there are several monitored waterbodies, which are at Moderate ecological status.

3.5.4.4 Sites designated for their nature conservation interest, where surface waters play a key role in sustaining the designated interest features, are also important receptors. Details of these sites are provided in **Part 3, Chapter 3, Ecology and Biodiversity** of effects on such sites will be undertaken in collaboration with ecology and groundwater specialists.

3.5.4.5 Additional baseline data to characterise the water environment within the study area will be collected as part of a desk study, with reference to published data sources, supplemented by data sets collected in consultation with the Environment Agency, Kent County Council in their role as the LLFA and River Stour (Kent) IDB. Desk study data sources include the Environment Agency flood maps for rivers and the sea, surface water and reservoirs, the Environment Agency Catchment Data Explorer that

[106] Environment Agency (2022). Catchment Data Explorer – Suffolk Body Water. [online] Available at: https://environment.data.gov.uk/catchment-planning/WaterBody/GB650503520002

records WFD data and the South East River Basin Management Plan[107], the Environment Agency Water Quality Data Archive which provides records of water quality data for monitored main rivers, and Ordnance Survey maps and aerial imagery.

3.5.4.6 Field notes and photographs of water features, collected during ecological walkovers and surveys will also be referenced, in addition to the high-resolution aerial imagery.

3.5.4.7 Baseline data collection will be undertaken on a risk basis, focusing on collecting data for receptors where source-pathway linkages are identified. For example, locations accommodating any above ground infrastructure (AGI) and temporary crossings of watercourses for construction access. For watercourse receptors (where applicable) WFD status data will be collected to characterise existing qualities and status objectives, as well as any measures identified to achieve these measures, as recorded in the South East River Basin Management Plan. Existing surface water interests (abstractions and discharges) will be identified with reference to Environment Agency consent/permit registers. Areas of fluvial/coastal floodplain will be described using Environment Agency flood mapping and modelling data and existing flood defence assets will be identified with reference to Environment Agency asset records and the Coastal Management Strategy for Pegwell Bay[108]. Other sources of flood risk, such as from surface water, groundwater and artificial sources, will be characterised in consultation with the LLFA and River Stour (Kent) IDB and with reference to relevant Strategic Flood Risk Assessments and other published sources.

Future Baseline

3.5.4.8 With regard to flood risk and drainage, future baseline conditions will be forecasted, drawing on current best practice guidelines. These will take into account the likely impacts of climate change on river flows, rainfall intensities, and tidal flood levels/storm surge. These future conditions would be accounted for in the design of the Kent converter station and any above ground infrastructure required for the HVAC connection where required to ensure future resilience to flooding. The likely effects of implementation of future cycles of WFD management plans on the ecological and chemical quality of waterbodies would be considered when assigning value to water environment resources and receptors.

3.5.5 Embedded and Control & Management Measures

Embedded Measures

3.5.5.1 The assessment of effects will take account of mitigation, including measures embedded into the Project's design and good practice measures. Key measures are described below.

[107] Department for Environment, Food & Rural Affairs and Environment Agency (2018). Water for Life and Livelihoods – South East River Basin District, River Basin Management Plan. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/718337/South_East_RBD_Part_1_river_basin_management_plan.pdf

[108] Environment Agency and Dover District Council (2014). Planning for the Future – Coastal Flood Risk Management Strategy Pegwell Bay to Kingsdown. [online] Available at: http://www.environmentdata.org/archive/ealit:502/OBJ/19001282.pdf

3.5.5.2 The Kent converter station would be situated to avoid areas of Flood Zone 2 and 3. This would ensure that Project infrastructure is safe from flooding and would also avoid permanent losses of floodplain storage or disruption to floodplain flow paths, so avoiding permanent impacts on offsite flood risk.

3.5.5.3 Sustainable Drainage System (SuDS) techniques would be utilised at the converter station to manage rainfall runoff in terms of both quantities and quality, as well as along the cable swathe during construction. Suitable techniques will be selected, influenced by ground conditions and with reference to the drainage hierarchy set out in the National Planning Practice Guidance[109]. The drainage hierarchy promotes the use of SuDS and encourages infiltration to ground as a preference, or where this is not practicable, discharges to surface water bodies.

3.5.5.4 SuDS Guidance[110], to achieve both attenuation and treatment of surface water runoff, avoiding increases in surface water flood risk and pollution of the receiving water environment.

3.5.5.5 Where the cable route crosses watercourses, appropriate construction techniques would be selected according to factors such as watercourse channel dimensions, flow conditions and environmental sensitivities. Main rivers may be crossed by trenchless techniques to avoid physical changes and impacts on flow and sediment transport regimes and hydromorphology. This technique would also reduce disturbance within the riparian corridor and the risks of the construction phase detrimental to water quality.

3.5.5.6 Where watercourses are crossed temporarily to provide for construction access, similarly suitable crossing designs would be selected with the aim of reducing impacts.

Control and Management Measures

3.5.5.7 Where effects cannot be avoided through design, commitments would be made, and secured through the Development Consent Order (DCO), to control and manage effects.

3.5.5.8 An outline Code of Construction Practice (CoCP) is provided in **Appendix 1.4.A Outline Code of Construction Practice.** Measures relevant to the control and management of impacts that could affect flood risk and land drainage are:

- GG16: Commitments include controlling runoff for work site areas using a variety of methods including header drains, buffer zones around watercourses, on-site ditches, silt traps and bunding. There would be no intentional discharge of site runoff to ditches, watercourses, drains or sewers without appropriate treatment and agreement of the appropriate authority. Fuels, oils, chemicals and any other potentially hazardous materials would be stored responsibly in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001, and all refuelling, oiling and greasing of construction plant and equipment would take place above drip trays and also away from watercourses and drains as far as is reasonably practicable.

[109] Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (2021). Planning Practice Guidance. [online] Available at: https://www.gov.uk/government/collections/planning-practice-guidance

[110] Construction Industry Research and Information Association (2015). The SuDS Manual (C753). [online] Available at: https://www.susdrain.org/resources/SuDS_Manual.html

- GG15: Appropriate spill kits would be easily accessible for these activities.
- GG18: Wheel washing will be provided at each main compound access point.
- GG17: Wash down of vehicles and equipment will take place in designated areas within construction compounds, with appropriate treatment provided e.g., sediment traps (GG17) in order to prevent pollution of the water environment.
- GG23: An Emergency Action Plan will be developed for the construction phase which will outline procedures to be implemented in case of unplanned events, including but not limited to site flooding and pollution incidents.
- W03: At all watercourse crossings, widths of top soil stripping would be reduced whilst still providing safe working widths and riparian vegetation and natural channel bed materials would be re-instated on completion of the works.
- W06: To manage potential flood risk impacts associated with works in the floodplain, temporary stores of spoil along the cable route corridor would be configured to avoid forming continuous barriers to floodplain flow conveyance.
- W01: Risks of sedimentation would be reduced using silt fencing or similar measures. Secondary consents under the Environmental Permitting Regulations and the Land Drainage Byelaws for qualifying works would also be secured.

3.5.6 Potential for Significant Effects

3.5.6.1 The water environment assessment will consider the construction, operation, maintenance, and decommissioning of the Kent Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4 Description of the Project**.

3.5.6.2 The proposed scope of the water environment assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

3.5.6.3 This section identifies the sources and impacts that could occur as a result of the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme.

3.5.6.4 The potential for the Kent Onshore Scheme to result in the potential significant effects described in this section takes into account the embedded and control and management measures described in section 5

Sources of construction impacts

3.5.6.5 Good practice measures within the CoCP would reduce the risk of pollution of the water environment during construction by removing pathways between sources and receptors for many construction activities.

3.5.6.6 However, potential for construction work to cause localised and temporary pollution effects would remain.

3.5.6.7 At open cut watercourse crossings there would be temporary physical disturbance and temporary changes to watercourse flow regimes may also occur, for example, where over pumping is required during construction of the cable and access route watercourse crossings. Impacts would range in duration, but crossings may be in place in some locations for several months. Whilst crossing watercourses via trenchless techniques reduces physical disturbance and flow regime effects, the technique is not entirely without pollution risk, which is associated with the potential for break out of drilling muds. Trenchless techniques also have a water demand.

3.5.6.8 During construction there would be potential for impacts on land drainage regimes and associated surface water flood risk, due to changes in land surface permeabilities or local topography, e.g. where vegetation cover is stripped and earthworks are undertaken.

3.5.6.9 At work sites located in the floodplain there would be potential for localised impacts associated with storage of spoil reducing available floodplain storage or interrupting key floodplain flow paths.

3.5.6.10 These higher risk activities and associated receptors are proposed to be scoped into the Environmental Statement (ES), which will be informed by the findings of a supporting FRA. Effects on artesian water, springs and groundwater resources are addressed in **Part 2, Chapter 6: Geology and Hydrogeology**.

3.5.6.11 The sources of construction impacts are:

- Soil stripping earthworks and excavations;
- Watercourse crossings for access and cable crossings (trenched);
- Watercourse cable crossings (trenchless); and
- Spoil storage in the floodplain.

Sources of operational impacts

3.5.6.12 During operation of the Project, there would be no sources of pollution with the potential to impact on surface waterbodies. This is because land within the cable construction working width would be reinstated following completion of the construction works.

3.5.6.13 There would be no operational discharges to surface watercourses and rainfall runoff from Kent Converter Station or any potential AGI associated with the HVAC connection would be sustainably attenuated and treated prior to discharge to the receiving water environment. Physico-chemical elements supporting WFD waterbody status would therefore be safeguarded. No likely significant effects are therefore anticipated, and it is proposed that water quality effects during operation are scoped out of the assessment.

3.5.6.14 Given the nature of the Project, there would be no permanent impacts on watercourse flow regimes or floodplains. There would be no new consumptive water uses, and the water quality of water receptors would not be degraded. Therefore, the potential for likely significant effects on existing water interests (surface water abstractions and discharges) and hydromorphology is negligible.

3.5.6.15 Regarding flood risk and land drainage, situating the Kent converter station outside of the floodplain and incorporating appropriate post construction surface water

management and land drainage systems would result in negligible effects. All operational effects on water environment receptors are therefore proposed to be scoped out.

3.5.6.16 The sources of operational impacts are:

- operational runoff and discharges from above ground infrastructure (AGI); and
- loss of floodplain storage.

Sources of maintenance impacts

3.5.6.17 Maintenance activities would fall under the Applicant's operational management procedures and given the nature of the Project; maintenance activities are considered to pose a low risk of causing likely significant effects on water environment receptors. It is proposed that all maintenance effects are scoped out.

3.5.6.18 Sources of maintenance impacts are:

- Soil stripping, earthworks and excavations;
- Watercourse crossings for access; and
- Spoil storage in the floodplain.

Sources of decommissioning impacts

3.5.6.19 Decommissioning of the Project would consider all the relevant environmental legislation and technology available at the time and any necessary licences and permits would be acquired. The sources of decommissioning impacts are predicted to be the same as those described for the construction of the Project water environment.

3.5.6.20 Sources of decommissioning impacts are:

- Soil stripping, earthworks and excavations;
- Watercourse crossings for access; and
- Spoil storage in the floodplain.

Potential impacts

3.5.6.21 Table 3.5.1 identifies the potential impacts that could result from the sources identified above.

Table 3.5.1: Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction & decommissioning	Soil stripping, earthworks and excavations	Pollution by silt, hydrocarbons and other	Yes	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
		construction materials,		
Construction	Watercourse crossings for access and cable route – open cut	Physical disturbance, changes to flow regime	Yes	**Scoped in**
Construction	Watercourse crossings for cable route – trenchless	Pollution risks (bentonite breakout) and water consumption	Yes	**Scoped in**
Construction & decommissioning	Soil stripping, earthworks and excavations	Increased runoff rates and volumes, disruption to land drainage regimes	Yes	**Scoped in**
Construction & decommissioning	Spoil storage in floodplain	Increased flood risk	Yes	**Scoped in**
Operation	Operational discharges and runoff from AGI	Pollution of watercourses	No – no impact pathways given SuDS treatment provision	Scoped out
Operation	Operational discharges and runoff from AGI and loss of floodplain storage	Increased flood risk	No – no impact pathways given SuDS attenuation provision	Scoped out
Operation	Operational infrastructure – AGI and watercourse crossings	Physical disturbance, impact to flow regimes	No– no impact pathway as cables would be buried	Scoped out
Maintenance	Maintenance activities	Pollution of watercourses and physical disturbance	No– no impact pathway given nature of maintenance activities	Scoped out

Impact Pathways on Receptors (Step 2)

3.5.6.22 This section identifies whether there are any impact pathways from the impacts identified above that could give risk to potential significant effect on the receptors within the water environment study areas.

3.5.6.23 Table 3.5.2 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Kent Onshore Scheme as shown on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary** and **Figure 3.1.2 Kent Onshore Scheme.**

Table 3.5.2: Impact pathways with receptors

Impact pathway	Receptors	Potential for significant effect	Proposed to be scoped in / out
Pollution due to construction and decommissioning activities	River Stour and watercourses in the Stour Marshes including Minster Stream and Richborough Stream	Yes	**Scoped in**
Temporary physical disturbance and change to flow regimes at watercourse crossings for access and cable route	River Stour and watercourses in the Stour Marshes including Minster Stream and Richborough Stream	Yes	**Scoped in**
Impact on land drainage regime during construction and operation due to soil stripping, earthworks and excavation	Ordinary watercourses, land drains and existing land uses	Yes	**Scoped in**
Temporary loss of floodplain storage / impediment of floodplain flows due to spoil storage during construction and decommissioning	Fluvial floodplains, existing land uses and infrastructure	Yes	**Scoped in**

Impact pathway	Receptors	Potential for significant effect	Proposed to be scoped in / out
Increased surface water runoff from converter station drainage during operation	Existing land uses and infrastructure	No – no impact pathway given SuDS attenuation provision	Scoped out
Increased flood risk due to permanent loss of floodplain storage / impediment of floodplain flows	Fluvial floodplains, existing land uses and infrastructure	No– no impact pathway, no above ground operational infrastructure in the floodplain	Scoped out
Permanent impact on land drainage regime during operation	Ordinary watercourses, land drains, existing land uses	No– no impact pathways, land drainage routes would be reinstated or re-provided	Scoped out

3.5.7 Proposed Assessment Methodology

3.5.7.1 An overview of the proposed assessment methodology is provided in **Part 1 Chapter 5 EIA Approach and Method**.

Proposed Data Sources

3.5.7.2 The assessment will be informed by several published data sets and reports, which will be referenced to describe the baseline qualities of surface water receptors. Key data sources include:

- Catchment data explorer database of Cycle 2 and 3 Water Framework Directive information (Environment Agency, 2020)
- River Basin Management Plan (Environment Agency, 2018)
- Long term flood risk map for England, the Flood Map for Planning and the Historic Flood Map (Environment Agency, 2022)
- Data from Environment Agency flood models
- Drainage and flood data from Local Authority Surface Water Management Plans and Strategic Flood Risk Assessments
- Water quality data from the Environment Agency archive (Environment Agency, 2018); and
- Data defining surface water catchment areas and hydrological properties (e.g. rainfall, slopes, and soil permeability) from the Flood Estimation Handbook webservice (CEH, 2008)

Proposed Assessment Methodology

3.5.7.3 The assessment will be based on guidance set out in Part 10 of Volume 11 of the Design Manual for Roads and Bridges (DMRB), LA113[111]. Whilst primarily intended for use in assessing the impacts of highways projects on the water environment, the methodology is widely accepted as suitable for assessing the effects of other types of linear infrastructure. This promotes assessment that is proportionate to the scale and nature of the proposals and that considers the sensitivity of the local water environment to change.

3.5.7.4 The method provides guidance on assigning value (sensitivity) to receptors (for example, watercourses, floodplains) as well as criteria for assigning impact magnitude. The criteria consider the scale/extent of the predicted change and the nature and duration of the impact. Tables 3.5.3 and 3.5.4 below present the receptor value and impact magnitude criteria.

Table 3.5.3: Criteria for assigned receptor value (sensitivity)

Value of resource or receptor	Criteria	Typical examples
Very high	Nationally significant attribute of high importance	Site protected/designated under European Commission (EC) or UK legislation (Special Area of Conservation, Special Protection Area, Site of Special Scientific Interest, Ramsar site) Watercourse having a Water Framework Directive (WFD) classification shown in a River Basin Management Plan (RBMP) and a Q95 > 1.0m^3/s. Watercourse in natural equilibrium exhibiting a range of morphological features (e.g. pools, riffles) that is free from any modification or human influence Essential infrastructure or highly vulnerable development
High	Locally significant attribute of high importance	Watercourse having a WFD classification shown in a RBMP and a Q95 <1.0m^3/s Very limited signs of modification or other human influences on morphology More vulnerable development
Medium	Of moderate quality and rarity	Watercourses not having a WFD classification shown in a RBMP and Q95 > 0.001m^3/s Watercourse showing signs of modifications and having a limited range of morphological features Less vulnerable development

[111] Highways England (2020). Design Manual for Roads and Bridges. LA 113 Road Drainage and the Water Environment. [online] Available at: https://www.standardsforhighways.co.uk/prod/attachments/d6388f5f-2694-4986-ac46-b17b62c21727?inline=true

Value of resource or receptor	Criteria	Typical examples
Low	Lower quality, common place	Watercourses not having a WFD classification in a RBMP and a Q95 flow <0.001m^3/s A highly modified watercourse, changed by human pressures. No morphological diversity Water compatible development

Table 3.5.4:Criteria for assigning impact magnitude

Magnitude of impact*	Criteria	Typical examples
Large adverse	Results in loss of attribute and/or quality and integrity of the attribute	Loss or extensive change to a fishery Loss or extensive change to a designated nature conservation site Reduction in waterbody WFD classification Pollution of a public water supply or loss of a major commercial/industrial/agricultural supply Extensive change to channel planform, replacement of large extent of natural bed/bans with artificial material Increase in peak flood level (1% annual exceedance probability) of > 100mm
Medium adverse	Results in effect on integrity of attribute, or loss of part of attribute	Partial loss in productivity if a fishery Pollution of a non-potential source of abstraction Contribution to reduction in waterbody WFD classification Degradation (quality or reliability) of a potable, commercial or agricultural water supply Replacement of natural bed material or banks with artificial material over more than 3% of the water body's total length Increase in peak flood level (1% annual exceedance probability) of > 50mm
Small adverse	Results in some measurable change in attribute quality or vulnerability	Minor effects on water supplies Slight change from baseline conditions of channel bed/banks Increase in peak flood level > 10mm
Negligible	Results in effect on attribute of insufficient	Negligible change in peak flood level (< 10mm) No measurable impact on WFD waterbodies or river channel planform

Magnitude of impact*	Criteria	Typical examples
	magnitude to affect the use or integrity	
Small beneficial	Results in some positive effect on an attribute or a reduced risk of negative effect occurring	Creation of flood storage and reduction in peak flood level (1% AEP) > 10mm
Medium beneficial	Results in moderate improvement of attribute quality	Contribution to improvement waterbody WFD classification Improvements to morphological diversity at the local scale Creation of flood storage and reduction in peak flood level (1% AEP) > 50mm
Large beneficial	Results in major improvement of attribute quality	Removal of existing polluting discharge or removing likelihood of polluting discharges to a watercourse Major improvement to morphological diversity at reach scale e.g. through culvert removal Improvement in waterbody WFD classification Creation of flood storage and reduction in peak flood level (1% AEP) > 100mm
No change	No change, either beneficial or detrimental, to attribute quality	

*terminology has been adapted from that used in LA113, DMRB (National Highways, 2020)

3.5.7.5 The significance of an effect is then derived using the matrix set out in **Part 1, Chapter 5, EIA Approach and Methodology.**

3.5.7.6 Given the size of the Project and the presence of areas of Flood Zone 3 within the study area, an FRA of the Project will be produced in accordance with the Energy National Policy Statement and local flood risk management guidelines published by the LLFA[112]. The FRA will consider flood risk from all relevant sources during both construction and operation, incorporating allowance for climate change in accordance with published guidance where applicable[113]. It will also include details of the measures proposed to adhere to local drainage and flood risk planning policies. A WFD Screening Assessment will also be produced for the Project guided by Planning Advice Note 18: The Water Framework Directive[9]. The effects of the Project on the South East Basin Management Plan[13] and the waterbodies therein will be described, and the assessment will set out how the Project design has been developed to align with the requirements of the Directive. A qualitative approach is proposed, and the assessment

[112] Lead Local Flood Authorities of the South East of England (2020). Water. People. Places. - A guide for master planning sustainable drainage into developments. [online] Available at: https://www.kent.gov.uk/__data/assets/pdf_file/0008/23579/Masterplanning-for-SuDS-Part-1.pdf

[113] Environment Agency (2022). Flood risk assessments: climate change allowances. [online] Available at: https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances

will identify how the Project design will avoid waterbody deterioration, as well as any other mitigation necessary.

3.5.8 Conclusion

3.5.8.1 Water environment receptors within the Scoping Boundary include the River Stour and watercourses draining the Stour Marshes, including the Minster Stream, there are also extensive floodplains. Higher risk project activities include watercourse crossings for access and construction of AGIs. A suite of embedded and good practice measures, coupled with commitments secured through the DCO would prevent or reduce source pathway linkages and control and manage effects on water quality, hydromorphology and flood risk and drainage.

Proposed Scope of the Assessment

3.5.8.2 A summary of the proposed scope of the assessment is provided in Table 3.5.5.

Table 3.5.5:Proposed scope of the assessment

Receptor	Potential significant effect	Project phase(s)	Proposed to be scoped in/out
Watercourses and water bodies	Construction opening new pollution pathways and /or causing physical disturbance and degradation.	Construction and decommissioning	**Scoped in**
Floodplains, landowners & Infrastructure	Loss of floodplain storage and changes in floodplain flow conveyance routes.	Construction, Construction Operation and Decommissioning	Scoped out
Watercourses, landowners & infrastructure	Increases in rates and volumes of rainfall runoff and effects on existing land drainage systems (quality & quantity).	Construction and decommissioning	**Scoped in**
Watercourses, landowners & infrastructure	Increases in other forms of flood risk (e.g. groundwater, artificial sources)	Construction Operation and Decommissioning	**Scoped in**

3.6 Geology and Hydrogeology

3.6.1 Introduction

3.6.1.1 This chapter presents how the geology and hydrogeology assessment will consider the potentially significant effects that may arise from the construction, operation, maintenance, and decommissioning of the Kent Onshore Scheme (as described in **Part 1, Chapter 4, Description of the Project**). This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an EIA.

3.6.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Kent Onshore Scheme Scoping Boundary, hereafter referred to as the Kent Scoping Boundary, is illustrated on **Figure 1.1.3 Kent Onshore Scoping Boundary**.

3.6.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project**;
- **Part 1, Chapter 5, EIA Approach and Methodology**;
- **Part 3, Chapter 1, Evolution of the Kent Onshore Scheme**; and
- **Part 3, Chapter 5, Water Environment**.

3.6.1.4 This chapter is supported by the following figures:

- **Figure 3.6.1: Superficial Geology**;
- **Figure 3.6.2 Bedrock Geology**;
- **Figure 3.6.3 Hydrogeology**; and
- **Figure 3.6.4 Potential Sources of Contamination**.

3.6.1.5 The Project has the potential for geology and hydrogeology effects through excavation/disturbance of potentially contaminated soil, creation of pathways for contamination during piling or foundation excavation, and changes to groundwater levels and flow.

3.6.1.6 For geology, the assessment will include potential effects relating to designated sites, mineral resources, and ground conditions (stability and contamination).

3.6.1.7 For hydrogeology the assessment will include potential effects relating to changes in groundwater levels or flow, or potential effects relating to contamination and changes in quality. It also includes potential effects on surface water from changes in groundwater quality, levels or flow (i.e. where there is hydraulic continuity).

3.6.1.8 Effects on surface water, groundwater flooding and groundwater in terms of the Water Framework Directive are considered in **Part 3 Chapter 5 Water Environment**.

3.6.1.9 Ecological aspects including potential significant effects on Groundwater Dependant Terrestrial Ecosystems are considered in **Part 3, Chapter 3, Ecology and Biodiversity**. However, this chapter will identify where the underlying geology and/or groundwater within these ecosystems may be affected by contamination, and potential impacts on groundwater levels and flow that support these ecosystems.

3.6.1.10 Effects on agricultural and soil quality are considered within **Part 3, Chapter 7, Agriculture and Soils**.

3.6.2 Regulatory and Planning Context

3.6.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. Key legislation, policy and guidance relevant to the assessment of potential effects on geology and hydrogeology associated with the construction, operation, maintenance and decommissioning of the Project is presented below.

Legislation

Environmental Protection Act (1990)[114]

3.6.2.2 Part 2A of the Environmental Protection Act 1990[114] and associated Statutory Guidance is the primary legislation on contaminated land. It provided a framework for the assessment and, where necessary, the remediation of contaminated land. Part 2A focuses on the identification and remediation of land which in its current use poses an unacceptable risk to people or the environment.

3.6.2.3 The Statutory Guidance that accompanies the Environmental Protection Act 1990, include the Contaminated Land Statutory Guidance, 2012[115] which provide a definition of what constitutes “contaminated land” and sets out the responsibilities of the Local Authority and the Environment Agency in the identification and management of contaminated land. The regulations also include a definition of 'risk', where a risk is said to be a combination of "(a) the likelihood that harm, or pollution of water, will occur as a result of contaminants in, on or under the land; and (b) the scale and seriousness of such harm or pollution if it did occur".

Environmental Damage (Prevention and Remediation) Regulations (2015)[116]

3.6.2.4 The Environmental Damage (Prevention and Remediation) Regulations 2015[116] aim to prevent new land contamination that will damage water or health. The Regulations also include enforcement procedures, including criminal sanctions, for breaches of the Regulations.

[114] Environmental Protection Act 1990 [online]. Available at: https://www.legislation.gov.uk/ukpga/1990/43/contents

[115] Department for Environment, Food and Rural Affairs (2012). Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/223705/pb13735cont-land-guidance.pdf

[116] The Environmental Damage (Prevention and Remediation) (England) Regulations 2015 [online]. Available at: https://www.legislation.gov.uk/uksi/2015/810/contents/made [Accessed 16 June 2022]

Environmental Permitting (England and Wales) Regulations (2016)[117]

3.6.2.5 The Environmental Permitting (England and Wales) Regulations (2016)[117] include transposition of the EU Landfill Directive[118] into UK law. These Regulations cover sites that are covered by environmental permits, such as landfills, and how these are regulated. The project may cross sites where there are permits currently held.

3.6.2.6 These Regulations also cover the licensing of surface waters and groundwater abstractions. They also protect water resources through Source Protection Zones (SPZs). The project may require abstractions or discharges during construction. Whilst the project is not indicated to pass through areas designated as SPZs, such areas are located in proximity.

Landfill Directive[118]

3.6.2.7 The Landfill Directive[118] was adopted by the European Community in 1999. Every Member State of the European Union (EU) was required to implement it from 16 July 2001. The Directive's overall objective is to prevent or reduce as far as possible the negative effects of landfilling on the environment, as well as any resulting risk to human health. It seeks to achieve this through specifying uniform technical standards at Community level. It also sets out requirements for the location, management, engineering, closure and monitoring for landfills. The Directive includes requirements relating to the characteristics of the waste to be landfilled. The Landfill Directive is currently implemented through the Environmental Permitting (England and Wales) Regulations 2016[117].

Water Resources Act (1991)[119]

3.6.2.8 The Water Resources Act (1991)[119] aims to maintain and improve the quality of controlled waters. Part II of the Act covers the licencing of surface water and groundwater abstractions.

The Water Environment (Water Framework Directive) Regulations (2017)[120]

3.6.2.9 The Water Framework Directive (WFD) (2017)[120] establish a framework for the protection of surface waters and groundwater and to prevent the deterioration of WFD water bodies.

3.6.2.10 A WFD assessment will be undertaken and this is described further in **Part 3 Chapter 5: Water Environment.**

[117] The Environmental Permitting (England and Wales) Regulations 2016 [online]. Available at: https://www.legislation.gov.uk/uksi/2016/1154/contents/made [Accessed 16 June 2022].

[118] The Landfill Directive Council Directive 1999/31/EC 1991 [online]. Available at: https://www.legislation.gov.uk/eudr/1999/31 [Accessed 16 June 2022].

[119] The Water Resources Act 1991 [online]. Available at: https://www.legislation.gov.uk/ukpga/1991/57/contents

[120] The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 [online]. Available at: https://www.legislation.gov.uk/uksi/2017/407/contents/made [Accessed 16 June 2022].

The Groundwater Regulations (2009)[121]

3.6.2.11 The Regulations cover potential groundwater contamination that could eventuate from spillages or disturbance of contaminated ground. The project has the potential to cross contaminated land or to create pollution risks during construction.

Environment Agency Groundwater Protection Position Statements (2018)[122]

3.6.2.12 The Environment Agency regulates activities that may impact groundwater resources, to prevent and limit pollution. This document is concerned with infrastructure schemes of national or regional significance, that pass through SPZs or are below the water table in Principal or Secondary aquifers.

3.6.2.13 Section A of the policy (general principles) includes the following

- A1: Wherever legislation allows, the Environment Agency will use a tiered, risk-based approach to regulate activities that may impact groundwater resources and to prevent and limit pollution;
- A2: Development must be appropriate to the sensitivity of the site. Where the potential consequences of a development or activity are serious or irreversible the Environment Agency will adopt the precautionary principle to manage and protect groundwater. The Environment Agency will also apply this principle in the absence of adequate information with which to conduct an assessment; and
- A3: The Environment Agency encourages everyone whose activities may impact upon groundwater to consider the groundwater protection hierarchy in their strategic plans when proposing new development or activities. The aim is to avoid potentially polluting activities being located in the most sensitive locations for groundwater.

3.6.2.14 Section C Infrastructure states the following:

- If national need for the provision and location of major developments overrides Environment Agency objections, the Environment Agency will raise its concerns and make every use of environmental impact assessment in addition to other measures to achieve environmental protection. Where developments receive approval against Environment Agency advice, it will apply section A - general protection position statements.

Planning Policy

National Planning Policy

National Policy Statements (NPS)

3.6.2.15 NPS EN-1[123], in paragraph 5.10.9 it states that “Applicants should safeguard any mineral resources on the proposed site as far as possible, taking into account the long-

[121] The Groundwater (England and Wales) Regulations 2009 [online]. Available at: https://www.legislation.gov.uk/ukdsi/2009/9780111480816/contents

[122] Environment Agency (2018). The Environment Agency’s approach to groundwater protection. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692989/Envirnment-Agency-approach-to-groundwater-protection.pdf

[123] Department of Energy & Climate Change (2011). Overarching National Policy Statement for Energy (EN-1). [online] Available at: Overarching National Policy Statement for Energy (publishing.service.gov.uk) [Accessed 13/07/2022].

term potential of the land use after any future decommissioning has taken place". Paragraph 5.10.22 also states "Where a proposed development has an impact upon a Mineral Safeguarding Area, the IPC should ensure that appropriate mitigation measures have been put in place to safeguard mineral resources".

3.6.2.16 NPS EN-1[123], in paragraph 5.3.7 it states that "development should aim to avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives, where significant harm cannot be avoided, then appropriate compensation measures should be sought".

3.6.2.17 NPS EN-1[123], in paragraph 5.15.3, it states that the Environmental Statement should in particular describe "*any impacts of the proposed project on… source protection zones (SPZs) around potable groundwater abstractions*"

3.6.2.18 NPS EN-1[123] is supported by National Policy Statement for Electricity Networks (EN-5)[124]. EN-5 contains paragraph 2.8.9 relating to Geology and Hydrogeology, which indicates that the IPC should consider for each specific project '*the environmental and archaeological consequences (undergrounding a 400kV line may mean disturbing a swathe of ground up to 40 metres across, which can disturb sensitive habitats, have an impact on soils and geology, and damage heritage assets, in many cases more than an overhead line would)*'.

The national planning policy framework

3.6.2.19 The National Planning Policy Framework[125] (paragraphs 174, 183, 179, 210) relates to conserving and enhancing the natural and local environment and helping the sustainable use of minerals. The National Planning Policy is supported by the associated Planning Practice Guidance for the NPPF, including Land Affected by Contamination[126], June 2014 (updated July 2019); Land Stability[127], March 2014 (updated July 2019); Natural Environment[128], January 2016 (updated July 2019).

Local planning policy

3.6.2.20 The local planning policy relevant to the scope of potential impacts relating to geology and hydrogeology is as follows:

- Kent Minerals and Waste Local Plan and Safeguarding Supplementary Planning Document[129]
  - CSM 5 - Land-won Mineral Safeguarding; and
  - DM 7 - Safeguarding Mineral Resources.

[124] Department of Energy and Climate Change (2011). National Policy Statement for Electricity Networks Infrastructure (EN-5). [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47858/1942-national-policy-statement-electricity-networks.pdf [Accessed 16 June 2022].

[125] Department for Levelling Up, Housing & Communities (2021). National Planning Policy Framework. London. [online] Available at: National Planning Policy Framework - Guidance - GOV.UK (www.gov.uk) [Accessed 16 June 2022].

[126] Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (2019). Planning Practice Guidance - Land Affected by Contamination. [online] Available at: https://www.gov.uk/guidance/land-affected-by-contamination

[127] Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (2019). Planning Practice Guidance – Land Stability. [online] Available at: https://www.gov.uk/guidance/land-stability [Accessed 16 June 2022].

[128] Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (2019). Planning Practice Guidance – Natural Environment. [online] Available at: https://www.gov.uk/guidance/natural-environment

[129] Kent County Council (2020). Kent Minerals and Waste Local Plan 2013-30, 2020. [online] Available at: https://www.kent.gov.uk/__data/assets/pdf_file/0004/112585/Kent-Minerals-and-Waste-Local-Plan-2013-2030.pdf [Accessed 16 June 2022].

- Dover District Council Core Strategy[130];
  - DM 17 – Groundwater Source Protection.
- Emerging Dover District Local Plan; and
  - DM 42 - Water Supply and Quality.
- Thanet Local Plan[131].
  - SE03 – Land Affected by Contamination; and
  - SE04 – Groundwater Protection.

Guidance and Advice Notes

3.6.2.21 The following core guidance documents provide the technical framework for applying a risk management process when dealing with land affected by contamination in a way that is consistent with government policies and legislation within the UK:

- Land Contamination: Risk Management (LCRM) [132];
- CIRIA 552: Contaminated Land Risk Assessment, A guide to good practice [133];
- BS 10175:2011+A2:2017 Investigation of potentially contaminated sites. Code of Practice[134]; and
- The Environment Agency's Guiding Principles for Managing and Reducing Land Contamination (GPLC2)[135].

3.6.3 Study Area

3.6.3.1 For the purpose of establishing the baseline conditions and defining the scope of the EIA, the study area has been defined as the Kent Scoping Boundary plus a 250m buffer for geology and up to a 500m buffer for hydrogeology. Given the scale and nature of the Project, this is considered a robust yet proportionate approach, and although not directly relevant for this development type, accords with the study area recommended in Guidance for the Safe Development of Housing on Land Affected by Contamination[136] .

[130] Dover District Council (2010). Dover District Local Development Framework Core Strategy. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/PDF/Adopted-Core-Strategy.pdf [Accessed 16 June 2022].

[131] Thanet District Council (2020). Thanet District Council Local Plan. [online] Available at: https://www.thanet.gov.uk/wp-content/uploads/2018/03/LP-adjusted.pdf [Accessed 16 June 2022].

[132] Environment Agency (2021). Land Contamination Risk Management. [online] Available at: https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm

[133] Rudland D., Lancefield R. and Mayell P. (2001). Contaminated land risk assessment, a guide to good practice (C552). CIRIA. p. 1-159.

[134] British Standards Institution (2011). BS 10175:2011+A2;2017, Investigation of potentially contaminated sites – code of practice. BSI. P. 1-134.

[135] Environment Agency (2016). Managing and Reducing Land Contamination: Guiding Principles (GPLC). [online] Available at: https://www.gov.uk/government/publications/managing-and-reducing-land-contamination [Accessed 16 June 2022].

[136] The National House Building Council, The Environment Agency and The Chartered Institute of Environmental Health (2008). Guidance for the Safe Development of Housing on Land Affected by Contamination. [online] Available at: https://www.nhbc.co.uk/binaries/content/assets/nhbc/products-and-services/tech-advice-and-guidance/guidance-for-the-safe-development-of-housing-on-land-affected-by-contamination.pdf [Accessed 16 June 2022].

3.6.3.2 The study area will be refined throughout the development of the Project, it is proposed that the study area for the EIA will be the proposed Order Limits plus the same buffer zones as described above.

3.6.4 Baseline Conditions

3.6.4.1 The following section provides a summary of the baseline environmental conditions within the Kent Scoping Boundary, using the sources of information outlined below.

Data Sources

3.6.4.2 The geology and hydrogeology baseline described in this section has been informed by the following data sources:

- Britain from Above, historical aerial imagery archive[137] ;
- British Geological Survey (BGS) Sheets 274 Ramsgate[138], 1:50,000 scale solid and drift edition.;
- BGS GeoIndex Viewer[139];
- BGS Hydrogeological Map of the Chalk and Lower Greensand of Kent[140];
- Coal Authority Interactive Map[141];
- Environment Agency (EA), Catchment Data Explorer[142] ;
- Environment Agency Report, New Groundwater Vulnerability Mapping Methodology in England and Wales[143];
- Geo Conservation Kent map of Regionally Important Geological Sites in Kent[144],;
- Multi-Agency Geographic Information for the Countryside (MAGIC) interactive map[145];
- National Library of Scotland, georeferenced historical maps for the period 1885 - 1970[146], and

[137] Britain from Above (2022). [online] Available at: https://britainfromabove.org.uk/en [Accessed 16 June 2022]

[138] British Geological Survey (1996). Sheet 191, Saxmundham, 1:50,000 scale solid and drift, geological map, BGS, Keysworth.

[139] British Geological Survey (2022). Geoindex Onshore. [online] Available at: https://mapapps2.bgs.ac.uk/geoindex/home.html [Accessed 16 June 2022].

[140] British Geological Survey (1970). Hydrogeological Maps of the United Kingdom - Hydrogeological map of the Chalk and Lower Greensand of Kent -Sheet 3b. Chalk regional hydrological characteristics and explanatory notes. BGS, Keysworth.

[141] The Coal Authority (2022). Interactive Map. [online] Available at: https://mapapps2.bgs.ac.uk/coalauthority/home.html

[142] Environment Agency (2022). Catchment Data Explorer – Stour (Essex) Water Body. [online] Available at: https://environment.data.gov.uk/catchment-planning/WaterBody/GB520503613602 [Accessed 16 June 2022].

[143] Environment Agency (2017). Groundwater vulnerability mapping methodology. [online] Available at: https://www.gov.uk/government/publications/updated-groundwater-vulnerability-maps-improvements-to-methodology-and-data [Accessed 16 June 2022].

[144] Geo Conservation Kent (2022). Geological Map of Kent. [online] Available at: https://www.geoconservationkent.org.uk/index.php?option=com_content&view=article&id=12:-geological-map-of-kent&catid=4:geology&Itemid=17 [Accessed 16 June 2022].

[145] Department for Environment, Food and Rural Affairs (2022). Multi-Agency Geographic Information for the Countryside (MAGIC). [online] Available at: https://magic.defra.gov.uk/ [Accessed 16 June 2022].

[146] National Library of Scotland (2022). Map Images. [online]. Available at: https://maps.nls.uk/geo/explore/side-by-side/#zoom=5.0&lat=56.00000&lon=-4.00000&layers=1&right=ESRIWorld [Access 16 June 2022].

- Zetica Ltd., Unexploded Ordnance Risk Maps[147].

Baseline

Geology

Superficial deposits

3.6.4.3 The superficial geology present beneath the Kent Scoping Boundary is shown on **Figure 3.6.1 Superficial Geology**.

3.6.4.4 The majority of the study area to the west of the A256 is shown to be underlain by Tidal Flat Deposits, described by the BGS[148] as typically comprising "*unconsolidated sediment, mainly mud and/or sand…. soft silty clay, with layers of sand, gravel and peat*". Further areas of Tidal Flat Deposits are present to the east of the A256 beneath St. Augustine's Golf Course.

3.6.4.5 To the east of the mapped areas of Tidal Flat Deposits, along the eastern boundary, the BGS record deposits of Beach and Tidal Flat Deposits (Undifferentiated) described[148] as a composite of Beach Deposits ("*Shingle, sand, silt and clay*") and the Tidal Flat Deposits described above.

3.6.4.6 Limited areas along the northern boundary are shown to be underlain by deposits of Head, described as a poorly sorted and poorly stratified deposit described by the BGS[148] as typically comprising "*sand and gravel, locally with lenses of silt, clay or peat and organic material*".

3.6.4.7 There are also some areas within the study area, predominantly immediately adjacent either side of the A256, where there are no superficial deposits recorded on the BGS mapping.

Bedrock geology

3.6.4.8 The bedrock geology present beneath the Kent Scoping Boundary is shown on **Figure 3.6.2 Bedrock Geology.**

3.6.4.9 The whole of the Kent Scoping Boundary is shown to be underlain by bedrock of the Thanet Formation, described by the BGS[148] as typically a "*silty fine-grained sand, with sandy silt, silt or sandy, silty clay especially in the lower part, forming a coarsening-upwards sequence*". BGS Sheet 274[138] indicates that the Thanet Formation is approximately 30m thick.

3.6.4.10 Beneath the Thanet Formation, the BGS mapping[138] and archive borehole logs record[139] chalk bedrock of the White Chalk Subgroup. The BGS map[138] indicates that the chalk is in excess of 200m thick. In the study area, to the north of the Kent Scoping Boundary the Thanet Formation is absent and the superficial deposits are directly underlain by the White Chalk Subgroup.

[147] Zetica UXO (2022). Unexploded Ordnance Risk Maps. [online] Available at: https://zeticauxo.com/downloads-and-resources/risk-maps/ [Accessed 16 June].

[148] British Geological Survey (2022). Lexicon of Named Rock Units. [online] Available at: https://webapps.bgs.ac.uk/lexicon/ [Accessed 16 June 2022].

Coal mining

3.6.4.11 The majority of the study area is shown to be within the Kent Coalfield and the geological mapping[138] indicates that the coal measures are likely to be at significant (>300m) depth beneath the chalk bedrock. In addition, the coal seams recorded by the BGS as present at depth within the study area are indicated to be of limited thickness (Kent Seam No 11 0.4m thick and Kent Seam No 14 0.7m thick).

3.6.4.12 A review of the Coal Authority's interactive map viewer[141] indicates that the southern part of the study area is in a Coal Mining Reporting Area. The interactive map shows that there are no recorded mine entries, fissures or breaklines, areas of historical recorded shallow mining, coal outcrops, coal mine abandonment plans, Surface Coal Resource Area or Development High Risk Areas within the study area.

Geo-conservation

3.6.4.13 A review of the Geo Conservation Kent interactive map[144] and DEFRA's MAGIC map[145] indicates that there are no Regionally Important Geological Sites (RIGS) or geological Sites of Special Scientific Interest (SSSI) present within the study area. However, the Sandwich Bay to Hacklinge Marshes SSSI is also designated as a Geological Conservation Review Site, which forms the eastern part of the study area and the wooded area between the former Richborough Power Station and Weatherlees Hill Water Treatment Works. These are discussed further within the Environmentally Sensitive Sites section.

Minerals

3.6.4.14 A review of the Kent County Council (KCC) Minerals and Waste Local Plan[129] (MWLP) indicates that there are no Mineral Safeguarding Areas (MSAs, as defined by Policy CSM 5 of the MWLP) within the Kent Scoping Boundary.

3.6.4.15 In addition, the MWLP and the KCC Mineral Sites Plan indicate that there are no proposed mineral extraction sites, safeguarded docks / wharves / jetties / rail depots within the Kent Scoping Boundary.

Radon

3.6.4.16 Based on the UK Radon maps[149] the study area is located within an area where less than 1% of homes are above the Action Level for Radon and therefore Radon protection measures in new homes would not be required. This is not considered to be entirely relevant to the Project, however it is a good indicator of whether Radon gas needs to be considered in the ES.

Hydrogeology

Aquifer designation – superficial

3.6.4.17 DEFRA's MAGIC map[145] indicates that the Undifferentiated Beach and Tidal Flat Deposits to the east of the study area are classified in parts as a Secondary A Aquifer and in parts as a Secondary Undifferentiated Aquifer. The Tidal Flat Deposits to the west of the study area and the Head Deposits to the north are classified as Unproductive Strata.

[149] UK Radon (2022). Radon Maps. [online] Available at: https://www.ukradon.org/radonmaps/ [Accessed on 16 June 2022].

3.6.4.18 Secondary A Aquifers are described by the Environment Agency (EA) as "*permeable layers that can support local water supplies, and may form an important source of base flow to rivers*". The Secondary Undifferentiated Aquifer classification is applied by the EA "*where it is not possible to apply either a Secondary A or B definition because of the variable characteristics of the rock type. These have only a minor value*[150]".

3.6.4.19 Unproductive Strata is described by the EA as "largely unable to provide usable water supplies and are unlikely to have surface water and wetland ecosystems dependent on them"[150].

3.6.4.20 Groundwater flow within the shallow aquifer is likely to be generally to the east, towards the River Stour and the sea. Groundwater levels and movement may exhibit some tidal influence in the eastern part of the study area.

Aquifer designation – bedrock

3.6.4.21 The bedrock of the Thanet Formation, present beneath the whole of the study area, is classified by the EA as a Secondary A Aquifer[145]. The White Chalk Subgroup, which is present beneath the Thanet Formation and directly underlying the superficial deposits to the north, is classified as a Principal Aquifer[145].

3.6.4.22 Principal Aquifers are described by the EA as strata that "provide significant quantities of drinking water, and water for business needs. They may also support rivers, lakes and wetlands[150].

3.6.4.23 The contours of Estimated minimum level of the chalk water table or pressure surface as shown on BGS' hydrogeological map[140], indicate that the piezometric surface within the Kent Scoping Boundary is likely to be zero metres above Ordnance Datum (mAOD).

3.6.4.24 The groundwater in the different strata (superficial and bedrock) may therefore be in hydraulic continuity.

Groundwater vulnerability

3.6.4.25 DEFRA's MAGIC map[145] indicates that the groundwater beneath the eastern part of the study area, i.e., approximately beneath areas where Undifferentiated Beach and Tidal Flat Deposits are present overlying the Thanet Formation, is of Medium to High vulnerability.

3.6.4.26 Within areas where the Thanet Formation is exposed at the surface, and not covered by a layer of superficial deposits, the groundwater vulnerability is considered to be High. Within the remaining parts of the study area, where the Tidal Flat Deposits overly the Thanet Sand Formation the groundwater vulnerability is considered to be Medium to Low Vulnerability.

3.6.4.27 The EA define High vulnerability as "Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits", and areas of Low vulnerability as "Areas that provide the greatest protection to groundwater from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial

[150] Environment Agency (2017). Protect Groundwater and Prevent Groundwater Pollution. [online] Available at: https://www.gov.uk/government/publications/protect-groundwater-and-prevent-groundwater-pollution/protect-groundwater-and-prevent-groundwater-pollution [Accessed 16 June 2022].

deposits characterised by a low permeability". Medium vulnerability is described as intermediate between Low and High vulnerability[143].

3.6.4.28 To the north of the Kent Scoping Boundary within the study area where the chalk bedrock is present directly beneath the superficial deposits the groundwater vulnerability is shown to be Medium to High.

Groundwater source protection zones

3.6.4.29 Source Protection Zones in relation to the Kent Onshore Scheme are shown on **Figure 3.6.3 Hydrogeology**.

3.6.4.30 DEFRA's MAGIC map[145] indicates that there are no groundwater Source Protection Zones (SPZs) within the Scoping Boundary.

3.6.4.31 Within the study area there are two SPZ 2s located approximately 300m northwest and 300m northeast of the Kent Scoping Boundary. The associated SPZ 1s are located approximately 900m northwest and 700m northeast of the Kent Scoping Boundary. It is anticipated that these abstractions are from within the White Chalk Subgroup.

3.6.4.32 A SPZ1 is defined as the inner zone which is a 50-day travel time of a pollutant to the source. A SPZ2 Outer Zone is defined as a 400-day travel time of a pollutant to a source. A SPZ3 is defined as the total catchment, which is the area around a source within which all the groundwater ends at the abstraction point[151].

3.6.4.33 The map also shows that the site is not located within a groundwater Drinking Water Safeguard Zone (DWSZ) or a groundwater Nitrate Issues Priority Zone (NIPZ). The nearest groundwater DWSZ and NIPZ are located approximately 450 m to the north of the Kent Scoping Boundary[145].

Groundwater body

3.6.4.34 The EA's Catchment Data Explorer[142] indicates that groundwater beneath the Kent Scoping Boundary and within the Study Area is part of the East Kent Tertiaries groundwater body (ref: GB40702G501600). This groundwater body received an overall Water Framework Directive (WFD) classification of "Poor" in 2019. This classification can be further broken down into classifications of "Good" for chemical quality and "Poor" for quantitative status.

Hydrology

3.6.4.35 The potential effects relating to hydrology are assessed within **Part 3, Chapter 5, Water Environment**, however where there is potential for groundwater to interact with and impact surface waters, those sensitive receptors are identified within this chapter in order to determine the potential effects from any contamination.

3.6.4.36 The Study Area is situated within the catchment of the River Stour, which is a designated main river, and flows generally to the south through the Scoping Boundary before turning to the north adjacent to the eastern Kent Scoping Boundary and out falling in Pegwell Bay. The Environment Agency Catchment Data Explorer[142] indicates that the catchment has been given a moderate Ecological Status and failing Chemical Status in 2019. The River Stour and Pegwell Bay are classified as a Drinking Water

[151] Environment Agency (2019). Groundwater Source Protection Zones (SPZs). [online] Available at: https://www.gov.uk/guidance/groundwater-source-protection-zones-spzs [Accessed 15 July 2022].

Protected Area for Surface Water. In addition to the River Stour, there are a network of watercourses that drain into the Stour Marshes within the study area.

Environmentally sensitive sites

3.6.4.37 A review of DEFRA's MAGIC map[145] indicates the following environmentally sensitive sites present within the Kent Scoping Boundary and within the study area:

- Sandwich Bay to Hacklinge Marshes SSSI, located both within the Kent Scoping Boundary (wooded area between former Richborough Power Station and Weatherlees Hill WTW) and within the study area immediately east and south of the eastern Scoping Boundary;
- Sandwich Bay Special Area of Conservation (SAC) and Thanet Coast & Sandwich Bay Special Protection Area (SPA) both located immediately east of the Kent Scoping Boundary and within the study area to the east. Thanet Coast & Sandwich Bay is also a wetland of international importance as designated by the Ramsar Convention; and
- Sandwich and Pegwell Bay National Nature Reserve (NNR) located beneath the Pegwell Bay and Cliffsend landfill within the Scoping Boundary to the northeast.

3.6.4.38 There are no recorded Local Nature Reserves (LNR) or areas of Ancient Woodland within the Scoping Boundary.

Potentially contaminative land uses

3.6.4.39 Much of the Kent Scoping Boundary and study area appears to have remained as undeveloped agricultural land since the earliest available publicly available historical mapping dated 1885[146]. In these areas it is considered that there is a very low risk of significant sources of potential contamination.

3.6.4.40 There are however areas within the Kent Scoping Boundary and the study area that have a history of potentially contaminative land use or where the current land use is potentially contaminative. Where identified, readily available information relating to these Potential Sources of Contamination (PSC) has been gathered and is presented in Table 3.6.1 below with a corresponding Risk Rating for their potential for generation of significant contamination. The location of these, are presented on **Figure 3.6.4 Potential Sources of Contamination**.

Table 3.6.1: Potential sources of contamination

PSC number	Name	Location	Description	Risk ranking
PSC within Scoping Boundary				
1	Cliffsend landfill (ref: EAHLD19457, WRC ref: 2200/7253)	Located in the north-eastern corner of the Scoping Boundary, to the south-east of St. Augustine's Golf Course, between Sandwich Road and the coastal path	This landfill is indicated to have been operated by Thanet District Council and received household and inert waste between 1960 and 1972. Historical mapping and historical aerial imagery indicate that the waste appears to have been deposited directly onto an area of marshy coastal land.	High
2	Railways	The Scoping Boundary is crossed by a north-west south-east trending railway line and a further east-west trending railway line forms the Scoping Boundaries northern boundary.	These railway branch lines are recorded on the 1888 – 1913 historical map as the Deal Branch and the Ashford, Canterbury and Ramsgate Branch of the Southeast Railway. On the basis of the Ordnance Survey mapping and LIDAR data reviewed, these lines appear to have been constructed approximately 'at grade' with small embankments constructed for bridged crossings over waterways.	Low
3	Minster Wastewater Treatment Works	Located within the east of the Scoping Boundary to the south of Marsh Farm Road to the north of Western Monkton Stream (drain) and the River Stour.	Historical mapping indicates the site was undeveloped land. The earliest available aerial imagery, dated 1940, shows the water treatment works present in the northwest corner of the site. The imagery shows the expansion of the site over a number of years. A review of the North East Kent Drainage Strategy[152] shows that the site treats waste water which is then released into the River Stour. It is assumed that the site is regulated under an Environmental Permit which	Low

[152] Southern Water (2016). Drainage Strategy – North East Kent. [online] Available at: https://www.southernwater.co.uk/media/3271/drainagestrategyreport-nekent.pdf [Accessed 16 June 2022].

			would include controls on testing before discharge.	
4	Car breakers / maintenance	Between Ebbsfleet Lane and east of A256, located partially within the scoping boundary.	From the earliest available mapping dated 1885-1900, a property is indicated at the location. From historical aerial photography it can be seen the house is used for the storage of vehicles from approximately 2003 until the present day.	Moderate
PSCs within wider study area				
5	Weatherlees Hill Wastewater Treatment Works (WTW)	Located in the centre of the Scoping Boundary at approximate NGR 633035 E, 162770 N.	Historical aerial imagery indicates that the WTW was constructed in the early 1990s on an area of previously undeveloped land. A review of the North East Kent Drainage strategy[152] states the site was constructed in 1996 with the site extended in 2006. The WTW does not appear (based on historical mapping snapshot) to have utilised sludge beds / lagoons or sludge drying slabs.	Low to Moderate
6	Ebbsfleet Ovenden landfill (ref: EAHLD34024, WRC ref: 2200/7278).	Located in the north-east of the Scoping Boundary, at the western end of St. Augustine's Golf Course, the polygon provided by the EA for this landfill is a small circle centred at approximate NGR 633500 E, 162995 N.	This landfill is indicated to have been operated by Ovenden Earthmoving Company Ltd. and received inert waste between 1976 and 1991. The licence is indicated to have been surrendered in 1992. Note: Such polygons are typically provided when the EA is unsure of the extent of a landfill and should not be taken as an accurate description of the licenced area.	Moderate
7	Richborough Power Station landfill (ref: EAHLD19472, WRC ref: 2200/7251)	Located in the centre of the Scoping Boundary at approximate NGR 632572 E, 162506N.	This landfill is indicated to have been operated by the Central Electricity Generating Board and received inert waste between 1962 and 1987. The licence is indicated to have been surrendered in 1990.	Moderate

Future Baseline

3.6.4.41 There are no foreseeable significant changes anticipated in relation to geology, hydrogeology or land contamination either prior to, or during, the construction and operational phases. It is assumed that any man-made changes (i.e. new developments) would be appropriately permitted and operated to prevent the creation of potentially adverse ground conditions or impacts to controlled waters.

3.6.5 Embedded and Control & Measurement Measures

Embedded Measures

3.6.5.1 The Project has, wherever possible, avoided sensitive features, such as groundwater SPZ 1, through the options appraisal.

Control and Management Measures

3.6.5.2 For the purpose of assessing the effects of the Project, it has been assumed that routine health and safety and environmental controls will be in place during construction, in accordance with standard good practice across the construction industry.

3.6.5.3 The outline Code of Construction Practice (CoCP) contained within **Appendix 1.4.A Outline Code of Construction Practice** contains a list of relevant good practice measures which will be adopted, including the following key commitments relating to Geology and Hydrogeology:

- GH01: Intrusive ground investigations and assessment will be undertaken prior to construction which will inform appropriate geotechnical design in relation to the site/structure specific ground conditions including ground instability/adverse ground conditions.
- GH02: Construction methods such as appropriate piling techniques (if required) to minimise the risk of mixing of aquifer bodies through the creation of new. This includes the provision of a Foundation Works Risk Assessment (FWRA), which would be undertaken once the proposed foundation solutions are known, in accordance with EA guidance ‘Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination’ (EA, 2001).
- GH03: Use of appropriate occupational health and safety measures e.g. Personal Protective Equipment (PPE), and statutory health and safety compliance (e.g. compliance with the Confined Spaces Regulations, 1997 in relation to ground gas from working in confined spaces/trenches) to minimise the risks associated with anticipated/unexpected contamination. Based on risk assessment informed by site specific information.
- GH04: appropriate training of construction and maintenance workers in the handling and use of potentially hazardous substances and the associated risks.
- GH05: All use and storage of chemicals to be undertaken in accordance with EA Pollution Prevention Guideline (PGG) notes, and controlled and monitored under

the Construction and Environmental Management Plan (CEMP) and general construction site good environmental and waste management procedures

- GH06: The control of earthworks or materials movement (including any re-use of materials) under appropriate Environmental Permits, exemptions or CL:AIRE 'The definition of Waste: The development industry Code of Practice (2011).
- GH07: Any temporary dewatering activities during construction will be undertaken in accordance with EA guidance, and if required, an Abstraction Licence and Environmental Permit (for the discharge) and will be limited to the depth and time required to facilitate construction activities.
- GH08: A protocol for dealing within any unexpected contamination.

3.6.6 Potential for Significant Effects

3.6.6.1 The geology and hydrogeology assessment will consider the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4 Description of the Project**.

3.6.6.2 The proposed scope of the ecology and biodiversity assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

3.6.6.3 This section identifies the sources and impacts that could occur as a result of the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme.

3.6.6.4 The potential for the Kent Onshore Scheme to result in the potential significant effects described in this section takes into account the embedded and control and management measures described in section 5.

Sources of construction impacts

- existing contamination;
- excavation of trenchless crossings;
- dewatering activities;
- general construction activities such as foundations;
- discharge of groundwater from dewatering;
- damage to sensitive receptors from the built environment;
- introduction of new contamination;
- ground gas; and
- coal measure.

Sources of operational impacts

- introduction of new contamination;
- introduction of impermeable surfaces; and
- ground gas.

Source of maintenance impacts

- introduction of new contamination; and
- ground gas.

Sources of decommissioning impacts

3.6.6.5 It is considered that the sources of impacts during decommissioning would be of a similar nature to those considered during the construction phase. It would also be undertaken in accordance with relevant environmental legislation available at the time and in accordance with any required licences and permits. Decommissioning activities would be subject to an environmental management plan that would identify and mitigate the potential impacts of decommissioning activities which that could harm sensitive receptors.

Potential impacts

3.6.6.6 Table 3.6.2 identifies the potential impacts that could result from the sources identified above.

Table 3.6.2: Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction and decommissioning	Existing contamination	Yes - Human health exposure to potential contamination through ground disturbance during construction and decommissioning	Has the potential to result in likely significant effects	**Scoped in**
Construction and decommissioning	Existing contamination	Yes - Mobilisation of existing contamination during general construction/decommissioning, impacting on land and/or groundwater quality	Has the potential to result in likely significant effects	**Scoped in**
Construction	Excavation of trenchless Crossings	No - Connection of two aquifer units at trenchless crossings	Not likely to result in a significant effect due to	Scoped out

			the incorporation of the mitigation by design.	
Construction	Dewatering activities	Yes - Changes to groundwater levels, quality and groundwater flow direction caused by dewatering	Potential to result in a significant effect	**Scoped in**
Construction, maintenance and decommissioning	Construction activities	No - Introduction of new potential contaminants to the environment from leaks, spills, fuels and oils	Not likely to result in a significant effect due to the incorporation of the mitigation by design.	Scoped out
Construction	Discharge of groundwater from dewatering	No - Physical and chemical effects on groundwater	Not likely to result in a significant effect due to the incorporation of the mitigation by design.	Scoped out
Construction, operation, maintenance and decommissioning	Ground gas	Yes - Ingress and accumulation of ground gas in buildings/confined spaces/trenches– resulting in explosion/asphyxiation/exposure	Potential to result in a likely significant effect.	**Scoped in**
Construction	General construction	No - Construction activities and the built development (operational phase) can be affected by natural geological hazards (dissolution features/soft ground/landslides/aggressive ground conditions etc).	Not likely to result in a significant effect due to the incorporation of the mitigation by design.	Scoped out
Construction	Built Environment	Yes - Damage to/destruction of designated sites of geological importance	Potential to result in a likely significant effect.	**Scoped in**

Construction and Operation	Built Environment	No - Sterilisation of safeguarded minerals	The Scoping Boundary is not within a mineral consultation area or a mineral safeguarded area therefore unlikely to result in significant effects.	Scoped out
Operation and maintenance	Existing contamination	No - Human health exposure to existing contamination	Not likely to result in a significant effect due to the nature of the project and the incorporation of the mitigation by design.	Scoped out
Operation and maintenance	Introduction of new contamination	No - Introduction of new potential contaminants to the environment from leaks, spills, fuels and oils during the operational phase	Not likely to result in a significant effect given the nature of the project and in consideration of best practice measures and maintenance.	Scoped out
Operation	Introduction of impermeable surfaces	No - Changes to groundwater levels and/or recharge rates	Not likely to result in significant effects due to the small surface area of the project. Any new areas of hardstanding would be designed to meet current drainage	Scoped out

			standards (see **Part 3 Chapter 5: Water Environment**).	
Construction, decommissioning, and Operation	Coal Measures	No - Ground instability effects relating to historical coal mining	Not likely to result in a significant effect as the scoping boundary is not within a development high risk area and the coal measures are anticipated to be relatively thin and at significant depth.	Scoped out

Impact Pathways on Receptors (Step 2)

3.6.6.7 Table 3.6.3 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Kent Onshore Scheme as shown on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary** and **Figure 3.1.2 Kent Onshore Scheme**.

Table 3.6.3: Impact pathways with receptors

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in / out
Human health exposure to potential contamination through ground disturbance during construction and decommissioning	Site workers, neighbours	Yes - Potential for existing contamination within the study area to result in significant effects	**Scoped in for construction and decommissioning** Scoped out for operation and maintenance
Mobilisation of existing contamination during general construction, impacting on land and/or groundwater quality	Environmentally sensitive sites, groundwater, Groundwater Dependant	Yes - Potential for existing contamination within the study	**Scoped in for construction and decommissioning**

	Terrestrial Ecosystems (GWDTE), surface water	area to result in significant effects	Scoped out for operation and maintenance
Changes to groundwater levels, quality and groundwater flow direction caused by dewatering and discharge	Environmentally sensitive sites, groundwater, GWDTE, surface water	Yes - Potential for dewatering to be required within the study area which could result in significant effects	**Scoped in for construction** Scoped out for operation, maintenance and decommissioning
Ingress and accumulation of ground gas in buildings/confined spaces/trenches (construction and operation) – resulting in explosion/asphyxiation/exposure	Construction/ maintenance workers, future users, built environment	Yes - Potential for gas generating strata within study area which could result in significant effects	**Scoped in for construction, operation, maintenance and decommissioning**
Damage to/destruction of designated sites of geological importance	Designated sites of geological importance	Yes - Designated sites located within the study area which could be damaged and could result in significant effects	**Scoped in for construction** Scoped out for operation, maintenance and decommissioning

3.6.7 Proposed Assessment Methodology

3.6.7.1 The proposed generic project wide approach to the assessment methodologies are presented in **Part 1 Chapter 5 EIA Approach and Method**. However, whilst this has informed the approach used in this chapter, it is necessary to set out how this methodology will be applied and adapted as appropriate, to address the specific needs of the assessment in relation to Geology and Hydrogeology.

Proposed Data Sources

3.6.7.2 The geology and hydrogeology assessment will be carried out in accordance with the following good practice guidance:

- Historical borehole records held by the BGS;
- Groundwater abstraction details as available from the EA and LPAs;
- Any relevant information regarding historical ground contamination that the LPAs hold; and
- Any relevant information held by the LPAs regarding geological sites.

Proposed Assessment Methodology

3.6.7.3 The methodology which has been followed for the work undertaken to date, and which will be developed during the EIA process, builds on the guidance set out earlier in this chapter for environmental effects assessed as likely to be significant. Therefore, to inform the ES, additional data gathering will be undertaken, building on the initial appraisal of baseline conditions provided in this scoping report and incorporating any additional information received from the Environment Agency and Local Authority (in response to requests for information), together with stakeholder responses from the Scoping Opinion.

3.6.7.4 The baseline information will be used to identify potential source-pathway-receptor linkages and inform a risk-based assessment of the effects of the project in relation to Geology and Hydrogeology. The risk based assessment will be undertaken following a tiered approach as supported by guidance provided in land contamination risk management (LCRM)[132], with progression through the different Tiers (Tier 1 Preliminary Risk Assessment, Tier 2 Generic Quantitative Risk Assessment and Tier 3 Detailed Quantitative Risk Assessment) dependent on the outcome of each previous Tier (therefore proportionate).

3.6.7.5 In the context of the length and size of the Study Area, and to provide a comprehensive yet proportionate assessment, an additional Tier (Tier 0) is proposed for the ES relating to Geology and Hydrogeology.

3.6.7.6 A Tier 0 assessment will be undertaken as a first stage screening of the Scoping Boundary and wider study area to identify potential pollutant linkages and assign a risk rating based on potential for significant contamination to be present. Those sources which are assessed to have a moderate, high or very high potential risk of contamination will be taken forward for further assessment to ensure the assessment is targeted in areas where significant effects are most likely. Where a very low or low risk rating is assessed, these areas will not be taken forward for further assessment in the ES on the basis they have a low likelihood of significant effects. The potential risk of contamination will be identified based on the historical and current land use:

Table 3.6.4: Criteria for classifying potential for generating contamination

Classification score	Potential for generating contamination
Very Low	Land Use Examples: Residential, retail or office use, agriculture. Contamination Potential: Limited
Low	Land Use Examples: Recent small scale industrial and light industry Contamination Potential: Locally slightly elevated concentrations
Moderate	Land Use Examples: Railway yards, collieries, scrap yards, inert landfills Contamination Potential: Possible widespread slightly elevated concentrations and locally elevated
High	Land Use Examples: Heavy industry, non-hazardous landfills

	Contamination Potential: Possible widespread elevated concentrations
Very High	Land Use Examples: Hazardous waste landfills, gas works, chemical works Contamination Potential: Likely widespread elevated concentrations

3.6.7.7 Risks associated with unexpected contamination will be managed through the protocols and good practice measures identified within the CoCP.

3.6.7.8 In order to evaluate whether the presence of a source of contamination could potentially lead to harmful consequences, a source-pathway-receptor methodology is adopted, with the underlying principle that the identification of pollutant linkages consists of the following three elements

- a source/hazard (a substance or situation that has the potential to cause harm or pollution);
- a pathway (a means by which the hazard moves along / generates exposure); and
- a receptor/target (an entity that is vulnerable to the potential adverse effects of the hazard).

3.6.7.9 Whilst the contamination may be a hazard it would not constitute a risk unless a pathway and receptor are also present and a pollutant linkage can be determined. Therefore, in assessing the potential for contamination to cause a significant effect: the extent and nature of the potential source or sources of contamination must be assessed; any pathways present must be identified; and sensitive receptors or resources identified and appraised to determine their value and sensitivity to contamination related impacts.

3.6.7.10 The methodology adopted in this chapter is qualitative with a progression from factual information (stated with reasonable certainty) regarding the baseline conditions, to appraisal informed by professional judgement and expression of opinions on the relative significance.

3.6.7.11 The risk assessment approach proposed in this methodology will be transposed into EIA classification as follows;

- For each potential effect the receptor sensitivity and impact magnitude will be assigned using the Tables 3.6.5 and 3.6.6 below, which will then be combined to give a significance of effect using the matrix provided in Table 3.6.7.

3.6.7.12 There is no equivalent published assessment methodology that relates to impacts relating to geology (e.g. geo-conservation). For consistency, a similar approach will be adopted to assess these effects (i.e. combination of receptor identification and associated sensitivity and magnitude of potential impacts) as stated above.

3.6.7.13 A source-pathway-receptor linkage approach, as detailed above, will also be applied to assessing the potential effects on groundwater which relate to the geological/hydrogeological settings between the Order Limits and identified groundwater abstractions and receptors, in accordance with the policy guidance outlined at the start of this chapter. Further, localised Hydrogeological Risk Assessment may also be required where dewatering is likely and the receptors

present. Assessment of the impacts on groundwater receptors, will be undertaken based on the approach and methodology described in Environment Agency, Hydrogeological Impact Appraisal for dewatering guidance (2007).

3.6.7.14 The proposed assessment approach in the chapter is based on desk study information. 'Reasonable worst case' assumptions regarding the likely ground conditions will be made when assessing effects in the ES, determined from the desk study information.

Sensitivity of Receptors

3.6.7.15 The criteria used to determine the value and sensitivity of receptors specific to geology and hydrogeology are set out in Table 3.6.5. These criteria are based on the generic criteria presented in **Part 1 Chapter 5 EIA Approach and Method**.

Table 3.6.5: Value/sensitivity criteria

Value/sensitivity	General criteria
Very High	Very high importance and rarity. International scale and limited potential for substitution **Geology:** Very rare and of international importance with no potential for replacement (e.g. UNESCO World Heritage Sites, UNESCO Global Geoparks, Site of Special Scientific Interest (SSSI) and Geological Conservation Review (GCR) where citations indicate features of international importance). Geology meeting international designation citation criteria which is not designated as such. **Minerals:** Existing Mineral sites **Contamination:** 1) human health: very high sensitivity land use such as residential or allotments; 2) surface water: Watercourse having a Water Framework Directive (WFD) classification shown in a River Basin Management Plan (RBMP) and Q95 ≥ 1.0 m3/s. Site protected/designated under EC or UK legislation (Special Areas of Conservation (SAC), Special Protection Areas (SPA), Sites of Special Scientific Interest (SSSI), Ramsar site) 3) groundwater: Principal aquifer providing a regionally important resource and regionally important public water supplies, Source Protection Zone (SPZ) 1 **Hydrogeology:** Principal aquifer providing a regionally important source and regionally important public water supplies. Groundwater quality associated with SPZ 1 associated with licensed abstractions. Water feeding GWDTEs with a high groundwater dependence with a high environmental importance and international or national value, such as

	Ramsar sites, Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Sites of Special Scientific Interest (SSSIs).
High	High importance and rarity. National scale and limited potential for substitution **Geology:** Rare and of national importance with little potential for replacement (e.g. geological SSSI, Area of Special Scientific Interest (ASSI), National Nature Reserves (NNR)). Geology meeting national designation citation criteria which is not designated as such. **Minerals:** Mineral preferred areas **Contamination:** 1) human health: high sensitivity land use such as public open space; 2) surface water: Watercourse having a WFD classification shown in a RBMP and Q95 <1.0m^3/s. 3) groundwater: Principal aquifer providing locally important resource or supporting a river ecosystem, SPZ2. **Hydrogeology:** Principal aquifer providing a locally important source and locally important public water supplies, SPZ 2. Water feeding GWDTEs with a moderate groundwater dependence with high environmental importance and international or national value, such as Ramsar sites, SACs, SPAs and SSSIs; or water feeding highly groundwater dependent GWDTE with a national non-statutory UK Biodiversity Action Plan (BAP) priority
Medium	Medium or high importance and rarity, regional scale, limited potential for substitution **Geology:** Regional importance with limited potential for replacement (e.g. RIGS). Geology meeting regional designation citation criteria which is not designated as such. **Minerals:** Mineral Safeguarded Areas and Mineral Consultation Area **Contamination:** 1) human health: medium sensitivity land use such as commercial or industrial; 2) surface water: Watercourses not having a WFD classification shown in a RBMP and Q95 >0.001m3/s. 3) groundwater: Secondary A Aquifers. extensive non-licensed private water abstractions (i.e. feeding ten or more properties or supplying large farming / animal estates). SPZ2 (Outer Protection Zone) associated with licenced abstractions. **Hydrogeology:**

	Secondary A aquifer. Groundwater flow and yield and quality associated with extensive non-licensed private water abstractions (i.e. feeding ten or more properties or supplying large farming / animal estates). Groundwater quality associated with SPZ2 (Outer Protection Zone) associated with licensed abstractions. Residential and commercial properties. Water feeding GWDTEs of low groundwater dependence with a high environmental importance and international or national value, such as Ramsar sites, SACs, SPAs and SSSIs; or water feeding moderately groundwater dependent GWDTE with a national non-statutory UK Biodiversity Action Plan (BAP) priority
Low	Low or medium importance and rarity, local scale **Geology:** Local importance / interest with potential for replacement (e.g. non designated geological exposures, former quarry's / mining sites). **Minerals:** Mineral present but outside of any MPS/MSA/MCA **Contamination:** 1) human health: low sensitivity land use such as highways and rail; 2) surface water: Watercourses not having a WFD classification shown in a RBMP and Q95 ≤0.001m3/s. 3) groundwater: Secondary B or Secondary Undifferentiated aquifer. Small scale private water abstractions (i.e. feeding fewer than ten properties). SPZ3. **Hydrogeology:** Secondary B or Secondary Undifferentiated aquifer. Groundwater flow and yield and quality associated with small scale private water abstractions (i.e. feeding fewer than ten properties). Groundwater quality associated with SPZ3 (Source Catchment Protection Zone) associated with licensed abstractions and with licensed abstractions for which no SPZ is defined. Water feeding GWDTEs of low groundwater dependence with a national non-statutory UK BAP priority; or water feeding highly or moderately groundwater dependent GWDTE sites with no conservation designation.
Negligible	Very low importance and rarity, local scale **Geology:** No geological exposures, little / no local interest. **Mineral:** No mineral identified **Contamination:** 1) human health: undeveloped surplus land / no sensitive land use proposed; 2) surface water: not present 3) groundwater: Unproductive strata

	Hydrogeology: Very poor groundwater quality and/or very low permeability make exploitation of groundwater unfeasible. No active groundwater supply. Water feeding GWDTEs of low groundwater dependence with no designation or groundwater that supports a wetland not classified as a GWDTE, although may receive some minor contribution from groundwater

Impact Magnitude

Table 3.6.6: Magnitude criteria

Magnitude	General criteria
Large	**Geology Adverse**: Permanent loss of geological feature / designation and/or quality and integrity, severe damage to key characteristics, features or elements.
	Contamination Adverse: Significant contamination identified, and contamination level significantly exceed human health and environmental assessment criteria with the potential for significant harm to be caused. Contamination heavily restricts future use of land **Contamination Benefit**: Substantial betterment of ground or groundwater quality/contamination conditions through remediation and/or mitigation.
	Hydrogeology Adverse: Major or irreversible change to groundwater aquifer(s) flow, water level, quality or available yield which endangers the resources currently available. Groundwater resource use / abstraction is irreparably impacted upon, with a major or total loss of an existing supply or supplies. Changes to water table level or quality would result in a major or total change in, or loss of, a groundwater dependent area, where the value of a site would be severely affected. Changes to groundwater aquifer(s) flow, water level and quality would result in major changes to groundwater baseflow contributions to surface water and/ or alterations in surface water quality. **Hydrogeology Beneficial**: Major increase in groundwater resource availability. Results in the achievement of Good Status for a WFD groundwater body or GWDTE which is currently failing its WFD objectives. Removal of existing or potential polluting discharge to groundwater
Medium	**Geology Adverse**: partial loss of geological feature / designation, potentially adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.
	Contamination Adverse: Contamination levels marginally exceed human health and environment assessment criteria. Control / remediation

	measures are required to reduce risks to human health / make land suitable for intended use. **Contamination Benefit**: Moderate Betterment of ground or groundwater quality/contamination conditions through remediation and/or mitigation.
	Hydrogeology Adverse: Moderate long term or temporary significant changes to groundwater aquifer(s) flow, water level, quality or available yield which results in moderate long term or temporarily significant decrease in resource availability. Groundwater resource use / abstraction is impacted slightly, but existing supplies remain sustainable. Changes to water table level or groundwater quality would result in partial change in or loss of a groundwater dependent area, where the value of the site would be affected, but not to a major degree. Changes to groundwater aquifer(s) flow, water level and quality would result in moderate changes to groundwater baseflow contributions to surface water and/ or alterations in surface water quality, resulting in a moderate shift from baseline conditions **Hydrogeology Beneficial**: Moderate increase in groundwater resource availability. Contributes, in combination with other effects, to the achievement of Good Status for a WFD groundwater body or GWDTE which is currently failing its WFD objectives. Significant reduction of existing or potential polluting discharge to groundwater.
Small	**Geology Adverse**: minor measurable change in geological feature / designation attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements.
	Contamination Adverse: Contamination levels below human health and environment assessment criteria and remediation is not required. Significant contamination is unlikely with a low risk to human health. Best practice measures can be required to minimise risks to human health; **Contamination Benefit**: Slight betterment of ground or groundwater quality/contamination conditions through remediation and/or mitigation.
	Hydrogeology Adverse: Minor changes to groundwater aquifer(s) flow, water level, quality or available yield leading to a noticeable change, confined largely to the Project area. Changes to water table level, groundwater quality and yield result in little discernible change to existing resource use. Changes to water table level or groundwater quality would result in minor change to groundwater dependent areas, but where the value of the site would not be affected. Changes to groundwater aquifer(s) flow, water level and quality would result in minor changes to groundwater baseflow contributions to surface water and / or alterations in surface water quality, resulting in a minor shift from baseline conditions. **Hydrogeology Beneficial**: Minor increase in groundwater resource availability. Leads to improvement of a WFD groundwater body which is currently failing its WFD objectives but insufficient effect to achieve Good Status. Minor reduction of existing or potential polluting discharge to groundwater.

Negligible	**Geology Adverse**: Very minor loss or detrimental alteration to one or more characteristics, features or elements of geological feature / designation. Overall integrity of resource not affected.
	Contamination: Contamination levels substantially below human health and environment assessment criteria and remediation is not required. No requirement for control measures to reduce risks to human health / make land suitable for intended use.
	Hydrogeology Adverse: Very slight change from groundwater baseline conditions, approximating to 'no change' conditions. Dewatering effects create no or no noticeable effects.

Table 3.6.7: Significance matrix

		Value/Sensitivity of receptor				
		Very High	**High**	**Medium**	**Low**	**Negligible**
Magnitude	**Large**	Major	Major/Moderate	Major/Moderate /Minor	Moderate/Minor	Minor/Negligible
	Medium	Major/Moderate	Major/Moderate	Moderate/Minor	Minor/Negligible	Negligible
	Small	Major/Moderate	Moderate/Minor	Moderate/Minor	Minor/Negligible	Negligible
	Negligible	Minor/Negligible	Minor/Negligible	Minor/Negligible	Negligible	Negligible

3.6.8 Conclusion

3.6.8.1 The Geology and Hydrogeology receptors that have been identified within the Scoping Boundary include human health, groundwater, surface waters, designated sites of geological importance and land quality. The preliminary baseline assessment indicates that there is the potential for significant effects on these receptors, however with the implementation of both the embedded mitigation and good practice measures described, the significance of the potential effects can be reduced for certain impacts so that significant effects are unlikely. Where significant effects have been assessed as unlikely, those impacts are scoped out of further assessment. Where there is potential for significant effects, these impacts have been scoped into the ES and will be assessed further, in accordance with the methodology described. The impacts proposed to be scoped in and out of the assessment are summarised in Table 3.6.8.

Proposed Scope of the Assessment

3.6.8.2 A summary of the proposed scope of the assessment is provided in Table 3.6.8.

Table 3.6.8: Proposed Scope of the assessment

Receptor	Potential significant effect	Project phase(s)	Proposed to be scoped in/out
Geology			
Designated sites of geological importance	Damage to/destruction of designated sites of geological importance	Construction	**Scoped in**
		Operation, maintenance and decommissioning	Scoped out
Mineral Reserves	Sterilisation of safeguarded minerals	Construction, Operation, maintenance and decommissioning	Scoped out
Built development	Damage to/destruction of the built development (operational phase) due to natural geological hazards (dissolution features/soft ground/landslides/aggressive ground conditions etc)	Construction, Operation, maintenance and decommissioning	Scoped out
Built development	Ground instability effects relating to historical coal mining	Construction, Operation, maintenance and decommissioning	Scoped out
Contamination			
Site workers, neighbours	Human health exposure to existing potential contamination through ground disturbance during construction and decommissioning	Construction and decommissioning	**Scoped in**
Environmentally sensitive sites, groundwater, GWDTE, surface water, land quality	Mobilisation of existing contamination during general construction, impacting on land and/or groundwater quality	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out
Environmentally sensitive sites, groundwater, GWDTE, surface	Introduction of new potential contaminants to the environment from leaks, spills, fuels and oils	Construction, operation, maintenance, and decommissioning	Scoped out

water, land quality.			
Construction/ maintenance workers, future users, built environment	Ingress and accumulation of ground gas in buildings/confined spaces/trenches (construction and operation) – resulting in explosion/asphyxiation/exposure	Construction, operation maintenance, and decommissioning	**Scoped in**
Site workers, maintenance workers, neighbours	Human health exposure to existing contamination during operation and maintenance	Operation and maintenance	Scoped out
Hydrogeology			
Environmentally sensitive sites, groundwater, GWDTE, surface water	Mixing of aquifer bodies due to the connection of aquifer units at trenchless crossings	Construction, operation, maintenance and decommissioning	Scoped out
Environmentally sensitive sites, groundwater, GWDTE, surface water	Changes to groundwater levels, quality and groundwater flow direction caused by dewatering	Construction Operation, maintenance and decommissioning	**Scoped in** Scoped out
Environmentally sensitive sites, groundwater, GWDTE, surface water	Physical and chemical changes to groundwater from the discharge of groundwater from dewatering	Construction, operation, maintenance and decommissioning	Scoped out
Environmentally sensitive sites, groundwater, GWDTE, surface water	Changes to groundwater levels and/or recharge rates from the introduction of impermeable surfaces	Construction, operation, maintenance and decommissioning	Scoped out

3.7 Agriculture and Soils

3.7.1 Introduction

3.7.1.1 This chapter presents of the Agriculture and Soils assessment which will consider the potentially significant effects that may arise from the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme (as described in **Part 1, Chapter 4, Description of the Project**) on agricultural and soil receptors. This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an Environmental Impact Assessment (EIA).

3.7.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Kent Onshore Scheme Scoping Boundary, hereafter referred to as the Kent Scoping Boundary, is illustrated on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary**.

3.7.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project**;
- **Part 1, Chapter 5, EIA Approach and Methodology**; and
- **Part 3, Chapter 1, Evolution of the Kent Onshore Scheme**.

3.7.1.4 This chapter is supported by the following figures:

- **Figure 3.7.1 Soilscape Mapping**;
- **Figure 3.7.2 Provisional Agricultural Land Classification Mapping**;
- **Figure 3.7.3 Detailed Agricultural Land Classification Mapping**; and
- **Figure 3.7.4 Environmental Stewardship Agreements and Woodland Grant Schemes**.

3.7.1.5 The receptors included within this chapter comprise:

- the presence and potential impact on best and most versatile (BMV) land (as defined by the Agricultural Land Classification (ALC) system) and soil function, including land affected temporarily during construction and the land required permanently; and
- the nature and potential impacts on landholdings in agricultural use, including land affected temporarily during construction and the land required permanently. This will cover issues of potential fragmentation, biosecurity risks and impacts on any land under agri-environmental, woodland or forestry schemes.

3.7.1.6 The assessment of potentially significant effects on agricultural and soil receptors will be supported by information presented in other chapters: **Part 3, Chapter 3, Ecology**

and Biodiversity; **Part 3, Chapter 5 Water Environment**; and **Part 3, Chapter 6 Geology and Hydrogeology**.

3.7.2 Regulatory and Planning Context

3.7.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. Key legislation, policy and guidance relevant to the assessment of potential effects on agriculture and soils associated with the construction, operation, maintenance and decommissioning of the Project is presented below.

Legislation

3.7.2.2 There is no primary legislation relevant to this topic.

Planning Policy

National planning policy

3.7.2.3 National Policy Statement (NPS) for Energy (EN-1)[153] contains paragraphs relating to agriculture and soils which have been considered within this chapter.

3.7.2.4 Paragraph 5.10.8 states that 'Applicants should seek to minimise impacts on the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) and preferably use land in areas of poorer quality (grades 3b, 4 and 5) except where this would be inconsistent with other sustainability considerations. Applicants should also identify any effects and seek to minimise impacts on soil quality taking into account any mitigation measures proposed'.

3.7.2.5 Paragraph 5.10.15 states that the Secretary of State (formerly the Infrastructure Planning Commission) should 'ensure that applicants do not site their scheme on the best and most versatile agricultural land without justification. It should give little weight to the loss of poorer quality agricultural land (in grades 3b, 4 and 5), except in areas (such as uplands) where particular agricultural practices may themselves contribute to the quality and character of the environment or the local economy'.

3.7.2.6 EN-1 is supported by the National Policy Statement for Electricity Networks Infrastructure (EN-5)[154] which contains paragraphs relating to agriculture and soils which have been considered within this chapter. Paragraph 1.7.5 states that, in relation to a presumption that electricity lines should be put underground, '*effects on soil, water, ecology and archaeology are likely to be negative, at least in the short term, requiring significant mitigation, but there is uncertainty around long term effects depending on the specific location and sensitivity of the receiving environment*'. This is reiterated in paragraph 2.8.9 (third bullet point).

[153] Department of Energy and Climate Change (2011). Overarching National Policy Statement for Energy (EN-1). [online] Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure

[154] Department of Energy and Climate Change (2011). National Policy Statement for Electricity Networks Infrastructure (EN-5). [online] Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure

Local planning policy

3.7.2.7 Relevant policies from the Thanet Local Plan, Adopted July 2020[155] will be considered. These are listed below:

- SP24 – Development in the Countryside; and
- E16 – Best and Most Versatile Agricultural Land

3.7.2.8 Relevant policies from the Dover District Council Core Strategy, adopted February 2010[156] and the Dover District Local Plan, adopted 2002[157], will also be considered. These are listed below:

- DM15 – Protection of the Countryside.

Guidance

3.7.2.9 Several standards and non-statutory guidelines, which provide details of assessment methodologies and mitigation techniques, will also be referenced to inform the assessment, including:

- Construction Code of Practice for the sustainable re-use of soils on construction sites[158];
- Technical Information Note (TIN) 049[159]. Agricultural Land Classification: protecting the best and most versatile agricultural land;
- Good Practice Guide for Handling Soils[160]; and
- A new perspective on land and soil in Environmental Impact Assessment[161].

3.7.3 Study Area

3.7.3.1 The study area for agriculture and soils comprises the land which would be directly affected by the Kent Onshore Scheme (through disturbance or temporary covering of the soils). This will be based on the proposed Order Limits in the ES but for the purposes of this Scoping Report the study area includes the land within the Kent

[155] Thanet District Council (2020). Local Plan, Adopted July 2020. [online] Available at: https://www.thanet.gov.uk/wp-content/uploads/2018/03/LP-adjusted.pdf

[156] Dover District Council (2010). Dover District Local Development Framework Core Strategy. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/PDF/Adopted-Core-Strategy.pdf

[157] Dover District Council (2002). Dover District Local Plan 2002. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/Adopted-Development-Plans/Dover-District-Local-Plan-2002.aspx

[158] Department for Environment, Food and Rural Affairs (2009). Construction Code of Practice for the sustainable re-use of soils on construction sites. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/716510/pb13298-code-of-practice-090910.pdf#:~:text=1.%20This%20Code%20of%20Practice%20for%20the%20sustainable,It%20is%20particularly%20intended%20for%20use%20in%20England.

[159] Natural England (2012). Technical Information Note TIN049. Agricultural Land Classification: protecting the best and most versatile agricultural land. [online] Available at: https://www.iow.gov.uk/azservices/documents/2782-FE14-Natural-England-TIN049-Agricultural-Land-Classification.pdf

[160] Ministry of Agriculture, Fisheries and Food (2000). Good Practice Guide for Handling Soils. [online] Available at: https://webarchive.nationalarchives.gov.uk/ukgwa/20090317221756/http://www.defra.gov.uk/farm/environment/land-use/soilguid/index.htm

[161] Institute of Environmental Management & Assessment (2022). A new perspective on land and soil in Environmental Impact Assessment.

Scoping Boundary. This is illustrated on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary**.

3.7.4 Baseline Conditions

Data Sources

3.7.4.1 The agriculture and soils baseline assessment has been informed by a desk study which has drawn on the following key information sources:

- Ordnance Survey mapping and aerial photography to establish land use and settlement patterns;
- Soilscape mapping showing the distribution of main soil types was assessed on the Land Information System website[162];
- ALC mapping, including provisional and (where available) detailed ALC mapping from the MAGIC website[163]; and
- Extent of agri-environmental and woodland schemes from the MAGIC website.

Baseline

Soils

3.7.4.2 The solid geology underlying the study area is described as comprising the Thanet Formation. This comprises sand, silt and clay sedimentary rocks formed approximately 56 to 59 million years ago in the Palaeogene Period. This solid geology is in the main overlain by tidal flat deposits within the study area. This material comprises clay and silt and was deposited around 2 million years ago in the Quaternary Period. Along the alignment of Richborough Way these superficial deposits are absent.

3.7.4.3 The soil types present within the study area are predominantly described as loamy and clayey soils of coastal flats with naturally high groundwater (**Figure 3.7.1 Soilscape Mapping**). These soils are formed in the tidal flat deposits. Where these drift deposits are absent (along the alignment of Richborough Way) the soils are described as freely draining slightly acid loamy soils formed directly on the solid geology.

Agricultural land classification

3.7.4.4 Provisional ALC mapping (**Figure 3.7.2 Provisional Agricultural Land Classification Mapping**) shows that the study area comprises Grade 2 land. This mapping, at a scale of 1:250,000, does not distinguish between Grades 3a and 3b (and cannot be used to inform site-specific assessments) but provides an indication of the likely land classification.

[162] Cranfield University (2021). LandIS : The Land Information System. [online] Available at: https://www.cranfield.ac.uk/themes/environment-and-agrifood/landis

[163] Department for Environment, Food and Rural Affairs (2022). Multi-Agency Geographic Information for the Countryside (MAGIC). [online] Available at: https://magic.defra.gov.uk/

3.7.4.5 There is some detailed ALC mapping available for the study area, based on surveys undertaken in 1993. The land east of Ebbsfleet Lane and to the west of Ebbsfleet Farmhouse/Great Oaks Small School has been mapped as a mix of Grade 2 and Grade 3a (as shown in **Figure 3.7.3 Detailed Agricultural Land Classification Mapping**).

3.7.4.6 Climate is unlikely to pose an overall limitation on ALC grade in relation to the criteria set out in the ALC Guidelines[164] (MAFF, 1988). Climate does, however, have an important influence on the interactive limitations of soil wetness and soil droughtiness, which is the balance between rainfall and water losses from the soil. The site has both relatively low rainfall and a long growing season, acting to decrease the severity of any potential soil wetness limitation, but increasing the severity of any potential soil droughtiness limitation.

Land use

3.7.4.7 A desk-based study using aerial photographs, along with information from other survey visits, has shown that the land use appears to be principally arable, with small areas of pasture on either side of the River Stour, and St Augustine's golf course east of Richborough Way.

3.7.4.8 There are areas of land within the study area under Countryside Stewardship (Higher Tier) Agreements and areas south of the River Stour under Entry Level plus Higher Level Environmental Stewardship agreements. Small areas of land east of Richborough Way (associated with the golf course) are also under Woodland Grant schemes (see **Figure 3.7.4 Environmental Stewardship Agreements and Woodland Grant Schemes**).

Future Baseline

3.7.4.9 It is considered that the baseline in relation to soils and ALC grades will not change from that described within the timeframe for the construction of this project. Whilst there may be potential changes in relation to climate change, including greater rainfall intensity and droughts, that could affect soil conditions, land grade and farming practices, it is likely that these would only be visible over longer time frames.

3.7.4.10 There could potentially be changes to land management practices and business approaches across the landowners/land managers.

3.7.5 Embedded and Control & Management Measures

Embedded Measures

3.7.5.1 The assessment of effects will take account of mitigation, including measures embedded into the Project's design and good practice measures. Key measures are described below.

[164] Ministry of Agriculture, Fisheries and Food (1988). Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land.

3.7.5.2 The temporary nature of many construction activities and the subsequent restoration of the land and its return to the preconstruction use is likely to result in the avoidance of long-term impacts on agricultural and soil receptors.

Control and Management Measures

3.7.5.3 An outline Code of Construction Practice (CoCP) is provided in **Appendix 1.4.A Outline Code of Construction Practice**. Measures relevant to the control and management of impacts that could affect the assessment relating to agriculture and soils are:

- GG03: A CEMP, a LEMP and an CTMP will be produced prior to construction. The CEMP shall include measures to manage dust, waste, water, noise, vibration and soil during construction. The contractor(s) shall undertake daily site inspections to check conformance to the Management Plans.
- GG19: Earthworks and stockpiled soil will be protected by covering, seeding or using water suppression where appropriate.
- AS01: Soil management measures will be included within the CEMP. Measures would include but not be limited to the following:
  - details of the soil resources present;
  - how the topsoil and subsoil will be stripped and stockpiled;
  - suitable conditions for when soil handling will be undertaken, for example avoiding handling of waterlogged soil;
  - indicative soil storage locations;
  - how soil stockpiles will be designed taking into consideration site conditions and the nature/composition of the soil;
  - specific measures for managing sensitive soils;
  - suitable protective surfacing where soil stripping can be avoided, based on sensitivity of the environment and proposed works;
  - approach to reinstating soil that has been compacted, where required; and
  - details of measures required for soil restoration.
- AS02: Where land is being returned to agricultural use, the appropriate soil conditions (for example through the replacement of stripped layers and the removal of any compaction) will be recreated. This will be achieved to a depth of 1.2m (or the maximum natural soil depth if this is shallower) except over the buried cables where the reinstated soil depth will be approximately 0.9m.
- AS03: Access to and from residential, commercial, community and agricultural land uses will be maintained throughout the construction period or as agreed through landowner discussions. This may require signed diversions or temporary restrictions to access. The means of access to affected properties, facilities and land parcels will be communicated to affected parties at the start of the project, with any changes communicated in advance of the change being implemented. Where field-to-field access points require alteration as a result of construction,

alternative field access will be provided in consultation with the landowner/occupier.

- AS04: Existing water supplies for livestock will be identified pre-construction. Where supplies will be lost or access compromised by construction works, temporary alternative supplies will be provided. Water supplies will be reinstated following construction.
- AS05: Consultation with affected landowners will be carried out to investigate the current extent of land drainage. A scheme of pre-construction land drainage will be designed with the intent of maintaining the efficiency of the existing land drainage system and to assist in maintaining the integrity of the working area during construction. The project may include a system of 'cut-off' drains which feed into a new header drain and the project will also take into account surface water runoff measures.
- AS06: Should animal bones be discovered during construction, which may indicate a potential burial site, works will cease, and advice will be sought from the Animal Health Regional Office on how to proceed, relevant to the origin and age of the materials found.
- AS07: All movement of plant and vehicles between fields will cease in the event of a notification by Defra of a disease outbreak in the vicinity of the site that requires the cessation of activities. Advice will be sought from Defra in order to develop suitable working methods required to reduce the biosecurity risk associated with the continuation of works.
- AS08: Clay bungs or other vertical barriers will be constructed within trench excavations where deemed necessary by a suitably experienced person, to prevent the creation of preferential drainage pathways.

3.7.6 Potential for Significant Effects

3.7.6.1 The agriculture and soils assessment will consider the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project**.

3.7.6.2 The proposed scope of the agriculture and soils assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

3.7.6.3 This section identifies the sources and impacts that would occur as a result of the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme.

3.7.6.4 The potential for the Kent Onshore Scheme to result in the potential significant effects described in this section takes into account the embedded and control and management measures described in section 5.

Sources of construction impacts

- temporary removal of land from agricultural production;
- disruption and disturbance to agricultural operations (from noise, fragmentation by fencing and disruption to water supplies or land drainage); and
- temporary disturbance to soils (potentially resulting in long-term changes to one or more soil functions).

Sources of operational impacts

- permanent removal of land from agricultural production;
- permanent loss of soils; and
- electric and magnetic fields (EMFs).

Sources of maintenance impacts

- temporary removal of land from agricultural production;
- temporary disruption and disturbance to agricultural operations (from noise, fragmentation by fencing and disruption to water supplies or land drainage); and
- temporary disturbance to soils (potentially resulting in long-term changes to one or more soil functions)

Sources of decommissioning impacts

- temporary removal of land from agricultural production;
- temporary disruption and disturbance to agricultural operations (from noise, fragmentation by fencing and disruption to water supplies or land drainage); and
- temporary disturbance to soils (potentially resulting in long-term changes to one or more soil functions).

Potential impacts

Soils and ALC

Soils and ALC during construction

3.7.6.5 During construction there would be a potential loss of BMV land (ALC Grades 1, 2 and 3a) from agricultural productivity. There would also be disturbance to soils, either from access for overhead line installation/removal or due to the excavation and soil stripping working areas for the underground cable trenches, pylon footings, converter station footprint and areas required temporarily (such as construction compounds). There would also be the potential for impacts on the ecosystem services the soils provide. The good practice measures set out within the Outline CoCP and the good practice soil management measures set out within the CEMP for soil handling, storage and reinstatement, would reduce the effects on soils.

3.7.6.6 By the end of construction, all land required temporarily would be reinstated minimising the risk of long-term effects on soils or ALC. However, until soil surveys have been undertaken to understand the sensitivity of the soils to handling, storage and reinstatement the construction effects on soils and ALC will be scoped into the ES.

Soils and ALC during operation

3.7.6.7 During operation, there would be a permanent loss of areas of agricultural land and associated soils for the permanent infrastructure. It is unlikely that this would give rise to a significant effect; however, the land grades and soil types affected would be confirmed through the assessment process and as such permanent impacts on soils and ALC will initially be scoped into the assessment. This would be informed by a survey following published guidelines[165]. However, if the site survey confirms that the permanent land affected is not BMV land or that the cumulative loss is below the magnitude threshold for a likely significant effect, then permanent loss of agricultural land during operation would be scoped out of the ES.

3.7.6.8 Any maintenance or repair works required which would result in disturbance to soils during operation of the project would be undertaken in accordance with good practice soil handling methods. No likely significant effects on soils or ALC during operational maintenance or repair activities are therefore concluded and this aspect is scoped out of the ES.

Land use

Land use during construction

3.7.6.9 During construction there would be potential impacts on agricultural operations due to disturbance (in particular where livestock are present), fragmentation, access restrictions or disruption to water supplies or land drainage. The measures set out within the Outline CoCP, including AS03, to maintain access throughout construction, would reduce the effects to agricultural land use. Effects on land drainage are covered in **Part 3 Chapter 5: Water Environment**.

3.7.6.10 By the end of the construction phase, all land required temporarily would be reinstated. As the footprint of the permanent infrastructure is limited and as impacts on agricultural operations will be dealt with through compensation agreements (which lies outside of the EIA process) it is considered that, on completion of the reinstatement of land required temporarily, there would be no significant effects on agricultural landholdings. Therefore, construction effects on land use are scoped out of the ES.

Land use during operation

3.7.6.11 During operation, there would be limited effects on agricultural operations. Limited areas of agricultural land would be lost permanently and there is the potential for restrictions to activities immediately over or adjacent to buried cables or under overhead lines; however, these will be dealt with through compensation agreements (which lies outside of the EIA process). Any maintenance or repair works required which would result in disturbance to agricultural operations would be undertaken in

[165] Ministry of Agriculture, Fisheries and Food (1988). Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land.

accordance with good practice soil handling methods. Therefore, there are no likely significant effects on agricultural landholdings during operation and this aspect is scoped out of the ES.

3.7.6.12 The majority of any financial consequences on individual landowners and farmers will be temporary, as most of the land will be reinstated by the end of the construction phase and any claims regarding compensation will be addressed outside of the EIA process. As such, potential economic effects on individual landowners and farmers are scoped out of the ES.

3.7.6.13 During operation, there can be landowner concerns that (EMFs) can affect land use. However, paragraph 2.10.8 of EN-5 states that, in relation to EMFs, '*there is little evidence that exposure of crops, farm animals or natural ecosystems to transmission line EMFs has any agriculturally significant consequences*'. National Grid will be undertaking a walkover of the Indicative Alignment to identify land use and activities that may require additional clearance of the conductors. Land uses include intensive activities involving horses, such as riding schools, stud farms and areas habitually used for loading or unloading horse boxes. With these measures in place, there would be no likely significant effects during operation on land use from EMF or microshocks, and this is therefore scoped out of the ES.

3.7.6.14 National Grid will provide the relevant information on EMFs in a separate document submitted as part of the application for development consent. This document will demonstrate compliance in accordance with the ICNIRP guidelines and paragraph 2.10.9 of EN-5.

Soils, ALC and land use during decommissioning

3.7.6.15 Decommissioning of the Project would consider all the relevant environmental legislation and technology available at the time. Decommissioning activities would be subject to an environmental management plan that would identify and mitigate the potential impacts of decommissioning activities that could harm sensitive receptors.

3.7.6.16 It is considered likely that the impacts associated with decommissioning would be similar to those identified during the construction phase, with land taken permanently returned to agricultural use where practicable.

3.7.6.17 Table 3.7.1 identifies the potential impacts that could result from the sources identified above.

Table 3.7.1: Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction	Temporary removal of land from agricultural production	Reduction in agricultural productivity	No - potential for a significant effect due to the restoration of land required temporarily and	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			compensation agreements with individual landowners.	
		Temporary loss of BMV land	Yes - Unlikely to be significant effects due to inclusion of best practice construction methods set out within the Outline CoCP. Soil surveys will be undertaken to confirm this.	**Scoped in (to be reviewed once soil surveys are complete).**
Construction	Temporary disruption and disturbance to agricultural operations (from noise, fragmentation and disruption to water supplies and land drainage	Reduction in agricultural productivity	No - potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
Construction	Temporary disturbance to soils	Changes to one or more soil functions	Yes - Unlikely to be significant effects due to inclusion of best practice construction methods set out within the Outline CoCP. Soil surveys will be undertaken to confirm this.	**Scoped in (to be reviewed once soil surveys are complete).**
Operation	Permanent removal of land from agricultural production	Reduction in agricultural productivity	No - potential for a significant effect due to the restoration of land required temporarily and	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			compensation agreements with individual landowners.	
		Permanent loss of BMV land	Yes - Unlikely to be significant effects due to inclusion of best practice construction methods set out within the Outline CoCP. Soil surveys will be undertaken to confirm this.	**Scoped in (to be reviewed once soil surveys are complete).**
Operation	Permanent loss of soils	Changes to one or more soil functions	Yes - Unlikely to be significant effects due to inclusion of best practice construction methods set out within the Outline CoCP. Soil surveys will be undertaken to confirm this.	**Scoped in (to be reviewed once soil surveys are complete).**
Operation	EMFs	EMFs impacting crops and livestock	No - Little evidence to indicate EMFs have a significant effect.	Scoped out
Maintenance	Temporary removal of land from agricultural production	Reduction in agricultural productivity	No - potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
		Temporary loss of BMV land	Yes - Unlikely to be significant effects due to inclusion of best practice construction methods set out within the Outline CoCP. Soil surveys will be undertaken to confirm this.	**Scoped in (to be reviewed once soil surveys are complete).**
Maintenance	Temporary disruption and disturbance to agricultural operations (from noise, fragmentation and disruption to water supplies and land drainage	Reduction in agricultural productivity	No - potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
Maintenance	Temporary disturbance to soils	Changes to one or more soil functions	Yes - Unlikely to be significant effects due to inclusion of best practice construction methods set out within the Outline CoCP. Soil surveys will be undertaken to confirm this.	**Scoped in (to be reviewed once soil surveys are complete).**
Decommissioning	Temporary removal of land from agricultural production	Reduction in agricultural productivity	No - No potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
		Temporary loss of BMV land	Yes - Unlikely to be significant effects due to inclusion of best practice construction methods set out within the Outline CoCP. Soil surveys will be undertaken to confirm this.	**Scoped in (to be reviewed once soil surveys are complete).**
Decommissioning	Temporary disruption and disturbance to agricultural operations (from noise, fragmentation and disruption to water supplies and land drainage	Reduction in agricultural productivity	No - No potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
Decommissioning	Temporary disturbance to soils	Changes to one or more soil functions	Yes - Unlikely to be significant effects due to inclusion of best practice construction methods set out within the Outline CoCP. Soil surveys will be undertaken to confirm this.	**Scoped in (to be reviewed once soil surveys are complete).**

Impact Pathways with Receptors (Step 2)

3.7.6.18 This section identities whether there are any impact pathways from the impacts identified above that could give rise to potentially significant effects on the receptors within the agricultural and soils study area or area.

3.7.6.19 Table 3.7.2 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Kent Onshore Scheme as shown

on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary** and **Figure 3.1.2 Kent Onshore Scheme.**

Table 3.7.2: Impact pathways with receptors

Impact pathway	Receptors	Potential for significant effect	Proposed to be Scoped in/out
Temporary removal of land from agricultural production during construction	BMV land	Yes - Land required temporarily to be returned to preconstruction condition through adherence to CoCP measures. Unlikely to be significant effect; to be confirmed once extent of BMV land and soil characteristics understood from surveys.	**Scoped in**
	Agricultural landholdings	No - No potential for a significant effect relating to land area or disturbance/ disruption due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
Permanent removal of land from agricultural production during operation	BMV land	Yes - Soil handling and re-use to be undertaken through adherence to CoCP measures. Unlikely to be significant effect; to be confirmed once extent of BMV land and soil characteristics understood from surveys.	**Scoped in**
	Agricultural landholdings	No - No potential for a significant effect relating to land area or disturbance/ disruption due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
Temporary disturbance to soils during construction	Soil quality and associated ecosystem services	Yes - Land required temporarily to be returned to preconstruction condition through adherence to CoCP measures. Unlikely to be significant effect; to be confirmed once soil characteristics and resilience understood from surveys.	**Scoped in**

Permanent loss of soils during operation	Soil quality and associated ecosystem services	Yes - Soil handling and re-use to be undertaken through adherence to CoCP measures. Unlikely to be significant effect; to be confirmed once soil characteristics and resilience understood from surveys.	**Scoped in**
EMFs during operation	Agricultural operations	No - Little evidence to indicate EMFs have a significant effect.	Scoped out
Temporary removal of land from agricultural production due to maintenance activities	Reduction in agricultural productivity	No - No potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
	BMV land	Yes - Unlikely to be significant effects due to inclusion of best practice construction methods set out within the Outline CoCP. Soil surveys will be undertaken to confirm this.	**Scoped in**
Temporary disruption and disturbance due to maintenance activities	Reduction in agricultural productivity	No - No potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
Temporary disturbance to soils during decommissioning activities	Soil quality and associated ecosystem services	Yes - Land required temporarily to be returned to preconstruction condition through adherence to CoCP measures. Unlikely to be significant effect; to be confirmed once soil characteristics and resilience understood from surveys.	**Scoped in**
Temporary removal of land from agricultural production due to decommissioning activities	Reduction in agricultural productivity	No - No potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out
Temporary disruption and disturbance due to decommissioning activities	Reduction in agricultural productivity	No - No potential for a significant effect due to the restoration of land required temporarily and compensation agreements with individual landowners.	Scoped out

3.7.7 Proposed Assessment Methodology

3.7.7.1 An overview of the proposed assessment methodology is provided in **Part 1 Chapter 5 EIA Approach and Method**.

Proposed Data Sources

3.7.7.2 The following data sources are proposed to be used to inform the assessment:

- Soil surveys (as required);
- Ordnance Survey mapping and aerial photography to establish land use and settlement patterns;
- Soilscape mapping showing the distribution of main soil types was assessed on the Land Information System website; ALC mapping, including provisional and (where available) detailed ALC mapping from the MAGIC website; and
- Extent of agri-environmental and woodland schemes from the MAGIC website.

Proposed Assessment Methodology

3.7.7.3 The assessment will be based on guidance set out by the Institute of Environmental Management and Assessment on how land and soil should be assessed in Environmental Impact Assessment[166]. This recently published guidance and the sensitivity and magnitude tables have been based on guidance set out in LA109[167] Geology and Soils of the Design Manual for Roads and Bridges (DMRB) which has traditionally been used to assess the impacts of both highway projects and other linear infrastructure projects on agriculture and soil receptors.

3.7.7.4 The IEMA guidance seeks to move practice away from a narrow focus on quantifying and financially compensating impacts on agricultural land and advocates a new and wider approach to assessing the soil functions, ecosystem services and natural capital provided by land and soils.

3.7.7.5 The sensitivity of receptors will be assessed based on the criteria set out in Table 3.7.3 below.

Table 3.7.3: Sensitivity of receptor criteria

Receptor sensitivity (in-situ soils)	Soil resource and soil functions
Very High	***Biomass production***: ALC Grades 1 & 2

[166] Institute of Environmental Management and Assessment (2022). A new perspective on land and soil in Environmental Impact Assessment.

[167] Highways England (2020). Design Manual for Roads and Bridges. LA 109 Geology and Soils. [online] Available at: https://www.standardsforhighways.co.uk/prod/attachments/adca4c7d-4037-4907-b633-76eaed30b9c0?inline=true

	Ecological habitat, soil biodiversity and platform for landscape: Soils supporting protected features within a European site (e.g., SAC, SPA, Ramsar); Peat soils; Soils supporting a National Park, or Ancient Woodland ***Soil carbon***: Peat soils Soils with potential for ecological/landscape restoration ***Soil hydrology***: Very important catchment pathway for water flows and flood risk management ***Archaeology, Cultural heritage, Community benefits and Geodiversity***: SAMs and adjacent areas; World Heritage and European designated sites; Soils with known archaeological interest; Soils supporting community/recreational/educational access to land covered by National Park designation ***Source of materials***: Important surface mineral reserves that would be sterilised (i.e., without future access)
High	***Biomass production***: ALC Grade 3a ***Ecological habitat, soil biodiversity and platform for landscape***: Soils supporting protected features within a UK designated site (e.g., UNESCO Geoparks, SSSI or AONB, Special Landscape Area and Geological Conservation Review sites); Native Forest and woodland soils; Unaltered soils supporting semi-natural vegetation ***Soil carbon***: Organo-mineral soils (e.g. peaty soils) ***Soil hydrology***: Important catchment pathway for water flows and flood risk management ***Archaeology, Cultural heritage, Community benefits and Geodiversity***: Soils with probable but as yet unproven (prior to being revealed by construction) archaeological interest; Historic parks and gardens; RIGS; Soils supporting community/recreational/educational access to RIGS and AONBs; ***Source of materials***: Surface mineral reserves that would be sterilised (i.e., without future access)
Medium	***Biomass production***: ALC Grade 3b ***Ecological habitat, soil biodiversity and platform for landscape***: Soils supporting protected or valued features within non-statutory designated sites (e.g. Local Nature Reserves (LNR), Local Geological Sites (LGSs), Sites of Nature Conservation Importance (SNCIs), Special Landscape Areas; Non-Native Forest and woodland soils ***Soil carbon***: Mineral soils ***Soil hydrology***: Important minor catchment pathway for water flows and flood risk management ***Archaeology, Cultural heritage, Community benefits and Geodiversity***: Soils with possible but as yet unproven (prior to being revealed by construction) archaeological interest; Soils supporting community/recreational/educational access to land ***Source of materials***: Surface mineral reserves that would remain accessible for extraction

Low	***Biomass production***: ALC Grade 4 and 5 ***Ecological habitat, soil biodiversity and platform for landscape***: Soils supporting valued features within non-designated notable or priority habitats/landscapes. Agricultural soils ***Soil carbon***: Mineral soils ***Soil hydrology***: Pathway for local water flows and flood risk management ***Archaeology, Cultural heritage, Community benefits and Geodiversity***: Soils supporting no notable cultural heritage, geodiversity nor community benefits; Soils supporting limited community/recreational/educational access to land ***Source of materials***: Surface mineral reserves that would remain accessible for extraction
Negligible	As for low sensitivity, but with only indirect, tenuous, and unproven links between sources of impact and soil functions

3.7.7.6 The magnitude of impacts will be assessed based on the criteria set out in Table 3.7.4 below.

Table 3.7.4: Magnitude criteria

Magnitude of impact (change))	Description of impacts restricting proposed land use
Large	Permanent, irreversible loss of one or more soil functions or soil volumes (including permanent sealing or land quality downgrading), over an area of more than 20ha or loss of soil-related features set out in Table 3.7.3 above, as advised by other topic specialists in EIA team (including effects from 'temporary developments'*) or Potential for permanent improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of more than 20ha, or gain in soil-related features set out in Table 3.7.3 above, as advised by other topic specialists in EIA team (including effects from 'temporary developments'*)
Medium	Permanent, irreversible loss of one or more soil functions or soil volumes, over an area of between 5 and 20ha or loss of soil-related features set out in Table 3.7.3 above, as advised by other topic specialists in EIA team (including effects from 'Temporary Developments'*) or Potential for improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of between 5 and 20ha, or gain in soil-related features set out in Table 3.7.3 above, as advised by other topic specialists in EIA team

Small	Permanent, irreversible loss over less than 5ha or a temporary, reversible loss of one or more soil functions or soil volumes), or temporary, reversible loss of soil-related features set out in Table 3.7.3 above, as advised by other topic specialists in EIA team or Potential for permanent improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of less than 5ha or a temporary improvement in one or more soil functions due to remediation or restoration or off-site improvement, or temporary gain in soil-related features set out in Table 3.7.3 above, as advised by other topic specialists in EIA team
Negligible	No discernible loss or reduction or improvement of soil functions or soil volumes that restrict current or proposed land use

*Temporary developments can result in a permanent impact if resulting disturbance or land use change causes permanent damage to soils

3.7.7.7 The significance of an effect is then derived using the matrix set out in **Part 1, Chapter 5 EIA Approach and Method.**

3.7.8 Conclusion

3.7.8.1 The Kent Onshore Scheme has the potential to affect agriculture and soil receptors as a result of the temporary and permanent removal of land from agricultural production including BMV land), disturbance to soils and disruption to agricultural operations. A suite of measures is set out in the Outline CoCP which seek to minimise the potential impacts on these receptors. Soil and ALC surveys will be undertaken in key areas where there would be permanent loss of land and sections of undergrounded cable to further inform the assessment.

Proposed Scope of the Assessment

3.7.8.2 A summary of the proposed scope of the assessment is provided in Table 3.7.5.

Table 3.7.5: Proposed scope of the assessment

Receptor	Potential for significant effect	Project phase(s)	Proposed to be scoped in/out
Temporary loss of BMV land	No likely significant effect; extent to be confirmed through ALC surveys	Construction, Maintenance, Decommissioning	**Scoped in**
Permanent loss of BMV land	Potential for permanent loss of BMV land; extent to be confirmed through ALC surveys	Operation	**Scoped in**

Soil quality and associated ecosystem services	No likely significant effect; to be confirmed through ALC surveys	Construction, Maintenance, Decommissioning	**Scoped in**
Temporary loss of BMV land; Soil quality and associated ecosystem services	No likely significant effect	Operation	**Scoped in**
Agricultural landholdings and effects of EMFs	No likely significant effect	Operation	Scoped out
Removal of land from agricultural use	No likely significant effect	Construction, Operation, Maintenance, Decommissioning	Scoped out
Disruption to agricultural operations	No likely significant effect	Construction, Maintenance, Decommissioning	Scoped out
Economic effects on landowners	No likely significant effect	Construction, Operation, Maintenance, Decommissioning	Scoped out

3.8 Traffic and Transport

3.8.1 Introduction

3.8.1.1 This chapter presents how the traffic and transport assessment which will consider the potentially significant effects on transport and access that may arise from the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme (as described in **Part 1, Chapter 4, Description of the Project**). This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an EIA.

3.8.1.2 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project**;
- **Part 1, Chapter 5, EIA Approach and Methodology**; and
- **Part 3, Chapter 1, Evolution of the Kent Onshore Scheme**.

3.8.1.3 This chapter is supported by the following figure:

- **Figure 3.8.1 Proposed Study Area in Kent (Traffic and Transport).**

3.8.1.4 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Kent Onshore Scheme Scoping Boundary, hereafter referred to as the Kent Scoping Boundary, is illustrated on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary**.

3.8.2 Regulatory and Planning Context

3.8.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. Key legislation, policy and guidance relevant to the assessment of potential effects on traffic and transport associated with the construction, operation, maintenance and decommissioning of the Project is presented below.

Legislation

3.8.2.2 There is no transport specific legislation relevant to the proposed assessment.

Planning Policy

National planning policy

National Policy Statement for Energy (NPS EN-1, 2011)

3.8.2.3 The NPS for Energy (EN-1) was published in 2011 and provides the basis for decisions regarding nationally significant energy infrastructure. Section 5.14 outlines the planning policy for traffic and transport, including guidance on undertaking relevant parts of the EIA. The most relevant paragraphs for this purpose are 5.13.3 to 5.13.5 which are set out as follows:

- Paragraph 5.13.3, which states that if a project is likely to have significant transport implications a Transport Assessment should be included with the ES;
- Paragraph 5.13.4, which states that where appropriate, a Travel Plan to include demand management measures to mitigate transport impacts should be prepared; and
- Paragraph 5.13.5, which states that where additional transport infrastructure is proposed, this should be discussed with the relevant network providers (in terms of the possibility of co-funding by Government for any third-party benefits).

3.8.2.4 In addition, Section 3.1 relates to Infrastructure Planning Commission (IPC) decision making which includes the following:

- Paragraph 3.1.1, the UK needs all the types of energy infrastructure covered by this NPS in order to achieve energy security at the same time as dramatically reducing greenhouse gas emissions;
- Paragraph 3.1.2, it is for industry to propose new energy infrastructure projects within the strategic framework set by Government. The Government does not consider it appropriate for planning policy to set targets for or limits on different technologies;
- Paragraph 3.1.3, the IPC should therefore assess all applications for development consent for the types of infrastructure covered by the energy NPSs on the basis that the Government has demonstrated that there is a need for those types of infrastructure and that the scale and urgency of that need is as described for each of them in this Part; and
- Paragraph 3.1.4, the IPC should give substantial weight to the contribution which projects would make towards satisfying this need when considering applications for development consent under the Planning Act 2008.

3.8.2.5 The NPS EN-1 is currently under review and an updated draft was published for consultation in September 2021, where the above paragraphs are proposed to be relocated to Section 5.14, supported by the following proposed updates:

- Paragraph 5.14.4, which also states that the assessment should consider any possible disruption to services and infrastructure (such as road, rail and airports); and
- Paragraph 5.14.8, which states that the Secretary of State (SoS) should only consider preventing or refusing development on highways grounds if there would be an unacceptable impact on highway safety, or residual cumulative impacts on the road network would be severe.

National Policy Statement for Electricity Networks Infrastructure (NPS EN-5, 2011)

3.8.2.6 The NPS for Electricity Networks Infrastructure (EN-5) was published in 2011 and sets out the policies relating to electricity networks infrastructure for consideration in conjunction with NPS EN-1.

3.8.2.7 The NPS EN-5 is currently under review and an updated draft was published for consultation in September 2021. While the adopted document does not refer to transport or highways requirements, the most relevant paragraphs are set out as follows:

- Paragraph 2.2.2, which discusses the factors that inform site selection for the proposed infrastructure; and
- Paragraph 2.2.3 and 2.2.4, which considers the land requirements to gain access for the purposes of installation and maintenance of networks.

National planning policy framework (July 2021)

3.8.2.8 The Government's National Planning Policy Framework (NPPF) was originally published in March 2012 and later revised in July 2021, outlining the Government's planning policies and how they are expected to be applied. The TA will set out the key guidance points of relevance to this application.

3.8.2.9 The most relevant paragraphs in the context of transport are set out below:

- Paragraph 104 outlines that 'transport issues should be considered from the earliest of stages of plan-making and development proposals'; this is to ensure that:
  - The potential impacts of development on transport networks can be addressed;
  - Opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;
  - Opportunities to promote walking, cycling and public transport use are identified and pursued;
  - The environmental impacts of traffic and transport infrastructure can be identified, assessed and considered – including appropriate opportunities for mitigation and for net gains in environmental quality; and
  - Patterns of movement, streets, parking and other transport considerations are integral to the design of schemes and contribute to making high quality places.
- Paragraph 110 outlines the key considerations when assessing sites to be allocated for development in plans or specific development applications. These are:
  - Appropriate opportunities to promote sustainable transport modes can be (or have been) taken up, given the type of development and its location;
  - Safe and suitable access to the Order limits can be achieved for all users;
  - The design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance; and

- Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

- Paragraph 111 states that development should only be prevented or refused on highways grounds where there would be an unacceptable impact on highway safety, or the residual cumulative impacts of development on the road network would be severe.
- Within this context, paragraph 112 states that applications for development should:
  - Give priority first to pedestrian and cycle movements and then, as far as possible, facilitate access to high quality public transport;
  - Address the needs of people with disabilities and reduced mobility in relation to all modes of transport;
  - Create places that are safe, secure and attractive, which minimise the scope for conflicts between pedestrians, cyclists and vehicles;
  - Allow for the efficient delivery of goods, and access by service and emergency vehicles; and
  - Be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.
- As outlined in Paragraph 113, all developments that generate significant amounts of movement should be required to provide a Travel Plan, and the application should be supported by a Transport Statement or TA so that the likely impacts of the proposal can be assessed.

National planning practice guidance (2014)

3.8.2.10 The Government's Planning Practice Guidance; Travel Plans, TAs and Transport Statements in Decision Taking (2014) provides advice on when TAs and Transport Statements are required, and what they should contain. The most relevant paragraphs are summarised below:

- Paragraph 002 states that Travel Plans, TAs and Transport Statements are all ways of assessing and mitigating the negative transport impacts of development in order to promote sustainable development. They are required for all developments which generate significant amounts of movements;
- Paragraphs 004 and 005 state that TAs should primarily focus on evaluating the potential transport impacts of a development proposal and may propose mitigation measures to promote sustainable development in order to avoid unacceptable or "severe" impacts where necessary;
- Paragraph 006 states that TAs support national planning policy and can positively contribute to encouraging sustainable travel, reducing traffic generation and detrimental impacts, reducing carbon emissions and climate impacts, creating accessible, connected and inclusive communities, improving health outcomes and quality of life, improving road safety and reducing the need for new development to increase existing road capacity of provide new roads;

- Paragraph 007 states that TAs should be established at an early stage and be tailored to local circumstances, as well as proportionate to the size and scope of the proposed development. In addition, they should be brought forward through collaborative ongoing working between the local planning authority/transport authority, transport operators, rail network operators, as well as National Highways where there may be implications for the strategic road network and other relevant bodies; and
- Paragraphs 013 to 015 provide further details of when TAs are required, how the need and scope of a TA should be established and what information should be included.

Guidelines for the environmental assessment of road traffic (1993)

3.8.2.11 Institute of Environmental Management and Assessment (IEMA) Guidelines for the Environmental Assessment of Road Traffic (1993) provides guidance on examining the environmental impacts of developments in terms of traffic and transportation.

Local planning policy

3.8.2.12 Local planning policy relating to transport and pertinent to the Kent Onshore Scheme is set out below.

Local Transport Plan 4: Delivering Growth without Gridlock (2016-2031)

3.8.2.13 The Local Transport Plan 4 has been updated by Kent County Council (KCC) with an aim to provide a clear vision for the future of transport across the county up to 2031. The document outlines polices and provides a delivery plan to manage and enhance the local transport network; the key aims and strategy include:

- Delivery of resilient transport infrastructure which reduces congestion and improves journey time reliability to enable economic growth;
- Promote affordable, accessible and connected transport to enable access for all;
- Provide a safer road, footway and cycleway network to reduce the likelihood of casualties and encourage other transport providers to improve safety on their networks;
- Deliver schemes to reduce the environmental footprint of transport, and enhance the historic and natural environment; and
- Provide and promote active travel choices for all members of the community to encourage good health and wellbeing and implement measures to improve local air quality.

3.8.2.14 The Local Plan recognises the NPPF stance on promoting transport systems in favour of sustainable transport modes, however, it also recognises that different policies and solutions will be necessary in different areas.

Freight Action Plan Kent (2017)

3.8.2.15 KCC developed this document with the aim of effectively addressing concerns related to the movement of freight both through and within Kent. The document highlights a

number of actions that KCC are looking to achieve in relation to freight movement across the county, these include;

- tackling the problem of overnight lorry parking in Kent;
- finding a long-term solution to Operational Stack;
- effectively managing the routeing of HGV traffic to ensure that such movements remain on the strategic road network for as much of the journey as possible;
- taking steps to address problems caused by freight traffic to communities; and
- ensuring that KCC continues to make effective use of planning and development control powers to reduce the impact of freight traffic.

Draft Thanet Local Plan (2031)

3.8.2.16 The Thanet Council is working with KCC to prepare a Transport Strategy for the district which supports the development proposed through the draft Local Plan. The document seeks to address key transport issues, including those related to the development identified in this Plan:

- Policy SP41 - Safe and Sustainable Travel - The Council will work with developers, transport service providers, and the local community to manage travel demand, by promoting and facilitating walking, cycling and use of public transport as safe and convenient means of transport. Development applications will be expected to take account of the need to promote safe and sustainable travel. New developments must provide safe and attractive cycling and walking opportunities to reduce the need to travel by car; and
- Policy TP10 - Traffic Management - Development required to implement traffic management measures designed to realise the best use of the highway network in terms of safety, traffic capacity and environmental conditions will be approved.

Thanet District Transport Strategy (2015-2031)

3.8.2.17 The Strategy replaces the former Thanet Transport Plan (2005). Its purpose is to provide a framework of transport policy to the year 2031 to support planned growth within the Thanet District. The main objectives of this Transport Strategy are to;

- Provide a policy framework for the district which is consistent with existing National and Regional policy;
- Support delivery managed growth identified within Thanet District Council's emerging local plan;
- Identify a package of robust transport improvements and interventions to enable the highway network to effectively accommodate the likely increase in travel demand across the plan period; and
- Propose a funding and delivery mechanism for identified interventions and actions.

Dover District Local Plan (2018)

3.8.2.18 The Local Plan sets out a vision and a framework for the future development of the area, addressing needs and opportunities for housing, the economy, community

facilities and infrastructure, as well as the basis for conserving and enhancing the natural and historic environment, mitigating and adapting to climate change, and achieving well designed places. Chapter 9 of the document sets out the Council's strategy for transport and infrastructure provision in the District and the relevant policies.

Dover Transport Strategy (2017)

3.8.2.19 The Dover Transport Strategy has been prepared in support of, National, Regional and Local transport policies, with the aims to;

- Manage the demand of travel rather than simply accommodate it;
- Provide new and improved infrastructure to facilitate growth;
- Improve local accessibility and travel choice to join to the town; and
- Support economic development and quality of life objectives.

3.8.3 Study Area

3.8.3.1 At this stage the proposed study area in Kent is defined by **Figure 1.1.3 Kent Scoping Boundary** and also includes additional parts of the highway network and the pedestrian/ cycle network including Public Rights of Way (PRoW) which may potentially be affected by the Kent Onshore Scheme. The proposed study area for traffic and transport is shown in **Figure 3.8.1 Proposed Study Area in Kent (Traffic and Transport)**.

3.8.3.2 The extent of the proposed study area for assessment in terms of highway impact will be subject to discussion, and agreement of this study area will be sought, with Kent County Council (KCC) as the local highway authority. Therefore, the proposed study area will be updated as required when the ES is prepared.

3.8.3.3 The proposed study area includes the following parts of the highway network for consideration:

- Sandwich Road;
- A256 Richborough Way;
- A299 Hengist Way;
- Cottington Road and Cottington Lane;
- Ebbsfleet Lane and Ebbsfleet Lane North;
- Brook Lane;
- Jutes Lane; and
- Marsh Farm Road.

3.8.3.4 The following junctions will also be considered:

- A256/Sandwich Road/Jutes Lane roundabout (“Ebbsfleet Roundabout”);
- A256/A299/Cottington Link Road roundabout (“Sevenscore Roundabout”); and

- A299/ A256/ Sandwich Road roundabout (“Lord of the Manor Roundabout”).

3.8.3.5 The proposed study area also includes the following walking and cycling routes (including PRoW) which will be considered:

- TE26 (public footpath);
- TE32 (public footpath);
- TE35 (restricted byway);
- TE36 (restricted byway);
- TE37 (public footpath);
- TE39 (public footpath);
- TE40 (public footpath);
- TR11 (public footpath);
- TR32 (public footpath);
- EE42 (public footpath);
- National Cycle Network (NCN) Route 15 – Sandwich to Whitstable;
- Promoted Route: England Coast Path – Camber to Ramsgate;
- Promoted Route: Contra Trail – Ramsgate to Pegwell Bay;
- Promoted Route: Saxon Shore Way; and
- Promoted Route: Viking Coastal Trail – Sandwich to Reculver.

3.8.4 Baseline Conditions

Data Sources

3.8.4.1 The traffic and transport baseline environment conditions described in this section have been informed by a review of the following data sources:

- Publicly available mapping and aerial imagery from Google Maps;
- Publicly available information on websites for public transport operators and online resources for promoted recreational routes; and
- Data held within the AECOM WebGIS platform, with transport infrastructure information, including routes and labelling for PRoW routes.

Baseline

Highway network

3.8.4.2 The proposed study area includes a number of roads including the A256 Richborough Way, A299 Hengist Way, Sandwich Road, Jutes Lane, Ebbsfleet Lane/Ebbsfleet Lane North, Marsh Farm Road, Cottington Road/Cottington Lane and Brook Lane.

3.8.4.3 The A256 runs in a north-south alignment between Dover in the south where it joins the A2 and Cliffsend in the north where it joins the A299 at Sevenscore Roundabout. As it passes through the proposed study area, the A256 is a dual carriageway with two lanes in each direction and is subject to the national speed limit, reducing to 50mph south of the Ebbsfleet roundabout (where it joins Sandwich Road and Jutes Lane). Access to Richborough sub-station is taken from a roundabout on the A256, approximately 400m south of Ebbsfleet roundabout.

3.8.4.4 The A299 runs in an east-west alignment between Faversham in the west where it joins the M2 and Ramsgate in the west. In vicinity of the proposed study area, the A299 is a dual carriageway with two lanes in each direction and is subject to the national speed limit.

3.8.4.5 Sandwich Road is a single carriageway road that connects the A256 at Ebbsfleet Roundabout in the south and the A299 at the Lord of the Manor Roundabout in the north and passes through Cliffsend. The speed limit varies along its length but is generally 40mph with a section of national speed limit adjacent to the Pegwell Bay Country Park and a section of 30mph through Cliffsend. There is also a restriction on vehicles over 7.5t (except for access) along the length of Sandwich Road.

3.8.4.6 Approximately 200m north of the Ebbsfleet Roundabout is Ebbsfleet Lane with access taken from Sandwich Road via a signalised junction. It is a no-through road which provides access to residential properties and the Stonelees Golf Centre. It is a single carriageway road and has a 7.5t vehicle weight restriction (except for access).

3.8.4.7 Jutes Lane can be accessed via the Ebbsfleet Roundabout and runs parallel to the A256 for approximately 800m before reaching Ebbsfleet Farmhouse. It is a single carriageway road with a 40mph speed limit and provides access to the Weatherlees Hill Wastewater Treatment Works.

3.8.4.8 Cottington Link Road connects the Sevenscore Roundabout to Cottington Road. Cottington Road runs in an east-west road direction connecting Minster in the east and Cliffsend in the west. It is approximately 5m wide and is subject to the national speed limit.

3.8.4.9 Ebbsfleet Lane North and Brook Lane also pass through the proposed study area; whilst they are no-through roads, they do provide local access to some residential properties and farmland. Ebbsfleet Lane North forms the southern arm of the crossroad junction with Thorne Hill, Cottington Road and Grinsell Hill. It is a single carriageway road with a 7.5t vehicle weight restriction (except for access). Approximately 500m south of the junction, there is an at-grade railway crossing, immediately south of which is Brook Lane. Marsh Farm Road also features an at-grade railway crossing a short distance to the west of Minster railway station.

Public transport network

3.8.4.10 Bus services can be accessed from bus stops at the Ebbsfleet Roundabout. These serve bus route 45/45A which runs between Ramsgate and Sandwich once per hour Monday – Saturday. The first bus service is around 07:00 and last service is around 18:00.

3.8.4.11 The closest railway station to the proposed study area is Minster, located approximately 2km northwest, however there is limited walking/cycling infrastructure

to make this journey possible without taking a substantial detour. It is typically served by one train per hour to Ramsgate and one train per hour to London Victoria (via Maidstone East). During the peak hours, there are additional services to London Charing Cross (via Tonbridge).

3.8.4.12 Sandwich train station is located approximately 4.5km south of the proposed study area and can be accessed via walking or cycling along the England Coast Path or by bus route 45/45A. The station is typically served by one train per hour to London St Pancras International and one train per hour to Ramsgate, with additional services to London Charing Cross (via Tonbridge).

3.8.4.13 Construction of a new rail station, Thanet Parkway, is underway and due to open in December 2022. It is located approximately 2km northeast of the proposed study area on the western periphery of Cliffsend. It is located between Minster and Ramsgate stations and will be served by both mainline and high-speed trains. The station will include a car park, pick-up/drop-off area, cycle storage and bus stops with forecourt.

Active travel network

3.8.4.14 National Cycle Network (NCN) Route 15 runs along the coastline between Sandwich and Whitstable. In the proximity of the proposed study area, it is a traffic-free route running alongside the A256 to the south of Ebbsfleet Roundabout and parallel to Sandwich Road to the north of the Ebbsfleet Roundabout.

3.8.4.15 There are a number of Public Rights of Way (PRoW) which could be impacted by the Kent Onshore Scheme including the following:

- TE26 – public footpath (approx. 3300m in length) that runs along the northern bank of the River Stour;
- TE32 – public footpath (approx. 1900m in length) that runs between Minster and TE26;
- TE35 – restricted byway (approx. 400m in length) that runs between Marsh Farm and TE26 (situated to the west of TE36);
- TE36 – restricted byway (approx. 400m in length) that runs between Marsh Farm and TE26 (situated to the east of TE35);
- TE37 – public footpath (approx. 2900m in length) that follows the Minster to Ramsgate rail line;
- TE39 – public footpath (approx. 1000m in length) that runs along Brooks Lane and across a field to Ebbsfleet Lane;
- TE40 – public footpath (approx. 900m in length) that runs between Minster and TE37;
- TR11 – public footpath (approx. 200m in length) that runs between Foads Lane and Cliffs End Road;
- TR32 – public footpath (approx. 1500m in length) that runs between Cottington Road and Canterbury Road west; and

- EE42 – public footpath (approx. 7300m in length) that runs along the southern bank of the River Stour. This also forms part of the long-distance walking route, known as the Saxon Shore Way.

3.8.4.16 Other recreational/promoted routes include:

- England Coast Path – a long-distance footpath between Camber, East Sussex and Ramsgate, Kent. It follows the coastline in the proximity of the proposed study area.
- Contra Trail – a short-distance route between Ramsgate and Pegwell Bay. In the proximity of the proposed study area, it follows a circular route around Pegwell Bay Country Park.
- Saxon Shore Way – a long-distance footpath between Gravesend and Hastings. In the proximity of the proposed study area, it follows the River Stour.
- Viking Coastal Trail – a 50km circular route on the Isle of Thanet passing along Cottington Road in proximity of the proposed study area.

3.8.4.17 There are no formal equestrian facilities (i.e. bridleways) in the vicinity of the proposed study area.

Future Baseline

3.8.4.18 The ES will consider future baseline conditions for the land within the proposed study area for the relevant assessment year. For example, base traffic flows will be factored up to the future base year using growth factors derived from TEMPro v7.2 for the relevant areas impacted by the Kent Onshore Scheme. In addition, consideration will be given to any committed developments or highway schemes that are due to be under construction or operational during the future baseline year; see **Part 3, Chapter 13 Cumulative Effects** for further details.

3.8.1 Embedded and Control & Management Measures

Embedded Measures

3.8.1.1 The Project will be designed in accordance with National Grid design standards. The Project will also need to comply with design safety standards including NETS SQSS and the suite of National Grid policies and processes which contains details on design standards required to be met when designing, constructing and operating its projects.

3.8.1.2 The proposed High Voltage Direct Cable (HVDC) cable route will typically be installed within a 40m wide working width. The exception to this is where environmental or engineering constraints mean additional land is required such as where the proposed HVDC route is required to cross obstacles such as roads, watercourses or railway lines using a non-open cut technique. In these locations working width may be required to be larger in order to accommodate the larger construction equipment required to undertake installation works.

3.8.1.3 Trenchless methods will typically be utilised where obstacles (watercourses, roads, railway lines, flood defences or other utilities) require to be crossed. This would involve the installation of ducts below the obstacle. The cables would then be pulled through

the ducts. This method is designed to avoid any potential impacts on the railway network.

3.8.1.4 In addition to the above, a trenchless crossing is proposed beneath the sensitive saltmarsh habitat at the landfall.

Control and Management Measures

3.8.1.5 An outline Code of Construction Practice (CoCP) is provided in **Appendix 1.4.A Outline Code of Construction Practice.** Measures relevant to the control and management of impacts that could affect the traffic and transport assessment are:

- GG03: A Construction Traffic Management Plan (CTMP) will be produced prior to construction.
- GG12: Appropriate site layout and housekeeping measures will be implemented by the contractor(s) at all construction sites. This will include but not be limited to:
  - Managing staff/vehicles entering or leaving site, especially at the beginning and end of the working day; and
  - Managing potential off-site contractor and visitor parking.
- GG13: Vehicles will be correctly maintained and operated in accordance with the manufacturers recommendations and in a responsible manner. All plant and vehicles will be required to switch off their engines when not in use and when it is safe to do so. In addition, plant and vehicles will conform to relevant applicable standards for the vehicle type.
- TT01: The CTMP will set out measures to reduce route and journey mileage to and from, as well as around site, and prevent nuisance to the residents, businesses and the wider community caused by parking, vehicle movements and access restrictions. It will also provide suitable control for the means of access and egress to the public highway and set out measures for the maintenance and upkeep of the public highway. The plan will also identify access for emergency vehicles. It will also set out measures to reduce safety risks through construction vehicle and driver quality standards.
- TT02: The contractor(s) will implement a monitoring and reporting system to check compliance with the measures set out within the CTMP. This will include the need for a GPS tracking system to be fitted to Heavy Goods Vehicles to check for compliance with authorised construction routes. The contractor(s) will also be expected to monitor the number of construction vehicles between the site and the strategic road network. Deviations from the authorised routes or changes to traffic levels that are higher than the CTMP assumptions will require discussion of the need for additional mitigation measures with highways authorities.
- TT03: All designated Public Rights of Way (PRoW) will be identified, and any potential temporary closures applied for/detailed in the DCO. All designated PRoW crossing the working area will be managed with access only closed for short periods while construction activities occur. Any required temporary diversions will be clearly marked at both ends with signage explaining the diversion, the duration of the diversion and a contact number for any concerns.

3.8.1.6 In addition to the above, construction vehicles will be managed at any road/rail/pedestrian/cycle crossing points such as by implementing manned controls (marshals/banksmen) at each crossing point, with a default priority that construction traffic will give-way to other users. Further details will be provided within the Framework CTMP.

3.8.2 Potential for Significant Effects

3.8.2.1 The traffic and transport assessment will consider the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project**.

3.8.2.2 The proposed scope of the traffic and transport assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

3.8.2.3 This section identifies the sources and impacts that would occur as a result of the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme.

3.8.2.4 The nature of the Kent Onshore Scheme is such that the greatest impact is likely to occur during the construction phase and this will be the focus of the assessment of transport effects presented in the ES.

3.8.2.5 The potential for the Kent Onshore Scheme to result in the potential significant effects described in this section takes into account the embedded and control and management measures described in section 5.

3.8.2.6 During the operational and maintenance phase, the Kent Onshore Scheme will be manned by a limited number of operatives across the site, with additional infrequent trips associated with maintenance/inspections or repairs when required. Staff vehicles and those used for maintenance are primarily expected to be pickup trucks and vans, with HGVs rarely accessing the site. Therefore, due to the low level of trips likely to be generated, it is proposed to exclude operational phase transport effects from the EIA. Further detail of the operational phase transport arrangements will be set out in the ES and Transport Assessment to support this approach.

3.8.2.7 In the event that the Project is decommissioned, there is expected to be fewer HGV, LGV and construction worker arrivals and departures associated with the decommissioning phase of the Kent Onshore Scheme than during the construction phase. It is therefore considered reasonable to assume that the impacts will be the same as, or not greater than, the construction phase. Therefore, and given that the exact timing of this scenario is unknown, it is proposed to adopt the assessment of the construction phase to determine the anticipated impact of the Kent Onshore Scheme during its decommissioning phase. Further detail of the decommissioning stage transport arrangements will be set out in the ES and Transport Assessment to support this approach.

3.8.2.8 It is recognised that a potential source of impacts arises from hazardous loads. These include the transport of explosives, gases, flammable liquid/solids, oxidising/toxic

substances, radioactive material or corrosive substances. SF6 Gas will be required for the circuit breakers, oil for the transformers, and other mixed, non-SF6 gases will be used in the Gas Insulated Switchgear. These inputs are expected to be predominantly required during the construction and decommissioning phases and the transport of hazardous loads will be considered accordingly within the ES and Transport Assessment.

3.8.2.9 Although the Kent Onshore Scheme is located near to a number of settlements including Ramsgate, Cliffsend, Minster, Ebbsfleet and Sandwich, the majority of staff and/or visitors (associated with each phase) are expected to travel by vehicle as opposed to on foot, by bicycle or by public transport for logistical reasons e.g. due to travel distance or the requirement to carry equipment. Therefore, this has not been detailed in this Scoping Report although for completeness these modes will be reviewed within the Transport Assessment.

3.8.2.10 Vehicular access during each phase is anticipated to be taken from the A256 and Sandwich Road. Further details on proposed access to the Kent Onshore Scheme will be included within the ES and the Transport Assessment which will be submitted with the DCO application.

3.8.2.11 The ES and Transport Assessment will assess the peak construction period, which will include Heavy Goods Vehicle (HGV) movements, Light Goods Vehicle (LGV) movements and vehicle movements associated with construction worker arrivals and departures. Construction traffic forecasts will be confirmed in the ES and Transport Assessment.

Sources of construction impacts

- Construction works e.g. where these require temporary traffic management, or result in temporary diversions or closures to the highway network or pedestrian/cycle routes, including PRoW;
- Construction routes e.g. where these interact with the existing transport networks (road/rail/pedestrian/cycle) such as at vehicle crossing points; and
- Construction vehicles:
  - HGVs;
  - LGVs;
  - Construction staff vehicles; and
  - Abnormal loads.

Sources of operational impacts

- Operational staff vehicles.

Sources of maintenance impacts

- Maintenance staff vehicles relating to monthly visual inspections, and rolling three year maintenance cycle; and

- Repair staff vehicles (including LGVs) relating to refurbishment and repair works, including the transportation of materials for such works.

Sources of decommissioning impacts

3.8.2.12 The potential sources of decommissioning impacts (traffic and transport) are considered to be the same as those set out above for the construction phase, albeit these would relate to the decommissioning phase.

Potential impacts

3.8.2.13 Table 3.8.1 identifies the potential impacts that could result from the sources identified above.

Table 3.8.1: Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction	Construction works, routes and vehicles	Yes - Additional severance to pedestrians and cyclists	Yes	**Scoped in**
Construction	Construction works, routes and vehicles	Yes - Additional delay to drivers	Yes	**Scoped in**
Construction	Construction works, routes and vehicles	Yes - Additional delay to pedestrians	Yes	**Scoped in**
Construction	Construction works, routes and vehicles	Yes - Decline in pedestrian and cyclist amenity	Yes	**Scoped in**
Construction	Construction works, routes and vehicles	Yes - Additional fear and intimidation to pedestrians and cyclists	Yes	**Scoped in**
Construction	Construction works, routes and vehicles	Decline in road safety	Yes	**Scoped in**
Construction	Construction works, routes and vehicles	Results in PRoW Diversions and/or Closures	Yes	**Scoped in**
Construction	Construction vehicles	Additional hazardous loads	Yes	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Operation	Operational staff vehicles	Additional severance to pedestrians and cyclists	No (limited traffic movements)	Scoped out
Operation	Operational staff vehicles	Additional delay to drivers	No (limited traffic movements)	Scoped out
Operation	Operational staff vehicles	Additional delay to pedestrians	No (limited traffic movements)	Scoped out
Operation	Operational staff vehicles	Decline in pedestrian and cyclist amenity	No (limited traffic movements)	Scoped out
Operation	Operational staff vehicles	Decline in road safety	No (limited traffic movements)	Scoped out
Operation	Operational staff vehicles	Results in PRoW Diversions and/or Closures	No (limited traffic movements)	Scoped out
Operation	Operational staff vehicles	Additional hazardous loads	No (few expected)	Scoped out
Maintenance	Maintenance and repair staff vehicles	Additional severance to pedestrians and cyclists	No (limited traffic movements)	Scoped out
Maintenance	Maintenance and repair staff vehicles	Additional delay to drivers	No (limited traffic movements)	Scoped out
Maintenance	Maintenance and repair staff vehicles	Additional delay to pedestrians	No (limited traffic movements)	Scoped out
Maintenance	Maintenance and repair staff vehicles	Decline in pedestrian and cyclist amenity	No (limited traffic movements)	Scoped out
Maintenance	Maintenance and repair staff vehicles	Decline in road safety	No (limited traffic movements)	Scoped out
Maintenance	Maintenance and repair staff vehicles	Results in PRoW Diversions and/or Closures	No (limited traffic movements)	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Maintenance	Maintenance and repair staff vehicles	Additional hazardous loads	No (few expected)	Scoped out
Decommissioning	Decommissioning works, routes and vehicles	Additional severance to pedestrians and cyclists	Yes	**Scoped in** (to be inferred by assessment of construction)
Decommissioning	Decommissioning works, routes and vehicles	Additional delay to drivers	Yes	**Scoped in** (to be inferred by assessment of construction)
Decommissioning	Decommissioning works, routes and vehicles	Additional delay to pedestrians	Yes	**Scoped in** (to be inferred by assessment of construction)
Decommissioning	Decommissioning works, routes and vehicles	Decline in pedestrian and cyclist amenity	Yes	**Scoped in** (to be inferred by assessment of construction)
Decommissioning	Decommissioning works, routes and vehicles	Additional fear and intimidation to pedestrians and cyclists	Yes	**Scoped in** (to be inferred by assessment of construction)
Decommissioning	Decommissioning works, routes and vehicles	Decline in road safety	Yes	**Scoped in** (to be inferred by assessment of construction)
Decommissioning	Decommissioning works, routes and vehicles	Results in PRoW Diversions and/or Closures	Yes	**Scoped in** (to be inferred by assessment of construction)
Decommissioning	Decommissioning vehicles	Additional hazardous loads	Yes	**Scoped in** (to be inferred by assessment of construction)

Impact Pathways with Receptors (Step 2)

3.8.2.14 This section identifies whether there are any impact pathways from the impacts identified above that could give rise to potentially significant effects on the receptors within the proposed study area. Further details of the road links, junctions, PRoW and

national/regional walking and cycling routes relevant to the study area are set out within section 3.8.4.

3.8.2.15 Table 3.8.2 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Kent Onshore Scheme as shown on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary** and **Figure 3.1.2 Kent Onshore Scheme.**

Table 3.8.2: Impact pathways with receptors

Impact pathway	Receptors	Potential for a significant effect	Proposed to be scoped in/out
Construction and decommissioning Additional severance to pedestrians and cyclists	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	Yes	**Scoped in**
Construction and decommissioning Additional delay to drivers	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	No – footpaths and bridleways not utilised by drivers so no impact	Scoped out
	National/regional walking and cycling routes	No – walking and cycling routes not utilised by drivers so no impact	Scoped out
Construction and decommissioning Additional delay to pedestrians	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking routes	Yes	**Scoped in**
Construction and decommissioning Decline in pedestrian and cyclist amenity	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	Yes	**Scoped in**
Construction and decommissioning	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**

Impact pathway	Receptors	Potential for a significant effect	Proposed to be scoped in/out
Additional fear and intimidation to pedestrians and cyclists	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	Yes	**Scoped in**
Construction and decommissioning Decline in road safety	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	No – no collision data available for footpaths and bridleways (not utilised by vehicles so no impact)	Scoped out
	National/regional walking and cycling routes	No – no collision data available for walking and cycling routes (not utilised by vehicles so no impact)	Scoped out
Construction and decommissioning Results in PRoW Diversions and/or Closures	Road links	No – this impact pathway relates solely to PRoW, not applicable to this receptor type	Scoped out
	Road junctions	No – this impact pathway relates solely to PRoW, not applicable to this receptor type	Scoped out
	PRoW	Yes	**Scoped in**
	National/regional walking and cycling routes	No – this impact pathway relates solely to PRoW, not applicable to this receptor type	Scoped out
Construction and decommissioning Additional hazardous loads	Road links	Yes	**Scoped in**
	Road junctions	Yes	**Scoped in**
	PRoW	No – footpaths and bridleways not utilised by vehicles or hazardous loads so no impact	Scoped out

Impact pathway	Receptors	Potential for a significant effect	Proposed to be scoped in/out
	National/regional walking and cycling routes	No – walking and cycling routes not utilised by vehicles or hazardous loads so no impact	Scoped out

3.8.3 Proposed Assessment Methodology

Proposed Data Sources

3.8.3.1 To inform the assessment of the Kent Onshore Scheme, information from a number of sources will be collected. The sources which will be used are set out below:

- Local travel and network information from various sources including KCC and local rail and bus operators;
- Personal Injury Accident (PIA) data from KCC;
- OS/Architectural Base Mapping to ascertain an accurate geographical representation of the areas in the vicinity of the Kent Onshore Scheme;
- Highway boundary information from KCC;
- Mode share data from the 2011 Census (or 2021 data if available and considered appropriate given the context of COVID-19); and
- Various traffic count and speed survey data where required (see below).

3.8.3.2 Peak hour traffic flows will be identified from historic data held by KCC with respect to A259 and Sandwich Road or traffic survey company databases if available. If suitable data is not available traffic counts will be undertaken at locations in the vicinity of the Kent Onshore Scheme to determine the baseline traffic conditions on the surrounding highway network. The extent of the traffic data and scope for any traffic surveys that may be required will be agreed with the Highway Authority (Kent County Council), as a statutory consultee, where possible.

3.8.3.3 To determine the impact of the Kent Onshore Scheme, a number of scenarios will be assessed using the information collated above. The scenarios considered appropriate for assessment are:

- Baseline (2022) – AM, PM and Daily; and
- Peak Construction Year (to be confirmed) With and Without Development – AM, PM and Daily.

3.8.3.4 The proposed construction period for the Kent Onshore Scheme is 2026 to 2030, and the peak construction year will be identified when the ES is prepared as this is not currently known.

3.8.3.5 The Transport Assessment Scoping Report will be formally presented to KCC as a statutory consultee in order to seek to agree the scope of the Transport Assessment.

In the event that junction capacity analysis is required, this will be discussed and agreed with KCC where necessary.

Proposed Assessment Methodology

3.8.3.6 In accordance with the Institute of Environmental Management and Assessment (IEMA) Guidelines for the Environmental Assessment of Road Traffic (1993) for assessing the environmental impacts of road traffic, the following criteria will be considered in this assessment.

- Severance;
- Pedestrian delay;
- Pedestrian and cyclist amenity;
- Fear and intimidation;
- Driver delay;
- Highway safety;
- PRoW diversions and/or closures; and
- Hazardous and dangerous loads.

3.8.3.7 The IEMA guidelines set out two rules in identifying potential links for analysis:

- Rule 1: include highway links where traffic flows will increase by more than 30% (or the number of HGVs will increase by more than 30%); and
- Rule 2: include any other specifically sensitive areas (e.g. accident black spots, conservation areas, hospitals, links with high pedestrian flows etc) where traffic flows have increased by 10% or more.

3.8.3.8 Based on this, it is proposed to assess links where traffic flows are expected to increase by 30% or more. However, it is not proposed to assess links where there is expected to be a less than a 30% increase in traffic flows as a result of the Kent Onshore Scheme, unless any specifically sensitive areas are identified. In addition, it is proposed to assign a very low magnitude of change as there is expected to be fewer than 30 additional vehicle trips per hour during each of the development peak hours as a result of the Kent Onshore Scheme, irrespective of the proportional increase in traffic flows.

3.8.3.9 In addition to the above, potential traffic-related effects will also be considered by other topics, including (and not limited to) the following examples:

- Potential effects of construction traffic on sites of ecological and nature conservation value are considered in **Part 3, Chapter 3 Ecology and Biodiversity**;
- Potential effects of construction traffic on air quality are considered in **Part 3, Chapter 9 Air Quality**;
- Potential effects of construction traffic on noise and vibration are considered **in Part 3, Chapter 10 Noise and Vibration**; and

- Potential effects of construction traffic on tourists, visitor attractions and other businesses are considered in **Part 3, Chapter 11 Socio Recreation and Tourism**.

3.8.3.10 The type of traffic which is anticipated to be generated by the Kent Onshore Scheme will be categorised as follows; primarily general traffic, LGVs, HGVs and Abnormal Indivisible Loads (AILs). The vehicle routeing and movement associated with the Project's construction will be considered in detail and will be discussed through consultation with the relevant Highway Authority (Kent County Council).

3.8.3.11 Once the locations and volumes of the proposed traffic have been identified it will be necessary to identify those receptors that may be impacted upon, due to the increase in vehicle movements. This will be done by identifying the percentage increase in vehicular activity along the identified construction routes following the collection of traffic data. The Automatic Traffic Counts (ATCs) will be used to derive baseline Annual Average Daily Traffic (AADT) for individual links, subdivided into 24 hour and 18 hour counts for total traffic and HGVs.

3.8.3.12 Typically, when assessing the impacts of traffic effects, there are a range of particular groups and locations which may be sensitive to changes in traffic conditions compliant with the criteria previously outlined.

3.8.3.13 These are outlined in the IEMA Guidance as 'Affected Parties', as follows:

- People at home;
- People in workplaces;
- Sensitive groups including children, elderly and disabled;
- Sensitive locations, e.g. hospitals, churches, schools, historic buildings;
- People walking;
- People cycling;
- Open spaces, recreational sites, shopping areas;
- Sites of ecological/nature conservation value; and
- Sites of tourist/visitor attraction.

3.8.3.14 The IEMA guidance states that this list of affected parties is not exhaustive. One affected party that is not on the list but will nevertheless be considered in this assessment is 'other road users'. All of the affected parties have one thing in common which is that their potential exposure to changes in traffic volumes comes about through their proximity to a construction traffic route.

3.8.3.15 It is important to note that the IEMA methodology does not consider the duration of effect, especially whether it is temporary (construction and decommissioning) or permanent (operational traffic). As such, effects that, using this methodology, may appear to be significant, may be considered not significant if the effect is temporary or infrequent (occurring only occasionally during construction for example).

3.8.3.16 To calculate the trip distribution of workers travelling to and from the proposed construction compounds each day, a simple gravity model will be developed (based on 2011 Census data, given that relevant 2021 Census data is not currently available).

Construction traffic associated with the Kent Onshore Scheme will be distributed onto the local highway network to calculate the resultant percentage increase on each link.

3.8.3.17 Assessments will be undertaken at the peak of construction, and this may cover more than one year as the peak year for traffic volumes can vary along various routes depending on which section of the Kent Onshore Scheme they serve.

3.8.3.18 Currently, it is anticipated that construction may take approximately two years. If historical data is utilised, base traffic flows will be factored up to the future base year in order to establish baseline flows and then factored up further to the identified peak year of construction. Growth factors will be derived from TEMPro v7.2 for the relevant areas impacted by the Kent Onshore Scheme. Meanwhile, the peak construction traffic flows will be derived by analysing construction traffic data and construction programmes provided by Design Engineers.

Transport Assessment

3.8.3.19 The ability of the highway network to accommodate the development traffic will be assessed and reported in a Transport Assessment (TA) which will form a technical annex to the ES Chapter. The TA will include information on:

- A review of relevant national, regional and local policies;
- Description of the existing baseline conditions – a description of the roads, railway lines, footpaths, bridleways and cycle paths crossed by the route and/or impacted by the works. The requirement to carry out any surveys on these routes will be agreed with the relevant planning authority;
- A review of the road safety data for the most recent five-year period within the proposed study area;
- Description of the Project and Kent Onshore Scheme setting out timescales for construction, identification of route sections, typical working width layout, compound locations, access routes to compounds, construction methods for individual railway and road crossings (where required);
- Traffic generation of compounds and any other relevant sites for construction staff with a profile of arrivals and departures for the day and HGV traffic with a profile of arrivals and departures for the day;
- Distribution and assignment of trips to the network with construction traffic distributed based on a simple gravity model of worker catchment area and HGVs assigned from the A road network;
- Mitigation measures; and
- Summary and conclusions.

Defining Significance

3.8.3.20 The significance of effect is determined through consideration of two elements; the magnitude of the impact and the sensitivity of the receptor. The following sections outline the approach that would be used to determine these factors.

Sensitivity, value, or importance

3.8.3.21 The general criteria for defining the importance or sensitivity of receptors are set out in Table 3.8.3. Key factors influencing this include:

- The value of the receptor or resource based upon empirical and/or intrinsic factors, for example considering any legal or policy protection afforded which is indicative of the receptor or resources' value internationally, nationally or locally; and
- The sensitivity of the receptor or resource to change, for example is the receptor likely to acclimatise to the change. This will consider legal and policy thresholds which are indicative of the ability of the resources to absorb change.

Table 3.8.3:Categorising the overall sensitivity of receptors

Receptor sensitivity	Receptor examples
Very High	Highway Links and Junctions: More than two sensitive users present (e.g. schools, play areas, care/retirement homes, disabled parking bays, hospitals, places of worship, historic buildings) Walk/Cycle Links including PRoW: Heavily trafficked highway with on-road pedestrian/cycle route
High	Highway Links and Junctions: Two sensitive users present (e.g. schools, play areas, care/retirement homes, disabled parking bays, hospitals, places of worship, historic buildings) Walk/Cycle Links including PRoW: Lightly trafficked highway with on-road pedestrian/cycle route
Medium	Highway Links and Junctions (at least one of the following): - One sensitive user present (e.g. schools, play areas, care/retirement homes, disabled parking bays, hospitals, places of worship, historic buildings) - Many residential properties with direct frontage to highway link being used as construction route - Pedestrians using footways, PRoW and/ or crossings on highway link - Cyclists using on-road designated cycle routes along highway link Walk/Cycle Links including PRoW: Heavily trafficked highway with off-road pedestrian/cycle route
Low	Highway Links and Junctions (at least one of the following): - Few residential properties with direct frontage to the highway link being used as a construction traffic route - Workplaces with direct frontage to highway link being used as construction route

Receptor sensitivity	Receptor examples
	- Cyclists using off-road designated cycle routes along highway link Walk/Cycle Links including PRoW: Lightly trafficked highway with off-road pedestrian/cycle route
Neutral	Highway Links and Junctions: No receptors along link Walk/Cycle Links including PRoW: Pedestrian/cycle route not running alongside highway

3.8.3.22 An assessment of the railway network is proposed to be scoped out from the Traffic and Transport chapter given that trenchless methods will be employed when installing cables to avoid any potential impacts on the railway, and that any vehicle crossing points of the railway (if required) will be managed to ensure operational rail safety.

Magnitude

3.8.3.23 The IEMA guidelines state that the magnitude of each impact should be determined as the predicted deviation from the baseline conditions.

3.8.3.24 This assessment will consider a range of potential effects that could be experienced during the construction stage of the Kent Onshore Scheme and this section identifies how magnitude will be considered for each.

3.8.3.25 **Severance** is defined in the IEMA guidelines as the *"perceived division that can occur with a community when it becomes separated by a major traffic artery"*. The term is used to describe a complex series of factors that separate people from places and other people. Severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by the road itself. It can also relate to quite minor traffic flows if they impede pedestrian access to essential facilities. The assessment will consider both total traffic and the proportion of HGVs. The guidance for thresholds of magnitude is taken from DMRB Volume 11, Section 3, Part 8.

3.8.3.26 **Pedestrian Delay** is considered to be affected by the changes in volume, composition or speed of traffic, in terms of their respective impacts on the ability of pedestrians to cross roads. In general, increases in traffic levels and/or traffic speeds are likely to lead to greater increases in pedestrian delay. Effects are only likely to be realised when the total two-way traffic on the carriageway exceeds 1,400 vehicles per hour (IEMA Guidelines).

3.8.3.27 **Pedestrian and Cyclist Amenity** is broadly defined as "the relative pleasantness of a journey and is considered to be affected by traffic flow, traffic composition and pavement width/separation from traffic". The guidance suggests that a tentative threshold for judging the significance of changes in pedestrian and cycle amenity would be where the traffic flow is halved or doubled.

3.8.3.28 **Fear and Intimidation** occurs through a combination of traffic flow, speed, proportion of HGVs and the proximity of the above to people or receptors on highway links. These indicators are often heightened by a perceived lack of protection or buffers from the

highway or through narrow or non-existent footways. The assessment will consider each road on a case by case basis, however there are indicative thresholds provided in the IEMA guidelines which are presented in Table 3.8.4.

3.8.3.29 **Driver Delay** is an effect cited in the IEMA guidance and relates to incremental increases in traffic (as outlined in Table 3.8.4). As a further consideration, where any temporary road closures or traffic management is likely to be in place to enable the construction of the Kent Onshore Scheme, any additional potential delay caused by these resultant diversion routes will be reported.

3.8.3.30 **Highway Safety** considers Personal Injury Collision (PIC) data obtained for the most recent five-year period available at junctions and links along the proposed construction traffic routes. These will be used to assess whether the additional traffic during construction of the Kent Onshore Scheme would be likely to have a detrimental effect of road safety.

3.8.3.31 **PRoW Diversions and Closures** will be considered on the basis of the type of impact i.e. whether a temporary PRoW closure or diversion is proposed, as well as any increases in pedestrian journey length following a closure/ diversion and how long any potential disruption to an existing route would occur for. The assessment will consider the indicative thresholds presented in Table 3.8.5 below which have been derived based on professional judgement.

3.8.3.32 With regard to **Hazardous and Dangerous Loads**, the guidance indicates that "the Statement should include a risk or catastrophe analysis to illustrate the potential for an accident to happen and the likely effect of such an event". Analysis of the road network within the proposed study area and understanding of the Kent Onshore Scheme works indicates that there are no particular features, such as a significant vertical drop immediately beyond the carriageway, which would suggest that the transfer of materials poses a particular risk beyond that which would be expected on the general highway network. However, there will be a requirement to transport gas and oil during the Project (particularly during the construction and decommissioning phases) which are categorised as Hazardous and Dangerous Loads (see Section 3.8.6).

3.8.3.33 In view of the above, the impacts of Hazardous and Dangerous Loads will be considered within the ES, in the form of a qualitative risk assessment to establish the likelihood and extent of such effects. The projected impacts of the Kent Onshore Scheme will be measured separately, dependent upon the receptor, for the construction and decommissioning periods. The Framework CTMP and the ES will include details of measures that will be employed to ensure the safe vehicular transport of components to and from the Kent Onshore Scheme.

3.8.3.34 Tables 3.8.4 and 3.8.5 summarise the criteria that will be used to assess the magnitude of effect (based on increases i.e. 'adverse' effects), along with the thresholds that will be used to determine whether effects are considered large, medium, small and negligible. Depending on the baseline information available, the various thresholds identified for the proportional increases in traffic flow relate to peak hour flows and daily flows (whichever is highest). Within these tables, neither the sensitivity of receptors, nor the duration of effects, is taken into consideration. These tables are formed using IEMA Guidelines and professional judgement.

Table 3.8.4:Categorising the overall magnitude of effect of a highway link

Impact	Negligible	Small	Medium	Large
Severance	Increase in total traffic flows of 29% or under (or increase in HGV flows under 10%).	Increase in total traffic flows of 30-59% (or increase in HGV flows of between 20%-39%).	Increase in total traffic flows of 60%-89% (or increase in HGV flows between 40%-89%).	Increase in total traffic flows or HGV flows of 90% and above.
Pedestrian Delay	Total traffic flows under 1,400 per hour	Where traffic flows exceed 1,400 vehicles per hour the severity of the impact will be determined based on the thresholds identified above for severance.		
Pedestrian and Cycle Amenity	Increase in total traffic flows of 49% or under.	Increase in total traffic flows of 50-69%.	Increase in total traffic flows of 70%-99%.	Increase in total traffic flows of 100% or above.
Fear and Intimidation	Increase in total traffic flows or HGV flows of 29% or under (or increase in HGV flows under 10%).	Increase in total traffic flows of 30-59% (or increase in HGV flows of between 10%-39%).	Increase in total traffic flows of 60%-89% (or increase in HGV flows between 40%-89%).	Increase in total traffic flows or HGV flows of 90% and above.
Driver Delay	Increase in total traffic flow of less than 29%.	Increase in total traffic flow of between 30% and 59%.	Increase in total traffic flow of between 60% and 89%.	Increase in traffic flow of 90% and above.
Highway Safety	Increase in total traffic flows of 30% or under (or increase in HGV flows under 10%).	All links estimated to experience increases in total traffic flows above 30% or increases in HGV flows above 10% are analysed further on a case by case basis.		
Hazardous Loads	Based on the probability of a personal injury collision, categorised as fatal or serious, involving a hazardous load occurring.			

3.8.3.35 An assessment of national/regional walking and cycling routes, as well as PRoW will also be carried out where these are directly affected by construction works or intersected by a construction route (for example), including in terms of severance, pedestrian delay, pedestrian and cycle amenity and for fear and intimidation, by reviewing the thresholds as identified in Table 3.8.4 above where relevant. In terms of

PRoW diversions and/or closures, the following thresholds are proposed to identify magnitude of effect based on professional judgement.

Table 3.8.5:Categorising the overall magnitude of effect of a PRoW diversion and/or closure

Impact	Negligible	Small	Medium	Large
PRoW Diversions and/or Closures	A temporary PRoW diversion (no closure) with either no increase in pedestrian journey length or an increase in pedestrian journey length for one to five days.	A temporary PRoW diversion (no closure) with an increase in pedestrian journey length for one to four weeks.	A short term PRoW closure (for less than four weeks in any 12 month period) without a diversion route; OR A temporary PRoW diversion (no closure) with an increase in pedestrian journey length for more than four weeks.	A short term PRoW closure (for more than four weeks in any 12 month period) without a diversion route.

3.8.3.36 Tables 3.8.4 and 3.8.5 above set out the proposed magnitude thresholds for the respective environmental effects that will be considered in the ES. With the exception of PRoW Diversion and Closure effects, all effects have a proposed magnitude that does not, initially, consider the duration over which an effect is likely to be experienced.

3.8.3.37 Duration is considered when assessing the overall significance of residual effects, noting that the DMRB Volume 11 Section 2 Part 5 states in Paragraph 1.47:

"*Recognition should be made that permanent impacts will be more significant than those of a temporary nature. For example, the impact may only occur during a single phase of the project construction and may be temporary. Alternatively, the impact may be long-term or irreversible and hence permanent. It is, therefore, important that the assessment distinguishes between permanent and temporary impacts*".

3.8.3.38 All of the traffic and transport effects associated with the construction and decommissioning of the Kent Onshore Scheme would be temporary effects. Some temporary effects would be likely to last longer than others, and these will be clearly reported in the ES. Following the quantified assessment, residual effects will be reported taking into account professional judgement on the duration over which effects are likely to be experienced.

Significance

3.8.3.39 In order to determine the effect on specific receptors, both the sensitivity of receptors and the magnitude of impact, as outlined above, are considered. Table 3.8.6 below shows the matrix that has been used to determine the effect category. Effects which are classified as **major** or **moderate** are considered to be significant (shown in **bold**).

Table 3.8.6: Significance matrix

Magnitude of effect	Receptor sensitivity				
	Very High	**High**	**Medium**	**Low**	**Neutral**
Large	**Major**	**Major/ Moderate**	**Major/ Moderate/ Minor**	**Moderate**/ Minor	Minor/ Negligible
Medium	**Major/ Moderate**	**Major/ Moderate**	**Moderate**/ Minor	Minor/ Negligible	Negligible
Small	**Major/ Moderate/ Minor**	**Moderate**/ Minor	**Moderate**/ Minor	Minor/ Negligible	Negligible
Negligible	Minor/ Negligible	Minor/ Negligible	Minor/ Negligible	Negligible	Negligible

3.8.4 Conclusion

3.8.4.1 This scoping chapter presents the potential for effects in respect of traffic and transport that may arise from the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme. This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an EIA.

Proposed Scope of the Assessment

3.8.4.2 A summary of the proposed scope of the assessment is provided in Table 3.8.7.

Table 3.8.7: Proposed scope of the assessment

Receptor	Potential significant effect	Project Phase(s)	Proposed to be scoped in/out
Road links	Severance Pedestrian Delay	Construction and decommissioning	**Scoped in**
	Pedestrian and Cycle Amenity Fear and Intimidation Driver Delay Highway Safety Hazardous Loads	Operation and maintenance	Scoped out

Road junctions	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation Driver Delay Highway Safety Hazardous Loads	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out
PRoW	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation PRoW Diversions and/or Closures	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out
National/regional walking and cycle routes	Severance Pedestrian Delay Pedestrian and Cycle Amenity Fear and Intimidation	Construction and decommissioning	**Scoped in**
		Operation and maintenance	Scoped out

3.9 Air Quality

3.9.1 Introduction

3.9.1.1 This chapter presents how the air quality assessment will consider the potentially significant effects that may arise from the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme (as described in Part 1, Chapter 4, Description of the Project). This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an Environmental Impact Assessment (EIA).

3.9.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Kent Onshore Scheme Scoping Boundary hereafter referred to as the Kent Scoping Boundary is illustrated on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary**.

3.9.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Project Description**;
- **Part 1, Chapter 5, EIA Approach and Methodology**; and
- **Part 3, Chapter 1, Evolution of the Kent Onshore Scheme**.

3.9.2 Regulatory and Planning Context

3.9.2.1 **Part 1, Chapter 2, Regulatory and Planning Contex**t describes the overall regulatory and planning policy context for the Project. Key legislation, policy and guidance relevant to the assessment of potential effects on air quality associated with the construction, operation, maintenance and decommissioning of the Project is presented below.

Legislation

- EU Framework Directive 96/62/EC[168];
- Directive 2008/50/EC on ambient air quality and cleaner air for Europe[169];
- Part IV of the Environment Act (1995, amended 2021)[170]; and

[168] Council Directive 96/62/EC (1996). Ambient Air Quality Assessment and Management. [online] Available at: https://www.legislation.gov.uk/eudr/1996/62

[169] Directive 2008/50/EC of the European Parliament and of the Council (2008). Ambient Air Quality and Cleaner Air for Europe. [online] Available at: https://www.legislation.gov.uk/eudr/2008/50/introduction

[170] Environment Act 1995 (amended 2021) [online]. Available at: https://www.legislation.gov.uk/ukpga/2021/30/part/4/enacted

- Air Quality Standards Regulations[171];
- The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007)[172]; and
- The Non-Road Mobile Machinery (Type-Approval and Emission of Gaseous and Particulate Pollutants) Regulations 2018[173].

Planning Policy

National planning policy

- Overarching National Policy Statement for Energy (EN-1)174 - Section 5.2 of EN-1 suggests that if a project is likely to have adverse effects on air quality an assessment of the impacts should be included in the Environmental Statement (ES). Paragraph 5.2.7 puts forth a number of aspects associated with the assessment of air quality that should be included in the ES, for example, “existing air quality levels and the relative change in air quality from existing levels”; and
- National Planning Policy Framework (Revised) (NPPF)[175].

Local planning policy

- Kent and Medway Energy and Low Emissions Strategy[176];
- Dover District Council Core Strategy[177]; and
- Thanet District Council Local Plan[178].

Guidance

- National Planning Policy Guidance (update) (NPPG)[179];

[171] The Air Quality Standards Regulations 2010 [online]. Available at: https://www.legislation.gov.uk/uksi/2010/1001/contents

[172] Department for Environment, Food and Rural Affairs (2007). The Air Quality Strategy for England, Scotland, Wales and Northern Ireland. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69336/pb12654-air-quality-strategy-vol1-070712.pdf

[173] The Non-Road Mobile Machinery (Type-Approval and Emission of Gaseous and Particulate Pollutants) Regulations 2018. [online] Available at: https://www.legislation.gov.uk/uksi/2018/764/made

[174] Department of Energy and Climate Change (2011). Overarching National Policy Statement for Energy (EN-1). [online] Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure

[175] Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework. [online] Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2

[176] Kent County Council and Medway Council (2020). Kent and Medway Energy and Low Emissions Strategy. [online] Available at: https://www.kent.gov.uk/__data/assets/pdf_file/0009/112401/Kent-and-Medway-Energy-and-Low-Emissions-Strategy.pdf

[177] Dover District Council (2010). Dover District Local Development Framework Core Strategy. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/PDF/Adopted-Core-Strategy.pdf

[178] Thanet District Council (2020). Thanet District Council Local Plan. [online] Available at: https://www.thanet.gov.uk/wp-content/uploads/2018/03/LP-adjusted.pdf [Accessed 13/07/2022].

[179] Department for Levelling Up, Housing and Communities, and Ministry of Housing, Communities & Local Government (2019). Planning Practice Guidance – Air Quality. [online] Available at: https://www.gov.uk/guidance/air-quality--3

- Institute of Air Quality Management Guidance on the assessment of dust from demolition and construction, 2014[180];
- Institute of Air Quality Management and Environmental Protection UK: Land-use Planning & Development Control: Planning for Air Quality. v1.2. Institute of Air Quality Management, London[181]; and
- Local Air Quality Management Technical Guidance (LAQM.TG(16))[182].

3.9.3 Study Area

3.9.3.1 The Institute of Air Quality Management (IAQM) construction dust guidance[180] requires that construction dust impacts are assessed up to 350m from the locations of demolition, construction and earthworks activities for human receptors and up to 50m for ecological receptors. Construction activities are assumed to take place anywhere within the Kent Scoping Boundary, therefore as a worst-case approach, the construction dust study area will include up to 350m from the edge of the scoping boundary. The construction phase Study Area also includes the first 50m of any road within 500m from the main site entrance(s) used by the site construction vehicles, as per IAQM construction dust guidance[180].

3.9.3.2 The number of vehicles associated with the construction phase of the Kent Onshore Scheme is not yet confirmed; however, it is anticipated that detailed assessment of construction vehicle emissions will be scoped out as traffic flows are expected to be below the IAQM screening criteria[181]. This will be confirmed upon receipt and screening of construction traffic data. If construction Heavy Duty Vehicle (HDV) flows are expected to be greater than 100 Annual Average Daily Traffic (AADT) flows on a road during the construction phase or 25 AADT within an Air Quality Management Area (AQMA), then exhaust emissions from construction vehicles will be modelled at receptors within 200m of these roads.

3.9.3.3 The IAQM development control guidance[181] details its own indicative criteria with respect to change as a result of a project's operational phase that, if met, highlight the need for an assessment, rather than necessarily defining the boundaries of a Study Area. The criteria are:

- A change in Light Duty Vehicle (LDV) flows of >100 AADT within or adjacent to an AQMA, or >500 AADT elsewhere;
- A change in HDV flows of >25 AADT within or adjacent to an AQMA, or >100 AADT elsewhere;
- Where a road is realigned by 5m or more and is within an AQMA;
- Where a junction is added or removed close to existing receptors; and

[180] Institute of Air Quality Management (2014). Guidance on the assessment of dust from demolition and construction. Institute of Air Quality Management, London. V.1.1.

[181] Institute of Air Quality Management and Environmental Protection UK (2017). Land-use Planning & Development Control: Planning for Air Quality. Institute of Air Quality Management, London. V.1.2.

[182] Department for Environment, Food and Rural Affairs (2018). Local Air Quality Management Technical Guidance (TG16). [online] Available at: https://www.scottishairquality.scot/sites/default/files/publications/2022-08/LAQM-TG16-April-21-v1.pdf

- Where there are one or more substantial combustion processes where there is a risk of impacts at relevant receptors.

3.9.3.4 The same screening criteria will be used to define the Study Area should the operational phase be scoped in for assessment. However, operational phase traffic flows are expected to be below these screening criteria and therefore it is proposed to scope out the assessment of operational vehicle emissions as air quality impacts will be negligible.

3.9.4 Baseline Conditions

Data Sources

3.9.4.1 The air quality environment baseline described in this section has been informed by the following data sources:

- Defra UK Air website[183] – to establish predicted background concentrations for Nitrogen Dioxide (NO_2), Particulate Matter less than 10 microns in diameter (PM_{10}) and Particulate Matter less than 2.5 microns in diameter ($PM_{2.5}$).
- Local authority websites and annual Air Quality Status Reports – to determine existing AQMAs and local air quality monitoring results:
  - KentAir website[184];
  - LondonAir website[185];
  - Kent and Medway Air Quality Monitoring Network Annual Report 2019[186];
  - Dover District Council Annual Status Report 2021[187]; and
  - Thanet District Council Annual Status Report 2021[188].
- MAGIC website[189] – to identify ecological sites within the air quality Study Area.

Baseline

3.9.4.2 Baseline data has been collated to determine the existing air quality conditions in the area that is likely to be affected by the Project. A review of the existing baseline will be undertaken to establish an understanding of the baseline air quality environment, to

[183] Department of Environment, Food and Rural Affairs (2022). UK Air – An Information Resource. [online] Available at: https://uk-air.defra.gov.uk/

[184] KentAir (2022). Reporting Air Quality in Kent and Medway. [online] Available at: https://kentair.org.uk/

[185] LondonAir (2022). [online] Available at: https://londonair.org.uk/LondonAir/Default.aspx

[186] Air Quality Data Management (2020). Kent and Medway Air Quality Monitoring Network (KMAQMN) Annual Report 2019. [online] Available at: https://kentair.org.uk/report/kent-medway-air-quality-monitoring-network-annual-report-2019

[187] Dover District Council (2021). Annual Status Report 2021. Bureau Veritas. [online] Available at: https://www.dover.gov.uk/Environment/Environmental-Protection/Air-Quality/Dover-District-Council-2021-ASR-v5.pdf

[188] Thanet District Council (2021). Annual Status Report 2021. Bureau Veritas. [online] Available at: https://www.thanet.gov.uk/wp-content/uploads/2018/03/Thanet-ASR_England_2021_Final_v1.0.pdf

[189] Department for Environment, Food and Rural Affairs (2022). Multi-Agency Geographic Information for the Countryside (MAGIC). [online] Aailable at: https://magic.defra.gov.uk/

identify areas that are likely to be sensitive to changes in emissions as a result of the Project.

3.9.4.3 As required by Part IV of the Environment Act (1995), all local authorities produce Annual Status Reports (ASRs) each year. The most recently available reports for Dover District Council and Thanet District Council is the 2021 ASRs[187] [188] which summarises air quality within their areas during 2020.

3.9.4.4 A review of the most recently published ASRs[187] [188] confirmed that exceedances of the NO_2 annual mean objective set in the AQS have been identified in Dover and Thanet, resulting in the current declaration of the following s AQMAs:

- Thanet Urban AQMA – declared in 2011;
- A20 AQMA – declared 2004, amended 2009; and
- High Street/ Ladywell AQMA – declared 2007.

3.9.4.5 The Kent Scoping Boundary area is located close to the Thanet Urban AQMA, which encompasses a number of urban areas within Thanet.

3.9.4.6 The closest monitoring location to the Kent Scoping Boundary is diffusion tube site TH16 which is a background site monitored by Thanet District Council. The annual average NO_2 concentration at this site is well below the AQS objective for all monitored years.

3.9.4.7 A review of the available modelled background concentrations for the Site and surrounding area has been carried out using Defra predicted annual mean background concentrations provided in 1km x 1km grid squares. Background concentrations for 2022 are well below the relevant objective values for all pollutants.

Future Baseline

3.9.4.8 Background pollutant concentrations and are predicted to decrease in future years, along with air pollutant concentrations from vehicle emissions sources due to improvements in technologies and increased emissions standards. This is supported by trends observed from local authority monitoring data and future predicted Defra background map concentrations.

3.9.5 Embedded and Control & Management Measures

Embedded Measures

3.9.5.1 The routeing and siting of the Kent Onshore Scheme has been evolved to avoid settlement areas as far as possible.

Control and Management Measures

3.9.5.2 An outline Code of Construction Practice (CoCP) is provided in **Appendix 1.4.A Outline Code of Construction Practice**. The Outline CoCP contains a list of relevant good practice measures, including the following key commitments relating to air quality:

- GG04: The CEMP shall include measures to manage dust, waste, water, noise, vibration and soil during construction. The contractor(s) shall undertake daily site inspections to check conformance to the Management Plans.
- GG10: Any activity carried out or equipment located within a construction compound that may produce a noticeable nuisance, including but not limited to dust, noise, vibration and lighting, will be located away from sensitive receptors such as residential properties or ecological sites where practicable.
- GG13: Plant and vehicles will conform to relevant applicable standards for the vehicle type as follows:
- Euro 4 (NOx) for petrol cars, vans and minibuses;
- Euro 6 (NOx and PM) for diesel cars, vans and minibuses; and
- Euro VI (NOx and PM) for lorries, buses, coaches and Heavy Goods Vehicles (excluding specialist abnormal indivisible loads).
- Vehicles will be correctly maintained and operated in accordance with manufacturer's recommendations and in a responsible manner. All plant and vehicles will be required to switch off their engines when not in use and when it is safe to do so.
- GG14: Materials and equipment will not be moved or handled unnecessarily. When loading and unloading materials from vehicles, including cable drums and excavated materials, drop heights will be limited.
- GG18: Wheel washing will be provided at each main compound access point on to the highway. An adequate supply of water will be made available at these locations at all times. Road sweepers will be deployed on public roads where necessary to prevent excessive dust or mud deposits.
- GG19: Earthworks and stockpiled soil will be protected by covering, seeding or using water suppression where appropriate.
- GG20: Bonfires and the burning of waste material will be prohibited.
- TT01: The CTMP will set out measures to reduce route and journey mileage to and from and around site, and prevent nuisance to the residents, businesses and the wider community caused by parking, vehicle movements and access restrictions. It will also provide suitable control for the means of access and egress to the public highway and set out measures for the maintenance and upkeep of the public highway. The plan will also identify access for emergency vehicles. It will also set out measures to reduce safety risks through construction vehicle and driver quality standards and measures to manage abnormal loads.

3.9.5.3 During construction, mitigation measures will be employed to ensure that dust emissions are minimised to a negligible impact, such as:

- Site management (logging of incidents/complaints);
- Monitoring (site inspections, soiling checks, compliance with Dust Management plan, etc);

- Preparing and maintaining the site (locate dust causing activities away from receptors, barriers, cleaning, enclosed specific operations with high potential for dust production, cover stockpiles, etc);
- Operating vehicle/machinery and sustainable travel (comply with NRMM standards, no idling, use mains electricity, travel plan etc);
- Operations (employ dust suppression, use enclosed chutes, minimise drop heights, etc);
- Demolition measures (damp down, avoid explosive blasting, soft strip interiors before demolition, etc);
- Earthworks measures (revegetate promptly, use hessian mulches and cover with topsoil, etc);
- Construction measures (avoid scabbling, keep aggregates damp, ensure fine powder materials are delivered enclosed and stored in silos, ensure bags are sealed after use); and
- Trackout measures (wash access and local roads, avid dry sweeping of large areas, ensure vehicle-borne materials are covered, install hard surface haul routes, wheel washing, etc).

3.9.5.4 Construction dust mitigation measures are considered tertiary mitigation i.e., actions that are standard best practices used to manage commonly occurring environmental effects.

3.9.5.5 Construction phase mitigation measures will be proposed as a function of the dust soiling and human health risk ratings allocated by following the IAQM construction dust guidance[180]. The IAQM construction dust guidance[180] also details an extensive list of potential mitigation measures by construction activity. Appropriate mitigation measures identified from the construction dust risk assessment will be secured through a draft Construction Environmental Management Plan (CEMP), that will be secured as a requirement in the draft Development Consent Order (DCO).

3.9.6 Potential for Significant Effects

3.9.6.1 The air quality assessment will consider the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project**.

3.9.6.2 The proposed scope of the air quality assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

3.9.6.3 This section identifies the sources and impacts that would occur as a result of the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme.

3.9.6.4 The potential for the Kent Onshore Scheme to result in the potential significant effects described in this section takes into account the embedded and control and management measures described in section 5.

Sources of construction impacts

- construction activities such as earthworks and trackout resulting in emissions of dust;
- emissions from NRMM; and
- emissions from construction traffic.

Sources of operational impacts

3.9.6.5 There are no other operational phase emissions sources or air quality impacts associated with the Project anticipated for inclusion in the air quality assessment.

Sources of maintenance impacts

3.9.6.6 Traffic trips associated with the maintenance of the Project are anticipated to be below the IAQM indicative criteria[181] for potential significant effects. Therefore, air quality impacts associated with operational phase vehicle emissions will be negligible and are proposed to be scoped out of further assessment.

3.9.6.7 Any potential NRMM emissions or dust generating activities associated with maintenance would be transient and temporary in nature, therefore there are no other maintenance emissions sources or air quality impacts associated with the Project anticipated for inclusion in the air quality assessment.

Sources of decommissioning impacts

3.9.6.8 The decommissioning phase of the Project will be assessed following the same approach as construction to consider any dust impacts associated with demolition and potential impacts from vehicle emissions. Therefore the potential sources of decommissioning impacts are:

- decommissioning activities such as earthworks and trackout resulting in emissions of dust;
- emissions from NRMM; and
- emissions from decommissioning traffic.

Potential impacts

3.9.6.9 The most common air quality impacts that may arise during demolition and construction activities are:

- dust deposition, resulting in the soiling of surfaces and reduction in amenity; and
- elevated PM_{10} concentrations, as a result of dust generating activities on site.

3.9.6.10 These impacts may affect human and ecological receptors. The IAQM construction dust guidance[180] defines a human receptor as:

3.9.6.11 “any location where a person or property may experience the adverse effects of airborne dust or dust soiling, or exposure to PM_{10} over a time period relevant to the Air Quality Objectives. In terms of annoyance effects, this will most commonly relate to dwellings, but may also refer to other premises such as buildings housing cultural heritage collections (e.g. museums and galleries), vehicle showrooms, food manufacturers, electronics manufacturers, amenity areas and horticultural operations (e.g. salad or soft-fruit production).”

3.9.6.12 An ecological receptor is defined as:

3.9.6.13 “any sensitive habitat affected by dust soiling. This includes the direct impacts on vegetation or aquatic ecosystems of dust deposition, and the indirect impacts on fauna (e.g. on foraging habitats)”.

3.9.6.14 The potential for dust emissions will be assessed for each activity that is likely to take place and considers three separate dust effects:

- Annoyance due to dust soiling;
- Harm to ecological receptors; and
- The risk of health effects due to a significant increase in exposure to PM_{10}.

3.9.6.15 Table 3.9.1 identifies the potential impacts that could result from the sources identified above

Table 3.9.1: Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction	Construction activities such as earthworks and trackout resulting in emissions of dust	Dust deposition and human health impacts	Yes - Negligible	**Scoped in**
	Emissions from NRMM	Change in local air pollutant concentrations	No - Not significant– due to temporary and transient nature and incorporation of best practice measures (CoCP)	Scoped out
	Emissions from construction traffic	Change in local air pollutant concentrations	No - Not significant– due to traffic numbers	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			anticipated to be below IAQM screening criteria	
Operation	Operational traffic vehicle emissions	Change in local air pollutant concentrations	No - Not significant– due to traffic numbers anticipated to be below IAQM screening criteria	Scoped out
Maintenance	Maintenance traffic vehicle emissions	Change in local air pollutant concentrations	No - Not significant– due to traffic numbers anticipated to be below IAQM screening criteria	Scoped out
Decommissioning	Decommissioning activities such as earthworks and trackout resulting in emissions of dust	Dust deposition and human health impacts	Yes - Negligible	**Scoped in**
	Emissions from NRMM	Change in local air pollutant concentrations	No - Not significant– due to temporary and transient nature and incorporation of best practice measures (CoCP)	Scoped out
	Emissions from decommissioning traffic	Change in local air pollutant concentrations	No - Not significant– due to traffic numbers anticipated to be below IAQM screening criteria	Scoped out

Impact Pathways with Receptors (Step 2)

3.9.6.16 Table 3.9.2 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the air quality assessment for the Kent Onshore Scheme as shown on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary** and **Figure 3.1.2 Kent Onshore Scheme**.

Table 3.9.2: Impact pathways with receptors

Impact pathway	Receptors	Potential for significant effect	Proposed to be scoped in / out
Construction activities	Nearby Air Quality Sensitive Receptors	Yes - Negligible	**Scoped in**
Construction traffic	Nearby Air Quality Sensitive Receptors	Negligible - due to traffic numbers anticipated to be below IAQM screening criteria	Scoped out
Operational traffic	Nearby Air Quality Sensitive Receptors	Negligible - due to traffic numbers anticipated to be below IAQM screening criteria	Scoped out

3.9.7 Proposed Assessment Methodology

3.9.7.1 Detailed technical assessment methodologies are presented in **Part 1 Chapter 5 EIA Approach and Method**. This section provides on overview of the methodologies used in the assessment of air quality from the Project.

Proposed Data Sources

3.9.7.2 No additional data sources are proposed other than those outlined in section 3. Should detailed dispersion modelling of vehicle emissions be required following the screening of construction traffic data then one year of meteorological data would be obtained from a nearby met station for the base year.

Proposed Assessment Methodology

Construction dust assessment

3.9.7.3 There is the potential for fugitive dust emissions to occur as a result of construction phase activities. These will be assessed in accordance with the methodology outlined in the IAQM construction dust guidance[180].

3.9.7.4 If there are no ecological receptors within 50m or human receptors within 350m of the Kent Onshore Scheme boundary, or within 50m of the haul routes (up to 500m from the site entrance(s)) then the need for a construction dust assessment is to be screened out. However, if there are receptors within in these distances then an assessment should be carried out. Initial review of the study area has identified that receptors are present and therefore a construction dust risk assessment is required.

3.9.7.5 A site is allocated a risk category based on two factors:

- The scale and nature of the works, which determines the magnitude of dust arising as: small, medium or large; and
- The sensitivity of the area to dust impacts, which can be defined as low, medium or high sensitivity.

3.9.7.6 The two factors are combined to determine the risk of dust impacts without mitigation applied.

3.9.7.7 The relevant criteria to define the potential magnitude of dust emission includes the following factors detailed in Table 3.9.3.

Table 3.9.3: Dust emission magnitude criteria

Magnitude	Criteria
Small	Demolition volume under 20,000m^3 less than 10m above ground level, total site area less than 2,500m^2, soil type with large grain size, total material moved less than 20,000 tonnes, construction material with low potential for dust release, less than 10 HDV trips per day, unpaved road length less than 50m etc.
Medium	Demolition activities 10m-20m above ground level, moderately dusty soil type, potentially dusty construction material, total material moved 20,000-100,000 tonnes, 10 to 50 HDV trips per day, unpaved road length 50-100m etc.
Large	On-site crushing and screening demolition, demolition activities greater than 20m above ground level, total site area greater than 10,000m^2, more than 10 heavy earth moving vehicles active at any one time, more than 10,000 tonnes of material moved, on site concrete batching, sandblasting, more than 50 HDV trips per day, unpaved road length greater than 100m etc.

3.9.7.8 The influencing factors to define receptor sensitivity to dust impacts are detailed in Table 3.9.4.

Table 3.9.4:Receptor sensitivity criteria

Sensitivity	Criteria

High	Where human receptors expected to be present continuously for extended periods of time e.g. residential properties, hospitals, schools and care homes. Internationally or nationally designated ecological sites.
Medium	Where users would expect to enjoy a reasonable level of amenity and value could be diminished by dust soiling e.g. parks and places of work. Nationally designated ecological sites.
Low	Where enjoyment of amenity would not reasonably be expected and exposure would be for limited periods e.g. footpaths, shopping streets and car parks. Locally designated ecological sites.

3.9.7.9 The IAQM construction dust guidance[180] categorises the unmitigated risk of dust impacts on human health and amenity (rather than ascribe a significance of effect) as a means of identifying the level of dust emissions mitigation required to ensure that residual impacts are 'not significant'. A higher dust risk rating requires more stringent mitigation measures in order to limit residual effects.

Vehicle emissions assessment

3.9.7.10 Assessment of vehicle emissions will be undertaken should the screening of traffic data meet the criteria set out by IAQM development control guidance[181] as detailed in paragraph 3.9.3.3.

3.9.7.11 If these criteria are not exceeded, then the IAQM development control guidance[181] considers air quality impacts associated with a scheme in terms of traffic emissions to be negligible and no further assessment is required.

3.9.7.12 Should screening of the relevant data indicate that any of the above criteria are met, then potential impacts at sensitive receptor locations can be assessed by calculating the change in NO_2 and particulate matter concentrations as a result of the Project. Detailed dispersion modelling would be undertaken using Atmospheric Dispersion Modelling Software (ADMS) to predict pollutant concentrations at worst case receptor locations within 200m of affected vehicle routes and compared against relevant AQS objectives. The significance of predicted impacts can then be determined in accordance with the methodology outlined in the IAQM development control guidance[181].

3.9.7.13 The significance of impacts would be assessed dependent upon the percentage change in concentration between the without and with Project scenarios, relative to the relevant air quality objectives, as presented in Table 3.9.5.

Table 3.9.5: IAQM impact descriptors for individual receptors

Long term average concentration at receptor in assessment year	% change in concentration relative to air quality assessment level (AQAL)			
	1	2-5	6-10	>10
75% or less of AQAL	Negligible	Negligible	Slight	Moderate
76 - 94% of AQAL	Negligible	Slight	Moderate	Moderate
95 - 102% of AQAL	Slight	Moderate	Moderate	Substantial
103 - 109% of AQAL	Moderate	Moderate	Substantial	Substantial
110% or more of AQAL	Moderate	Substantial	Substantial	Substantial

3.9.8 Conclusion

3.9.8.1 With regards to air quality impacts associated with the Kent Onshore Scheme, the assessment of construction dust is scoped into the assessment. It is proposed that construction traffic vehicle emissions are scoped out of the assessment due to the number of vehicles anticipated to be below the IAQM screening criteria[181], subject to confirmation upon receipt of construction traffic data.

Proposed Scope of the Assessment

3.9.8.2 A summary of the proposed scope of the assessment is provided in Table 3.9.6.

Table 3.9.6: Proposed scope of the assessment

Receptor	Potential significant effect	Project phase(s)	Proposed to be scoped in/out and for which option
Nearby Air Quality Sensitive Receptors	Dust deposition	Construction and Decommissioning	**Scoped in**

Receptor	Potential significant effect	Project phase(s)	Proposed to be scoped in/out and for which option
Nearby Air Quality Sensitive Receptors	Human health dust impacts	Construction and Decommissioning	**Scoped in**
Nearby Air Quality Sensitive Receptors	Increase in vehicle emissions	Construction, Operational, Maintenance and Decommissioning	Scoped out
Nearby Air Quality Sensitive Receptors	Emissions from NRMM	Construction and Decommissioning	Scoped out

3.10 Noise and Vibration

3.10.1 Introduction

3.10.1.1 This chapter presents how the noise and vibration assessment will consider the potentially significant effects that may arise from the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme (as described in **Part 1, Chapter4, Description of Project**). This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an Environmental Impact Assessment (EIA).

3.10.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Kent Onshore Scheme Scoping Boundary hereafter referred to as the Kent Scoping Boundary is illustrated on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary**.

3.10.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project**;
- **Part 1, Chapter 5, EIA Approach and Methodology**; and
- **Part 3, Chapter 1, Evolution of the Kent Onshore Scheme**.

3.10.1.4 This chapter is supported by the following figure:

- **Figure 3.10.1 Noise and Vibration Baseline Kent**.

3.10.1.5 The potential effects of noise and vibration on ecological receptors and heritage assets are considered in **Part 3, Chapter 3, Ecology and Biodiversity**, and **Part 3, Chapter 4, Cultural Heritage**, respectively.

3.10.2 Regulatory and Planning Context

3.10.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. Key legislation, policy and guidance relevant to the assessment of potential effects on noise and vibration associated with the construction, operation, maintenance and decommissioning of the Project is presented below.

Legislation

3.10.2.2 The below legislation will be considered when identifying potential constraints to the Kent Onshore Scheme and wider Project, design options and mitigation.

- The Control of Pollution Act 1974[190]; and
- Environmental Protection Act 1990[191].

Planning Policy

National planning policy

3.10.2.3 The assessment will take account of the relevant National Policy Statements (NPSs) for energy: the Overarching National Policy Statement for Energy (EN-1) [192] and the National Policy Statement for Electricity Networks (EN-5) [193]. These NPSs are, in the process of being updated and therefore relevant sections of the draft NPSs are also included below, where relevant.

3.10.2.4 EN-1 states that 'where noise impacts are likely to arise from the proposed development, the applicant should include the following in the noise assessment' including a description of the noise generating aspects leading to noise impacts, noise sensitive properties that may be affected, an assessment of the effect of predicted changes in the noise environment at noise sensitive properties and measures to be employed in mitigating noise.

3.10.2.5 EN-5 contains the following guidance relating to noise, specifically from overhead lines, which has been considered within this chapter:

'The IPC should ensure that relevant assessment methodologies have been used in the evidence presented to them, and that the appropriate mitigation options have been considered and adopted. Where the applicant can demonstrate that appropriate mitigation measures will be put in place, the residual noise impacts are unlikely to be significant.'

3.10.2.6 The National Planning Policy Framework (NPPF) (2012; revised in 2021)[194] details the Government's planning policies for England and how these are expected to be applied. The NPPF includes statements relating to noise and the requirement to take it into account in the planning process. Section 174 indicates that the planning system should contribute to and enhance the natural and local environment by:

'preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.'

3.10.2.7 Section 185 is specifically related to noise, requiring, planning policy decisions to:

[190] Control of Pollution Act 1974 [online]. Available at: https://www.legislation.gov.uk/ukpga/1974/40 [Accessed July 2022].

[191] Environmental Protection Act 1990 [online]. Available at: https://www.legislation.gov.uk/ukpga/1990/43/contents [Accessed July 2022].

[192] Department of Energy and Climate Change (2011). Overarching National Policy Statement for Energy (EN-1). [online] Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure

[193] Department of Energy and Climate Change (2011). National Policy Statement for Electricity Networks Infrastructure (EN-5). [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47858/1942-national-policy-statement-electricity-networks.pdf

[194] Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework. [online] Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2

- Mitigate and reduce to a minimum, potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life; and
- identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason

3.10.2.8 The terms 'significant adverse effect' and 'adverse effect' reflect the terminology used in the Noise Policy Statement for England, 2010 (NPSE) [195] which sets out the long-term vision of Government noise policy:

'to promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.'

3.10.2.9 The NPSE outlines three aims for the effective management and control of environmental, neighbour and neighbourhood noise:

- avoid significant adverse impacts on health and quality of life;
- mitigate and minimise adverse impacts on health and quality of life; and
- where possible, contribute to the improvement of health and quality of life.

3.10.2.10 In its aims, the NPSE uses the key phrases "significant adverse" and "adverse". The NPSE states in its explanatory note that there are two established concepts that are currently being applied to noise impacts, which are:

- NOEL – No Observed Effect Level. This is the level below which no effect can be detected.
- LOAEL – Lowest Observed Adverse Effect Level. This is the level above which adverse effects on health and quality of life can be detected.

3.10.2.11 The NPSE then extends this concept to include:

- SOAEL – Significant Observed Adverse Effect Level. This is the level above which significant adverse effects on health and quality of life occur.

3.10.2.12 The NPSE notes that it is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to vary for different noise sources, receptors and times. It is for the project to identify relevant SOAELs taking account of the sources of exposure and receptors.

3.10.2.13 The NPPF and NPSE do not, therefore, provide absolute limits on noise that are acceptable or unacceptable in a given situation. It does however, set out the need to use planning decisions, including through the use of conditions, to avoid or mitigate adverse impacts on health and quality of life resulting from noise. The Planning Practice Guidance for Noise (PPGN)[196] advises on how planning can manage potential noise impacts. In this guidance it advises that local planning authorities' plan making

[195] Department for Environment, food and Rural Affairs (2010). Noise Policy Statement for England. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69533/pb13750-noise-policy.pdf

[196] Department for Levelling Up, Housing and Communities, and Ministry of Housing, Communities and Local Government (2019). Planning Practice Guidance – Noise. [online] Available at: https://www.gov.uk/guidance/noise--2 [Accessed July 2022].

and decision taking should take account of the acoustic environment and in doing so consider:

- whether or not a significant adverse effect is occurring or likely to occur;
- whether or not an adverse effect is occurring or likely to occur; and
- whether or not a good standard of amenity can be achieved.

3.10.2.14 PPGN provides a noise exposure hierarchy explaining how effects of noise can be categorised, as reproduced in Table 3.10.1.

Table 3.10.1: PPGN noise exposure hierarchy

Response	Example of outcomes	Increasing effect level	Action
Not present	No effect	No Observed Effect	No specific measures required
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response.		
	Lowest Observed Effect Level (LOAEL)		
Present and intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a small actual or perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
	Significant Observed Effect Level (SOAEL)		
Present and disruptive	The noise causes a material change in behaviour, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite,	Unacceptable Adverse Effect	Prevent

Response	Example of outcomes	Increasing effect level	Action
	significant, medically definable harm, e.g. auditory and non-auditory.		

Local planning policy

3.10.2.15 The study area runs through both Thanet Borough Council at the north end of the Kent Onshore Scheme, and Dover Borough Council, in the south of the Kent Onshore Scheme, and as such the policies of both bodies regarding biodiversity and the protection of natural resources apply to the Kent Onshore Scheme.

3.10.2.16 The planning policies that relate to the footprint of the Kent Onshore Scheme are shown in Table 3.10.2 for policies set in place by both Thanet Borough Council[197] and by Dover Borough Council[198][199].

Table 3.10.2: Planning policies that relate to the Kent Onshore Scheme

Document	Planning policy	Purpose
Thanet Local Plan, Adopted July 2020	SE01 – Potentially Polluting Development	Development with potential to pollute will be permitted only where: 1) Applicable statutory pollution controls and siting will effectively and adequately minimise the impact upon existing and proposed land uses and the environment including the effects, including cumulative effects, on health, the natural environment such as significant natural and heritage assets, or general amenity resulting from the release of pollutants to water, land or air or from noise, dust, vibration, light, odour or heat; and In determining individual proposals, regard will be paid to: 2) The economic and wider social need for the development; and 3) The visual impact of measure needed to comply with any statutory environmental quality standards or objectives. 4) where there is an impact and the development is acceptable, a suitable mitigation is proposed to the satisfaction of the pollution control regimes. Permission for development which is sensitive to pollution will be permitted only if it is sufficiently separated from any existing or potential source of pollution as to reduce pollution impact upon health, the natural environment or general amenity to an

[197] Thanet District Council (2020). Thanet District Council Local Plan. [online] Available at: https://www.thanet.gov.uk/wp-content/uploads/2018/03/LP-adjusted.pdf [Accessed 13/07/2022].

[198] Dover District Council (2010). Dover District Local Development Framework Core Strategy. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/PDF/Adopted-Core-Strategy.pdf [Accessed 13/07/2022].

[199] Dover District Council (2002). Dover District Local Plan 2002. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/Adopted-Development-Plans/Dover-District-Local-Plan-2002.aspx

		acceptable level, and adequate safeguarding and mitigation on residential amenity.
	SE06 – Noise Pollution	In areas where noise levels are relatively high, permission will be granted for noise sensitive development only where adequate mitigation is provided, and the impact of the noise can be reduced to acceptable levels. Development proposals that generate significant levels of noise must be accompanied by a scheme to mitigate such effects, bearing in mind the nature of surrounding uses. Proposals that would have an unacceptable impact on noise-sensitive areas or uses will not be permitted.
Dover District Local Development Framework Core Strategy Adopted February 2010	No specific policies	
Dover District Local Plan Regulation 18 Draft	No specific policies	

3.10.3 Study Area

3.10.3.1 This section describes the study areas for each aspect of the noise and vibration assessment. The study areas for each aspect of the noise and vibration assessment are shown in **Figure 3.10.1 Noise and Vibration Baseline - Kent.**

Construction Noise Study Area

3.10.3.2 The study area for construction noise impacts within the ES will consider noise sensitive receptors (NSRs) within 300m of the Kent Scoping Boundary, excluding construction traffic on the public highway which is assessed separately. This is based on guidance in British Standard 5228-1:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites – Part 1: Noise' (BS 5228-1) [200], which states that caution is needed when making construction noise predictions beyond 300m due to meteorological effects, particularly when a soft ground correction factor has been applied. A 300m construction noise study area is also advocated by DMRB LA 111[201]. This will be refined as the Kent Onshore Scheme develops.

[200] British Standards Institute (2008). BS 5228-1:2009+A1:2014 - Code of practice for noise and vibration control on construction and open sites: Noise.

[201] Highways England (2020). Design Manual for Roads and Bridges - LA 111 Noise and Vibration. [online] Available at: https://www.standardsforhighways.co.uk/prod/attachments/cc8cfcf7-c235-4052-8d32-d5398796b364?inline=true

Construction Traffic Noise Study Area

3.10.3.3 The construction traffic routes are not currently defined at this stage. However, noise from construction traffic on the existing road network will be assessed for each applicable road based on guidance from DMRB LA 111. The assessment principally considers the change in Basic Noise Level (BNL) of each road, calculated in line with the methodology described in technical memorandum Calculation of Road Traffic Noise (CRTN) [202], with a subsequent assessment of the impacts on NSRs within 50m of routes where a change in BNL of at least 1dB is identified due to construction traffic.

Construction Vibration Study Area

3.10.3.4 The proposed study area for construction vibration impacts, based on guidance from BS 5228-2:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration' (BS 5228-2) [203] and DMRB LA 111 (Highways England, 2020), will consider NSRs within 300m of the Kent Scoping Boundary. This will be refined as the Kent Onshore Scheme develops.

Operational Noise Study Area

3.10.3.5 The study area for operational noise impacts from the proposed converter station is 1000m from the Kent converter station Site Option Area, based on guidance from ISO 9613:1996 'Acoustics – Attenuation of sound during propagation outdoors – Part 2: General Method of calculation' (ISO 9613) [204]. There will be particular emphasis on the NSRs closest to the converter station. This will be refined as the Kent Onshore Scheme develops.

3.10.3.6 The AC connection between the proposed converter station the National Grid connection point at Richborough substation will be via either an overhead line or underground cables. The selection has not been made at this stage. Depending on the proposed overhead line conductor and pylon types, the study area for operational noise impacts from any proposed overhead lines would extend 200m from the proposed route centre line. This is based on at least 60 years of experience operating the UK transmission network at 400kV. There is no significant audible noise effect beyond this distance, even in the most sensitive of locations.

3.10.3.7 Noise from underground cables are proposed to be scoped out since their operation does not generate material levels of noise.

Operational Vibration Study Area

3.10.3.8 There are no material sources of operational vibration proposed as part of the Kent Onshore Scheme. Operational vibration is therefore proposed to be scoped out of further assessment.

[202] Department of Transport and Welsh Office (1988). Calculation of Road Traffic Noise. London. HMSO

[203] British Standards Institute (2008). BS 5228-1:2009+A1:2014 - Code of practice for noise and vibration control on construction and open sites: Vibration.

[204] International Standards Organisation (1996). ISO 9613:1996 Acoustics – Attenuation of sound during propagation outdoors – Part 2: General Method of calculation.

3.10.4 Baseline Conditions

Data sources

3.10.4.1 An initial baseline assessment has been informed by a desk study which has drawn on the following information sources:

- Defra strategic noise mapping (2017) [205];
- Ordinance Survey mapping; and
- Nemo Link Environmental Statement Volume 1, Chapter 12 – Noise and Vibration (2013).

3.10.4.2 Pertinent baseline information is provided in **Figure 3.10.1 Noise and Vibration Baseline – Kent.**

Baseline

3.10.4.3 The study area includes a mix of residential, rural, industrial, and commercial environments. The noise climate is therefore expected to vary throughout the study area.

3.10.4.4 The main sources of noise are likely to include road traffic from the A256 which runs between Ramsgate to the north and Dover to the south. There are potential railway noise sources from train services on the Ashford to Ramsgate Line and the Kent Coast Line. There are also potential industrial sources of noise, particularly in the vicinity of the A256. Away from these sources of noise into more rural areas, ambient sound levels would be expected to be lower.

3.10.4.5 Relative to the proposed converter station study area, there are isolated NSRs within the study area:

- to the south on Richborough Road, Whitehouse Drove, Castle Road and the A256;
- to the east on Ebbsfleet Lane and Sandwich Road;
- to the north on Ebbsleet Lane North and Grinsell Hill; and
- to the west on Marsh Farm Road.

3.10.4.6 There are also built-up residential areas to the northeast at Cliffsend, and to the northwest at Minster.

3.10.4.7 Defra strategic noise mapping indicates that ambient noise levels are moderate to high in the vicinity of the A256, but reduce to relatively low levels beyond approximately 300m from the road. This is concordant with existing noise survey data from the Nemo Link Environmental Statement (2013), taken during 2013.

3.10.4.8 There are a number of Noise Important Areas (NIA) on the existing public highway along routes which may be used for construction traffic associated with the Kent Onshore Scheme. NIAs are determined via strategic noise maps and highlight the

[205] Department for Environment, Food and Rural Affairs (2019). Strategic noise mapping: explaining which noise sources were included in the 2017 noise maps. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/902825/strategic-noise-mapping-round3.pdf

residential areas experiencing the highest 1% of noise levels from road and rail sources in England. These are generally away from the construction noise study area but may be applicable when identifying potential construction traffic noise impacts on the wider road network. The NIAs within the construction noise study area are as follows:

- NI_12135 – Ebbsfleet Lane, adjacent to Ramsgate Road; and
- NI_4487 – Sandwich Road at Foads Lane.

3.10.4.9 There are additional NIAs in the wider area on main transport routes (e.g. Island Road, and the A299) which are not likely to be significantly affected by the Kent Onshore Scheme.

3.10.4.10 With regards to background sound levels, which are applicable to the assessment of operational noise, the 2013 noise survey data indicates that background sound levels at the nearest NSRs are in the order of 40 to 61 dB $L_{A90,T}$ during daytime periods, and 27 to 33 dB $L_{A90,T}$ during night-time periods (further noise surveys will be conducted as part of this Kent Onshore Scheme).

3.10.4.11 With regards to the vibration baseline, it is assumed that existing vibration levels are negligible in the study area.

Future Baseline

3.10.4.12 The future baseline is not expected to materially change in the reasonably foreseeable future with regards to noise and vibration.

3.10.5 Embedded and Control & Management Measures

Embedded Measures

Construction noise and vibration

3.10.5.1 Where feasible, the Kent Onshore Scheme has avoided NSRs, such as settlements, through routeing and siting.

Operational noise

3.10.5.2 At this stage, the proposed converter station has not yet been designed. However, it will be designed to meet applicable noise limits at nearby NSRs using readily available techniques. This will include consideration of plant selection, site layout, screening, and enclosures, as may be considered appropriate. Additionally, the converter station siting has avoided NSR, such as settlements, through the optioneering process.

3.10.5.3 Similarly, the AC connection between the proposed converter station and the National Grid connection point at Richborough substation will be via either an overhead line or underground cables. Underground cables do not generate material levels of noise and the potential overhead line route has avoided NSRs, such as settlements, through routeing and siting.

3.10.5.4 There are no material sources of vibration from the operation of the converter station. There are, however, sources of low levels of vibration including transformers and

cooling plant. Such plant would be installed on anti-vibration mountings and levels of vibration would not be expected to be perceptible, even in close proximity to the equipment.

Control and Management Measures

Construction noise control and management measures

3.10.5.5 In developing the noise control measures to be used, the following hierarchy will be followed:

- Control at source – for example the selection of quieter equipment;
- The choice of location for equipment on site;
- Control of working hours; and
- The provision of acoustic enclosures around equipment or barriers around work sites.

3.10.5.6 As per the hierarchy above, the first source of control for noise pollution is to control at the source. To this end, where reasonably practicable, efforts will be made to use equipment that reduces the noise produced where located in close proximity to NSRs.

3.10.5.7 Where works may be required to be undertaken outside of the core hours, the local planning authority will be notified in advance along with any neighbouring receptors.

3.10.5.8 An outline Code of Construction Practice (CoCP) is provided in **Appendix 1.4.A Outline Code of Construction Practice**. Measures relevant to the control and management of impacts that could affect the noise and vibration assessment are:

- GG04 - The CEMP shall include measures to manage dust, waste, water, noise, vibration and soil during construction. The contractor(s) shall undertake daily site inspections to check conformance to the Management Plans.
- GG06 - Construction workers will undergo training to increase their awareness of environmental issues as applicable to their role on the project. Topics will include but are not limited to:
  - working hours and noise and vibration reducing measures; and
  - agreed traffic routes, access points, etc.
- GG11 - Any activity carried out or equipment located within a construction compound that may produce a noticeable nuisance, including but not limited to dust, noise, vibration and lighting, will be located away from sensitive receptors such as residential properties or ecological sites where practicable.
- GG26 - Members of the community and local businesses will be kept informed regularly of the works through active community liaison. This will include notification of noisy activities, heavy traffic periods and start and end dates of key phasing. A contact number will be provided which members of the public can use to raise any concerns or complaints about the project. All construction-related complaints will be logged by the contractor(s) in a complaints register, together with a record of the responses given and actions taken.

- NV01 - Construction working will be undertaken within the agreed working hours set out within the Development Consent Order (DCO). Best practicable means to reduce construction noise will be set out within the CEMP.

Operational noise control and management measures

3.10.5.9 It is anticipated that further detailed assessment of operational noise from the proposed converter station, once the design has been finalised, detailing specific mitigation measures, would be secured via DCO Requirement.

Operational vibration control and management measures

3.10.5.10 There are no material sources of operational vibration proposed as part of the Project. Some converter station plant would include rotating and moving parts, such as the fans of cooling equipment. However, levels of vibration generated by such plant is low and all plant, including transformers, would be expected to be mounted on suitable anti-vibration mounts. These are primarily to protect the plant itself from potential vibration impacts but also serve to attenuate vibration generated by the plant. Vibration would therefore not be expected to be perceptible even in very close proximity to plant.

3.10.6 Potential for Significant Effects

3.10.6.1 The noise and vibration assessment will consider the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project**.

3.10.6.2 The proposed scope of the noise and vibration assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

3.10.6.3 This section identifies the sources and impacts that would occur as a result of the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme.

3.10.6.4 The potential for the Kent Onshore Scheme to result in the potential significant effects described in this section takes into account the embedded and control and management measures described in section 5.

Source of construction impacts

- noise effects from construction activities;
- vibration effects from construction activities; and
- noise effects from construction traffic.

Sources of operational impacts

- noise effects from the converter station.

Sources of maintenance impacts

- noise and vibration effects from maintenance activities.

Sources of decommissioning impacts

- noise and vibration effects from decommissioning activities.

Potential impacts

3.10.6.5 Table 3.10.3 below presents the potential impacts and noise and vibration and whether they are proposed to be scoped in or scoped out.

Table 3.10.3: Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction	Construction activities	Construction noise at NSRs	Yes - There will be potential significant effects due to construction noise at NSRs within the study area. However, this depends on the nature and the duration of activities, the distance between the noise source and the NSR, and the good practice measures employed to reduce noise.	**Scoped in**
		Construction vibration at NSRs	Yes - There will be potential significant effects on human receptors (i.e. nuisance) due to construction vibration at NSRs within the study area. The level of significance will depend on the nature and the duration of activities, the distance between the source of vibration and the NSR, and the good practice measures employed to reduce vibration. However, the duration	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			of such activities would be expected to be relatively short at any one location, and, together with the implementation of good practice measures, significant effects from such works are not expected. Construction vibration would not be expected to cause damage to buildings or structures unless very high levels of vibration are generated. Such levels would only be expected to occur where vibration generating activities occur very close to structures, within several meters, and specific control measures would be in place in such instances.	
	Construction traffic	Construction traffic noise at NSRs	Yes - There is the potential for significant effects at NSRs close to construction traffic routes depending on the number of construction vehicle movements and existing traffic flows along proposed routes.	**Scoped in**
		Construction traffic vibration at NSRs	Vibration from traffic on the public highway is caused by irregularities in the road surface. Where the road surface is free from irregulates, such as potholes, significant vibration effects would not be expected, even at	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			relatively short distances. This is confirmed by the Design Manual for Roads and Bridges LA 111 Noise and Vibration (2020) (DRMB).	
Operation	converter station	Operational noise at NSRs	Yes - There are a number of potential sources of audible noise from converter stations. Each of these has its own characteristic frequency spectrum and pattern of occurrence due to the nature of the noise-generating mechanisms involved. The primary sources of noise are likely to be transformers, cooling equipment, alternating current (AC) and direct current (DC) switch gear, and AC filters and voltage smoothing equipment. Transformer noise is almost constant, with a hum occurring at exact harmonics of the supply frequency; 100Hz and 200Hz components are usually dominant. Transformers generally run continuously except for occasional maintenance and fault outages. Transformer coolers typically emit a broadband noise; however, their operation depends on temperature and loading.	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			No - Switchgear noise is generated, in the main, by the operation of circuit breakers, for which the noise emissions are 'impulsive' in character (i.e. of short duration). Switchgear operations would be very infrequent. Modern switchgear of the Sulphur Hexafluoride (SF6) type operates with a dull 'thud'. Switchgear would operate infrequently and is therefore proposed to be scoped out.	Scoped out
			Auxiliary plant may comprise standby diesel generators and air compressors to provide emergency back-up power to cooling plant. When present and operating, these may contribute to the broadband noise climate. They do not run continuously, and in any case, would be housed in a building or outdoor acoustic enclosure. Noise from such assets is therefore not considered significant, given its emergency function and as such is proposed to be scoped out.	
		Operational vibration at NSRs	No - There are no material sources of operational vibration proposed as part of the	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			Project. Some converter station plant would include rotating and moving parts, such as the fans of cooling equipment. However, levels of vibration generated by such plant is low and all plant, including transformers, would be expected to be mounted on suitable anti-vibration mounts. These are primarily to protect the plant itself from potential vibration impacts but also serve to attenuate vibration generated by the plant. Vibration would therefore not be expected to be perceptible even in very close proximity to plant.	
	Overhead lines	Operational noise at NSRs	No - Overhead lines can generate audible noise due to corona discharge from the conductors. A portion of the energy associated with the corona process is released as acoustic energy which radiates into the air as sound pressure waves. The level of noise generated is affected by a number of factors, including the type of conductor, conductor bundle and pylon design, weather conditions (typically more noise is generated during wet conditions), and contamination on the	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			conductors. The nearest NSR are approximately 500m away from the closest potential proposed overhead line. This is outside the study area for operational noise from overhead lines, defined as 200m from the proposed overhead line. There is no significant audible noise effect beyond this distance, even in the most sensitive of locations and as such is proposed to be scoped out. Additional information will be provided as part of the ES to justify scoping out.	
	Maintenance activities	Operational noise and vibration at NSRs	Yes - Maintenance of the underground cables, overhead lines and the converter station would be infrequent, localised, and would follow good practice measures for the reduction of noise and vibration where required. Noise and vibration effects from maintenance activities would be expected to be no worse, and typically less than, the effects of during the construction phase.	**Scoped in**
	Underground cables	Operational noise and vibration at NSRs	No - Underground cables are practically quiet. Operational noise from underground cables is scoped out of the ES	Scoped out

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
	Operational road traffic	Operational road traffic noise and vibration at NSRs	No - The Kent Onshore Scheme is not likely to generate significant levels of additional road traffic during operation, with a low level of manned activity at the converter station site and occasional maintenance activities.	Scoped out
Maintenance	Decommissioning activities	Decommissioning noise and vibration at NSRs	Yes - Decommissioning of the underground cables, overhead lines and the converter station would follow good practice measures for the reduction of noise and vibration where required. Noise and vibration effects from decommissioning activities would be expected to be similar to the effects of during the construction phase.	**Scoped in**

Impact Pathways with Receptors (Step 2)

3.10.6.6 This section identities whether there are any impact pathways from the impacts identified above that could give rise to potentially significant effects on the receptors within the noise and vibration study areas. The potential impact pathways are described in Table 3.10.4.

Table 3.10.4: Impact pathways with receptors

Impact pathway	Receptors	Potential for significant effects	Proposed to be Scoped in/out
Disturbance from construction noise	Residential and non-residential NSR	Yes - There will be potential significant effects due to construction noise at NSRs within the study area. However, this depends on the nature and the duration of activities, the distance between the noise source and the NSR, and the good	**Scoped in**

Impact pathway	Receptors	Potential for significant effects	Proposed to be Scoped in/out
		practice measures employed to reduce noise.	
Disturbance from construction vibration	Residential and non-residential NSR	Yes - There will be potential significant effects on human receptors (i.e. nuisance) due to construction vibration at NSRs within the study area. The level of significance will depend on the nature and the duration of activities, the distance between the source of vibration and the NSR, and the good practice measures employed to reduce vibration. However, the duration of such activities would be expected to be relatively short at any one location, and, together with the implementation of good practice measures, significant effects from such works are not expected.	**Scoped in**
Structural damage from construction vibration	Structures	Yes - Construction vibration would not be expected to cause damage to buildings or structures unless very high levels of vibration are generated. Such levels would only be expected to occur where vibration generating activities occur very close to structures, within several meters, and specific control measures would be in place in such instances.	**Scoped in**
Disturbance from construction traffic noise	Residential and non-residential NSR	Yes - There is the potential for significant effects at NSRs close to construction traffic routes depending on the number of construction vehicle movements and existing traffic flows along proposed routes.	**Scoped in**
Disturbance from construction traffic vibration	Residential and non-residential NSR	No - Vibration from traffic on the public highway is caused by irregularities in the road surface. Where the road surface is free from irregulates, such as potholes, significant vibration effects would not be expected, even at relatively short distances. This is confirmed by the Design Manual for Roads and Bridges LA 111 Noise and Vibration (2020) (DRMB).	Scoped out
Disturbance from operational noise	Residential and non-	Yes - There are a number of potential sources of audible noise from converter stations. Each of these has its own	**Scoped in**

Impact pathway	Receptors	Potential for significant effects	Proposed to be Scoped in/out
from Proposed converter station	residential NSR	characteristic frequency spectrum and pattern of occurrence due to the nature of the noise-generating mechanisms involved. The primary sources of noise are likely to be transformers, cooling equipment, alternating current (AC) and direct current (DC) switch gear, and AC filters and voltage smoothing equipment. Transformer noise is almost constant, with a hum occurring at exact harmonics of the supply frequency; 100Hz and 200Hz components are usually dominant. Transformers generally run continuously except for occasional maintenance and fault outages. Transformer coolers typically emit a broadband noise; however, their operation depends on temperature and loading.	
		No - Switchgear noise is generated, in the main, by the operation of circuit breakers, for which the noise emissions are 'impulsive' in character (i.e. of short duration). Switchgear operations would be very infrequent. Modern switchgear of the Sulphur Hexafluoride (SF6) type operates with a dull 'thud'. Switchgear would operate infrequently and is therefore proposed to be scoped out. Auxiliary plant may comprise standby diesel generators and air compressors to provide emergency back-up power to cooling plant. When present and operating, these may contribute to the broadband noise climate. They do not run continuously, and in any case, would be housed in a building or outdoor acoustic enclosure. Noise from such assets is therefore not considered significant, given its emergency function and as such is proposed to be scoped out.	Scoped out
Disturbance from operational noise from overhead lines	Residential and non-residential NSR	No - Overhead lines can generate audible noise due to corona discharge from the conductors. A portion of the energy associated with the corona process is released as acoustic energy which	Scoped out

Impact pathway	Receptors	Potential for significant effects	Proposed to be Scoped in/out
		radiates into the air as sound pressure waves. The level of noise generated is affected by a number of factors, including the type of conductor, conductor bundle and pylon design, weather conditions (typically more noise is generated during wet conditions), and contamination on the conductors. The nearest NSR are approximately 500m away from the closest potential proposed overhead line. This is outside the study area for operational noise from overhead lines, defined as 200m from the proposed overhead line. There is no significant audible noise effect beyond this distance, even in the most sensitive of locations and as such is proposed to be scoped out. Additional information will be provided as part of the ES to justify scoping out.	
Disturbance from operational vibration	Residential and non-residential NSR	No - There are no material sources of operational vibration proposed as part of the Project. Some converter station plant would include rotating and moving parts, such as the fans of cooling equipment. However, levels of vibration generated by such plant is low and all plant, including transformers, would be expected to be mounted on suitable anti-vibration mounts. These are primarily to protect the plant itself from potential vibration impacts but also serve to attenuate vibration generated by the plant. Vibration would therefore not be expected to be perceptible even in very close proximity to plant.	Scoped out
Disturbance from operational traffic noise	Residential and non-residential NSR	No - The Kent Onshore Scheme is not likely to generate significant levels of additional road traffic during operation, with a low level of manned activity at the converter station site and occasional maintenance activities.	Scoped out
Disturbance from noise and vibration from	Residential and non-	Yes - Maintenance of the underground cables, overhead lines and the converter station would be infrequent, localised, and	**Scoped in**

Impact pathway	Receptors	Potential for significant effects	Proposed to be Scoped in/out
maintenance activities	residential NSR	would follow good practice measures for the reduction of noise and vibration where required. Noise and vibration effects from maintenance activities would be expected to be no worse, and typically less than, the effects of during the construction phase.	
Disturbance from decommissioning noise and vibration	Residential and non-residential NSR	Yes - Decommissioning of the underground cables, overhead lines and the converter station would follow good practice measures for the reduction of noise and vibration where required. Noise and vibration effects from decommissioning activities would be expected to be similar to the effects of during the construction phase.	**Scoped in**

3.10.7 Assessment Methodology

3.10.7.1 The assessment methodology for the EIA is outlined in **Part 1, Chapter 5 EIA Approach and Method**. This section provides on overview of the methodologies proposed to be used in the assessment of noise and vibration from the Kent Onshore Scheme.

Proposed Data Sources

3.10.7.2 The following data sources would be used in the noise and vibration assessment:

- AddressBase Plus data;
- Noise survey data;
- Project design information;
- Construction programme, schedule, and plant data (if available);
- Baseline and construction traffic data;
- Topography data;
- Substation plant noise and/or specification data;
- Converter station plant and/or specification data (if available).

3.10.7.3 Where detailed data is not available at the time of the ES, suitable assumptions will be made and documented. In terms of construction data, information would be based on the methodologies used in similar projects. With regards to the converter station, it is unlikely that a full design will be available at the time of the ES. As such, the ES will

serve to determine noise limits for the proposed converter station via the noise survey data. It is anticipated that further detailed assessment of operational noise from the proposed converter station, once the design has been finalised, detailing specific mitigation measures, would be secured via DCO Requirement to meet the determined noise criteria.

Ascribing Sensitivity

3.10.7.4 NSRs are determined partly on property type, for example residential properties are of a higher sensitivity than factories and offices.

3.10.7.5 Although all residential NSRs are sensitive to noise and vibration, there are also cases where the sensitivity of an NSR may depend on the pre-existing noise climate. For example, NSRs falling with NIAs (existing high noise areas) may be more sensitive to increases in noise than those outside NIAs. Consideration will be given to such instances as part of the assessment of construction impacts.

3.10.7.6 The sensitivity of residential NSRs is factored into the assessment criteria for noise and vibration impacts through the various guidance documents. The significance of effects at residential NSR is therefore directly related to magnitude of effect. However, additional consideration of sensitivity may be required in certain cases for non-residential NSRs. The criteria used to determine the value and sensitivity of non-residential NSRs specific to noise and vibration are set out in Table 3.10.5. These values are based on standard practice.

Table 3.10.5: Criteria for determining value/sensitivity (Non-Residential NSRs)

Sensitivity/value	Criteria
Very High	Schools and education premises, hospitals, clinics.
High	Care homes, places of worship, community centres, libraries.
Medium	Areas primarily used for leisure activities including PRoWs, sports facilities, and sites of historic or cultural importance, camp sites, hotels, gardens, parks.
Low	Offices, cafes/bars with external areas.
Negligible	Industrial or retail premises

Ascribing Impact Magnitude

Construction noise

3.10.7.7 Construction noise impacts will be assessed in accordance with BS 5228-1 and will take account of the guidance of DMRB.

3.10.7.8 Construction noise levels will be calculated at NSRs within the study area in accordance with the methodology described in Annex F of BS 5228-1. The predicted construction noise levels at NSRs will be compared against applicable noise thresholds

as detailed in Section E.3.2 of BS 5228-1 (the 'ABC' method) together with temporal criteria as detailed in DMRB. Given the rural area of the majority of the Kent Onshore Scheme area, the lower threshold values (Category 'A') would be applied as a worst-case assessment to all residential NSR in lieu of baseline noise monitoring for construction impacts.

3.10.7.9 The lowest observed adverse effect level (LOAEL) and the significant adverse effect level (SOAEL) will be established in accordance with Table 3.10.6.

Table 3.10.6: Criteria for determining value/sensitivity (Non-Residential NSRs)

Time period	LOAEL	SOAEL
Weekdays 7:00am to 7:00pm, and Saturdays 7:00am to 1:00pm	50dB $L_{Aeq,T}$	65dB $L_{Aeq,T}$
Weekdays 7:00pm to 11:00pm, Saturdays 1:00pm to 11:00pm, and Sundays 7:00am to 11:00pm	50dB $L_{Aeq,T}$	55dB $L_{Aeq,T}$
Night-time 11:00pm to 7:00am	40dB $L_{Aeq,T}$	45dB $L_{Aeq,T}$

Construction vibration

3.10.7.10 Construction vibration levels will be calculated and assessed in accordance with the methodologies described in BS 5228-2 and will take account of the guidance of DMRB. No vibration baseline study is proposed.

3.10.7.11 Vibration levels from construction activities will be calculated in accordance with the methodology described in Annex E of BS 5228-2. Predicted vibration levels will be compared against applicable guidance values for both potential annoyance to human receptors together with temporal criteria detailed in DMRB.

3.10.7.12 Construction vibration effect threshold levels, including applicable LOAEL and SOAEL, are shown Table 3.10.7.

Table 3.10.7: Construction vibration effect magnitudes at residential receptors

Magnitude	Vibration Level mm/s PPV*	Effect
Negligible	0.14	Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration
Small	0.3	Vibration might be just perceptible in residential environments (LOAEL)

Medium	1.0	It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents (SOAEL)
Large	10	Vibration is likely to be intolerable for any more than a very brief exposure to this level in most building environments
	* Peak Particle Velocity	

Construction traffic noise

3.10.7.13 Noise from construction traffic on the public highway will be calculated in accordance with CRTN and assessed against the criteria detailed in DMRB. The BNL from roads within the construction traffic study area will be calculated in accordance with CRTN for the do-nothing and do-something scenarios in the construction year. The calculated BNL values will be compared to determine the magnitude of the impact as detailed in Table 3.10.8.

Table 3.10.8: Magnitude of impact from construction traffic at residential receptors

Magnitude	Increase in BNL of closest public road used for construction traffic (dB)
Large	Greater than or equal to 5.0
Medium	Greater than or equal to 3.0 and less than 5.0
Small	Greater than or equal to 1.0 and less than 3.0
Negligible	Less than 1.0

Operational converter station noise

3.10.7.14 The assessment of operational noise will follow the methodology stated in BS 4142:2014+A1:2019 ‘Methods for rating and assessing industrial and commercial sound’ (BS 4142)[206].

3.10.7.15 Noise limits will be determined based on background sound level surveys at locations representative of nearby NSR. Surveys will be conducted in accordance with the requirements of BS 4142 and in general accordance with the methodology detailed in BS 7445-1:2003 ‘Description and measurement of environmental noise. Guide to quantities and procedures’ (BS 7445)[207].

3.10.7.16 BS 4142 assesses the potential significance of effects by comparing the 'rating sound level' of an industrial source to the typically representative ‘background sound level’ at the location of nearby receptors. The sound rating is a combination of the specific

[206] British Standards Institute (2019). BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound. BSI

[207] British Standards Institute (2003). BS 7445-1:2003 Description and measurement of environmental noise. Guide to quantities and procedures. BSI

sound level at the NSR and any applicable penalties that may be required for acoustic character, such as tonality or impulsivity.

3.10.7.17 The specific sound level at nearby NSR will be predicted by incorporating the available converter station design information in a computer noise model, based on the methodology detailed in from ISO 9613.

3.10.7.18 The predicted sound rating levels will be compared against the relevant noise limits determined from the baseline sound level survey data. The lower the rating level is relative to the measured background sound level, the less likely it is that there will be an adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

3.10.7.19 When considering context, BS 4142 references BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings' (BS 8233)[208] as providing context where background and rating noise levels are low. BS 8233 recommends internal sound levels in habitable spaces such as living rooms and bedrooms.

3.10.7.20 As noted above, it is anticipated that further detailed assessment of operational noise from the proposed converter station, once the design has been finalised, detailing specific mitigation measures would be secured via a condition attached to the outline planning permission, if granted. The assessment will therefore focus on setting of noise limits such that adverse impacts are avoided. It is standard practice to set the limit for operational noise such that the sound rating level does not exceed the background sound level, such that the impact is 'low'. The magnitude impacts for operational noise are detailed in Table 3.10.9.

Table 3.10.9: Magnitude of impact from operational converter station noise

Magnitude	Comparison of sound rating level and background sound level
Large	Rating level > 10dB above the background sound level
Medium	Rating level between 5 and 9 dB above background sound level
Small	Rating level between 0 and 4 dB above background sound level
Negligible	Rating level below background sound level

Maintenance noise and vibration

3.10.7.21 Noise and vibration effects from maintenance activities during operation will be assessed as per construction noise and vibration impacts, as described above.

Decommissioning noise and vibration

3.10.7.22 Noise and vibration effects from decommissioning activities during operation will be assessed as per construction noise and vibration impacts, as described above.

[208] British Standards Institute (2014). BS 8233:2014 Guidance on sound insulation and noise reduction for buildings. BSI

Ascribing Significance of Effect

Construction, maintenance, and decommissioning noise and vibration – residential receptors

3.10.7.23 Noise and vibration from construction, maintenance, and decommissioning activities, and construction traffic noise will constitute a significant adverse effect where it is determined that a Large or Medium magnitude of impact will occur at a residential NSR for a duration exceeding:

- 10 or more days or nights in any 15 consecutive days or nights; or
- a total number of days exceeding 40 in any six consecutive months.

Operational noise and vibration – residential receptors

3.10.7.24 Operational noise impacts will constitute a significant adverse effect where it is determined that a major magnitude of impact will occur at residential NSRs.

Significance of effect at non-residential NSR

3.10.7.25 With regards to non-residential receptors, the significance of effect will be determined via the matrix shown in Table 3.10.10, taking account of the sensitivity of the NSR and the impact magnitude. For construction impacts, the duration of impact will also be taken into account, as above.

Table 3.10.10: Significance matrix at Non-Residential NSR

		NSR sensitivity				
		Very High	**High**	**Medium**	**Low**	**Negligible**
Impact magnitude	**Large**	Major	Major	Major	Moderate	Minor
	Medium	Major	Moderate	Moderate	Minor	Negligible
	Small	Moderate	Moderate	Minor	Negligible	Negligible
	Negligible	Minor	Negligible	Negligible	Negligible	Negligible

3.10.7.26 Major and moderate effects are typically considered to be significant, whilst minor and negligible effects are considered to be not significant. However, professional judgement will also be applied in reaching conclusions as to the significance of effects.

3.10.8 Conclusion

3.10.8.1 This chapter has considered the scoping of noise and vibration impacts during the construction, operation, and decommissioning of the Kent Onshore Scheme and describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential

significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an EIA.

Proposed Scope of the Assessment

3.10.8.2 A summary of the proposed scope of the assessment is provided in Table 3.10.11.

Table 3.10.11: Proposed scope of the assessment

Receptor	Potential for significant effect	Project phase(s)	Proposed to be scoped in/out
Nearby NSRs	Construction noise	Construction	**Scoped in**
Nearby NSRs and structures	Construction vibration	Construction	**Scoped in**
Nearby NSRs	Construction traffic noise	Construction	**Scoped in**
Nearby NSRs	Operational converter station noise	Operation	**Scoped in**
Nearby NSRs	Operational overhead line noise	Operation	Scoped out
Nearby NSRs	Operational vibration	Operation	Scoped out
Nearby NSRs	Operational road traffic	Operation	Scoped out
Nearby NSRs	Operational maintenance noise and vibration	Operation	**Scoped in**
Nearby NSRs	Decommissioning noise and vibration	Decommissioning	**Scoped in**

3.11 Socio-economics, Recreation & Tourism

3.11.1 Introduction

3.11.1.1 This chapter presents how the socio-economics, recreation and tourism assessment will consider the potentially significant effects that may arise from the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme (as described in Part 1, Chapter 4, Description of the Project). This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential significant effects to be considered within the assessment, and how the potential significant effects will be assessed for the purpose of an Environmental Impact Assessment (EIA).

3.11.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Kent Onshore Scheme Scoping Boundary, hereafter referred to as the Kent Scoping Boundary, is illustrated on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary**.

3.11.1.3 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project**;
- **Part 1, Chapter 5, EIA Approach and Methodology**; and
- **Part 3, Chapter 1, Evolution of the Kent Onshore Scheme**.

3.11.1.4 This chapter is supported by the following figure:

- **Figure 3.11.1 Socio-economic, Recreation and Tourism Study Areas and Receptors**.

3.11.1.5 The assessment will consider potentially significant socio-economic, recreation and tourism effects on the following receptors:

- Employment (including training and apprenticeship opportunities);
- Users of recreational routes and Public Rights of Way (PRoW);
- Local communities that could be affected by community severance; and
- Residential properties, local businesses, visitor attractions, community facilities, open space and development land.

3.11.2 Regulatory and Planning Context

3.11.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. Key legislation, policy and guidance relevant to the assessment of potential effects on socio-economics, recreation and

tourism associated with the construction, operation, maintenance and decommissioning of the Project is presented below.

3.11.2.2 Detailed below is a summary of planning policy of relevance to socio-economics, recreation and tourism. It includes relevant paragraphs of the Overarching National Policy Statement for Energy (EN1)[209]; the National Policy Statement for Electricity Networks Infrastructure (EN-5)[210]; the National Planning Policy Framework (NPPF)[211]; and National Planning Practice Guidance (NPPG)[212], as well as relevant local planning policy.

Legislation

3.11.2.3 No legislation of relevance to socio-economic, recreation and tourism effects.

Planning Policy

National planning policy

National Policy Statement for Energy (EN-1)

3.11.2.4 Paragraphs 5.12.2 – 5.12.5 of the Overarching National Policy Statement for Energy (EN-1)[209] details requirements for NSIP applications to consider all relevant socio-economic impacts, and to highlight that socio-economic impacts may be linked to other impacts (for example links between visual impacts and tourism and local businesses). Socio-economic impacts may include:

- "the creation of jobs and training opportunities;
- the provision of additional local services;
- effects on tourism;
- the impact of a changing influx of workers during the different construction, operation and decommissioning phases…There could also be effects on social cohesion depending on how populations and service provision change as a result of the development; and
- cumulative effects."

National Policy Statement for Energy (EN-5)

3.11.2.5 The National Policy Statement for Electricity Networks Infrastructure (EN-5)[210] supplements EN-1, with additional guidance specific to the development of electricity

[209] Department of Energy and Climate Change (2011). Overarching National Policy Statement for Energy (EN-1). [online] Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure

[210] Department of Energy and Climate Change (2011). National Policy Statement for Electricity Networks Infrastructure (EN-5). [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47858/1942-national-policy-statement-electricity-networks.pdf

[211] Department for Levelling Up, Housing & Communities, (2021). National Planning Policy Framework. London. [online] Available at: National Planning Policy Framework - Guidance - GOV.UK (www.gov.uk) [Accessed 16 June 2022].

[212] Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (2021). Planning Practice Guidance. [online] Available at: https://www.gov.uk/government/collections/planning-practice-guidance

networks infrastructure. This document makes no reference to socio-economics, recreation or tourism.

National planning policy framework

3.11.2.6 The National Planning Policy Framework (NPPF)[211] sets out various policies with respect to the social and economic objectives of the planning system.

- Paragraph 8 outlines the economic objective of the planning system 'to help build a strong, responsive, and competitive economy by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity'.
- Paragraph 100 states 'decisions should protect and enhance public rights of way'.

National planning practice guidance

3.11.2.7 The National Planning Practice Guidance (NPPG)[212] provides guidance on which includes planning and the economy and to consider the existing and potential future needs of the population in terms of economic development, jobs and employment opportunities; and on open space, sports and recreation facilities, public rights of way and local green space. The contents of the NPPG are not materially relevant to the assessment of socio-economic, recreation and tourism effects as the content does not influence the undertaking of the assessment of effects.

Local planning policy

3.11.2.8 Local planning policy and guidance of relevance to the socio-economic, recreation and tourism assessment includes:

- South East Local Enterprise Partnership (SELEP) Economic Renewal Strategy, 2021[213];
- SELEP, Coast to Capital LEP, Enterprise M3 LEP, Local Energy Strategy[214];
- Kent County Council (KCC), Kent and Medway Growth and Infrastructure Framework (GIF), 2018 Update[215];
- KCC A 2050 Picture of Kent and Medway 2018[216];
- KCC Rights of Way Improvement Plan 2018-2028[217];

[213] South East Local Enterprise Partnership (2021). Economic Recovery and Renewal Strategy. [online] Available at: https://www.southeastlep.com/our-strategy/economic-recovery-and-renewal-strategy/

[214] Coast to Capital, Enterprise M3, and South East Local Enterprise Partnerships (2019). Local Energy Strategy. [online] Available at: https://www.southeastlep.com/app/uploads/2019/03/Local-Energy-Strategy-FINAL.pdf

[215] Kent County Council (2018). Kent and Medway Growth and Infrastructure Framework (2018 Update). [online] Available at: https://www.kent.gov.uk/__data/assets/pdf_file/0018/80145/GIF-Framework-full-document.pdf

[216] Kent County Council (2018). A 2050 Picture of Kent and Medway. [online] Available at: https://www.kent.gov.uk/__data/assets/pdf_file/0009/79920/GIF-2050-Picture.pdf

[217] Kent County Council (2018). Rights of way Improvement Plan. [online] Available at: https://www.kent.gov.uk/__data/assets/pdf_file/0005/90491/Rights-of-Way-Improvement-Plan-2018-2028.pdf

- Dover District Council Core Strategy 2010[218], including:
  - ‘Policy CP 2 – Provision for Jobs and Homes between 2006-2026’
  - ‘Policy CP 7 – Green Infrastructure Network’
  - ‘Policy DM 25 – Open Space’;
- Draft Dover New District Local Plan 2022 (Regulation 18 Draft)[219], including:
  - ‘Strategic Policy 8 – Economic Growth’
  - ‘Strategic Policy 9 – Employment Allocations’ (including draft designation - Sandwich Industrial Estate strategic employment area);
  - ‘DM Policy 18 New Employment Development’;
- Dover District Economic Growth Strategy, 2021[220];
- Thanet Local Plan, 2020[221], including:
  - ‘SPO4 – Economic Growth’
  - ‘SP13 – Housing Provision’
  - ‘SP38 – Healthy and Inclusive Communities’;
  - ‘HO14 – Land south of Cottington Road’;
  - ‘HO15 – Land north of Cottington Road’; and
  - ‘SP46 – New Railway Station’.
- Economic Growth Strategy for Thanet, 2016; and
- Ash Neighbourhood Development Plan 2021, including:
  - Objective 1: Environmental (landscape, open spaces, biodiversity and climate change);
  - Objective 2: Housing, requirements, design, built environment, site allocations, sustainability and climate change resilience;
  - Objective 3: Leisure, Well-being, Education and Healthcare; and
  - Objective 4: Employment in the local economy.

[218] Dover District Council (2010). Dover District Local Development Framework Core Strategy. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/PDF/Adopted-Core-Strategy.pdf [Accessed 13/07/2022].

[219] Land Use Consultants Ltd. On behalf of Dover District Council (2020). Draft Dover District Local Plan (Reg 18) Habitats Regulations. [online] Available at: https://www.doverdistrictlocalplan.co.uk/uploads/pdfs/habitat-regulation-assessment-of-the-draft-local-plan-2020.pdf

[220] Dover District Council (2021). Dover District Economic Growth Strategy. [online] Available at: https://moderngov.dover.gov.uk/documents/s44639/Economic%20Growth%20Strategy%20-%20Appendix%201.pdf#:~:text=This%20Economic%20Growth%20Strategy%20sets%20out%20Dover%20District,local%20communities%20to%20prosper%20in%20a%20fast-changing%20world.

[221] Thanet District Council (2020). Thanet District Council Local Plan. [online] Available at: https://www.thanet.gov.uk/wp-content/uploads/2018/03/LP-adjusted.pdf [Accessed 13/07/2022].

3.11.3 Study Area

3.11.3.1 The study area for socio-economic, recreation and tourism varies depending on the likely spatial extent of the effect under consideration.

3.11.3.2 This chapter of the Scoping Report sets out potential effects with respect to the Kent Scoping Boundary (as illustrated on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary**).

3.11.3.3 Effects on employment will be considered within the local authorities of Dover and Thanet, the two local authorities that the Kent Scoping Boundary falls within.

3.11.3.4 Effects on users of recreational routes and PRoW will consider impacts on routes and PRoW likely to be affected by alterations in their use. This will include all routes located within 500 m of the Kent Scoping Boundary, this study area is illustrated on **Figure 3.11.1 Socio-economic, recreation and Tourism Study Areas and Receptors**.

3.11.3.5 The study area for local communities that could be affected by community severance will consider communities that may potentially be directly and indirectly affected by the Kent Onshore Scheme. These will include communities directly connected by recreational routes and PRoW. The communities that could be impacted are within 1km of the Kent Scoping Boundary and which is illustrated on **Figure 3.11.1 Socio-economic, Recreation and Tourism Study Areas and Receptors.**

3.11.3.6 The study area for residential properties, local businesses, visitor attractions relevant for tourism, community facilities, open space and development land will consider receptors that could be directly or indirectly affected by the Kent Onshore Scheme. The receptors that could be impacted are within 500 m of the Kent Scoping Boundary as illustrated on **Figure 3.11.1 Socio-economic, Recreation and Tourism Study Areas and Receptors.** Potential significant effects included within the Landscape and Visual chapter will also be reviewed and receptors beyond 500m will be considered should significant amenity impacts be identified.

3.11.4 Baseline Conditions

Data Sources

3.11.4.1 The socio-economic, recreation and tourism assessment baseline environment described in this section has been informed by the following data sources:

- Office of National Statistics (ONS), (2021), Mid-Year Population Estimates[222];
- ONS, (2021), Claimant count by sex and age (February 2022)[223];

[222] Office for National Statistics (2021). Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2020. [online] Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/latest

[223] ON Office for National Statistics (2022). CLA02: Claimant Count by age group (Experimental Statistics). [online] Available at: https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/outofworkbenefits/datasets/cla02claimantcountbyagegroup

- ONS, (2020), Annual Population Survey (January 2020 to December 2020)[224]; and
- Ministry of Housing, Community and Local Government (MHCLG), (2020), English Indices of Deprivation (2019)[225].

3.11.4.2 The baseline for recreational routes and PRoW is based on:

- KCC PRoW map[226]; and
- Sustrans National Cycle Network route map[227].

3.11.4.3 The baseline for private assets is based on AECOM desk research with reference to:

- Dover District Local Plan Adopted Policies Map[228]; and
- Thanet District Local Plan Policies Map[229].

3.11.4.4 The baseline for development land is based on:

- Dover District Land Allocations Local Plan[230];
- Thanet District Local Plan[231]; and
- Planning applications portals for Dover and Thanet Districts.

Baseline

3.11.4.5 The Kent Scoping Boundary straddles the local authorities of Dover District (hereafter 'Dover') and Thanet District (hereafter 'Thanet'). Dover had an estimated population of approximately 118,500 and Thanet an estimated population of 141,500 in 2020.

3.11.4.6 The Kent Scoping Boundary comprises predominantly agricultural land. A number of small towns and villages lie outside of, but close to the Kent Scoping Boundary of the. These include: Minster, approximately 250m to the north west, Cliffsend adjacent to the north east of the Kent Scoping Boundary. The larger town of Ramsgate lies 2km away to the northeast. Port Richborough business park and The Discovery Park business park are approximately 600m and 3km to the south respectively.

3.11.4.7 Approximately 7.5% and 21.4% of Lower Layer Super Output Areas (LSOAs) located in Dover and Thanet respectively are ranked within the most deprived decile of LSOAs

[224] Office for National Statistics (2021). Annual Population Survey (January 2020 to December 2020). [online] Available at: https://www.nomisweb.co.uk/datasets/apsnew

[225] Ministry of Housing, Communities & Local Government (2019). English Indices of Deprivation 2019. [online] Available at: https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019

[226] Kent County Council (2017). Public Rights of Way Map. [online] Available at: https://webapps.kent.gov.uk/countrysideaccesscams/standardmap.aspx

[227] Ordnance Survey Maps (2022). Map of the National Cycle Network. [online] Available at: https://explore.osmaps.com/?lat=52.229585&lon=1.342731&style=Standard&zoom=7.5461&overlays=os-ncn-layer&type=2d&placesCategory= [Accessed April 2022].

[228] Dover District Council (2010). Adopted Policies Map. [online] Available at: https://maps.dover.gov.uk/webapps/Adopted_Policies_Map/

[229] Thanet District Council (2020). Thanet Local Plan Map. [online] Available at: https://thanet.opus4.co.uk/planning/localplan/maps/thanetlocalplan#

[230] Dover District Council (2015). Land Allocations Local Plan. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/PDF/Land-Allocations-Local-Plan.pdf

[231] Thanet District Council (2020). Thanet District Council Local Plan. [online] Available at: https://www.thanet.gov.uk/wp-content/uploads/2018/03/LP-adjusted.pdf [Accessed 13/07/2022].

in England. Out of the 317 local authorities in England, Dover and Thanet ranked as the 107th and 34th most deprived respectively.

Employment and labour market

3.11.4.8 In 2020, the proportion of the population that was of working-age (16-64 years) in Dover (58.7%) and Thanet (57.1%) was slightly lower than the proportion for the South East region (61.1%) and England and Wales (62.2%).

3.11.4.9 In 2021, the economic activity rate in Dover (79.2%) was lower than the South East average (81.1%), but slightly higher than England and Wales (78.9%). The economic activity rate in Thanet of 69.9% was lower than both the regional and national averages.

3.11.4.10 The unemployment rate in 2021 in Dover (6.4%) and Thanet (6.6%) were higher than the South East average (4.2%) and England and Wales (5.0%). The claimant count (as a proportion of residents aged 16-64 years), recorded in February 2022, was 4.5% in Dover and 7.2% in Thanet. The count in Dover is broadly in line with England and Wales (4.4%) but higher than the South East average (3.4%). The claimant count in Thanet is higher than both these comparative averages.

3.11.4.11 In 2020, the proportion of the population that held a higher level NVQ Level 4+ qualification in Dover (39.4%) and Thanet (26.5%) was lower than the proportion across the South East (45.1%) and England and Wales (42.6%). The proportion of the population with no formal qualifications in Dover (4.3%) was lower than the South East (4.8%) and England and Wales (6.3%). By contrast, the proportion of the population with no formal qualifications in Thanet (9.2%) was higher than both the regional and national comparative geographies.

Recreational routes and PRoW

3.11.4.12 The study area for recreational routes and PROW is intersected by a number of recreational routes and PRoW, including National Cycle Network Route 15 (NCR 15), the England Coast Path, Viking Coastal Trail, the Saxon Shore Way, the Contra Trail and a number of footpaths and bridleways.

Residential properties

3.11.4.13 Residential areas in the communities of Cliffs End and Minster are within the study area to the north-east and north-west, respectively. The remainder of the study area for residential properties comprises a sparsely populated rural area and contains some dispersed private properties and farm buildings.

Business premises

3.11.4.14 There are a large number of businesses in Cliffs End within the study area. There are also five further business located within the study area in Minster including a garage, a private tutor, a farm and two holiday rental properties. These is also a farm located in the small settlement of Sevenscore to the north of the Kent Scoping Boundary. St Augustine's Golf Course, Stonelees Golf Club and Pegwell Bay Country Park are also within the study area as illustrated on **Figure 3.11.1 Kent Onshore Scheme Socio-economic, Recreation and Tourism Study Areas and Receptors.**

Visitor attractions

3.11.4.15 St Augustine's Cross Memorial site lies within the study area, to the northeast.

Community facilities

3.11.4.16 There are two community facilities located with the study area. Great Oaks Small School is located in the south of the Kent Scoping Boundary, while Cliffsend Village Hall is located to the northeast of the Kent Scoping Boundary, within the study area as illustrated on **Figure 3.11.1 Kent Onshore Scheme Socio-economic, Recreation and Tourism Study Areas and Receptors.**

Open space

3.11.4.17 Pegwell Bay Country Park falls within the study area.

Development land

3.11.4.18 Within the north-east of study area, adjacent to Cliffsend, there are two residential site allocations in the Thanet Local Plan. The allocations are for: up to 40 dwellings on land north of Cottington Road (Policy HO14); up to 23 dwellings on the land south of Cottington Road (Policy HO15). To the south of the Kent Scoping Boundary, within the study area, a Planning Application F/TH/20/0648 to construct 20 holiday homes at Stonelees Golf Course was submitted in May 2020. The application is awaiting a planning decision as illustrated on **Figure 3.11.1 Kent Onshore Scheme Socio-economic, Recreation and Tourism Study Areas and Receptors**.

Future Baseline

3.11.4.19 ONS population projections232 show over the 10-year period from 2022 to 2032 the population across Dover and Thanet is expected to grow by 8.5% and 4.5% respectively (to approximately 132,600 people in Dover and 151,400 in Thanet). The increase in both local authorities is greater than the projected rate of increase in the South East (3.5%) and across England as a whole (4.0%) over the same period.

3.11.4.20 The future baseline for residential properties, businesses, community facilities, open spaces, visitor attractions and development land over the medium-term is highly uncertain. Due to this uncertainty, for the purposes of this assessment, it is assumed the future baseline for the Kent Onshore Scheme study area would be unchanged from the current baseline to the completion of the Kent Onshore Scheme, except where new development is expected to be delivered in line with allocated and planned development sites as set out in section 3.

[232] Office for National Statistics (2018). Population Projections. [online] Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections

3.11.5 Embedded and Control & Management Measures

Embedded Measures

3.11.5.1 Mitigation measures will be included in the design where practicable to help avoid, prevent or reduce effects on the environment. The Kent Onshore Scheme has been routed and sited to avoid residential areas where possible.

Control and Management Measures

3.11.5.2 An outline Code of Construction Practice (CoCP) is provided **in Appendix 1.4.A Outline Code of Construction Practice.** Measures relevant to the control and management of impacts that could affect the socio-economics, recreation and tourism assessment are:

- GG03: A Construction Environmental Management Plan (CEMP), a Landscape and Ecological Management Plan (LEMP) and a Construction Traffic Management Plan (CTMP) will be produced prior to construction;
- GG05: A suitably experienced Environmental Manager will be appointed for the duration of the construction phase. In addition, a qualified and experienced Environmental Clerk of Works will be available during the construction phase to advise, supervise and report on the delivery of the mitigation methods and controls outlined in the CEMP. The Environmental Clerk of Works will monitor that the works proceed in accordance with relevant environmental DCO requirements and adhere to the required good practice and mitigation measures;
- GG08: Land used temporarily will be reinstated where practicable to its pre-construction condition and use. Hedgerows, fences and walls (including associated earthworks and boundary features) will be reinstated to a similar style and quality to those that were removed, with landowner agreement; and
- GG26: Members of the community and local businesses will be kept informed regularly of the works through active community liaison. This will include notification of noisy activities, heavy traffic periods and start and end dates of key phasing. A contact number will be provided which members of the public can use to raise any concerns or complaints about the project. All construction-related complaints will be logged by the contractor(s) in a complaints register, together with a record of the responses given and actions taken.

3.11.6 Potential for Significant Effects

3.11.6.1 The socio-economics, recreation and tourism assessment will consider the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project**.

3.11.6.2 The proposed scope of the socio-economics, recreation and tourism assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

3.11.6.3 This section identifies the sources and impacts that would occur as a result of the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme.

3.11.6.4 The potential for the Kent Onshore Scheme to result in the potential significant effects described in this section takes into account the embedded and control and management measures described in section 5.

Sources of construction impacts

- generation of construction-related employment, training and apprenticeship opportunities, both directly at work sites and indirectly in the supply chain;
- generation of Gross value added (GVA);
- potential temporary closure or diversions to PRoW and recreational routes;
- potential temporary severance of access to community facilities for residents leading to deterioration of social cohesion and affecting mental health; and
- potential temporary adverse land take or amenity impacts on residential properties, local businesses, visitor attractions, community facilities, open space or development land.

Sources of operational impacts

- potential permanent closure or diversions to PRoW and recreational routes;
- potential permanent severance of access to community facilities for residents leading to deterioration of social cohesion and affecting mental health;
- potential permanent adverse land take or amenity impacts on residential properties, local businesses, visitor attractions, community facilities, open space or development land;
- potential creation of permanent operational phase employment, training and apprenticeship opportunities, both directly at work sites and indirectly in the supply chain; and
- potential generation of Gross value added (GVA) in Dover and Thanet during the operational phase.

Sources of maintenance impacts

- The sources of maintenance impacts are assessed to be the same as those listed as sources of construction impacts.

Sources of decommissioning impacts

- The sources of decommissioning impacts are assessed to be the same as those listed as sources of construction impacts.

Potential impacts

3.11.6.5 Table 3.11.1 below identifies the potential impacts that could result from the sources identified above.

Table 3.11.1:Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction, maintenance and decommissioning	Generation of construction-related employment, training and apprenticeship opportunities, both directly at work sites and indirectly in the supply chain.	Generation of construction-related employment, training and apprenticeship opportunities, both directly at work sites and indirectly in the supply chain in Dover and Thanet.	Yes - The Kent Onshore Scheme will generate direct and indirect temporary employment, training and apprenticeship opportunities both on Site and in the supply chain during the construction, maintenance and decommissioning phases.	**Scoped in**
	Generation of Gross value added (GVA)	Generation of Gross value added (GVA) in Dover and Thanet.	Yes - The employment and wider economic activity created during the construction maintenance and decommissioning phases will generate GVA within the local Dover and Thanet economies.	**Scoped in**
	Potential temporary closure or diversions to PRoW and recreational routes.	Potential temporary closure or diversions to PRoW and recreational routes within 500m of the Kent Scoping Boundary causing disruption to users.	Yes - Disruption to PRoW or other recreational routes during the construction maintenance and decommissioning phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with KCC.	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
	Potential temporary severance of access to community facilities	Potential temporary severance of access to community facilities within 1km of the Kent Scoping Boundary for local residents, leading to deterioration of social cohesion and affecting mental health.	Yes - As above, disruption to PRoW or other recreational routes would be avoided as far as possible. Where necessary, suitable diversions would be agreed with KCC.	**Scoped in**
	Potential temporary land take or amenity impacts on residential properties, local businesses, visitor attractions, community facilities, open space or development land.	Potential temporary land take or amenity impacts on residential properties, local businesses, visitor attractions, community facilities, open space or development land within 500m of the Kent Scoping Boundary.	Yes - A number of residential properties, local businesses, visitor attractions, community facilities, open spaces and development land allocations have been identified within the study area.	**Scoped in**
Operation	Potential permanent closure or diversions to PRoW and recreational routes.	Potential permanent closure or diversions to PRoW and recreational routes within 500 m of the Kent Scoping Boundary.	No - Disruption to PRoW or other recreational routes during the operation phase would be avoided as far as possible. Where necessary, suitable diversions would be agreed with KCC.	Scoped in
	Potential permanent severance of access to	Potential permanent severance of access to community facilities within 1km of the	Yes - As above, disruption to PRoW or other recreational routes would be avoided as far as possible. Where	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
	community facilities.	Kent Scoping Boundary for local residents, leading to deterioration of social cohesion and affecting mental health.	necessary, suitable diversions would be agreed with KCC.	
	Potential permanent adverse land take or amenity impacts on residential properties, local businesses, visitor attractions, community facilities, open space or development land.	Potential permanent land take or amenity impacts on residential properties, local businesses, visitor attractions, community facilities, open space or development land within 500m of the Kent Scoping Boundary.	Yes - A number of residential properties, local businesses, visitor attractions, community facilities, open spaces and development land allocations have been identified within the study area.	**Scoped in**
	Creation of permanent operational phase employment, training and apprenticeship opportunities, both directly at work sites and indirectly in the supply chain.	Creation of permanent operational phase employment, training and apprenticeship opportunities, both directly at work sites and indirectly in Dover and Thanet.	The scale of operational employment generated is likely to be very limited.	Scoped out
	Generation of Gross value added (GVA) during the operational phase.	Generation of Gross value added (GVA) in Dover and Thanet during the operational phase.	No - The scale of operational employment generated is likely to be very limited and therefore any effect on GVA will be small.	Scoped out

Impact Pathways with Receptors (Step 2)

3.11.6.6 This section identities whether there are any impact pathways from the impacts identified above that could give rise to potentially significant effects on the receptors within the Kent Onshore Scheme study area.

3.11.6.7 Table 3.11.2 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment for the Kent Onshore Scheme as shown on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary** and **Figure 3.1.2 Kent Onshore Scheme.**

Table 3.11.2: Impact pathways with receptors

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Generation of employment, training and apprenticeship opportunities, both directly at work sites and indirectly in the supply chain in Dover and Thanet.	Employment levels within Dover and Thanet.	Yes - The Kent Onshore Scheme will generate direct and indirect temporary employment, training and apprenticeship opportunities both on Site and in the supply chain during the construction, maintenance and decommissioning phases. No - The scale of operational employment generated is likely to be very limited.	**Proposed to be scoped in for construction, maintenance and decommissioning** Scoped out for operation
Generation of Gross value added (GVA) in Dover and Thanet.	Local economy within Dover and Thanet.	Yes - The employment and wider economic activity created during the construction maintenance and decommissioning phases will generate GVA within the local Dover and Thanet economies. No - The scale of operational employment generated is likely to be very limited and therefore any effect on GVA will be small.	**Proposed to be scoped in for construction, maintenance and decommissioning** Scoped out for operation
Potential temporary or permanent closure or diversions to PRoW and recreational routes within 500m	Users of PRoW and recreational routes within 500m of Kent Scoping Boundary.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with KCC.	**Proposed to be scoped in for all project phases**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
of the Kent Scoping Boundary.			
Potential temporary or permanent severance of access to community facilities within 1km of the Kent Scoping Boundary.	Local communities within 1km of the Kent Scoping Boundary including Cliffsend and Minster.	Yes - As above, disruption to PRoW or other recreational routes would be avoided as far as possible at all phases. Where necessary, suitable diversions would be agreed with KCC.	**Proposed to be scoped in for all project phases**
Potential temporary or permanent adverse land take or amenity impacts on residential properties, local businesses, visitor attractions, community facilities, open space or development land within 500m of the Kent Scoping Boundary.	Residential properties within 500m of the Kent Scoping Boundary including those in Cliffsend, Minster and dispersed individual properties.	Yes - A number of residential properties, local businesses, visitor attractions, community facilities, open spaces and development land allocations have been identified within the study area.	**Proposed to be scoped in for all project phases**
	Businesses within 500m of the Kent Scoping Boundary including those located in Cliffsend and Minster as well as St Augustine Golf Club and Stonelees Golf Centre.		
	Visitor attractions within 500m of the Kent Scoping Boundary including St Augustine's Memorial Cross.		
	Community facilities within 500m of the Kent Scoping Boundary including, Great		

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
	Oaks Small School and Cliffsend Village Hall.		
	Development land within 500m of the Kent Scoping Boundary including, Land North of Cottington Road, Land South of Cottington Road and planning application F/TH/20/0648.		
	Open space within 500m of the Kent Scoping Boundary including Pegwell Bay Country Park.		

3.11.7 Proposed Assessment Methodology

3.11.7.1 The assessment methodology for the EIA is outlined in **Volume 1 Chapter 5 EIA Approach and Method.**

Proposed Data Sources

3.11.7.2 A desk-based baseline assessment will be undertaken using a rage of sources to provide a description of the socio-economic conditions within the socio -economic and land use study areas set out above. This will be done using established statistical sources, and in consultation with stakeholders, where relevant. Relevant policy will be reviewed at the local regional and national levels to identify the key issues of relevance to the Project.

Proposed Assessment Methodology

3.11.7.3 An assessment of potential impacts will be undertaken to determine the effect of the Kent Onshore Scheme on the baseline socio-economic conditions. The methodology for assessing socio-economic impacts will follow standard EIA guidance and will entail:

- assessment of the likely scale, permanence and significance of effects associated with socio-economics, recreation & tourism receptors; and

- an assessment of the potential cumulative impacts with other projects within the surrounding area.

3.11.7.4 The assessment of potential socio-economic impacts will use policy thresholds and expert judgment to assess the scale and nature of the impacts of the Project against baseline conditions. For socio-economics, recreation and tourism there is no accepted definition of what constitutes a significant (or not significant) socio-economic effect. It is however recognised that effects are categorised based upon the relationship between the scale (or magnitude) of effect and the sensitivity (or value) of the affected resource or receptor.

3.11.7.5 As such, the socio-economics, recreation and tourism effects will be assessed on the basis of:

- *Consideration of sensitivity to impact*: specific values in terms of sensitivity are not attributed to socio-economic resources/receptors due to their diverse nature and scale, however the assessment takes account of the qualitative (rather than quantitative) 'sensitivity' of each receptor and, in particular, their ability to respond to change based on recent rates of change and turnover (if appropriate); and
- *Scale of impact*: this entails consideration of the size of the impact on people or business in the context of the area in which effects will be experienced.

3.11.7.6 The assessment aims to be objective and quantify effects as far as possible. However, some effects can only be evaluated on a qualitative basis. Effects are proposed to be defined as follows:

- *Beneficial classifications of effect*: indicate an advantageous or beneficial effect on an area, which may be minor, moderate, or major in effect;
- *Negligible classifications of effect*: indicate imperceptible effects on an area;
- *Adverse classifications of effect*: indicate a disadvantageous or adverse effect on an area, which may be minor, moderate or major in effect; and
- *No effect classifications*: indicate that there are no effects on an area.

3.11.7.7 Based on consideration of the above, where an effect is assessed as being beneficial or adverse, the scale of the effect are proposed to be assigned using the below criteria:

- *Minor*: a small number of receptors are beneficially or adversely affected. The effect will make a small measurable positive or negative difference on receptors at the relevant area(s) of effect;
- *Moderate*: a noticeable number of receptors are beneficially or adversely affected. The effect will make a measurable positive or negative difference on receptors at the relevant area(s) of effect; and
- *Major*: all or a large number of receptors are beneficially or adversely affected. The effect will make a measurable positive or negative difference on receptors at the relevant area(s) of effect.

3.11.7.8 Those effects which are found to be moderate or major are considered to be 'significant' and those which are minor or negligible are 'not significant'.

3.11.7.9 Duration of impact will also be considered, with more weight given to reversible long-term or permanent changes than to temporary ones. Temporary impacts are

considered to be those associated with the construction works. Long-term reversible impacts are generally those associated with the completed and operational development.

Assumptions and Limitations

3.11.7.10 The commercial agreement for land, including productive land, between the proponent and land owners is beyond the scope of this assessment and the future Environmental Statement (ES) documentation.

3.11.7.11 The approximately four year construction period is expected to require a peak workforce across the Suffolk Onshore, Kent Onshore and Offshore Schemes of between 300-400 workers. A proportion of these workers are likely to live locally to the site, while a proportion will travel to the site to work. More detail on the average and peak number of workers expected to work on each of the Offshore and Onshore Schemes across the construction period, and the proportion of workers who will be expected to live locally to the site will be set out in the Preliminary Environmental Information Report.

3.11.8 Conclusion

3.11.8.1 This chapter of the Scoping Report has set out the proposed scope and methodology for the ES assessment of socio-economic effects arising from the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme. The socio-economic, recreation and tourism receptors that have been identified within the respective study areas surrounding the Kent Onshore Scheme include local communities, the local economy within Dover and Thanet, users of PRoW and open space, residential and business properties, visitor attractions, development land, and community facilities within the respective study areas. The preliminary baseline assessment indicates that there is the potential for significant effects on these receptors.

Proposed Scope of the Assessment

3.11.8.2 A summary of the proposed scope of the assessment is provided in Table 3.11.3

Table 3.11.3: Proposed scope of the assessment

Receptor	Potential significant effect	Project phase(s)	Proposed to be scoped in/out
Employment levels within Dover and Thanet	The Kent Onshore Scheme will generate direct and indirect temporary employment, training and apprenticeship opportunities both on Site and in the supply chain during the construction, maintenance and	Construction, maintenance and decommissioning	**Scoped in**
		Operation	Scoped out

	decommissioning phases. The scale of operational employment generated is likely to be very limited.		
Local economy within Dover and Thanet	The employment and wider economic activity created during the construction maintenance and decommissioning phases will generate GVA within the local Dover and Thanet economies. The scale of operational employment generated is likely to be very limited and therefore any effect on GVA will be small.	Construction, maintenance and decommissioning	**Scoped in**
		Operation	Scoped out
Users of PRoW and recreational routes within 500 m of the Kent Scoping Boundary	Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with KCC.	Construction, maintenance and decommissioning	**Scoped in**
		Operation	**Scoped in**
Local communities within 1 km of Kent Scoping Boundary	As above, disruption to PRoW or other recreational routes would be avoided as far as possible at all phases. Where necessary, suitable diversions would be agreed with KCC.	Construction, maintenance and decommissioning	**Scoped in**
		Operation	**Scoped in**
Residential properties within 500 m of the Kent Scoping Boundary	A number of residential properties, local businesses, visitor attractions, community facilities, open spaces and development land allocations have been identified within the study area.	Construction, maintenance and decommissioning	**Scoped in**
		Operation	**Scoped in**
Businesses within 500 m of the Kent Scoping Boundary			
Visitor attractions within 500 m of the Kent Scoping Boundary			
Community facilities within 500 m of the Kent Scoping Boundary			
Development land within 500m of the Kent Scoping Boundary			

Open Space within 500m of the Kent Scoping Boundary

3.12 Health and Wellbeing

3.12.1 Introduction

3.12.1.1 This chapter presents how the Health and Wellbeing assessment will consider the potential effects that may arise from the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme (as described in **Part 1, Chapter 4, Description of the Project**). This chapter of the Scoping Report describes the methodology to be used within the assessment, the datasets to be used to inform the assessment, an overview of the baseline conditions, the potential effects to be considered within the assessment, and how the potential effects will be assessed for the purpose of an EIA).

3.12.1.2 The Project Scoping Boundary is illustrated on **Figure 1.1.1 Project Scoping Boundary** and the Kent Onshore Scheme Scoping Boundary hereafter referred to as the Kent Scoping Boundary is illustrated on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary**.

3.12.1.3 The assessment will consider potential health and wellbeing effects on the following receptors:

- Quality of life and safety of local residents, workers and visitors;
- Users of recreational routes and Public Rights of Way (PRoW);
- Users of open space;
- Users of local community services and social infrastructure; and
- Local communities that could be affected by community severance.

3.12.1.4 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project**;
- **Part 1, Chapter 5, EIA Approach and Methodology**;
- **Part 3, Chapter 1, Evolution of the Kent Onshore Scheme**;
- **Part 3, Chapter 2, Landscape and Visual**;
- **Part 3, Chapter 6, Geology and Hydrogeology**;
- **Part 3, Chapter 8, Traffic and Transport**;
- **Part 3, Chapter 9, Air Quality**;
- **Part 3, Chapter 10, Noise and Vibration**; and
- **Part 3, Chapter 11: Socio-economics, Recreation and Tourism**.

3.12.1.5 This chapter is supported by the following figure:

- **Figure 3.12.1 Kent Onshore Scheme Health and Wellbeing Study Areas and Receptors**.

3.12.2 Regulatory and Planning Context

3.12.2.1 **Part 1, Chapter 2, Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. Key legislation, policy and guidance relevant to the assessment of potential effects on health and wellbeing associated with the construction, operation, maintenance and decommissioning of the Project is presented below.

Legislation

3.12.2.2 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017; and The Marine Works (Environmental Impact Assessment) Regulations 2007[233] also require the EIA for infrastructure projects to consider potential impacts on health and wellbeing.

Planning Policy

National planning policy

National Policy Statement for Energy (EN-1)

3.12.2.3 Paragraphs 4.3.1 – 4.3.5 of the Overarching National Policy Statement for Energy (NPS EN-1)[209] details requirements for National Policy Statement (NSIP) applications to consider all relevant impacts to health and wellbeing.

National Policy Statement for Energy (EN-5)

3.12.2.4 The NPS for Electricity Networks Infrastructure (NPS EN-5)[210] supplements EN-1, with additional guidance specific to the development for electricity networks infrastructure. This document provides guidance on the effects of electro-magnetic fields (EMFs) and their impact on health.

National planning policy framework (NPPF)

3.12.2.5 The National Planning Policy Framework (NPPF)[234] sets out various policies with respect to the health and wellbeing objectives of the planning system. Chapter 8 on 'Promoting healthy and safe communities' outlines the health and community objectives of the NPPF, including the management of PRoW, access to open spaces and access to community amenities.

[233] Department of Energy and Climate Change (2011). National Policy Statement for Electricity Networks Infrastructure (EN-5). [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47858/1942-national-policy-statement-electricity-networks.pdf

[234] Department for Levelling Up, Housing & Communities (2021). National Planning Policy Framework. London. [online] Available at: National Planning Policy Framework - Guidance - GOV.UK (www.gov.uk) [Accessed 16 June 2022].

National planning practice guidance

3.12.2.6 The National Planning Practice Guidance (NPPG)[235] provides additional guidance to the NPPF. Guidance of particular relevance to health includes Paragraphs 92 to 103 which set out how the design and use of the built and natural environment are major determinants of health and wellbeing, and how in turn, positive planning can contribute to healthier communities.

Additional national guidance

3.12.2.7 Additional national guidance relevant to health and wellbeing includes:

- Design Manual for Roads and Bridges (DMRB) Document LA112[236];
- NHS Healthy Urban Development Unit (HUDU)[237] Rapid Health Impact Assessment (HIA) Tool;
- Public Health England (PHE) Guidance 'Spatial Planning for Health: An evidence resource for designing healthier places'[238];
- PHE Strategy 2020 to 2025[239];
- The Marmot Review: Fair Society Healthy Lives (2010)[240];
- Health Equity in England 10 Years On (2020)[241]; and
- Build Back Fairer – The Covid-19 Marmot Review (2020)[242].

Local planning policy

- Kent County Council (KCC) A 2050 Picture of Kent and Medway 2018[243];
- KCC Rights of Way Improvement Plan 2018-2028[244];

[235] Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (2021). Planning Practice Guidance. [online] Available at: https://www.gov.uk/government/collections/planning-practice-guidance

[236] Highways England, Transport Scotland, Welsh Government and the Department for Infrastructure (2020). Design Manual for Roads and Bridges – LA112 – Population and Human Health. [online] Available at:https://www.standardsforhighways.co.uk/prod/attachments/1e13d6ac-755e-4d60-9735-f976bf64580a?inline=true

[237] NHS London Healthy Urban Development Unit (2019). Rapid Health Impact Assessment Tool. [online] Available at: https://www.healthyurbandevelopment.nhs.uk/wp-content/uploads/2019/10/HUDU-Rapid-HIA-Tool-October-2019.pdf#:~:text=The%20Rapid%20HIA%20tool%20The%20tool%20is%20designed,renewal%20programmes%20and%20outline%20and%20detailed%20planning%20applications.

[238] Public Health England (2017). Spatial Planning for Health: An evidence resource for designing healthier places. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/729727/spatial_planning_for_health.pdf

[239] Public Health England (2019). PHE Strategy 2020 to 2025. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/831562/PHE_Strategy_2020-25.pdf

[240] Marmot, M. (2010). Fair Society, Healthy Lives: The Marmot Review. Strategic Review of Health Inequalities in England Post 2010. [online] Available at: https://www.parliament.uk/globalassets/documents/fair-society-healthy-lives-full-report.pdf

[241] Marmot, M., Allen, J., Boyce, T., Goldblatt, P., and Morrison, J. (2020). Health Equity in England: The Marmot Review 10 Years On. [online] Available at: https://www.health.org.uk/publications/reports/the-marmot-review-10-years-on

[242] Marmot, M., Allen, J., Goldblatt, P., Morrison, J., and Herd, E. (2020). Build Back Fairer: The COVID-19 Marmot Review. [online] Available at: https://www.health.org.uk/publications/build-back-fairer-the-covid-19-marmot-review

[243] Kent County Council (2018). A 2050 Picture of Kent and Medway. [online] Available at: https://www.kent.gov.uk/__data/assets/pdf_file/0009/79920/GIF-2050-Picture.pdf

[244] Kent County Council (2018). Rights of way Improvement Plan. [online] Available at: https://www.kent.gov.uk/__data/assets/pdf_file/0005/90491/Rights-of-Way-Improvement-Plan-2018-2028.pdf

- Dover District Council (DDC) Core Strategy 2010[245] including:
  - ‘Policy CP 7 – Green Infrastructure Network’; and
  - ‘Policy DM 25 – Open Space’.
- Draft Dover New District Local Plan 2022[246] (Regulation 18 Draft);
  - Includes a commitment to improving the health and wellbeing of residents, improving quality of life for all and reducing health inequalities;
- Thanet District Council Local Plan, 2020[247] including:
  - ‘SP27 – Green Infrastructure’;
  - ‘SP32 - Protection of Open Space and Allotments’;
  - ‘SP33 – Local Green Space’;
  - ‘SP34 – Provision of Accessible Natural and Semi-Natural Green Space, Parks, Gardens and Recreation Grounds’;
  - ‘SP38 – Healthy and Inclusive Communities’; and
  - ‘SP41 – Community Infrastructure’.
- Ash Neighbourhood Development Plan 2021[248] including:
  - Objective 1: Environmental (landscape, open spaces, biodiversity and climate change); and
  - Objective 3: Leisure, Well-being, Education and Healthcare.

3.12.3 Study Area

3.12.3.1 The study area for the health and wellbeing assessment will vary by the type of impact being assessed, these include:

- The human health profile baseline study area will comprise a local ward area comprising the wards in which the Kent Onshore Scheme is located, within which there is a high likelihood that effects arising from the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme could be experienced: Thanet Villages ward and Cliffsend and Pegwell ward. Where data is not available at the ward level, local authority level data will be provided for Dover and Thanet districts.

[245] Dover District Council (2010). Core Strategy. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/Adopted-Development-Plans/Core-Strategy.aspx

[246] Land Use Consultants Ltd. On behalf of Dover District Council (2020). Draft Dover District Local Plan (Reg 18) Sustainability Appraisal. [online] Available at: https://www.doverdistrictlocalplan.co.uk/uploads/pdfs/sustainability-appraisal-of-the-draft-local-plan-2020.pdf

[247] Thanet District Council (2020). Thanet District Council Local Plan. [online] Available at: https://www.thanet.gov.uk/wp-content/uploads/2018/03/LP-adjusted.pdf [Accessed 13/07/2022].

[248] Ash Parish Council (2021). ASH PARISH COUNCIL NEIGHBOURHOOD DEVELOPMENT PLAN 2018-2037. [online] Available at: https://www.dover.gov.uk/Planning/Planning-Policy-and-Regeneration/PDF/Ash-NDP-Plan-Final-Sept-2021.pdf

- The study areas for assessing the health and wellbeing impacts of the Kent Onshore Scheme will be influenced by the geographic extent of the relevant technical assessments, these include:
  - Part 3 Chapter 2, Landscape and Visual;
  - Part 3, Chapter 6: Geology and Hydrogeology;
  - Part, Chapter 8: Transport and Transport;
  - Part 3, Chapter 9: Air Quality;
  - Part 3, Chapter 10: Noise and Vibration; and
  - Part 3, Chapter 11: Socio-economics, Recreation and Tourism.

3.12.3.2 The assessment will refer to the study areas identified by the relevant EIA chapters.

3.12.4 Baseline Conditions

3.12.4.1 This section provides a high-level summary of key health and wellbeing indicators for the defined study areas detailed in section 3 above. Information gathered and presented has been identified through a desktop study.

Data Sources

3.12.4.2 This overview of community health indicators is based on the following public data sources:

- Office for National Statistics (ONS). Mid-year sub-national population estimate data (2020)[249];
- ONS 2011 Census Data[250];
- PHE Local Health Data[251]; and
- ONS Claimant Count Data[252].

Community Health Baseline Overview

3.12.4.3 Table 3.12.1 sets out a summary of key health indicators across the local ward and local authority study areas, compared to regional (South East) and national (England) averages.

[249] Office for National Statistics (2020). Subnational population projections for England. [online] Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/subnationalpopulationprojectionsforengland/2018based

[250] Office for National Statistics (2012). Census 2011. [online] Available at: https://www.ons.gov.uk/census/2011census

[251] Office for Health Improvement and Disparities (2019). Local Health. [online] Available at: https://www.gov.uk/government/collections/local-health-public-health-data-and-mapping-tool-for-small-areas

[252] Office for National Statistics (2022). CLA02: Claimant Count by age group (Experimental Statistics). [online] Available at: https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/outofworkbenefits/datasets/cla02claimantcountbyagegroup

Table 3.12.1 Community health profile

	Local wards	Dover	Thanet	South East England	England
Population (2020)	12,398	118,514	141,458	9,217,265	56,550,138
Population aged under 16 (%) (2020)	15.6%	17.6%	18.9%	19.3%	19.2%
Population aged over 65 (%) (2020)	29.0%	23.8%	24.1%	19.7%	18.5%
Unemployment rate	4.6%	6.6%	8.7%	4.8%	6.3%
Unemployment (% working age population claiming out of work benefits)	3.4%	3.6%	6.0%	2.9%	3.8%
General Health – bad or very bad (%)	6.1%	6.3%	7.5%	4.3%	5.5%
Long term health problem or disability (%)	19.4%	20.8%	23.4%	15.7%	17.6%
Life Expectancy at Birth (males) (2018-2020)	n/a	79.5	77.6	80.2	79.4
Life Expectancy at Birth (females) (2018-2020)	n/a	82.8	82.1	83.8	83.1
Inequality in Life Expectancy at Birth (males 2018-2020)	n/a	7.3	8.5	7.9	9.7
Inequality in Life Expectancy at Birth (females 2018-2020)	n/a	6.1	9.7	6.2	7.9
Obese children (Year 6) (%)	n/a	20.8	23.3	19.1	21.0%
Under 75 mortality rate from all causes	n/a	338.4	391.8	303.5	336.5

	Local wards	Dover	Thanet	South East England	England
(2018-2020) (per 100,000 people)					

Future Baseline

3.12.4.4 ONS population projections[253] show over the 10-year period from 2022 to 2032 the population across Dover and Thanet is expected to grow by 8.5% and 4.5% respectively (to approximately 132,600 people in Dover and 151,400 in Thanet). The increase in both local authorities is greater than the projected rate of increase in the South East (3.5%) and across England as a whole (4.0%) over the same period.

3.12.4.5 Due to the broad range of individual and environmental determinants that can influence physical and mental health outcomes, the future community health baseline over the medium-term is highly uncertain. Due to this uncertainty, for the purposes of this assessment, it is assumed the future baseline for the Kent Onshore Scheme study area would be unchanged from the current baseline to the completion of the Kent Onshore Scheme.

3.12.5 Embedded and Control & Management Measures

Embedded Measures

3.12.5.1 Mitigation measures will be included in the design where practicable to help avoid, prevent or reduce effects on the environment and local communities. The Kent Onshore Scheme has been routed and sited to avoid residential areas where possible.

3.12.5.2 The design of the Kent Onshore Scheme will be compliant with the guidelines and policies relating to electromagnetic fields stated in NPS EN-5, including the International Commission on Non-Ionizing Radiation Protection guidelines (1998).

Control and Management Measures

3.12.5.3 An outline Code of Construction Practice (CoCP) is provided in **Appendix 1.4.A Outline Code of Construction Practice**. Measures relevant to the control and management of impacts that could affect health and wellbeing are:

- GG03: A Construction Environmental Management Plan (CEMP), a Landscape and Ecological Management Plan (LEMP) and a Construction Traffic Management Plan (CTMP) will be produced prior to construction;
- GG05: A suitably experienced Environmental Manager will be appointed for the duration of the construction phase. In addition, a qualified and experienced Environmental Clerk of Works (ECoW) will be available during the construction

[253] Office for National Statistics (2018). Population Projections. [online] Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections

phase to advise, supervise and report on the delivery of the mitigation methods and controls outlined in the CEMP. The ECoW will monitor the works to ensure these proceed in accordance with the relevant environmental measures as set out in the DCI application and its Environmental Statement (ES) and adhere to the required best practice and mitigation measures as set out in the relevant applicable guidlines;

- GG06: Construction workers will undergo specific training to increase their awareness of environmentally sensitive sites across the Project as applicable to their role. Topics will include, will but not be limited to, the following:
  - pollution prevention and pollution incident response;
  - dust management and control measures;
  - working hours and noise and vibration reduction measures;
  - working with potentially contaminated materials;
  - waste management and storage; and
  - flood risk response actions;
- GG11: Any activity carried out or equipment located within a construction compound that may produce a noticeable nuisance, including but not limited to dust, noise, vibration and lighting, will be located away from sensitive receptors such as residential properties or ecological sites as far as practicable;
- GG13: Plant and vehicles will conform to relevant applicable standards for the vehicle type as follows:
  - Euro 4 (NOx) for petrol cars, vans and minibuses;
  - Euro 6 (NOx and PM) for diesel cars, vans and minibuses; and
  - Euro VI (NOx and PM) for lorries, buses, coaches and Heavy Goods Vehicles (excluding specialist abnormal indivisible loads).
  - Vehicles will be correctly maintained and operated in accordance with manufacturer's recommendations and in a responsible manner. All plant and vehicles will be required to switch off their engines when not in use and when it is safe to do so;
- GG20: Bonfires and the burning of waste material on-site will be prohibited;
- GG21: Construction lighting will be of the lowest luminosity necessary to safely perform each task. It will be designed, positioned and directed to reduce the intrusion into adjacent properties, protected species and habitats;
- GG23: An Emergency Action Plan will be developed for the construction phase which will outline procedures to be implemented in case of unplanned emergency events, including but not limited to site flooding and pollution incidents; and
- GG26: Members of the community and local businesses will be kept informed regularly of the works through active community liaison. This will include notification of noisy activities, heavy traffic periods and start and end dates of key phasing. A contact number will be provided which members of the public can use

to raise any concerns or complaints about the Project. All construction-related complaints will be logged by the appointed contractor(s) in the form of a complaints register, together with a record of the responses given and actions taken.

3.12.6 Potential for Significant Effects

3.12.6.1 The health and wellbeing assessment will consider the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme. Details of each of these stages are set out in **Part 1, Chapter 4, Description of the Project.**

3.12.6.2 The proposed scope of the health and wellbeing assessment is set out below and has been determined using the approach described in **Part 1, Chapter 5, EIA Approach and Methodology**.

Sources and Impacts (Step 1)

3.12.6.3 This section identifies the sources and impacts that would occur as a result of the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme.

3.12.6.4 The potential for the Kent Onshore Scheme to result in potential effects described in this section takes into account the embedded and control and management measures described in section 5.

Sources of construction impacts

- Potential temporary and permanent impacts on the quality of life and safety of local residents, visitors and workers arising from construction of the Kent Onshore Scheme related to air quality, noise, landscape amenity and traffic and transport;
- Potential temporary and permanent impacts related to accessibility impacts of PRoW, recreational routes and open space, impacting local residents, visitor and worker accessibility to these active travel routes;
- Potential temporary and permanent accessibility impacts on PRoW and recreational routes impacting local resident access to local community services and social infrastructure; and
- Potential temporary and permanent impacts on community cohesion arising from impacts to accessibility and community engagement work impacting local residents.

Sources of operational impacts

- Potential permanent accessibility impacts on PRoW and recreational routes and open space, impacting local residents, visitor and worker accessibility to active travel routes and open space;
- Potential permanent accessibility impacts on PRoW and recreational routes impacting local resident access to local community services and social infrastructure;

- Potential permanent impacts on community cohesion arising from permanent accessibility impacts; and
- Potential permanent quality of life impacts on residents and visitors arising from noise disturbance; and
- Potential permanent impacts on local residents arising from the generation of electro-magnetic fields (EMFs).

Sources of maintenance impacts

3.12.6.5 The sources of maintenance impacts are assessed to be the same as those listed as sources of construction impacts.

Sources of decommissioning impacts

3.12.6.6 The sources of decommissioning impacts are assessed to be the same as those listed as sources of construction impacts.

Potential impacts

3.12.6.7 Table 3.12.2 below identifies the potential impacts that could result from the sources identified above.

Table 3.12.1: Sources and impacts

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
Construction, maintenance and decommissioning	Potential temporary and permanent impacts of construction, maintenance and decommissioning on air quality, noise, landscape amenity and traffic and transport.	Potential temporary quality of life and safety impacts on local residents, workers and visitors within the relevant technical assessment study areas.	Yes - Potential health related effects experienced during construction, maintenance and decommissioning of the Kent Onshore Scheme would be determined through the topic specific assessments, but are expected to include air quality, noise and vibration, landscape amenity and	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
			traffic and transport effects.	
	Potential temporary and permanent closure or diversions to PRoW and recreational routes.	Potential temporary closure or diversions to PRoW and recreational routes within 500m of the Kent Scoping Boundary causing disruption to users.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with KCC.	**Scoped in**
	Potential temporary and permanent severance of access to open space.	Potential temporary severance of access to open space within 500m of the Kent Scoping Boundary for local residents, workers and visitors affecting mental health.	Yes - As above, disruption to PRoW or other recreational routes and access to open space during all phases of the would be avoided as far as possible. Where necessary, suitable diversions would be agreed with KCC.	**Scoped in**
	Potential temporary and permanent severance of access to community services and social infrastructure.	Potential temporary closure or diversions to PRoW and recreational routes within 500m of the Kent Scoping Boundary impacting on local residents' access to	Yes - As above, disruption to PRoW, other recreational routes or roads offering access to community services and social infrastructure during all phases would be avoided as far as possible. Where	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
		local community services and social infrastructure.	necessary, suitable diversions would be agreed with KCC.	
	Potential temporary and permanent severance of access to local communities.	Potential temporary severance of access to local communities within 1km of the Kent Scoping Boundary for local residents, leading to deterioration of community cohesion and affecting mental health.	Yes - As above, disruption to PRoW or other recreational routes which facilitate community cohesion during construction, maintenance and decommissioning phases of the Kent Onshore Scheme would be avoided as far as possible. Where necessary, suitable diversions would be agreed with KCC.	**Scoped in**
Operation	Potential permanent closure or diversions to PRoW and recreational routes.	Potential permanent closure or diversions to PRoW and recreational routes within 500 m of the Kent Scoping Boundary.	Yes - Disruption to PRoW or other recreational routes affecting access to facilities would be avoided as far as possible. Where necessary, suitable diversions would be agreed with KCC.	**Scoped in**
	Potential permanent severance of	Potential permanent severance of access to	Yes - Disruption to PRoW or other recreational routes affecting	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
	access to open space.	open space within 500m of the Kent Scoping Boundary for local residents, workers and visitors affecting mental health.	access to facilities would be avoided as far as possible. Where necessary, suitable diversions would be agreed with KCC.	
	Potential permanent severance of access to community services and social infrastructure.	Potential permanent severance of access to community services and social infrastructure within 1km of the Kent Scoping Boundary for local residents, leading to deterioration of social cohesion and affecting mental health.	Yes - Disruption to PRoW or other recreational routes affecting access to facilities would be avoided as far as possible. Where necessary, suitable diversions would be agreed with KCC.	**Scoped in**
	Potential permanent severance of access to local communities.	Potential permanent severance of access to local communities within 1km of the Kent Scoping Boundary for local residents, leading to	Yes - Disruption to PRoW or other recreational routes affecting access to facilities would be avoided as far as possible. Where necessary, suitable diversions would	**Scoped in**

Project phase	Source	Impact	Potential for significant effects	Proposed to be scoped in/out
		deterioration of community cohesion and affecting mental health.	be agreed with KCC.	
	Potential permanent impacts of operational noise.	Potential permanent quality of life impacts on residents and visitors within 1km of the Kent Scoping Boundary.	Yes - Potential health related effects experienced during the operation of the Kent Onshore Scheme would be determined through the topic specific assessments but are expected to include noise effects.	**Scoped in**
	Potential permanent impacts of operation associated with the generation of EMFs.	Potential permanent impacts on local residents and workers associated with the generation of EMFs.	No - The Applicant will ensure that policies and procedures are in place at the design phase to ensure that all equipment will comply with public EMF exposure limits.	Scoped out

Impact Pathways with Receptors (Step 2)

3.12.6.8 This section identities whether there are any impact pathways from the impacts identified above that could give rise to potential effects on the receptors within the health and wellbeing study areas.

3.12.6.9 Table 3.12.3 provides a summary of the impact pathways identified and those proposed to be scoped into and or out of the assessment of health and wellbeing for the Kent Onshore Scheme as shown on **Figure 1.1.3 Kent Onshore Scheme Scoping Boundary** and **Figure 3.1.2 Kent Onshore Scheme**.

Table 3.12.2: Impact pathways with receptors

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
Potential temporary and permanent quality of life and safety impacts on local residents, workers and visitors within the relevant technical assessment study areas.	Local residents, workers and visitors within the relevant technical assessment study areas. This may include receptors within Cliffsend and Minster.	Yes - Potential health related effects experienced as a result of the Kent Onshore Scheme would be determined through the topic specific assessments, but are expected to include air quality, noise and vibration, landscape amenity and traffic and transport effects during the construction, maintenance and decommissioning phase, and noise and vibration during the operational phase.	**Proposed to be scoped in for all phases**
Potential temporary and permanent closure or diversions to PRoW and recreational routes within 500m of the Kent Scoping Boundary.	Users of PRoW and recreational routes within 500m of Kent Scoping Boundary.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with KCC.	**Proposed to be scoped in for all phases**
Potential temporary and permanent severance of access to open space within 500m of the Kent Scoping Boundary for local residents, workers and visitors.	Users of open space within 500m of Kent Scoping Boundary including Pegwell Bay Country Park.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with KCC.	**Proposed to be scoped in for all phases**
Potential temporary and permanent closure or	Community facilities within 500m of the Kent	Yes - Disruption to PRoW or other recreational routes	**Proposed to be scoped in for all phases**

Impact pathway	Receptors	Potential for significant effects	Proposed to be scoped in/out
diversions to PRoW and recreational routes within 500m of the Kent Scoping Boundary impacting on local residents' access to local community services and social infrastructure.	Scoping Boundary including, Great Oaks Small School and Cliffsend Village Hall.	during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with KCC.	
Potential temporary and permanent severance of access to local communities within 1km of the Kent Scoping Boundary for local resident.	Local communities within 1km of the Kent Scoping Boundary, including Cliffsend and Minster.	Yes - Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with KCC.	**Proposed to be scoped in for all phases**

3.12.7 Proposed Assessment Methodology

3.12.7.1 There is no consolidated methodology or practice for the assessment of effects on human health and wellbeing. Best practice principles are provided in the NHS England's Healthy Urban Development Unit's Rapid Health Impact Assessment (HIA) Toolkit 2019 and this toolkit will form the basis of the approach to assessing the impacts on health arising from the Kent Onshore Scheme.

3.12.7.2 The World Health Organisation (WHO) Europe defines health as: 'a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity'[254]. Public health therefore encompasses general wellbeing, not just the absence of illness.

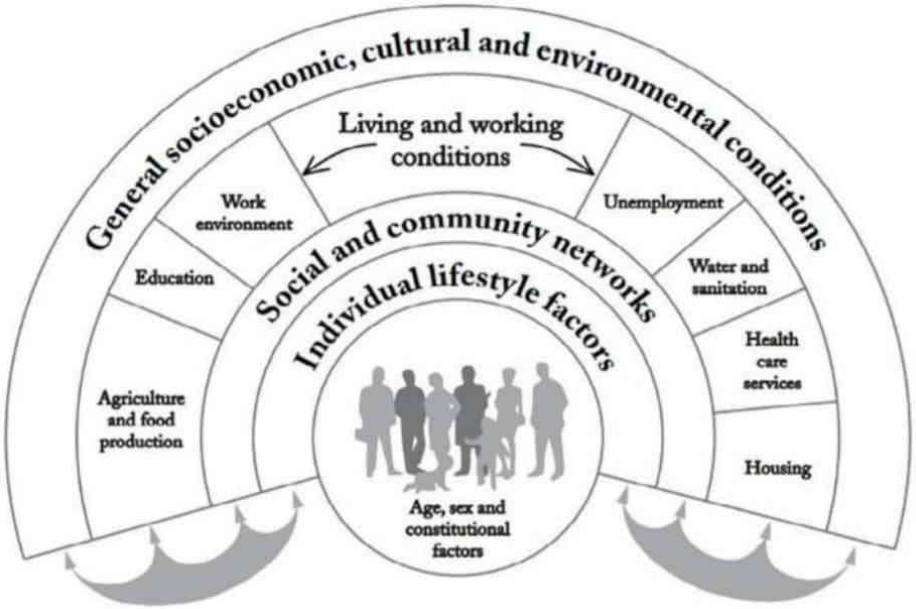
3.12.7.3 The health and wellbeing of individuals is determined by a broad range of individual constitutional and behavioural factors, as well as broader environmental, social and economic factors. Some factors are direct and obvious, others are indirect.

3.12.7.4 Dahlgreen and Whitehead's model of the main determinants of health illustrates the breadth of possible influences on health, as show in Image 3-12-1. At the centre of the illustration are factors that are largely fixed – including individual age, sex, constitutional and genetic factors. Outside of this are factors generally described as the wider or broader determinants of health. The model emphasises interactions between the layers. Moving outwards from the centre, individual lifestyle choices are embedded in social norms and community networks, and in living and working

[254] World Health Organisation (2018). Health inequities and their causes. [online] Available at: https://www.who.int/news-room/facts-in-pictures/detail/health-inequities-and-their-causes

conditions, which in turn are shaped by and related to the wider socioeconomic and cultural environment.

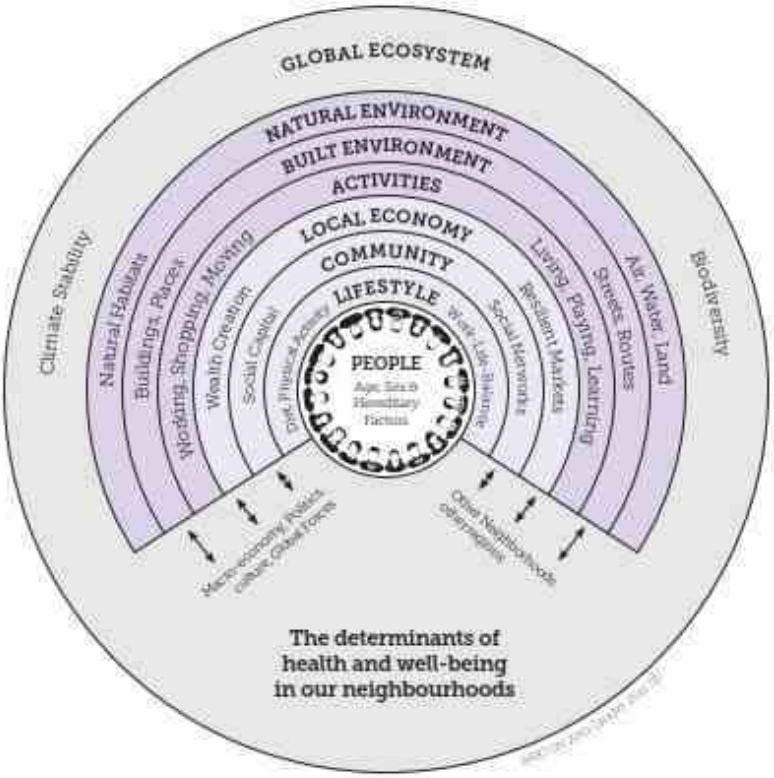
Image 3.12.1: Determinants of health



Source: Dahlgreen and Whitehead, 1993

3.12.7.5 This model has been developed to show elements of the built environment and communities that are the key determinants of health, as shown in Image 3-12-2.

Image 3.12.2: Determinants of health in neighbourhoods



Source: Barton and Grant, 2006

3.12.7.6 Within a population there can also be health inequalities, defined by the WHO as 'differences in health status or in the distribution of health determinants between different population groups. For example, differences in mobility between elderly people and younger populations or differences in mortality rates between people from different social classes'[255].

Baseline

3.12.7.7 Relevant policy will be reviewed at the local, regional and national levels to identify the key issues of relevance to the Kent Onshore Scheme.

3.12.7.8 A baseline assessment will be undertaken using a range of sources to provide a description of the health conditions within the health study areas as set out above. This will be done using established statistical sources and desk based research.

Assessment of Potential Effects

3.12.7.9 As set out above the factors contributing to individual health and wellbeing are broad, and the health of existing and new residents, workers and visitors will be largely

[255] World Health Organisation (2018). Health inequities and their causes. [online] Available at: https://www.who.int/news-room/facts-in-pictures/detail/health-inequities-and-their-causes

determined by individual age and constitutional factors and lifestyle factors unrelated to the Kent Onshore Scheme.

3.12.7.10 Taking account of these factors, the health assessment will use relevant guidance set out in the framework for assessment set out by the *NHS HUDU Planning for Health Rapid HIA Tool* to consider how the Kent Onshore Scheme could influence health – including how it could influence health inequalities, during the construction, maintenance, operational and decommissioning phases.

3.12.7.11 The HUDU assessment tool identifies eleven broad determinants that are likely to be influenced by specific development proposals and can be influenced through design and management measures, against which the likely impacts of new developments can be assessed. Of these, the following five broad determinants are relevant to the potential health impacts arising from the Kent Onshore Scheme:

- Access to health and social care services and other social infrastructure;
- Access to open space and nature;
- Air quality, noise and neighbourhood amenity;
- Accessibility and active travel; and
- Social cohesion and inclusive design.

3.12.7.12 Due to the diverse nature of health determinants and outcomes which are assessed, and the difficulty of quantifying these with respect to health outcomes, NHS HUDU guidance does not provide a methodology for assessing the significance of effects. In line with this, the assessment of likely health impacts of the Kent Onshore Scheme will be described qualitatively, based on professional judgement and best practice guidance, and effects will be assessed as: 'positive', 'negative', 'neutral' or 'uncertain', using the criteria set out in Table 3-12-4.

3.12.7.13 Where an impact is identified, actions will be proposed to mitigate any negative impact on health, or to realise opportunities to create health benefits. It should be noted that in many cases, mitigation will be embedded within the design of the Kent Onshore Scheme, and the implementation of this will be an underlying assumption of the assessment.

Table 3.12.4: Health assessment impact categories

Impact category	Description
Positive	A beneficial impact is identified
Neutral	No discernible health impact is identified
Negative	An adverse impact is identified
Uncertain	Where uncertainty exists as to the overall impact

3.12.7.14 The assessment will draw on the findings of related technical assessments, as listed at 3.12.3.1. The geographical extent of health effects will be determined by the assessments set out in those related chapters.

3.12.8 Conclusion

Summary

3.12.8.1 This chapter of the Scoping Report has set out the proposed scope and methodology for the ES assessment of health and wellbeing effects arising from the construction, operation, maintenance and decommissioning of the Kent Onshore Scheme. The socio-economic, recreation and tourism receptors that have been identified within the respective study areas surrounding the Kent Onshore Scheme include local communities, residents and workers, as well as visitors and users of PRoW, open space and community facilities within the respective study areas.

Proposed Scope of the Assessment

3.12.8.2 A summary of the proposed scope of the assessment is provided in Table 3.12.5.

Table 3.12.3:Proposed scope of the assessment

Receptor	Potential for significant effects	Project phase(s)	Proposed to be scoped in/out
Local residents, workers and visitors within the relevant technical assessment study areas.	Potential health related effects experienced as a result of the Kent Onshore Scheme would be determined through the topic specific assessments, but are expected to include air quality, noise and vibration, landscape amenity and traffic and transport effects during the construction, maintenance and decommissioning phase, and noise and vibration during the operational phase.	Construction, maintenance and decommissioning	**Scoped in**
		Operation	**Scoped in**
Users of PRoW and recreational routes within 500m of Kent Scoping Boundary.	Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with KCC.	Construction, maintenance and decommissioning	**Scoped in**
		Operation	**Scoped in**
Users of open space within 500m of Kent Scoping Boundary.	Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with KCC.	Construction, maintenance and decommissioning	**Scoped in**
		Operation	**Scoped in**

Community facilities within 500m of the Kent Scoping Boundary.	Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with KCC.	Construction, maintenance and decommissioning	**Scoped in**
		Operation	**Scoped in**
Local communities within 1km of the Kent Scoping Boundary.	Disruption to PRoW or other recreational routes during all phases would be avoided as far as possible. Where necessary, suitable diversions would be agreed with KCC.	Construction, maintenance and decommissioning	**Scoped in**
		Operation	**Scoped in**
Local residents and workers in close proximity to the Kent Scoping Boundary.	The Applicant will ensure that policies and procedures are in place at the design phase to ensure that all equipment will comply with public EMF exposure limits.	Construction, maintenance and decommissioning	Scoped out
		Operation	Scoped out

3.13 Cumulative Effects

3.13.1 Introduction

3.13.1.1 This chapter presents how the intra-project and inter-project cumulative effects assessment will consider the potentially significant cumulative effects that may arise from the Kent Onshore Scheme. A description of intra-project and inter-project cumulative effects is presented in **Part 1, Chapter 5, EIA Approach and Method**.

3.13.1.2 This chapter should be read in conjunction with:

- **Part 1, Chapter 4, Description of the Project**;
- **Part 1, Chapter 5, EIA Approach and Method**; and
- **Part 3, Technical Chapters 2-12**

3.13.1.3 This chapter is supported by the following figures:

- **Figure 3.13.1 Zone of Influence for the Kent Onshore Scheme**;
- **Figure 3.13.2 All Projects and Development Plans Located within the Zone of Influence for the Kent Onshore Scheme**; and
- **Figure 3.13.3 Projects proposed to be taken to Stage 2 for the Kent Onshore Scheme**.

3.13.2 Intra-Project

3.13.2.1 The proposed method for assessing the intra-project cumulative effects is presented in **Part 1, Chapter 5**, **EIA Approach and Method**. This describes a proposed three staged approach that will be used to assess whether the culmination of effects on an individual receptor is likely to lead to an overall effect of greater significance.

3.13.2.2 The first stage (pre-screening) in the process is to identify whether individual or groups of receptors could be affected by more than one type of effect (usually where they are considered by more than one technical chapter).

3.13.2.3 Where multiple types of effects are considered within one chapter, the findings are not proposed to be presented within the Intra-Project Cumulative Effects Chapter. This is likely to be:

- effects on ecological receptors as the Ecology and Biodiversity Chapter will identify all potential types of effects on ecological receptors; and
- effects on Human Health as the Human Health Chapter will identify all potential types of effect.

3.13.2.4 Where this first stage identifies that either:

- there is only one type of effect for a particular receptor; or
- only one topic has identified effects on that receptor,

- it is considered that there will be no potential for an intra-project effects and receptors will not be taken through to the next stage (screening) of the assessment.

3.13.2.5 An initial pre-screening assessment is presented in Table 3.13.1 showing how the receptor groups are likely to interact between chapters. This will be revisited as part of the ES to ensure all receptors considered within the ES are taken through this pre-screening assessment.

Table 3.13.1: Pre-screening Stage

Receptors	Technical chapters+										
	2	3	4	5	6	7	8	9	10	11	12
Landscape elements	✓		✓								
Residential receptors	✓							✓	✓	✓	
Commercial receptors									✓	✓	
Designated Sites		✓						✓	✓	✓	
Ecological receptors		✓						✓			
Notable Habitats (terrestrial and aquatic)		✓		✓				✓			
Designated heritage assets	✓		✓								
Non-designated heritage assets			✓								
Water resources (existing abstractions and discharges)				✓	✓						
Watercourses and waterbodies				✓	✓						
Flood risk receptors				✓							
BMV Agricultural Land						✓					
Agricultural holdings						✓					
Soil						✓				✓	
Public rights of way	✓						✓			✓	
Cycle Routes	✓						✓			✓	
Roads							✓				
Communities	✓				✓				✓	✓	
Geology					✓						
Groundwater					✓						
Human Health					✓						✓

+ Chapter numbers refer to the Scoping Technical Chapters: Chapter 2 Landscape and Visual (Part 3.2); Chapter 3 Ecology and Biodiversity (Part 3.3); Chapter 4 Cultural Heritage (Part 3.4); Chapter 5 Water Environment (Part 3.5); Chapter 6 Geology and Hydrogeology (Part 3.6); Chapter 7 Agriculture and Soils (Part 3.7); Chapter 8 Traffic

and Transport (Part 3.8); Chapter 9 Air Quality (Part 3.9); Chapter 10 Noise and Vibration (Part 3.10); Chapter 11 Socioeconomic, Recreation and Tourism (Part 3.11); and Chapter 12 Human Health (Part 3.12).

3.13.3 Inter-Project

3.13.3.1 The proposed method for assessing the inter-project cumulative effects is presented in **Part 1, Chapter 5, EIA Approach and Method**. The following section sets out the methodology for Stage 1 and Stage 2 in relation to the Kent Onshore Scheme.

Stage 1

3.13.3.2 Stage 1 of the approach outlined in PINS Advice Note Seventeen requires a 'long list' of other developments to be identified, as well as high level information, such as the location/application boundary. This initial long list is provided in **Appendix 1.5.A Inter Project Cumulative Effects Long List** and will be continually reviewed and updated as required.

Establishing the ZOI

3.13.3.3 The first step in identifying the long list is to establish the Zone of Influence (ZOI) for the Kent Onshore Scheme. **Part 1, Chapter 5, EIA Approach and Methodology** describes how the ZOI has been defined based on the largest study area of the technical chapters.

3.13.3.4 The study areas proposed for technical chapters 2-12 are summarised in Table 3.13.2. The rationale for these study areas are explained in section 3 of the relevant technical topic chapters 2-12.

Table 3.13.2:Study Areas for Environmental Topics

Environmental topic	Study areas
Ecology and Biodiversity	10km
Landscape and Visual	3km
Cultural Heritage	1km
Water Environment, Geology and Hydrogeology, Air Quality	<0.5km
Noise and Vibration, Agriculture and Soils, Traffic and Transport*	<0.25km

*at this stage construction traffic routes are not yet known, however it is not anticipated that construction traffic routes ultimately assessed within the ES routes would extend beyond 10km due to the proximity of the strategic road network. This will be reviewed once construction traffic routes are known.

3.13.3.5 The largest topic study area has been identified as 10km from the Kent Onshore Scheme Scoping Boundary, therefore a ZOI of 20km from the Kent Onshore Scheme Scoping Boundary has been set to establish the long list of developments. This is illustrated on **Figure 3.13.1 Zone of Influence for the Kent Onshore Scheme**.

3.13.3.6 This will be kept under review as the Project develops and the long list updated as required.

Identify the long list of 'Other Developments'

3.13.3.7 A long list of other projects within the ZOI has been established and is presented in **Appendix 1.5.A Inter Project Cumulative Effects Long List** and those that are within the ZOI for the Kent Onshore Scheme are shown on **Figure 3.13.2 All Projects and Development Plans Located within the Zone of Influence for Kent Onshore Scheme**. This has been established using the guidance provided in Advice Note Seventeen and the 'other developments' have been categorised into three Tiers as described in **Part 1, Chapter 5, EIA Approach and Method**. The long list has been established by a search of the Planning Inspectorate's Programme of Projects (undertaken in July 2022) and planning applications held on the following relevant planning authority websites:

- Thanet District Council;
- Dover District Council; and
- Canterbury City Council

3.13.3.8 Allocated sites in Local Plans or other Development Plans which were not yet subject to planning applications have also been identified on the long list.

3.13.3.9 Minor planning applications have been excluded from the assessment, as these relate to projects of small which are unlikely to give rise to significant environmental effects. These projects are therefore unlikely to give rise to significant cumulative environmental effects with the Kent Onshore Scheme.

Stage 2

3.13.3.10 The long list is presented in **Appendix 1.5.A Inter Project Cumulative Effects Long List** and those projects relevant to the Kent Onshore Scheme are illustrated on **Figure 3.13.2 All projects and Development Plans located within the Zone of Influence for the Kent Onshore Scheme**. The projects included on the long list were then screened as to the nature and scale of development to identify whether they would be likely to result in a potential for a significant cumulative effect with the Kent Onshore Scheme.

3.13.3.11 The long list of projects to be proposed to be taken forward to Stage 2 are listed in Table 3.13.3 below and illustrated on **Figure 3.13.3 Projects proposed to be taken forward to Stage 2 for the Kent Onshore Scheme**.

Table 3.13.3:Projects proposed to be taken forward for Stage 2

ID	Application Ref (where applicable)	Planning Authority	Project and location	Description	Distance from Project Scoping Boundary (km)	Tier

10	TR020002	Planning Inspectorate	Manston Airport	Reopen and develop Manston Airport	1.8	Tier 1
16	OL/TH/22/0414	Thanet	Land on the north side of Foxborough Lane RAMSGATE Kent	Outline planning application for the erection of up to 115 dwellings with all matters reserved except for access	1.0	Tier 1
17	F/TH/21/1671	Thanet	Land south of Canterbury Road West RAMSGATE Kent	Erection of 145 dwellings, with open space, landscaping, access and associated infrastructure.	0.8	Tier 1
30	F/TH/20/0648	Thanet	Stonelees Golf Course Ebbsfleet Lane RAMSGATE Kent CT12 5DJ	Erection of 10 No. detached and 10 No. semi-detached 2-storey holiday homes together with single storey site office/reception building, parking and landscaping. Open for comment icon	0.1	Tier 1
44	F/TH/19/0173	Thanet	Hoo Farm 147 Monkton Road Minster RAMSGATE Kent CT12 4JB	Erection of 23 no. dwellings following the demolition of existing buildings, with associated parking, open space and landscaping.	1.6	Tier 1
79	F/TH/22/0579	Thanet	Richborough Energy Park Sandwich Road RAMSGATE Kent CT13 9NL	Extension of electricity battery storage facility to provide additional 249mw capacity including electrical plant and equipment, alterations to land levels, landscaping and associated works, following removal of existing wind turbine, site clearance and levelling Open for comment icon	0.7	Tier 1
100	22/00245	Dover	Goshall Valley East	Environmental Impact Assessment - Scoping	3.8	Tier 2

			Street Ash Kent	Opinion for a proposed solar farm		
108	20/00540	Dover	Field southwest of Solton Manor Farm The Lane Guston Kent	Request for EIA Screening Opinion for proposed solar farm	16.7	Tier 2

3.13.4 Conclusion

3.13.4.1 As outlined above inter and intra cumulative effects are proposed to be scoped into the EIA and the results will be presented in the Environmental Statement (ES). **Appendix 1.5.A Inter-Project Cumulative Effects Long List** considers each scoped in environmental discipline, the ZOI and whether effects associated with each of the developments could interact with the effects associated with this project. Table 3.13.3 outlines the proposed short-listed developments that further information including, design, location, programme, operation and decommissioning information and reported environmental effects will be gathered for, to inform which of those developments will be assessed as part of the inter-project cumulative effects assessment.

Sea Link

Environmental Impact Assessment Scoping Report
Volume 2 Appendices

October 2022



nationalgrid

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1.1.A Transboundary Screening Matrix

Table 1.1.A.1: Transboundary screening matrix

Criteria and relevant considerations	Resulting of the screening considerations
Characteristics of the development: Size of the development Use of natural resources Production of waste Pollution and nuisances Risk of accidents Use of technologies	The Project is a proposal to reinforce the transmission system in the South East of England and East Anglia. This reinforcement would be approximately 130km – 140km long, comprising of a High Voltage Direct Current (HVDC) link. This would be achieved by reinforcing the network with a HVDC Link between the proposed Friston substation in the Sizewell area of Suffolk to the Richborough to Canterbury overhead line close to Richborough in Kent. All parts of the Project would be located within England and are within English Territorial Waters. The Project would be delivered in compliance with all relevant legislation, consents and permits. The Project is likely to use some resources that are likely to be obtained from the global market. It is envisaged that materials would be obtained locally where possible. It is not likely that any waste nuisances or accidents would extend beyond the English territorial waters. No novel technologies are proposed that have potential for transboundary effects.
Location of development and geographical area: What is the existing use? What is the distance to another European Economic Area (EEA) state? (Name EEA state) What is the extent of the area of a likely impact under the jurisdiction of another EEA state?	The existing land use is largely rural in Suffolk, semi-rural in Kent and wholly within the English territorial waters for the offshore scheme. The Suffolk Onshore Scheme is in an area that is predominantly rural. The settlements of Aldeburgh, Friston, Saxmundham, Leiston, and Knodishall Common are located adjacent to the Project Scoping Boundary. The Sizewell Nuclear Site is located to the north of the Project Scoping Boundary and there are two existing 400kV overhead lines that cross the Project Scoping Boundary. The Kent Onshore Scheme is in an area which is semi-rural although land use in the areas closest to the coast include golf courses and areas of nature conservation. The settlement of Cliffs End is located adjacent to the north of the Project Scoping Boundary and the settlement of Minster approximately 350m from the Project Scoping Boundary also to the north. The Offshore Scheme is located wholly within English Territorial Waters and it lies within the East

	Inshore and South East Inshore Marine Plan areas. The Project Scoping Boundary crosses the Suffolk Coastal Waters, East Anglian Shipping Waters, Eastern English Channel Approaches and the Goodwin Sands and North Dover Strait Marine Character Areas. France is the closet EEA state. The French EEZ boundary is located approximately 25km from the Project Scoping Boundary. It is not envisaged or likely that any works or impacts arising from the Project will extend beyond the jurisdiction of the UK.
Environmental importance: Are particular environmental values (e.g. protected areas – name them) likely to be affected? Capacity of the natural environment. Wetlands, coastal zones, mountain and forest areas, nature reserves and parks, sites within the National Site Network (SAC and SPA), Ramsar sites, Marine Conservation Zones (MCZ), areas where environmental quality standards already exceeded, densely populated areas, landscapes of historical, cultural or archaeological significance.	The Suffolk Onshore Scoping Boundary includes part of the Suffolk Coasts and Heath Area of Outstanding Natural Beauty (AONB) and Sandlings Special Protection Area (SPA). Parts of the Leiston Aldeburgh and Sizewell Marshes Sites of Special Scientific Interest (SSSI) are located within the Suffolk Scoping Boundary. Additionally, to the above, the study area, outside the Suffolk Onshore Scoping Boundary also include the following international and national designations: Minsmere – Walberswick SPA, The Alde-Ore Estuary SPA, The Southern North Sea Special Area of Conservation (SAC), Orfordness-Shingle Street's SAC, Staverton Park & The Thicks, Wantisden SAC, Dew's Ponds SAC, Iken Wood SSSI, Sandlings Forest SSSI, Blaxhall Heath SSSI, Gromford Meadow SSSI. With regards to non-statutory designated sites, the North Warren Royal Society for the Protection of Birds (RSPB) Reserve, Grove Wood/Old World Wood and Great Wood Ancient Woodlands are located within the Suffolk Onshore Scoping Boundary and the Minsmere RSPB Reserve is located outside the Suffolk Onshore Scoping Boundary but within the study area. The Kent Onshore Scoping Boundary includes parts of the Thanet Coast and Sandwich Bay Ramsar and SPA in addition to parts of the Sandwich Bay SAC, Sandwich Bay to Hacklinge Marshes SSSI, Sandwich and Pegwell Bay National Nature Reserve (NNR) and the Southern North Sea SAC. Additionally to the above, the study area, outside the Kent Scoping Boundary also include the following international and national designations: Stodmarch

	SAC, Princes Beachlands LNR and Richborough Castle and Minster Abbey Scheduled Monuments. There is only one non-statutory designated site within the study area; ash Level and South Richborough Pasture Local Wildlife Site (LWS). Parts of the Outer Thames Estuary and Thanet Coast and Sandwich Bay Ramsar and SPAs are located within the Offshore Scoping Boundary as well as parts of the Southern North Sea and the Sandwich Bay SACs. Parts of the Leiston – Aldeburgh and Sandwich Bay to Hacklinge Marshes SSSI as well as Goodwin Sands Marine Conservation Zone (MCZ) are located within the Offshore Scoping Boundary. Two sites, the Margate and Landsands SAC and Kentish Knock MCZ will also be assessed as part of the study area but outside the Offshore Scoping Boundary. The Project is likely to result in localised impacts to landscape, cultural heritage (including archaeology), soils, adjacent landowners and residents, biodiversity (including protected species), and the water environment. These impacts would be mitigated to reduce the significance of any effect. These impacts would not result in impacts to another jurisdiction in any other EEA state.
Potential impacts and carrier: By what means could impacts be spread (i.e. what pathways)?	The pathways by which impacts could be spread are via air, water and land. However, none of the impacts identified associated with the Project are anticipated to extend across the boundary of another jurisdiction.
Extent: What is the likely extent of the impact (geographical area and size of the affected population)?	The extent of the impacts will vary for different Environmental Impact Assessment (EIA) topics. However, no significant effects are anticipated that could impact on another EEA state.
Magnitude: What will the likely magnitude of the change in relevant variables be relative to the status quo, taking into account the sensitivity of the variable?	The magnitude of change will vary for different EIA topics. However, none of the anticipated effects are likely to occur at a magnitude that would impact another EEA state.
Probability: What is the degree of probability of the impact? Is the impact likely to occur as a consequence of normal conditions or	It is very unlikely that effects from the Project would impact on another EEA state during both normal conditions and exceptional situations such as accidents.

exceptional situations such as accidents?	
Duration: Is the impact likely to be temporary, short-term or long-term? Is the impact likely to relate to the construction, operation or decommissioning phase of the activity?	No significant effects are anticipated that could impact on another EEA state.
Frequency: What is likely to be the temporal pattern of the impact?	No significant effects are anticipated that could impact on another EEA state.
Reversibility: Is the impact likely to be reversible or irreversible?	No significant effects are anticipated that could impact on another EEA state.
Cumulative impacts: Are other major developments close by?	There are a number of other proposed developments within the Project Scoping Boundary. A pre-screening exercise and a long list has been produced as part of this Scoping Report (**Appendix 1.5.A Inter Project Cumulative Effects Long List**). The potential cumulative effects will be assessed within the EIA. At present, no significant effects are anticipated that could impact on another EEA state.

1.4.A Outline Code of Construction Practice (CoCP)

1.4.A.1 Introduction

Overview

1.4.A.1.1 The Sea Link Project (hereafter referred to as the 'Project') is a proposal by National Grid Electricity Transmission plc (hereafter referred to as National Grid) to reinforce the transmission network in the South East of England and East Anglia. The Project is required to accommodate additional power flows generated from renewable and low carbon energy generation, as well as additional new interconnection with mainland Europe.

1.4.A.1.2 This reinforcement would be achieved by reinforcing the network with a High Voltage Direct Current (HVDC) Link between the proposed Friston substation in the Sizewell area of Suffolk and the existing Richborough to Canterbury 400kV overhead line close to Richborough in Kent.

1.4.A.1.3 The Project would comprise of the following elements:

- Underground HVAC cable between the proposed Friston substation and a new converter station in Suffolk.
- New converter station in Suffolk.
- Underground HVDC cable between a new converter station in Suffolk and a landfall on the Suffolk coast, either between Aldeburgh and Thorpeness or at Sizewell Gap.
- Marine HVDC cable between a landfall on the Suffolk coast and a landfall in Pegwell Bay in Kent.
- Underground HVDC cable between a landfall in Pegwell Bay and a new converter station in Kent.
- New converter station in Kent.
- A HVAC connection (either by overhead line or underground cables) between a new converter station in Kent and the existing Canterbury to Richborough overhead line.

Purpose of the Code of Construction Practice

1.4.A.1.4 This is the Outline Code of Construction Practice (CoCP) for the Project, which has been produced to support the Environmental Impact Assessment (EIA) Scoping Report. It has been produced to set out control and management measures that will be undertaken during construction of the Project if granted consent. It is designed to support the scoping out of matters within the Scoping Report and future EIA where these would not result in a likely significant effect with control and management measures in place.

1.4.A.1.5 It will be updated as the Project evolves to include additional measures identified through the engineering design, the EIA process and from engagement with

stakeholders. A final CoCP will be submitted as an appendix to the Environmental Statement (ES) as part of the application for development consent. Compliance with the CoCP will be secured by way of a requirement in the Development Consent Order (DCO).

1.4.A.1.6 It is assumed that measures in the CoCP will be in place before undertaking the assessment. This will enable the assessment to be proportionate and focused on the likely significant effects that would be material to the decision. This is in accordance with The Institute of Environmental Management and Assessment's (2016) guidance document, Delivering Quality Development.

1.4.A.1.7 The Project will be delivered in compliance with all relevant legislation, consents and permits. Any statutory requirements listed in this document and industry good practice guidance which has informed each part of the document are not to be seen as exhaustive.

1.4.A.1.8 National Grid will put in place robust procedures to audit and inspect the Project, including its supply chain of contractors, to make sure the control measures set out in the CoCP are adopted when constructing the Project. The CoCP will apply to all areas of the Project delivered pursuant to the DCO, during construction.

1.4.A.1.9 Throughout this document, each standard measure has been assigned a reference number, for example (GG01). This is for ease of cross-reference

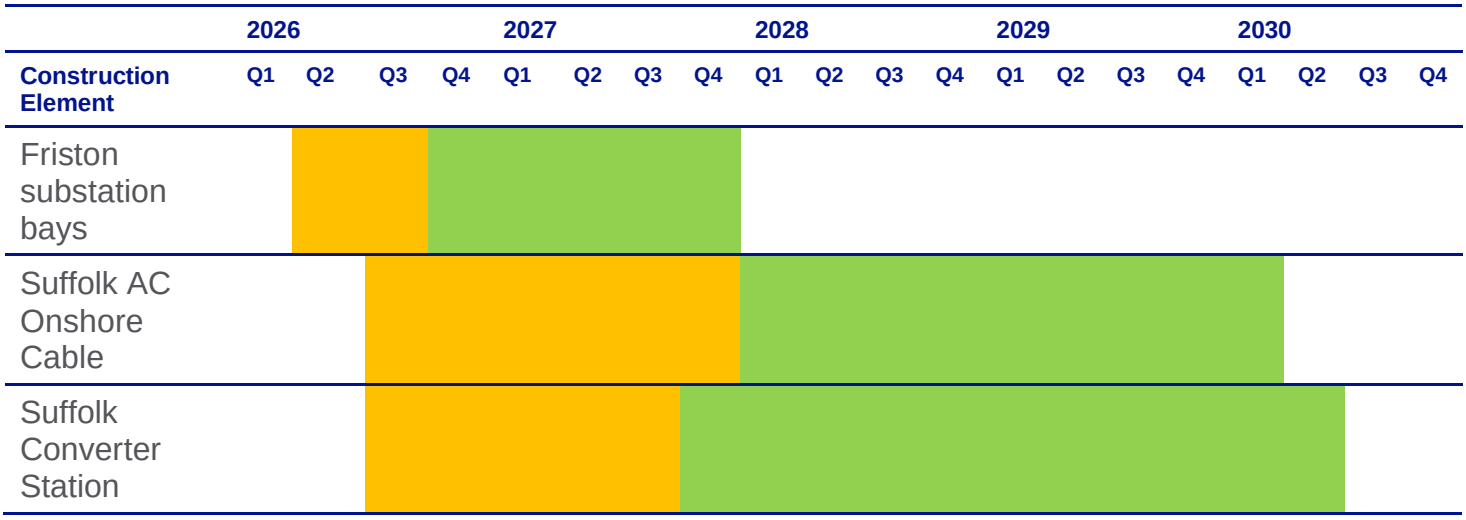
1.4.A.2 Construction Programme

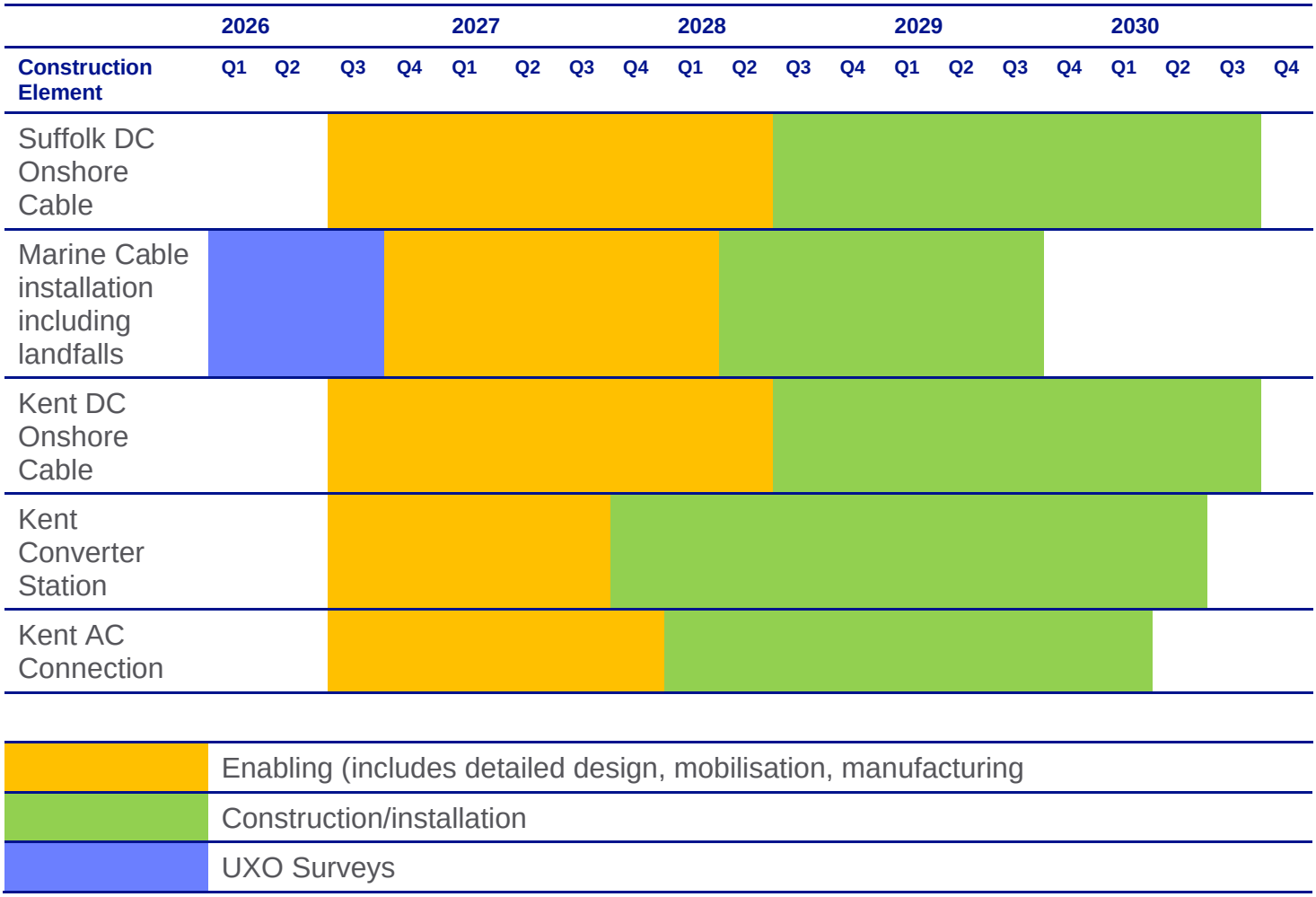
1.4.A.2.1 Subject to gaining development consent, construction works would be expected to start in 2026 and be completed by 2030. Certain advance works (such as archaeological trial trenching or protected species mitigation) may take place in advance of the main construction period.

1.4.A.2.2 The construction schedule will be developed as the Project progresses and will take account of seasonal constraints such as protected species breeding or hibernation seasons and reducing impacts associated with flood zones.

1.4.A.2.3 An indicative construction programme for the Project is presented in Table 1.4.A.1.

Table 1.4.A.1: Indicative construction programme





1.4.A.3 Control and Management Measures

1.4.A.3.1 Control and management measures have been identified that would reduce impacts from the Project on the environment (Table 1.4.A.1). These are generally measures that would normally be implemented on a well-run construction site, but also include a number of good practice measures that have been identified through the scoping work in order to support a proportionate assessment. They also include measures that have typically been employed on other National Grid projects. The contractor(s) will be expected to demonstrate compliance with these measures during construction.

Table 1.4.A.2: Control and management measures

Ref	Control and management measures
	General project commitments
GG01	The project will be run in compliance with all relevant legislation, consents and permits.
GG02	The project design will be compliant with the guidelines and policies relating to electromagnetic fields stated in National Policy Statement EN-5, including the International Commission on Non-Ionizing Radiation Protection guidelines (1998).
GG03	A Construction Environmental Management Plan (CEMP), a Landscape and Ecological Management Plan (LEMP) and a Construction Traffic Management Plan (CTMP) will be produced prior to construction.
GG04	The CEMP shall include measures to manage dust, waste, water, noise, vibration and soil during construction. The contractor(s) shall undertake daily site inspections to check conformance to the Management Plans.
GG05	A suitably experienced Environmental Manager will be appointed for the duration of the construction phase. In addition, a qualified and experienced Environmental Clerk of Works will be available during the construction phase to advise, supervise and report on the delivery of the mitigation methods and controls outlined in the CEMP. The Environmental Clerk of Works will monitor that the works proceed in accordance with relevant environmental DCO requirements and adhere to the required good practice and mitigation measures. The Environmental Clerk of Works will be supported as necessary by appropriate specialists, including ecologists and arboriculturists.
GG06	Construction workers will undergo training to increase their awareness of environmental issues as applicable to their role on the project. Topics will include but not be limited to: • pollution prevention and pollution incident response; • dust management and control measures; • location and protection of sensitive environmental sites and features; • adherence to protected environmental areas around sensitive features; • working hours and noise and vibration reduction measures; • working with potentially contaminated materials; • waste management and storage; • flood risk response actions; and

Ref	Control and management measures
	• agreed traffic routes, access points, etc.
GG07	A full record of condition will be carried out (photographic and descriptive) of the working areas that may be affected by the construction activities. This record will be available for comparison following reinstatement after the works have been completed to ensure that the standard of reinstatement at least meets that recorded in the pre-condition survey.
GG08	Land used temporarily will be reinstated where practicable to its pre-construction condition and use. Hedgerows, fences and walls (including associated earthworks and boundary features) will be reinstated to a similar style and quality to those that were removed, with landowner agreement.
GG09	Where sensitive features are to be retained within or immediately adjacent to the Order Limits, an appropriate protective area will be established using appropriate fencing and signage and will be inspected, repaired and replaced as necessary. The protective areas will be shown on the Retention and Reinstatement Plans contained within the LEMP.
	Construction site setup
GG10	The name and contact details for the project will be displayed at the entrance to all compounds. This will include an emergency number.
GG11	Any activity carried out or equipment located within a construction compound that may produce a noticeable nuisance, including but not limited to dust, noise, vibration and lighting, will be located away from sensitive receptors such as residential properties or ecological sites where practicable.
GG12	Appropriate site layout and housekeeping measures will be implemented by the contractor(s) at all construction sites. This will include but not be limited to: preventing pests and vermin control and treating any infestation promptly, including arrangements for the proper storage and disposal of waste produced on site; • inspecting and collecting any waste or litter found on site; • locating or designing site offices and welfare facilities to limit the overlooking of residential properties; • locating designated smoking/vaping areas to avoid nuisance to neighbours; • managing staff/vehicles entering or leaving site, especially at the beginning and end of the working day; and • managing potential off-site contractor and visitor parking.
GG13	Plant and vehicles will conform to relevant applicable standards for the vehicle type as follows: • Euro 4 (NOx) for petrol cars, vans and minibuses;

Ref	Control and management measures
	• Euro 6 (NOx and PM) for diesel cars, vans and minibuses; and • Euro VI (NOx and PM) for lorries, buses, coaches and Heavy Goods Vehicles (excluding specialist abnormal indivisible loads). Vehicles will be correctly maintained and operated in accordance with manufacturer's recommendations and in a responsible manner. All plant and vehicles will be required to switch off their engines when not in use and when it is safe to do so.
GG14	Materials and equipment will not be moved or handled unnecessarily. When loading and unloading materials from vehicles, including cable drums and excavated materials, drop heights will be limited.
GG15	Fuels, oils and chemicals will be stored responsibly, away from sensitive water receptors. Where practicable, they will be stored >15m from watercourses, ponds and groundwater dependent terrestrial ecosystems. Where it is not practicable to maintain a >15m distance, additional measures will be identified. All refuelling, oiling and greasing of construction plant and equipment will take place above drip trays and also away from drains as far as is reasonably practicable. Vehicles and plant will not be left unattended during refuelling. Appropriate spill kits will be made easily accessible for these activities. Potentially hazardous materials used during construction will be safely and securely stored including use of secondary containment where appropriate. Stored flammable liquids such as diesel will be protected either by double walled tanks or stored in a bunded area with a capacity of 110% of the maximum stored volume. Spill kits will be located nearby.
GG16	Runoff across the site will be controlled through a variety of methods including header drains, buffer zones around watercourses, on-site ditches, silt traps and bunding. There will be no intentional discharge of site runoff to ditches, watercourses, drains or sewers without appropriate treatment and agreement of the appropriate authority (except in the case of an emergency).
GG17	Wash down of vehicles and equipment will take place in designated areas within construction compounds. Wash water will be prevented from passing untreated into watercourses and groundwater. Appropriate measures will include use of sediment traps.
GG18	Wheel washing will be provided at each main compound access point on to the highway. An adequate supply of water will be made available at these locations at all times. Road sweepers will be deployed on public roads where necessary to prevent excessive dust or mud deposits.
GG19	Earthworks and stockpiled soil will be protected by covering, seeding or using water suppression where appropriate.
GG20	Bonfires and the burning of waste material will be prohibited.
GG21	Construction lighting will be of the lowest luminosity necessary to safely perform each task. It will be designed, positioned and directed to reduce the intrusion into adjacent properties, protected species and habitats.

Ref	Control and management measures
GG22	A Site Waste Management Plan (SWMP) will be developed prior to construction. The contractor(s) will maintain and monitor the SWMP throughout the construction phase and oversee that any sub-contractor(s) adhere to the SWMP. The SWMP will set out, in an auditable manner, how waste will be reduced, reused, managed and disposed of in accordance with the waste hierarchy. Dedicated areas will be identified on the construction plans to allow materials and wastes to be segregated at source, reducing the risk of damage or contamination.
GG23	An Emergency Action Plan will be developed for the construction phase which will outline procedures to be implemented in case of unplanned events, including but not limited to site flooding and pollution incidents.
GG24	Stone pads will be installed in areas where heavy equipment, such as cranes and piling rigs, are to be used. The stone pads will provide stable working areas and will reduce disturbance to the ground. The stone pad area will be stripped of the topsoil, which will be stored and reinstated in accordance with the soil management measures contained in the CEMP.
GG25	Working areas will be appropriately fenced. The type of fencing installed will depend on the area to be fenced and will take into consideration the level of security required in relation to the surrounding land and public access, rural or urban environment and arable or stock farming. For some locations the fence used may also serve to provide acoustic and visual screening of the work sites and reduce the potential for disturbance of users in the surrounding areas. Fencing will be regularly inspected and maintained and removed as part of the demobilisation unless otherwise specified.
GG26	Members of the community and local businesses will be kept informed regularly of the works through active community liaison. This will include notification of noisy activities, heavy traffic periods and start and end dates of key phasing. A contact number will be provided which members of the public can use to raise any concerns or complaints about the project. All construction-related complaints will be logged by the contractor(s) in a complaints register, together with a record of the responses given and actions taken.
	Landscape and visual
LV01	The contractor(s) will retain vegetation where practicable. Where vegetation is lost and trees cannot be replaced in situ due to the restrictions associated with land rights required for operational safety, native shrub planting approved by National Grid will be used as a replacement, in accordance with the outline vegetation reinstatement plans included within the LEMP.
LV02	The contractor(s) will apply the relevant protective principles set out in British Standard (BS) 5837:2012: Trees in relation to design, demolition and construction. This will be applied to trees within the Order Limits which will be preserved through the construction phase, and to trees outside of the Order Limits where such measures do not hinder or prevent the use of the relevant working width for construction. All works to high grade trees, including trees under Tree Preservation Orders and veteran trees, will be undertaken or supervised by a suitably qualified arboriculturist.
LV03	A five-year aftercare period will be established for all reinstatement and mitigation planting.

Ref	Control and management measures
	Ecology and biodiversity
B01	The contractor(s) will comply with relevant protected species legislation. Appropriate licences will be obtained where necessary from Natural England for all works affecting protected species as identified by the Environmental Statement and through pre-construction surveys. All applicable works will be undertaken in accordance with the relevant requirements and conditions set out in those licences.
B02	The assumption will be that vegetation with the potential to support breeding birds will not be removed during the breeding bird season (March to August inclusive). If any works become necessary during the breeding bird season, works will be supervised by an Environmental Clerk of Works. Appropriate protection measures will be put in place should active nests be found. These will include exclusion zones around active nests until chicks fledge or nests become inactive as determined by monitoring by the Environmental Clerk of Works.
B03	Where there will be a risk of animal entrapment, a means of escape will be installed into all excavations left open overnight.
B04	To control the spread of invasive weeds in accordance with the Wildlife and Countryside Act 1981, any plant or machinery that has been used in areas infested with invasive species (both terrestrial and aquatic), such as Japanese knotweed and Himalayan balsam, will be thoroughly cleaned. Water used to clean vehicles will be controlled to prevent the spread of the plant (through seeds, rhizomes, fragments, etc.). The area will be cordoned off to prevent any inadvertent spreading.
B05	All habitats suitable for common reptiles will be subject to two-stage habitat manipulation that will take place between mid-March and mid-October. Firstly, vegetation will be cut to approximately 150mm (with the arisings removed) under the supervision of an Environmental Clerk of Works and the site left for a minimum of two days to allow reptiles to naturally disperse from the area. Secondly, vegetation will be cleared down to ground level under the supervision of an Environmental Clerk of Works. Vegetation will be cleared using appropriate equipment based on the type of vegetation to be removed, the area affected, and the risk of mortality or injuring reptiles. Construction works could commence immediately after completion of the second stage. Reptile hibernacula will be retained and protected during construction where practicable. If unavoidable, the removal of vegetation and groundworks at hibernacula will be timed to avoid the hibernation season (late October to early March). Replacement hibernacula and refugia will be provided.
B06	Alternative roost structures (bat boxes) will be provided (with landowner consent) on retained trees within the Order Limits or areas outside of the Order Limits agreed with landowners. Three boxes will be provided for each tree with moderate bat roost potential to be felled. Five boxes will be provided for each tree with high bat roost potential to be felled.
B07	Where the works require the crossing or removal of hedgerows, the gap will be reduced to a width required for safe working. Where hedge removals are necessary, ‘dead hedging’ should be used, where practicable, in the interim periods to retain connectivity during construction. Dead hedging can comprise vegetation arisings or artificial provision, such as willow

Ref	Control and management measures
	screening panels or Heras fencing covered in camouflage netting. New hedgerow planting will contain native, woody species of local provenance.
	Cultural heritage
H01	Locations of known archaeological interest/value, or areas where archaeological work is planned, will be signposted/fenced off to avoid unintentional damage.
H02	Where a previously unknown heritage asset is discovered, or a known heritage asset proves to be more significant than foreseen at the time of application, the project will inform the local planning authority and will agree a solution that protects the significance of the new discovery, so far as is practicable, within the project parameters.
	Water environment
W01	All works within main rivers or ordinary watercourses will be in accordance with a method approved under environmental permits issued under the Environmental Permitting Regulations or the protective provisions of the DCO for the benefit of the Environment Agency and the Lead Local Flood Authorities.
W02	For open cut watercourse crossings and installation of vehicle crossing points, good practice measures will include but not be limited to: • where practicable, reducing the working width for open cut crossings of a main or ordinary watercourse whilst still providing safe working; • installation of a pollution boom downstream of open cut works; • the use and maintenance of temporary lagoons, tanks, bunds, silt fences or silt screens as required; • have spill kits and straw bales readily available at all crossing points for downstream emergency use in the event of a pollution incident; • the use of all static plant such as pumps in appropriately sized spill trays; • prevent refuelling of any plant or vehicle within 15m of a watercourse; • prevent storing of soil stockpiles within 15m of a main river; • inspect all plant prior to work adjacent to watercourses for leaks of fuel or hydraulic fluids; and • reinstating the riparian vegetation and natural bed of the watercourse, using the material removed when appropriate, on completion of the works and compacting as necessary. If additional material is required, appropriately sized material of similar composition will be used.

Ref	Control and management measures
W03	Riverbank and in-channel vegetation will be retained where not directly affected by installation works. Natural substrate will be provided through temporary watercourse crossings box culverts.
W04	Where watercourses are to be crossed by construction traffic, measures to be applied include the use of 'flume' pipes or temporary spanned bridges. Once the flume pipe is installed, the area above the flume pipe will be backfilled and construction mats placed over the backfilled area to permit the passage of plant, equipment, materials and people. Flume pipes will be sized to reflect the span width and the estimated flow characteristics of the watercourse under peak flow conditions and kept free from debris. Where used, temporary bridges will be designed specifically to consider the span length and the weight and size of plant and equipment that will cross the bridge.
W05	The contractor(s) will comply with all relevant consent conditions or DCO provisions regarding de-watering and other discharge activities. This will particularly be with regard to volumes and discharge rates and will include discharges to land, water bodies or third-party drains/sewers.
W06	Where new or additional surfacing is required on any access tracks and compound areas, these will be permeable surfaces where ground conditions allow. The project will incorporate appropriate surface water drainage measures into its final design for the haul roads and access tracks so that they do not lead to a significant increase in flood risk. Temporary haul routes within Flood Zone 3 and areas of high and medium risk of flooding from surface water will be removed at the end of the construction phase and the ground surface will be reinstated to pre-project levels. No construction materials should be stored within Flood Zone 3 and areas of high and medium risk of flooding from surface water.
W07	The contractor(s) will subscribe to the Environment Agency's Floodline service, which provides advance warning of potential local flooding events, and subscribe to the Met Office's Weather Warnings email alerts system and any other relevant flood warning information. The contractor(s) will implement a suitable flood risk action plan, which will include appropriate evacuation procedures should a flood occur or be forecast.
W08	Active private water supplies will be identified with landowners through the landowner discussions. Appropriate measures will be considered during construction. In the event of a landowner or tenant reporting that installation activities have affected their private water supplies, an initial response will be provided within 24 hours. Where the installation works have affected a private water supply, an alternative water supply will be provided, as appropriate.
W09	In the event of a significant spill during construction, all relevant landowners/tenants will be contacted within 24 hours, within 250m of the spill, to determine if there are any private water supplies that might be affected; an assessment of the likelihood of groundwater contamination reaching identified private water supplies will be undertaken, and where a private water supply is judged likely to be affected, an alternative water supply will be provided, as appropriate.

Ref	Control and management measures
W10	Where a main river is crossed by a trenchless crossing, the cables will be laid at least 1m below the hard bed level of the river and will remain at or below this level for a distance of not less than 3m from the brink of the riverbank before rising at a slope no greater than 1 vertical in 1.5 horizontal. Marker posts shall also be positioned on each bank of the river to indicate the location of the under-crossing and the nature of the works.
	Geology and hydrogeology
GH01	Intrusive ground investigations and assessment will be undertaken prior to construction which will inform appropriate geotechnical design in relation to the site/structure specific ground conditions including ground instability/adverse ground conditions
GH02	Construction methods such as appropriate piling techniques (if required) to minimise the risk of mixing of aquifer bodies through the creation of new. This includes the provision of a Foundation Works Risk Assessment (FWRA), which would be undertaken once the proposed foundation solutions are known, in accordance with EA guidance 'Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination' (EA, 2001).
GH03	Use of appropriate occupational health and safety measures e.g. Personal Protective Equipment (PPE), and statutory health and safety compliance (e.g. compliance with the Confined Spaces Regulations, 1997 in relation to ground gas from working in confined spaces/trenches) to minimise the risks associated with anticipated/unexpected contamination. Based on risk assessment informed by site specific information.
GH04	Appropriate training of construction and maintenance workers in the handling and use of potentially hazardous substances and the associated risks.
GH05	All use and storage of chemicals to be undertaken in accordance with EA Pollution Prevention Guideline (PGG) notes, and controlled and monitored under the Construction and Environmental Management Plan (CEMP) and general construction site good environmental and waste management procedures.
GH06	The control of earthworks or materials movement (including any re-use of materials) under appropriate Environmental Permits, exemptions or CL:AIRE 'The definition of Waste: The development industry Code of Practice (2011).
GH07	Any temporary dewatering activities during construction will be undertaken in accordance with EA guidance, and if required, an Abstraction Licence and Environmental Permit (for the discharge) and will be limited to the depth and time required to facilitate construction activities.
GH08	A protocol for dealing within any unexpected contamination.
	Agriculture and soils
AS01	Soil management measures will be included within the CEMP. Measures will include but not be limited to the following:

Ref	Control and management measures
	• the soil resources present; • how topsoil and subsoil will be stripped and stockpiled; • suitable conditions for when handling soil will be undertaken, for example avoiding handling of waterlogged soil; • indicative soil storage locations; • how soil stockpiles will be designed taking into consideration site conditions and the nature/composition of the soil; • specific measures for managing sensitive soils; • suitable protective surfacing where soil stripping can be avoided, based on sensitivity of the environment and proposed works; • approach to reinstating soil that has been compacted, where required; and • details of measures required for soil restoration.
AS02	Where land is being returned to agricultural use, the appropriate soil conditions (for example through the replacement of stripped layers and the removal of any compaction) will be recreated. This will be achieved to a depth of 1.2m (or the maximum natural soil depth if this is shallower) except over buried cables where the reinstated soil depth will be approximately 1.1m.
AS03	Access to and from residential, commercial, community and agricultural land uses will be maintained throughout the construction period or as agreed through the landowner discussions. This may require signed diversions or temporary restrictions to access. The means of access to affected properties, facilities and land parcels will be communicated to affected parties at the start of the project, with any changes communicated in advance of the change being implemented. Where field-to-field access points require alteration as a result of construction, alternative field access will be provided in consultation with the landowner/occupier.
AS04	Existing water supplies for livestock will be identified pre-construction. Where supplies will be lost or access compromised by construction works, temporary alternative supplies will be provided. Water supplies will be reinstated following construction.
AS05	Consultation with affected landowners will be carried out to investigate the current extent of land drainage. A scheme of pre-construction land drainage will be designed with the intent of maintaining the efficiency of the existing land drainage system and to assist in maintaining the integrity of the working area during construction. The project may include a system of ‘cut-off’ drains which feed into a new header drain and the project will also take into account surface water runoff measures.

Ref	Control and management measures
AS06	Should animal bones be discovered during construction, which may indicate a potential burial site, works will cease, and advice will be sought from the Animal Health Regional Office on how to proceed, relevant to the origin and age of the materials found.
AS07	All movement of plant and vehicles between fields will cease in the event of a notification by the Department for Environment, Food and Rural Affairs (Defra) of a disease outbreak in the vicinity of the site that requires the cessation of activities. Advice will be sought from Defra in order to develop suitable working methods required to reduce the biosecurity risk associated with the continuation of works.
AS08	Clay bungs or other vertical barriers will be constructed within trench excavations where deemed necessary by a suitably experienced person, to prevent the creation of preferential drainage pathways.
	Traffic and transport
TT01	The CTMP will set out measures to reduce route and journey mileage to and from and around site, and prevent nuisance to the residents, businesses and the wider community caused by parking, vehicle movements and access restrictions. It will also provide suitable control for the means of access and egress to the public highway and set out measures for the maintenance and upkeep of the public highway. The plan will also identify access for emergency vehicles. It will also set out measures to reduce safety risks through construction vehicle and driver quality standards and measures to manage abnormal loads.
TT02	The contractor(s) will implement a monitoring and reporting system to check compliance with the measures set out within the CTMP. This will include the need for a GPS tracking system to be fitted to Heavy Goods Vehicles to check for compliance with authorised construction routes. The contractor(s) will also be expected to monitor the number of construction vehicles between the site and the strategic road network. Deviations from the authorised routes or changes to traffic levels that are higher than the CTMP assumptions will require discussion of the need for additional mitigation measures with highways authorities.
TT03	All designated Public Rights of Way (PRoWs) will be identified, and any potential temporary closures applied for/detailed in the DCO. All designated PRoWs crossing the working area will be managed with access only closed for short periods while construction activities occur. Any required temporary diversions will be clearly marked at both ends with signage explaining the diversion, the duration of the diversion and a contact number for any concerns.
	Noise and vibration
NV01	Construction working will be undertaken within the agreed working hours set out within the DCO. Best practicable means to reduce construction noise will be set out within the CEMP.
	General project commitments (marine)
GM01	Designated (and as minimal as possible) anchoring areas and protocols shall be employed during

Ref	Control and management measures
	marine operations to minimise physical disturbance of the seabed
GM02	As-built locations of cable and external protection will be supplied to UKHO (Admiralty) and Kingfisher (KIS-ORCA)
GM03	An offshore Construction Environmental Management Plan (CEMP) including an Emergency Spill Response Plan and Waste Management Plan, Marine Pollution Contingency Plan (MPCP), Shipboard Oil Pollution Emergency Plan (SOPEP) and a dropped objects procedure will be produced prior to installation
	Landfall and vessel set up
LVS01	All project vessels shall adhere to the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (BWM Convention) (IMO, 2017)
LVS02	All project vessels must comply with the International Regulations for Preventing Collisions at Sea (1972) (IMO, 2019a), regulations relating to International Convention for the Prevention of Pollution from Ships (the MARPOL Convention 73/78) (IMO, 2019e) with the aim of preventing and minimising pollution from ships and the international Convention for the Safety of Life at Sea (SOLAS, 1974).
LVS03	An installation machine failure contingency plan will be produced prior to installation
LVS04	All oil, fuel and chemical spills will be reported to the MMO Marine Pollution response team
LVS05	Drilling fluids required for trenchless operations will be carefully managed to minimise the risk of breakouts into the marine environment. Specific avoidance measures would include: • the use of biodegradable drilling fluids (PLONOR substances) where practicable, • drilling fluids will be tested for contamination to determine possible reuse or disposal; and • If disposal is required drilling fluids would be transported by a licensed courier to a licensed waste disposal site.
	Marine physical environment
MPE01	During the course of cable route clearance, specific activities will be completed to remove items from the seabed. Out of Service cables will be removed as per industry guidelines, larger debris including lost fishing gear will be removed prior to cable installation and a pre-lay grapnel run will be completed to ensure smaller debris is removed. In the event that abandoned, lost or discarded fishing gear ('ALDFG') is encountered, it may be necessary in certain circumstances to bring ALDFG onto the vessel deck. In these instances, marked ALDFG will be returned to the local MMO/ Inshore Fisheries and Conservation Authority (IFCA) for onward retrieval by the owner of the marked gear, in line with existing best practice. Not all

Ref	Control and management measures
	gear (particularly ‘active’ gear) is marked; if necessary to bring onto the vessel deck, unmarked gear will be disposed of via conventional onshore waste channels.
MPE02	Cables will be buried to a target depth of 1.0m to 2.0m for the majority of the route, depending on a number of factors including sediment type and sediment mobility.
MPE03	Cable protection features (e.g. rock placement, mattresses and grout bags) will be installed only where considered necessary for the safe operation of the Project.
	Benthic ecology
BE01	A biosecurity plan will be produced for the project, following the latest guidance on INNS from the GB non-native species secretariat.
BE02	All project vessels shall adhere to the International Maritime Organisation (IMO) Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species (Biofouling Guidelines 2011).
BE03	Cable installation will be carried out on a 24-hour basis in order to reduce the overall installation time and associated disturbance of ecological receptors.
	Marine mammals
MM01	Adherence to JNCC guidelines, where appropriate, regarding the minimisation of impacts from underwater sound generated from known project activities of piling, geophysical surveys, and UXO detonation
	Ornithology
O01	The CoCP and CEMP will outline the best practice mitigation measures required to be implemented during construction. This would include measures to prevent accidental spillages from occurring and to minimise disturbance of sediments.
	Marine archaeology
	A Written Scheme of Investigation (WSI) including a Protocol for Archaeological Discoveries (PAD) will be agreed and implemented. Unavoidable impacts to potential archaeological receptors would be addressed through a series of agreed control and management measures to deal with the discoveries once impacts have occurred. These measures would be outlined in a WSI and would be in place throughout the construction, operation, maintenance and decommissioning phases. The WSI would address unavoidable impacts associated with the worst-case scenario (Rochdale Envelope) in accordance with archaeological best practice. The WSI would be agreed by the Archaeological Curator via the Regulator prior to works commencing. A project-specific PAD will be established to support the reporting of unexpected archaeological material during the lifetime of the Project. Impact to unexpected archaeological material is reduced by promptly receiving archaeological advice and undertaking recording and/or conserving any objects that have been disturbed. Additional investigation of features

Ref	Control and management measures
	with an uncertain identity or archaeological value can often mean their true nature and value can be better understood. A PAD reduces the impact on the marine historic environment by enabling Project staff to report their finds in a manner that is convenient and effective. Any additional marine geophysical survey, diver or ROV survey footage that takes place within the area will be assessed by a suitably qualified marine geophysicist or marine archaeologist, as appropriate. If an archaeologically important site is subsequently discovered during Project works, a temporary exclusion zone (TEZ) will be established to allow for further investigation to take place. The TEZ would then be re-evaluated, removed or expanded, based on the results of further investigations
MA02	A Written Scheme of Investigation (WSI) will also include offsetting of archaeological impact where necessary through the completion of a palaeo-environmental assessment of deposits of high geoarchaeological potential which may be disturbed.
MA03	The project will be run in compliance with all relevant legislation, consents and permits, for example the Marine and Coastal Access Act 2009, Protection of Military Remains 1986, Merchant Shipping Act 1995, Protection of Wrecks Act 1973 and Ancient Monuments and Archaeological Areas Act 1979.
MA04	Locations of known marine archaeological interest/value within the marine environment will be avoided by all marine vessels by the implementation of AEZs.
MA05	Where a previously unknown heritage asset is discovered, or a known heritage asset proves to be more significant than foreseen at the time of application, the project will inform the MMO, as advised by Historic England, and will agree a solution that protects the significance of the new discovery, so far as is practicable, within the project parameters.
	Shipping and navigation
SN01	A risk based burial approach will be used where cables will be buried to a target depth of 1.0m to 2.0m for the majority of the route, assessing cable protection risk factors such as sediment type, sediment mobility, fishing activity, shipping movements and anchor deployment along the route
SN02	Relevant information will be communicated to other sea users via Notices to Mariners (NtM), Radio Navigation Warnings Navigational Telex (NAVTEX) and/or broadcast warnings.
SN03	All Project vessels will display appropriate marks and lights and will always broadcast their status on AIS.
SN04	Temporary aids to navigation will be used as required to guide vessels around areas of installation activity
SN05	A compass deviation report will be produced prior to installation
SN06	Guard vessel(s), using RADAR with Automatic RADAR Plotting Aid (ARPA) to monitor vessel activity and predict possible interactions, will be employed to work alongside the installation vessel(s) during cable installation works.
	Commercial fisheries

Ref	Control and management measures
CF01	Cables will be buried to a target depth of 1m to 2m for the majority of the route to minimise risk of interaction with fishing gear
CF02	A Fisheries Liaison Officer (FLO) and fisheries working group(s) will be maintained throughout installation to ensure project information is effectively disseminated, dialogue is maintained with the commercial fishing industry and access to home ports is maintained during the main fishing season.
CF03	Timings of any temporary areas of exclusion from fishing grounds will be clearly communicated via a notice to mariners.
	Other sea users
OSU01	Crossing agreements will be agreed with aggregate extraction, cable and pipeline owners. The crossing agreement describes the rights and responsibilities of the parties and also the design of the crossing. Crossing design will be in line with industry standards, using procedures and techniques agreed with the cable and pipeline owners.
OSU02	Timely and efficient communication will be given to sea users in the area via Notices to Mariners, Kingfisher Bulletins, Navigational Telex (NAVTEX and Navigational Areas (NAVAREA) warnings.

1.5.A Inter-Project Cumulative Effects Long List

Table 1.5.A.1: Inter project cumulative effects long list

ID	Application ref (where applicable)	Planning Authority	Project and location	X	Y	Within the Suffolk Onshore Scheme ZOI	Within the Kent Onshore Scheme ZOI	Within the Offshore Scheme ZOI	Description	Distance from Suffolk Scoping Boundary (km)	Distance from Kent Scoping Boundary (km)	Distance from Offshore Scoping Boundary (km)	Application status	Date of application	Tier	Progress to Stage 2?
1	EN10012	Planning Inspectorate	Development Consent Order for the Sizewell C Nuclear Power Station	647136	263389	Yes	No	Yes	The Sizewell C Project	0.72	N/A	0.5	Approved	27/05/2020	1	Yes
2	MC/19/3015	MMO	NeuConnect - Offshore Interconnector between UK and Germany	587011	174705	No	No	Yes	NeuConnect - Offshore interconnector between UK and Germany	N/A	N/A	0	Approved	22/10/2020	1	Yes
3	MC/20/0031	MMO	GridLink - Offshore Interconnector between UK and France	581135	172009	No	No	Yes	GridLink - Offshore interconnector between UK and France	N/A	N/A	0	Approved	7th January 2020	1	Yes
4	N/A	Planning Inspectorate	North Falls Offshore Wind Farm - The offshore project area lies within the Outer Thames Estuary	622595	217983	No	No	Yes	Wind farm being proposed within the Outer Thames Estuary	N/A	N/A	0	Pre-Application	Application expected 01/06/2023	2	Yes
5	EN010077	Planning Inspectorate	East Anglia ONE North Offshore Windfarm - Southern North Sea approx. 36km from the Suffolk Coast. Onshore cable route connecting to onshore substation	647700	260640	No	No	Yes	Construction and operation of up to 67 wind turbine generators with associated onshore and offshore development. Onshore development includes a cable route to connect the windfarm to the onshore substation.	N/A	N/A	0	Approved	25/10/2019	1	Yes
6	EN010078	Planning Inspectorate	East Anglia TWO Offshore Windfarm - Southern North Sea approx. 32.6km from the Suffolk Coast. Onshore cable route connecting to onshore substation	647699	260631	Yes	No	Yes	An offshore wind farm which could consist of up to 75 turbines, generators and associated infrastructure, with an installed capacity of up to 900MW	1.62	N/A	0	Approved	25/10/2019	1	Yes
7	N/A	Planning Inspectorate	Nautilus - Offshore interconnector between UK and Belgium	643143	262220	Yes	No	Yes	Proposed second Interconnector between Great Britain and Belgium. It would create a new 1.4 gigawatts (GW) high voltage direct current (HVDC) electricity link	0.66	N/A	0	Pre-Application	Application expected Q2 2023	3	Yes
8	EN010084	Planning Inspectorate	Thanet Extension Offshore Windfarm	634375	163170	No	Yes	Yes	An offshore wind generating station of up to 340 Megawatts formed as an extension to the existing operational Thanet Offshore Wind Farm in waters	N/A	0.17	0.18	Refused	21/11/2019	1	No application refused

									adjacent to the entrance to the Thames estuary in Kent, connecting to the shore at Pegwell Bay							
9	**N/A**	**Planning Inspectorate**	**Five Estuaries Offshore Windfarm**			**No**	**No**	**Yes**	**Five Estuaries is an offshore wind farm to generate in excess of 300MW. The project will be comprised of (but not limited to): an offshore wind farm, including wind turbine generators and associated foundations and array cables; transmission infrastructure, including offshore substations and associated foundations, offshore and onshore export cables (underground), including associated transition bays and jointing bays, an onshore substation, and connection infrastructure into the National electricity Transmission System.**	**N/A**	**N/A**	**0**	**Pre-Application**	**Application expected Q3 2023**	**2**	**Yes**
10	**TR020002**	**Planning Inspectorate**	**Manston Airport**	**633031**	**165832**	**No**	**Yes**	**No**	**Reopen and develop Manston Airport**	**N/A**	**1.80**	**N/A**	**Approved on re determination**	**18/08/2022**	**1**	**Yes**
11	**EN010056**	**Planning Inspectorate**	**East Anglia THREE Offshore Windfarm - Offshore approx. 69km from Port of Lowestoft.**	**635058**	**239047**	**No**	**No**	**Yes**	**Construction and operation of up to 172 wind turbine generators with associated onshore and offshore development. Onshore development includes a cable route to connect the windfarm to the onshore substation.**	**N/A**	**N/A**	**0**	**Approved**	**07/08/2017**	**1**	**Yes**
12	F/TH/22/0953	Thanet	Land south of Millennium Way Broadstairs Kent	637042	167595	No	Yes	No	Erection of a two storey 66-bed care home (Use Class C2) with associated services, car parking and landscaping with access onto Northwood Road following demolition of existing building	N/A	4.02	N/A	Awaiting decision	07/07/2022	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
13	F/TH/22/0649	Thanet	St Peters Presbytery 117 Canterbury Road Westgate On Sea Kent CT8 8NW	632207	169724	No	Yes	No	Erection of part 3storey / part 4 storey building to provide 38 Retirement Living apartments for older persons, with associated communal facilities, parking and landscaping.	N/A	5.65	N/A	Awaiting decision	06/05/2022	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
14	F/TH/22/0642	Thanet	Land southwest of the Nightingales Ramsgate Road MARGATE Kent	635949	169306	No	Yes	No	Erection of 3-storey building to accommodate 8.No 2-bed and 2.No 3-bed self-contained flats, and commercial unit to provide health service use (use class E(e)) at ground floor level, together with associated access, landscaping, parking, bin and cycle stores.	N/A	5.46	N/A	Awaiting decision	05/05/2022	1	No. Nature, scale and location of development not likely to generate significant cumulative effects

15	F/TH/22/0573	Thanet	Land at Manston Road RAMSGATE Kent	635870	165797	No	Yes	No	Erection of 90 residential units (Use Class C3) consisting of 12No 1bed, 24No 2bed, 47No 3bed and 7No 4bed dwellings with associated access, parking and landscaping including play area	N/A	2.25	N/A	Awaiting decision	21/04/2022	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
16	**OL/TH/22/0414**	**Thanet**	**Land on the North Side of Foxborough Lane RAMSGATE Kent**	**631286**	**165007**	**No**	**Yes**	**No**	**Outline planning application for the erection of up to 115 dwellings with all matters reserved except for access**	**N/A**	**1.01**	**N/A**	**Awaiting decision**	**21/03/2022**	**1**	**Yes**
17	**F/TH/21/1671**	**Thanet**	**Land south of Canterbury Road West RAMSGATE Kent**	**634320**	**164923**	**No**	**Yes**	**No**	**Erection of 145 dwellings, with open space, landscaping, access and associated infrastructure.**	**N/A**	**0.79**	**N/A**	**Awaiting decision**	**25/10/2021**	**1**	**Yes**
18	F/TH/21/1853	Thanet	Grenham Lodge Manston Road RAMSGATE Kent CT12 5BT	634639	166169	No	Yes	No	Erection of 16no. two storey dwellings comprising of 4no. four-bed dwellings and 12no. three-bed dwellings.	N/A	2.07	N/A	Awaiting decision	29/11/2021	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
19	F/TH/21/1422	Thanet	Phase 5A land north of Haine Road Broadstairs And West Of Nash Road MARGATE Kent	636147	167840	No	Yes	No	Erection of 38 residential units consisting of 10No 1bed and 28No 2bed flats (Use Class C3) together with a Community Hall Building (Use Class F2[b]), associated access, amenity space and parking	N/A	4.18	N/A	Awaiting decision	09/09/2021	Tier 1	No. Nature, scale and location of development not likely to generate significant cumulative effects
20	F/TH/21/0688	Thanet	2 - 12 Harold Road MARGATE Kent	636608	171059	No	Yes	No	Erection of a four storey building containing 26No. 2 bed flats and 8No. 3 bed flats and erection of 3No. 3 storey 4 bed terraced houses, with associated parking, access and landscaping works following demolition of the existing commercial buildings	N/A	7.33	N/A	Awaiting decision	30/04/2021	1	No. Nature and scale of development not likely to generate significant cumulative effects
21	F/TH/21/0671	Thanet	Land to the north of Fairlawn Road and the west of Northwood Road Broadstairs Kent	637029	167486	No	Yes	No	Erection of 12No 3-bed dwellings, 26No 4-bed dwellings, 3No 1-bed flats, and 3No 2-bed flats, together with associated access, parking and landscaping, following demolition of existing structures.	N/A	3.91	N/A	Awaiting decision	28/04/2022	1	No. Nature and scale of development not likely to generate significant cumulative effects
22	F/TH/21/0582	Thanet	Land on the East Side of Nash Road MARGATE Kent CT9 4LD	636268	168011	No	Yes	No	Erection of four, three and two storey building containing 51No apartments for over 55's and guest apartment, communal facilities, access, parking and landscaping	N/A	4.39	N/A	Decided	12/04/2021	1	No. Nature and scale of development not likely to generate significant cumulative effects
23	F/TH/21/0417	Thanet	Land at New Haine Road RAMSGATE Kent	636199	167963	No	Yes	No	Hybrid planning application comprising outline planning with all matters reserved (except for access) for up to 322no. residential dwellings with associated open space, infrastructure and earthworks; and full planning for 178no. residential dwellings (Phase 1) with associated open space,	N/A	4.31	N/A	Decided	18/03/2021	1	No. Nature and scale of development not likely to generate significant cumulative effects

									equipped play area, landscaping, parking, infrastructure and earthworks						
24	F/TH/20/1726	Thanet	Bowling Centre Ethelbert Crescent MARGATE Kent CT9 2DY	636174	171278	No	Yes	No	Erection of a five-storey building accommodating 8 two-bedroom apartments and 2 three-bedroom apartments and two leisure units (Use Class E(d)) at ground floor following part demolition of the existing bowling alley	N/A	7.41	N/A	Decided	15/12/2020	1	No. Nature and scale of development not likely to generate significant cumulative effects
25	F/TH/20/1525	Thanet	Stephens Haine Road RAMSGATE Kent CT12 5ES	635751	166134	No	Yes	No	Erection of 115no. dwellings comprising a mix of 2, 3 and 4-bed houses, and 1 and 2 bed-apartments, with vehicular access from Haine Road, together with associated highway infrastructure works, parking, and landscaping Open for comment icon	N/A	2.51	N/A	Awaiting decision	13/11/2020	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
26	F/TH/20/0873	Thanet	254 - 258 Northdown Road MARGATE Kent CT9 2PX	636628	170828	No	Yes	No	Erection of 4-storey building (and part three storey, part single storey rear extension) with basement level to accommodate 40no. bedroom hotel (use class C1) with restaurant at ground floor and basement level, and associated parking to rear	N/A	7.12	N/A	Decided	10/07/2020	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
27	F/TH/20/0832	Thanet	Eastport Motors 314 Margate Road RAMSGATE Kent CT12 6AN	637009	166932	No	Yes	No	Erection of part three storey, part two storey building containing 9No 2-bed and 1No studio self contained flats following demolition of existing building	N/A	3.36	N/A	Decided	30/06/2020	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
28	F/TH/20/0802	Thanet	2 - 12 Harold Road MARGATE Kent	636608	171059	No	Yes	No	Erection of part 5 storey, part 4 storey building including accommodation in roof space containing 41No. 1, 2 and 3 bed flats together with 4No. 3 storey 4 bed terraced houses with associated parking, access and landscaping following demolition of existing commercial buildings	N/A	7.33	N/A	Decided	24/06/2020	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
29	F/TH/20/0768	Thanet	Land rear of 19 To 23 Harold Road And 9 To 15 Albion Road MARGATE Kent	636429	171100	No	Yes	No	Erection of 14No. dwellings consisting of 4No. 2-bed two storey terraced houses, 7No. 3-bed and 2No. 4-bed three storey terraced houses, and 1No. 2 bed single storey detached bungalow, together with associated parking, access and landscaping	N/A	7.31	N/A	Decided	17/06/2020	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
30	**F/TH/20/0648**	**Thanet**	**Stonelees Golf Course Ebbsfleet Lane RAMSGATE Kent CT12 5DJ**	**633419**	**162997**	**No**	**Yes**	**No**	**Erection of 10 No. detached and 10 No. semi-detached 2-storey holiday homes together with single storey site office/reception building,**	**N/A**	**0.08**	**N/A**	**Awaiting decision**	**18/05/2020**	**1**	**Yes**

									parking and landscaping. Open for comment icon							
31	F/TH/20/0585	Thanet	Fairfield Manor Fairfield Road BROADSTAIRS Kent CT10 2JY	638198	167933	No	Yes	No	Erection of 5 storey building consisting of 30No 1bed and 22No 2bed retirement flats with associated communal facilities, creation of new access onto Fairfield Rd, parking and landscaping following demolition of existing buildings	N/A	4.65	N/A	Decided	04/05/2020	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
32	F/TH/20/0123	Thanet	Land north of Fairlawn Road RAMSGATE Kent	637017	167465	No	Yes	No	Erection of 4no. 4-bed and 6no. 3-bed dwellings together with associated access and landscaping	N/A	3.88	N/A	Decided	29/01/2020	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
33	F/TH/19/1531	Thanet	Ramsgate Social Club Elms Avenue RAMSGATE Kent CT11 9BD	637982	164824	No	Yes	No	Erection of part 4 storey part 3 storey building with excavated basement level, to accommodate 12No 2-bed flats, 2No 3-bed maisonettes and function room (sui-generis) with associated parking and access following demolition of existing club house	N/A	1.93	N/A	Decided	11/11/2019	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
34	F/TH/19/1465	Thanet	6 North Foreland Road BROADSTAIRS Kent CT10 3NJ	639882	169562	No	Yes	No	Erection of 5No part 3-storey part 4-storey buildings (including basement parking) to provide 34No. 2-bed self contained flats, with associated landscaping and access.	N/A	6.85	N/A	Decided	30/10/2019	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
35	F/TH/19/1389	Thanet	20 - 26 Albion Place RAMSGATE Kent CT11 8HQ	638532	164892	No	Yes	No	Erection of part 5 storey part 4 storey building with basement to accommodate 4No. 2 bed self-contained maisonettes, 8No. 2 bed self-contained flats and 1No. 5 bed single dwelling, and erection of 4 storey 5 bed single dwelling with basement with existing external walls and internal party wall retained at 20 Albion Place, following demolition of existing 4 storey building with basement 21-26 Albion Place and partial demolition of 20 Albion Place, together with external alterations to 20 Albion Place, alterations and extension to roof and alterations to parking arrangement at rear	N/A	2.42	N/A	Decided	14/10/2019	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
36	F/TH/19/1231	Thanet	Land northeast of The Length St Nicholas at Wade BIRCHINGTON Kent	626943	166580	No	Yes	No	Erection of 34No. dwellings, together with associated landscaping, parking and access.	N/A	4.47	N/A	Decided	11/09/2019	1	No. Nature, scale and location of development not likely to generate significant cumulative effects

37	F/TH/19/1025	Thanet	The Orb Inn 243 Ramsgate Road MARGATE Kent CT9 4EU	635940	169186	No	Yes	No	Erection of 10No 2 bed flats, 2No 3 bed maisonettes and 2No 1 bed flats with associated access, parking and landscaping following demolition of existing building	N/A	5.34	N/A	Decided	25/07/2019	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
38	F/TH/19/0889	Thanet	Former Westonville Garage Canterbury Road MARGATE Kent	634307	170442	No	Yes	No	Erection of a part 3-storey, part 4-storey, and part 5-storey building comprising 15no. 2-bed self-contained flats and 3no. 1-bed self-contained flats, with basement parking	N/A	6.26	N/A	Decided	26/06/2019	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
39	F/TH/19/0813	Thanet	Land formerly used as Club Union Convalescent Home Reading Street BROADSTAIRS Kent	638742	169649	No	Yes	No	Erection of 24no. dwellings with associated vehicular access from Reading Street and Convent Road, pedestrian access from Astor Road, parking and landscaping	N/A	6.44	N/A	Decided	12/06/2019	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
40	F/TH/19/0663	Thanet	St Peters Prestbytery 117 Canterbury Road Westgate on Sea Kent CT8 8NW	632328	169734	No	Yes	No	Erection of a four storey building for a mixed use development comprising 751 sq m of commercial office use on the ground floor (use class B1) together with 2No one-bedroom, 8No two-bedroom and 4No three-bedroom apartments on first, second and third floors (use class C3) with associated parking, access and landscaping following demolition of existing building.	N/A	5.66	N/A	Decided	15/05/2019	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
41	F/TH/19/0497	Thanet	Land on the south side of Dane Road MARGATE Kent	636052	170789	No	Yes	No	Erection of 2no. 3/4 storey buildings to accommodate 39No. 2-bed and 9No. 1-bed self-contained flats, with associated parking, landscaping, and vehicular access onto Dane Road	N/A	6.90	N/A	Decided	10/04/2019	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
42	F/TH/19/0438	Thanet	Land between Manston Road and Preston Road, Adjoining Manston Green Industries Manston Ramsgate Kent	634719	166319	No	Yes	No	Mixed use residential and business development comprising 28 dwellings, (24no. 3-bed and 4no. 4-bed), 1,013sqm of office floor space (Use Class B1) and a detached building incorporating a shop and cafe, together with associated access roads, paths and vehicle parking	N/A	2.24	N/A	Decided	03/04/2019	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
43	F/TH/19/0323	Thanet	Land on the north side of Stirling Way RAMSGATE Kent	636366	166584	No	Yes	No	Erection of 23no. 2 storey dwellings and a 3-storey building accommodating 15No. self-contained flats together with associated parking and landscaping	N/A	2.97	N/A	Awaiting decision	12/03/2019	1	No. Nature, scale and location of development not likely to generate significant cumulative effects

44	**F/TH/19/0173**	**Thanet**	**Hoo Farm 147 Monkton Road Minster RAMSGATE Kent CT12 4JB**	**629864**	**164902**	**No**	**Yes**	**No**	**Erection of 23 no. dwellings following the demolition of existing buildings, with associated parking, open space and landscaping.**	**N/A**	**1.56**	**N/A**	**Decided**	**12/02/2019**	**1**	**Yes**
45	F/TH/18/1755	Thanet	19 Royal Road RAMSGATE Kent CT11 9LE	637819	164589	No	Yes	No	Erection of 9no. 3-storey 3-bed terraced dwellings, conversion and external alterations to former chapel to 5no. 2 bed self-contained flats, including insertion of windows and doors, together with associated landscaping following demolition of existing extensions and buildings to rear	N/A	1.66	N/A	Decided	02/01/2019	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
46	F/TH/18/1717	Thanet	Bowling Centre Ethelbert Crescent MARGATE Kent CT9 2DY	636168	171294	No	Yes	No	Erection of a five storey building to accommodate 10No 2 Bed and 3No 3 Bed self-contained flats together with altered fire escape route and exit doors via Cliftonville Court following part demolition of existing bowling alley	N/A	7.42	N/A	Decided	18/12/2018	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
47	F/TH/18/1665	Thanet	25 Osborne Road BROADSTAIRS Kent CT10 2AF	639005	167759	No	Yes	No	Erection of 2no. 3-storey buildings containing 10no. 2-bed self contained flats, and erection of 1no. 2-storey 3-bed dwelling, with associated parking following demolition of existing building	N/A	4.85	N/A	Decided	07/12/2018	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
48	F/TH/18/1655	Thanet	Fairfield Manor Fairfield Road BROADSTAIRS Kent CT10 2JY	638082	167661	No	Yes	No	Erection of 1No. five-storey building and 1No. four-storey building with basement/undercroft parking, containing 56 No. self-contained flats (37 x 2 bed and 19 x 1 bed) together with new vehicle access from Fairfield Road, associated works and landscaping, following demolition of existing care home.	N/A	4.35	N/A	Decided	05/12/2018	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
49	F/TH/18/1109	Thanet	14 Suffolk Avenue Westgate on Sea Kent CT8 8JG	631935	169359	No	Yes	No	Change of use from light industrial (use class B2) to residential (use class C3) with erection of 12No. 2 bedroom dwellings, 8no. 2 bedroom maisonettes, and 3No. 1 bedroom dwellings, with associated parking and landscaping, following demolition of existing office building, showroom buildings and manufacturing/storage buildings	N/A	5.27	N/A	Decided	02/08/2018	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
50	F/TH/18/1038	Thanet	The Elms Social Club Elms Avenue RAMSGATE Kent CT11 9BD	637974	164819	No	Yes	No	Erection of 5-storey building with part single storey, to accommodate 12No 2-bed flats, 2No 3-bed maisonettes and function room (sui-generis) with associated parking and access following demolition of existing club house	N/A	1.92	N/A	Decided	19/07/2018	1	No. Nature, scale and location of development not likely to generate significant cumulative effects

51	F/TH/18/0642	Thanet	8 Beach Avenue BIRCHINGTON Kent CT7 9JS	629858	169552	No	Yes	No	Erection of a three-storey building to provide 12No two-bedroom flats with access and parking following demolition of existing bungalow	N/A	5.77	N/A	Decided	03/05/2018	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
52	F/TH/18/0568	Thanet	Land on the west side of Nash Court Road MARGATE Kent	635655	169320	No	Yes	No	Erection of 10No 3 and 4 Bedroom Houses with associated parking	N/A	5.38	N/A	Decided	20/04/2018	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
53	F/TH/18/0430	Thanet	Land rear of 163 To 173 Pegwell Road RAMSGATE Kent	636424	164480	No	Yes	No	Erection of 9No 4 bedroom dwellings and 1No 5 bedroom dwelling with associated parking and access	N/A	0.86	N/A	Decided	23/03/2018	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
54	F/TH/18/0145	Thanet	Former Holly Tree PH and the Old Coach House 382 and 392 Northdown Road MARGATE Kent CT9 3PG	637370	170679	No	Yes	No	Erection of a part 3 part 4 storey building comprising 24 No 2 bed and 11 No 1 bed flats and micro-pub together with 3 No detached dwellings with associated parking and landscaping following demolition of existing fire damaged remains of the Holly Tree PH (No 382) and The Old Coach House (No 392)	N/A	7.12	N/A	Decided	26/01/2018	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
55	F/TH/18/0142	Thanet	Land formerly used as Club Union Convalescent Home Reading Street BROADSTAIRS Kent	638990	169560	No	Yes	No	Erection of 25no. dwellings, with associated vehicular access from Reading Street and Convent Road, pedestrian access from Astor Road, with off street parking and landscaping	N/A	6.45	N/A	Decided	25/01/2018	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
56	F/TH/17/1788	Thanet	Land northwest of former Seabathing Hospital Canterbury Road MARGATE Kent	634386	170446	No	Yes	No	Erection of 10No 2 bedroom dwellings with associated parking, access and landscaping.	N/A	6.26	N/A	Decided	20/12/2017	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
57	F/TH/17/1508	Thanet	81 - 85 High Street RAMSGATE Kent	638122	165124	No	Yes	No	Erection of a 4 storey building to provide 6No. 1 bedroom and 8No 2 bedroom self contained flats	N/A	2.23	N/A	Decided	10/10/2017	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
58	F/TH/17/1407	Thanet	Dane Valley Arms Dane Valley Road MARGATE Kent CT9 3RZ	637160	637160	No	Yes	No	Redevelopment of site for the erection of two,three and four storey buildings containing 5no. 1-bed flats, 5no. 2-bed flats, 5no. 3-bed houses, 2no. 4-bed houses with associated parking,	N/A	5.96	N/A	Decided	22/09/2017	1	No. Nature, scale and location of development not likely to generate significant

									bin and cycle storage, together with micro pub on the ground floor following demolition of existing buildings							cumulative effects
59	F/TH/17/1231	Thanet	Fard Industries Limited 237 Ramsgate Road MARGATE Kent CT9 4BL	635913	169223	No	Yes	No	Erection of 2No. buildings containing 13no. 2-bed flats and 1no. 3-bed flat following demolition of existing garage	N/A	5.37	N/A	Decided	21/08/2017	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
60	F/TH/17/1125	Thanet	7 - 9 Addington Road MARGATE Kent CT9 1NH	635668	170790	No	Yes	No	Erection of part three, part four storey building comprising 12No. 2-bed flats together with erection of rear boundary wall and single storey bin store enclosures	N/A	6.80	N/A	Decided	28/07/2017	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
61	F/TH/21/0801	Thanet	Land north of Maple Leaf Business Park Maple Leaf Business Park Monkton Kent	631583	166375	No	Yes	No	Erection of 16no. general industrial units (Use Class B2) with associated parking and access	N/A	2.29	N/A	Decided	18 /05/2021	1	No. nature, scale and location of development not likely to generate significant cumulative effects
62	R/TH/20/1733	Thanet	Garden Cottage Minster Road Monkton RAMSGATE Kent CT12 4BA	631132	166345	No	Yes	No	Application for reserved matters for appearance and landscaping pursuant to outline application ref: TH/20/1051 as a variation of condition 5 attached to Planning Permission OL/TH/19/0290, for the erection of a perfumery manufacturing facility, offices, warehousing, associated parking and site access, following demolition of existing dwelling	N/A	2.34	N/A	Decided	16/12/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
63	F/TH/20/0616	Thanet	Land west of Invicta Way Ramsgate Kent	631274	166403	No	Yes	No	Erection of 22 No two storey mixed use commercial units	N/A	2.36	N/A	Decided	12/05/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
64	F/TH/20/0303	Thanet	Land east of Columbus Avenue RAMSGATE Kent	631546	166392	No	Yes	No	Erection of 26No. general industrial units, associated parking and access road.	N/A	2.31	N/A	Decided	27/07/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
65	OL/TH/19/0290	Thanet	Garden Cottage Minster Road Monkton RAMSGATE Kent CT12 4BA	631132	166345	No	Yes	No	Outline application for the erection of a perfumery manufacturing facility, offices, warehousing, associated parking and site access including layout and scale, following demolition of existing dwelling	N/A	2.34	N/A	Decided	05/03/2019	1	No. nature, scale and location of development not likely to generate significant cumulative effects
66	F/TH/18/1747	Thanet	Land east of Columbus Avenue RAMSGATE Kent	631546	166392	No	Yes	No	Erection of 35No. general industrial units, associated parking and access road.	N/A	2.31	N/A	Decided	21/12/2018	1	No. nature, scale and location of development not

															likely to generate significant cumulative effects
67	F/TH/18/1185	Thanet	Land east of Columbus Avenue RAMSGATE Kent	631546	166392	No	Yes	No	Erection of 18No. general industrial units, associated parking and access road	N/A	2.31	N/A	Decided	21/08/2018	1	No. nature, scale and location of development not likely to generate significant cumulative effects
68	F/TH/18/0637	Thanet	Land west of Invicta Way Ramsgate Kent	631274	166403	No	Yes	No	Erection of 2 storey building for manufacturing timber products (use class B2)	N/A	2.36	N/A	Decided	02/05/2018	1	No. Nature and scale of development not likely to generate significant cumulative effects
69	F/TH/18/0549	Thanet	Lockwoods Yard The Grove Westgate On Sea Kent CT8 8AS	632637	169969	No	Yes	No	Erection of part two storey/part three storey/part four storey 1200 sqm extension of light industrial use (Class B1) to the Eastern and Northern perimeters with associated parking and landscaping together with the demolition of the existing paint store.	N/A	5.91	N/A	Decided	18/04/2018	1	No. nature, scale and location of development not likely to generate significant cumulative effects
70	F/TH/18/0093	Thanet	Land on west side of the Loop Manston Ramsgate Kent	631620	166513	No	Yes	No	Erection of 9No. industrial units, together with associated external works	N/A	2.43	N/A	Decided	16/01/2018	1	No. nature, scale and location of development not likely to generate significant cumulative effects
71	F/TH/17/1756	Thanet	Land west of Invicta Way Ramsgate Kent	631260	166392	No	Yes	No	Erection of a concrete batching plant with workshop, office, storage units and concrete bays associated parking (Phase 1) together with erection of 10 commercial units with associated parking (Phase 2)	N/A	2.35	N/A	Decided	12/12/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects
72	F/TH/17/1589	Thanet	Land east of Columbus Avenue RAMSGATE Kent	631457	166411	No	Yes	No	Erection of 19No. general industrial units, associated parking and access road.	N/A	2.34	N/A	Decided	30/10/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects
73	F/TH/17/1169	Thanet	Land east of Columbus Avenue RAMSGATE Kent	631457	166411	No	Yes	No	Erection of 3No. general industrial units, 1No two storey office unit, access road and associated parking.	N/A	2.34	N/A	Decided	09/08/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects
74	F/TH/17/1056	Thanet	Mushroom Farm Manston Road MARGATE Kent CT9 4LT	633711	166856	No	Yes	No	Change of use of land and existing buildings along with the erection of 4No industrial buildings for mixed use as use classes B1, B2 and B8 with associated landscaping bund and car parking areas.	N/A	2.68	N/A	Decided	18/07/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects
75	F/TH/17/1063	Thanet	Land east of Columbus Avenue RAMSGATE Kent	631409	166428	No	Yes	No	Erection of 22 No. general industrial units, associated parking and access road.	N/A	2.36	N/A	Decided	18/07/2017	1	No. nature, scale and location of development not

															likely to generate significant cumulative effects
76	OL/TH/20/1435	Thanet	Land at New Haine Road RAMSGATE Kent	636231	167041	No	Yes	No	Hybrid application for outline permission (phase 2) for the erection of 54no. commercial units (Use Class E(g)), with all matters reserved, except access and; full application (phase 1) for the erection of up to 132no. commercial units (Use Class E(g)), and cafe (Use Class E(b)), within 1no. 2-storey building and 2no. part 2-storey, part 3-storey buildings, with associated parking and landscaping, and vehicular access onto New Haine Road.	N/A	3.43	N/A	Decided	27/10/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
77	F/TH/22/0824	Thanet	Chapel House Thorne Hill Minster RAMSGATE Kent CT12 5DS	633370	164922	No	Yes	No	Variation of condition 10 of planning permission F/TH/21/0965 for the "Change of use of existing main building to wedding/function venue with accommodation together with associated development including; erection of single storey pitched roof function room, together with erection of 8no. single storey guest / visitor lodges, formation of parking area, alteration to access (north), associated operational development, including alterations to existing buildings and landscaping" to allow alterations to opening hours Open for comment icon	N/A	0.85	N/A	Awaiting decision	15/06/2022	1	No. Nature and scale of development not likely to generate significant cumulative effects
78	F/TH/22/0732	Thanet	53 - 57 High Street MARGATE Kent CT9 1DX	635319	170866	No	Yes	No	Change of use from retail (Use Class E(a)) to a digital technology and education campus (Use Class F1a) with ancillary cafe facilities and co-working / studio space, cycle storage, refuse storage together with installation of plant at roof level, and elevational refurbishments Open for comment icon	N/A	6.80	N/A	Awaiting decision	25/05/2022	1	No. Nature and scale of development not likely to generate significant cumulative effects
79	**F/TH/22/0579**	**Thanet**	**Richborough Energy Park Sandwich Road RAMSGATE Kent CT13 9NL**	**633242**	**162232**	**No**	**Yes**	**No**	**Extension of electricity battery storage facility to provide additional 249mw capacity including electrical plant and equipment, alterations to land levels, landscaping and associated works, following removal of existing wind turbine, site clearance and levelling Open for comment icon**	**N/A**	**0.68**	**N/A**	**Awaiting decision**	**22/04/2022**	**1**	**Yes**
80	F/TH/22/0051	Thanet	Land adjacent to Birchington Vale Caravan Park Shottendane Road Birchington Kent	632307	168091	No	Yes	No	Change of use of land for the stationing of static holiday caravans and associated works Open for comment icon	N/A	4.02	N/A	Awaiting decision	13/01/2022	1	No. nature, scale and location of development not likely to generate significant

																cumulative effects
81	F/TH/21/1480	Thanet	Queen Elizabeth the Queen Mothers Hospital St Peters Road MARGATE Kent CT9 4AN	635927	169647	No	Yes	No	Erection of a single storey front extension with ramp, two storey inner courtyard extension, creation of new car park adjacent to existing staff car park and Nightingales, reconfiguration of existing car parks with new crossing and associated landscaping	N/A	5.78	N/A	Decided	21/09/2021	1	No. Nature and scale of development not likely to generate significant cumulative effects
82	F/TH/21/1099	Thanet	Land on the northwest side of Star Lane MARGATE Kent	636043	168026	No	Yes	No	Variation of condition 2 of planning permission F/TH/19/1310 for the erection of a three storey building to accommodate a 78 bed care home (use class C2) include landscaping, access and car parking, to allow for alterations to external materials, parking provision, site layout, and internal configuration.	N/A	4.30	N/A	Decided	12/07/2021	1	No. nature, scale and location of development not likely to generate significant cumulative effects
83	F/TH/21/0965	Thanet	Chapel House Thorne Hill Minster RAMSGATE Kent CT12 5DS	633373	164919	No	Yes	No	Change of use of existing main building to wedding/function venue with accommodation together with associated development including; erection of single storey pitched roof function room, together with erection of 8no. single storey guest / visitor lodges, formation of parking area, alteration to access (north), associated operational development, including alterations to existing buildings and landscaping.	N/A	0.85	N/A	Decided	15/06/2021	1	No. Nature and scale of development not likely to generate significant cumulative effects
84	F/TH/20/1296	Thanet	Hornby Hobbies Unit H1 - H2 Enterprise Road MARGATE Kent CT9 4JX	636248	168653	No	Yes	No	Change of use of warehouse (Building H2) and part of Hornby factory building (Building H1) (Use Classes B1, B2 and B8) to museum (Use Class F.1) with associated car parking, following alterations to red bricked building to create main entrance with lantern extension to roof and ramped access, following demolition of security building, alterations to windows within warehouse building to include glazed doors and addition of polycarbonate panelling, addition of ramp and stairs to front to access lower ground level exhibition space and cafe area, installation of louvres on rear and side elevations of Hornby factory building to provide ventilation for car park	N/A	4.96	N/A	Decided	29/09/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects

85	F/TH/20/1065	Thanet	Land on the northwest side of Star Lane MARGATE Kent	636055	168057	No	Yes	No	Variation of condition 2 of planning permission F/TH/19/1310 for the erection of a three storey building to accommodate a 78 bed care home (use class C2) include landscaping, access and car parking to allow reduction in units from 78 to 75 and associated works to design and layout	N/A	4.33	N/A	Decided	17/08/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
86	F/TH/20/0714	Thanet	Margate Football Ground Hartsdown Road MARGATE Kent CT9 5QZ	634872	170003	No	Yes	No	Erection of 120 bed hotel and ancillary facilities including restaurant, new stands, studio spaces, cafe, club shop, club offices and car parking	N/A	5.87	N/A	Decided	03/06/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
87	F/TH/20/0657	Thanet	Former Police Station and former Magistrates Court House Cavendish Street RAMSGATE Kent	638211	164978	No	Yes	No	Erection of bin store, cycle store and 2no. cycle racks, substation and enclosure, and water tank	N/A	2.21	N/A	Decided	19/05/2020	1	No. Nature and scale of development not likely to generate significant cumulative effects
88	F/TH/19/1310	Thanet	Land on the northwest side of Star Lane MARGATE Kent	636080	168040	No	Yes	No	Erection of a three storey building to accommodate a 78 bed care home (use class C2) include landscaping, access and car parking	N/A	4.33	N/A	Decided	30/09/2019	1	No. Nature and scale of development not likely to generate significant cumulative effects
89	F/TH/19/1291	Thanet	Birchington Vale Caravan Park Shottendane Road Birchington Kent CT7 0HD	632310	168112	No	Yes	No	Change of use of land from touring and tent camping area to stationing of static caravans and associated works	N/A	4.04	N/A	Decided	26/09/2019	1	No. nature, scale and location of development not likely to generate significant cumulative effects
90	F/TH/19/0959	Thanet	Queen Elizabeth the Queen Mothers Hospital Ramsgate Road MARGATE Kent CT9 4BG	635931	169645	No	Yes	No	Installation of ground mounted 400kW solar array to the north east of The Nightingales	N/A	5.77	N/A	Decided	09/07/2019	1	No. nature, scale and location of development not likely to generate significant cumulative effects
91	F/TH/18/1593	Thanet	16 - 22 Godwin Road MARGATE Kent CT9 2HG	636493	171135	No	Yes	No	Change of use to Hotel (use class C1) together with the erection of third floor rear extensions and replacement roof Open for comment icon	N/A	7.36	N/A	Awaiting decision	15/11/2018	1	No. Nature and scale of development not likely to generate significant cumulative effects
92	F/TH/18/1053	Thanet	43 - 49 Marine Terrace MARGATE Kent	635038	170615	No	Yes	No	Erection of 124 bedroom hotel (use class C1) with associated restaurant/bar, gymnasium, meeting spaces, and rooftop bar together with 1No retail/restaurant (use classes A1/A3) at ground floor following demolition of existing buildings	N/A	6.50	N/A	Decided	24/07/2018	1	No. Nature and scale of development not likely to generate significant cumulative effects
93	F/TH/18/0507	Thanet	Hartsdown Academy George V Avenue MARGATE Kent CT9 5RE	634453	169915	No	Yes	No	Erection of part two/part three storey teaching block together with single storey extension to sports hall with associated	N/A	5.74	N/A	Decided	09/04/2018	1	No. nature, scale and location of development not likely to generate

									ancillary works and landscaping following demolition of 5 existing buildings.							significant cumulative effects
94	F/TH/18/0432	Thanet	Land Adjacent Birchington Vale Caravan Park Shottendane Road Birchington Kent	632304	168111	No	Yes	No	Change of use of land for the stationing of static holiday caravans and associated works	N/A	4.04	N/A	Decided	26/03/2018	1	No. nature, scale and location of development not likely to generate significant cumulative effects
95	F/TH/18/0291	Thanet	Bethesda Medical Centre Palm Bay Avenue MARGATE Kent CT9 3NR	637076	171378	No	Yes	No	Erection of extensions to enlarge existing medical centre to provide medical and community facilities comprising a two storey extension to front of existing building with alterations to entrance, a two-storey extension to eastern end of building with plant room within roof, installation of solar panels to roof slopes and creation of new pedestrian and vehicular access, together with 46 parking spaces to front and rear and use of adjacent land for the provision of an additional 54 spaces, with associated structures, enclosures and landscaping.	N/A	7.78	N/A	Decided	27/02/2018	1	No. nature, scale and location of development not likely to generate significant cumulative effects
96	F/TH/17/1662	Thanet	Margate Football Ground Hartsdown Road MARGATE Kent CT9 5QZ	634876	170009	No	Yes	No	Application for the removal of condition 1 of planning consent F/TH/11/0428 The erection of mixed use development, comprising a football stadium, an 80 bed hotel, fitness club, children's club, children's play area, theme bar, conference and banqueting suites, hospitality boxes, admin offices, boardroom for the football club, 10 five a sides & one full size all weather pitch & associated parking and landscaping	N/A	5.88	N/A	Decided	17/11/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects
97	F/TH/17/1397	Thanet	Dock Hereditament and Premises Port of Ramsgate Royal Harbour Approach Ramsgate Kent CT11 9FT	637834	164204	No	Yes	No	Change of use of land to a 90 space lorry and coach park for a temporary period of 24 months	N/A	1.48	N/A	Decided	21/09/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects
98	F/TH/17/1145	Thanet	29 Ethelbert Crescent MARGATE Kent CT9 2DU	636287	171309	No	Yes	No	Erection of seven storey hotel (C1 Use Class), comprising 117no. bedrooms, restaurant provision on the ground floor, and basement parking	N/A	7.47	N/A	Decided	02/08/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects
99	F/TH/17/1141	Thanet	Former Ramsgate Swimming Pool Newington Road RAMSGATE Kent CT11 0QX	637026	165463	No	Yes	No	Variation of conditions 2, 6 and 13 of planning approval F/TH/15/0006 'Erection of 2 storey fire station and training centre, with associated 2 storey training structures and vehicular parking following demolition of	N/A	1.92	N/A	Decided	02/08/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects

									existing building' to allow for alterations to boundary treatment, together with provision and use of an emergency generator.							
100	**22/00245**	**Dover**	**Goshall Valley East Street Ash Kent**	**630074**	**158743**	**No**	**Yes**	**No**	**Environmental Impact Assessment - Scoping Opinion for a proposed solar farm**	**N/A**	**3.79**	**N/A**	**Scoping**	**01/04/2022**	**2**	**Yes**
101	22/00205	Dover	Land on the south side of Archers Court Road Whitfield Kent	630786	145209	No	Yes	No	Outline application for the erection of up to 28 dwellings (30% affordable) (with all matters reserved except access) (including demolition of 14 Archers Court Road)	N/A	16.86	N/A	Awaiting decision	26/01/2022	1	No. nature, scale and location of development not likely to generate significant cumulative effects
102	22/00366	Dover	Semmering the Avenue Temple Ewell CT16 3AW	629063	144389	No	Yes	No	Erection of a two storey building with ground floor car port/home office and first floor annexe for ancillary use with associated parking	N/A	17.87	N/A	Decided	11/03/2022	1	No. nature, scale and location of development not likely to generate significant cumulative effects
103	PE/18/00139	Dover	Site at Barwick Road Dover CT17 0TJ	629841	142025	No	Yes	No	Erection of 210 dwellings	N/A	20.11	N/A	Unknown	Unknown		No. Proposed development is outside the ZOI
104	19/00615	Dover	Lydden Hill Race Circuit Wootton CT4 6ET	623846	146876	No	Yes	No	Demolition of existing Circuit Offices and erection of replacement building comprising VIP Centre and additional use of the circuit for non-race activities and construction of new access road from existing access in Geddinge Lane	N/A	17.19	N/A	Unknown	Unknown	1	No. nature, scale and location of development not likely to generate significant cumulative effects
105	17/00602	Dover	Shelvin Farm Shelvin Wootton CT4 6RL	622680	147510	No	Yes	No	Erection of an agricultural multi-purpose building	N/A	17.20	N/A	Decided	19/05/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects
106	20/00679	Dover	Land on the northwest side of Archers Court Road Whitfield Kent	630859	145360	No	Yes	No		N/A	16.70	N/A	Decided	09/09/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
107	22/00029	Dover	Phase 1C Whitfield Urban Extension Archers Court Road Whitfield	630899	145311	No	Yes	No	Reserved Matters application for the approval of layout, scale, landscaping, internal access arrangements and appearance for 249 dwellings pursuant to outline planning Permission DOV/10/01010	N/A	16.75	N/A	Awaiting decision	10/01/2022	1	No. nature, scale and location of development not likely to generate significant cumulative effects
108	**20/00540**	**Dover**	**Field southwest of Solton Manor Farm the Lane Guston Kent**	**630899**	**145311**	**No**	**Yes**	**No**	**Request for EIA Screening Opinion for proposed solar farm**	**N/A**	**16.75**	**N/A**	**Decided**	**22/05/2020**	**2**	**Yes**

109	19/01241	Dover	Woodpecker Court 45 Wigmore Lane Eythorne CT15 4BF	628126	149994	No	Yes	No	Retrospective application for the change of use of land and the erection of 5no. buildings for use as 2no. classrooms, tool and machine storage, toilet block, including change of use of adjacent land for educational use and erection of a woodland classroom (updated documentation and amended description)	N/A	12.63	N/A	Decided	09/10/2019	1	No. nature, scale and location of development not likely to generate significant cumulative effects
110	20/00179	Dover	Site of former Snowdown Colliery Sandwich Road Snowdown Kent	628697	150092	No	Yes	No	Environmental Impact Assessment: Mixed Use Development	N/A	12.37	N/A	Decided	19/02/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
111	21/00340	Dover	Manor Farm Willow Woods Road Little Mongeham Deal Kent CT14 0HR	633277	150984	No	Yes	No	Screening opinion - proposed creation of an airfield, ancillary buildings and glamping pods	N/A	11.12	N/A	Decided	28/02/2021	1	No. nature, scale and location of development not likely to generate significant cumulative effects
112	21/00255	Dover	Land opposite 423 To 459 Dover Road Walmer	636611	149585	No	Yes	No	Reserved Matters application pursuant to Outline permission DOV/17/00487 for the details of appearance, landscaping, layout and scale for the erection of 85 dwellings	N/A	12.85	N/A	Decided	17/02/2021	1	No. nature, scale and location of development not likely to generate significant cumulative effects
113	21/01683	Dover	Site at cross Road Deal CT14 9LA	636146	150562	No	Yes	No	Reserved matters application for the details of layout, scale, landscaping and appearance for the erection of 100 dwellings pursuant to outline planning permission DOV/20/01125	N/A	11.86	N/A	Awaiting decision	02/11/2021	1	No. nature, scale and location of development not likely to generate significant cumulative effects
114	21/01822	Dover	Land on the West Side Of Cross Road Deal CT14 9LA	636138	150560	No	Yes	No	Outline planning application for the erection of up to 140 dwellings including affordable housing, with public open space, landscaping, and vehicular access (all matters reserved except for access)	N/A	11.86	N/A	Awaiting decision	02/11/221	1	No. nature, scale and location of development not likely to generate significant cumulative effects
115	19/00895	Dover	Land to the rear of Freemens Way Freemens Way Deal	636799	151286	No	Yes	No	Erection of 88 no. dwellings, equipped play area, sports field with 8 no. 15m high lighting columns, erection of club house, associated car parking, hard and soft landscaping (amended documents)	N/A	11.16	N/A	Decided	24/07/2019	1	No. nature, scale and location of development not likely to generate significant cumulative effects
116	PE/18/00082	Dover	Land off Sandwich Road Sholden Deal	634501	153742	No	Yes	No	Erection of 300-400 dwellings, provision of formal and informal open space, new boundary landscaping.	N/A	8.66	N/A	Decided	19/02/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
117	20/00180	Dover	Land at Betteshanger Park Sandwich Road Sholden Deal CT14 0BF	635257	153995	No	Yes	No	Request for EIA Screening Opinion	N/A	8.48	N/A	Decided	19/02/2020	1	No. nature, scale and location of development not likely to generate significant

															cumulative effects
118	PE/18/00149	Dover	The Old Lorry Farm Shop Sandwich Road Hacklinge Northbourne Deal CT14 0AR	634553	153697	No	Yes	No	Creation of a holiday park with associated access, landscaping and parking.	N/A	8.72	N/A	Unknown	Unknown	1	No. nature, scale and location of development not likely to generate significant cumulative effects
119	21/00504	Dover	Land at Gore Lane Eastry Kent	630482	154918	No	Yes	No	Reserved matters application for the details of, internal access, appearance, landscaping, layout, and scale for the erection of 50no. dwellings and the discharge of conditions 6, 7, 9, 10, 12, 13, 14, 24 and 30 pursuant to Outline application DOV/19/00574.	N/A	7.26	N/A	Decided	30/03/2021	1	No. nature, scale and location of development not likely to generate significant cumulative effects
120	19/01362	Dover	Summerfield Nurseries Barnsole Road Staple CT3 1LD	627806	156255	No	Yes	No	Erection of 11no. detached dwellings, 6no. affordable houses, garages, cycle/bin stores, vehicular access and associated parking (existing buildings to be demolished)	N/A	7.07	N/A	Decided	08/11/2019	1	No. nature, scale and location of development not likely to generate significant cumulative effects
121	20/00439	Dover	Preston Village Hall Mill Lane Preston CT3 1HB	625133	160935	No	Yes	No	Erection of a village hall, creation of additional parking, bicycle parking, soft and hand landscaping and installation of new school safety barrier (existing village hall to be demolished)	N/A	5.26	N/A	Unknown	Unknown	1	No. nature, scale and location of development not likely to generate significant cumulative effects
122	21/01045	Dover	Land to the south of River Stour Ramsgate Road Sandwich Kent	615975	166541	No	Yes	No	Creation of a ground based photovoltaic solar farm, inverters, sub-stations, security fencing, access, infrastructure and associated works	N/A	14.33	N/A	Decided	25/06/2021	1	No. nature, scale and location of development not likely to generate significant cumulative effects
123	CA/22/00869	Canterbury	Land south of Greenhill Road Herne Bay Kent	615527	155390	No	Yes	No	Reserved matters application for the approval of appearance, landscaping, layout and scale for the erection of a single-storey community building, MUGA and sports playing pitches with associated car parking, earthworks, fencing, drainage and associated ancillary works pursuant to outline planning permission CA//17/02907/OUT.	N/A	16.34	N/A	Awaiting decision	20/04/2022	1	No. nature, scale and location of development not likely to generate significant cumulative effects
124	CA/22/00700	Canterbury	Land south and east of Nackington Road Canterbury Kent	617231	166678	No	Yes	No	Outline application for proposed residential development for up to 200 dwellings, open space and associated infrastructure, with all matters reserved apart from site access.	N/A	13.15	N/A	Awaiting decision	03/05/2022	1	No. nature, scale and location of development not likely to generate significant cumulative effects

125	CA/22/00577	Canterbury	Land at Herne Bay Golf Course Thanet Way A2990 Herne CT6 7PG	617213	166678	No	Yes	No	Non-material amendment to planning permission CA//18/02369/RES for the Application for approval of access, appearance, landscaping, layout and scale for phase 5, comprising 109 dwellings of the redevelopment of the former Herne Bay Golf Course pursuant to outline planning permission CA/16/00378/VAR; to allow condition 3 to be reworded so that the play area can be delivered prior to the occupation of the 60th dwelling on the phase.	N/A	13.17	N/A	Decided	14/03/2022	1	No. nature, scale and location of development not likely to generate significant cumulative effects
126	CA/22/00578	Canterbury	Herne Bay Golf Club Thanet Way Herne Bay Kent	620276	161894	No	Yes	No	Non-material amendment to planning permission CA/20/00101/RES for the Application for approval of access, appearance, landscaping, layout and scale for Phase 6A of the redevelopment of the former Herne Bay Golf Course pursuant to outline planning permission CA/16/00378/VAR; to allow condition 3 to be reworded so that the play area can be delivered prior to the occupation of the 55th dwelling on the phase.	N/A	9.71	N/A	Decided	28/03/2022	1	No. nature, scale and location of development not likely to generate significant cumulative effects
127	CA/21/02797	Canterbury	Land to the south of Island Road (A28) Former Chislet Colliery Hersden Westbere	612574	155941	No	Yes	No	Reserved matters application for phase 1 comprising access into the site together with associated infrastructure and landscaping pursuant to outline planning permission CA//16/00673/OUT.	N/A	18.77	N/A	Awaiting decision	18/11/2021	1	No. nature, scale and location of development not likely to generate significant cumulative effects
128	CA/21/02719	Canterbury	Land north of Cockering Road Thanington Without Kent	612561	155937	No	Yes	No	Application for the approval for access, appearance, layout and scale of phase 1 incorporating 60 dwellings of a mixed use development comprising up to 400 dwellings in a mix of sizes, types and tenures including affordable housing, up to 3,716 sqm of commercial space (use class B1), a community building or leisure centre (Use classes D1-D2) of up to 200 sqm, new highway infrastructure including spine road with accesses onto Milton Manor Road and Cockering Road and a network of internal roads, footpaths and cycle route, provision of no less than 18 hectares of open space, associated landscaping, utilities infrastructure, sustainable drainage system and earthworks. All matters reserved. pursuant to outline	N/A	18.78	N/A	Awaiting decision	09/11/2021	1	No. nature, scale and location of development not likely to generate significant cumulative effects

									planning permission CA//17/00519/OUT							
129	CA/21/02426	Canterbury	Land north of Thanet Way Whitstable Kent	609381	164221	No	Yes	No	Reserved Matters application for Phase 3 comprising 108 residential dwellings including affordable units and associated works, landscaping, parking, open space and servicing, pursuant to outline planning permission CA/15/01296	N/A	20.55	N/A	Decided	06/10/2021	1	No. Proposed development is outside the ZOI
130	CA/21/02244	Canterbury	Grasmere Gardens land south of the Ridgeway Chestfield	609388	164187	No	Yes	No	Application for the approval of appearance, landscaping, layout, scale and internal circulation for Phases 2 and 3 including the erection of 160 dwellings, 3,500 sqm of commercial floorspace, along with provision of all associated infrastructure, MUGA and parking, pursuant to outline planning permission CA//17/00469/OUT.	N/A	20.54	N/A	Decided	13/09/2021	Tier 1	No. Proposed development is outside the ZOI
131	CA/21/01798	Canterbury	Land at Cockering Road Thanington CT4 7BH	612959	166172	No	Yes	No	Application for the approval of appearance, landscaping, layout and scale pursuant to planning permission CA//18/00346/VAR for a 60 bed nursing home.	N/A	17.21	N/A	Awaiting decision	15/07/2021	1	No. nature, scale, and location of development not likely to generate significant cumulative effects
132	CA/21/01800	Canterbury	Strode Farm Lower Herne Road Herne Herne Bay Kent CT6 7NH	612607	155939	No	Yes	No	Reserved matters application for the approval of appearance, access, landscaping, layout and scale for development of Phase A consisting of 128 residential units, 207 square metres of commercial floorspace, and provision of the first phase of the Herne Relief Road, alongside the provision of all associated infrastructure, parking, servicing, landscaping, utilities, and open space, pursuant to outline planning permission CA/15/01317/OUT.	N/A	18.74	N/A	Decided	27/07/2021	1	No. nature, scale, and location of development not likely to generate significant cumulative effects
133	CA/21/01797	Canterbury	Land off Cockering Road Thanington	617402	165966	No	Yes	No	Application for the approval of appearance, landscaping, layout and scale pursuant to CA//18/00346/VAR, for the employment area comprising 4,000 sq metres of business use.	N/A	12.81	N/A	Awaiting decision	04/08/2021	1	No. nature, scale and location of development not likely to generate significant cumulative effects

134	CA/21/01597	Canterbury	Land off Cockering Road Thanington	612537	155944	No	Yes	No	Application for the approval of appearance, landscaping, layout and scale for phase 3 comprising 184 dwellings pursuant to outline planning permission CA/18//00346/VAR.	N/A	18.80	N/A	Awaiting decision	24/06/2021	1	No. nature, scale, and location of development not likely to generate significant cumulative effects
135	CA/21/01278	Canterbury	Land south of Greenhill Road Herne Bay Kent	612619	155975	No	Yes	No	Reserved matters application for the approval of site accesses from Thornden Wood Road and Greenhill Road and a connecting link road pursuant to outline planning permission CA//17/02907/OUT.	N/A	18.72	N/A	Decided	17/05/2021	1	No. nature, scale, and location of development not likely to generate significant cumulative effects
136	CA/21/01277	Canterbury	Land south of Greenhill Road Herne Bay Kent	615940	166545	No	Yes	No	Reserved matters application for the approval of appearance, access, landscaping, layout and scale for residential development consisting of 450 dwellings (including affordable), together with associated open space, drainage, infrastructure, earthworks and site accesses from Thornden Wood Road and Greenhill Road and a connecting link road pursuant to outline planning permission CA//17/02907/OUT.	N/A	14.37	N/A	Decided	17/05/2021	1	No. nature, scale, and location of development not likely to generate significant cumulative effects
137	CA/21/01244	Canterbury	Cockering Farm Cockering Road Thanington Without CT1 3UR	615924	166543	No	Yes	No	Application for the approval of reserved matters in relation to earthworks pursuant of conditions 1 and 10 for a mixed use development comprising up to 400 dwellings in a mix of sizes, types and tenures including affordable housing, up to 3,716 sqm of commercial space (use class B1), a community building or leisure centre (Use classes D1-D2) of up to 200 sqm, new highway infrastructure including spine road with accesses onto Milton Manor Road and Cockering Road and a network of internal roads, footpaths and cycle route, provision of no less than 18 hectares of open space, associated landscaping, utilities infrastructure, sustainable drainage system and earthworks. All matters reserved pursuant to outline planning permission CA//17/00519/OUT	N/A	14.38	N/A	Decided	13/05/2021	1	No. nature, scale and location of development not likely to generate significant cumulative effects
138	CA/21/01136	Canterbury	Hoplands Farm Island Road Hersden Canterbury Kent CT3 4HQ	613497	156018	No	Yes	No	Application for approval of reserved matters relating to access, appearance, landscaping, layout and scale for the provision of a Business Campus comprising approximately 5,400sqm (GIA)	N/A	17.89	N/A	Awaiting decision	04/05/2021	1	No. nature, scale and location of development not likely to generate significant cumulative effects

									pursuant to outline planning permission CA/16/00404/OUT.							
139	CA/21/00829	Canterbury	Land off Cockering Road Thanington	620710	161996	No	Yes	No	Application for approval of reserved matters of appearance, landscaping, layout and scale for Phase 2 for 210 dwellings pursuant to CA/18/00346 Variation of conditions 03 & 31 of planning permission CA/15/01479/OUT (outline permission for mixed use development of up to; 750 residential units, 4,000 m2 of business use, 1,000 m2 of retail/service uses, 5,000 m2 of residential institutions, including hospice and nursing home, 2,000 m2 of community and leisure uses; primary school; extended westbound slip road on the A2, accesses to Cockering Road; internal roads, footpaths and cycle routes; plus new planting and landscaping. All matters reserved except access).	N/A	9.27	N/A	Awaiting decision	08/04/2021	1	No. nature, scale and location of development not likely to generate significant cumulative effects
140	CA/21/00765	Canterbury	Land at and adjacent to Cockering Farm Thanington Without Canterbury	612573	155895	No	Yes	No	Application for approval of the reserved matter of access for the spine road pursuant to CA//17/00519/OUT outline application for a mixed use development comprising up to 400 dwellings in a mix of sizes, types and tenures including affordable housing, up to 3,716 sqm of commercial space (use class B1), a community building or leisure centre (Use classes D1-D2) of up to 200 sqm, new highway infrastructure including spine road with accesses onto Milton Manor Road and Cockering Road and a network of internal roads, footpaths and cycle route, provision of no less than 18 hectares of open space, associated landscaping, utilities infrastructure, sustainable drainage system and earthworks. All matters reserved pursuant to outline planning permission.	N/A	18.79	N/A	Awaiting decision	15/04/2021	1	No. nature, scale and location of development not likely to generate significant cumulative effects
141	CA/21/00158	Canterbury	Land at Hillborough south of Highfields Avenue Beltinge Herne Bay	612655	155933	No	Yes	No	Outline application for up to 350 dwellings and associated infrastructure with all matters reserved except access.	N/A	18.70	N/A	Awaiting decision	21/01/2021	1	No. nature, scale and location of development not likely to generate significant cumulative effects

142	CA/20/02826	Canterbury	Land at Sturry/Broad Oak Sturry	619553	167672	No	Yes	No	Outline application (with all matters reserved) for the development of up to 630 houses and associated community infrastructure comprising primary school, community building, public car park and associated amenity space, access, parking and landscaping; and detailed/full application for the construction of part of the Sturry Link Road and a local road from the Sturry Link Road to Shalloak Road.	N/A	11.29	N/A	Decided	14/12/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
143	CA/20/02627	Canterbury	Land at and adjacent to Cockering Farm Thanington Without Kent	616850	161179	No	Yes	No	Application for the approval of appearance, access, landscaping, layout and scale for phases 1 & 2 consisting of 176 dwellings together with new highway infrastructure, footpaths and cycle route, provision of public open space, associated landscaping, utilities infrastructure, sustainable drainage system and earthworks pursuant to outline planning permission CA/17/00519.	N/A	13.20	N/A	Awaiting decision	27/11/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
144	CA/20/02505	Canterbury	Land at Giles Lane Giles Lane Canterbury Kent CT2 7LR	612924	156166	No	Yes	No	The proposed development to provide 935 purpose-built student accommodation comprising 144 cluster flats, 1 double-bed unit and 132 studios, arranged in 5 blocks ranging from three to six storeys; replacement two-storey squash building, single-storey sports pavilion, new footpaths, highways improvements to include widening of Giles Lane, new access points off Giles Lane, provision of parking, cycle spaces and green infrastructure, following demolition of existing residential properties and office building.	N/A	18.36	N/A	Awaiting decision	10/11/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
145	CA/20/02436	Canterbury	Land north of Thanet Way Whitstable	613536	159543	No	Yes	No	Reserved Matters application for part Phase 1 and Phase 2 comprising 213 residential dwellings and associated works, landscaping, parking, open space and servicing, together with details of the strategic infrastructure (including roads, levels and drainage) within Phase 3, pursuant to outline planning permission CA/15/01296	N/A	16.76	N/A	Decided	10/11/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
146	CA/20/01878	Canterbury	Howe Barracks Littlebourne Road Canterbury	609328	164137	No	Yes	No	Application for approval of reserved matters relating to access, landscaping, scale, layout and appearance for the development of sports pitches, comprising a grass football pitch and 2 No. all weather 3G mini	N/A	20.60	N/A	Decided	26/08/2020	1	No. Proposed development is outside the ZOI

									soccer pitches and a neighbourhood equipped area of play with associated car parking, landscaping and earthworks pursuant to outline planning permission CA/14/01230/FUL.							
147	CA/20/01777	Canterbury	Land north of Cockering Road Thanington Land at and adjacent to Cockering Farm Thanington	617923	158140	No	Yes	No	Variation of conditions 6 (approved plans), 7 (phasing plan), 8 (masterplan), 11 (open Space Strategy) and 28 (Spine Road) of Outline planning permission CA//17/00519/OUT for a mixed use development comprising up to 400 dwellings, up to 3,716 sqm of commercial space, a community building or leisure centre of up to 200 sqm, new highway infrastructure including spine road with accesses onto Milton Manor Road and Cockering Road and a network of internal roads, footpaths and cycle route, and provision of no less than 18 hectares of open space; to allow relocation and alteration of the approved western access from roundabout to a T junction, together with associated re-alignment of the spine road.	N/A	12.99	N/A	Decided	17/08/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
148	CA/20/01680	Canterbury	Land off Cockering Road Thanington	612464	155867	No	Yes	No	Application for approval of reserved matters of access, appearance, landscaping, layout and scale for Phase 1B for 87 dwellings pursuant to CA//18/00346 Variation of conditions 03 & 31 of planning permission CA/15/01479/OUT (outline permission for mixed use development of up to; 750 residential units, 4,000 m2 of business use, 1,000 m2 of retail/service uses, 5,000 m2 of residential institutions, including hospice and nursing home, 2,000 m2 of community and leisure uses; primary school; extended westbound slip road on the A2, accesses to Cockering Road; internal roads, footpaths and cycle routes; plus new planting and landscaping. All matters reserved except access).	N/A	18.90	N/A	Decided	04/08/2020	Tier 1	No. nature, scale and location of development not likely to generate significant cumulative effects
149	CA/20/01369	Canterbury	Hoplands Farm Island Road Hersden Westbere CT3 4HQ	612374	155861	No	Yes	No	Application for approval of reserved matters relating to access, landscaping, scale, layout and appearance for the erection of medical centre with associated parking and landscaping, pursuant to outline planning permission CA/16/00404/OUT.	N/A	18.99	N/A	Decided	01/07/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects

150	CA/20/01188	Canterbury	Hoplands Farm Island Road Hersden Canterbury Kent CT3 4HQ	620044	161747	No	Yes	No	Application for approval of reserved matters for Phases 4 and 5 and part of Phase 3 relating to access, landscaping, scale, layout and appearance for the erection of 72 dwellings, including affordable housing, open space, ecological corridors, play area, allotments, parking, highways infrastructure, WWTW and utilities pursuant to outline planning permission CA/16/00404/OUT.	N/A	9.96	N/A	Decided	22/06/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
151	CA/20/00819	Canterbury	Pilgrims Hospice Saxon Fields	620623	161951	No	Yes	No	Application for approval of reserved matters of access, appearance, landscaping, layout and scale for: a two-storey building comprising a 16-bed hospice, day care and ancillary training facilities, ancillary storage buildings, associated parking and landscaping; pursuant to CA/18/00346/VAR.	N/A	9.36	N/A	Decided	17/04/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
152	CA/20/00678	Canterbury	Hoplands Farm Island Road Hersden Canterbury Kent CT3 4HQ	613787	158125	No	Yes	No	Application for the approval of reserved matters relating to access, appearance, landscaping, layout and scale for the creation of open space, playground and ecological area on phase 3 and part of phase 1a pursuant to outline planning permission CA//16/00404/OUT.	N/A	16.88	N/A	Decided	25/03/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
153	CA/20/00101	Canterbury	Herne Bay Golf Club Thanet Way Herne Bay Kent	620482	161963	No	Yes	No	Application for approval of access, appearance, landscaping, layout and scale for Phase 6A of the redevelopment of the former Herne Bay Golf Course pursuant to outline planning permission CA//16/00378/VAR.	N/A	9.50	N/A	Decided	15/01/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
154	CA/20/00074	Canterbury	Land at and adjacent to Cockering Farm Thanington	617048	168223	No	Yes	No	Variation of conditions 06 (approved plans) and 07 (phasing plan) of planning permission CA//17/00519/OUT for a mixed use development comprising up to 400 dwellings, up to 3,716 sqm of commercial space (use class B1), a community building or leisure centre (Use classes D1-D2) of up to 200 sqm, new highway infrastructure a network of internal roads, footpaths and cycle route. All matters reserved; to allow realignment of spine road and alterations to proposed Milton Manor Road junction.	N/A	13.82	N/A	Decided	10/01/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects

155	CA/19/10360	Canterbury	Land north of Thanet Way Thanet Way Whitstable Kent	612740	156260	No	Yes	No	Variation of condition 27 of planning permission CA/15/01296/OUT for outline planning application (with all matters reserved except for access) for the demolition of existing buildings and the erection of up to 400 dwellings including affordable housing, extension to Duncan Down, green infrastructure, multi-use games area, parking, access and associated infrastructure and other ancillary works to allow housing development to be carried out concurrently with the construction of the new roundabout.	N/A	18.50	N/A	Decided	11/12/2019	1	No. nature, scale and location of development not likely to generate significant cumulative effects
156	CA/19/10078	Canterbury	Hoplands Farm Island Road Hersden Canterbury Kent CT3 4HQ	609305	164049	No	Yes	No	Application for approval of reserved matters for part of Phase 2, relating to access, appearance, layout, landscaping and scale for the erection of apprenticeship centre (D1 use class) with associated external work area and parking, pursuant to outline planning permission CA/16/00404/OUT.	N/A	20.62	N/A	Decided	22/11/2019	1	No. Proposed development is outside the ZOI
157	CA/19/10015	Canterbury	Phase 3 Royal Parade Land at Howe Barracks Littlebourne Road Canterbury Kent	620957	161951	No	Yes	No	Application for the approval of appearance, access, landscaping, layout and scale for residential development consisting of 7 dwellings, together with allotments, associated parking, landscaping, earthworks and supporting infrastructure of reserved matters phase 3 of outline planning permission for the demolition of all but three of the Barracks buildings and the redevelopment of the site for up to 500 dwellings with new formal and informal public spaces and landscaping together with revised access from Littlebourne Road, new parking to Littlebourne Road and a road link connecting Littlebourne Road with Chaucer Road/Military Road, pursuant to outline planning permission CA/14/01230/FUL.	N/A	9.03	N/A	Awaiting decision	28/10/2019	1	No. nature, scale and location of development not likely to generate significant cumulative effects

158	CA/19/10011	Canterbury	Phase 3 Royal Parade Land at Howe Barracks Littlebourne Road Canterbury Kent	617582	157856	No	Yes	No	Application for the approval of appearance, access, landscaping, layout and scale for residential development consisting of 122 dwellings (including affordable housing), together with associated parking, landscaping, earthworks and supporting infrastructure of reserved matters phase 3 of outline planning permission for the demolition of all but three of the Barracks buildings and the redevelopment of the site for up to 500 dwellings with new formal and informal public spaces and landscaping together with revised access from Littlebourne Road, new parking to Littlebourne Road and a road link connecting Littlebourne Road with Chaucer Road/Military Road, pursuant to outline planning permission CA/14/01230/FUL.	N/A	13.41	N/A	Awaiting decision	28/10/2019	1	No. nature, scale and location of development not likely to generate significant cumulative effects
159	CA//19/02047	Canterbury	Land rear of 51 Rough Common Road Rough Common Harbledown CT2 9DL	617550	157855	No	Yes	No	Outline application for 34 no. dwellings, comprising of 7 no. self build plots, including access, enlargement of side and rear dormers along with alterations to front gable to existing property.	N/A	13.44	N/A	Decided	16/10/2019	1	No. nature, scale and location of development not likely to generate significant cumulative effects
160	CA//19/01777	Canterbury	Land off Cockering Road Thanington	612846	159328	No	Yes	No	Variation of conditions 01 (approved drawings) and 17 (samples of materials) of planning permission CA//17/02719/RES for the application for approval of Phase 1 reserved matters for appearance, landscaping, layout and scale for; 269 dwellings; 400 m2 of commercial (classes A1 - A5), 150 m2 cricket pavillion and associated pitch, areas of formal and informal open space, children's play areas and utlilities pursuant to outline planning permission CA/15/01479/OUT; to allow superseding of approved materials strategy plan.	N/A	17.48	N/A	Decided	12/09/2019	1	No. nature, scale and location of development not likely to generate significant cumulative effects
161	CA//19/01737	Canterbury	Howe Barracks Littlebourne Road Canterbury	612554	155907	No	Yes	No	Variation of condition 01 (drawings) of planning permission CA/17/00786/RES for the reserved matters application for the creation of parkland, including landscaping, footpaths/cycleways, parkland entrances, pond, SUDs feature, equipped play including other recreational equipment, picnic area, earthworks including earth mounding and sculpting,	N/A	18.80	N/A	Decided	30/08/2019	1	No. nature, scale and location of development not likely to generate significant cumulative effects

									associated parkland furniture and engineering works; to allow changes to lighting and tarmac appearance.							
162	CA//19/01463	Canterbury	Northgate Garage Northgate Canterbury CT1 1FW	617611	157852	No	Yes	No	Proposed erection of 35 self-contained flats with underground parking and access, following demolition of the existing building.	N/A	13.39	N/A	Awaiting decision	23/07/2019	1	No. nature, scale and location of development not likely to generate significant cumulative effects
163	CA//19/00765	Canterbury	Hoplands Farm Island Road Hersden CT3 4HQ	620920	161918	No	Yes	No	Application for approval of reserved matters relating to access, appearance, landscaping, layout and scale for the erection of 176 no. dwellings on Phases 1A, 1B and 3 pursuant to outline planning permission CA/16/00404/OUT.	N/A	9.07	N/A	Decided	25/04/2019	1	No. nature, scale and location of development not likely to generate significant cumulative effects
164	CA//19/00116	Canterbury	Parham Student Village: 8-13 Albert Mews 105 Sturry Road; 1-4 Riverdale House Sturry Road; 1-3 Parham Close Parham Road; 1-12 Becket Mews Parham Close	615855	158945	No	Yes	No	Change of use from existing student accommodation at 8-13 Albert Mews, 105 Sturry Road, Canterbury to C3 residential dwellings; change of use from existing student accommodation at 1-4 Riverdale House, Sturry Road, Canterbury to C3 residential dwellings; change of use from existing student accommodation at 1-3 Parham Close, Parham Road, Canterbury to C3 residential dwellings with alterations to convert two end terrace properties into 2 no. one-bedroom and 2 no. two-bedroom flats including new and amended door openings; and change of use from existing student accommodation at 1-12 Becket Mews, Parham Close to C3 residential dwellings.	N/A	14.66	N/A	Decided	21/01/2019	1	No. nature, scale and location of development not likely to generate significant cumulative effects
165	CA//18/02573	Canterbury	Howe Barracks Littlebourne Road Canterbury	615855	158945	No	Yes	No	Reserved matters application for the Ecology Corridor including the creation of new landscape and ecological features, community orchards and associated infrastructure and earthworks.	N/A	14.66	N/A	Decided	20/12/2018	Tier 1	No. nature, scale and location of development not likely to generate significant cumulative effects
166	CA//18/02369	Canterbury	Land at Herne Bay Golf Course Thanet Way A2990 Herne CT6 7PG	617602	157847	No	Yes	No	Application for approval of access, appearance, landscaping, layout and scale for phase 5, comprising 109 dwellings of the redevelopment of the former Herne Bay Golf Course pursuant to outline planning permission CA/16/00378/VAR.	N/A	13.40	N/A	Decided	22/11/2018	1	No. nature, scale and location of development not likely to generate significant cumulative effects

167	CA//18/01664	Canterbury	Land north of Thanet Way Whitstable	617791	166838	No	Yes	No	Reserved Matters application for Phase 1 comprising 138 residential dwellings and associated works, landscaping, parking, open space and servicing, together with details of the extension to Duncan Down including landscaping, multi-use games area and allotments.	N/A	12.66	N/A	Decided	15/08/2018	1	No. nature, scale and location of development not likely to generate significant cumulative effects
168	CA//18/01305	Canterbury	Land North of Popes Lane Sturry CT2 0JZ	609233	164016	No	Yes	No	Outline application for up to 140 dwellings including access.	N/A	20.69	N/A	Decided	25/06/2018	1	No. nature, scale and location of development not likely to generate significant cumulative effects
169	CA//18/00910	Canterbury	Howe Barracks Littlebourne Road Canterbury CT1 1TD	617483	161310	No	Yes	No	Phase 2 reserved matters including access, appearance, landscaping, layout and scale of planning permission CA/14/01230/FUL for residential development consisting of 200 dwellings (including affordable housing) together with associated parking, landscaping and supporting infrastructure.	N/A	12.56	N/A	Decided	16/05/2018	1	No. nature, scale and location of development not likely to generate significant cumulative effects
170	CA//18/00868	Canterbury	Broad Oak Farm Sweechgate Broad Oak Sturry CT2 0QR	616736	157743	No	Yes	No	Hybrid planning application comprising: detailed/full application for development of 456 residential dwellings comprising 402 houses and 54 flats, with associated open space, landscaping, car parking, access and other infrastructure (following demolition of 52 Shalloak Road, existing agricultural buildings and structures); and outline application (with all matters reserved) for development of a commercial area with up to 212sqm of Class A1 and up to 593sqm of Class B1 use.	N/A	14.24	N/A	Decided	08/05/218	1	No. nature, scale and location of development not likely to generate significant cumulative effects
171	CA//18/00346	Canterbury	Land off Cockering Road Thanington Without	616835	161463	No	Yes	No	Variation of conditions 03 & 31 of planning permission CA/15/01479/OUT (outline permission for mixed use development of up to; 750 residential units, 4,000 m2 of business use, 1,000 m2 of retail/service uses, 5,000 m2 of residential institutions, including hospice and nursing home, 2,000 m2 of community and leisure uses; primary school; extended westbound slip road on the A2, accesses to Cockering Road; internal roads, footpaths and cycle routes; plus new planting and landscaping. All matters reserved except access) to allow: relocation of; the employment area, the nursing home, a proportion of	N/A	13.18	N/A	Decided	14/07/2018	1	No. nature, scale and location of development not likely to generate significant cumulative effects

									the housing, reduced local centre footprint; increase the height of the hospice; updated cricket pavilion pitch area; and updated internal access routes.							
172	CA//17/02913	Canterbury	Hoplands Farm Island Road Westbere	613147	155840	No	Yes	No	Application for approval of reserved matters relating to access, appearance, landscaping, layout and scale for the erection of 176 no. dwellings on Phases 1A, 1B and 3 pursuant to outline planning permission CA/16/00404/OUT.	N/A	18.28	N/A	Decided	22/12/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects
173	CA//17/02907	Canterbury	Land south of Greenhill Road Herne Bay	620018	161746	No	Yes	No	Planning application for a mixed use development including up to 450 dwellings comprising: Detailed proposals for the change of use of agricultural land to outdoor sports playing pitches (for use by Briary School). Outline application for up to 450 dwellings with all matters reserved also including community facilities, a link road, pedestrian and cycle links, sustainable urban design drainage measures, landscaped bund/earthworks and boundary treatments, public open space, highway-related and utilities infrastructure.	N/A	9.98	N/A	Decided	15/01/2018	1	No. nature, scale and location of development not likely to generate significant cumulative effects
174	CA//17/02719	Canterbury	Land off Cockering Road Thanington	615938	166547	No	Yes	No	Application for approval of Phase 1 reserved matters for appearance, landscaping, layout and scale for; 269 dwellings; 400 m2 of commercial (classes A1 - A5), 150 m2 cricket pavillion and associated pitch, areas of formal and informal open space, children's play areas and utlilities pursuant to outline planning permission CA/15/01479/OUT.	N/A	14.37	N/A	Decided	23/02/2018	1	No. nature, scale and location of development not likely to generate significant cumulative effects
175	CA//17/02455	Canterbury	Hoplands Farm Island Road Hersden Westbere CT3 4HQ	612580	155906	No	Yes	No	Application for the approval of access in Phase 1 for a neighbourhood extension for the creation of up to 250 houses including affordable housing, neighbourhood centre (comprising Class A1 foodstore (400sq.m), Class D1 medical centre (380sq.m), Class D1 dentist (150sq.m), Class A1 pharmacy (150sq.m), Class D1 nursery (120sq.m) and Class	N/A	18.78	N/A	Decided	01/12/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects

									A1 convenience retail (360sq.m)), commercial estate (comprising Class B1 business floorspace (up to 5572sq.m), Class D1 apprenticeship centre (616sq.m) and Class D1/D2 community building (up to 672sq.m)), parish parkland and associated access, parking, amenity space and landscaping pursuant to outline planning permission CA/16/00404/OUT.							
176	CA//17/01383	Canterbury	Land at Sturry/Broad Oak Sturry	620876	162006	No	Yes	No	Outline application (with all matters reserved) for the development of up to 650 houses and associated community infrastructure comprising primary school, community building, public car park and associated amenity space, access, parking and landscaping; and detailed/full application for the construction of part of the Sturry Link Road and a local road from the Sturry Link Road to Shalloak Road.	N/A	9.10	N/A	Decided	12/07/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects
177	CA//17/00519	Canterbury	Land at and adjacent to Cockering Farm Thanington	616923	161185	No	Yes	No	Outline application for a mixed use development comprising up to 400 dwellings in a mix of sizes, types and tenures including affordable housing, up to 3,716 sqm of commercial space (use class B1), a community building or leisure centre (Use classes D1-D2) of up to 200 sqm, new highway infrastructure including spine road with accesses onto Milton Manor Road and Cockering Road and a network of internal roads, footpaths and cycle route, provision of no less than 18 hectares of open space, associated landscaping, utilities infrastructure, sustainable drainage system and earthworks. All matters reserved.	N/A	13.13	N/A	Decided	0310/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects
178	CA/20/02267	Canterbury	Bullockstone Road South of Thanet Way Herne Bay Kent	616926	161171	No	Yes	No	Road improvements comprising the widening and realigning of Bullockstone Road and the construction of two new roundabouts to replace the existing junctions between Bullockstone Road / Lower Herne Road and Bullockstone Road / Canterbury Road.	N/A	13.13	N/A	Decided	11/011/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
179	CA/20/02204	Canterbury	Land to the south of Thanet Way (A299) and west of Thornden Wood Road Herne Bay Kent CT6 7NU	616899	165959	No	Yes	No	Installation of a ground mounted photovoltaic (PV) solar energy generation system, associated infrastructure, security measures (including CCTV) and landscaping.	N/A	13.30	N/A	Decided	02/10/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects

180	CA/20/01679	Canterbury	46-47 High Street Canterbury Kent CT1 2SD	615359	165505	No	Yes	No	Partial demolition, change of use, extension and refurbishment of existing buildings and erection of new buildings between two to five stories in height, to provide mixed-use development comprising 33 self-contained units of accommodation, 32 services apartments, retail, restaurant and office space and community facilities, together with a new pedestrian retail arcade and market hall, public squares and public realm, pedestrian access, ancillary vehicular and service access, servicing, disabled parking area, soft and hard landscaping.	N/A	14.73	N/A	Awaiting decision	04/08/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
181	CA/19/10419	Canterbury	Herne Bay Household Waste and Recycling Centre Westbrook Lane Herne Bay Kent CT6 8DD	614887	157778	No	Yes	No	Proposed hydrogen electrolysis production facility with associated storage, parking, landscaping, fencing, fuelling, access and laying of power cable.	N/A	15.95	N/A	Decided	16/01/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
182	CA/19/10411	Canterbury	Reculver Caravan Park Reculver Lane Herne Bay Kent CT6 6SU	615532	167134	No	Yes	No	Proposed siting of 64 no. glamping pods together with conversion and alteration of existing building to form 3 no. holiday lets, reception/office and toilet block with associated hardstanding, parking and landscaping.	N/A	14.91	N/A	Decided	15/01/2020	1	No. nature, scale and location of development not likely to generate significant cumulative effects
183	CA//19/01769	Canterbury	Seasalter Levels Seasalter Lane Seasalter Whitstable CT5 4BS	622659	169268	No	Yes	No	Proposed erection of gates and fences, installation of piping and formation of scrapes.	N/A	9.44	N/A	Decided	24/09/2019	1	No. nature, scale and location of development not likely to generate significant cumulative effects
184	CA//19/01398	Canterbury	Land at Middle Pett Farm Pett Bottom Road Bishopsbourne.	609065	164585	No	Yes	No	Proposed retention of existing polytunnels.	N/A	20.89	N/A	Decided	31/07/2019	1	No. nature, scale and location of development not likely to generate significant cumulative effects
185	CA//19/00707	Canterbury	Alberta Caravan Park Faversham Road Seasalter Whitstable CT5 4BJ	616752	153363	No	Yes	No	Proposed use of land to accommodate 91 static holiday caravans.	N/A	16.39	N/A	Decided	12/04/2019	1	No. nature, scale and location of development not likely to generate significant cumulative effects
186	CA//19/00526	Canterbury	Land north of Highstreet Road Waterham Whitstable	608048	164566	No	Yes	No	Proposed construction of polytunnels and water storage tanks following demolition of building.	N/A	21.90	N/A	Decided	25/03/2019	1	No. Proposed development is outside the ZOI
187	CA//19/00352	Canterbury	Podlinge Farm Ashenfield Road Waltham CT4 5SP	607148	162771	No	Yes	No	Change of use from agricultural to equine together with single-storey stable building, single-storey agricultural barn, creation of sand school and associated access and drainage.	N/A	22.76	N/A	Decided	11/03/2019	1	No. Proposed development is outside the ZOI

188	CA//19/00012	Canterbury	Nickle Farm Ashford Road Chartham CT4 7PF	609665	147044	No	Yes	No	Proposed controlled atmosphere fruit store.	N/A	25.87	N/A	Decided	04/01/2019	1	No. Proposed development is outside the ZOI
189	CA//18/02551	Canterbury	Wincheap Park & Ride Ten Perch Road Canterbury CT1 3TQ	609248	155664	No	Yes	No	Proposed extension to existing park and ride facility to provide an additional 228 parking spaces, replacement terminal building, reconfiguration to access, together with fencing, lighting, landscaping and cycle storage.	N/A	21.97	N/A	Decided	18/12/2018	1	No. Proposed development is outside the ZOI
190	CA//18/01948	Canterbury	Land at Highland Court Farm Coldharbour Lane Bekesbourne CT4 5HN	613772	156959	No	Yes	No	Hybrid planning application for mixed use development for leisure, commercial and tourism uses comprising: (1) A detailed planning application for a centre for sporting excellence (to include sports pitches, changing rooms, clubhouse and floodlights), business innovation centre, food and drinks hub and leisure hub; with access and associated highways works. (2) An outline planning application (with all matters reserved) for business uses, food and drinks hub, innovation centre, home farm centre, artisan offices, mixed use court and holiday homes; plus associated access, landscaping, parking and drainage infrastructure.	N/A	17.28	N/A	Decided	01/10/2018	1	No. nature, scale and location of development not likely to generate significant cumulative effects
191	CA//18/00620	Canterbury	Franciscan International Study Centre Giles Lane Blean CT2 7NA	619583	153730	No	Yes	No	Proposed change of use from residential institution to student accommodation together with erection of 3 no. two and three-storey buildings comprising student accommodation, two-storey front extension to main block for use as student accommodation together with landscaping, provision of associated parking and alterations to access following partial demolition of existing buildings.	N/A	13.97	N/A	Decided	29/03/2018	1	No. nature, scale and location of development not likely to generate significant cumulative effects
192	CA//18/00557	Canterbury	Woodside Wood Radfall Ride Chestfield CT5 3EW	613544	159581	No	Yes	No	Proposed additional use of woodland for the purpose of a forest school educational facility, including retrospective use of land for the siting of a mobile unit for use ancillary to the forest school and siting of mobile WC trailer.	N/A	16.74	N/A	Decided	25/04/2018	1	No. nature, scale and location of development not likely to generate significant cumulative effects
193	CA//18/00235	Canterbury	Land at A2 A28 & Ten Perch Road Wincheap Canterbury	613413	164241	No	Yes	No	Construction of a new eastbound (coastbound) A2 off slip, associated reconfiguration of both Ten Perch Road and the Ten Perch Road/A28 junction, modified footpath/cycle routes, ground re-profiling, lighting, surface water attenuation features and landscaping.	N/A	16.53	N/A	Decided	31/01/2018	1	No. nature, scale and location of development not likely to generate significant cumulative effects

194	CA//17/02225	Canterbury	Bridge Place Country Club Bridge Place Bridge CT4 5LF	613718	156755	No	Yes	No	Proposed two-storey extension to provide additional hotel guest bedrooms and restaurant, change of use of the coachhouse and erection of seven single-storey huts to provide additional guest suites, change of use of the lodge to provide ancillary accommodation, erection of detached garage, greenhouse and plant room/store together with internal alterations and revised parking.	N/A	17.40	N/A	Decided	05/10/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects
195	CA//17/02125	Canterbury	Nickle Farm Nickle Lane Chartham	618110	153898	No	Yes	No	Proposed erection of polytunnels.	N/A	14.99	N/A	Decided	14/09/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects
196	CA//17/02092	Canterbury	Canterbury Riverside Kingsmead Road and Sturry Road Canterbury CT1 1SZ	615383	158501	No	Yes	No	Proposed multiplex cinema, 8no single-storey bar/restaurant units, five-storey building comprising 3no retail units with student accommodation (111 bed) above, 1no part four, part six-storey building for purpose built student accommodation (382 bed), 1no five-storey building comprising 54 flats, 1no three-storey building comprising 17 flats, 16no two-storey dwellings, 1no three, four and five -storey building comprising 102 flats with associated public realm, access alterations, car parking, riverside walkway and 'launch' with canoe store (following demolition of existing buildings).	N/A	15.25	N/A	Decided	11/09/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects
197	CA//17/02079	Canterbury	Land at Bridge Road Bridge CT4 5AL	617232	154322	No	Yes	No	Proposed erection of polytunnels.	N/A	15.44	N/A	Decided	08/09/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects
198	CA//17/02081	Canterbury	Land at Goose Farm Broad Oak Sturry CT2 0QL	616145	161537	No	Yes	No	Proposed erection of polytunnels.	N/A	13.85	N/A	Decided	08/09/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects
199	CA//17/01722	Canterbury	Woodside Wood Radfall Ride Chestfield	613391	164334	No	Yes	No	Proposed additional use of woodland for the purpose of a Forest School educational facility, including retrospective use of land for the siting of a mobile unit for use ancillary to the Forest School, and siting of mobile WC trailer. Re-submission.	N/A	16.55	N/A	Decided	16/10/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects

200	CA//17/01866	Canterbury	Land at Hillborough Sweechbridge Road Herne Bay	620897	167592	No	Yes	No	Planning application for a mixed use development including up to 900 dwellings comprising: Detailed proposals for the erection of 193 new dwellings, 1 no. Local Equipped Area of Play (LEAP), a new vehicular access (via priority junction) onto Sweechbridge Road (north), provision of realigned vehicular access to Sweechbridge Road (south), new westbound on slip to, and modified westbound off-slip from, A299 Thanet Way to Heart in Hand Road, upgraded alignment of May Street, associated internal roads/footpaths/cycleways, sustainable drainage system, earthworks, public open space, landscaping (inc woodland) and street lighting. Outline application for up to 707 additional dwellings with all matters reserved except access (excluding internal circulation) also including: up to 33,000 sq.m. of employment/commercial floorspace with associated parking spaces comprising employment units (within Use Class B1(a), B1 (c) B2 and B8) (27,000 sqm) and a 80 no. bed care-home (Use Class C2) (4,500 sq.m.); local shopping facilities including a convenience store (Use Class A1) (up to 500 sq.m.) and 3 no. retail units (Use Class A1/ A2 / A3 or A5) (up to 300 sq.m.); a new community centre (including changing rooms and car parking) (Use Class D1) (up to 550 sq.m.) with associated car parking; land for a two-form entry Primary School with associated parking, drop-off/pick-up provision and open space; new public open space including 1 no. Local Equipped Area of Play (LEAP), allotments and 2 no. playing pitches; landscaping; ecological mitigation; sustainable drainage system; earthworks, including new landscaped bund alongside Thanet Way (A299); improvement works to the existing May Street road network including enabling work within the public highway over May Street Bridge to provide a southbound vehicular access, and the necessary services and	N/A	10.04	N/A	Decided	16/08/2017	1	No. nature, scale and location of development not likely to generate significant cumulative effects

									utilities infrastructure, associated internal roads, footpaths and cycleways to facilitate movement within the site including access to Altira B						
201	DC/20/4545/EIA	East Suffolk	ABP Lowestoft Lowestoft Suffolk	653647	292993	No	No	No	EIA Scoping Opinion - Lowestoft Eastern Energy Facility	29.68	N/A	N/A	Decided	10/11/2020	1	No. Proposed development is outside the ZOI
202	**DC/20/4846/EIA**	**East Suffolk**	**B-17 Solar Farm Parham Airfield Parham Suffolk**	**632996**	**260873**	**Yes**	**No**	**No**	**EIA Screening Opinion - Proposed Solar Energy Scheme**	**6.53**	**N/A**	**N/A**	**Scoping**	**27/11/202**	**2**	**Yes**
203	DC/22/1046/EIA	East Suffolk	Bawdsey Reservoir Site Ferry Road Bawdsey Suffolk	633790	238352	No	No	No	EIA Screening Opinion - Proposed winter storage reservoir	22.09	N/A	N/A	Unknown	16/03/2022	2	No. Proposed development is outside the ZOI
204	DC/19/1610/EIA	East Suffolk	Beccles & Worlingham Garden Neighbourhood Darby Road Beccles Suffolk	642554	289110	No	No	No	Environmental Impact Assessment Screening Opinion - mixed use including residential development , formal and informal open space and ancillary surface water drainage features	24.07	N/A	N/A	Decided	16/04/2019	1	No. Proposed development is outside the ZOI
205	DC/18/4428/FUL	East Suffolk	Bernard Matthews Scalesbrook Lane Holton Halesworth Suffolk IP19 8NJ	640185	278775	Yes	No	No	Erection of a new chicken processing factory	13.85	N/A	N/A	Permitted	26/10/2018	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
206	DC/19/1726/EIA	East Suffolk	Blackheath Poultry Farm Bartholomews Lane Wenhaston With Mells Hamlet Suffolk	641429	275064	Yes	No	No	Screening Opinion request for removal of existing structures and major site improvements to include two replacement poultry sheds and ancillary structures.	10.03	N/A	N/A	Unknown	26/04/2019	2	No. Nature, scale and location of development not likely to generate significant cumulative effects
207	DC/22/0194/EIA	East Suffolk	Blue Barn Farm Capel Hall Lane Trimley St Martin Felixstowe Suffolk IP11 0RB	628768	237739	No	No	No	EIA - A balanced cut and fill earth moving operation to create an irrigation reservoir. No materials to be brought onto or leave site. Why necessary for agriculture: Blue Barn Farm is under new owner ship, investment is ongoing to expand root vegetable production on the light land. The existing reservoir is only able to provide irrigation for less than half the farm. The Felixstowe Hydrocycle has allowed more water availability, this must be reservoir stored. Why designed for agriculture: The farm has a network of underground irrigation mains which are pressurized by a pump house at the existing reservoir. The new reservoir will siphon water down to the existing pump house, no additional pumping infrastructure or power will be required.	25.02	N/A	N/A	Unknown	18/01/2022	1	No. Proposed development is outside the ZOI

208	DC/18/2995/FUL	East Suffolk	Blyth River Gravel Pit Heath Road Wenhaston With Mells Hamlet Suffolk IP19 9BZ	642052	276080	Yes	No	No	Full planning for change of use of the site to provide holiday lodge accommodation and associated leisure activities.	11.03	N/A	N/A	Permitted	31/07/2018	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
209	DC/20/1722/FUL	East Suffolk	Boyton Marshes Nature Reserve The Street Boyton Suffolk IP12 3LR	638848	247434	Yes	No	No	The creation of a 30 hectare freshwater scrape (two hydrological units) for key SPA breeding species and potential European colonising species. By the lowering of the natural field surface to create standing water and a mosaic of islands. Water levels to be controlled by simple sluice structures and new feature enclosed by an anti-predator combination electric fence.	11.74	N/A	N/A	Permitted	07/05/2020	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
210	DC/22/0306/EIA	East Suffolk	Brightwell Hall Farm Brightwell Street Brightwell Ipswich Suffolk IP10 0BE	625034	243414	No	No	No	EIA Screening Opinion - Proposed spring water reservoir	23.08	N/A	N/A	Scoping	24/06/2022	2	No. Proposed development is outside the ZOI
211	DC/17/3823/EIA	East Suffolk	Broadland Sands Holiday Park Coast Road Corton Lowestoft Suffolk NR32 5LG	653729	298551	No	No	No	EIA Screening Opinion - Extension of existing caravan park for the stationing of static caravans, creation of access and associated external works, car parking and landscaping.	34.99	N/A	N/A	Unknown	01/09/2017	2	No. Proposed development is outside the ZOI
212	DC/18/1239/EIA	East Suffolk	Carlton Meres Country Park Carlton Lane Kelsale Cum Carlton Saxmundham Suffolk IP17 2QP	636550	264992	Yes	No	No	Demolition of the existing reception building and Extention to the existing clubhouse and swimming pool. The extension of the existing Caravan Park for the stationing of static caravans, creation of access and associated external works, car parking and landscaping - Request for Environmental Impact assessment, Screening opinion	3.19	N/A	N/A	Decided	22/03/2018	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
213	DC/21/0767/EIA	East Suffolk	Carlton Park Industrial Estate Main Road Kelsale Cum Carlton Suffolk IP17 2NL	636556	264991	Yes	No	No	EIA Screening Opinion - Erection of 11 no. commercial units consisting of Class E (office and cafe / restaurant), B2 (light industrial) and B8 (storage and distribution) uses.	3.19	N/A	N/A	Scoping	16/02/2021	2	No. Nature, scale and location of development not likely to generate significant cumulative effects
214	DC/17/3178/FUL	East Suffolk	CEFAS Pakefield Road Lowestoft Suffolk NR33 0HT	654142	291148	No	No	No	Demolition of former grand hotel building (Class B1) and ancillary buildings (Class B8). Redevelopment to provide new 3 storey office building (Class B1) with ancillary parking, landscape and access. Refurbishment of existing 4 storey laboratory building (Class B1) to provide new plant equipment to roof, new roof and facade alterations. Demolition of boundary walls. Outline	28.13	N/A	N/A	Permitted	24/07/2017	1	No. Proposed development is outside the ZOI

									application for public pavilion for restaurant and visitor centre use.						
215	DC/19/1386/EIA	East Suffolk	Coastal Defence Works Bawdsey Beach Bawdsey Manor Bawdsey Suffolk	633131	238051	No	No	No	Proposed works to the coastal defences	22.64	N/A	N/A	Decided	01/04/2019	1	No. Proposed development is outside the ZOI
216	DC/19/1532/VOC	East Suffolk	Easton Farm Park Sanctuary Bridge Road Easton Suffolk IP13 0EQ	627707	258441	Yes	No	No	Variation of Conditions No 2, 6, 7, 12, 14 of DC/18/2956/VOC (Variations of Conditions 2, 3, 6, 12, 16, 17 on DC/15/3165/FUL)	12.19	N/A	N/A	Permitted	29/04/2019	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
217	DC/21/4289/EIA	East Suffolk	Felixstowe Ferry Recovery Works Ferry Road Felixstowe Suffolk	632892	237712	No	No	No	EIA Screening Opinion - Felixstowe Ferry Recovery Works	23.05	N/A	N/A	Decided	13/09/2021	1	No. Proposed development is outside the ZOI
218	DC/19/4343/EIA	East Suffolk	Felixstowe Road Haulage Yard Felixstowe Road Stratton Hall Suffolk	620694	241921	No	No	No	EIA Screening Opinion - Proposed Haulage Yard	27.19	N/A	N/A	Scoping	06/11/2019	2	No. Proposed development is outside the ZOI
219	DC/21/2929/EIA	East Suffolk	Field 350m southeast Of Home Farm Capel St Andrew Woodbridge Suffolk IP12 3LR	638218	247746	Yes	No	No	EIA Screening Opinion - A balanced cut and fill earthmoving operation to create an irrigation reservoir. The London Clay underlying the site will be engineered into a water tight lining. No materials are brought to or removed from site.	11.70	N/A	N/A	Scoping	15/06/2021	2	No. Nature, scale and location of development not likely to generate significant cumulative effects
220	DC/18/4818/EIA	East Suffolk	High Lodge Haw Wood Hinton Suffolk IP17 3QT	643058	272252	Yes	No	No	Change of use of part of golf course to land for the siting of holiday lodges	7.21	N/A	N/A	Unknown	21/11/2018		No. Nature, scale and location of development not likely to generate significant cumulative effects
221	**DC/20/3142/FUL**	**East Suffolk**	**High Lodge Leisure Darsham Road Hinton Blythburgh Saxmundham Suffolk IP17 3QT**	**643451**	**269725**	**Yes**	**No**	**No**	**Redevelopment of golf course and vacant paddock land for the siting of 170 holiday lodges, 3 tree houses, new Facilities Building, Maintenance and Housekeeping Building, car parking and associated highway works.**	**4.69**	**N/A**	**N/A**	**Permitted**	**08/09/2020**	**1**	**Yes**
222	DC/19/2666/FUL	East Suffolk	Kesgrave Quarry Sinks Pit Kesgrave Suffolk IP5 2PE	622832	246355	No	No	No	Construction of 2 No. new buildings and use of land for vehicle and plant hire operator(s) comprising offices, workshops, associated parking, drainage infrastructure etc to allow for the hire, storage, sale, maintenance and servicing of vehicles, plant, machinery and equipment	22.56	N/A	N/A	Permitted	03/07/2019	1	No. Proposed development is outside the ZOI

223	DC/21/1079/VOC	East Suffolk	Kesgrave Quarry Sinks Pit Kesgrave Suffolk IP5 2PE	622797	246351	No	No	No	Variation of Conditions 6, 7, 8 & 10 of DC/19/2666/FUL - Construction of 2 No. new buildings and use of land for vehicle and plant hire operator(s) comprising offices, workshops, associated parking, drainage infrastructure etc to allow for the hire, storage, sale, maintenance and servicing of vehicles, plant, machinery and equipment. - Variation to operating hours.	22.58	N/A	N/A	Awaiting decision	05/03/2021	1	No. Proposed development is outside the ZOI
224	DC/22/1347/EIA	East Suffolk	Kittiwake Artificial Nesting Structure at Port of Lowestoft Hamilton Road Lowestoft Suffolk	655311	293205	No	No	No	EIA Screening Opinion - Kittiwake Artificial Nesting Structure	30.48	N/A	N/A	Scoping	04/04/2022	2	No. Proposed development is outside the ZOI
225	DC/18/3685/VOC	East Suffolk	Land adjacent to Ellough Airfield Benacre Road Ellough Beccles Suffolk NR34 7XD	644793	288369	No	No	No	Variation of Condition No.4 of DC/12/1113/FUL - Installation of a 30MW solar farm and associated infrastructure - Proposed that condition 4 be amended to read: "The planning permission hereby granted is for a period from the date of this decision until the date occurring 40 years after the date of commencement of the development hereby permitted. Written notification of the date of commencement shall be given to the Local Planning Authority no later than 14 days after the event."	23.37	N/A	N/A	Permitted	05/09/2018	1	No. Proposed development is outside the ZOI
226	DC/22/0991/FUL	East Suffolk	Land adjacent to Mill Farm Thomas Avenue Trimley St Mary Suffolk IP11 0YS	628125	236917	No	No	No	Erection of 50 dwellings with associated landscaping, open space, access, drainage and parking	26.06	N/A	N/A	Awaiting decision	10/03/2022	1	No. Proposed development is outside the ZOI
227	DC/20/5239/EIA	East Suffolk	Land adjacent to Reeve Lodge High Road Trimley St Martin Suffolk	627520	237232	No	No	No	EIA Screening Opinion - Outline planning permission (all matters reserved except access) for the erection of up to 139 new homes (including provision of up to 46 affordable homes), land for a 2-form entry primary school with pre-school, open space, SUDS and all associated infrastructure provision	26.13	N/A	N/A	Scoping	23/12/2020	2	No. Proposed development is outside the ZOI
228	**DC/21/3254/FUL**	**East Suffolk**	**Land and buildings at Croft Farm Hulver Lane Snape Suffolk IP17 1QU**	**638766**	**259237**	**Yes**	**No**	**No**	**Change of use for agricultural land and part of an existing agricultural building to a touring caravan site for up to 30 caravans and associated facilities including toilets, showers and a guest reception.**	**2.29**	**N/A**	**N/A**	**Permitted**	**13/07/2021**	**1**	**Yes**
229	DC/21/2575/EIA	East Suffolk	Land at Corporation Farm Drunkards Lane Falkenham Ipswich Kirton IP10 0PT	628074	239581	No	No	No	EIA Screening Opinion - Proposed reservoir.	23.89	N/A	N/A	Scoping	26/05/2021	2	No. Proposed development is outside the ZOI

230	DC/22/1453/EIA	East Suffolk	Land at Ipswich Road Newbourne Suffolk	626530	242984	No	No	No	EIA Screening Opinion - Proposed development of a solar farm and associated infrastructure	22.30	N/A	N/A	Decided	11/04/2022	1	No. Proposed development is outside the ZOI
231	DC/21/0607/EIA	East Suffolk	Land at Oakes Farm Beccles Road Carlton Colville Suffolk	649495	290109	No	No	No	EIA Screening Opinion - approximately 20.75 for sports pitches/open space/parkland, approximately 5.4 ha of residential development (gross) and approximately 3.5 ha of commercial development.	25.74	N/A	N/A	Awaiting decision	08/02/2021	1	No. Proposed development is outside the ZOI
232	DC/22/1346/EIA	East Suffolk	Land at Pakefield Holiday Park Arbor Lane Lowestoft Suffolk NR33 7BE	653653	289872	No	No	No	EIA Screening Opinion - The extent of the proposals are shown on the enclosed Masterplan (Drawing No. 290 - 04 P2 at 1:500 A1). This layout plan illustrates the proposed siting and arrangement of the development described above, comprising the siting of 91 static holiday and lodge caravans, a new central facilities complex, associated hardstanding and landscaping throughout. The proposed development has in fact been reviewed by East Suffolk Council as part of their pre-application advice service (DC/21/4683/PREAPP). The pre-application advice provided by East Suffolk Council had regard to the proposed level of development and material planning considerations, such as landscape impact, flood risk and ecology. Whilst the description of the scheme has not changed and still comprises those 4 aspects of development outlined above, there have been some internal amendments and alterations to the scheme's layout since this advice request was made. In particular, the new central facilities building has been centralised on the eastern element of the application site, with the static and lodge caravan development reconfigured accordingly. This new layout of the scheme is shown upon the Proposed Site Masterplan submitted with this screening request.	26.76	N/A	N/A	Scoping	04/04/2022	2	No. Proposed development is outside the ZOI
233	**DC/21/5550/FUL**	**East Suffolk**	**Land at Park Farm Loudham Hall Road Loudham Woodbridge Suffolk IP13 0NW**	**631237**	**254611**	**Yes**	**No**	**No**	**Erection of a solar photovoltaic (PV) array, with a total export capacity of up to 21 MW. Each of the solar panels will be mounted on a fixed panel system. The panels are covered by high transparency solar glass with an anti-reflective coating which minimises glare and glint, while aiding in the**	**10.79**	**N/A**	**N/A**	**Awaiting decision**	**10/12/2021**	**1**	**Yes**

								maximum absorption of the available sunlight. The panels are dark grey/blue in colour and are mounted on a frame of anodized aluminium alloy and galvanized steel.						
234	**DC/19/4987/EIA**	**East Suffolk**	**Land at Rock Barracks Heath Road Woodbridge Suffolk IP12 3LZ**	**632867**	**248579**	**Yes**	**No**	**No**	**EIA Screening Opinion - Photovoltaic PV Solar Park of approximately 1.5MW along with associated PV equipment.**	**13.87**	**N/A**	**N/A**	**Scoping**	**23/12/2019**	**2**	**Yes**
235	DC/20/4692/EIA	East Suffolk	Land at the Former Deben High School Site Garrison Lane Felixstowe Suffolk	629856	234895	No	No	No	EIA Screening Option - Proposed development of 61 dwellings and leisure facilities by East Suffolk Council.	26.94	N/A	N/A	Scoping	19/11/2020	2	No. Proposed development is outside the ZOI
236	DC/20/1671/VOC	East Suffolk	Land at Tower Road Gisleham Lowestoft Suffolk NR33 7ND	652394	286678	No	No	No	Variation of Condition No.14 of DC/17/2538/VOC Variation of Condition Nos. 2, 13 & 17 of DC/15/5066/FUL - Demolition of existing buildings and structures and redevelopment to provide 4 retail units, 1 Cafe unit and 1 flexible retail/restaurant unit with associated car parking, servicing, landscaping public realm and pedestrian and vehicular access - The removal of the mezzanine from Unit 4 (this results in the loss of 372 sq m of retail space); The addition of a mezzanine in Unit 2 of 186 sqm; The sub division of Unit 5 into 3 separate retail units (5a, 5b & 5c); Also minor amendments to plans. Variation to Unit 4 to alow a wider range of goods to be sold.	23.33	N/A	N/A	Permitted	05/05/2020	1	No. Proposed development is outside the ZOI
237	DC/19/3042/EIA	East Suffolk	Land at Victoria Mill Road Framlingham Suffolk IP13 9DW	628447	263192	Yes	No	No	Screening opinion request for residential development of up to 50 dwellings, including on site affordable housing and/or custom build/self build units and public open space.	10.77	N/A	N/A	Scoping	26/07/2019	2	No. Nature, scale and location of development not likely to generate significant cumulative effects
238	DC/18/3988/EIA	East Suffolk	Land Behind Velda Close Lowestoft Suffolk	652558	290642	No	No	No	EIA Screening Opinion - Request for a Fluvial Scheme	27.10	N/A	N/A	Scoping	19/09/2018	2	No. Proposed development is outside the ZOI
239	DC/20/2821/EIA	East Suffolk	Land between High Street and Chapel Lane Pettistree Suffolk	630205	255689	Yes	No	No	EIA Screening Opinion - residential development of 136 homes	10.99	N/A	N/A	Awaiting decision	28/07/2020	2	No. Nature, scale and location of development not likely to generate significant cumulative effects

240	DC/18/4644/VOC	East Suffolk	Land east of Adastral Park Martlesham Heath Martlesham Suffolk	624870	245134	No	No	No	Variation of condition 34 of DC/17/1435/OUT - Outline planning permission for up to 2000 dwellings, an employment area of c0.6ha (use Class B1), primary local centre comprising use Classes A1,A2, A3, A4, A5, B1, C3, D1, D20, secondary centre9comprising possible use Classes A1, A3 and A4), a school, green infrastructure (including Suitable Accessable Natural Greenspace (SANGs)), outdoor play ares, sports ground and allotments/community orchards0, public footpaths and cycleways, vehicle accesses and associated infrastructure.	21.99	N/A	N/A	Permitted	11/02/2019	1	No. Proposed development is outside the ZOI
241	DC/21/4329/EIA	East Suffolk	Land north of Conway Close And Swallow Close Felixstowe Suffolk	631291	236294	No	No	No	EIA Scoping Opinion request - Create up to 150 new homes, associated infrastructure and open space	25.05	N/A	N/A	Decided	16/09/2021	1	No. Proposed development is outside the ZOI
242	DC/20/1690/EIA	East Suffolk	Land off Howlett Way Trimley St Martin Suffolk	627696	237481	No	No	No	Screening Opinion - Proposed residential development at land off Howlett Way	25.82	N/A	N/A	Awaiting decision	05/05/2020	1	No. Proposed development is outside the ZOI
243	DC/18/2774/ARM	East Suffolk	Land south and east of Adastral Park Martlesham Heath Martlesham Suffolk	624790	245143	No	No	No	Approval of reserved matters - site entrance and boulevard comprising the detail of the following elements: the new junction with the A12; the entrance to the site, including the new entrance feature / acoustic bund along the A12 boundary; the new boulevard from the site entrance to the junction with the eastern spine road; the new western spine road and new junction with the Ipswich Road, incorporating measures required by Condition 43 of DC/17/1435/OUT; the landscaping to the entrance and zone along the boulevard / spine road; the new drainage to the boulevard and spine road, including pumping station off the Ipswich Road, in the valley corridor; the new incoming utility supplies along the route of the boulevard and spine road - on DC/20/1234/VOC.	22.04	N/A	N/A	Permitted	03/07/2018	1	No. Proposed development is outside the ZOI
244	DC/22/2371/FUL	East Suffolk	Land south of Bungay Road Barsham Suffolk	640796	289760	No	No	No	Extension of Barsham Water Treatment Works comprising a storage reservoir, new treatment buildings, associated infrastructure, temporary access and landscaping. Open for comment icon	24.74	N/A	N/A	Awaiting decision	13/06/2022	1	No. Proposed development is outside the ZOI
245	**DC/21/4044/EIA**	**East Suffolk**	**Land south of Darsham Station Main Road Darsham Suffolk**	**640539**	**269673**	**Yes**	**No**	**No**	**EIA Screening Opinion - Proposed residential development of up to 110 dwellings**	**4.85**	**N/A**	**N/A**	**Scoping**	**25/08/2021**	**2**	**Yes**

246	DC/19/4170/ARM	East Suffolk	Land south of Hall Lane Oulton Suffolk	651876	294792	No	No	No	Approval of Reserved Matters - DC/01/0977/OUT - Outline Application for a mixed use development comprising of residential, neighbourhood shopping centre, community hall, primary school, play areas and country park	30.87	N/A	N/A	Permitted	24/10/2019	1	No. Proposed development is outside the ZOI
247	DC/21/3327/EIA	East Suffolk	Land to the east of A1093 And North Of Chapel Road Bucklesham Suffolk	625757	241664	No	No	No	Solar farm, comprising an array of ground-mounted solar panels and ancillary infrastructure including inverters, transformer units, electrical infrastructure, switchgear, storage and welfare cabins, security fencing, CCTV and a temporary construction compound	23.78	N/A	N/A	Unknown	12/07/2021		No. Proposed development is outside the ZOI
248	**DC/21/1001/FUL**	**East Suffolk**	**Land to the north and south of New Road east of Silverlace Green Parham Suffolk**	**631761**	**260461**	**Yes**	**No**	**No**	**Construction and operation of a solar farm together with all associated works, equipment and necessary infrastructure**	**7.81**	**N/A**	**N/A**	**Permitted**	**01/03/2021**	**1**	**Yes**
249	DC/20/2643/EIA	East Suffolk	Land to the West Of Chapel Road Grundisburgh Suffolk	622524	250291	No	No	No	Environmental Impact Assessment - Residential development of 80 homes	20.37	N/A	N/A	Unknown	16/07/2020		No. Proposed development is outside the ZOI
250	DC/20/3362/FUL	East Suffolk	Land west of Chapel Road Grundisburgh Suffolk	622574	250299	No	No	No	Full Planning Application for the erection of 70 dwellings, including affordable dwellings, together with public open space, roads, accesses, parking, garages, drainage and associated infrastructure	20.32	N/A	N/A	Awaiting decision	01/09/2020		No. Proposed development is outside the ZOI
251	DC/19/0398/EIA	East Suffolk	Land west of Copperwheat Avenue Reydon Suffolk	649475	277815	Yes	No	No	EIA Screening Opinion - Proposed residential development	14.03	N/A	N/A	Unknown	25/01/2019	2	No. Nature, scale and location of development not likely to generate significant cumulative effects
252	DC/21/3671/EIA	East Suffolk	Land west of Ellough Road Beccles Suffolk	643819	289059	No	No	No	EIA Screening Opinion - Garden neighbourhood	24.02	N/A	N/A	Decided	31/07/2021	1	No. Proposed development is outside the ZOI
253	**DC/21/2387/EIA**	**East Suffolk**	**Land west of Sandpit House and Sewage Pumping Station Loudham Hall Road Pettistree Suffolk**	**632344**	**265829**	**Yes**	**No**	**No**	**EIA Screening Opinion - Proposed development of a 21 MWp Solar PV Development**	**7.38**	**N/A**	**N/A**	**Scoping**	**14/05/2021**	**2**	**Yes**
254	DC/18/2886/EIA	East Suffolk	Lowestoft FRMP Tidal Defences Hamilton Road And Battery Green Road Lowestoft Suffolk	655269	293198	No	No	No	EIA Screening Opinion - For a tidal flood barrier across Lake Lothing entrance, flood defences in the Outer Harbour downstream of the proposed tidal flood barrier and property level resilience measures to be installed at properties at several locations throughout Lowestoft	30.45	N/A	N/A	Scoping	11/07/2018	2	No. Proposed development is outside the ZOI
255	DC/22/1204/EIA	East Suffolk	Moors Farm Shingle Street Hollesley Suffolk	636724	243592	Yes	No	No	EIA Screening Opinion - Water fill irrigation reservoir	16.10	N/A	N/A	Scoping	28/03/2022	2	No. Nature, scale and location of development not likely to generate

															significant cumulative effects
256	DC/21/1712/OUT	East Suffolk	Newnham Business Park Saxtead Road Framlingham Suffolk IP13 9RE	627280	264053	Yes	No	No	Hybrid planning application seeking outline planning permission for the creation of a phased employment area for office, studio, workshop and light industrial and storage units comprising B1, B2 and B8 use classes (previously approved ref. DC/16/4370/OUT) and retrospective full planning approval for attenuation works and construction of new vehicular access as completed on land known as Newnham Business Park, Saxtead Road, Framlingham, Suffolk	11.98	N/A	N/A	Permitted	08/04/2021	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
257	DC/21/3486/FUL	East Suffolk	Orwell Crossing Truck Stop A14 Nacton East Bound Nacton Heath Ipswich Suffolk IP10 0DD	621354	241237	No	No	No	Erection of buildings for use within Classes B2 and B8 together with access and servicing arrangements, vehicle parking, landscaping and associated works.	27.24	N/A	N/A	Awaiting decision	21/07/2021	1	No. Proposed development is outside the ZOI
258	DC/20/4761/FUL	East Suffolk	Parcel of land to north of Falcon Inn Road Wrentham Suffolk NR34 7NH	647303	284140	Yes	No	No	Conservation and Fishing Pond	19.45	N/A	N/A	Permitted	07/12/2020	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
259	DC/21/4254/EIA	East Suffolk	Part land east of Wash Lane and west of Cucumber Lane Beccles Suffolk	643219	288429	No	No	No	EIA Screening Opinion - development of part of a new garden neighbourhood. This parcel known as 'Land West of Oak Lane' will principally comprise of approximately 34.73ha of land for a range of residential dwellings (Use Class C3) to cater for market and affordable needs.	23.39	N/A	N/A	Decided	10/09/2021	1	No. Proposed development is outside the ZOI
260	DC/17/4964/EIA	East Suffolk	Part land South of Chediston Street Halesworth Suffolk	638011	277241	Yes	No	No	EIA Screening Opinion - For up to 200 dwellings to include car parking, open space provision with associated infrastructure and access	12.83	N/A	N/A	Unknown	16/11/2017	2	No. Nature, scale and location of development not likely to generate significant cumulative effects
261	DC/18/2098/EIA	East Suffolk	Part land west side of London Road Beccles Suffolk	642071	288830	No	No	No	EIA Screening Opinion - Proposed Residential Development of up to 280 Homes	23.78	N/A	N/A	Unknown	18/05/2018	2	No. Proposed development is outside the ZOI
262	DC/19/1432/ARM	East Suffolk	Part of 4126 Wood Lane Oulton Suffolk	651279	294690	No	No	No	Approval of Reserved Matters of DC/01/0977/OUT - Outline Application for a mixed use development comprising of residential, neighbourhood shopping centre, community hall, primary school, play areas and country park - Access,	30.62	N/A	N/A	Refused	11/04/2019	1	No. Proposed development is outside the ZOI

									Appearance, Landscaping, Layout and Scale						
263	**DC/22/2276/EIA**	**East Suffolk**	**Proposed Reservoir at Grange Farm Yoxford Road Westelton Suffolk**	**643797**	**268962**	**Yes**	**No**	**No**	**EIA Screen Opinion - Proposed Reservoir.**	**3.94**	**N/A**	**N/A**	**Awaiting decision**	**06/06/2022**	**1**	**Yes**
264	DC/20/5252/VOC	East Suffolk	Riduna Park Station Road Melton Woodbridge Suffolk IP12 1QT	628650	250480	Yes	No	No	Variation of Condition 13 of C/09/0584 - Development of two storey business units to include offices, workshops, coffee shop/cafe & associated external works, off site highway works.	15.50	N/A	N/A	Permitted	24/12/2022	1	No. Nature and scale of development not likely to generate significant cumulative effects
265	DC/20/2546/EIA	East Suffolk	Rose Farm Rose Farm Lane Framlingham Woodbridge Suffolk IP13 9PT	627181	264511	Yes	No	No	EIA Screening Opinion - To provide winter water storage for crop irrigation	12.13	N/A	N/A	Unknown	08/07/2020	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
266	**DC/18/2794/EIA**	**East Suffolk**	**Saxmundham To Peasenhall Water Mains Installation Suffolk**	**636000**	**269248**	**Yes**	**No**	**No**	**Installation of approximately 7.7 kilometres of 250mm diameter pipeline between Lodgewood Water Tower in Peasenhall and Saxmundham Water Tower.**	**6.74**	**N/A**	**N/A**	**Unknown**	**03/07/2018**	**1**	**Yes**
267	DC/19/1289/EIA	East Suffolk	Sinks Pit Main Road Kesgrave Suffolk IP5 2PE	622783	246038	No	No	No	Environmental Impact Assessment Scoping Opinion the erection of 2 new buildings and use of land for vehicle and plant hire operator(s) comprising offices, workshops, associated parking, drainage infrastructure etc to allow for the hire, storage, sale, maintenance and servicing of vehicles, plant, machinery and equipment.	22.81	N/A	N/A	Decided	26/03/2019	1	No. Proposed development is outside the ZOI
268	DC/21/2289/EIA	East Suffolk	Site at Former Crown Nursery High Street Ufford Suffolk IP13 6EL	629290	252775	Yes	No	No	Environmental Impact Assessment - Proposed Development of 2.67ha of land of which 1.04ha is to be developed with a built form of 13no. units of commercial floorspace all comprising uses within Class E of the Use Classes Order 1987 (as amended).	13.46	N/A	N/A	Unknown	10/05/2021	2	No. Nature, scale and location of development not likely to generate significant cumulative effects
269	**DC/17/4188/EIA**	**East Suffolk**	**Site SSP12 Rendlesham Suffolk**	**633651**	**252912**	**Yes**	**No**	**No**	**Screening opinion - erection of up to 75 dwellings.**	**10.40**	**N/A**	**N/A**	**Unknown**	**02/10/2017**	**2**	**Yes**

270	DC/19/1637/FUL	East Suffolk	Sizewell B Power Station Complex and Adjoining Land Sizewell Power Station Road Sizewell Leiston Suffolk IP16 4UR	647136	263389	Yes	No	No	1. In outline, comprising a Visitor Centre (maximum 2,000sq.m GEA) and a maximum of 9,500sq.m (GEA) of floorspace to provide administration, storage, welfare and canteen facilities with all matters reserved apart from access. 2. In full, for the demolition of the existing Outage Store, Laydown Area, Operations Training Centre, Technical Training Facility, Visitor Centre, and Rosery Cottage garage; removal of technical training and pool car park (63 spaces), Coronation Wood car park (21 spaces), Visitor Centre car park (16 spaces) and northern outage car park (576 spaces); meantime use of the Technical Training Centre as an interim Visitor Centre followed by its demolition; and erection of new (all floorspace in GEA) Outage Store (2,778sq.m), Laydown Area (11,990sq.m) including New Western Access Road, Yardman's Office (23sq.m), Training Centre (4,032sq.m), Rosery Cottage garage (30sq.m), Replacement Car Park (2,363sq.m) providing 112 spaces, and Outage Car Park (15,525sq.m) providing (576 spaces) including new access road (and alternative access to bridleway), footpath and amended junction at Sizewell Gap; and associated landscaping earthworks/recontouring, tree felling and boundary treatment.	0.72	N/A	0.88	Permitted	18/04/2019	1	Yes
271	DC/20/4646/FUL	East Suffolk	Sizewell B Sizewell Power Station Complex and Adjoining Land Sizewell Power Station Road Sizewell Leiston Suffolk IP16 4UR	647136	263389	Yes	No	No	Hybrid application seeking outline planning permission, with all matters reserved, for up to 9,500 square metres Gross External Area (GEA) to provide administration, storage, welfare and canteen facilities and a visitor centre of up to 1,000 square metres GEA. Detailed planning permission is sought for demolition of some existing structures and redevelopment to include a training centre and interim visitor centre, an outage store, lay down area, car and cycle parking, landscaping,	0.72	N/A	0.88	Permitted	16/11/2020	1	Yes

									associated infrastructure (including utilities, plant and highway works), tree felling and other relevant works.							
272	DC/21/5408/EIA	East Suffolk	Sizewell C Sizewell Power Station Road Sizewell Leiston Suffolk	647136	263389	Yes	No	No	Formal screening opinion pursuant to Regulation 6 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended)1 (herein referred to as the EIA Regulations) in relation to a proposed development on land north of the Sizewell B Power station, Sizewell, Leiston. The proposed development comprises two types of geotechnical trials, these being: (i) ground anchor trials; and (ii) deep soil mixing trials, both located within the proposed Sizewell C power stations main platform area (herein referred to as the Proposed Development). The trials will be undertaken to inform the geotechnical design development for the enabling works of the proposed Sizewell C power station. The Proposed Development is located within the ESC's administrative boundary.	0.72	N/A	0.88	Unknown	01/12/2021	1	Yes
273	DC/20/0902/OUT	East Suffolk	Suffolk Constabulary Force Headquarters Portal Avenue Martlesham Heath Martlesham Suffolk IP5 3QS	624197	246060	No	No	No	Outline Application (Some Matters Reserved) - Demolition and removal of all necessary existing buildings and structures to enable the residential development for up to 300no. new dwellings, with access from Portal Avenue, associated open space and landscaping, drainage and infrastructure. Open for comment icon	21.78	N/A	N/A	Awaiting decision	27/02/2020	1	No. Proposed development is outside the ZOI
274	DC/17/4967/EIA	East Suffolk	The Clubhouse Waldringfield Golf Club Newbourne Road Waldringfield Suffolk	626626	244953	No	No	No	Demolition and clearance of existing buildings and redevelopment of site for a mix of holiday let accommodation, residential dwellings and over 55s residential accommodation together with, landscaping and the continued use of existing points of access from Newbourne Road	20.87	N/A	N/A	Unknown	21/11/2017	1	No. Proposed development is outside the ZOI

275	DC/19/3275/EIA	East Suffolk	Thorington Gravel Pit London Road Thorington Suffolk	642029	274159	Yes	No	No	Request for screening opinion of proposed holiday park development within the FCC environment thorington landholding	9.11	N/A	N/A	Unknown	20/08/2019	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
276	DC/21/3251/FUL	East Suffolk	Thorington Quarry London Road Thorington Suffolk IP17 3QZ	642245	273254	Yes	No	No	Construction and operation of a Holiday Park comprising holiday lodges, reception and amenities building and ancillary infrastructure.	8.21	N/A	N/A	Unknown	20/12/2021	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
277	**DC/21/5515/FUL**	**East Suffolk**	**Town Farm Town Farm Lane Kelsale Cum Carlton Saxmundham Suffolk IP17 2RJ**	**639129**	**266934**	**Yes**	**No**	**No**	**Erection of 21 MW Solar PV Development with associated equipment and ecological improvement works on Land at Town Farm, Town Hall Lane, Kelsale cum Carlton, IP17 2RJ**	**3.13**	**N/A**	**N/A**	**Awaiting decision**	**05/01/2022**	**1**	**Yes**
278	**DC/21/2943/EIA**	**East Suffolk**	**Town Farm Town Farm Lane Kelsale Cum Carlton Suffolk**	**639277**	**266865**	**Yes**	**No**	**No**	**Screening Opinion - The erection of a 21MWp Solar PV Development**	**2.98**	**N/A**	**N/A**	**Unknown**	**17/06/2021**	**2**	**Yes**
279	**DC/21/4643/EIA**	**East Suffolk**	**UKZ139 BC Wissett Solar Farm Grays Lane Wissett Suffolk**	**635802**	**279849**	**Yes**	**No**	**No**	**EIA Screening Opinion - Proposed solar photovoltaic (PV) farm, with battery energy storage**	**16.04**	**N/A**	**N/A**	**Unknown**	**08/10/2021**	**2**	**Yes**
280	DC/19/3089/VOC	East Suffolk	Unit 1 Riduna Park Station Road Melton Suffolk IP12 1QT	628672	250481	Yes	No	No	Variation of Condition 15 (Opening Hours), on Application C/09/0584 (Development of two storey business units to include offices, workshops, coffee shop/cafe and associated external works and off-site highway work) in relation to Unit 1, Riduna Park only.	15.49	N/A	N/A	Permitted	06/08/2019	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
281	DC/19/4506/VOC	East Suffolk	Unit 18 Riduna Park Station Road Melton Woodbridge Suffolk IP12 1QT	628602	250484	Yes	No	No	Variation of Condition No.15 of C/09/0584 - Development of two storey business units to include offices, workshops, coffee shop/cafe & associated external works, off site highway works. - Extension to permitted open hours to Unit 18.	15.53	N/A	N/A	Permitted	18/11/2019	Tier 1	No. Nature, scale and location of development not likely to generate significant cumulative effects
282	DC/21/3728/VOC	East Suffolk	Unit 3 Gateway Retail Park Tower Road Lowestoft Gisleham Suffolk NR33 7NG	653111	289496	No	No	No	Variation of Condition No. 5 of DC/20/1671/VOC- Variation of Condition No.14 of DC/17/2538/VOC Variation of Condition Nos. 2, 13 & 17 of DC/15/5066/FUL - Demolition of existing buildings and structures and redevelopment to provide 4 retail units, 1 Cafe unit and 1 flexible retail/restaurant unit with associated car parking, servicing, landscaping public realm and pedestrian and vehicular access - The removal of the mezzanine from Unit 4 (this results in the loss of 372 sq m of retail space); The addition	26.22	N/A	N/A	Permitted	05/08/2021	1	No. Proposed development is outside the ZOI

									of a mezzanine in Unit 2 of 186 sqm; The sub division of Unit 5 into 3 separate retail units (5a, 5b & 5c); Also minor amendments to plans. Variation to Unit 4 to alow a wider range of goods to be sold.						
283	DC/18/0290/EIA	East Suffolk	Water Treatment Works Barsham Hill Barsham Suffolk	641289	288940	No	No	No	EIA Screening Opinion - Replacement water treatment works	23.90	N/A	N/A	Unknown	18/01/2018	2	No. Proposed development is outside the ZOI
284	DC/17/4171/FUL	East Suffolk	Wenhaston Quarry Heath Road Wenhaston With Mells Hamlet Halesworth IP19 9BZ	641095	276682	Yes	No	No	Full planning for change of use of the site to provide holiday lodge accommodation and associated leisure activities	11.67	N/A	N/A	Refused	30/09/2017	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
285	**DC/21/00022**	**Mid Suffolk**	**Brundish Manor The Street Brundish Woodbridge Suffolk IP13 8BL**	**626083**	**270941**	**Yes**	**No**	**No**	**Full Planning Application - Change of Use of land and siting 180No (45kw) photovoltaic array in paddock.**	**15.23**	**N/A**	**N/A**	**Granted**	**04/01/2021**	**1**	**Yes**
286	DC/20/01603	Mid Suffolk	Wilby Coronation Hall Brundish Road Wilby Suffolk	624255	271997	Yes	No	No	Planning Application - Installation of a Sewage Treatment Plant.	17.34	N/A	N/A	Granted	21/04/2020	1	No. Nature, scale and location of development not likely to generate significant cumulative effects
287	**N/A**	**Planning Inspectorate**	**EuroLink - Offshore interconnector between UK and The Netherlands**	**647585**	**262200**	**Yes**	**No**	**Yes**	**Proposed second link to the Netherlands of 1.4GW by 2030. Current proposal for interconnector / hybrid - windconnector**	**0**	**N/A**	**0**	**Pre-Application**	**N/A**	**3**	**Yes**
288	**N/A**	**Planning Inspectorate**	**Reinforcement of the transmission system between Norwich and Tilbury.**			**Yes**	**No**	**No**	**The East Anglia Green Energy Enablement (GREEN) project is a proposal to build a new high voltage network of 150km line reinforcement between Norwich, Bramford and Tilbury.**	**24**	**N/A**	**N/A**	**Pre-Application**	**N/A**	**3**	**Yes. Whilst outside the ZOI there is potential for an overlap of the largest study areas of the two projects. This will be reviewed once more information is available.**
289	**ENQ/2021/00097**	**MMO**	**Hanson Aggregates Marine Ltd Area 528**			**No**	**No**	**Yes**	**This is an aggregate exploration and option area located immediately to the eat of the offshore scoping boundary. Hanson Aggregate Ltd are looking to apply for a marine licence to allow for aggregate extraction from this area.**	**N/A**	**N/A**	**0.5**	**Pre-Application**	**N/A**	**Tier 3**	**Yes**

2.4.A Heritage Assets within Suffolk Scoping Boundary

Table 2.4.A.1: Non-designated assets recorded on the Suffolk HER within the Scoping Boundary

ID	Description/summary	Period	Grid ref
MSF14283	Findspot of a Medieval silver groat of Heinrich V. Silver groat of Heinrich V, Archbishop of Bremen 1463-96. Formerly recorded as LCS MISC.	Medieval	TM 44315 63865
MSF33081	7 Roman coins and 1 med coin. 7 Roman copper alloy coins and 1 medieval silver coin.	Roman to Medieval	TM 42600 61100
MSF21604	Cropmarks of uncertain archaeological significance. Cropmarks of uncertain archaeological significance have been recorded from aerial photographs. They comprise what has been interpreted as a causewayed ring ditch surrounded by an oval boundary. Their archaeological significance is doubtful.	Unknown	TM 45791 63462
MSF21600	Cropmarks of uncertain archaeological significance. Cropmarks of uncertain archaeological significance have been recorded from aerial photographs. They comprise what has been interpreted as a causewayed ring ditch, together with other, unspecified cropmarks, possibly tracks. Their archaeological significance is not known.	Unknown	TM 45895 63191
MSF21583	Cropmarks of uncertain archaeological significance. Cropmarks of uncertain archaeological significance have been recorded from aerial photographs. They have been interpreted as a causewayed ring ditch of possible Bronze Age date, and possible undated field boundaries. They were not recognised in a subsequ	Bronze Age?	TM 46758 62597
MSF21585	Cropmarks of uncertain archaeological significance. Cropmarks of uncertain archaeological significance have been recorded from aerial photographs. They have been interpreted as a causewayed ring ditch of possible Bronze Age date. They were not recognised in a subsequent survey of aerial photographs for the area.	Bronze Age?	TM 46878 62587
MSF21592	Cropmarks of uncertain archaeological significance. Cropmarks of uncertain	Bronze Age?	TM 46206 62610

	archaeological significance have been recorded from aerial photographs. They have been interpreted as a causewayed ring ditch of unknown but possibly Bronze Age date. They were not recognised in a subsequent survey of aerial photog		
MSF21597	Cropmarks of uncertain archaeological significance. Cropmarks of uncertain archaeological significance have been recorded from aerial photographs. They have been interpreted as a possible enclosure, possible ring ditches and possible trackways of unknown date. They were not recognised in a subsequent surveys.	Unknown	TM 46189 63076
MSF21602	Cropmarks of uncertain archaeological significance. Cropmarks of uncertain archaeological significance have been recorded from aerial photographs. They have been interpreted as a semi-circular ring ditch of unknown but possibly Bronze Age date. They were not recognised in a subsequent survey of aerial photos.	Bronze Age?	TM 46287 62628
MSF21593	Cropmarks of uncertain archaeological significance. Cropmarks of uncertain archaeological significance have been recorded from aerial photographs. They have been interpreted as an incomplete causewayed ring ditch of unknown but possibly Bronze Age date. They were not recognised in a subsequent survey of a	Bronze Age?	TM 46156 62604
MSF21618	Cropmarks of uncertain archaeological significance. Cropmarks of uncertain archaeological significance have been recorded from aerial photographs. They have been interpreted as possible field boundaries of unknown date. They were not recognised in a subsequent survey of aerial photographs for this area an	Unknown	TM 45900 62700
MSF21631	Cropmarks of uncertain archaeological significance. Cropmarks of uncertain archaeological significance have been recorded from aerial photographs. They have been interpreted as possible field boundaries of unknown date. They were not recognised in a subsequent survey of aerial photographs for this area.	Unknown	TM 45500 62800
MSF21582	Findspot of a glass bead of unknown date. One glass bead found, date unknown.	Unknown	TM 46822 62640

MSF2328	Findspot of a Roman bronze head-stud brooch. Bronze head-stud brooch (C2) found in Knodishall area 1973. Formerly recorded as KND MISC	Roman	TM 42500 61500
MSF22680	Harrow Farm, Harrow Lane. Sub-square enclosure indicated by cropmark.	Unknown	TM 42400 64610
MSF21619	Medieval artefact scatter of coarseware and one Prehistoric flint gritted sherd. Medieval coarseware, plus one possible prehistoric flint gritted sherd(?). Formerly recorded as LCS MISC.	Medieval	TM 45900 62700
MSF21596	Medieval artefact scatter of coarseware pottery sherds. Majority of pottery found was Med coarseware, there was one stray find of a Rom sherd.	Medieval	TM 46093 62981
MSF21586	Medieval artefact scatter of coarseware pottery. Medieval coarseware pottery found.	Medieval	TM 46519 62578
MSF21580	Medieval artefact scatter of coarseware sherds. C13/C14 coarseware sherds.	Medieval	TM 46825 62643
MSF21598	Medieval artefact scatter of coarseware sherds. Fifteen Med coarseware sherds found.	Medieval	TM 45758 63107
MSF21590	Medieval artefact scatter of pottery sherds, including Thetford ware and coarseware. One Thetford-type ware sherd and medieval coarseware found.	Medieval	TM 46174 62571
MSF22553	Medieval deer park, Leiston. Deer park listed in Domesday survey, location unknown, Previously LCS Misc.	Early Medieval	TM 45500 63500
MSF35355	Milestone on the A1094. Milestone on the A1094 at Rushmere Lodge Farm.	Post-Medieval	TM 42885 59016
MSF27693	Milestone on the A1094. Milestone on the A1094 at South Warren Golf Course.	Post-Medieval	TM 44269 58209
MSF26867	Mill Piece (tithe). Approximate location of former windmill suggested by 'Mill Piece' name in tithe (S1)(R1). Formerly recorded as LCS MISC.	Medieval to IPS: Post-Medieval	TM 45200 61600
MSF27742	Negative evaluation Aldringham Court, Aldringham cum Thorpe.	Unknown	TM 44510 60590
MSF31502	OUTLINE RECORD: Georchaeological boreholes at Aldhurst Farm, Leiston.	Unknown	TM 45000 63450
MSF38065	OUTLINE RECORD: Area 8 Sizewell C GRR Aldhurst Land (SGL) GEO (CAS) EVAL.	Unknown	TM 45180 63673
MSF30770	OUTLINE RECORD: CROPMARKS - MOAT?.	Unknown	TM 43390 64430
MSF30769	OUTLINE RECORD: CROPMARKS - PIT ALIGNMENT.	Unknown	TM 43610 64720

MSF38064	OUTLINE RECORD: Green Rail Route Area 5 (also labled as Area 7 and Mellen Land) Sizewell C (SGL) GEO (CAS) EVL.	Unknown	TM 44134 63890
MSF33557	OUTLINE RECORD: Medieval pottery scatter (BACKLOG).	Unknown	TM 40500 63800
MSF38723	OUTLINE RECORD: Sizewell C Leiston GRR Poll Land (SGL) GEO (CAS) EVAL.	Unknown	TM 45060 63855
MSF21599	Post-Medieval artefact scatter of pottery sherds. Thirteen Post-Medieval sherds found (S1)(S2).	Post-Medieval	TM 45758 63107
MSF21581	Prehistoric artefact scatter of flint flakes, including pot boiler flints and scrapers. Several flint flakes and others were found, including some pot boiler flints and scrapers.	Prehistoric	TM 46824 62642
MSF21587	Prehistoric artefact scatter of pot boiler flints and worked flints. Several pot boiler flints and other worked flints found.	Prehistoric	TM 46516 62575
MSF21589	Prehistoric artefact scatter of worked flint, including pot boiler flints and scrapers. Prehistoric worked flint including pot boiler flints and scrapers.	Prehistoric	TM 46171 62571
MSF21595	Prehistoric artefact scatter of worked flints, pot boiler flints and scrapers. A number of worked flints including two pot boiler flints and scrapers.	Prehistoric	TM 46093 62981
MSF21591	World War II building debris. Large amount of modern building debris noted on this field, probably World War II.	Modern	TM 46174 62573

Table 2.4.A.2: Non-designated assets within the Suffolk Onshore Scoping Boundary (line data)

MonUID	Description/summary	Period	Grid ref
MXS18775	Linear bank, visible as an earthwork to the south of Valley Grange.	Unknown	TM 44254 58152
MXS18774	Linear banks, of unknown date, visible on the golf course at South Warren. Formerly ADB 037.	Unknown	TM 44607 58064
MSF35003	Aldeburgh branch railway line.	Post-Medieval	TM 42461 63328

Table 2.4.A.3: Non-designated assets within the Suffolk Onshore Scoping Boundary (area data)

MonUID	Description/summary	Period	Grid ref
MSF19482	Great Wood. Ancient Woodlands.	Unknown	TM 43761 59483
MSF19483	Grove Wood / Old World Wood. Ancient Woodlands.	Unknown	TM 41812 61034
MSF21037	The Mear (1783); The Meare C16 & 1976); The Meer (1817); The Haven (1837). Large mere shown as 'The Meare' in the C16/17; 'The Mear' in 1783; 'The Meer' in 1817; much reduced as 'The Haven' in 1837.	Medieval & Post-Medieval	TM 46587 58727
MSF16640	Hazlewood Common. World War II anti-aircraft obstructions, visible as earthworks on Hazlewood Common.	Modern	TM 43436 58383
MXS18767	Possible curvilinear enclosure, unknown date. Curvilinear enclosure, of unknown date, visible as a cropmark northwest of Chapel Farm. Possibly a chalk ring associated with the nearby airfield.	Modern	TM 44265 59240
MXS18768	World WarII anti- tank obstacle. World War II anti-tank obstacle from Hazlewood Marshes to The Fens (c.2.5km), visible as earthworks in 1943 but levelled by 1953.	Modern	TM 44940 58485
MXS18772	A possible World War II strongpoint including trenches and barbed wire. A possible World War II strongpoint including trenches and barbed wire, visible north of Round Hill. Formerly ADB 035	Modern	TM 44295 57998
MXS18773	World War II anti-aircraft obstructions. World War II anti-aircraft obstructions on the fairways of the golf course at South Warren.	Modern	TM 44492 58108
MXS18773	World War II anti-aircraft obstructions. World War II anti-aircraft obstructions on the fairways of the golf course at South Warren.	Modern	TM 44708 58032
MXS18773	World War II anti-aircraft obstructions. World War II anti-aircraft obstructions on the fairways of the golf course at South Warren.	Modern	TM 44802 57953

MXS18773	World War II anti-aircraft obstructions. World War II anti-aircraft obstructions on the fairways of the golf course at South Warren.	Modern	TM 44902 57959
MXS18773	World War II anti-aircraft obstructions. World War II anti-aircraft obstructions on the fairways of the golf course at South Warren.	Modern	TM 45033 58031
MXS18773	World War II anti-aircraft obstructions. World War II anti-aircraft obstructions on the fairways of the golf course at South Warren.	Modern	TM 45000 57919
MXS18776	Four Post-Medieval quarries, visible as earthworks. Four probably post-Medieval quarries, visible as earthworks south of Valley Grange.	Post-Medieval	TM 44053 58191
MXS18778	World War II 'Diver' HAA battery. World War II 'Diver' HAA battery, visible immediately north of Eight Acre Covert.	Modern	TM 44898 58533
MXS18779	Quarry, visible as an earthwork north of Eight Acre Covert. Quarry, of unknown date, visible as an earthwork north of Eight Acre Covert. Formerly ADB 039	Unknown	TM 44906 58454
MXS18780	Three Post-Medieval quarries. Three probably post-Medieval quarries (one recorded as a 'clay pit') by Chapel Farm.	Post-Medieval	TM 44575 58849
MXS18781	Six Post-Medieval quarry pits, one labelled sand pit. Six probably post-Medieval quarry pits, visible as earthworks north and east of Grange Farm	Post-Medieval	TM 44066 58812
MXS18782	Hazlewood Aerodrome. Site of World War I airfield, visible as earthworks and a surviving building.	Modern	TM 43839 58891
MXS18783	Thee Post-Medieval quarry pits. Three quarries, possibly post-Medieval, visible immediately north and east of Hazlewood Hall Farm.	Post-Medieval	TM 43479 58929
MXS18783	Thee Post-Medieval quarry pits. Three quarries, possibly post-Medieval, visible immediately north and east of Hazlewood Hall Farm.	Post-Medieval	TM 43423 58922
MXS18783	Thee Post-Medieval quarry pits. Three quarries, possibly post-Medieval, visible immediately north and east of Hazlewood Hall Farm.	Post-Medieval	TM 43558 58851
MXS18785	Post-medieval WW2 bomb crater and emplacement. World War II emplacements visible as earthworks on Hazlewood Common. Formerly FRS 012	Modern	TM 43469 58222
MXS18786	Post-medieval WW2 trench, tank trap, military training site. World War II ditch, probably for training purposes, is visible as an earthwork on Hazlewood Common. Formerly FRS 012	Modern	TM 43444 58295

MXS19698	World War II anti-tank ditch. A World War II anti-tank ditch in Leiston and Aldringham cum Thorpe parish	Modern	TM 47121 61795
MXS19701	World War II strongpoint and a possible experimental radar station. World War II strongpoint and a possible experimental radar station in Leiston parish	Modern	TM 47467 62524
MXS19702	Quarry pit of unknown date. A quarry pit of unknown date, Leiston	Unknown	TM 46954 62396
MXS19705	A World War II seafront strongpoint. A World War II seafront strongpoint in Aldringham cum Thorpe parish	Modern	TM 47553 62295
MXS19733	Post-Medieval Sea bank, Aldeburgh. Post-Medieval Sea bank, Aldeburgh	Post-Medieval	TM 46676 59105
MXS19734	Early Post-Medieval relict sea banks. Relict sea banks, probably early post-Medieval date, in Aldeburgh parish	Post-Medieval	TM 46447 58212
MXS19735	World War II anti-tank ditches. World War II anti-tank ditches in Aldeburgh	Modern	TM 46824 58918
MXS19736	Remains of a footbridge crossing The Haven leading to Haven House. Remains of a footbridge crossing The Haven leading to Haven House, Aldeburgh	Post-Medieval to Modern	TM 46846 58762
MXS19737	A World War II strongpoint surrounded by a minefield. A World War II strongpoint surrounded by a minefield, Aldringham cum Thorpe	Modern	TM 46821 58175
MXS19739	World War II anti-aircraft ditches. World War II anti-aircraft ditches, Aldeburgh.	Modern	TM 46380 58764
MXS19739	World War II anti-aircraft ditches. World War II anti-aircraft ditches, Aldeburgh.	Modern	TM 46456 58579
MXS19739	World War II anti-aircraft ditches. World War II anti-aircraft ditches, Aldeburgh.	Modern	TM 46438 58467
MXS19739	World War II anti-aircraft ditches. World War II anti-aircraft ditches, Aldeburgh.	Modern	TM 46655 58596
MXS19740	Two probable World War II bomb craters. Two probable World War II bomb craters, Aldeburgh	Modern	TM 46663 58307
MXS19741	Probable Post-Medieval field boundaries to the north of Brick Kiln Cottage. Probable Post-Medieval field boundaries to the north of Brick Kiln Cottage, Aldeburgh	Medieval and Post-Medieval	TM 46038 58366
MXS19742	A World War II strongpoint and group of bomb craters. A World War II strongpoint and group of bomb craters in Aldeburgh parish	Modern	TM 46279 58487
MXS19743	A World War II strongpoint adjacent to Brick Kiln cottage. A World War II strongpoint adjacent to Brick Kiln cottage, Aldeburgh	Modern	TM 46051 58325

MXS19744	World War II 'Diver' HAA battery. A World War II Heavy Anti-Aircraft Artillery battery in Aldeburgh	Modern	TM 45841 58407
MXS19745	Post-Medieval brick- earth quarry pit. A brick-earth quarry pit of probable post-Medieval date, Aldeburgh	Post-Medieval	TM 45941 58255
MXS19746	Post-Medieval path or track. A path or track of probable post-Medieval date, Aldeburgh	Post-Medieval and Modern	TM 45415 58116
MXS19747	Post-Medieval clay extraction pit. Post-Medieval clay extraction pit, Aldeburgh	Post-Medieval and Modern	TM 45797 57958
MXS19748	World War II 'Diver' HAA battery. A World War II Heavy Anti-Aircraft Artillery site, Aldeburgh	Modern	TM 45952 57740
MXS19752	Post-Medieval relict sea- bank. A relict sea-bank of post-Medieval date, Aldeburgh	Post-Medieval	TM 46535 58322
MXS19838	An extensive length of World War II beach scaffolding. An extensive length of World War II beach scaffolding running south from Aldringham cum Thorpe parish	Modern	TM 46842 57859
MXS19856	World War II anti-invasion beach defences. World War II anti-invasion beach defences near Sizewell village, Leiston	Modern	TM 47562 62817
MXS19858	World War II anti-invasion coastal defences. World War II anti-invasion coastal defences from Sizewell village to Sizewell Hall, Leiston	Modern	TM 47607 62205
MXS19861	A c. 3.5km long row of World War II anti-tank cubes from Aldeburgh to Thorpness. A circa 3.5km long row of Second World War anti-tank cubes from Aldeburgh to Thorpeness.	Modern	TM 46813 58098
MXS19863	World War II anti-tank cubes. World War II anti-tank cubes, Aldeburgh.	Modern	TM 46769 58294
MSF21392	Modern ship's mast mounted in a metal sheath, possibly a lookout post. Old ship's mast mounted in metal sheath. Metal footholds set into mast to aid climbing. Sited near old huts and boat winches of fisherman. Lookout?	Unknown	TM 47596 62646
MSF22813	Fristonmoor; Buxlow. Small mapped enclosure with a scatter of Medieval pottery (20 sherds).	Post-Medieval and Modern	TM 41203 61803
MSF22814	Littlemoor Farm, Fristonmoor; Buxlow. An enclosed area formerly (on C19 maps) containing 4 dwellings, now demolished.	Post-Medieval	TM 41254 61732
MSF22815	Old Kiln Field; Kiln Field; Buxlow. Field names and brick debris suggesting brickworks.	Post-Medieval	TM 41571 61784
MSF11502	Moor Farm; High House Farm. About 20 sherds C13/C14 pottery (coarseware cooking pot and	Medieval	TM 40965 61708

	glazed jug) and a fragment of Rhenish lava millstone revealed in builders' construction trench (S1).		
MSF12593	Small smock mill, Thorpe Road. Remains of a small smock mill, built in 1800 by Collins of Melton.	Post-Medieval and Modern	TM 46790 58296
MSF13936	Two bowl barrows on Aldringham Green. Scheduled (with ARG 001) Monument - one of three tumuli situated on Aldringham Green - also see ARG 013.	Bronze Age	TM 44737 60848
MSF13937	Aldringham Green. One of three Scheduled round barrows on Aldringham Green - also see ARG 001 & ARG 012.	Bronze Age	TM 44700 60856
MSF14092	Agricultural pit of negligible archaeological significance. A pit, probably relating to Post-Medieval or modern agricultural activity and of negligible archaeological significance, is visible as an earthwork and soilmark on aerial photographs. It had been recorded previously as a possible enclosure.	Post-Medieval and Modern	TM 45131 61661
MSF14095	Half of a ring ditch or circular enclosure of unknown date, visible as a cropmark. Semi-circular cropmark, possibly surviving half of ring ditch or small circular enclosure, diameter approximately 50m.	Unknown	TM 41779 60783
MSF16193	Small rectangular(?) enclosure, possibly open ended to NE. Small rectangular(?) enclosure, possibly open ended to NE.	Unknown	TM 40580 62080
MSF16196	Medieval artefact scatter. Med pottery scatter & one short cross silver penny (of Henry II?).	Medieval	TM 45006 60455
MSF16888	Post-Medieval bridge. Site of bridge as shown on Hodskinson's map of 1783 (S1), crossing the Hundred River.	Post-Medieval	TM 44694 60594
MSF16889	Post-Medieval bridge shown on Hodskinson's map. Bridge shown crossing a small stream on Hodskinson's map (S1).	Post-Medieval	TM 45456 63481
MSF17577	Little Moor Farm; Buxlow Parsonage. Rectangular moated site of former Buxlow parsonage on the south edge of the former Friston Moor (common).	Medieval and Post-Medieval	TM 41193 61664
MSF2306	Aldringham Green Round Barrow; Two bowl barrows, Aldringham Green. Scheduled (together with ARG 012) Monument - round barrow.	Unknown	TM 44706 60813
MSF2524	Gorse Hill. Thirteen amphorae (carrot shaped variety) found in front of house parallel to road on E, location not precise (S1).	Roman	TM 45809 58313
MSF2530	Hazlewood Church; Church of St Mary. Hazlewood Church, in ruins by 1600, the	Medieval	TM 44774 59077

	Churchyard remained in use until circa 1700, at Domesday there were two churches in Aldeburgh - ? Aldeburgh and Hazlewood (see also ADB 223)		
MSF2532	Gorse Hill. Flint scatter - flakes and scrapers, probably Neo.	Neolithic	TM 45612 58416
MSF2538	Roman artefact scatter. Pottery and half a melon bead (possibly mislocated and should be within ADB 014 area).	Roman	TM 46002 58405
MSF2539	Medieval scatter of pottery and red burnt clay. Scatter of pottery and red burnt clay (S1).	Medieval	TM 45785 58496
MSF2540	Golf Course. Collared urn rim, found buried upside down, containing cremated bones, in bunker on golf course.	Bronze Age	TM 44820 58137
MSF2544	The Red House. Barbed and tanged flint arrowhead found in the garden of the Red House, from a heap of soil left over from the building of a garage in 1970 (S1).	Bronze Age	TM 45411 57903
MSF4001	Cropmarks of undated field boundaries. Cropmarks of undated field boundaries, and perhaps other features, are visible on aerial photographs.	Unknown	TM 44810 63081
MSF14096	Buxlow; Buxton. 1753: Symbol for `church or chapel in ruins' on Bowen's map of Suffolk at `Buxton', N of Friston church (S1).	Medieval	TM 41391 60614
MSF17578	Friston Moor. Friston Moor, a former common.	Medieval	TM 40766 61666
MSF2325	Knodishall Common; Coldfair Green. Tumuli, one large and eight small in two rows E - W.	Unknown	TM 43175 60852
MSF2543	Gorse Hill (Rom). Scatter of Rom pottery now in Ipswich museum.	Roman	TM 45767 58458
MSF2552	Gorse Hill (Med). Pottery scatter.	Medieval	TM 45767 58458
MSF2330	Large simple rectangular inhabited moat at Hill Farm. Large simple rectangular inhabited moat at Hill Farm.	Medieval	TM 39804 61764
MSF2331	NE of Hill Farm C19 decoy or flight pond, not part of a moat. NE of Hill Farm C19 decoy or flight pond, not part of a moat.	Post-Medieval	TM 39977 62038
MSF23623	Cross with ring ditch, probably from a former post mill, visible as cropmarks. Cropmark of cross within ring ditch, probably from former post-mill (S1). On NE facing slope.	Medieval	TM 42647 61096
MSF25256	EDF Access, Sizewell Power Station. Monitoring of test pits revealed evidence of a channel, pond or wet hollow in the south of LCS 160 containing a	Medieval	TM 47189 62669

	sherd of medieval pottery, a small quantity of unstratified medieval pottery.		
MSF25696	Knodishall Coldfair Green historic settlement; St Andrews Green; Coldford Green (1783). Indicative area of the historic settlement of Knodishall surrounding Coldfair (or St Andrews) Green. Named Coldford Green on Hodskinson's 1783 map.	Medieval and Post-Medieval	TM 43376 60998
MSF25683	Aldringham historic settlement core (Med). Indicative area of the historic settlement core of Aldringham.	Medieval and Post-Medieval	TM 44636 60979
MSF26453	Aldringham Green. Medieval Green.	Medieval	TM 44665 60961
MSF26002	Suffolk square pillbox. Suffolk square pillbox.	Modern	TM 41745 59673
MSF16639	Possible ring ditch of unknown date. Circular cropmark, possibly a ring ditch, of unknown date, is visible on Hazlewood Common.	Unknown	TM 43234 58559
MSF16638	Possible ring ditch of unknown date. Circular cropmark, possibly a ring ditch, of unknown date, is visible on Hazlewood Common.	Unknown	TM 43265 58554
MXS18777	Ring ditch and possible round barrow site, unknown date. Possible round barrow site, visible between Grange Farm and Valley Grange	Bronze Age	TM 44010 58509
MSF24054	Small finds assemblage. During a monitoring visit a fire-cracked flint, a sherd of Roman and a sherd of medieval pot were found, all unstratified.	Early Neolithic to Medieval	TM 44670 58933
MSF29478	Medieval Settlement at Sizewell, Leiston. Medieval Settlement with evidence of industrial activity on edge of Settlement	Early Neolithic to Medieval	TM 47213 62654
MSF33455	Fragmentary cropmarks of possible medieval settlement. Fragmentary cropmarks of possible medieval settlement are visible on aerial photographs to the north of St Andrew’s Church, Aldringham cum Thorpe.	Medieval	TM 45014 60469
MSF33606	Possible gun emplacement for 'Diver' HAA site. Parchmarks of four possible former gun emplacements which may have been associated with the 'Diver' HAA site to the east (SHER ADB 200) are visible on aerial photographs to the west of Leiston Road, Aldeburgh.	Post-Medieval to Modern	TM 45042 59039
MSF33594	Possible soilmark enclosure. An undated possible enclosure is visible as faint soilmarks on aerial photographs on land to the east of Leiston Road, Aldeburgh.	Roman	TM 45983 58636
MSF33592	Possible cropmark enclosure. An undated possible cropmark enclosure is visible as faint cropmarks	Roman	TM 45649 58431

	on aerial photographs on land to the east of Leiston Road, Aldeburgh.		
MSF33591	Fragmentary linear cropmarks. Undated fragmentary linear ditches are visible as faint cropmarks on aerial photographs on land to the north of South Warren golf course, Aldeburgh.	Unknown	TM 45181 58367
MSF33426	Site of possible Bronze Age round barrow or medieval to Post-Medieval mill mound, The Walks. The site of a possible Bronze Age round barrow or medieval to post-Medieval mill mound is visible as a soil and cropmark on aerial photographs.	Early Bronze Age and Post-Medieval	TM 46599 62312
MSF33424	Earthworks of linear and rectilinear boundaries of unknown date, The Walks, Aldringham Common. Linear and rectilinear boundaries of unknown date are visible as earthworks on aerial photographs of The Walks, Aldringham Common.	Unknown	TM 46476 62253
MSF33429	Site of Second World War Diver anti-aircraft battery. A Second World War Diver anti-aircraft battery is visible as structures and earthworks on aerial photographs. The site was dismantled at the end of the war but parts of the trackways still survive, as may some of the hardstandings.	Modern	TM 46548 62017
MSF33430	Linear earthwork banks on Broom Covert. Linear earthwork banks, perhaps post-Medieval boundaries, are visible on aerial photographs of heathland at Broom Covert. They are in part followed by modern land divisions depicted on Ordnance Survey maps.	Post-Medieval and Modern	TM 46347 63010
MSF33431	Site of fragmentary cropmarks of unknown date and significance. Fragmentary cropmarks, of uncertain date and archaeological significance, are visible on aerial photographs. They could represent former field boundaries and/or enclosures, and perhaps part of a trackway.	Unknown	TM 46107 62855
MSF33433	Site of fragmentary cropmarks of unknown date and significance. Fragmentary cropmarks, of uncertain date and archaeological significance, are visible on aerial photographs. They could represent former field boundaries.	Unknown	TM 46058 62293
MSF33434	Site of fragmentary cropmarks of unknown date and significance. Fragmentary cropmarks, of uncertain date and archaeological significance, are visible on aerial photographs. They could represent former field boundaries.	Unknown	TM 45791 62363
MSF33436	Site of fragmentary cropmarks of unknown date and significance. Faint and fragmentary rectilinear cropmarks, of uncertain date and archaeological significance, are visible on aerial photographs.	Unknown	TM 45486 63017

MSF33438	Site of Leiston Very High Frequency (VHF) Fixer Station. A World War Two direction finding (D/F) station (or a similar type of communications/navigation site), which remained in use into the Cold War period under the Rotor programme, is visible as a group of structures, connected by pathways, on aerial photogr	Modern	TM 45835 61789
MSF33442	Site of two probable First World War pillboxes. Two probable First World War pillboxes are visible as extant buildings (since levelled) on aerial photographs.	Modern	TM 45849 62507
MSF33448	Site of one or more Second World War slit trenches. One or more Second World War slit trenches are visible as earthworks on aerial photographs taken between 1944 and 1946. They were probably outlying defences for Leiston, and perhaps also the Diver anti-aircraft battery (LCS 185) located a short distance	Modern	TM 45622 63111
MSF33439	Site of Second World War military training area and/or defended locality. A Second World War military site, perhaps used for training and/or as a defended locality, is visible as earthworks and structures on aerial photographs. There is potential for some elements to still survive, as the eastern part of the site – Broom Cov	Modern	TM 46333 62982
MSF33440	Second World War training area and/or strong point. A Second World War training area and/or strong point is visible as earthworks and structures on 1940s aerial photographs. Recent photographs indicate that while much of the site was dismantled before the end of the war, some earthworks probably still sur	Modern	TM 46529 62375
MSF33444	Site of undated boundary on Leiston Common. An undated linear bank, probably a former boundary, is visible as an earthwork on Leiston Common on aerial photographs taken in 1946. It has since been levelled.	Medieval and Post-Medieval	TM 45654 63440
MSF31925	Site of Second World War (and/or possibly First World War) military training site, Leiston Common. The site of a Second World War (and/or possibly First World War) military training site on Leiston Common is visible as earthworks and barbed wire on 1940s aerial photographs.	Modern	TM 45870 63451
MSF31923	Site of Second World War Diver battery. The site of a Second World War Diver battery has been recorded on Leiston Common, and is visible on 1940s aerial photographs as surviving and removed structures, a building or hut (since removed) and earthworks (now levelled).	Modern	TM 45801 63319

MSF31922	Site of Second World War Auxiliary Unit Operational Base, Leiston Common. The site of a Second World War Auxiliary Unit Operational Base has been recorded on Leiston Common, and is visible as an earthwork on aerial photographs. However, see too LCS 164 for an alternative location for this site.	Modern	TM 45825 63502
MSF2531	Extensive cropmark site. A series of field boundaries and possible fragmentary settlement features are visible as cropmarks on aerial photographs on land to the south and east of Crag Pit Nurseries, Aldeburgh.	Medieval to Post-Medieval	TM 45964 57997
MSF16194	Second World War anti-glider ditches and military training activity on The Walks, Aldringham Common. An extensive network of Second World War anti-glider ditches is visible as earthworks on aerial photographs of The Walks, Aldringham Common. Traces of Second World War (and perhaps earlier) military training activity is also visible, as the earthworks of	Modern	TM 46379 61508
MSF21588	Multi-period cropmarks of probable field boundaries and enclosures. Multi-period cropmarks of probable field boundaries and enclosures are visible on aerial photographs. They are undated, but more than one phase is apparent. An Iron Age to Roman date for some of the cropmarks is plausible.	Early Iron Age to Roman	TM 46531 62607
MSF21594	Site of Second World War Diver anti-aircraft battery. A Second World War Diver anti-aircraft battery is visible as structures on aerial photographs. The site is now arable and there is no evidence that any elements survive; an evaluation in the area of the site noted large amounts of modern building materia	Post-Medieval to Second World War	TM 46182 62565
MSF34510	A World War II Anti-tank ditch. A World War II Anti-tank ditch, Aldeburgh (formerly MXS19751).	Modern	TM 46686 57833
MSF34510	A World War II Anti-tank ditch. A World War II Anti-tank ditch, Aldeburgh (formerly MXS19751).	Modern	TM 46479 57813
MSF33815	Bronze Age/Early Iron Age settlement activity at Land south of Red House Lane, Leiston (Excavation pending). Middle-late Bronze Age to early Iron Age settlement activity identified by field boundaries, possible roundhouses, pits in a ditched enclosure and urned cremation.	Middle Bronze Age to Post-Medieval	TM 45000 61777
MSF29484	Late Prehistoric and Romano-British agricultural activity at Galloper offshore Wind Farm. Features, mostly ditches with some pits, consistent with small scale Late Prehistoric and Romano-British activity probably relating to farming practices.	Roman	TM 46647 62704

MSF16637	Ring ditch and possible round barrow, both of unknown date. Possible round barrow site, visible as a ring ditch and potential mound, of unknown date, east of Horseshoe Covert.	Bronze Age	TM 43120 58667
MSF37237	Land to the east of Aldeburgh Road, Aldringham Cum Thorpe. Possible multiphase medieval-post-medieval rectilinear field system and several Early Iron Age features.	Early Iron Age to Post-Medieval	TM 44649 61214
MSF38516	Farmstead: Chapel Barn. Chapel Barn field barn visible on 1st Ed OS map. L-plan courtyard field barn in a field containing the remains of a medieval church (ADB 005). The field barn has been demolished and replaced with a modern working farm.	Medieval	TM 44552 58948
MSF38519	Farmstead: Crag Pit Farm. Crag Pit Farm visible on 1st Ed OS map is a regulard courtyard H plan farmstead with the farm house set apart from the working buildings. The farmstead is set to the south of a private road. There has been partial loss of working buildings.	Post-Medieval	TM 45834 58126
MSF39277	Farmstead: Bull's Hall Farm. Bull's Hall Farm is a farmstead visible on the 1st Ed OS map. The farmstead is laid out in a regular F-plan with the farmhouse detached and set away from the yard. The farmstead sits alongside a private track in an isolated location.i	Post-Medieval	TM 42648 60396
MSF39278	Farmstead: Park Farm. Park Farm is a farmstead visible on the 1st Ed OS map. The farmstead is laid out in a regular L-plan with buildings to the third side and additional detached elements. The farmhouse is detached and set away from the yard.	Post-Medieval	TM 42708 59581
MSF39281	Farmstead: Rushmere Lodge Farm. Rushmere Lodge Farm is a farmstead visible on the 1st Ed OS map. The farmstead is laid out in a multi yard pattern with F-plan, and L-plan elements and further detached buildings. The farmhouse is detached and set away from the yard.	Post-Medieval	TM 42769 59115
MSF39282	Farmstead: Hazelwood Hall Farm. Hazelwood Hall Farm is a farmstead visible on the 1st Ed OS map. The farmstead is laid out in a regular U-plan with the farmhouse detached and set away from the yard. The farmstead sits alongside a public road in an isolated location.	Post-Medieval	TM 43464 58806
MSF39283	Farmstead: Grange Farm. Grange Farm is a farmstead visible on the 1st Edition OS map. The farmstead is laid out in a regular L-plan with additional detached elements and the farmhouse	Post-Medieval	TM 43916 58699

	set away from the yard. The farmstead sits alongside a private track in an isolated location.		
MSF34410	Chapel Barn Farm, Aldeburgh (ADLHS) FW. The Aldeburgh & District Local History Society (ADLHS) have been conducting fieldwalking adjacent to the ruined St Mary's Church near Aldeburgh (ALD 005). Finds include prehistoric flints, Roman/ Saxon/ medieval/post-med pottery.	Early Bronze Age to Post-Medieval	TM 44708 59127
MSF39512	Farmstead: High House Farm (Fristonmoor). Fristonmoor is a farmstead visible on the 1st Ed Os map. The farmstead is laid out in a regular F-plan with additional detached elements. The farmhouse is detached and set away from the yard. The farmstead is set alongside a private track in an isolated position.	Post-Medieval	TM 40977 61701
MSF39513	Farmstead: Little Moor Farm. Little Moor Farm is a farmstead visible on the 1st Ed Os map. The farmstead is laid out in a loose courtyard. The farmstead sits alongside a private track in an isolated location. All working buildings have been lost.	Post-Medieval	TM 41234 61678
MSF39514	Farmstead: Clouting's Farm. Clouting's Farm is a farmstead visible on the 1st Ed Os Map. The farmstead is laid out in a regular L-plan with the farmhouse detached and set away from the yard. The farmstead sits alongside a private track in an isolated location.	Post-Medieval	TM 41147 62072
MSF39519	Farmstead: Peartree Farm. Peartree Farm is a farmstead visible on the 1st Ed Os map. The farmstead is laid out in a regular L-plan with buildings to the third side. The farmhouse is detached and set away from the yard. The farmstead sits alongside a public road in an isolated location.	Post-Medieval	TM 41803 61648
MSF39520	Farmstead: Manor Farm. Manor Farm is a farmstead visible on the 1st Ed Os Map. The farmstead is laid out in a full regular courtyard plan with the farmhouse detached and set away from the yard. The farmstead sits alongside a public road in an isolated location.	Post-Medieval	TM 42114 61304
MSF39522	Farmstead: Billeaford Hall. Billeaford Hall is a farmstead visible on the 1st Ed OS map. The farmstead is laid out in a multi-yard pattern with U-plan and L-plan features. The farmhouse is detached and set away from the yard. The farmstead sits alongside a public road in an isolated location.	Post-Medieval	TM 43318 60228
MSF39551	Farmstead: Sizewell Farm. Sizewell Farm is a farmstead visible on the 1st Ed Os map. The farmstead is laid out in a linear plan with additional	Post-Medieval	TM 47158 62395

	detached elements. The farmhouse is detached and set away from the yard. The farmstead sits alongside a public road in an isolated location.		
MSF39552	Farmstead: Hawsell's Farm. Hawsell's Farm is a farmstead visible on the 1st Ed Os map. The farmstead is laid out in a regular U-plan with additional detached elements. The farmhouse is detached and set away from the yard. The farmstead sits alongside a private track in an isolated location.	Post-Medieval	TM 45478 61799
MSF39553	Farmstead: Crown Farm. Crown Farm is a farmstead visible on the 1st Ed Os map. The farmstead is laid out in a regular E-plan with additional detached elements. The farmhouse is detached and set away from the yard. The farmstead sits alongside a public road in an isolated location.	Post-Medieval	TM 45886 62447
MSF39554	Farmstead: Common Farm. Common Farm is a farmstead visible on the 1st Ed Os Map. The farmstead is laid out in a regular U-plan with the farmhouse detached and set away from the yard. The farmstead sits alongside a public road in an isolated location.	Post-Medieval	TM 45622 63226
MSF39867	Field Barn: Unnamed Field Barn. An unnamed field barn visible on the 1st Ed Os map. The barn sits alongside a private track in an isolated location. The barn has been completely lost.	Post-Medieval	TM 40433 62170
MSF39868	Farmstead: Redhouse Farm. Redhouse Farm is a farmstead visible on the 1st Ed Os map. The farmstead is laid out in a linear plan with additional detached elements. The farmhouse is detached and set away from the yard. The farmstead sits alongside a public road in an isolated location.	Post-Medieval	TM 40419 61687
MSF39869	Farmstead: Hill Farm. Hill Farm is a farmstead visible on the 1st Ed Os map. The farmstead is laid out in a regular U-plan with additional detached elements. The farmhouse is detached and set away from the yard. The farmstead sits alongside a private track in an isolated location.	Post-Medieval	TM 39847 61804
MSF39869	Farmstead: Hill Farm. Hill Farm is a farmstead visible on the 1st Ed Os map. The farmstead is laid out in a regular U-plan with additional detached elements. The farmhouse is detached and set away from the yard. The farmstead sits alongside a private track in an isolated location.	Post-Medieval	TM 39787 61760
MSF39917	Farmstead: Trust Farm (Town Farm). Town Farm is a farmstead visible on the 1st Ed Os map. The farmstead is laid out in a regular T-plan with additional detached elements. The farmstead sits	Post-Medieval	TM 40491 62616

	alongside a private track in an isolated location. Only the farmhouse remains.		
MSF43261	North Warren, Aldeburgh. Warren.	Medieval	TM 45284 59323
MSF43262	Thorpe and Aldringham Commons. Common Land.	Medieval	TM 46409 61034
MSF43263	Sizewell Common. Common Land	Medieval	TM 47343 61978
MSF43411	Dry Common, Leiston. Common, visible on Hodskinson's Map 1783.	Medieval	TM 45989 63492
MSF43412	Wet Common, Leiston. Common, visible on Hodskinson's Map 1783.	Medieval	TM 46752 63994
MSF43261	North Warren, Aldeburgh. Warren	Medieval	TM 44578 60372
MSF43519	Coastal Heath, Leiston. Common, visible 1880s	Medieval	TM 47586 63942
MSF43589	Friston Green/Blackheath. Green visible on Hodskinson's Map of 1783.	Medieval	TM 41424 59715
MSF22764	Theberton airfield; Leiston airfield; Saxmundham airfield. Former mainly military airfield, in use between 1934 and 1965.	Modern	TM 42816 64346
MSF22765	Buxlow Forest (1783); The Forest; Whin Cover. Site of former ancient (?) woodland shown and named as Buxlow Forest in 1783.	Medieval to Post-Medieval	TM 42641 64782
MSF11524	Medieval artefact scatter of pottery. (Med). Scatter of Med (& Rom) pottery found on field surface by farmer (S1)(S2).	Medieval	TM 44989 63631
MSF11525	Abbey Road. Scatter of red tile over most of field surface (S1).	Unknown	TM 44418 63814
MSF11526	Abbey Lane. Scatter of metalwork found by farmer, includes groat and cut halfpenny and `many Nuremberg tokens' (S1).	Medieval	TM 44251 63872
MSF12096	Roman artefact scatter of pottery. (Rom). Finds scatter of Med & Rom pottery found by farmer during ploughing and subsequent walking.	Roman	TM 44989 63631
MSF12097	Medieval artefact scatter. Finds scatter identified whilst farming, and subsequent random walking.	Medieval	TM 44878 63573
MSF806	Near Brick Kiln Farm, Leiston, (Mesolithic). Two Mesolithic mace heads one with hole not completely bored through.	Mesolithic	TM 45008 63319
MSF19469	Great Wood. Ancient Woodlands	Unknown	TM 39588 62931
MSF25178	Moat Farm. Area of cropmarks showing online on 'Flash Earth' (July 2011). Possible fish ponds SW of the farm.	Unknown	TM 43142 64927

MSF2340	Leiston Abbey, Abbey Farm. Founded 1182 on a site about 2 miles away nearer the sea (see LCS 002) as a Premonstratensian house, dedicated to the Blessed Virgin, by Ranulf de Glanville, Henry II's chief Justicier. listed building scheduled.	Medieval	TM 44457 64189
MSF26807	Burnt flint mound. Extensive scatter of heavily burnt flints adjacent to a small stream.	Unknown	TM 44940 63558
MSF26812	Brick works. Brick works, kilns, pug mill and drying sheds and extraction pit shown on 1880's map.	Post-Medieval	TM 44454 63168
MSF26809	Six medieval pennies. Two silver Henry II pennies found 1994 and in 2006 a further hoard of six Henry II pennies (1163-1167) were found.	Medieval	TM 44885 63681
MSF33446	Site of cropmarks of uncertain archaeological significance and unknown date, possibly relating to a prehistoric barrow. Site of cropmarks visible on aerial photographs of uncertain archaeological significance and unknown date, but comprising a possible oval mound, a ring ditch, a substantial flanking ditch and possible pits.	Early Neolithic to Late Bronze Age	TM 45054 63652
MSF33445	Site of possible double ring ditch of uncertain significance and date. A possible double ring ditch of uncertain archaeological significance and date is visible as a cropmark on aerial photographs. If a genuine archaeological feature, its size and topographic position would support its interpretation as the remains of a Bronze Age burial.	Bronze Age	TM 45158 63612
MSF33447	Site of vague cropmarks of unknown date and significance. Vague and fragmentary cropmarks of unknown date and significance are visible on aerial photographs.	Unknown	TM 44980 63384
MSF31920	Extensive area of Second World War military training activity. Evidence of Second World War military training activity is visible on aerial photographs as earthworks and disturbed ground spread across an extensive area of Leiston, including part of Dunwich Forest and Kenton Hills.	Modern	TM 45483 63834
MSF31543	Possible practice trench and undated ditches at Aldhurst Farm. Possible practice trench and undated ditches identified during evaluation trenching at Aldhurst Farm	Post-Medieval to Modern	TM 45006 63482
MSF35810	Medieval ditches, Abbey View Lodges, Leiston. Evaluation identified medieval ditches and a modern pit.	Medieval	TM 44387 63694
MSF39545	Farmstead: Hill Farm. Hill Farm is a farmstead visible on the 1st Ed Os map. The farmstead is laid out in a regular F-plan with additional detached elements. The farmhouse is detached	Post-Medieval	TM 43997 64446

	and set away from the yard. The farmstead sits alongside a private track in an isolated location.		
MSF39546	Farmstead: Aldhurst Farm (Rookwood Farm). Rookwood Farm is a farmstead visible on the 1st Ed Os Map. The farmstead is laid out in a loose courtyard plan and sits alongside a public road in an isolated location. There has been a partial loss of working buildings.	Post-Medieval	TM 43977 63957
MSF39555	Farmstead: Works Farm. Works Farm is a farmstead visible on the 1st Ed Os map. The farmstead is laid out in a full regular courtyard with additional detached elements. The farmstead sits alongside a private track in an isolated location.	Post-Medieval	TM 44684 63217
MSF39914	Farmstead: Wardspring Farm. Wardspring Farm is a farmstead visible on the 1st Ed Os map. The farmstead is laid out in a regular U-plan with the farmhouse detached and set away from the yard. The farmstead is set alongside a private track in an isolated location.	Post-Medieval	TM 40421 63388
MSF39950	Farmstead: Hill Farm. Hill Farm is a farmstead visible on the 1st Ed Os map. The farmstead is laid out in a regular F-plan, a further U-plan, and additional detached elements. The farmhouse is detached and set away from the yard. i	Post-Medieval	TM 42172 64132
MSF39951	Farmstead: Moat Farm (Mustard's Farm). Mustard's Farm is a farmstead visible on the 1st Ed Os map. The farmstead is laid out in a regular U-plan with additional detached elements. The farmhouse is detached and set away from the yard. The farmstead sits alongside a public road in an isolated location.	Post-Medieval	TM 43195 65072

Table 2.4.A.4: Non-Designated Heritage Assets within the Suffolk Site 1 Emerging Preference Option Area

Asset ID	Site/description	Period	Grid Reference
MSF19482	Great Wood	Unknown	TM 43760 59482
MXS18782	Hazlewood Aerodrome	First World War to 20th century	TM 43838 58891

Table 2.4.A.5: Designated Heritage Assets within 2 km of the Suffolk Site 1 Emerging Preference Option Area

Asset ID	Site/description	Period	Grid Reference
1215751	DUFFIELD HOUSE. **Grade II listed building.**	Post-Medieval	TM 41313 60260
1215755	CHERRY TREE FARMHOUSE. **Grade II listed building.**	Post-Medieval	TM 43805 61071
1216081	BILLEAFORD HALL. **Grade II listed building.**	Post-Medieval	TM 43308 60202
1216388	TWO ADJOINING FARM BUILDINGS IMMEDIATELY SOUTH WEST OF CHERRY TREE FARMHOUSE. **Grade II listed building.**	Post-Medieval	TM 43790 61057
1287747	ROMANY'S REST. **Grade II listed building.**	Post-Medieval	TM 43614 61089

Table 2.4.A.6: Non-Designated Heritage Assets within the Suffolk Site 3 Emerging Preference Boundary

Asset ID	Site Description	Period	Grid Reference
MSF19469	Great Wood.	Unknown	TM 39588 62931

Table 2.4.A.7: Designated Heritage Assets within 2 km of the Suffolk Site 3 Emerging Preference Option Area

Asset ID	Site/description	Period	Grid ref
1215749	BUXLOW MANOR. **Grade II* listed building.**	Post-Medieval	TM 41071 63232
1268184	CHURCH OF ST JOHN BAPTIST. **Grade II* listed building.**	Medieval	TM 38900 62941
1278252	CHURCH OF ST MARY MAGDALENE. **Grade II* listed building.**	Medieval	TM 39095 61594
1365996	THE BEECHES INCLUDING STABLE BLOCK. **Grade II* listed building.**	Post-Medieval	TM 38590 63395
1030866	THE LIMES. **Grade II listed building.**	Post-Medieval	TM 38518 61817
1215743	LITTLE MOOR FARM. **Grade II listed building.**	Post-Medieval	TM 41228 61678
1216049	HIGH HOUSE FARM. **Grade II listed building.**	Post-Medieval	TM 40965 61696
1231179	WOOD FARMHOUSE. **Grade II listed building.**	Post-Medieval	TM 39369 62492
1231182	BRIAR COTTAGE. **Grade II listed building.**	Post-Medieval	TM 38827 61200
1231296	HILL FARMHOUSE. **Grade II listed building.**	Post-Medieval	TM 39802 61758
1231300	STERNFIELD HOUSE. **Grade II listed building.**	Post-Medieval	TM 39145 61583
1231328	SANDY COTTAGE. **Grade II listed building.**	Post-Medieval	TM 38818 61188
1231355	THATCHED COTTAGE. **Grade II listed building.**	Post-Medieval	TM 39242 61446
1258312	GARDEN COTTAGE. **Grade II listed building.**	Post-Medieval	TM 38605 61827

1268158	BEECH LAWN COTTAGE. **Grade II listed building.**	Post-Medieval	TM 38597 62978
1268159	BEECH LAWN HOUSE INCLUDING ORANGERY TO REAR. **Grade II listed building.**	Post-Medieval	TM 38595 62967
1268160	IVY HOUSE. **Grade II listed building.**	Post-Medieval	TM 38596 62954
1268161	16, SOUTH ENTRANCE. **Grade II listed building.**	Post-Medieval	TM 38574 62909
1268162	MONKS COTTAGES. **Grade II listed building.**	Post-Medieval	TM 38589 62855
1268163	THE WHITE HOUSE. **Grade II listed building.**	Post-Medieval	TM 38578 62838
1268164	CROWN HOUSE. **Grade II listed building.**	Post-Medieval	TM 38584 62826
1268178	HURTS HALL. **Grade II listed building.**	Post-Medieval	TM 38958 62544
1268179	1-15, ALBION STREET. **Grade II listed building.**	Post-Medieval	TM 38475 63136
1268180	10 AND 12, ALBION STREET. **Grade II listed building.**	Post-Medieval	TM 38434 63114
1268181	CHANTRY COTTAGES. **Grade II listed building.**	Post-Medieval	TM 38543 63033
1268182	14 AND 16, CHANTRY ROAD. **Grade II listed building.**	Post-Medieval	TM 38526 63034
1268183	CHURCH HOUSE. **Grade II listed building.**	Post-Medieval	TM 38846 62992
1268185	FAIRFIELD HOUSE EAST, FAIRFIELD HOUSE SOUTH, BROOK FARMHOUSE. **Grade II listed building.**	Post-Medieval	TM 38421 63488
1268186	2, HIGH STREET. **Grade II listed building.**	Post-Medieval	TM 38649 63031
1268187	6, 6A AND 8, HIGH STREET. **Grade II listed building.**	Post-Medieval	TM 38656 63057
1268188	10, HIGH STREET. **Grade II listed building.**	Post-Medieval	TM 38660 63069
1268189	HOLLY LODGE. **Grade II listed building.**	Post-Medieval	TM 38693 63061
1268190	WHITE HART HOTEL. **Grade II listed building.**	Post-Medieval	TM 38674 63100

1268191	23, HIGH STREET. **Grade II listed building.**	Post-Medieval	TM 38657 63116
1268192	25 AND 27, HIGH STREET. **Grade II listed building.**	Post-Medieval	TM 38661 63128
1268193	26, 26A AND 26B, HIGH STREET. **Grade II listed building.**	Post-Medieval	TM 38689 63151
1268194	28 AND 30, HIGH STREET. **Grade II listed building.**	Post-Medieval	TM 38687 63185
1268195	BELL HOTEL. **Grade II listed building.**	Post-Medieval	TM 38663 63155
1268196	33, HIGH STREET (See details for further address information) . **Grade II listed building.**	Post-Medieval	TM 38671 63173
1268197	35, HIGH STREET. **Grade II listed building.**	Post-Medieval	TM 38675 63179
1268198	39, HIGH STREET. **Grade II listed building.**	Post-Medieval	TM 38669 63202
1278159	STERNFIELD HALL. **Grade II listed building.**	Post-Medieval	TM 39050 61355
1278167	1 AND 2, THE STREET. **Grade II listed building.**	Post-Medieval	TM 39216 61447
1278253	8-10, CHURCH HILL. **Grade II listed building.**	Post-Medieval	TM 38873 61701
1278254	START FARM. **Grade II listed building.**	Post-Medieval	TM 39220 61442
1278255	34 AND 35, THE STREET. **Grade II listed building.**	Post-Medieval	TM 39226 61423
1287772	PATTLE'S FARMHOUSE. **Grade II listed building.**	Post-Medieval	TM 41565 62176
1365982	46, HIGH STREET. **Grade II listed building.**	Post-Medieval	TM 38669 63245
1365983	ASHFORD HOUSE. **Grade II listed building.**	Post-Medieval	TM 38692 63166
1365984	MARKET HALL, FRONT STEPS AND ATTACHED RAILINGS. **Grade II listed building.**	Post-Medieval	TM 38648 63142
1365985	OLD BANK HOUSE INCLUDING RAILINGS TO FRONT. **Grade II listed building.**	Post-Medieval	TM 38640 63166
1365986	4 AND 6, MARKET PLACE. **Grade II listed building.**	Post-Medieval	TM 38651 63180
1365987	7 AND 7A, MARKET PLACE. **Grade II listed building.**	Post-Medieval	TM 38666 63188

1365988	8, MARKET PLACE. **Grade II listed building.**	Post-Medieval	TM 38647 63191
1365989	16, MARKET PLACE. **Grade II listed building.**	Post-Medieval	TM 38632 63232
1365990	WINGFIELD HOUSE. **Grade II listed building.**	Post-Medieval	TM 38631 63170
1365991	9, 11, 15 AND 19, MARKET PLACE. **Grade II listed building.**	Post-Medieval	TM 38656 63218
1365992	17, MARKET PLACE. **Grade II listed building.**	Post-Medieval	TM 38659 63227
1365993	21 AND 23, MARKET PLACE. **Grade II listed building.**	Post-Medieval	TM 38650 63234
1365994	LYNWOOD HOUSE. **Grade II listed building.**	Post-Medieval	TM 38583 63348
1365995	VARLEY HOUSE. **Grade II listed building.**	Post-Medieval	TM 38558 63411
1365997	FAIRFIELD PREPARATORY SCHOOL. **Grade II listed building.**	Post-Medieval	TM 38541 63425
1365998	24, NORTH ENTRANCE. **Grade II listed building.**	Post-Medieval	TM38539 63544
1365999	BROOK COTTAGE. **Grade II listed building.**	Post-Medieval	TM 38535 63593
1366000	POST MILL ROUNDHOUSE. **Grade II listed building.**	Post-Medieval	TM 38262 63123
1366002	PRIORY HOUSE. **Grade II listed building.**	Post-Medieval	TM 38610 63004
1458741	Sternfield War Memorial. **Grade II listed building.**	Post-Medieval	TM 39089 61580

Non-Designated Heritage Assets 2km of the proposed Friston substation

1.4.A.3.2 No non-designated assets have been recorded on the HER, although it is known that a number of assets/sites were identified as part of the archaeological works undertaken for other schemes. These have not yet been added to the HER.

Table 2.4.A.8: Designated Heritage Assets within 2 km of the proposed Friston substation

Asset ID	Site/description	Period	Grid Ref
1006040	Church Common round barrows. **Scheduled Monument.**	Prehistoric	TM 40304 59318
1215741	Friston Post Mill. **Grade II* listed building.**	Post-Medieval	TM 41131 60114
1215745	CHURCH OF ST LAWRENCE. **Grade II* listed building.**		TM 42592 61952
1215749	BUXLOW MANOR. **Grade II* listed building.**	Post-Medieval	TM 41071 63232
1278252	CHURCH OF ST MARY MAGDALENE. **Grade II* listed building.**	Medieval	TM 39095 61594
1287646	LEISTON HOUSE FARMHOUSE. **Grade II* listed building.**	Post-Medieval	TM 42829 62928
1287864	CHURCH OF ST MARY. **Grade II* listed building.**	Medieval	TM 41350 60488
1215743	LITTLE MOOR FARM. **Grade II listed building.**	Post-Medieval	TM 41228 61678
1215744	WOODSIDE FARMHOUSE. **Grade II listed building.**	Post-Medieval	TM 41233 60626
1215751	DUFFIELD HOUSE. **Grade II listed building.**	Post-Medieval	TM 41313 60260
1215909	Friston Hall. **Grade II listed building.**	Post-Medieval	TM 40511 60309
1216049	HIGH HOUSE FARM. **Grade II listed building.**	Post-Medieval	TM 40965 61696
1216066	FRISTON HOUSE. **Grade II listed building.**	Post-Medieval	TM 40927 60734
1216081	BILLEAFORD HALL. **Grade II listed building.**	Post-Medieval	TM 43308 60202
1227893	WESTHOUSE FARMHOUSE. **Grade II listed building.**	Post-Medieval	TM 41723 63402
1231179	WOOD FARMHOUSE. **Grade II listed building.**	Post-Medieval	TM 39369 62492

1231296	HILL FARMHOUSE. **Grade II listed building.**	Post-Medieval	TM 39802 61758
1231300	STERNFIELD HOUSE. **Grade II listed building.**	Post-Medieval	TM 39145 61583
1231355	THATCHED COTTAGE. **Grade II listed building.**	Post-Medieval	TM 39242 61446
1278159	STERNFIELD HALL. **Grade II listed building.**	Post-Medieval	TM 39050 61355
1278167	1 AND 2, THE STREET. **Grade II listed building.**	Post-Medieval	TM 39216 61447
1278254	START FARM. **Grade II listed building.**	Post-Medieval	TM 39220 61442
1278255	34 AND 35, THE STREET. **Grade II listed building.**	Post-Medieval	TM 39226 61423
1287532	CROSSING FARMHOUSE. **Grade II listed building.**	Post-Medieval	TM 42506 63335
1287747	ROMANY'S REST. **Grade II listed building.**	Post-Medieval	TM 43614 61089
1287772	PATTLE'S FARMHOUSE. **Grade II listed building.**	Post-Medieval	TM 41565 62176
1287793	KNODISHALL PLACE. **Grade II listed building.**	Post-Medieval	TM 42600 62120
1287969	GATE AND GATE PIERS 15 METRES NORTH EAST OF FRISTON HALL. **Grade II listed building.**	Post-Medieval	TM 40519 60324
1287971	NUMBERS 1 AND 2 (CHURCH WALLS), NUMBER 3 AND NUMBER 4 (CHURCH WALLS COTTAGE). **Grade II listed building.**	Post-Medieval	TM 41302 60463
1435814	Friston War Memorial. **Grade II listed building.**	Post-Medieval	TM 41372 60483
1458639	Knodishall War Memorial. **Grade II listed building.**	Post-Medieval	TM 42572 61946
1458741	Sternfield War Memorial. **Grade II listed building.**	Post-Medieval	TM 39089 61580

Table 2.4.A.9: Heritage Assets within the Suffolk Site 1 Preferred Boundary

Asset ID	Site Description	Period	Grid Reference
127721	BILLEAFORD HALL. **Grade II Listed Building.**	Post-Medieval	TM 43308 60202
131038	GORSEHILL. **Grade II Listed Building.**	Post-Medieval	TM 45642 58312
MSF33081	7 Roman coins and 1 med coin	Roman to Medieval	TM 42600 61100
MSF27693	Milestone on the A1094	Post-Medieval	TM 44269 58210
MSF35355	Milestone on the A1094	Post-Medieval	TM 42885 59017
MSF2328	Findspot of a Roman bronze head-stud brooch	Roman	TM 42500 61500
MXS18774	Linear banks, of unknown date, visible on the golf course at South Warren.	Unknown	TM 44470 58088
MXS18775	Linear bank, visible as an earthwork to the south of Valley Grange.	Unknown	TM 44254 58152
MSF35003	Aldeburgh branch railway line	19th century to IPS: Modern	TM 46071 57929
MSF19482	Great Wood	Unknown	TM 43760 59482
MSF19483	Grove Wood / Old World Wood	Unknown	TM 41812 61033
MSF21037	The Mear (1783); The Meare C16 & 1976); The Meer (1817); The Haven (1837)	Medieval to IPS: Post-Medieval	TM 46586 58726
MSF16640	Hazlewood Common	Second World War	TM 43436 58382
MXS18767	Possible curvilinear enclosure, unknown date	First World War to 20th century	TM 44265 59240
MXS18768	World WarII anti- tank obstacle.	Second World War	TM 44940 58484
MXS18772	A possible World War II strongpoint including trenches and barbed wire.	Second World War	TM 44295 57997
MXS18773	World War II anti-aircraft obstructions.	Second World War	TM 44491 58108
MXS18773	World War II anti-aircraft obstructions.	Second World War	TM 44708 58031

MXS18773	World War II anti-aircraft obstructions.	Second World War	TM 44801 57953
MXS18773	World War II anti-aircraft obstructions.	Second World War	TM 44902 57958
MXS18773	World War II anti-aircraft obstructions.	Second World War	TM 45033 58030
MXS18773	World War II anti-aircraft obstructions.	Second World War	TM 45000 57919
MXS18776	Four Post-Medieval quarries, visible as earthworks.	Post-Medieval	TM 44053 58190
MXS18778	World War II 'Diver' HAA battery.	Second World War	TM 44898 58533
MXS18779	Quarry, visible as an earthwork north of Eight Acre Covert.	Unknown	TM 44906 58454
MXS18780	Three Post-Medieval quarries.	Post-Medieval	TM 44575 58849
MXS18781	Six Post-Medieval quarry pits, one labelled sand pit	Post-Medieval	TM 44065 58811
MXS18782	Hazlewood Aerodrome	First World War to 20th century	TM 43838 58891
MXS18783	Thee Post-Medieval quarry pits	Post-Medieval	TM 43478 58929
MXS18783	Thee Post-Medieval quarry pits	Post-Medieval	TM 43422 58921
MXS18783	Thee Post-Medieval quarry pits	Post-Medieval	TM 43558 58850
MXS18784	Post-medieval clay pit, visible as an earthwork	Post-Medieval	TM 43589 58207
MXS18785	Post-medieval WW2 bomb crater and emplacement	Second World War	TM 43469 58221
MXS18786	Post-medieval WW2 trench, tank trap, military training site	Second World War	TM 43444 58294
MXS19733	Post-Medieval sea bank, Aldeburgh.	Post-Medieval	TM 46675 59105
MXS19734	Early Post-Medieval relict sea banks.	Post-Medieval	TM 46447 58212
MXS19735	World War II anti-tank ditches.	Second World War	TM 46823 58917

MXS19736	Remains of a footbridge crossing The Haven leading to Haven House.	Post-Medieval to Second World War	TM 46846 58761
MXS19737	A World War II strongpoint surrounded by a minefield.	Second World War	TM 46821 58175
MXS19739	World War II anti-aircraft ditches.	Second World War	TM 46380 58764
MXS19739	World War II anti-aircraft ditches.	Second World War	TM 46456 58579
MXS19739	World War II anti-aircraft ditches.	Second World War	TM 46437 58467
MXS19739	World War II anti-aircraft ditches.	Second World War	TM 46654 58596
MXS19740	Two probable World War II bomb craters.	Second World War	TM 46662 58306
MXS19741	Probable Post-Medieval field boundaries to the north of Brick Kiln Cottage.	Medieval to IPS: Post-Medieval	TM 46038 58366
MXS19742	A World War II strongpoint and group of bomb craters.	Second World War	TM 46278 58486
MXS19743	A World War II strongpoint adjacent to Brick Kiln cottage.	Second World War	TM 46050 58324
MXS19744	World War II 'Diver' HAA battery.	Second World War	TM 45841 58406
MXS19745	Post-Medieval brick- earth quarry pit.	Post-Medieval	TM 45941 58255
MXS19746	Post-Medieval path or track.	Post-Medieval to IPS: Modern	TM 45415 58115
MXS19747	Post-Medieval clay extraction pit.	Post-Medieval to IPS: Modern	TM 45796 57958
MXS19748	World War II 'Diver' HAA battery.	Second World War	TM 45952 57739
MXS19752	Post-Medieval relict sea- bank.	Post-Medieval	TM 46535 58321
MXS19838	An extensive length of World War II beach scaffolding.	Second World War	TM 46842 57858
MXS19861	A c. 3.5km long row of World War II anti-tank cubes from Aldeburgh to Thorpness.	Second World War	TM 46813 58098
MXS19863	World War II anti-tank cubes.	Second World War	TM 46769 58293

MSF22814	Littlemoor Farm, Fristonmoor; Buxlow	Post-Medieval	TM 41254 61732
MSF22815	Old Kiln Field; Kiln Field; Buxlow	Post-Medieval	TM 41571 61784
MSF12593	Small smock mill, Thorpe Road	19th century to 20th century	TM 46789 58296
MSF14095	Half of a ring ditch or circular enclosure of unknown date, visible as a cropmark.	Unknown	TM 41778 60782
MSF2524	Gorse Hill	Roman	TM 45809 58312
MSF2530	Hazlewood Church; Church of St Mary	Medieval	TM 44774 59077
MSF2532	Gorse Hill	Neolithic	TM 45612 58415
MSF2538	Roman artefact scatter.	Roman	TM 46002 58404
MSF2539	Medieval scatter of pottery and red burnt clay.	Medieval	TM 45784 58496
MSF2540	Golf Course	Bronze Age	TM 44820 58136
MSF2544	The Red House	Bronze Age	TM 45411 57902
MSF14096	Buxlow; Buxton	Medieval	TM 41391 60614
MSF2325	Knodishall Common; Coldfair Green	Unknown	TM 43175 60852
MSF2543	Gorse Hill (Rom)	Roman	TM 45767 58457
MSF2552	Gorse Hill (Med)	Medieval	TM 45767 58457
MSF23623	Cross with ring ditch, probably from a former post mill, visible as cropmarks.	Medieval	TM 42646 61096
MSF25696	Knodishall Coldfair Green historic settlement; St Andrews Green; Coldford Green (1783)	Medieval to IPS: Post-Medieval	TM 43376 60997
MSF26002	Suffolk square pillbox	Second World War	TM 41745 59673
MSF16639	Possible ring ditch of unknown date	Unknown	TM 43234 58558
MSF16638	Possible ring ditch of unknown date	Unknown	TM 43264 58554

MXS18777	Ring ditch and possible round barrow site, unknown date	Bronze Age	TM 44010 58509
MSF24054	Small finds assemblage	Early Neolithic to Medieval	TM 44669 58932
MSF33606	Possible gun emplacement for 'Diver' HAA site	Post-Medieval to Second World War	TM 45042 59039
MSF33594	Possible soilmark enclosure	Roman	TM 45982 58635
MSF33592	Possible cropmark enclosure	Roman	TM 45648 58431
MSF33591	Fragmentary linear cropmarks	Unknown	TM 45180 58366
MSF2531	Extensive cropmark site.	Medieval to IPS: Post-Medieval	TM 45964 57997
MSF34510	A World War II Anti-tank ditch	Second World War	TM 46686 57833
MSF34510	A World War II Anti-tank ditch	Second World War	TM 46478 57813
MSF16637	Ring ditch and possible round barrow, both of unknown date	Bronze Age	TM 43120 58667
MSF38516	Farmstead: Chapel Barn	Medieval	TM 44551 58947
MSF38519	Farmstead: Crag Pit Farm	19th century	TM 45833 58125
MSF39277	Farmstead: Bull's Hall Farm	19th century	TM 42647 60395
MSF39278	Farmstead: Park Farm	19th century	TM 42707 59580
MSF39281	Farmstead: Rushmere Lodge Farm	19th century	TM 42769 59115
MSF39282	Farmstead: Hazelwood Hall Farm	19th century	TM 43463 58805
MSF39283	Farmstead: Grange Farm	19th century	TM 43916 58699
MSF34410	Chapel Barn Farm, Aldeburgh (ADLHS) FW	Early Bronze Age to IPS: Post-Medieval	TM 44708 59127
MSF39513	Farmstead: Little Moor Farm	19th century	TM 41233 61677

MSF39519	Farmstead: Peartree Farm	19th century	TM 41803 61647
MSF39520	Farmstead: Manor Farm	19th century	TM 42114 61303
MSF39522	Farmstead: Billeaford Hall	17th century to 19th century	TM 43318 60228
MSF43261	North Warren, Aldeburgh	Medieval	TM 44577 60372
MSF43589	Friston Green/Blackheath	Medieval	TM 41424 59715

Table 2.4.A.10: Heritage Assets within the Suffolk Site 1 Alternative Option Area

Asset ID	Site/description	Period	Grid Ref
1011378	Two bowl barrows on Aldringham Green. **Scheduled Monument.**	Prehistoric	TM 44711 60854
1215788	ELM TREE FARMHOUSE. **Grade II listed.**		TM 44693 61098
1216081	BILLEAFORD HALL. **Grade II listed.**		TM 43308 60202
1393143	ALDRINGHAM COURT. **Grade II listed.**		TM 44559 60592
MSF21580	Medieval artefact scatter of coarseware sherds. (Med)	Medieval	TM 46826 62643
MSF21581	Prehistoric artefact scatter of flint flakes, including pot boiler flints and scrapers. (Preh)	Prehistoric	TM 46825 62643
MSF21582	Findspot of a glass bead of unknown date. (Un)	Unknown	TM 46822 62640
MSF21583	Cropmarks of uncertain archaeological significance	Unknown	TM 46759 62598
MSF21585	Cropmarks of uncertain archaeological significance	Unknown	TM 46879 62588
MSF21586	Medieval artefact scatter of coarseware pottery. (Med)	Medieval	TM 46520 62579
MSF21587	Prehistoric artefact scatter of pot boiler flints and worked flints. (Preh)	Prehistoric	TM 46517 62576
MSF21589	Prehistoric artefact scatter of worked flint, including pot boiler flints and scrapers. (Preh)	Prehistoric	TM 46171 62571
MSF21590	Medieval artefact scatter of pottery sherds, including Thetford ware and coarseware. (Med)	Medieval	TM 46174 62571
MSF21591	World War II building debris. (PMed)	Modern	TM 46174 62574
MSF21592	Cropmarks of uncertain archaeological significance	Unknown	TM 46206 62610
MSF21593	Cropmarks of uncertain archaeological significance	Unknown	TM 46156 62604
MSF21602	Cropmarks of uncertain archaeological significance	Unknown	TM 46288 62629
MSF26867	Mill Piece (tithe)	Medieval and Post-Medieval	TM 45200 61600

MSF33081	7 Roman coins and 1 med coin	Roman to Medieval	TM 42600 61100
MSF2328	Findspot of a Roman bronze head-stud brooch	Roman	TM 42500 61500
MSF27742	Negative evaluation Aldringham Court, Aldringham cum Thorpe	Unknown	TM 44510 60590
MSF35003	Aldeburgh branch railway line	Post-Medieval	TM 46157 60547
MSF19482	Great Wood	Unknown	TM 43760 59482
MSF19483	Grove Wood / Old World Wood	Unknown	TM 41812 61033
MXS18782	Hazlewood Aerodrome	First World War to 20th century	TM 43838 58891
MXS19698	World War II anti-tank ditch.	Second World War	TM 47120 61794
MXS19701	World War II strongpoint and a possible experimental radar station.	Second World War to Cold War	TM 47466 62523
MXS19702	Quarry pit of unknown date.	Unknown	TM 46954 62396
MXS19705	A World War II seafront strongpoint.	Second World War	TM 47553 62295
MXS19856	World War II anti-invasion beach defences.	Second World War	TM 47561 62817
MXS19858	World War II anti-invasion coastal defences.	Second World War	TM 47607 62205
MSF21392	Modern ship's mast mounted in a metal sheath, possibly a lookout post.	Unknown	TM 47596 62646
MSF22814	Littlemoor Farm, Fristonmoor; Buxlow	Post-Medieval	TM 41254 61732
MSF22815	Old Kiln Field; Kiln Field; Buxlow	Post-Medieval	TM 41571 61784
MSF13936	Two bowl barrows on Aldringham Green	Bronze Age	TM 44737 60848
MSF13937	Aldringham Green	Bronze Age	TM 44699 60856
MSF14092	Agricultural pit of negligible archaeological significance	Post-Medieval to IPS: Modern	TM 45131 61661

MSF14095	Half of a ring ditch or circular enclosure of unknown date, visible as a ropmark.	Unknown	TM 41778 60782
MSF16196	Medieval artefact scatter.	Medieval	TM 45005 60455
MSF16888	Post-Medieval bridge.	18th century to 19th century	TM 44693 60594
MSF2306	Aldringham Green Round Barrow; Two bowl barrows, Aldringham Green	Unknown	TM 44705 60813
MSF14096	Buxlow; Buxton	Medieval	TM 41391 60614
MSF2325	Knodishall Common; Coldfair Green	Unknown	TM 43175 60852
MSF23623	Cross with ring ditch, probably from a former post mill, visible as cropmarks.	Medieval	TM 42646 61096
MSF25256	EDF Access, Sizewell Power Station	Medieval	TM 47189 62669
MSF25696	Knodishall Coldfair Green historic settlement; St Andrews Green; Coldford Green (1783)	Medieval to IPS: Post-Medieval	TM 43376 60997
MSF25683	Aldringham historic settlement core (Med)	Medieval to IPS: Post-Medieval	TM 44635 60979
MSF26453	Aldringham Green	Medieval	TM 44665 60960
MSF26002	Suffolk square pillbox	Second World War	TM 41745 59673
MSF29478	Medieval Settlement at Sizewell, Leiston	Early Neolithic to Medieval	TM 47213 62654
MSF33455	Fragmentary cropmarks of possible medieval settlement	Medieval	TM 45013 60469
MSF33426	Site of possible Bronze Age round barrow or medieval to Post-Medieval mill mound, The Walks	Early Bronze Age to IPS: Post-Medieval	TM 46599 62312
MSF33424	Earthworks of linear and rectilinear boundaries of unknown date, The Walks, Aldringham Common	Unknown	TM 46475 62252
MSF33429	Site of Second World War Diver anti-aircraft battery	Second World War	TM 46548 62017
MSF33430	Linear earthwork banks on Broom Covert	Post-Medieval to IPS: Modern	TM 46347 63010
MSF33433	Site of fragmentary cropmarks of unknown date and significance	Unknown	TM 46057 62292

MSF33434	Site of fragmentary cropmarks of unknown date and significance	Unknown	TM 45791 62362
MSF33438	Site of Leiston Very High Frequency (VHF) Fixer Station	Second World War to Cold War	TM 45834 61789
MSF33442	Site of two probable First World War pillboxes	First World War	TM 45849 62506
MSF33439	Site of Second World War military training area and/or defended locality	Second World War	TM 46333 62982
MSF33440	Second World War training area and/or strong point	Second World War	TM 46529 62375
MSF16194	Second World War anti-glider ditches and military training activity on The Walks, Aldringham Common	20th century to IPS: Modern	TM 46379 61507
MSF21588	Multi-period cropmarks of probable field boundaries and enclosures	Early Iron Age to Roman	TM 46530 62606
MSF21594	Site of Second World War Diver anti-aircraft battery	Post-Medieval to Second World War	TM 46182 62565
MSF33815	Bronze Age/Early Iron Age settlement activity at Land south of Red House Lane, Leiston (Excavation pending)	Middle Bronze Age to IPS: Post-Medieval	TM 44999 61777
MSF29484	Late Prehistoric and Romano-British agricultural activity at Galloper offshore Wind Farm	Roman	TM 46646 62704
MSF37237	Land to the east of Aldeburgh Road, Aldringham Cum Thorpe.	Early Iron Age to IPS: Post-Medieval	TM 44649 61213
MSF39277	Farmstead: Bull's Hall Farm	19th century	TM 42647 60395
MSF39278	Farmstead: Park Farm	19th century	TM 42707 59580
MSF39513	Farmstead: Little Moor Farm	19th century	TM 41233 61677
MSF39519	Farmstead: Peartree Farm	19th century	TM 41803 61647
MSF39520	Farmstead: Manor Farm	19th century	TM 42114 61303
MSF39522	Farmstead: Billeaford Hall	17th century to 19th century	TM 43318 60228
MSF39551	Farmstead: Sizewell Farm	19th century	TM 47158 62394

MSF39552	Farmstead: Hawsell's Farm	19th century	TM 45478 61798
MSF39553	Farmstead: Crown Farm	19th century	TM 45885 62446
MSF43262	Thorpe and Aldringham Commons	Medieval	TM 46409 61034
MSF43263	Sizewell Common	Medieval	TM 47343 61978
MSF43261	North Warren, Aldeburgh	Medieval	TM 44577 60372
MSF43519	Coastal Heath, Leiston	Medieval	TM 47585 63942
MSF43589	Friston Green/Blackheath	Medieval	TM 41424 59715

Table 2.4.A.11: Heritage Assets within the Suffolk Site 3 Emerging Preference Option Area

Asset ID	Site/description	Period	Grid Ref
1215743	LITTLE MOOR FARM. **Grade II listed building.**	Post-Medieval	TM 41228 61678
1216049	HIGH HOUSE FARM. **Grade II listed building.**	Post-Medieval	TM 40965 61696
1216081	BILLEAFORD HALL. **Grade II listed building.**	Post-Medieval	TM 43308 60202
1231296	HILL FARMHOUSE. **Grade II listed building.**	Post-Medieval	TM 39802 61758
1269753	GORSEHILL. **Grade II listed building.**	Post-Medieval	TM 45642 58312
MSF33081	7 Roman coins and 1 med coin	Roman to Medieval	TM 42600 61100
MSF27693	Milestone on the A1094	Post-Medieval	TM 44269 58210
MSF35355	Milestone on the A1094	Post-Medieval	TM 42885 59017
MSF2328	Findspot of a Roman bronze head-stud brooch	Roman	TM 42500 61500
MXS18774	Linear banks, of unknown date, visible on the golf course at South Warren.	Unknown	TM 44470 58088
MXS18775	Linear bank, visible as an earthwork to the south of Valley Grange.	Unknown	TM 44254 58152
MSF35003	Aldeburgh branch railway line	19th century to IPS: Modern	TM 46071 57929
MSF19482	Great Wood	Unknown	TM 43760 59482
MSF19483	Grove Wood / Old World Wood	Unknown	TM 41812 61033
MSF21037	The Mear (1783); The Meare C16 & 1976); The Meer (1817); The Haven (1837)	Medieval to IPS: Post-Medieval	TM 46586 58726
MSF16640	Hazlewood Common	Second World War	TM 43436 58382
MXS18767	Possible curvilinear enclosure, unknown date	First World War to 20th century	TM 44265 59240
MXS18768	World WarII anti- tank obstacle.	Second World War	TM 44940 58484

MXS18772	A possible World War II strongpoint including trenches and barbed wire.	Second World War	TM 44295 57997
MXS18773	World War II anti-aircraft obstructions.	Second World War	TM 44491 58108
MXS18773	World War II anti-aircraft obstructions.	Second World War	TM 44708 58031
MXS18773	World War II anti-aircraft obstructions.	Second World War	TM 44801 57953
MXS18773	World War II anti-aircraft obstructions.	Second World War	TM 44902 57958
MXS18773	World War II anti-aircraft obstructions.	Second World War	TM 45033 58030
MXS18773	World War II anti-aircraft obstructions.	Second World War	TM 45000 57919
MXS18776	Four Post-Medieval quarries, visible as earthworks.	Post-Medieval	TM 44053 58190
MXS18778	World War II 'Diver' HAA battery.	Second World War	TM 44898 58533
MXS18779	Quarry, visible as an earthwork north of Eight Acre Covert.	Unknown	TM 44906 58454
MXS18780	Three Post-Medieval quarries.	Post-Medieval	TM 44575 58849
MXS18781	Six Post-Medieval quarry pits, one labelled sand pit	Post-Medieval	TM 44065 58811
MXS18782	Hazlewood Aerodrome	First World War to 20th century	TM 43838 58891
MXS18783	Thee Post-Medieval quarry pits	Post-Medieval	TM 43478 58929
MXS18783	Thee Post-Medieval quarry pits	Post-Medieval	TM 43422 58921
MXS18783	Thee Post-Medieval quarry pits	Post-Medieval	TM 43558 58850
MXS18785	Post-medieval WW2 bomb crater and emplacement	Second World War	TM 43469 58221
MXS18786	Post-medieval WW2 trench, tank trap, military training site	Second World War	TM 43444 58294
MXS19733	Post-Medieval sea bank, Aldeburgh.	Post-Medieval	TM 46675 59105
MXS19734	Early Post-Medieval relict sea banks.	Post-Medieval	TM 46447 58212

MXS19735	World War II anti-tank ditches.	Second World War	TM 46823 58917
MXS19736	Remains of a footbridge crossing The Haven leading to Haven House.	Post-Medieval to Second World War	TM 46846 58761
MXS19737	A World War II strongpoint surrounded by a minefield.	Second World War	TM 46821 58175
MXS19739	World War II anti-aircraft ditches.	Second World War	TM 46380 58764
MXS19739	World War II anti-aircraft ditches.	Second World War	TM 46456 58579
MXS19739	World War II anti-aircraft ditches.	Second World War	TM 46437 58467
MXS19739	World War II anti-aircraft ditches.	Second World War	TM 46654 58596
MXS19740	Two probable World War II bomb craters.	Second World War	TM 46662 58306
MXS19741	Probable Post-Medieval field boundaries to the north of Brick Kiln Cottage.	Medieval to IPS: Post-Medieval	TM 46038 58366
MXS19742	A World War II strongpoint and group of bomb craters.	Second World War	TM 46278 58486
MXS19743	A World War II strongpoint adjacent to Brick Kiln cottage.	Second World War	TM 46050 58324
MXS19744	World War II 'Diver' HAA battery.	Second World War	TM 45841 58406
MXS19745	Post-Medieval brick- earth quarry pit.	Post-Medieval	TM 45941 58255
MXS19746	Post-Medieval path or track.	Post-Medieval to IPS: Modern	TM 45415 58115
MXS19747	Post-Medieval clay extraction pit.	Post-Medieval to IPS: Modern	TM 45796 57958
MXS19748	World War II 'Diver' HAA battery.	Second World War	TM 45952 57739
MXS19752	Post-Medieval relict sea- bank.	Post-Medieval	TM 46535 58321
MXS19838	An extensive length of World War II beach scaffolding.	Second World War	TM 46842 57858
MXS19861	A c. 3.5km long row of World War II anti-tank cubes from Aldeburgh to Thorpness.	Second World War	TM 46813 58098

MXS19863	World War II anti-tank cubes.	Second World War	TM 46769 58293
MSF22813	Fristonmoor; Buxlow	Medieval to IPS: Post-Medieval	TM 41203 61803
MSF22814	Littlemoor Farm, Fristonmoor; Buxlow	Post-Medieval	TM 41254 61732
MSF22815	Old Kiln Field; Kiln Field; Buxlow	Post-Medieval	TM 41571 61784
MSF11502	Moor Farm; High House Farm	Medieval	TM 40964 61707
MSF12593	Small smock mill, Thorpe Road	19th century to 20th century	TM 46789 58296
MSF14095	Half of a ring ditch or circular enclosure of unknown date, visible as a ropmark.	Unknown	TM 41778 60782
MSF16193	Small rectangular(?) enclosure, possibly open ended to NE.	Unknown	TM 40580 62079
MSF17577	Little Moor Farm; Buxlow Parsonage	Medieval to IPS: Post-Medieval	TM 41192 61663
MSF2524	Gorse Hill	Roman	TM 45809 58312
MSF2530	Hazlewood Church; Church of St Mary	Medieval	TM 44774 59077
MSF2532	Gorse Hill	Neolithic	TM 45612 58415
MSF2538	Roman artefact scatter.	Roman	TM 46002 58404
MSF2539	Medieval scatter of pottery and red burnt clay.	Medieval	TM 45784 58496
MSF2540	Golf Course	Bronze Age	TM 44820 58136
MSF2544	The Red House	Bronze Age	TM 45411 57902
MSF14096	Buxlow; Buxton	Medieval	TM 41391 60614
MSF17578	Friston Moor	Medieval	TM 40765 61666
MSF2325	Knodishall Common; Coldfair Green	Unknown	TM 43175 60852
MSF2543	Gorse Hill (Rom)	Roman	TM 45767 58457

MSF2552	Gorse Hill (Med)	Medieval	TM 45767 58457
MSF2330	Large simple rectangular inhabited moat at Hill Farm.	Medieval	TM 39803 61763
MSF2331	NE of Hill Farm C19 decoy or flight pond, not part of a moat.	19th century to 20th century	TM 39976 62038
MSF23623	Cross with ring ditch, probably from a former post mill, visible as cropmarks.	Medieval	TM 42646 61096
MSF25696	Knodishall Coldfair Green historic settlement; St Andrews Green; Coldford Green (1783)	Medieval to IPS: Post-Medieval	TM 43376 60997
MSF26002	Suffolk square pillbox	Second World War	TM 41745 59673
MSF16639	Possible ring ditch of unknown date	Unknown	TM 43234 58558
MSF16638	Possible ring ditch of unknown date	Unknown	TM 43264 58554
MXS18777	Ring ditch and possible round barrow site, unknown date	Bronze Age	TM 44010 58509
MSF24054	Small finds assemblage	Early Neolithic to Medieval	TM 44669 58932
MSF33606	Possible gun emplacement for 'Diver' HAA site	Post-Medieval to Second World War	TM 45042 59039
MSF33594	Possible soilmark enclosure	Roman	TM 45982 58635
MSF33592	Possible cropmark enclosure	Roman	TM 45648 58431
MSF33591	Fragmentary linear cropmarks	Unknown	TM 45180 58366
MSF2531	Extensive cropmark site.	Medieval to IPS: Post-Medieval	TM 45964 57997
MSF34510	A World War II Anti-tank ditch	Second World War	TM 46686 57833
MSF34510	A World War II Anti-tank ditch	Second World War	TM 46478 57813
MSF16637	Ring ditch and possible round barrow, both of unknown date	Bronze Age	TM 43120 58667
MSF38516	Farmstead: Chapel Barn	Medieval	TM 44551 58947

MSF38519	Farmstead: Crag Pit Farm	19th century	TM 45833 58125
MSF39277	Farmstead: Bull's Hall Farm	19th century	TM 42647 60395
MSF39278	Farmstead: Park Farm	19th century	TM 42707 59580
MSF39281	Farmstead: Rushmere Lodge Farm	19th century	TM 42769 59115
MSF39282	Farmstead: Hazelwood Hall Farm	19th century	TM 43463 58805
MSF39283	Farmstead: Grange Farm	19th century	TM 43916 58699
MSF34410	Chapel Barn Farm, Aldeburgh (ADLHS) FW	Early Bronze Age to IPS: Post-Medieval	TM 44708 59127
MSF39512	Farmstead: High House Farm (Fristonmoor)	17th century to 19th century	TM 40977 61700
MSF39513	Farmstead: Little Moor Farm	19th century	TM 41233 61677
MSF39514	Farmstead: Clouting's Farm	19th century	TM 41146 62072
MSF39519	Farmstead: Peartree Farm	19th century	TM 418v03 61647
MSF39520	Farmstead: Manor Farm	19th century	TM 42114 61303
MSF39522	Farmstead: Billeaford Hall	17th century to 19th century	TM 43318 60228
MSF39867	Field Barn: Unnamed Field Barn	19th century	TM 40432 62170
MSF39868	Farmstead: Redhouse Farm	19th century	TM 40418 61686
MSF39869	Farmstead: Hill Farm	17th century to 19th century	TM 39847 61804
MSF39869	Farmstead: Hill Farm	17th century to 19th century	TM 39786 61760
MSF43261	North Warren, Aldeburgh	Medieval	TM 45284 59322
MSF43261	North Warren, Aldeburgh	Medieval	TM 44577 60372

MSF43589	Friston Green/Blackheath	Medieval	TM 41424 59715
MSF19469	Great Wood	Unknown	TM 39588 62931

Table 2.4.A.12: Heritage Assets within the Suffolk Site 3 Alternative Option 1 Option Area

Asset ID	Site/description	Period	Grid Ref
1014520	Leiston Abbey (second site) and moated site. **Scheduled Monument.**	Medieval	TM 44456 64188
1215743	LITTLE MOOR FARM. **Grade II listed building.**	Post-Medieval	TM 41228 61678
1216049	HIGH HOUSE FARM. **Grade II listed building.**	Post-Medieval	TM 40965 61696
1231179	WOOD FARMHOUSE. **Grade II listed building.**	Post-Medieval	TM 39369 62492
1231296	HILL FARMHOUSE. **Grade II listed building.**	Post-Medieval	TM 39802 61758
MSF21580	Medieval artefact scatter of coarseware sherds. (Med)	Unknown	TM 46826 62643
MSF21581	Prehistoric artefact scatter of flint flakes, including pot boiler flints and scrapers. (Preh)	Unknown	TM 46825 62643
MSF21582	Findspot of a glass bead of unknown date. (Un)	Unknown	TM 46822 62640
MSF21583	Cropmarks of uncertain archaeological significance	Unknown	TM 46759 62598
MSF21585	Cropmarks of uncertain archaeological significance	Unknown	TM 46879 62588
MSF21586	Medieval artefact scatter of coarseware pottery. (Med)	Unknown	TM 46520 62579
MSF21587	Prehistoric artefact scatter of pot boiler flints and worked flints. (Preh)	Unknown	TM 46517 62576
MSF21589	Prehistoric artefact scatter of worked flint, including pot boiler flints and scrapers. (Preh)	Unknown	TM 46171 62571
MSF21590	Medieval artefact scatter of pottery sherds, including Thetford ware and coarseware. (Med)	Unknown	TM 46174 62571
MSF21591	World War II building debris. (PMed)	Unknown	TM 46174 62574
MSF21592	Cropmarks of uncertain archaeological significance	Unknown	TM 46206 62610
MSF21593	Cropmarks of uncertain archaeological significance	Unknown	TM 46156 62604
MSF21595	Prehistoric artefact scatter of worked flints, pot boiler flints and scrapers. (Preh)	Unknown	TM 46093 62981

MSF21596	Medieval artefact scatter of coarseware pottery sherds. (Med)	Unknown	TM 46093 62981
MSF21597	Cropmarks of uncertain archaeological significance	Unknown	TM 46190 63076
MSF21598	Medieval artefact scatter of coarseware sherds. (Med)	Unknown	TM 45759 63108
MSF21599	Post-Medieval artefact scatter of pottery sherds. (PMed)	Unknown	TM 45759 63108
MSF21600	Cropmarks of uncertain archaeological significance	Unknown	TM 45896 63192
MSF21602	Cropmarks of uncertain archaeological significance	Unknown	TM 46288 62629
MSF21604	Cropmarks of uncertain archaeological significance	Unknown	TM 45791 63463
MSF21618	Cropmarks of uncertain archaeological significance	Unknown	TM 45900 62700
MSF21619	Medieval artefact scatter of coarseware and one Prehistoric flint gritted sherd	Medieval	TM 45900 62700
MSF21631	Cropmarks of uncertain archaeological significance	Unknown	TM 45500 62800
MSF22553	Medieval deer park, Leiston	IPS: Early Medieval to Unknown	TM 45500 63500
MSF22680	Harrow Farm, Harrow Lane	Unknown	TM 42400 64610
MSF14283	Findspot of a Medieval silver groat of Heinrich V. (Med)	Medieval	TM 44315 63865
MSF30769	OUTLINE RECORD: CROPMARKS - PIT ALIGNMENT	Unknown	TM 43610 64720
MSF30770	OUTLINE RECORD: CROPMARKS - MOAT?	Unknown	TM 43390 64430
MSF31502	OUTLINE RECORD: Georchaeological boreholes at Aldhurst Farm, Leiston	Unknown	TM 45000 63450
MSF33557	OUTLINE RECORD: Medieval pottery scatter (BACKLOG)	Unknown	TM 40500 63800
MSF38064	OUTLINE RECORD: Green Rail Route Area 5 (also labled as Area 7 and Mellen Land) Sizewell C (SGL) GEO (CAS) EVL	Unknown	TM 44134 63890
MSF38065	OUTLINE RECORD: Area 8 Sizewell C GRR Aldhurst Land (SGL) GEO (CAS) EVAL	Unknown	TM 45180 63674

MSF38723	OUTLINE RECORD: Sizewell C Leiston GRR Poll Land (SGL) GEO (CAS) EVAL	Unknown	TM 45060 63855
MSF35003	Aldeburgh branch railway line	Post-Medieval	TM 42461 63328
MSF19483	Grove Wood / Old World Wood	Unknown	TM 41812 61033
MXS19698	World War II anti-tank ditch.	Second World War	TM 47120 61794
MXS19701	World War II strongpoint and a possible experimental radar station.	Second World War to Cold War	TM 47466 62523
MXS19702	Quarry pit of unknown date.	Unknown	TM 46954 62396
MXS19705	A World War II seafront strongpoint.	Second World War	TM 47553 62295
MXS19856	World War II anti-invasion beach defences.	Second World War	TM 47561 62817
MXS19858	World War II anti-invasion coastal defences.	Second World War	TM 47607 62205
MSF21392	Modern ship's mast mounted in a metal sheath, possibly a lookout post.	Unknown	TM 47596 62646
MSF22813	Fristonmoor; Buxlow	Medieval to IPS: Post-Medieval	TM 41203 61803
MSF22814	Littlemoor Farm, Fristonmoor; Buxlow	Post-Medieval	TM 41254 61732
MSF22815	Old Kiln Field; Kiln Field; Buxlow	Post-Medieval	TM 41571 61784
MSF11502	Moor Farm; High House Farm	Medieval	TM 40964 61707
MSF16193	Small rectangular(?) enclosure, possibly open ended to NE.	Unknown	TM 40580 62079
MSF16889	Post-Medieval bridge shwon on Hodskinson's map.	18th century to 19th century	TM 45456 63480
MSF17577	Little Moor Farm; Buxlow Parsonage	Medieval to IPS: Post-Medieval	TM 41192 61663
MSF4001	Cropmarks of undated field boundaries	Unknown	TM 44810 63081
MSF14096	Buxlow; Buxton	Medieval	TM 41391 60614
MSF17578	Friston Moor	Medieval	TM 40765 61666

MSF2330	Large simple rectangular inhabited moat at Hill Farm.	Medieval	TM 39803 61763
MSF2331	NE of Hill Farm C19 decoy or flight pond, not part of a moat.	19th century to 20th century	TM 39976 62038
MSF25256	EDF Access, Sizewell Power Station	Medieval	TM 47189 62669
MSF29478	Medieval Settlement at Sizewell, Leiston	Early Neolithic to Medieval	TM 47213 62654
MSF33426	Site of possible Bronze Age round barrow or medieval to Post-Medieval mill mound, The Walks	Early Bronze Age to IPS: Post-Medieval	TM 46599 62312
MSF33424	Earthworks of linear and rectilinear boundaries of unknown date, The Walks, Aldringham Common	Unknown	TM 46475 62252
MSF33429	Site of Second World War Diver anti-aircraft battery	Second World War	TM 46548 62017
MSF33430	Linear earthwork banks on Broom Covert	Post-Medieval to IPS: Modern	TM 46347 63010
MSF33431	Site of fragmentary cropmarks of unknown date and significance	Unknown	TM 46107 62854
MSF33433	Site of fragmentary cropmarks of unknown date and significance	Unknown	TM 46057 62292
MSF33434	Site of fragmentary cropmarks of unknown date and significance	Unknown	TM 45791 62362
MSF33436	Site of fragmentary cropmarks of unknown date and significance	Unknown	TM 45485 63016
MSF33442	Site of two probable First World War pillboxes	First World War	TM 45849 62506
MSF33448	Site of one or more Second World War slit trenches	Second World War	TM 45622 63111
MSF33439	Site of Second World War military training area and/or defended locality	Second World War	TM 46333 62982
MSF33440	Second World War training area and/or strong point	Second World War	TM 46529 62375
MSF33444	Site of undated boundary on Leiston Common	Medieval to IPS: Post-Medieval	TM 45653 63439
MSF31925	Site of Second World War (and/or possibly First World War) military training site, Leiston Common	First World War to Second World War	TM 45869 63451
MSF31923	Site of Second World War Diver battery	Second World War	TM 45801 63318

MSF31922	Site of Second World War Auxiliary Unit Operational Base, Leiston Common	Second World War	TM 45824 63501
MSF16194	Second World War anti-glider ditches and military training activity on The Walks, Aldringham Common	20th century to IPS: Modern	TM 46379 61507
MSF21588	Multi-period cropmarks of probable field boundaries and enclosures	Early Iron Age to Roman	TM 46530 62606
MSF21594	Site of Second World War Diver anti-aircraft battery	Post-Medieval to Second World War	TM 46182 62565
MSF29484	Late Prehistoric and Romano-British agricultural activity at Galloper offshore Wind Farm	Roman	TM 46646 62704
MSF39512	Farmstead: High House Farm (Fristonmoor)	17th century to 19th century	TM 40977 61700
MSF39513	Farmstead: Little Moor Farm	19th century	TM 41233 61677
MSF39514	Farmstead: Clouting's Farm	19th century	TM 41146 62072
MSF39519	Farmstead: Peartree Farm	19th century	TM 41803 61647
MSF39551	Farmstead: Sizewell Farm	19th century	TM 47158 62394
MSF39553	Farmstead: Crown Farm	19th century	TM 45885 62446
MSF39554	Farmstead: Common Farm	19th century	TM 45621 63226
MSF39867	Field Barn: Unnamed Field Barn	19th century	TM 40432 62170
MSF39868	Farmstead: Redhouse Farm	19th century	TM 40418 61686
MSF39869	Farmstead: Hill Farm	17th century to 19th century	TM 39847 61804
MSF39869	Farmstead: Hill Farm	17th century to 19th century	TM 39786 61760
MSF39917	Farmstead: Trust Farm (Town Farm)	19th century	TM 40491 62616
MSF43262	Thorpe and Aldringham Commons	Medieval	TM 46409 61034
MSF43263	Sizewell Common	Medieval	TM 47343 61978

MSF43411	Dry Common, Leiston	Medieval	TM 45989 63491
MSF43412	Wet Common, Leiston	Medieval	TM 46751 63994
MSF43519	Coastal Heath, Leiston	Medieval	TM 47585 63942
MSF22764	Theberton airfield; Leiston airfield; Saxmundham airfield	20th century to Cold War	TM 42815 64345
MSF22765	Buxlow Forest (1783); The Forest; Whin Cover	Medieval to IPS: Post-Medieval	TM 42641 64781
MSF11524	Medieval artefact scatter of pottery. (Med)	Medieval	TM 44989 63631
MSF11525	Abbey Road	Unknown	TM 44418 63814
MSF11526	Abbey Lane	Medieval	TM 44251 63872
MSF12096	Roman artefact scatter of pottery. (Rom)	Roman	TM 44989 63631
MSF12097	Medieval artefact scatter.	Medieval	TM 44877 63572
MSF806	Near Brick Kiln Farm, Leiston, (Mesolithic)	Mesolithic	TM 45007 63319
MSF19469	Great Wood	Unknown	TM 39588 62931
MSF25178	Moat Farm	Unknown	TM 43142 64927
MSF2340	Leiston Abbey, Abbey Farm.	Medieval	TM 44456 64188
MSF26807	Burnt flint mound	Unknown	TM 44940 63557
MSF26812	Brick works	Post-Medieval	TM 44453 63168
MSF26809	Six medieval pennies	12th century	TM 44884 63681
MSF33446	Site of cropmarks of uncertain archaeological significance and unknown date, possibly relating to a prehistoric barrow	Early Neolithic to Late Bronze Age	TM 45054 63652
MSF33445	Site of possible double ring ditch of uncertain significance and date	Bronze Age	TM 45157 63612

MSF33447	Site of vague cropmarks of unknown date and significance	Unknown	TM 44980 63384
MSF31920	Extensive area of Second World War military training activity	First World War to Second World War	TM 45482 63833
MSF31543	Possible practice trench and undated ditches at Aldhurst Farm	Post-Medieval to IPS: Modern	TM 45005 63482
MSF35810	Medieval ditches, Abbey View Lodges, Leiston	Medieval	TM 44387 63694
MSF39545	Farmstead: Hill Farm	16th century to 19th century	TM 43997 64446
MSF39546	Farmstead: Aldhurst Farm (Rookwood Farm)	19th century	TM 43976 63956
MSF39555	Farmstead: Works Farm	19th century	TM 44683 63216
MSF39914	Farmstead: Wardspring Farm	19th century	TM 40421 63387
MSF39918	Farmstead: Wood Farm	17th century to 19th century	TM 39370 62527
MSF39950	Farmstead: Hill Farm	17th century to 19th century	TM 42171 64132
MSF39951	Farmstead: Moat Farm (Mustard's Farm)	17th century to 19th century	TM 43194 65071

Table 2.4.A.13: Heritage Assets within the Suffolk Site 3 Alternative Option 2 Option Area

Asset ID	Site/description	Period	Grid Ref
1011378	Two bowl barrows on Aldringham Green. **Scheduled Monument.**	Prehistoric	TM 44711 60854
1215743	LITTLE MOOR FARM. **Grade II listed building.**	Post-Medieval	TM 41228 61678
1215788	ELM TREE FARMHOUSE. **Grade II listed building.**	Post-Medieval	TM 44693 61099
1216049	HIGH HOUSE FARM. **Grade II listed building.**	Post-Medieval	TM 40965 61696
1216081	BILLEAFORD HALL. **Grade II listed building.**	Post-Medieval	TM 43308 60202
1231179	WOOD FARMHOUSE. **Grade II listed building.**	Post-Medieval	TM 39369 62492

1231296	HILL FARMHOUSE. **Grade II listed building.**	Post-Medieval	TM 39802 61758
1393143	ALDRINGHAM COURT. **Grade II listed building.**	Post-Medieval	TM 44560 60592
MSF21580	Medieval artefact scatter of coarseware sherds. (Med)	Unknown	TM 46826 62643
MSF21581	Prehistoric artefact scatter of flint flakes, including pot boiler flints and scrapers. (Preh)	Unknown	TM 46825 62643
MSF21582	Findspot of a glass bead of unknown date. (Un)	Unknown	TM 46822 62640
MSF21583	Cropmarks of uncertain archaeological significance	Unknown	TM 46759 62598
MSF21585	Cropmarks of uncertain archaeological significance	Unknown	TM 46879 62588
MSF21586	Medieval artefact scatter of coarseware pottery. (Med)	Unknown	TM 46520 62579
MSF21587	Prehistoric artefact scatter of pot boiler flints and worked flints. (Preh)	Unknown	TM 46517 62576
MSF21589	Prehistoric artefact scatter of worked flint, including pot boiler flints and scrapers. (Preh).	Unknown	TM 46171 62571
MSF21590	Medieval artefact scatter of pottery sherds, including Thetford ware and coarseware. (Med).	Unknown	TM 46174 62571
MSF21591	World War II building debris. (PMed).	Unknown	TM 46174 62574
MSF21592	Cropmarks of uncertain archaeological significance.	Unknown	TM 46206 62610
MSF21593	Cropmarks of uncertain archaeological significance.	Unknown	TM 46156 62604
MSF21602	Cropmarks of uncertain archaeological significance.	Unknown	TM 46288 62629
MSF26867	Mill Piece (tithe).	Medieval to IPS: Post-Medieval	TM 45200 61600
MSF33081	7 Roman coins and 1 med coin.	Roman to Medieval	TM 42600 61100
MSF2328	Findspot of a Roman bronze head-stud brooch.	Roman	TM 42500 61500
MSF27742	Negative evaluation Aldringham Court, Aldringham cum Thorpe.	Unknown	TM 44510 60590
MSF35003	Aldeburgh branch railway line.	Post-Medieval	TM 46157 60547

MSF19482	Great Wood	Unknown	TM 43760 59482
MSF19483	Grove Wood / Old World Wood	Unknown	TM 41812 61033
MXS18782	Hazlewood Aerodrome	First World War to 20th century	TM 43838 58891
MXS19698	World War II anti-tank ditch.	Second World War	TM 47120 61794
MXS19701	World War II strongpoint and a possible experimental radar station.	Second World War to Cold War	TM 47466 62523
MXS19702	Quarry pit of unknown date.	Unknown	TM 46954 62396
MXS19856	World War II anti-invasion beach defences.	Second World War	TM 47561 62817
MXS19858	World War II anti-invasion coastal defences.	Second World War	TM 47607 62205
MSF21392	Modern ship's mast mounted in a metal sheath, possibly a lookout post.	Unknown	TM 47596 62646
MSF22813	Fristonmoor; Buxlow	Medieval to IPS: Post-Medieval	TM 41203 61803
MSF22814	Littlemoor Farm, Fristonmoor; Buxlow	Post-Medieval	TM 41254 61732
MSF22815	Old Kiln Field; Kiln Field; Buxlow	Post-Medieval	TM 41571 61784
MSF11502	Moor Farm; High House Farm	Medieval	TM 40964 61707
MSF13936	Two bowl barrows on Aldringham Green	Bronze Age	TM 44737 60848
MSF13937	Aldringham Green	Bronze Age	TM 44699 60856
MSF14092	Agricultural pit of negligible archaeological significance	Post-Medieval to IPS: Modern	TM 45131 61661
MSF14095	Half of a ring ditch or circular enclosure of unknown date, visible as a ropmark.	Unknown	TM 41778 60782
MSF16193	Small rectangular(?) enclosure, possibly open ended to NE.	Unknown	TM 40580 62079
MSF16196	Medieval artefact scatter.	Medieval	TM 45005 60455
MSF16888	Post-Medieval bridge.	18th century to 19th century	TM 44693 60594

MSF17577	Little Moor Farm; Buxlow Parsonage	Medieval to IPS: Post-Medieval	TM 41192 61663
MSF2306	Aldringham Green Round Barrow; Two bowl barrows, Aldringham Green	Unknown	TM 44705 60813
MSF14096	Buxlow; Buxton	Medieval	TM 41391 60614
MSF17578	Friston Moor	Medieval	TM 40765 61666
MSF2325	Knodishall Common; Coldfair Green	Unknown	TM 43175 60852
MSF2330	Large simple rectangular inhabited moat at Hill Farm.	Medieval	TM 39803 61763
MSF2331	NE of Hill Farm C19 decoy or flight pond, not part of a moat.	19th century to 20th century	TM 39976 62038
MSF23623	Cross with ring ditch, probably from a former post mill, visible as cropmarks.	Medieval	TM 42646 61096
MSF25256	EDF Access, Sizewell Power Station	Medieval	TM 47189 62669
MSF25696	Knodishall Coldfair Green historic settlement; St Andrews Green; Coldford Green (1783)	Medieval to IPS: Post-Medieval	TM 43376 60997
MSF25683	Aldringham historic settlement core (Med)	Medieval to IPS: Post-Medieval	TM 44635 60979
MSF26453	Aldringham Green	Medieval	TM 44665 60960
MSF26002	Suffolk square pillbox	Second World War	TM 41745 59673
MSF29478	Medieval Settlement at Sizewell, Leiston	Early Neolithic to Medieval	TM 47213 62654
MSF33455	Fragmentary cropmarks of possible medieval settlement	Medieval	TM 45013 60469
MSF33426	Site of possible Bronze Age round barrow or medieval to Post-Medieval mill mound, The Walks	Early Bronze Age to IPS: Post-Medieval	TM 46599 62312
MSF33424	Earthworks of linear and rectilinear boundaries of unknown date, The Walks, Aldringham Common	Unknown	TM 46475 62252
MSF33429	Site of Second World War Diver anti-aircraft battery	Second World War	TM 46548 62017
MSF33430	Linear earthwork banks on Broom Covert	Post-Medieval to IPS: Modern	TM 46347 63010

MSF33433	Site of fragmentary cropmarks of unknown date and significance	Unknown	TM 46057 62292
MSF33434	Site of fragmentary cropmarks of unknown date and significance	Unknown	TM 45791 62362
MSF33438	Site of Leiston Very High Frequency (VHF) Fixer Station	Second World War to Cold War	TM 45834 61789
MSF33442	Site of two probable First World War pillboxes	First World War	TM 45849 62506
MSF33439	Site of Second World War military training area and/or defended locality	Second World War	TM 46333 62982
MSF33440	Second World War training area and/or strong point	Second World War	TM 46529 62375
MSF16194	Second World War anti-glider ditches and military training activity on The Walks, Aldringham Common	20th century to IPS: Modern	TM 46379 61507
MSF21588	Multi-period cropmarks of probable field boundaries and enclosures	Early Iron Age to Roman	TM 46530 62606
MSF21594	Site of Second World War Diver anti-aircraft battery	Post-Medieval to Second World War	TM 46182 62565
MSF33815	Bronze Age/Early Iron Age settlement activity at Land south of Red House Lane, Leiston (Excavation pending)	Middle Bronze Age to IPS: Post-Medieval	TM 44999 61777
MSF29484	Late Prehistoric and Romano-British agricultural activity at Galloper offshore Wind Farm	Roman	TM 46646 62704
MSF37237	Land to the east of Aldeburgh Road, Aldringham Cum Thorpe.	Early Iron Age to IPS: Post-Medieval	TM 44649 61213
MSF39277	Farmstead: Bull's Hall Farm	19th century	TM 42647 60395
MSF39278	Farmstead: Park Farm	19th century	TM 42707 59580
MSF39512	Farmstead: High House Farm (Fristonmoor)	17th century to 19th century	TM 40977 61700
MSF39513	Farmstead: Little Moor Farm	19th century	TM 41233 61677
MSF39514	Farmstead: Clouting's Farm	19th century	TM 41146 62072
MSF39519	Farmstead: Peartree Farm	19th century	TM 41803 61647

MSF39520	Farmstead: Manor Farm	19th century	TM 42114 61303
MSF39522	Farmstead: Billeaford Hall	17th century to 19th century	TM 43318 60228
MSF39551	Farmstead: Sizewell Farm	19th century	TM 47158 62394
MSF39552	Farmstead: Hawsell's Farm	19th century	TM 45478 61798
MSF39553	Farmstead: Crown Farm	19th century	TM 45885 62446
MSF39867	Field Barn: Unnamed Field Barn	19th century	TM 40432 62170
MSF39868	Farmstead: Redhouse Farm	19th century	TM 40418 61686
MSF39869	Farmstead: Hill Farm	17th century to 19th century	TM 39847 61804
MSF39869	Farmstead: Hill Farm	17th century to 19th century	TM 39786 61760
MSF43262	Thorpe and Aldringham Commons	Medieval	TM 46409 61034
MSF43263	Sizewell Common	Medieval	TM 47343 61978
MSF43261	North Warren, Aldeburgh	Medieval	TM 44577 60372
MSF43519	Coastal Heath, Leiston	Medieval	TM 47585 63942
MSF43589	Friston Green/Blackheath	Medieval	TM 41424 59715
MSF19469	Great Wood	Unknown	TM 39588 62931
MSF39918	Farmstead: Wood Farm	17th century to 19th century	TM 39370 62527

3.5.A Heritage Assets within Kent Scoping Boundary

Table 3.4.A.1: Non-designated assets recorded on the Kent HER within the Scoping Boundary

ID	Grid Ref	Period	Description	Type
MKE10031	TR 33630 63899	Late Iron Age	Iron Age coins, Cottington Hill, Minster	FINDSPOT
MKE10032	TR 33570 63899	Iron Age	Copper Celtic coin, Cottington Hill, Minster	FINDSPOT
MKE10033	TR 33660 63899	Late Iron Age	Gaulish Iron Age coins, Cottington Hill, Minster	FINDSPOT
MKE10034	TR 33599 63899	Late Iron Age	Late Iron Age coin, Cottington Hill, Minster	FINDSPOT
MKE10035	TR 33679 63899	Late Iron Age	Late Iron Age coin, Cottington Hill, Minster	FINDSPOT
MKE10036	TR 33730 63899	Late Iron Age	Iron Age coin, Cottington Hill, Minster	FINDSPOT
MKE10037	TR 33599 63899	Late Iron Age	Late Iron Age coin, Cottington Hill, Minster	FINDSPOT
MKE104171	TR 34034 64000	Unknown	'Anlage unbekannter Art'	Unknown
MKE104172	TR 33996 64114	Unknown	'Scheinwerfer-Batterie'	Unknown
MKE108903	TR 33121 63393	Roman	Roman silver spoon	FINDSPOT
MKE114034	TR 33353 63496	Unknown	Hoard	FINDSPOT
MKE115840	TR 34177 64049	Early Neolithic to Post Medieval	Possible ditches and enclosures, west of Earlsmead Crescent	DITCH?; ENCLOSURE?
MKE15864	TR 33699 63899	Medieval to Post Medieval	Prehistoric finds and Tudor remains, Cottington Hill, Minster parish	WALL
MKE15873	TR 32449 63450	Unknown	Undated burials, Weatherlees Hill, Minster Marshes, Minster	BURIAL
MKE15874	TR 33450 63450	Late Bronze Age	Bronze Age hoard, Cottington Hill, Minster	Hoard

MKE15875	TR 33850 63619	Late Bronze Age to Early Iron Age	Prehistoric midden material, Cottington Hill, Minster	MIDDEN
MKE15983	TR 33200 63000	Early Bronze Age to Medieval	Multiperiod occupation, Ebbsfleet farm	SETTLEMENT; Hoard; SETTLEMENT; SETTLEMENT; SETTLEMENT
MKE21076	TR 33894 64000	Roman	Romano-British drainage ditches, hearth and two inhumations	DITCH; HEARTH; INHUMATION
MKE21077	TR 33509 63494	Roman	Romano British Landscape, inhumation burial and possible WW11 anti-aircraft station	ENCLOSURE; DITCH; INHUMATION; PIT
MKE35138	TR 34036 64156	Post Medieval	SAINT AUGUSTINE'S CROSS	CROSS; SITE; COMMEMORATIVE MONUMENT; CROSS
MKE39272	TR 34131 64046	Modern	COASTAL BATTERY, Pegwell Bay	COASTAL BATTERY; SLIT TRENCH; BANK (EARTHWORK); MILITARY BUILDING; MACHINE GUN POST; NISSEN HUT; ANTI AIRCRAFT GUN EMPLACEMENT; PATH; BARBED WIRE ENTANGLEMENT; MACHINE GUN POST; MILITARY BUILDING
MKE39400	TR 34178 63788	Modern	PILLBOX	PILLBOX
MKE43326	TR 32762 63851	Unknown	Rectangular crop mark	ENCLOSURE
MKE56547	TR 19463 58495	Post Medieval	Ashford & Margate Railway	RAILWAY
MKE56550	TR 33063 57722	Post Medieval to Modern	Deal Branch Railway	RAILWAY
MKE73930	TR 33299 63499	Late Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE73931	TR 33299 63499	Late Iron Age	Iron Age silver coin	FINDSPOT

MKE73932	TR 33299 63499	Late Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE73933	TR 33299 63499	Early Iron Age to Roman	Iron Age copper alloy coin	FINDSPOT
MKE73934	TR 33299 63499	Late Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE73935	TR 33299 63499	Late Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE73936	TR 33299 63499	Late Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE73937	TR 33299 63499	Middle Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE73938	TR 33399 63899	Late Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE73940	TR 33000 64000	Medieval	Medieval copper alloy brooch	FINDSPOT
MKE73946	TR 33399 63400	Late Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE73947	TR 33399 63400	Late Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE73948	TR 33399 63400	Late Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE73949	TR 33399 63400	Late Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE73950	TR 33399 63400	Late Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE73972	TR 32300 64000	Roman to Early Medieval or Anglo-Saxon	Roman copper alloy buckle	FINDSPOT
MKE73974	TR 32200 63900	Medieval	Medieval lead weight	FINDSPOT
MKE74042	TR 33399 63400	Middle Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74167	TR 33399 63400	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74168	TR 33399 63400	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74169	TR 33399 63400	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74170	TR 33399 63400	Iron Age	Iron Age copper alloy coin	FINDSPOT

MKE74171	TR 33399 63400	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74172	TR 33299 63499	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74173	TR 33299 63499	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74174	TR 33299 63499	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74175	TR 33299 63499	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74176	TR 33299 63499	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74179	TR 33399 63400	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74181	TR 33399 63400	Iron Age	Iron Age silver coin	FINDSPOT
MKE74273	TR 33299 63499	Iron Age	Iron Age silver coin	FINDSPOT
MKE74278	TR 33399 63400	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74286	TR 33399 63899	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74287	TR 33299 63499	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74288	TR 33299 63499	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74355	TR 33000 64000	Iron Age	Iron Age gold coin	FINDSPOT
MKE74401	TR 33399 63400	Iron Age	Iron Age silver coin	FINDSPOT
MKE74416	TR 33299 63499	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74417	TR 33299 63499	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74418	TR 33299 63499	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74419	TR 33299 63499	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74420	TR 33299 63499	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74421	TR 33299 63499	Iron Age	Iron Age silver coin	FINDSPOT

MKE74422	TR 33299 63499	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74423	TR 33299 63499	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74426	TR 33190 63229	Iron Age	Iron Age silver coin	FINDSPOT
MKE74453	TR 32800 63800	Iron Age	Iron Age copper alloy coin	FINDSPOT
MKE74461	TR 32050 63980	Iron Age	Iron Age gold coin	FINDSPOT
MKE76083	TR 28494 63308	Medieval	Abbot's Wall	SEA DEFENCES
MKE76084	TR 34030 62912	Medieval	Boarded Groin	SEA DEFENCES
MKE76498	TR 34000 63999	Early Medieval or Anglo-Saxon	Early Denarial silver early penny ('sceat'), Cliffsend, Ramsgate	FINDSPOT
MKE76499	TR 34000 63999	Early Medieval or Anglo-Saxon	A plated imitation? Anglo-Saxon silver early penny ('sceat'), Cliffsend, Ramsgate	FINDSPOT
MKE78429	TR 33199 63000	Late Bronze Age	Late Bronze Age Hoard, Ebbsfleet Farm	Hoard
MKE78430	TR 33224 63036	Early Iron Age to Middle Iron Age	Early/Middle Iron Age site, Weatherlees Hill Waste Treatment Works	OCCUPATION LAYER; PIT; GULLY
MKE78431	TR 33253 63056	Medieval to Post Medieval	Medieval/Post Medieval features, Weatherlees Hill Waste Treatment Works	DITCH; PIT
MKE78432	TR 33276 63072	Early Iron Age to Middle Iron Age	Animal burial, Weatherlees Hill Waste Treatment Works	ANIMAL BURIAL
MKE78433	TR 33345 63096	Medieval	Medieval pit, Weatherlees Waste Treatment Works	PIT
MKE78764	TR 33329 63089	Late Bronze Age to Early Iron Age	Late Bronze Age/Early Iron Age activity, Weatherlees Wastewater Treatment works	DITCH; STRUCTURE; POST HOLE; HEARTH?; PIT; GULLY
MKE8054	TR 31250 62940	Medieval	Abbot's Wall, Monkton, Minster and Sandwich	SEA DEFENCES
MKE8058	TR 34369 63940	Early Medieval or Anglo-Saxon	St Augustine'S Well	WELL

MKE8059	TR 33270 63080	Bronze Age	Bronze Age founder's hoard, Ebbsfleet Farm, Minster parish	Hoard
MKE8060	TR 33000 63000	Roman	Roman bronze toga pin (fibula), Ebbsfleet, Minster parish	FINDSPOT
MKE8062	TR 33000 64000	Iron Age	Iron Age coin, Sevenscore, Minster parish	FINDSPOT
MKE8075	TR 31980 63780	Unknown	Possible building and burials, Clapper Hill, Minster	BURIAL?; BUILDING?
MKE8084	TR 30900 63100	Roman	Possible cremation burial site, Minster Sewage Works, Minster	BURIAL; CREMATION CEMETERY?
MKE8106	TR 33340 63319	Post Medieval to Modern	Modern trench, Ebbsfleet, Minster parish	SLIT TRENCH
MKE8107	TR 32600 63600	Unknown	Sub-circular mound earthwork/cropmark, Minster Marshes	MOUND
MKE8108	TR 31358 63214	Unknown	Sub-circular mound earthwork/cropmarks, near Minster Sewage Works	MOUND
MKE8109	TR 31350 63390	Unknown	Sub-circular mound earthwork/cropmark, near Minster Sewage Works	MOUND
MKE8113	TR 33392 63301	Early Bronze Age to Roman	Multi period site on Cottington Hill, Minster parish	BURIAL; SETTLEMENT; VILLA
MKE8114	TR 33799 63899	Roman	Romano-British pits and associated materials, Cottington Hill, Minster parish	PIT
MKE8115	TR 33499 63599	Early Medieval or Anglo-Saxon to Medieval	Early medieval/medieval pit, Cottington Hill, Minster parish	PIT
MKE8118	TR 33799 64099	Late Iron Age to Roman	Romano-British occupation site, Cliffs End, Minster parish	SETTLEMENT
MKE86895	TR 30801 63167	Post-Medieval	Marsh Farm	FARMSTEAD
MKE86923	TR 31951 63329	Post Medieval	Sheepwash on Minster Marsh	FARMSTEAD
MKE86924	TR 32163 63576	Post-Medieval	Sheepwash on Minster Marsh	FARMSTEAD
MKE86974	TR 33210 63057	Post Medieval	Ebbsfleet Farm	FARMSTEAD

MKE89564	TR 34376 63674	Modern	Anti tank pimples, Pegwell Bay	ANTI TANK PIMPLE
MKE91586	TR 33975 64098	Post Medieval	Linear earthwork features south west of Saint Augustine's Cross	SHEEP DIP?
MKE91586	TR 33959 64103	Post Medieval	Linear earthwork features south west of Saint Augustine's Cross	SHEEP DIP?
MKE91780	TR 34057 64139	Early Medieval or Anglo-Saxon	Reputed site of St Augustine's Oak, 30m south-east of St Augustine's Cross.	SITE
MKE91795	TR 33500 63800	Unknown	2 parallel curving linear cropmarks west of Cottington Hill, possibly accompanied by pits. Formerly a plantation.	LINEAR FEATURE
MKE91798	TR 33900 63400	Unknown	Parallel linear features running north-east to south-west south of St Augustine's Golf Course	LINEAR FEATURE
MKE91799	TR 33000 62900	Unknown	Complex palaeochannels north of Weatherlees Water Treatment Works	PALAEOCHANNEL
MKE91803	TR 33879 63480	Unknown	Palaeochannels and drainage ditches visible as cropmarks and on aerial photographs between Ebbsfleet and St Augustine's Golf Course	PALAEOCHANNEL; DRAINAGE DITCH
MKE91810	TR 32895 63161	Unknown	Parallel north-east to south-west cropmark features, north-west of Weatherless Water Treatment Works, visible in 1946 aerial photographs	LINEAR FEATURE
MKE91813	TR 33150 63150	Unknown	Circular cropmark, possibly a barrow, immediately north of Ebbsfleet Farm	FEATURE
MKE91815	TR 33800 63900	Unknown	Cropmark suggests sub-rectilinear enclosure with circular disturbance or structure in north-east corner, located at Cottington Hill	ENCLOSURE
MKE91825	TR 34170 63830	Post Medieval	The Boarded Groin medieval land reclamation earthwork, Ebbsfleet.	DRAINAGE SYSTEM?
MKE91826	TR 34365 63844	Post Medieval	Redundant drainage ditches visible on historic mapping and aerial photographs	DRAINAGE DITCH
MKE91837	TR 33600 64100	Unknown	Cropmark of a probable small pit, just west of intersection of Cottington Road and railway	CHALK PIT?
MKE91838	TR 33350 63600	Unknown	Cropmarks of 5 probable small pits on Thanet Sands in a north-	PIT

			south line on the eastern side, just west of intersection of Cottington Road and railway	
MKE91866	TR 33277 63058	Late Bronze Age	Late bronze age field system, enclosures, structures, cremation burials and hoards, Ebbsfleet Farm Cottages	DITCH; ENCLOSURE; BOUNDARY DITCH; POST BUILT STRUCTURE; GULLY; POST HOLE; Hoard
MKE91870	TR 33296 63058	Late Iron Age to Roman	Late iron age / early Roman enclosure ditches, Ebbsfleet Farm Cottages	BOUNDARY DITCH; GULLY; POST BUILT STRUCTURE; DEFENDED ENCLOSURE
MKE91873	TR 33307 63097	Medieval	Medieval ditch and metalled trackway, Ebbsfleet Farm Cottages	TRACKWAY; DITCH
MKE91877	TR 33234 63003	Late Iron Age to Roman	Late iron age / early Roman ditches found at Weatherlees WWTW Pond	DEFENDED ENCLOSURE; PIT; DITCH; DITCH
MKE91882	TR 33244 62986	Medieval	Medieval field system found at Weatherlees WWTW Pond	FIELD SYSTEM; PIT; DITCH; ENCLOSURE
MKE91885	TR 33296 63112	Late Bronze Age	Late bronze age field system near Weatherlees Farm	DITCH; FIELD SYSTEM
MKE91887	TR 33302 63115	Late Iron Age to Roman	Late iron age / early Roman ditches near Weatherlees Farm	DITCH; PIT
MKE91888	TR 33286 63122	Medieval	Probable late medieval well near Weatherlees Farm	WELL?
MKE91892	TR 33276 63314	Neolithic	Neolithic subsoils and struck flints, Ebbsfleet Farm Cottages	BURIED SOIL HORIZON?
MKE91892	TR 33281 63366	Neolithic	Neolithic subsoils and struck flints, Ebbsfleet Farm Cottages	BURIED SOIL HORIZON?
MKE91894	TR 33298 63345	Late Mesolithic to Early Neolithic	Late mesolithic / early neolithic flint working floor, Ebbsfleet Farm Cottages	LITHIC WORKING SITE?
MKE91895	TR 33325 63466	Neolithic	Neolithic polished stone axe, Ebbsfleet Farm Cottages	FINDSPOT?
MKE91896	TR 33309 63364	Neolithic	Neolithic unfinished stone axe, Ebbsfleet Farm Cottages	FINDSPOT?

MKE91898	TR 33269 63244	Early Neolithic	Shallow pits and postholes of probable early neolithic date, Ebbsfleet Farm Cottages	PIT; POST HOLE
MKE91899	TR 33297 63301	Early Bronze Age to Roman	Bronze Age to early iron age activity, Ebbsfleet Farm Cottages	PIT; DITCH; HOLLOW WAY; CREMATION BURIAL; ENCLOSURE; DITCH; BOUNDARY DITCH; WELL; ROUND HOUSE (DOMESTIC); GRUBENHAUS; INHUMATION CEMETERY
MKE91899	TR 33303 63420	Early Bronze Age to Roman	Bronze Age to early iron age activity, Ebbsfleet Farm Cottages	PIT; DITCH; HOLLOW WAY; CREMATION BURIAL; ENCLOSURE; DITCH; BOUNDARY DITCH; WELL; ROUND HOUSE (DOMESTIC); GRUBENHAUS; INHUMATION CEMETERY
MKE91899	TR 33295 63375	Early Bronze Age to Roman	Bronze Age to early iron age activity, Ebbsfleet Farm Cottages	PIT; DITCH; HOLLOW WAY; CREMATION BURIAL; ENCLOSURE; DITCH; BOUNDARY DITCH; WELL; ROUND HOUSE (DOMESTIC); GRUBENHAUS; INHUMATION CEMETERY
MKE91909	TR 33267 63183	Medieval to Post Medieval	Medieval or post medieval field system, Ebbsfleet Farm Cottages	FIELD SYSTEM
MKE91910	TR 33470 63694	Early Bronze Age to Roman	Bronze Age to Roman activity Cottington Hill, discovered during East Kent Access Route excavations 2009-2011	FIELD SYSTEM; ENCLOSURE; PIT; OVEN?; POST BUILT STRUCTURE; CREMATION; PIT;

				ROUND HOUSE (DOMESTIC); PIT; WELL?; INHUMATION
MKE91910	TR 33388 63597	Early Bronze Age to Roman	Bronze Age to Roman activity Cottington Hill, discovered during East Kent Access Route excavations 2009-2011	FIELD SYSTEM; ENCLOSURE; PIT; OVEN?; POST BUILT STRUCTURE; CREMATION; PIT; ROUND HOUSE (DOMESTIC); PIT; WELL?; INHUMATION
MKE91910	TR 33356 63498	Early Bronze Age to Roman	Bronze Age to Roman activity Cottington Hill, discovered during East Kent Access Route excavations 2009-2011	FIELD SYSTEM; ENCLOSURE; PIT; OVEN?; POST BUILT STRUCTURE; CREMATION; PIT; ROUND HOUSE (DOMESTIC); PIT; WELL?; INHUMATION
MKE91910	TR 33557 63782	Early Bronze Age to Roman	Bronze Age to Roman activity Cottington Hill, discovered during East Kent Access Route excavations 2009-2011	FIELD SYSTEM; ENCLOSURE; PIT; OVEN?; POST BUILT STRUCTURE; CREMATION; PIT; ROUND HOUSE (DOMESTIC); PIT; WELL?; INHUMATION
MKE91911	TR 33602 63846	Bronze Age	Two early bronze age double ring ditches at Cottington Hill, discovered during East Kent Access Route excavations 2009-2011	RING DITCH; PIT; DITCH
MKE91912	TR 33796 64100	Early Iron Age to Early Medieval or Anglo-Saxon	Bronze Age to Saxon activity Cottington Hill, discovered during East Kent Access Route excavations 2009-2011, zone 9	FIELD SYSTEM; PIT; PIT; HEARTH?
MKE91916	TR 33734 64122	Early Medieval or Anglo-Saxon	Saxon settlement, discovered during East Kent Access Route excavations 2009-2011, zone 9	GRUBENHAUS; DITCH
MKE97070	TR 33353 63496	Roman	Roman Silver coin hoard	FINDSPOT
MKE97458	TR 32866 62669	Later Prehistoric	Prehistoric ditches and pits, Richborough	DITCH; PIT; DITCH

MKE97608	TR 36341 68160	Early Neolithic to Late Bronze Age	Neolithic to Bronze Age Activity along the Margate to Broadstairs Pipe Installation	ENCLOSURE; POST HOLE; BARROW?; RING DITCH; DITCH; PIT; TRACKWAY
MKE97609	TR 36341 68160	Late Iron Age to Medieval	Late Iron Age to Roman occupation, pipeline installation between Margate and Broadstairs.	DITCH; PIT; HOLLOW WAY?; CREMATION CEMETERY; DITCH; DITCH; PIT; INHUMATION CEMETERY; OVEN; GRAVE; PIT; POST HOLE; TREE THROW
MKE97610	TR 36341 68160	Early Medieval or Anglo-Saxon to Medieval	Anglo-Saxon and Medieval features, Margate to Broadstairs pipeline installation.	BUILDING; BAKERY; WALL; DITCH; GULLY; PIT
MKE98884	TR 34385 64052	Late Bronze Age	Late Bronze Age circular enclosure and peripheral rectangular enclosures, Cliffsend	CIRCULAR ENCLOSURE; RECTANGULAR ENCLOSURE
MKE98895	TR 34313 64059	Early Iron Age to Middle Iron Age	Bronze to Iron Age ditches and middens, south of Cottington Road, Cliffsend	DITCH; MIDDEN
MKE98899	TR 34411 63999	Medieval	Medieval features, south of Cottington Road, Cliffsend	DITCH
MWX43173	TR 35020 63817	Modern	WWII post alignment in the intertidal zone of Pegwell Bay, west of Ramsgate.	POST ALIGNMENT; ANTI SEAPLANE OBSTACLE; ANTI BOAT LANDING OBSTACLE; ANTI LANDING OBSTACLE; ANTI LANDING CABLE
MWX43182	TR 34452 63552	Modern	WWII beach scaffolding, Pegwell Bay	BEACH SCAFFOLDING
MWX43183	TR 34176 63100	Modern	WWII coastal defence measure in form of wire obstacle, Pegwell Bay	BEACH DEFENCE; ANTI LANDING CABLE
MWX43185	TR 34025 62925	Modern	WWII anti-tank blocks along the coastline of Pegwell Bay, extending south to a possible pillbox	ANTI TANK BLOCK; PILLBOX?

MWX43187	TR 34403 63815	Modern	WWII bomb crater, St Augustine's Golf Course, Pegwell Bay	BOMB CRATER
MWX43188	TR 34533 63897	Modern	WWII barbed wire, Pegwell Bay	BARBED WIRE ENTANGLEMENT
MWX43189	TR 34575 63824	Modern	WWII coastal defence feature comprising beach fencing, Pegwell Bay	FENCE; ANTI BOAT LANDING OBSTACLE
MWX43190	TR 34275 63983	Modern	WWII defensive features, Cliffsend, Pegwell Bay	SLIT TRENCH; MACHINE GUN POST; BARBED WIRE ENTANGLEMENT
MWX43191	TR 34167 63847	Modern	WWII defensive features, St Augustine's Golf Course, Pegwell Bay	SLIT TRENCH; MACHINE GUN POST; MOUND; PILLBOX
MWX43192	TR 34283 63964	Modern	WWII anti-aircraft battery, St Augustine's Golf Course, Pegwell Bay	SLIT TRENCH; DEFENCE WORK; ROAD; ANTI AIRCRAFT BATTERY; ANTI AIRCRAFT GUN EMPLACEMENT; BANK (EARTHWORK); MILITARY BUILDING
MWX43282	TR 33525 59739	Modern	Weatherlees Siding, Richborough Port	RAILWAY SIDING
MWX43334	TR 30533 62907	Unknown	Haystack stance, Minster Marshes	STACK STAND
MWX43335	TR 30732 62903	Unknown	Haystack stance, Minster Marshes	STACK STAND
MWX43337	TR 30734 62544	Modern	WWII enhanced drainage, Ash Levels	DEFENCE WORK; BANK (EARTHWORK); BANK (EARTHWORK); BANK (EARTHWORK); BANK (EARTHWORK); BANK (EARTHWORK)
MWX43337	TR 31920 62365	Modern	WWII enhanced drainage, Ash Levels	DEFENCE WORK; BANK (EARTHWORK);

				BANK (EARTHWORK); BANK (EARTHWORK); BANK (EARTHWORK); BANK (EARTHWORK)
MWX43337	TR 31372 62500	Modern	WWII enhanced drainage, Ash Levels	DEFENCE WORK; BANK (EARTHWORK); BANK (EARTHWORK); BANK (EARTHWORK); BANK (EARTHWORK); BANK (EARTHWORK)
MWX43342	TR 31490 62881	Modern	WWII enhanced drainage, Minster Marshes	DEFENCE WORK; BANK (EARTHWORK)
MWX43343	TR 31104 62604	Medieval to Post Medieval	Possible flood bank, Ash Levels	BANK (EARTHWORK); FLOOD DEFENCES
MWX43344	TR 31107 62738	Medieval to Post Medieval	Water management features, Ash Levels	FLOOD DEFENCES; BANK (EARTHWORK); DITCH; BANK (EARTHWORK)
MWX43353	TR 30955 62895	Modern	WWII bomb craters south of Boxlees Hill, Minster Marshes	BOMB CRATER
MWX43354	TR 31082 62972	Modern	WWII bomb craters south of Boxlees Hill, Minster Marshes	BOMB CRATER
MWX43355	TR 31079 62896	Unknown	WWII bomb crater south of Boxlees Hill, Minster Marshes	BOMB CRATER
MWX43356	TR 31033 62648	Unknown	Hay stack stance, Ash Levels	STACK STAND
MWX43357	TR 31300 62689	Unknown	Hay stack stance, Ash Levels	STACK STAND
MWX43358	TR 31497 62699	Unknown	Hay stack stance, Ash Levels	STACK STAND
MWX43359	TR 31380 62558	Unknown	Hay stack stance, Ash Levels	STACK STAND
MWX43360	TR 31454 62474	Unknown	Hay stack stance, Ash Levels	STACK STAND

MWX43362	TR 31435 62355	Medieval to Post Medieval	Hay stack stance, Ash Levels	STACK STAND
MWX43368	TR 31572 62656	Medieval to Post Medieval	Enclosure and boundary features, Ash Level.	BANK (EARTHWORK); ENCLOSURE
MWX43369	TR 31576 62939	Unknown	Possible drainage channel, Minster Marshes.	WATER CHANNEL
MWX43370	TR 31713 62950	Unknown	Possible flood bank, Minster Marshes	FLOOD DEFENCES
MWX43371	TR 31715 62865	Medieval to Post Medieval	Possible flood bank, Minster Marshes.	BANK (EARTHWORK)
MWX43372	TR 31763 62903	Medieval to Modern	Probable WWII Stop Line, Minster Marshes	DITCH; STOP LINE; BANK (EARTHWORK)
MWX43373	TR 31977 62557	Medieval to Post Medieval	Boundary features and possible flood bank, east of Minster Sluice, River Stour	FLOOD DEFENCES; BANK (EARTHWORK); DITCH
MWX43376	TR 31846 62218	Medieval to Post Medieval	Hay stack stance, Ash Level	STACK STAND
MWX43377	TR 32022 62358	Unknown	Hay stack stances, Ash Level	STACK STAND
MWX43387	TR 33027 62887	Medieval to Modern	Probable WWII Stop Line, Ebbsfleet to St Augustine's Well	DITCH; STOP LINE; BANK (EARTHWORK)
MWX43388	TR 34065 63478	Modern	Possibe pillbox, St Augustine's Golf Course	BUILDING
MWX43487	TR 33301 60950	Modern	Richborough Port	MILITARY DEPOT; PORT
MWX43720	TR 34695 63806	Post Medieval to Modern	Rifle range, Cliffsend	RIFLE RANGE

5.2.A Major Accidents and Disasters Scoping Table

Table 5.2.A.1: Major accidents and disasters scoping table

Major event group	Major event category	Major event type	Basis of decision to scope in/out	Proposed to be Scoped in?
Natural Hazards	Geophysical	Earthquakes	Earthquakes in the UK are moderately frequent but are unlikely to be powerful enough to inflict severe damage. The British Geological Society (BGS) acknowledges although the UK is distant from the nearest plate boundary, the Mid-Atlantic Ridge, earthquakes in the UK occur as crustal stresses within the tectonic plates are relieved by movement occurring on pre-existing fault planes. One of the driving forces is regional compression caused by motion of the Earth's tectonic plates and uplift resulting from the melting of the ice sheets that covered many parts of Britain thousands of years ago. The Project is not considered to be vulnerable to earthquakes of the level experienced in the UK. It is also unlikely to trigger earthquakes.	No
Natural Hazards	Geophysical	Volcanic Activity	According to the National Risk Register – 2020, there are a number of volcanoes across Europe that could affect the UK, especially volcanoes in Iceland (such as Bárðarbunga and Eyjafjallajökull) due to their proximity to the UK and because there are frequent eruptions. Due to prevailing winds, they have potential to blow ash and gas towards the UK. It is highly unlikely that an ash cloud could significantly impact on any aspect of the Project.	No
Natural Hazards	Geophysical	Landslides	The BGS is the definitive source of landslide information in Great Britain. The National Landslide Database shows there have been two landslides recorded within the Kent Scoping Boundary one within the Suffolk Scoping Boundary.	No

			The Project's topography is relatively flat with gently undulating land. The Project does not involve the formation of deep cuts/high embankments. In designing the Project to applicable standards, resources and receptors would not be put at a greater risk as a consequence of the Project.	
Natural Hazards	Geophysical	Sinkholes	The superficial and bedrock geology within the Project Scoping Boundary is described in **Part 2, Chapter 6, Geology and Hydrogeology**, for the Suffolk Onshore Scheme, **Part 3, Chapter 6, Geology and Hydrogeology**, for the Kent Onshore Scheme and **Part 4, Chapter 2, Physical Processes** for the Offshore Scheme. Due to the nature of the superficial and bedrock geology within the Project Scoping Boundary sinkholes are unlikely.	No
Natural Hazards	Geophysical	Tsunamis	N/A - The Project is not located in a tsunami risk zone.	No
Natural Hazards	Hydrology	Tidal Flooding	The baseline environment in relation to flooding is presented in **Part 2, Chapter 5, Water Environment** for the Suffolk Onshore Scheme and **Part 3, Chapter 5, Water Environment** for the Kent Onshore Scheme. With regards to both the Suffolk Onshore Scheme and the Kent Onshore Scheme the proposed converter stations would be outside of the floodplain and will incorporate appropriate post construction surface water management and land drainage systems which would result in negligible effects and are therefore proposed to be scoped out of the ES. There is no pathway for operational cables or overhead lines to impact on tidal flooding. Flood risk is proposed to be scoped in for both the Suffolk and Kent Onshore Schemes during construction, maintenance and decommissioning of the Project. The ES will be supported by a Flood	No
Natural Hazards	Hydrology	Fluvial Flooding		No
Natural Hazards	Hydrology	Pluvial Flooding		No
Natural Hazards	Hydrology	Groundwater Flooding		No

			Risk Assessment (FRA). The detailed scope of the FRA will be agreed with relevant stakeholders but the construction, maintenance and decommissioning of The Project is not likely to lead to any increased risk of a major accident or disaster from all types of flooding.	
Natural Hazards	Hydrology	Avalanches	N/A - Avalanches are not considered relevant given the location of the Project.	No
Natural Hazards	Climatological and Meteorological	Cyclones, hurricanes, typhoons, storms and gales	Cyclones, hurricanes, typhoons do not typically occur in the UK. Storms and gales could result in damage to the converter stations. However, they will be designed in line with UK standards which take into account environmental conditions including exposure to UK weather conditions. The risk is not significantly different to other similar infrastructure in the locality.	No
Natural Hazards	Climatological and Meteorological	Thunderstorms	This type of event could result in lightning strikes to temporary elevated structures during construction (e.g. tower cranes); however, the risk is no different to other construction projects in the locality. The converter stations will be fitted with appropriate lightning conductors.	No
Natural Hazards	Climatological and Meteorological	Wave surges	The Project is located in hydrological catchment areas that are at risk of tidal flooding, however the majority of the infrastructure is below ground and therefore would not be subject to the direct hydraulic forces of a wave surge.	No
Natural Hazards	Climatological and Meteorological	Extreme temperatures: Heatwaves, Low (sub-zero) temperatures and heavy snow	This type of event could expose site infrastructure to greater heat intensity and exposure to sunlight. Heavy snow could cause disruption to workers and delivery vehicles and drivers during construction. High temperature records are now being broken across the UK with increasing frequency. Data sourced from the UK Met Office summarises the highest daily maximum temperature in the UK is 40.3°C,	No

			recorded in Coningsby, Lincolnshire in July 2022. The lowest daily minimum temperature on record in the UK is -27.2°C recorded in Altnaharra, Scotland in December 1995. In late February and early March 2018, the UK experienced a spell of severe winter weather with very low temperatures and significant snowfall. This event became known as 'The Beast from the East' in the media and led to widespread impacts across the UK. Climate change is set to lead to more extreme events over the coming years. The project will be designed to existing National Grid standards, which include consideration of high temperatures. National Grid also undertakes regular inspections of the network using thermal imaging to assess damage from weather.	
Natural Hazards	Climatological and Meteorological	Droughts	Over the past 40 years or so, England has experienced five long-duration droughts (lasting over 6 months) and two shorter periods of drought. Drought in the other UK nations is rare. During the 2010–12 drought, parts of south-east and eastern England recorded their lowest 18-month rainfall total in over 100 years. Temporary hosepipe bans were applied to 20 million customers, and the environment and agricultural sectors were disrupted. Drought has the longest advance warning times of the severe weather types. The Project would not be vulnerable to drought. The design of the cable will be resilient to ground shrinkage.	No
Natural Hazards	Climatological and Meteorological	Severe Space Weather: Solar Flares	The energy from solar flares reaches Earth within a few minutes and can cause radio blackouts. The Project is no more vulnerable than other similar infrastructure in the locality.	No

Natural Hazards	Climatological and Meteorological	Severe Space Weather: Solar Energetic Particles	Solar energetic particles arrive at Earth around 15 minutes to a few hours after they occur, and cause solar radiation storms which can potentially harm astronauts and impact electronics. The Project is no more vulnerable than other similar infrastructure in the locality.	No
Natural Hazards	Climatological and Meteorological	Severe Space Weather: Coronal Mass Ejections (CMEs)	CMEs travel slowly and can take between 14 hours and up to four days to reach Earth and cause geomagnetic storms with many impacts including localised disruptions to power grids. The Project is no more vulnerable than other similar infrastructure in the locality.	No
Natural Hazards	Climatological and Meteorological	Fog	Fog is one of the most common weather conditions in the UK, particularly throughout autumn and winter. Severe disruption to transport occurs when the visibility falls below 50m over a wide area. Should fog become an issue during the construction phase due to visibility, work would cease, where it is not safe to continue until conditions improve.	No
Natural Hazards	Climatological and Meteorological	Wildfires: Forest fire, Bush/brush, pasture	In 2018, fire and rescue services dealt with a number of wildfires across the country. The vast majority of these were considered business as usual, although some larger incidents (including the Saddleworth Moor and Winter Hill fires) involved mutual aid from other services and the use of specialist capabilities such as high-volume pumps. Scotland also experiences large, rural wildfires, most recently seen in Dumfries and Galloway in 2020. The converter stations would include standoff distances from wooded areas and landscape planting. Should weather conditions during construction become hot and dry for a long period of time, further consideration would be given to hot work activity locations.	No

Natural Hazards	Climatological and Meteorological	Poor Air Quality	Between 27 June and 7 July 2006, and between 13 and 23 July of the same year, the UK experienced two periods of extended hot weather with associated elevated ozone and harmful airborne particles. In the first episode, the combination of heatwave conditions, poor air quality and worsening of people's pre-existing conditions led to up to 540 deaths and up to 700 hospital admissions. The same factors led to up to 630 deaths and up to 830 hospital admissions in the second episode. Periods of elevated pollution over a widespread area, and lasting more than two days, can occur around 5 to 10 times a year dependent on seasonal weather conditions. The proposed scope of the air quality assessment is set out in **Part 2, Chapter 9, Air Quality** for the Suffolk Onshore Scheme and **Part 3, Chapter 9, Air Quality** for the Kent Onshore Scheme. No potential significant air quality effects are predicted from the Project. During operation of the Project there is unlikely to be any effect on Air Quality as maintenance vehicles would be very few and there are no emissions associated with the operation of the Project itself.	No
Natural Hazards	Biological	Disease epidemics: • Viral • Bacterial • Parasitic • Fungal • Prion	There were four influenza pandemics in the 20th century. The most recent flu pandemic was the H1N1 strain (swine flu) pandemic in 2009 which caused at least 18,500 deaths worldwide. In 1918, another variant of the same H1N1 strain (Spanish flu) killed over 50 million people globally. Over the past 30 years, more than 30 new, or newly recognised, diseases have been identified. Most of these have been zoonoses – diseases that are naturally transmissible, directly or indirectly, from animals to humans. Examples of new infections that have emerged in the human population include	No

			COVID-19 (which has led to more than 150,000 deaths in the UK since the start of the pandemic), HIV and HCIDs, such as Ebola, SARS, Middle East Respiratory syndrome (MERS), and Zika virus. The construction and operation of the Project would not give rise to any disease epidemics. The development itself would be constructed following all necessary guidance and restrictions in place at the time of its construction relating to the control of COVID-19.	
Natural Hazards	Biological	Animal Diseases: • zoonotic: • avian influenza • West Nile virus • Rabies • non-zoonotic: • foot and mouth • swine fever	Both low and highly pathogenic avian influenza has been recorded in poultry in the UK several times in the last 10 years, although with no human cases reported. The most recent outbreaks of avian influenza occurred in November 2020 years, most recently in the winter of 2016/17, although with no human cases reported. Bats infected with Lyssavirus (rabies) have been found every year for the last seven years and there have been a number of cases of equine notifiable disease in the UK in 2019 and 2020. Classical swine fever has been recorded in the UK but African swine fever has not. Bluetongue was first recorded in the UK in 2007. It was eradicated in 2008 through vaccination but UK animals are vulnerable to new incursions. There was a devastating foot and mouth disease outbreak in 2001 which cost the UK around £8 billion, however, greatly improved response arrangements ensured that an outbreak in 2007 caused much less damage (£150 million). The Project would not be a source of any disease epidemics and spread during any outbreak would be controlled through containment of infected animals including prohibition of transportation. The	No

			Project will adopt strict biosecurity protocols when working between livestock/poultry farms and these measures would form part of the Construction Environmental Management Plan (CEMP)	
Natural Hazards	Biological	Plants	Standard control measures would be implemented by the appointed contractor during construction to handle and dispose of any diseased or invasive plants to prevent their spread. Measures, such as a biosecurity plan as set out in measure BE01 of **Appendix 1.4.A Outline Code of Construction Practice** would be put in place for the Project.	No
Technological or Manmade Hazards	Societal	Extensive public demonstrations which could lead to violence and loss of life	In recent decades, serious widespread disorder in the UK has been rare. On 6 August 2011, a protest in Tottenham following the shooting of Mark Duggan by the police escalated into widespread public disorder. The G20 summits in 2009 and 2017 resulted in varying degrees of violent disorder, while the tuition fees protest in 2010 saw incidents of criminal damage and use of improvised missiles against police. The Project is located in a largely rural area of the UK, and despite the isolated cases listed above, the UK is considered to be a politically stable country. The Project should not lead to civil unrest, widespread damage to societies and economies and is unlikely to require largescale multi-faceted humanitarian assistance.	No
Technological or Manmade Hazards	Societal	Widespread damage to societies and economies.		
Technological or Manmade Hazards	Societal	The need for largescale multi-faceted humanitarian assistance.		
Technological or Manmade Hazards	Societal	The hindrance or prevention of humanitarian assistance by political and military constraints		
Technological or Manmade Hazards	Societal	Significant security risks for humanitarian relief workers in some areas.		
Technological or Manmade Hazards	Societal	Famine	The Project is located in a developed country that produces its own crops and imports food. It is politically stable and not subject to hyperinflation and therefore food is available, whether produced within	No

			the UK or imported. Famine is also not relevant to the use of the Project.	
Technological or Manmade Hazards	Societal	Displaced population	The Project is located in a developed country which is politically stable. There will be no significant displacement of populations as part of the Project.	No
Technological or Manmade Hazards	Industrial and Urban Accidents	Major Accident Hazard Chemical sites	There are two establishments within 3km the Project Scoping Boundary that are covered by the Control of Major Accident Hazard (COMAH) Regulations 2015. These establishments are strictly regulated under the COMAH Regulations 2015 and have to manage their activities in a way which reduces risk to workers and the public. Operators must take all measures necessary to prevent major accidents and to limit their consequences for people and the environment. The Project would not lead to any increased risk of a major accident or disaster from a COMAH site.	No
Technological or Manmade Hazards	Industrial and Urban Accidents	Major Accident Hazard Pipelines	The Project would not lead to any increased risk of a major accident or disaster from a major accident hazard pipeline.	No
Technological or Manmade Hazards	Industrial and Urban Accidents	Nuclear	Nuclear sites are designed, built and operated so that the likelihood of releases of radiological material in the UK is extremely low. Historical accidents include Windscale (UK) in 1957. Sizewell B is located to the north of the Suffolk Scoping Boundary. It is a nuclear power station on the Suffolk coast. Alongside Sizewell B, Sizewell C was granted development consent in July 2022. Although the potential for interactions is considered to be negligible, Sizewell B & the proposed Sizewell C will be considered for further assessment. The Project would not lead to any increased risk of a major accident or disaster from a nuclear site.	No

Technological or Manmade Hazards	Industrial and Urban Accidents	Fuel storage	The Project would not lead to any increased risk of a major accident or disaster from a fuel storage site.	No
Technological or Manmade Hazards	Industrial and Urban Accidents	Dam breaches	Dam breaches in the UK are rare. The last major breach was at the Cwm Eigiau dam in 1925, which caused 17 fatalities and widespread flooding. The Malpasset dam in southern France was breached on 2 December 1959, resulting in over 400 fatalities and widespread damage. English reservoirs are regulated under the Reservoirs Act (1975). A UK dam breach is highly unlikely. However, if a breach occurs, the emergency services will issue a warning and may decide that evacuation is necessary. There are no reservoirs within the Project Scoping Boundary and the Project would not lead to any increased risk of a dam breach. Potential risks from reservoir flooding will be considered in the Flood Risk Assessment. The Project is not expected to lead to any increased risk of major accident or disaster from reservoir flooding.	No
Technological or Manmade Hazards	Industrial and Urban Accidents	Mines and storage caverns	The Kent Onshore Scheme Scoping Boundary is within a Coal Mining Reporting Area. This is detailed in **Part 3, Chapter 6, Geology and Hydrogeology**. Ground instability effects relating to historical coal mining and not likely to result in a significant effect as the Kent Onshore Scheme Scoping Boundary is not within a development high risk areas and the coal measures are anticipated to be relatively this and at significant depth. The Project is not likely to lead to any increased risk of a major accident or disaster from mines and caverns.	No
Technological or Manmade Hazards	Industrial and Urban Accidents	Fires	Fires could be initiated by construction related activities however standard control measures would be implemented by the	No

			appointed contractor to manage the risk of fire. Measure GG20 of **Appendix 1.4.A Outline Code of Construction Practice** prohibits bonfires and the burning of water material on site. The Project is not likely to lead to any increased risk of a major accident or disaster from fires.	
Technological or Manmade Hazards	Transport accidents	Road	Transport accidents occur across the UK on a daily basis. During construction there will be an increase in heavy construction plant and equipment on the local road network which would form the entry and exit points for construction traffic and therefore may increase the risk of road traffic accidents. Access points will incorporate appropriate visibility splays, turning radii and speed limit reductions where necessary/appropriate. Measures TT01, TT02, TT03 of **Appendix 1.4.A Outline Code of Construction Practice** set out measures to control and manage construction traffic on the highway network. The operation of the Project would not result in increased traffic flow or changes to traffic composition which could have an adverse impact on highway safety. The Project is not likely to lead to any increased risk of a major accident or disaster from road traffic accidents.	No
Technological or Manmade Hazards	Transport accidents	Rail	There are railway lines within both the Suffolk Onshore Scheme Scoping Boundary and the Kent Onshore Scheme Scoping Boundary. The railway line within the Suffolk Onshore Scheme Scoping Boundary would only need to be crossed if Site 3 Alternative (Option 1) was selected as the preferred option. The railway line within Kent would be crossed by the HVAC connection between the converter station and the Richborough to Canterbury overhead	No

			line. does not cross any rail stations or tracks within the Kent Scoping Boundary. The closest railway station to the proposed study area is Minster, located approximately 2km northwest. Construction of a new rail station, Thanet Parkway, is underway and due to open in December 2022. It is located approximately 2km northeast of the proposed study area and Within the Suffolk Scoping Boundary there are no rail services, although Saxmundham railway station is located circa. 2.5km to the northwest of the Option Area	
Technological or Manmade Hazards	Transport accidents	Waterways	The proposed scope of the Shipping and Navigation assessment is set out in **Part 4, Chapter 8, Shipping and Navigation**. Measures SN01, - SN06 are in included within **Appendix 1.4.A Outline Code of Construction Practice** to control and manage vessel movements during the installation of the marine cable. The Project is not likely to lead to any increased risk of a major accident or disaster from marine vessel accidents.	No
Technological or Manmade Hazards	Transport accidents	Aviation	There have been no major air accidents in the UK since the Kegworth incident in 1989. There are no in-use airports or airfields within the Project Scoping Boundary. The nearest airport is Manston Airport which is approximately 1km north of the Kent Onshore Scheme Scoping Boundary. The airport received development consent in August 2022, following re determination, for the construction and operation of additional facilities. The Kent Onshore Scheme will be designed so there no impacts on this airport or its operations. The Project is not likely to lead to any increased risk of a major accident or disaster from aviation accidents.	No

Technological or Manmade Hazards	Pollution accidents	Air	The proposed scope of the air quality assessment is set out in Part 2, Chapter 9, Air Quality for the Suffolk Onshore Scheme and Part 3, Chapter 9, Air Quality for the Kent Onshore Scheme. No potential significant air quality effects are predicted from the Project. During operation of the Project there is unlikely to be any effect on Air Quality as maintenance vehicles would be very few and there are no emissions associated with the operation of the Project itself. The Project is not likely to lead to any increased risk of a major accident or disaster from air pollution accidents.	No
Technological or Manmade Hazards	Pollution accidents	Land	Measures GG06, GG23, W02, GH05, GM03, LVS02 and LVS04 in **Appendix 1.4.A Outlie Code of Construction Practice** will ensure control and management measures are in place to prevent pollution from the construction of the Project. The Project is not likely to lead to any increased risk of a major accident or disaster from land pollution accidents.	No
Technological or Manmade Hazards	Pollution accidents	Water	Measures GG06, GG23, W02, GH05, GM03, LVS02 and LVS04 in **Appendix 1.4.A Outlie Code of Construction Practice** will ensure control and management measures are in place to prevent pollution from the construction of the Project. The Project is not likely to lead to any increased risk of a major accident or disaster from water pollution accidents	No
Technological or Manmade Hazards	Utilities failures	Electricity	Above-ground electrical transmission lines are present within the Scoping Boundary which are National Grid owned and transmitted 400kv. During construction, any work required near electric overhead power lines would be adequately controlled and appropriate site-specific risk assessments completed	No

			which would consider such aspects as: • The voltage and height; • Size and reach of any machinery or equipment; • Safe clearance distances required; • Site conditions such as undulating terrain; andCompetence, supervision, training and briefing to staff. The Project is not likely to lead to any increased risk of a major accident or disaster from an electricity utilities failure.	
Technological or Manmade Hazards	Utilities failures	Gas	There are no gas transmission pipelines within the Project Scoping Boundary The Project is not likely to lead to any increased risk of a major accident or disaster from a gas utilities failure.	No
Technological or Manmade Hazards	Utilities failures	Water Supply	The project would be designed and constructed to appropriate design standards which include crossing of other utilities. Including consultation and agreement of protective provisions with the asset owners. The Project is not likely to lead to any increased risk of a major accident or disaster from a water supply utilities failure.	No
Technological or Manmade Hazards	Utilities failures	Sewage system	The project would be designed and constructed to appropriate design standards which include crossing of other utilities. Including consultation and agreement of protective provisions with the asset owners. The Project is not likely to lead to any increased risk of a major accident or disaster from a sewage system utilities failure.	No
Technological or Manmade Hazards	Malicious Attacks	Unexploded Ordnance	UXO surveys will be undertaken and the project would be designed and	No

			constructed to appropriate design standards relevant to UXO. The Project is not likely to lead to any increased risk of a major accident or disaster from UXO.	
Technological or Manmade Hazards	Malicious Attacks	Chemical Biological Radiological Nuclear	The Project will form part of the National Transmission System. Measures are established to prevent such an attack.	No
Technological or Manmade Hazards	Malicious Attacks	Transport systems	N/A	No
Technological or Manmade Hazards	Malicious Attacks	Crowded places	N/A	No
Technological or Manmade Hazards	Engineering accidents and failures	Cyber	According to the National Risk Register 2020, cyber-attacks occur almost constantly on key national and commercial electronic information, control systems and digital industries. National Grid Electricity System Operator (ESO) must adhere to Security Quality of Supply Standards. The Project is not likely to lead to any increased risk of a major accident or disaster from cyber attacks.	No
Technological or Manmade Hazards	Engineering accidents and failures	Infrastructure	N/A	No
Technological or Manmade Hazards	Engineering accidents and failures	Bridge failure	N/A	No
Technological or Manmade Hazards	Engineering accidents and failures	Flood defence failure	The project would be designed and constructed to appropriate design standards which include crossing of flood defences. Including consultation and agreement of protective provisions with the asset owners. The Project is not likely to lead to any increased risk of a major accident or disaster from a flood defence failure.	No

Technological or Manmade Hazards	Engineering accidents and failures	Mast and tower collapse	The HVAC connection for the Kent Onshore Scheme includes an option for this to be made with an overhead line. There are no overhead lines proposed as part of the Suffolk Onshore Scheme. Pylons are designed with a wide base and deep concrete foundations to provide a stable footing. The pylons are designed to safety standards that mean it is highly unlikely that a pylon would collapse if something fell on it. The Project is not likely to lead to any increased risk of a major accident or disaster from mast or tower collapse.	No
Technological or Manmade Hazards	Engineering accidents and failures	Property or bridge demolition accidents	N/A	No
Technological or Manmade Hazards	Engineering accidents and failures	Tunnel failure/fire	N/A.	No
Technological or Manmade Hazards	Human error	Buried strike to existing buried services	The protection of buried services is achieved through existing safety controls embedded during the design and construction stages. These include analysis of up-to-date service information to identify the location of services, holding discussions with service providers to agree protective provisions and managing the risks to services. Measures to manage risk include undertaking service location surveys to track where services are located on the ground. Works would also take into consideration Health and Safety and Environment (HSE) guidance (2014), which provides advice on how to reduce any direct risks to people's health and safety, as well as the indirect risks arising through damage to services. These existing measures reduce the risk to as low as reasonably practicable for the project to cause a service strike through human error. The Project is not likely to lead to any increased risk of a major accident or	No

			disaster from buried strike to existing buried services.	
Technological or Manmade Hazards	Human error	Damage to underground cable	The underground cables are placed at a minimum depth of 1.1m (deep enough so as not to be affected by agricultural activities). The cables and ducts are placed in cement-bound sand with a tile over the top as added protection. Landowners would be made aware of the route of the cable and associated land rights which would outline the activities that can take place over the cable. In the extremely unlikely event that the cable was damaged, the fault would be reported in milliseconds through the monitoring system and the system would be auto-isolated, making it safe pending investigations. The Project is not likely to lead to any increased risk of a major accident or disaster from damage to underground cables.	No
Technological or Manmade Hazards	Human error	Crane Operation	Geotechnical investigations would be undertaken to identify the stability/suitability of the ground beneath where the crane would be placed, having an appropriately designed crane base plate, and using trained staff to operate the crane. The Project is not likely to lead to any increased risk of a major accident or disaster from crane operation.	No
Technological or Manmade Hazards	Sabotage or arson	Sabotage or arson on proposed infrastructure	During construction, the working area would have security fencing around the site and only authorised personnel would be admitted to the site. Outside of working hours, it is anticipated that the site would have the proper security measures such as: security guard/CCTV to check for trespassers that could result in sabotage or arson. During operation, the converter stations surrounded by security fencing to prevent trespass. The Project is not likely to lead to any increased risk of a major accident or disaster from sabotage or arson on the proposed infrastructure.	No

Sea Link

Environmental Impact Assessment Scoping Report
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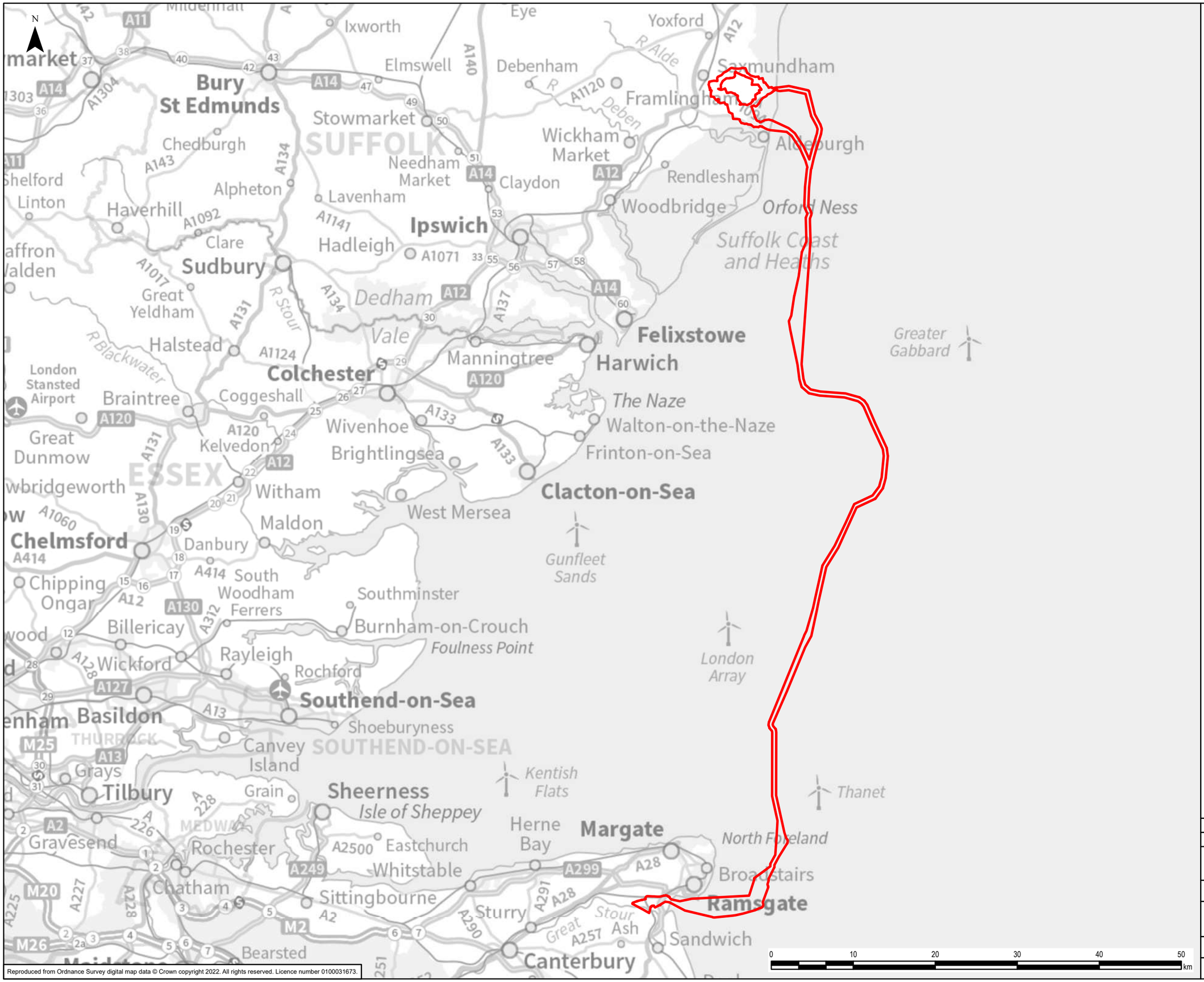
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Part 1- Introduction



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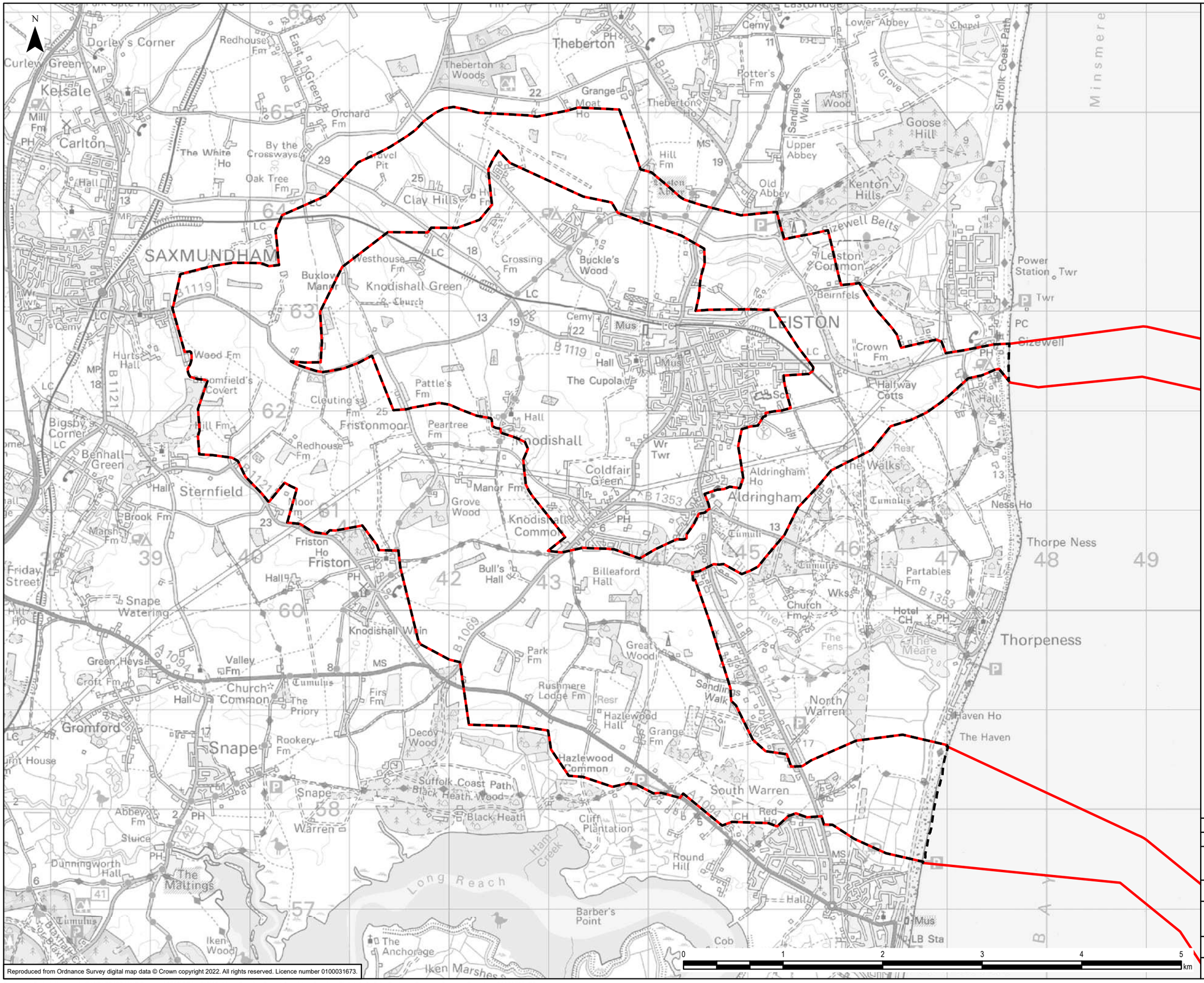
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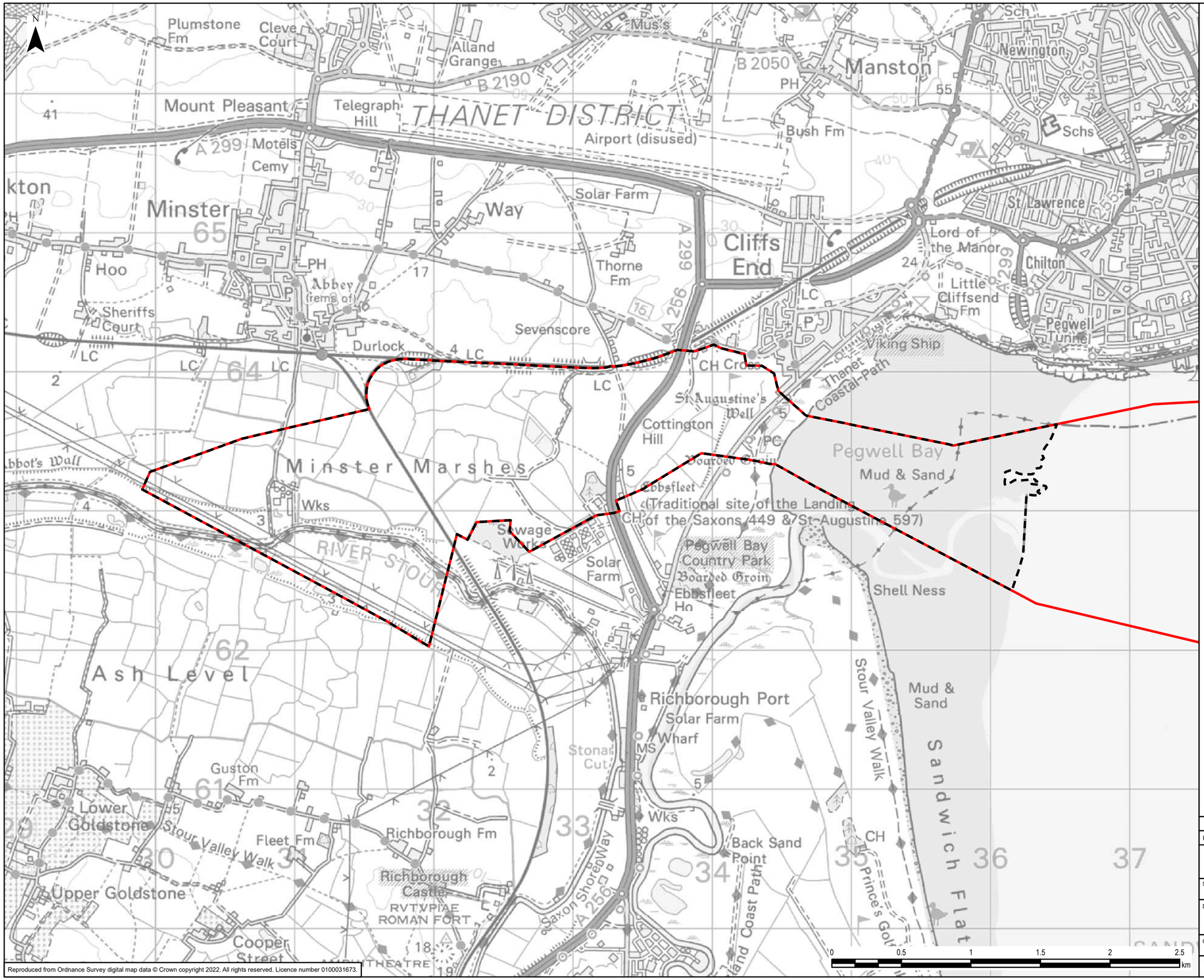
Scheme: SEA LINK

Document Title: SUFFOLK ONSHORE SCHEME SCOPING BOUNDARY

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	07/07/2022	DF	07/07/2022	CC	07/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 1.1.2	1:35,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig1-1-2_Suffolk_Onshore_Scheme_Scoping_Boundary_20220707_EB.aprx



Legend

- Project Scoping Boundary
- Kent Onshore Scheme Scoping Boundary

Rev	Date	Description	GIS	Chk	App
0	07/07/2022	SCOPING REPORT	EB	DF	CC

nationalgrid

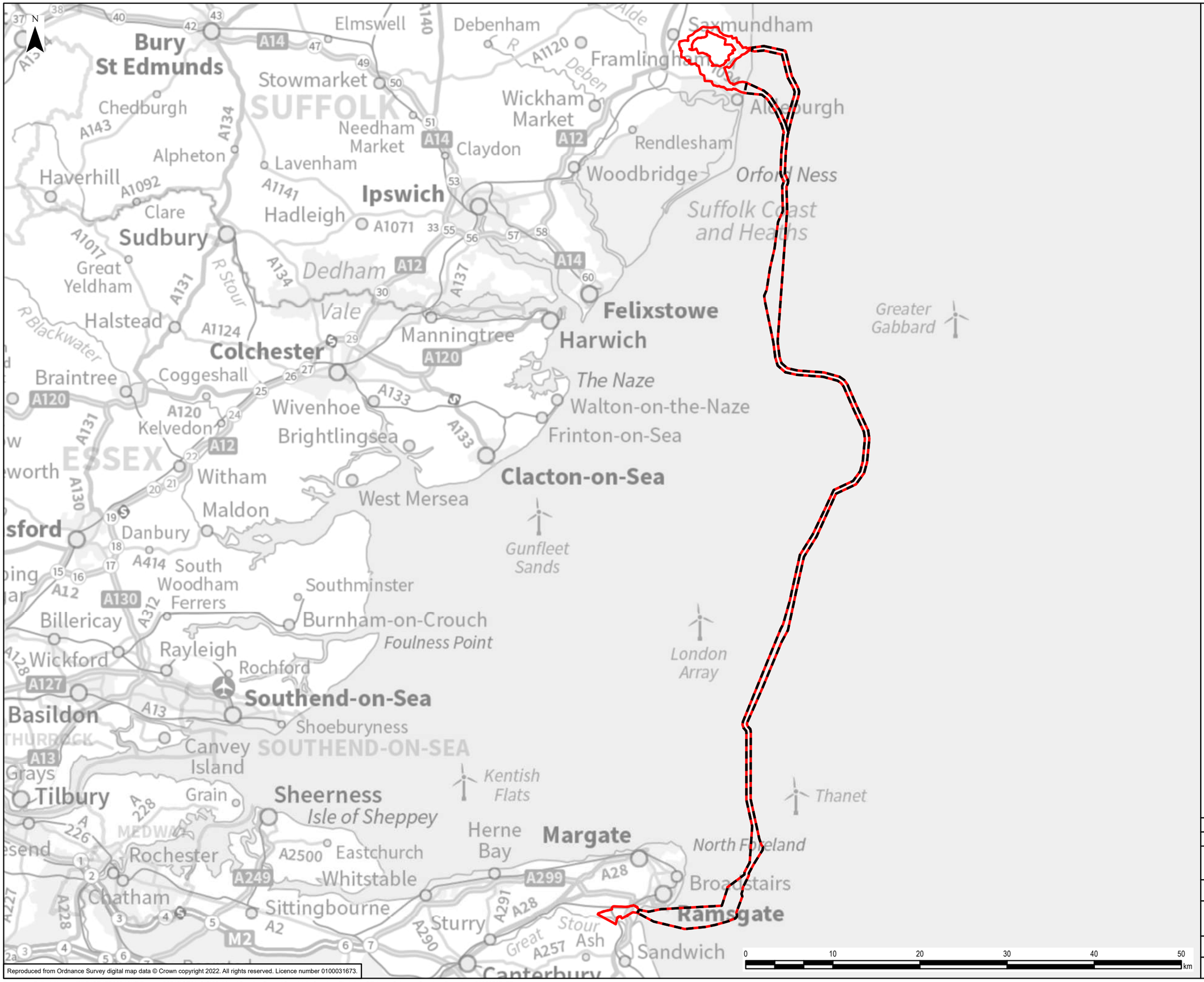
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Document Title: KENT ONSHORE SCHEME SCOPING BOUNDARY

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	07/07/2022	DF	07/07/2022	CC	07/07/2022

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FIGURE 1.1.3	1:25,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig1-1-3_Kent_Onshore_Scheme_Scoping_Boundary_20220707_EB.aprx



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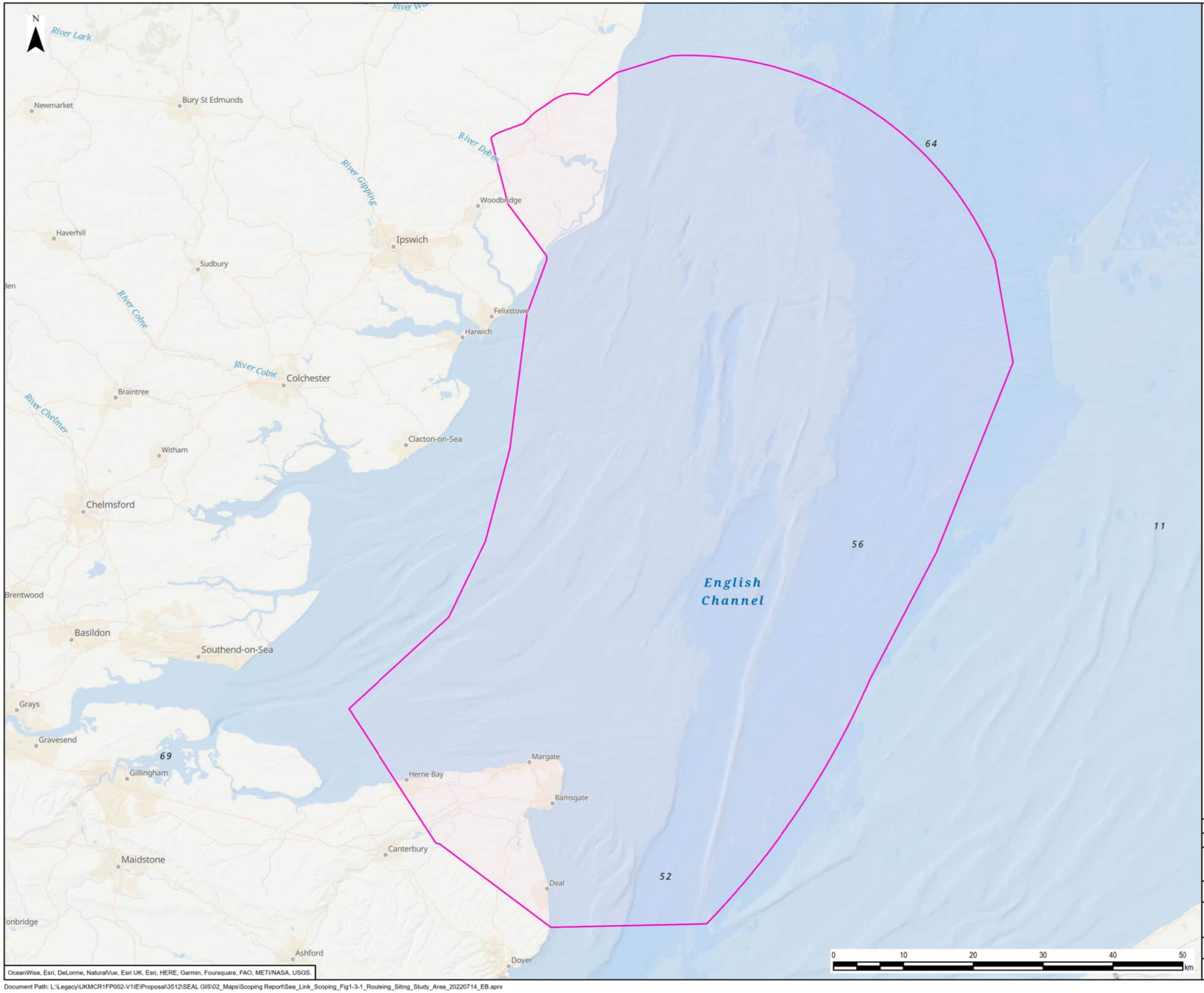
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Document Title: OFFSHORE SCHEME SCOPING BOUNDARY

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	07/07/2022	DF	07/07/2022	CC	07/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 1.1.4	1:400,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig1-1-4_Offshore_Scheme_Scoping_Boundary_20220707_EB.aprx



Rev	Date	Description	GIS	Chk	App
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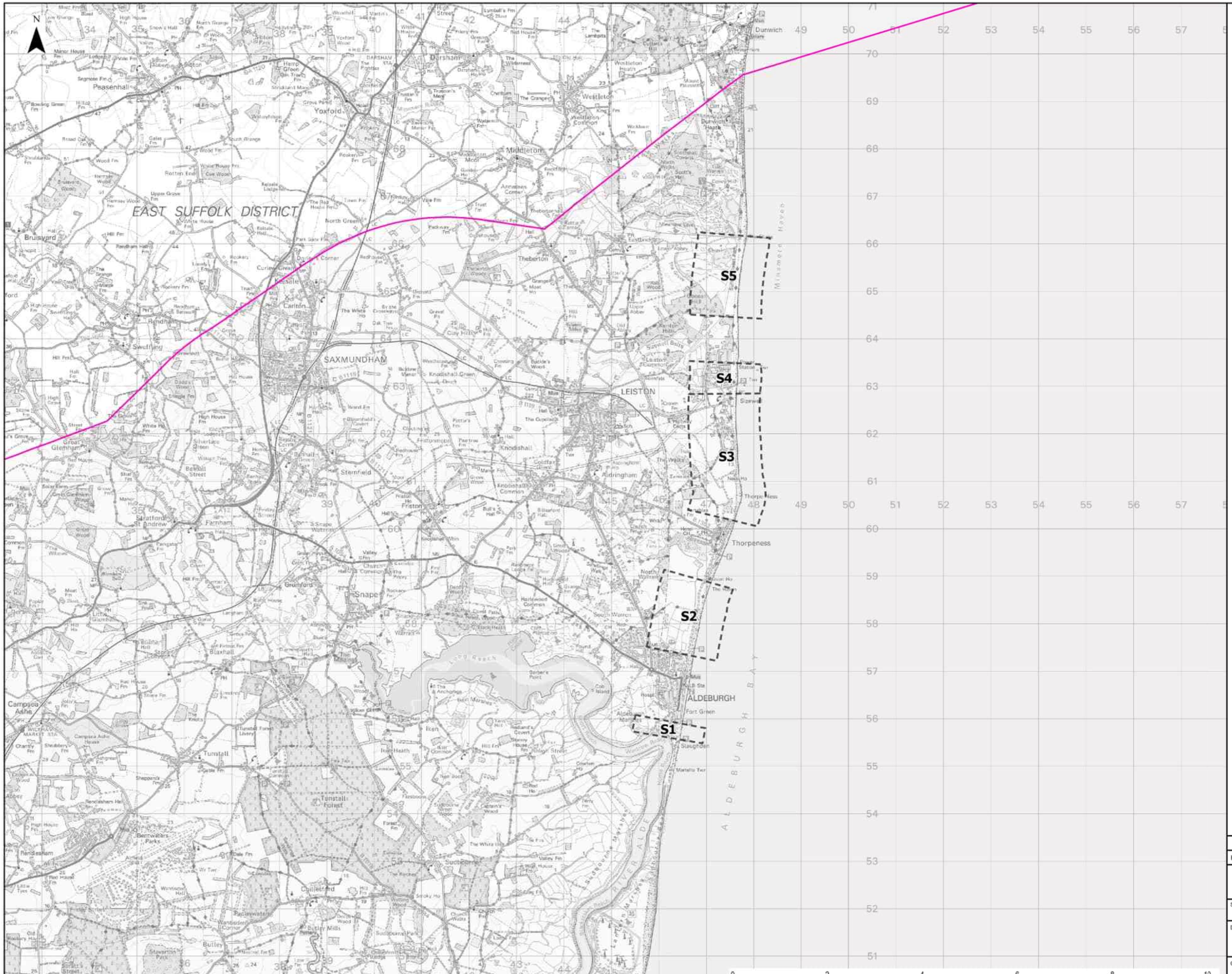
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Document Title: ROUTEING AND SITING STUDY AREA

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	14/07/2022	DF	14/07/2022	CC	14/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 1.3.1	1:500,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig1-3-1_Routeing_Siting_Study_Area_20220714_EB.aprx



Legend

- Routeing and Siting Study Area
- Landfall Area of Search

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Scheme:	SEA LINK
Document Title:	SUFFOLK LANDFALL AREA OF SEARCH

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	14/07/2022	DF	14/07/2022	CC	14/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 1.3.2	1:75,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig1-3-2_Suffolk_Landfall_Areas_of_Search_20220714_EB.aprx



Legend

- Routeing and Siting Study Area
- Landfall Area of Search

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0	14/07/2022	SCOPING REPORT	EB	DF	CC

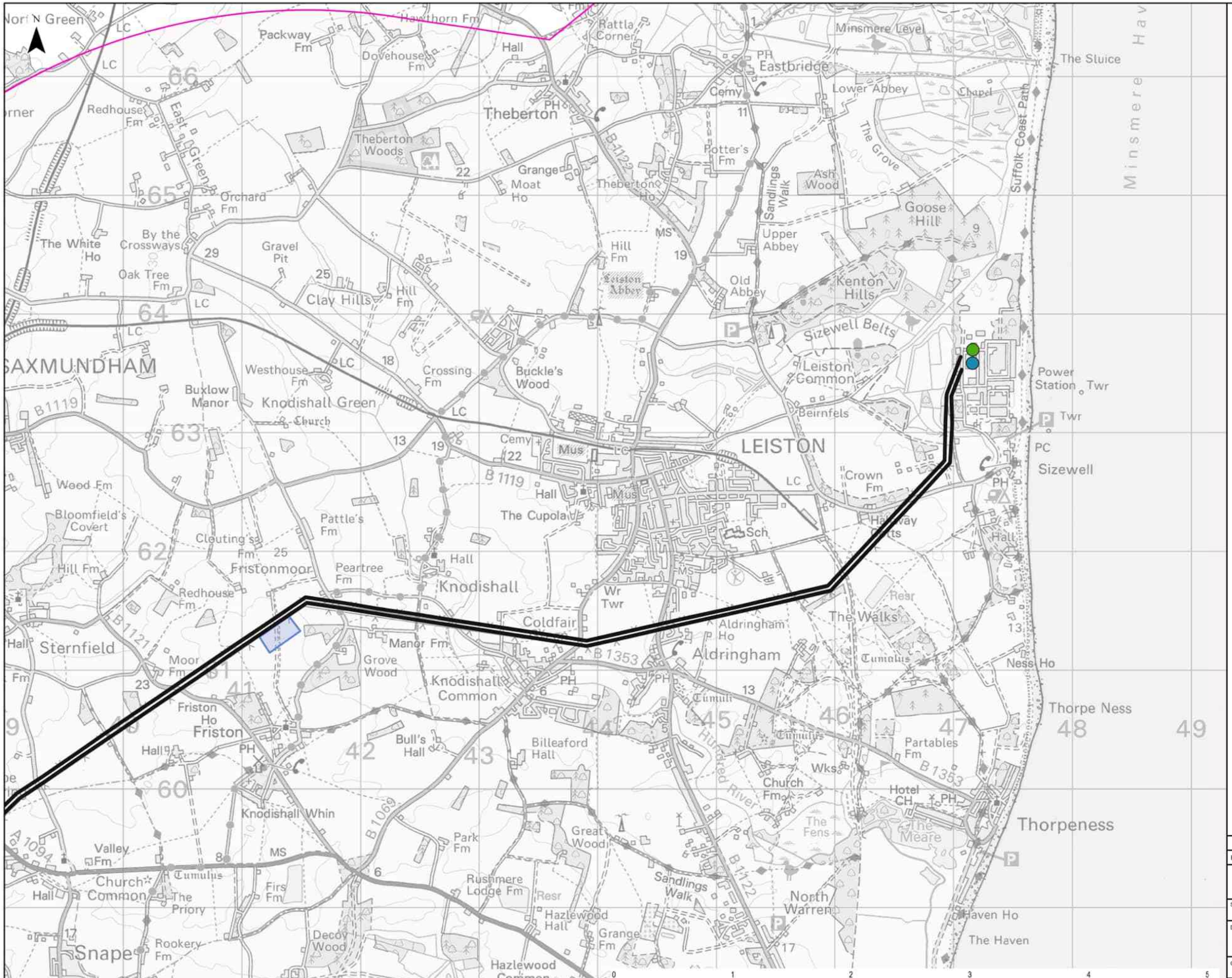
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Scheme:	SEA LINK
Document Title:	KENT LANDFALL AREA OF SEARCH

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	14/07/2022	DF	14/07/2022	CC	14/07/2022

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FIGURE 1.3.3	1:100,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig1-3-3_Kent_Landfall_Areas_of_Search_20220714_EB.aprx



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Scheme:	SEA LINK
Document Title:	SUFFOLK NETWORK CONNECTION POINTS

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	13/07/2022	DF	13/07/2022	CC	13/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 1.3.4	1:30,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig1-3-4_Suffolk_Network_Connection_Points_20220713_EB.aprx

EAST SUFFOLK DISTRICT

SAXMUNDHAM

ALDEBURGH

A

B

C

D

E

F

G

H

I

Legend

- Routeing and Siting Study Area
- National Grid Overhead Line - 400kV
- Proposed Sizewell Substation
- Existing Sizewell Substation
- Proposed Friston Substation
- Converter Site Option Areas

0 1 2 3 4 5 km

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Rev	Date	Description	GIS	Chk	App
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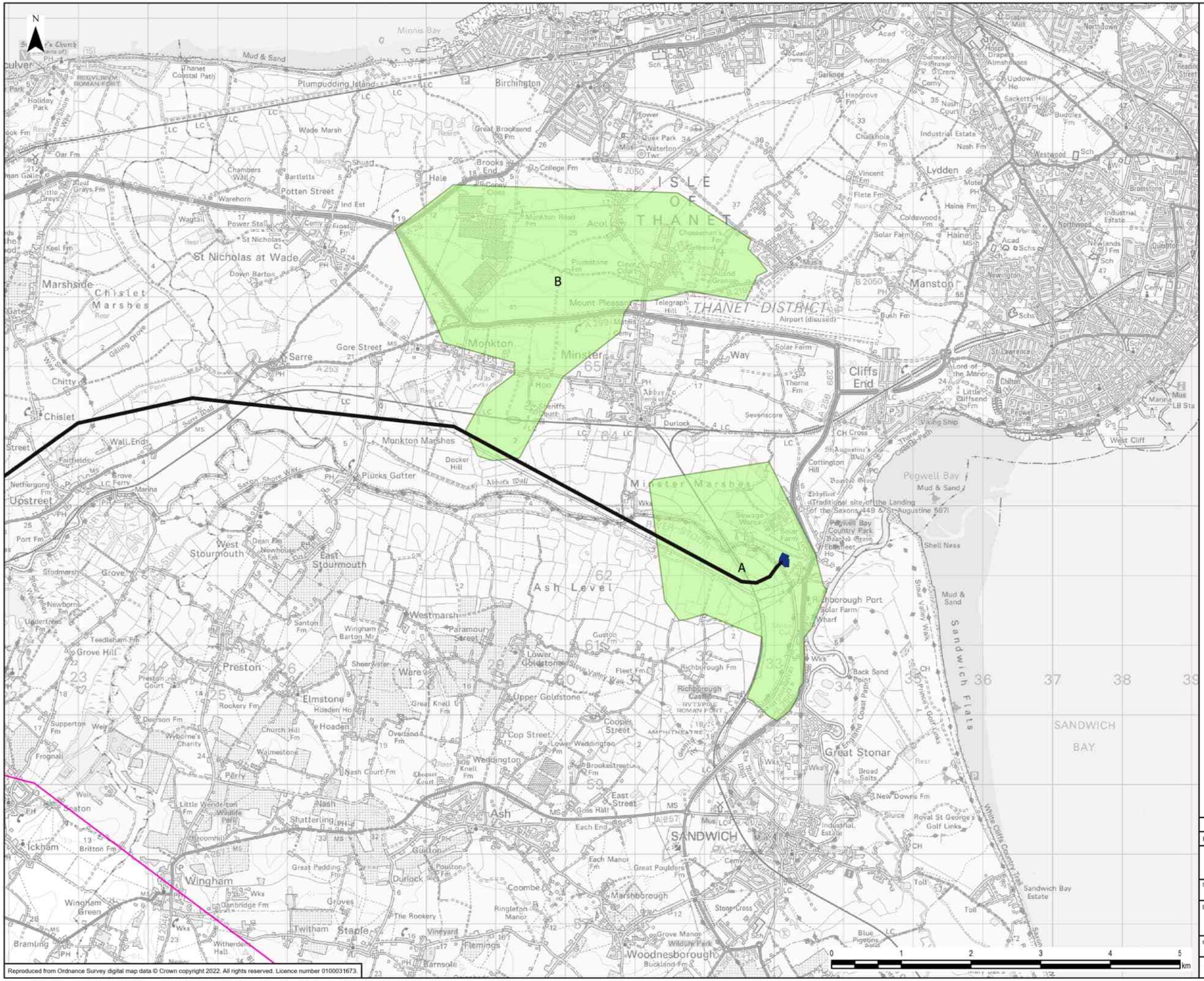
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Document Title: SUFFOLK CONVERTER SITE OPTION AREAS

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	14/07/2022	DF	14/07/2022	CC	14/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 1.3.5	1:50,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig1-3-5_Suffolk_Converter_Site_Option_Areas_20220714_EB.aprx



Legend

- Routeing and Siting Study Area
- National Grid Overhead Line - 400kV
- Richborough Substation
- Converter Site Option Areas

Rev	Date	Description	GIS	Chk	App
0	13/07/2022	SCOPING REPORT	EB	DF	CC

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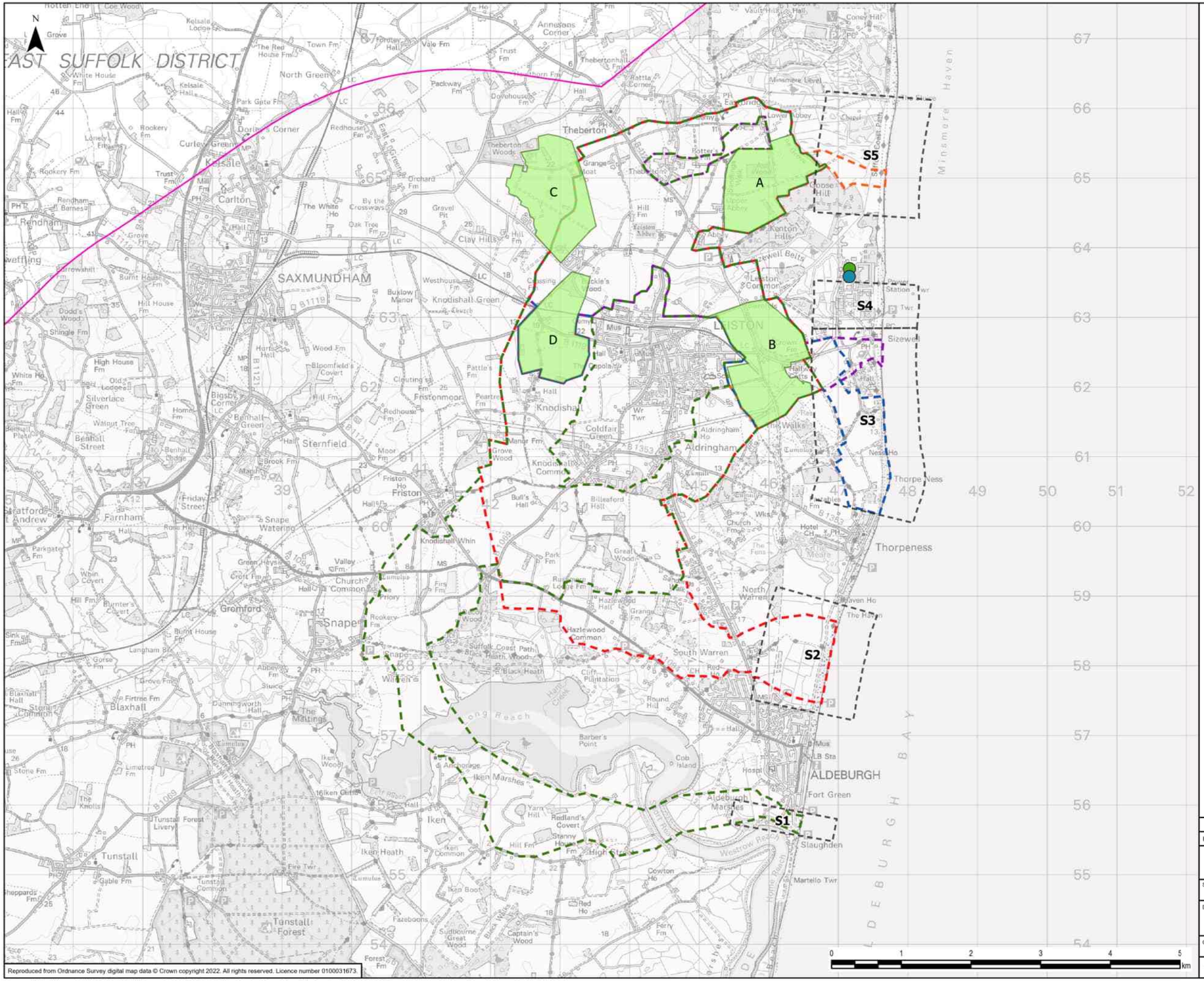
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Document Title: KENT CONVERTER SITE OPTION AREAS

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	13/07/2022	DF	13/07/2022	CC	13/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 1.3.6	1:50,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig1-3-6_Kent_Converter_Site_Option_Areas_20220713_EB.aprx



Legend

- Routeing and Siting Study Area
- Proposed Sizewell Substation
- Existing Sizewell Substation
- Converter Site Option Areas

Sizewell Connection Points Terrestrial Corridors

- Green
- Red
- Blue
- Purple
- Orange
- Landfall Area of Search

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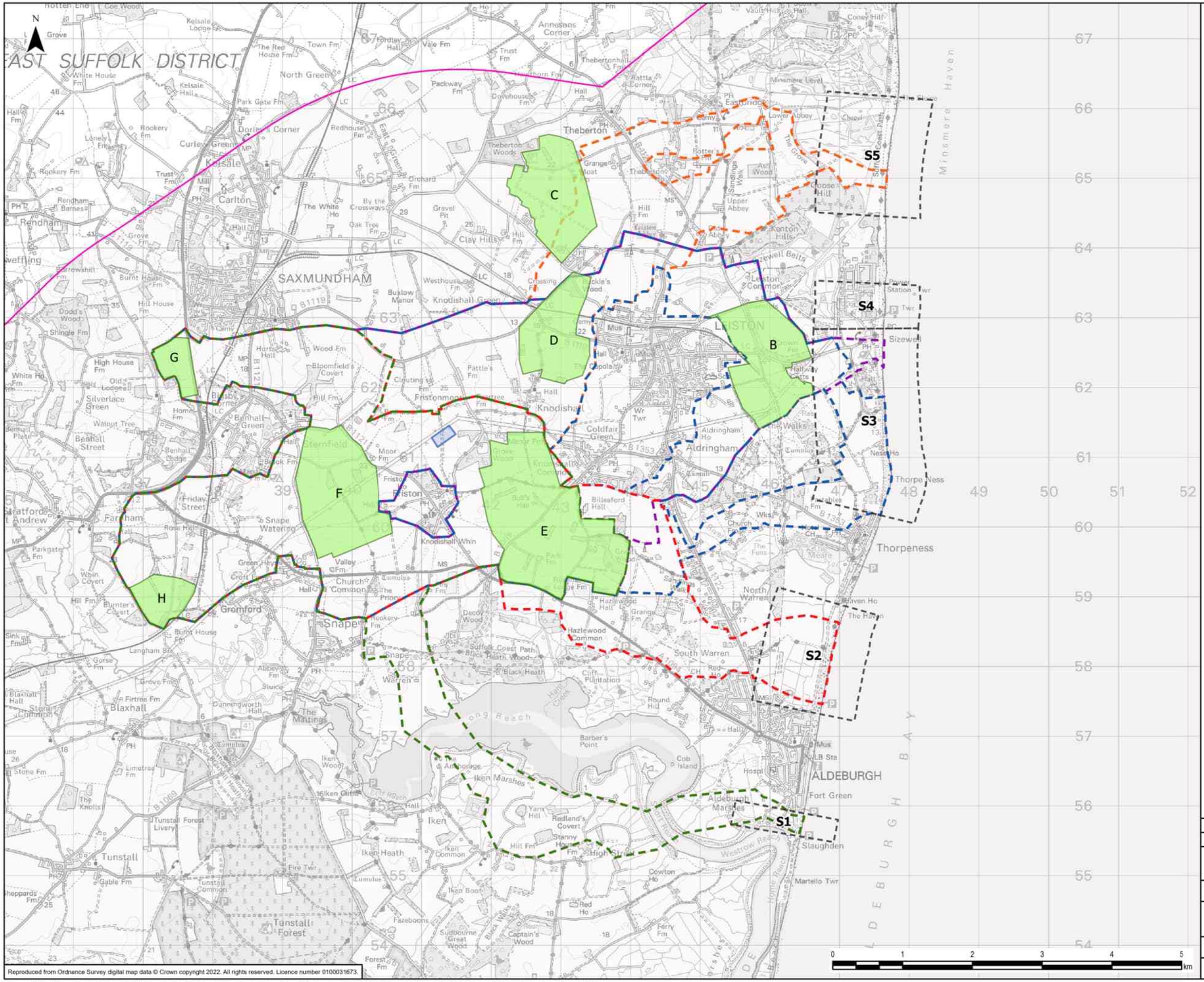
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Document Title: SUFFOLK TERRESTRIAL ROUTE CORRIDORS - SIZEWELL CONNECTION

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	14/07/2022	DF	14/07/2022	CC	14/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 1.3.7	1:50,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig1-3-7_Suffolk_Terrestrial_Route_Corridors_Sizewell_Connection_20220714_EB.aprx



Legend

- Routeing and Siting Study Area
- Proposed Friston Substation
- Landfall Area of Search
- Converter Site Option Areas

Proposed Friston Substation Connection Point Terrestrial Corridors

- Green
- Red
- Blue
- Purple
- Orange

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0 1 2 3 4 5 km

Rev	Date	Description	GIS	Chk	App
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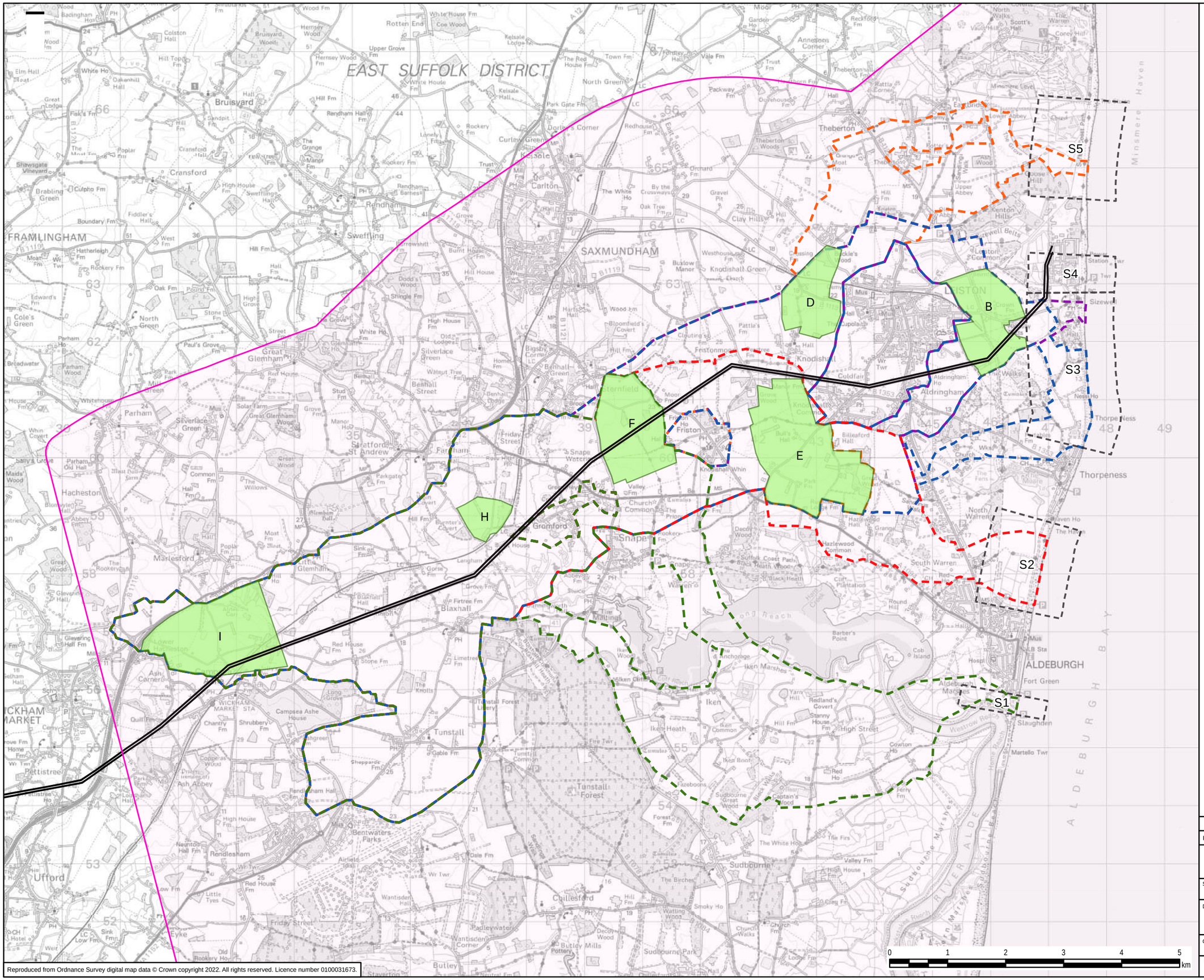
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Document Title: SUFFOLK TERRESTRIAL ROUTE CORRIDORS - PROPOSED FRISTON CONNECTION

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	19/07/2022	DF	19/07/2022	CC	19/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 1.3.8	1:50,000	A3	1	0

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Legend

- Routeing and Siting Study Area
- National Grid Overhead Line - 400kV
- Landfall Area of Search
- Converter Site Option Areas

New Connection Point Terrestrial Corridors

- Green
- Red
- Blue
- Purple
- Orange

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Rev	Date	Description	GIS	Chk	App
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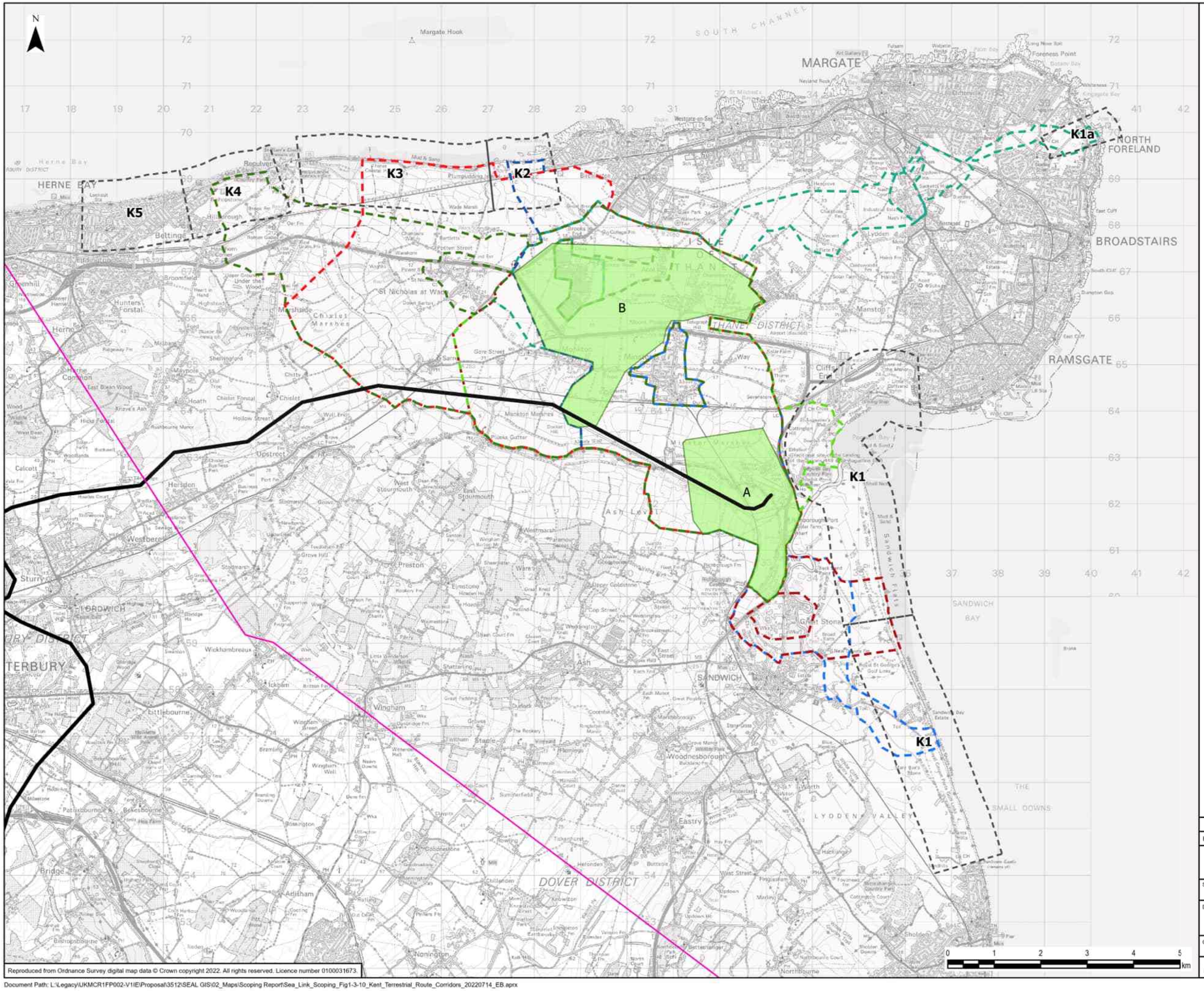
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Document Title: SUFFOLK TERRESTRIAL ROUTE CORRIDORS - NEW CONNECTION

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	20/10/2022	DF	20/10/2022	CC	20/10/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 1.3.9	1:60,000	A3	1	0

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Legend

- Routeing and Siting Study Area
- National Grid Overhead Line - 400kV
- Landfall Area of Search
- Converter Site Option Areas

North Kent Coast Terrestrial Corridors

- Green
- Red
- Blue

Broadstairs Terrestrial Corridor

- Green

Pegwell Bay Terrestrial Corridors

- Green
- Red
- Blue

Rev	Date	Description	GIS	Chk	App
0	14/07/2022	SCOPING REPORT	EB	DF	CC

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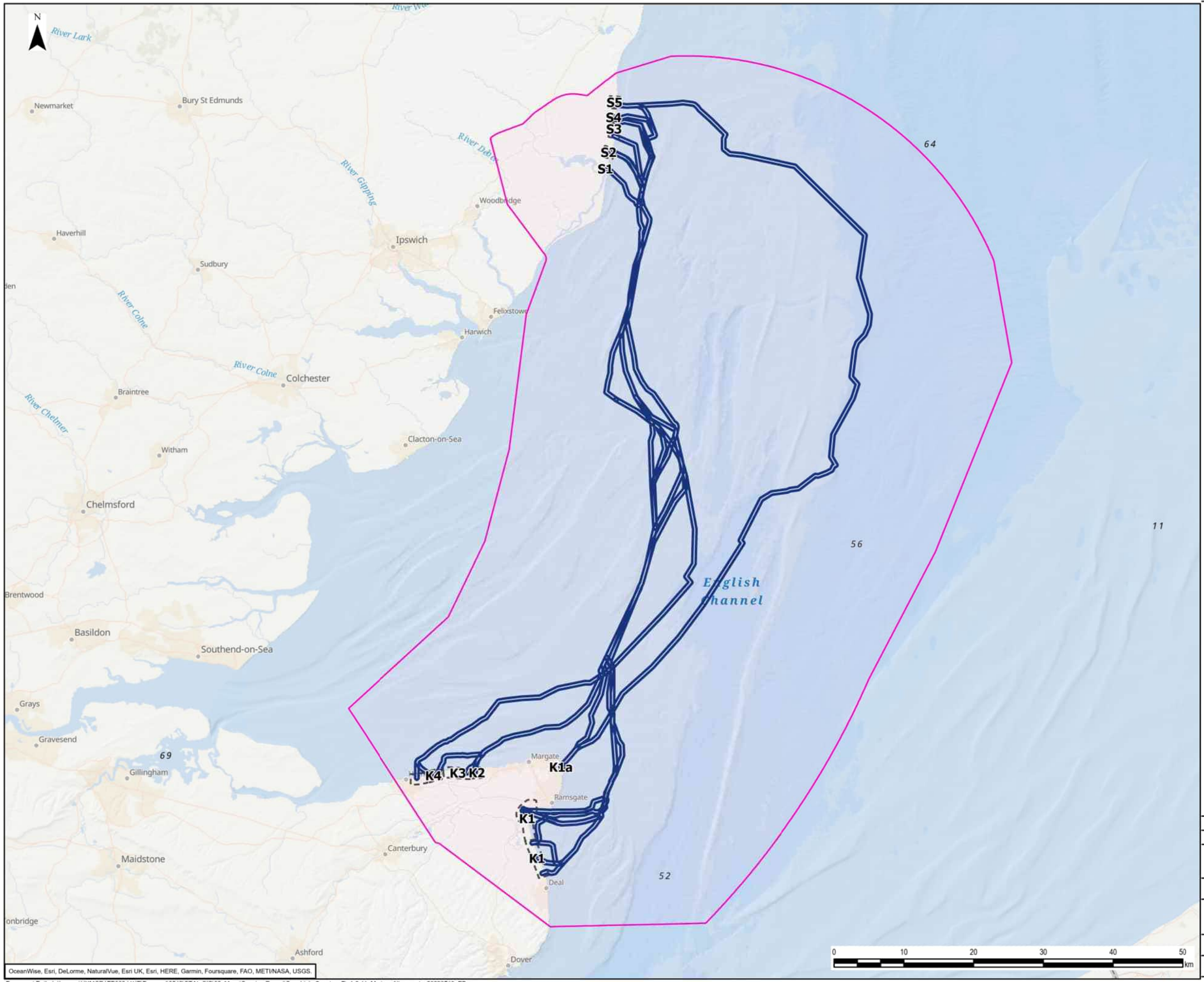
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Document Title: KENT TERRESTRIAL ROUTE CORRIDORS

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	14/07/2022	DF	14/07/2022	CC	14/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 1.3.10	1:75,000	A3	1	0

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Legend

- Routeing and Siting Study Area
- Landfall Area of Search
- Marine Final Routes

Rev	Date	Description	GIS	Chk	App
0	13/07/2022	SCOPING REPORT	EB	DF	CC

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Scheme: SEA LINK

Document Title: MARINE ALIGNMENTS

Creator:	Date:	Checker:	Date:	Approver:	Date:
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Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 1.3.11	1:500,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig1-3-11_Marine_Alignments_20220713_EB.aprx

Part 2- Suffolk Onshore Scheme

EAST SUFFOLK DISTRICT

SAXMUNDHAM

ALDEBURGH

A
B
C
D
E
F
G
H
I

S1
S2
S3
S4
S5

Legend

- Routeing and Siting Study Area
- National Grid Overhead Line - 400kV
- Proposed Sizewell Substation
- Existing Sizewell Substation
- Proposed Friston Substation
- Converter Site Option Areas
- Landfall Area of Search
- Marine Final Routes

Sizewell Connection Points Terrestrial Corridors

- Green
- Red
- Blue
- Purple
- Orange

Proposed Friston Substation Connection Point Terrestrial Corridors

- Green
- Red
- Blue
- Orange
- Purple

New Connection Point Terrestrial Corridors

- Green
- Red
- Blue
- Orange
- Purple

0 1 2 3 4 5 km

Rev	Date	Description			
0	20/07/2022	SCOPING REPORT	EB	DF	CC

nationalgrid

Scheme: SEA LINK

Document Title: EVOLUTION OF THE SUFFOLK ONSHORE SCHEME - SHEET 1 OF 4

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	20/07/2022	DF	20/07/2022	CC	20/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.1.1	1:60,000	A3	1	0

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EAST SUFFOLK DISTRICT

A
B
C
D
E
F
G
H
I
S1
S2
S3
S4
S5

Legend

- Routeing and Siting Study Area
- National Grid Overhead Line - 400kV
- Proposed Sizewell Substation
- Existing Sizewell Substation
- Proposed Friston Substation
- Converter Site Option Areas
- Landfall Area of Search
- Marine Final Routes

Sizewell Connection Points Terrestrial Corridors

- Green
- Red
- Blue
- Purple
- Orange

Proposed Friston Substation Connection Point Terrestrial Corridors

- Green
- Red
- Blue
- Orange
- Purple

New Connection Point Terrestrial Corridors

- Green
- Red
- Blue
- Orange
- Purple

Rev	Date	Description			
0	20/07/2022	SCOPING REPORT	EB	DF	CC

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Scheme: SEA LINK

Document Title: EVOLUTION OF THE SUFFOLK ONSHORE SCHEME - SHEET 2 OF 4

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	20/07/2022	DF	20/07/2022	CC	20/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.1.1	1:60,000	A3	1	0

0 1 2 3 4 5 km

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EAST SUFFOLK DISTRICT

MINSMERE-WALBERSWICK HEATHS AND MARSHES SSSI

SIZEWELL MARSHES SSSI

GROMFORD MEADOW SSSI

SNAPE WARREN SSSI

ALDE-ORE ESTUARY SPA

ALDE-ORE & BUTLEY ESTUARIES SAC

BLAXHALL HEATH SSSI

IKEN WOOD SSSI

SANDLINGS SPA

SANDLINGS FOREST SSSI

CRAG PIT, ALDEBURGH SSSI

ALDEBURGH BRICK PIT SSSI

ROUND HILL PIT, ALDEBURGH SSSI

ALDEBURGH HALL PIT SSSI

LEISTON - ALDEBURGH SSSI

RED HOUSE FARM PIT, SUDBOURNE SSSI

VALLEY FARM PIT, SUDBOURNE SSSI

ALDE-ORE ESTUARY SSSI

ORFORDNESS-SHINGLE STREET SAC

A B C D E F G H I S1 S2 S3 S4 S5

0 1 2 3 4 5 km

Legend

- Routeing and Siting Study Area
- National Grid Overhead Line - 400kV
- Proposed Sizewell Substation
- Existing Sizewell Substation
- Proposed Friston Substation
- Converter Site Option Areas
- Landfall Area of Search
- Marine Final Routes

Sizewell Connection Points Terrestrial Corridors

- Green
- Red
- Blue
- Purple
- Orange

Proposed Friston Substation Connection Point Terrestrial Corridors

- Green
- Red
- Blue
- Orange
- Purple

New Connection Point Terrestrial Corridors

- Green
- Red
- Blue
- Orange
- Purple
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Site of Special Scientific Interest (SSSI)
- Proposed Sizewell C Nuclear Power Station Order Limits

Rev	Date	Description	GIS	Chk	App
0	20/07/2022	SCOPING REPORT	EB	DF	CC

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Scheme: SEA LINK

Document Title: EVOLUTION OF THE SUFFOLK ONSHORE SCHEME - SHEET 3 OF 4

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	20/07/2022	DF	20/07/2022	CC	20/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.1.1	1:60,000	A3	1	0

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EAST SUFFOLK DISTRICT

MINSMERE-WALBERSWICK HEATHS AND MARSHES SSSI

SIZEWELL MARSHES SSSI

GROMFORD MEADOW SSSI

SNAPE WARREN SSSI

ALDE-ORE ESTUARY SPA

ALDE-ORE & BUTLEY ESTUARIES SAC

BLAXHALL HEATH SSSI

IKEN WOOD SSSI

SANDLINGS SPA

SANDLINGS FOREST SSSI

CRAG PIT, ALDEBURGH SSSI

ALDEBURGH BRICK PIT SSSI

ROUND HILL PIT, ALDEBURGH SSSI

ALDEBURGH HALL PIT SSSI

LEISTON - ALDEBURGH SSSI

RED HOUSE FARM PIT, SUDBOURNE SSSI

VALLEY FARM PIT, SUDBOURNE SSSI

ALDE-ORE ESTUARY SSSI

ORFORDNESS-SHINGLE STREET SAC

A B C D E F G H I

S1 S2 S3 S4 S5

0 1 2 3 4 5 km

Legend

- Routeing and Siting Study Area
- National Grid Overhead Line - 400kV
- Proposed Sizewell Substation
- Existing Sizewell Substation
- Proposed Friston Substation
- Converter Site Option Areas
- Landfall Area of Search
- Marine Final Routes

Sizewell Connection Points Terrestrial Corridors

- Green
- Red
- Blue
- Purple
- Orange

Proposed Friston Substation Connection Point Terrestrial Corridors

- Green
- Red
- Blue
- Orange
- Purple

New Connection Point Terrestrial Corridors

- Green
- Red
- Blue
- Orange
- Purple
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Site of Special Scientific Interest (SSSI)
- RSPB Reserve
- Rivers
- Proposed Sizewell C Nuclear Power Station Order Limits
- East Anglia One North & Two Order Limits

Rev	Date	Description	GIS	Chk	App
0	21/07/2022	SCOPING REPORT	EB	DF	CC

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Scheme: SEA LINK

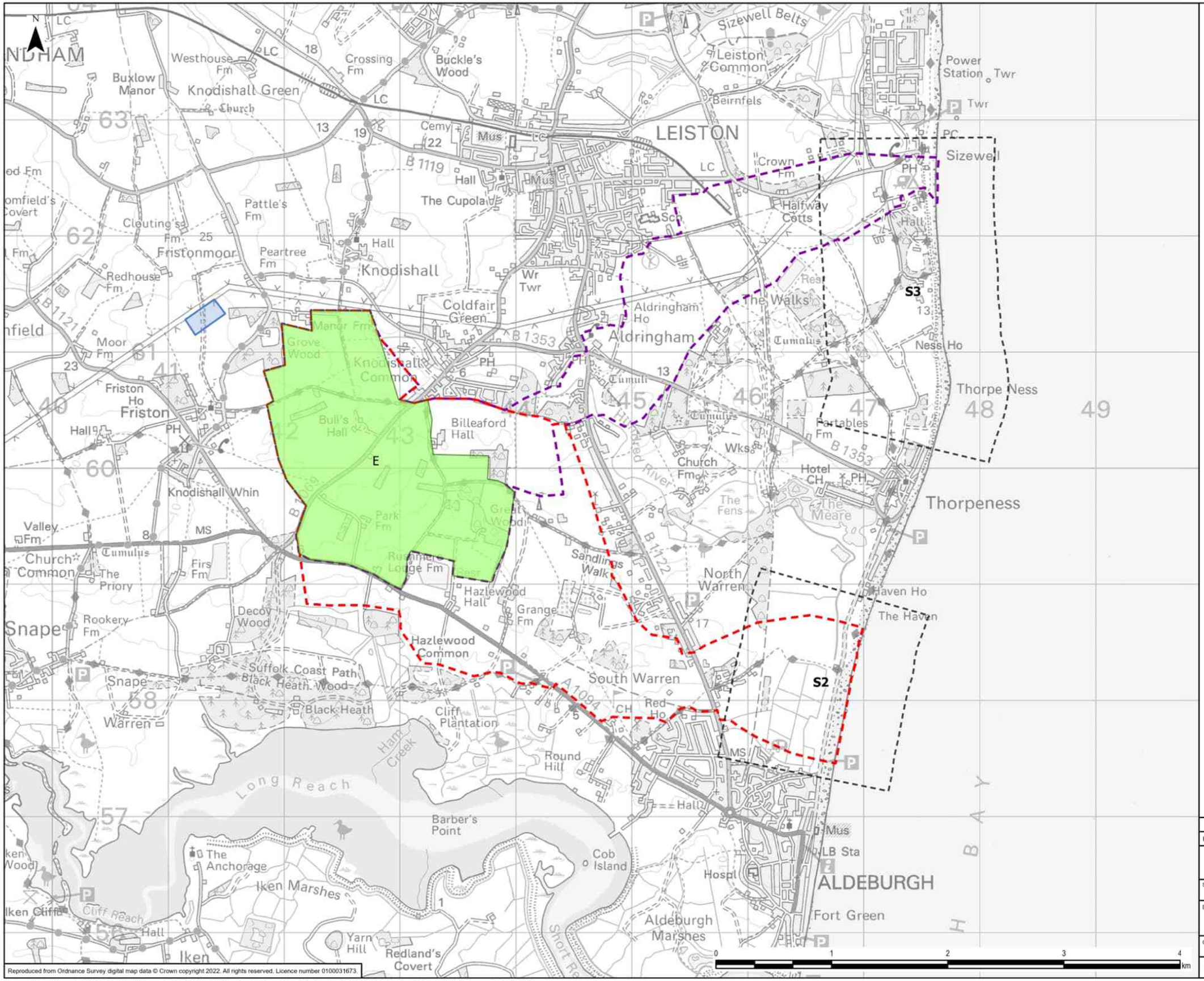
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Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	21/07/2022	DF	21/07/2022	CC	21/07/2022

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FIGURE 2.1.1	1:60,000	A3	1	0

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FIGURE 2.1.2	1:30,000	A3	1	0

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EAST SUFFOLK DISTRICT

SAXMUNDHAM

ALDEBURGH

Site 1

Site 2

Site 3

Site 4

Site 5

Site 6

Site 7

A

B

C

D

E

F

G

H

I

Legend

- National Grid Overhead Line - 400kV
- Proposed Friston Substation
- Converter Site Option Areas
- Potential Coordinated Converter Station Sites

0 1 2 3 4 km

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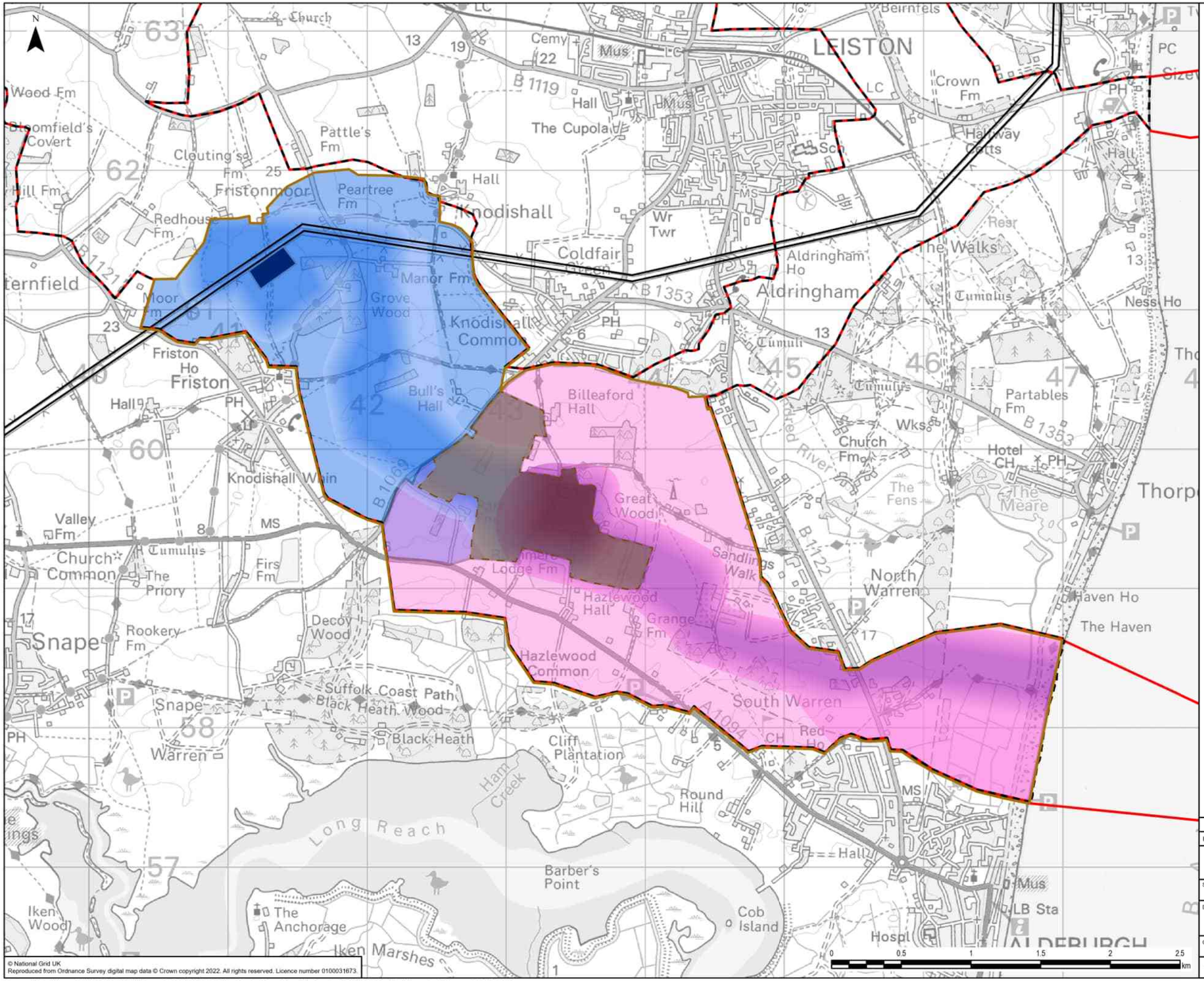
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Document Title: POTENTIAL COORDINATED CONVERTER STATION SITES

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FIGURE 2.1.3	1:50,000	A3	1	0

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Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- National Grid Overhead Line - 400kV
- Proposed Friston Substation
- Suffolk Site 1 Emerging Preference Boundary
- Suffolk Converter Site 1 Emerging Preference - Option Area
- Suffolk Converter Site 1 Emerging Preference - Graduated Swathe
- HVDC Corridor Graduated Swathe
- HVAC Corridor Graduated Swathe
- HVDC Corridor
- HVAC Corridor

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0 0.5 1 1.5 2 2.5 km

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Document Title: SUFFOLK SITE 1 EMERGING PREFERENCE

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FIGURE 2.1.4	1:25,000	A3	1	0

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Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- National Grid Overhead Line - 400kV
- Proposed Friston Substation
- Suffolk Site 3 Emerging Preference Boundary
- Update Consultation Suffolk Converter Site Option Site 3
- Suffolk Converter Site 3 Emerging Preference
- HVDC Corridor Graduated Swathe
- HVAC Corridor Graduated Swathe
- HVAC Corridor
- HVDC Corridor

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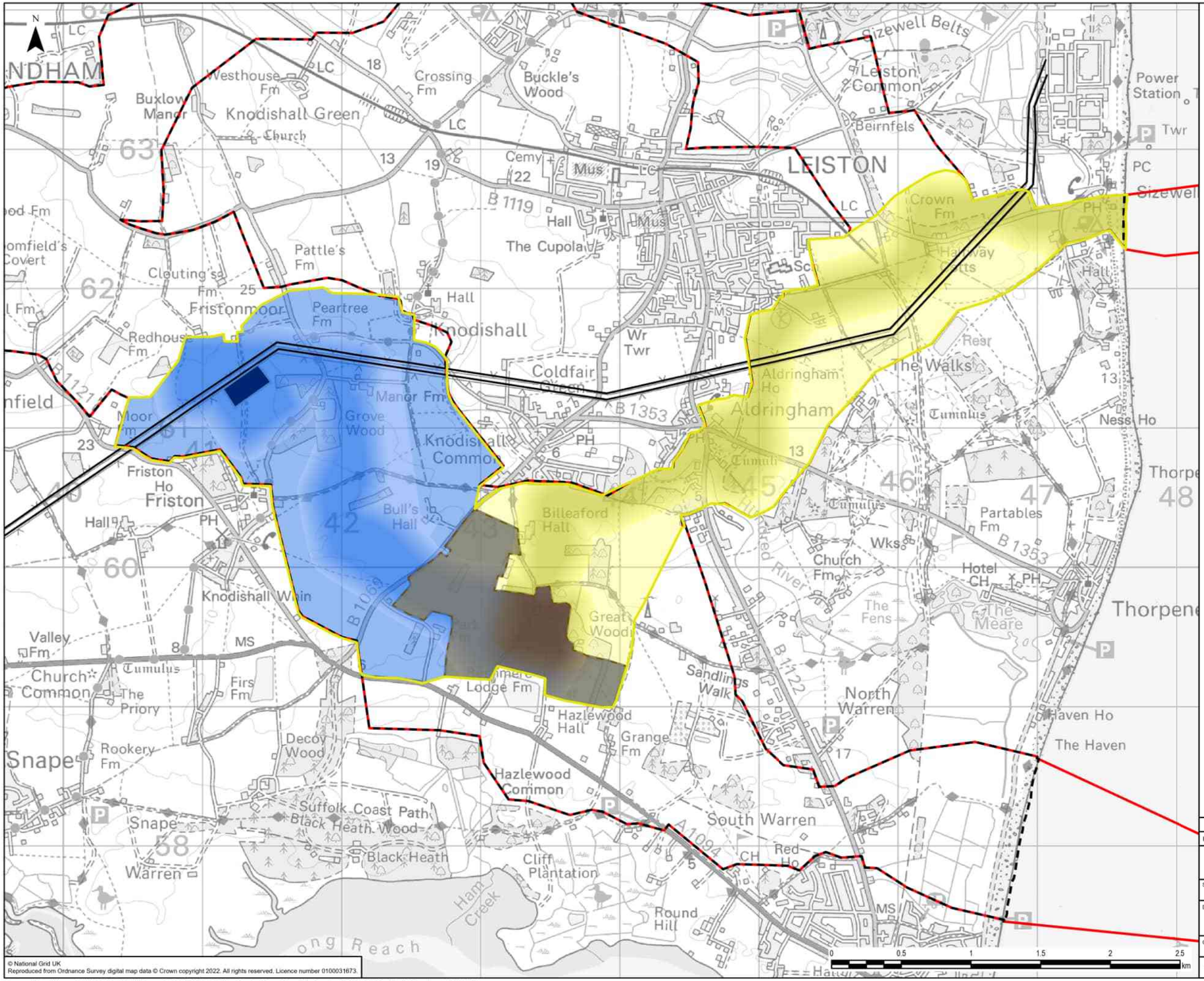
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FIGURE 2.1.5	1:30,000	A3	1	0

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0 0.5 1 1.5 2 2.5 km

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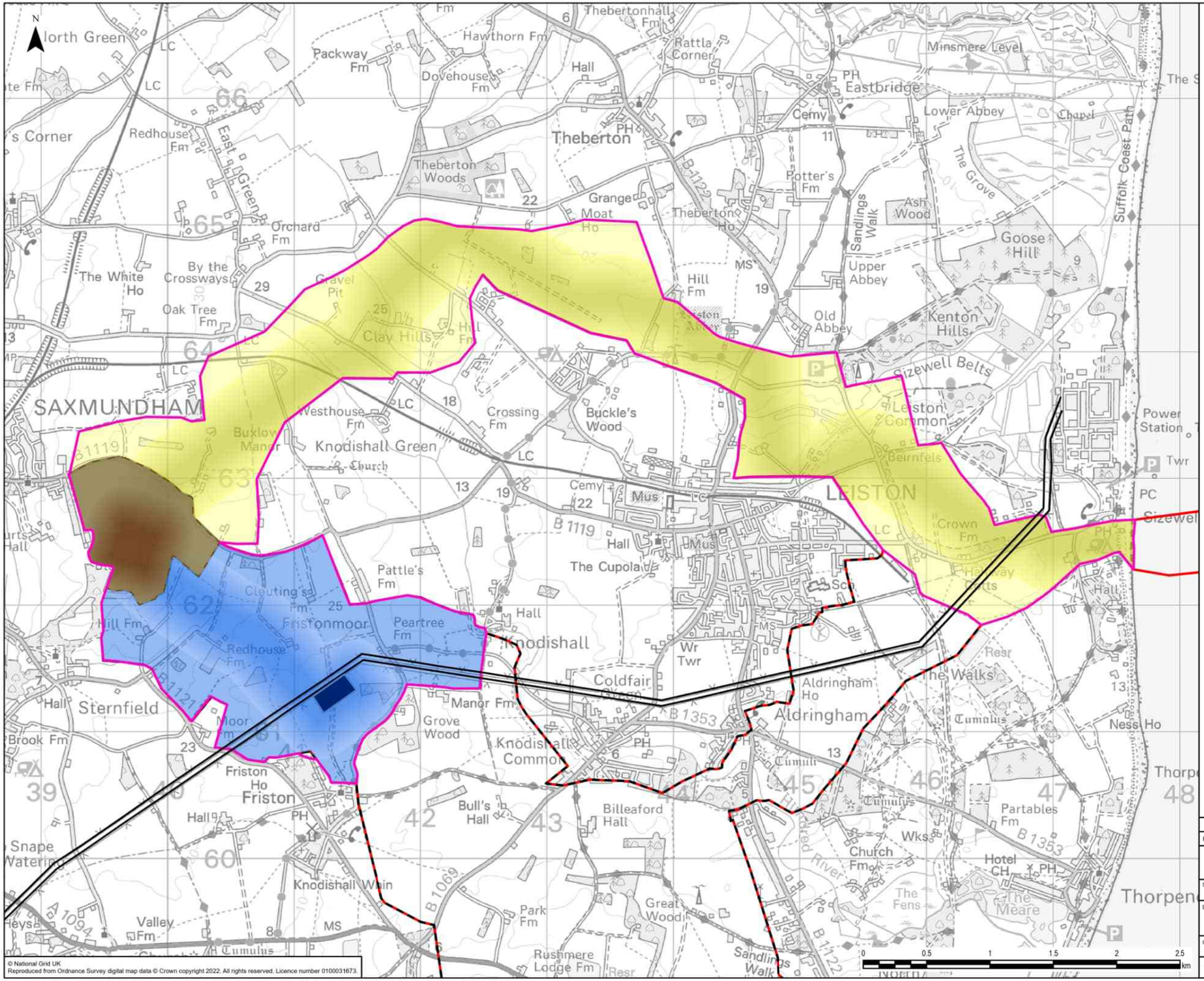
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Document Title: SUFFOLK SITE 1 ALTERNATIVE

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FIGURE 2.1.6	1:25,000	A3	1	0

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N
Saxmundham
Theberton
Leiston
Knodishall
Knodishall Green
Sternfield
Friston
Aldringham
Thorpe
Sizewell Belts
Leiston Common
Knodishall Common
Theberton Woods
Kenton Hills
Goose Hill
Ash Wood
Lower Abbey
Upper Abbey
Old Abbey
Minsmere Level
Eastbridge
Rattle Corner
Potter's Fm
Grange Moat
Theberton Ho
Hill Fm
Clay Hills
Gravel Pit
Oak Tree Fm
Orchard Fm
Redhouse Fm
East Green
Packway Fm
Dovehouse Fm
Hawthorn Fm
Thebertonhall Fm
Hall
PH
Cemy
Chapel
Suffolk Coast Path
The Grove
Sandlings Walk
Westhouse Fm
Crossing Fm
Buckle's Wood
Buxlow Manor
Church
Pattle's Fm
Cleuting's Fm
Friston Moor
Peartree Fm
Redhouse Fm
Coldfair Green
Manor Fm
Grove Wood
Bull's Hall
Billeaford Hall
Park Fm
Great Wood
Rushmere Lodge Fm
Valley Fm
Brook Fm
Moor Fm
Friston Ho
Aldringham Ho
Ness Ho
Partables Fm
Church Fm
Crown Fm
Halfway Butts
The Walks
The Meare
The Fens
Beirnfels
Power Station
Twr
PC
Wr Twr
Resr
Tumulus
Mus
Sch
Wks
Hotel
CH
Buxlow Manor
Hill Fm
Hall
PH
Cemy
Mus
Sch
Wks
Twr
Resr
MS
B 1119
B 1122
B 1121
B 1353
B 1069
A 1094
The Cupola
Hall
Knodishall Wash
Knodishall Green
Church
Hall
Hall
Hall

Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- National Grid Overhead Line - 400kV
- Proposed Friston Substation
- Suffolk Site 3 Alternative Option 2 Boundary
- Update Consultation Suffolk Converter Site Option Site 3
- Suffolk Converter Site 3 Emerging Preference
- HVAC Corridor Graduated Swathe
- HVAC Corridor
- Alternative HVDC Corridor

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Document Title: SUFFOLK SITE 3 ALTERNATIVE OPTION 2

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FIGURE 2.1.8	1:27,500	A3	1	0

0 0.5 1 1.5 2 2.5 km

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Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Suffolk Site 1 Emerging Preference Boundary

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Document Title: SUFFOLK SITE 1 EMERGING PREFERENCE OPTION AREA

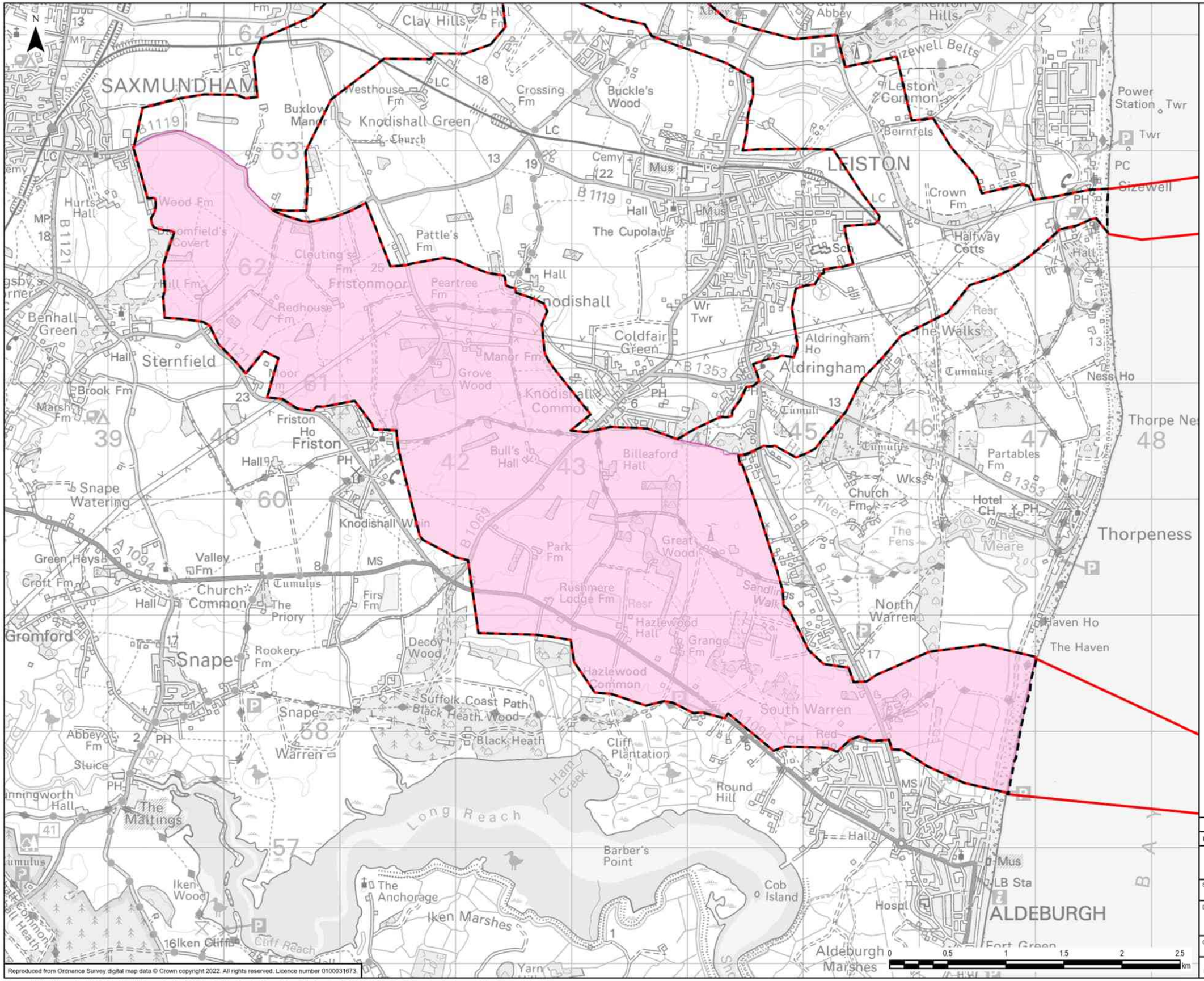
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FIGURE 2.1.9	1:25,000	A3	1	0

0 0.5 1 1.5 2 2.5 km

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Document Title: SUFFOLK SITE 3 EMERGING PREFERENCE OPTION AREA

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FIGURE 2.1.10	1:30,000	A3	1	0

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Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Suffolk Site 1 Alternative Boundary

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Document Title: SUFFOLK SITE 1 ALTERNATIVE OPTION AREA

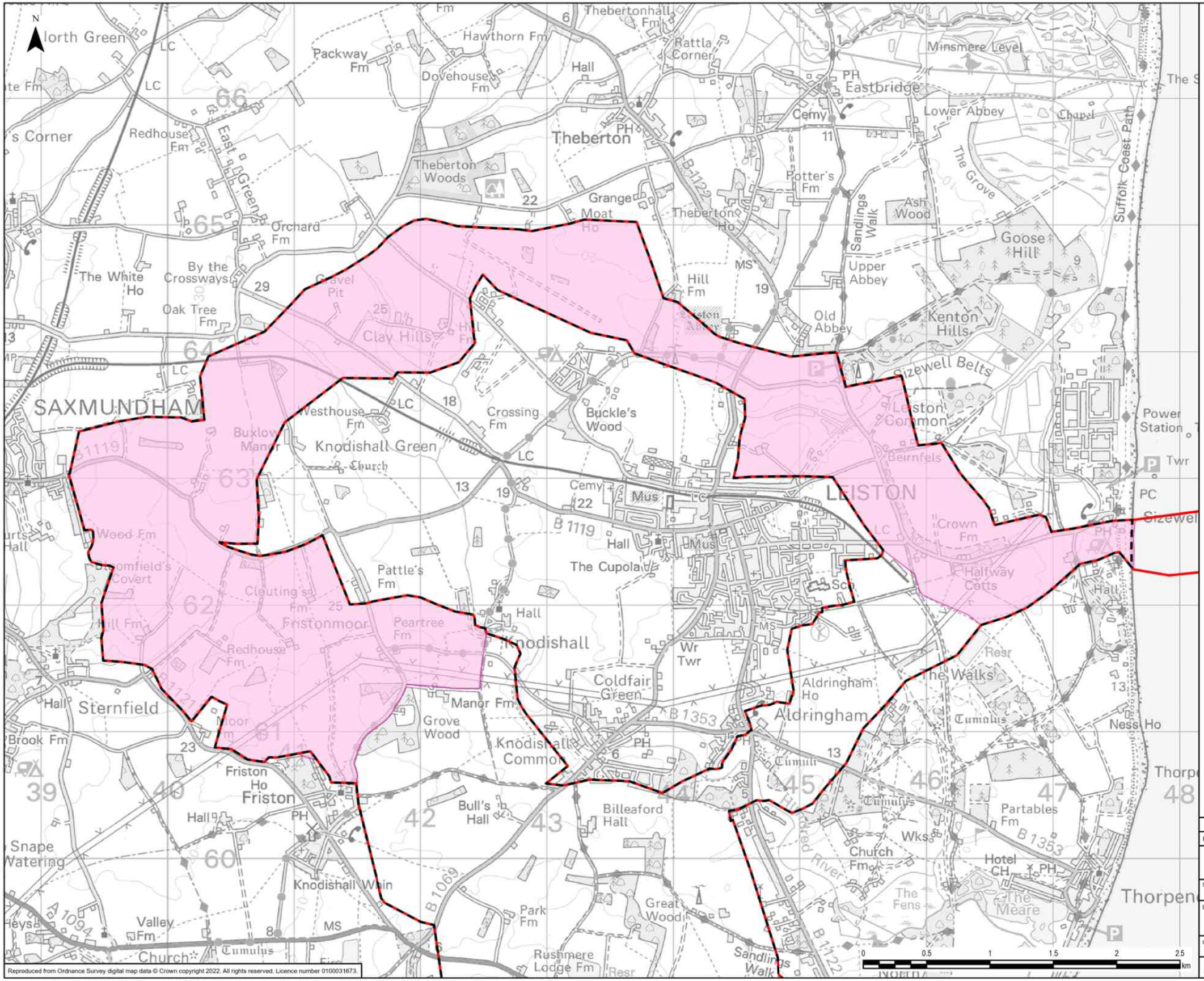
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FIGURE 2.1.11	1:25,000	A3	1	0

0 0.5 1 1.5 2 2.5 km

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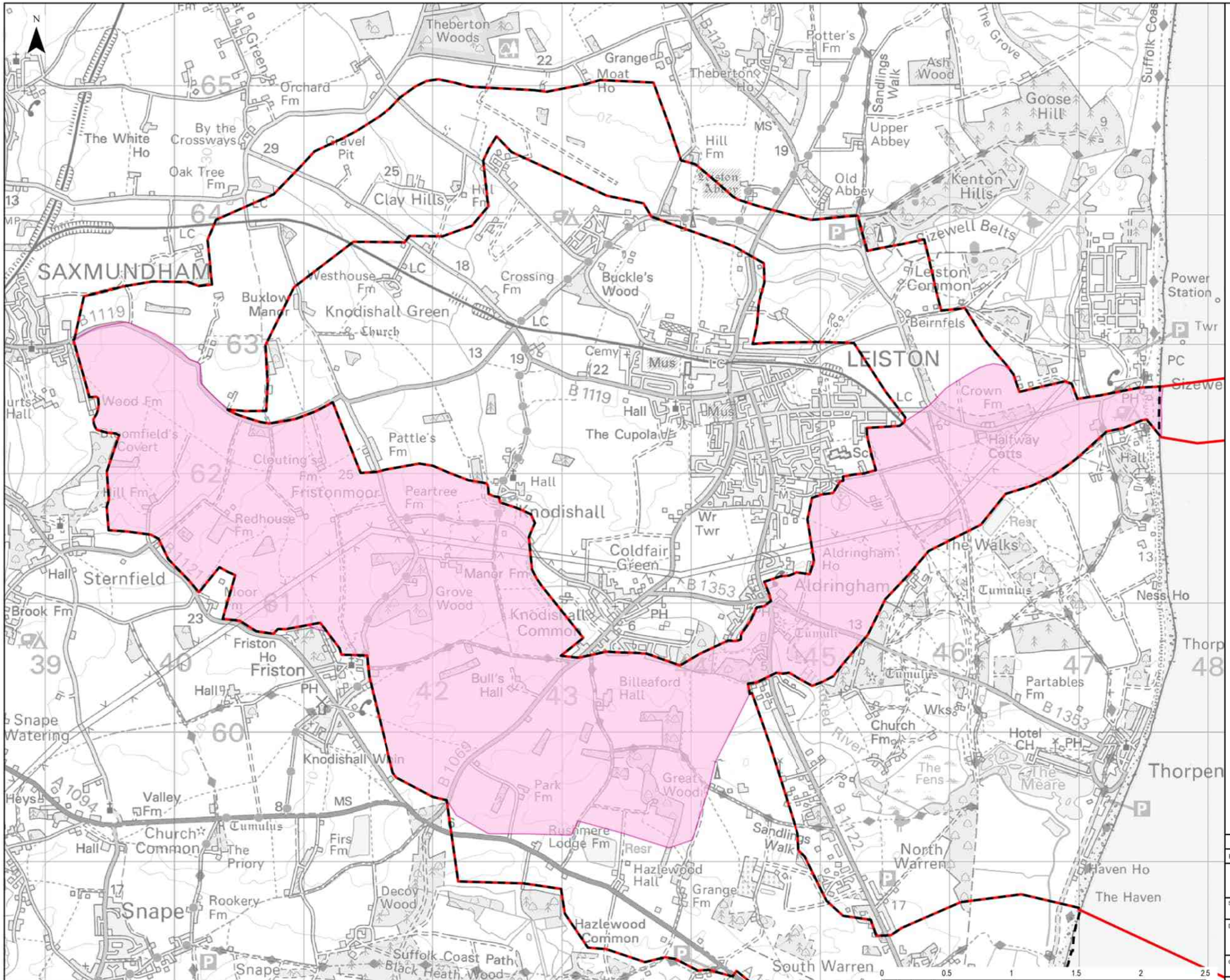
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FIGURE 2.1.12	1:27,500	A3	1	0



Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Suffolk Site 3 Alternative Option 2 Boundary

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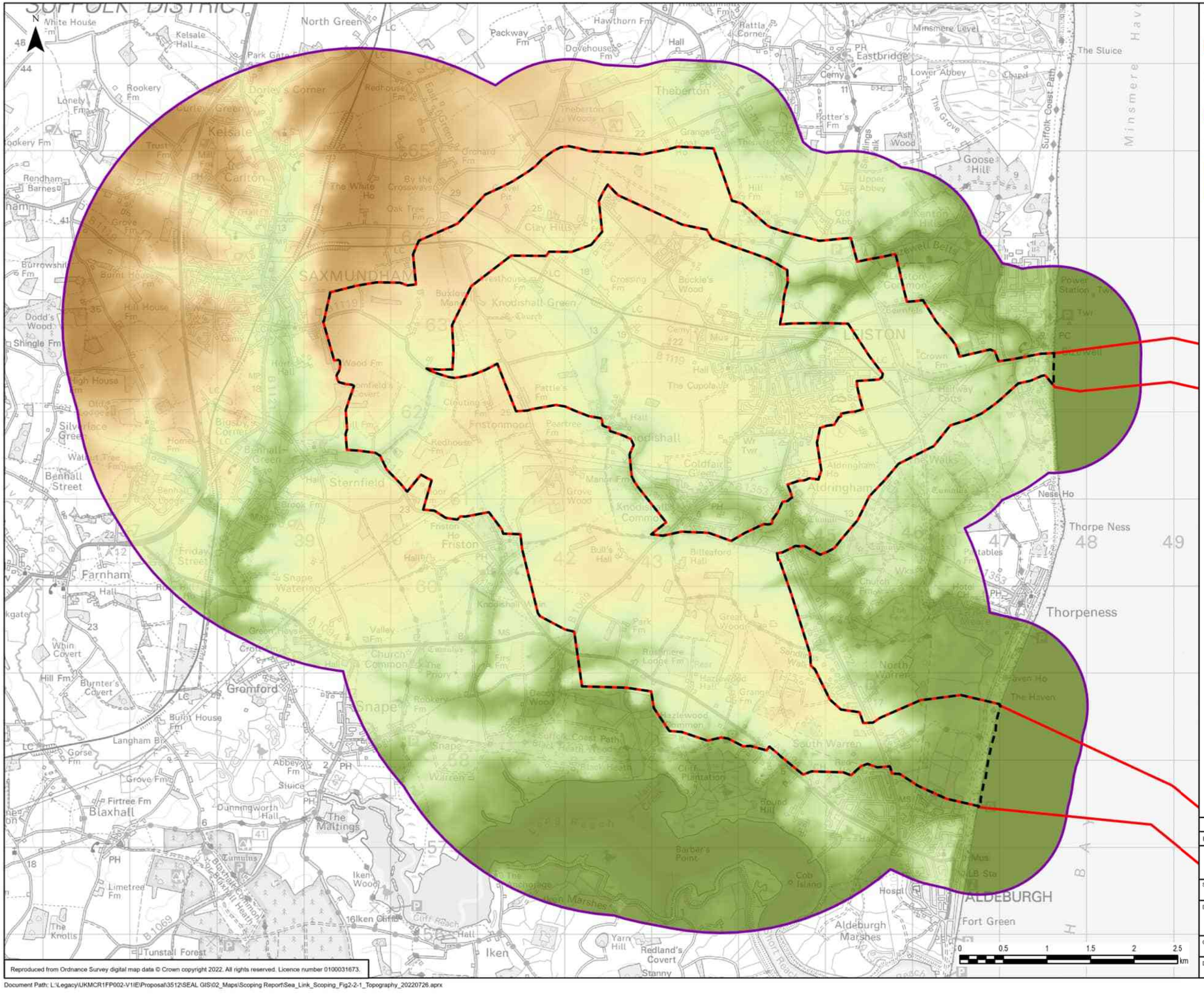
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FIGURE 2.1.13	1:27,500	A3	1	0

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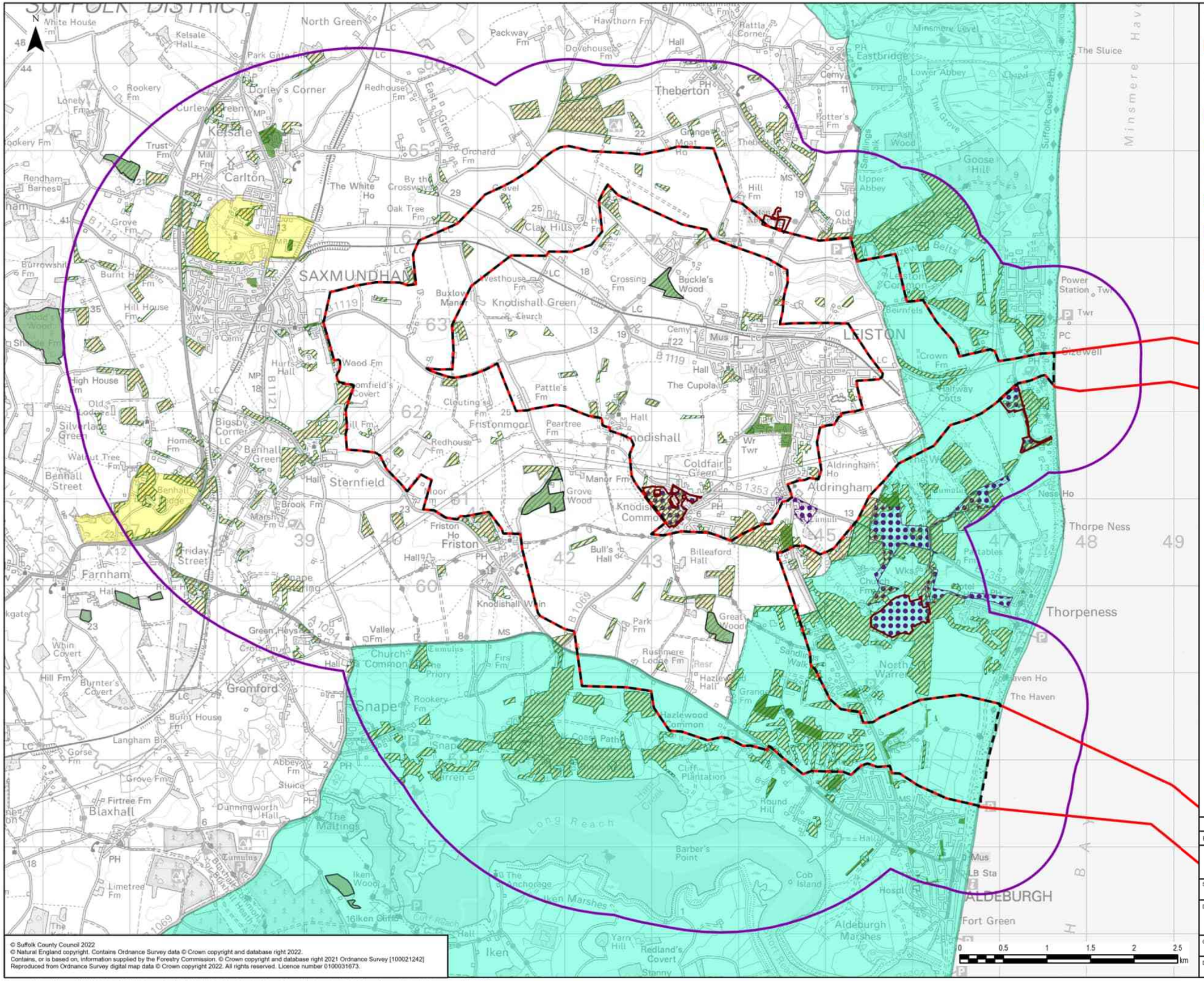
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FIGURE 2.2.1	1:40,000	A3	1	0

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Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Landscape and Visual Study Area
- Tree Preservation Orders
- Ancient Woodland
- National Forest Inventory - Woodland
- Registered Common Land
- CRoW Section 15 Land
- Parks and Gardens of Historic or Landscape Interest
- Suffolk Coast & Heaths Area of Outstanding Natural Beauty

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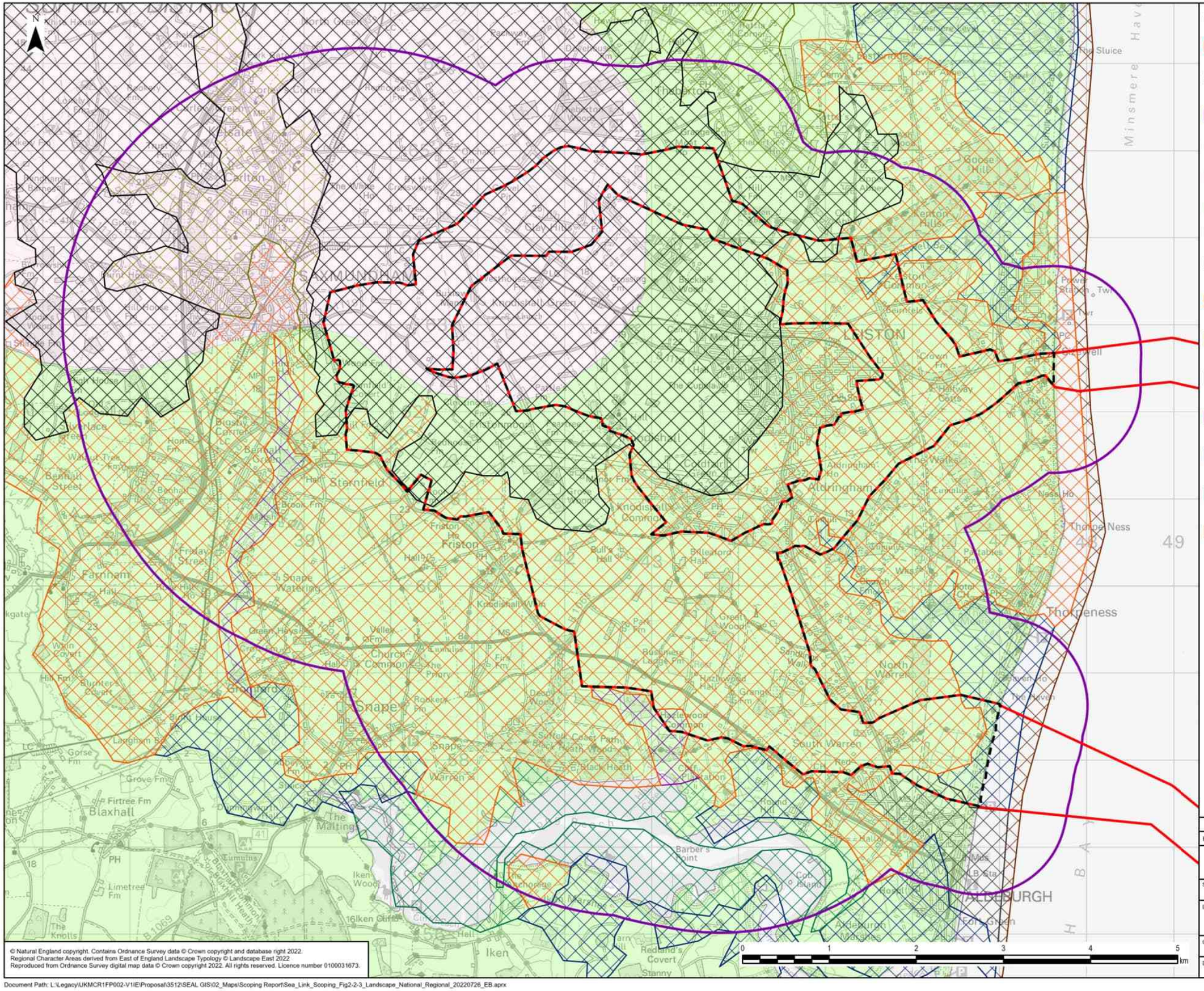
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Document Title: LANDSCAPE CONTEXT AND DESIGNATIONS

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EB	26/07/2022	DF	26/07/2022	CW	26/07/2022

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FIGURE 2.2.2	1:40,000	A3	1	0

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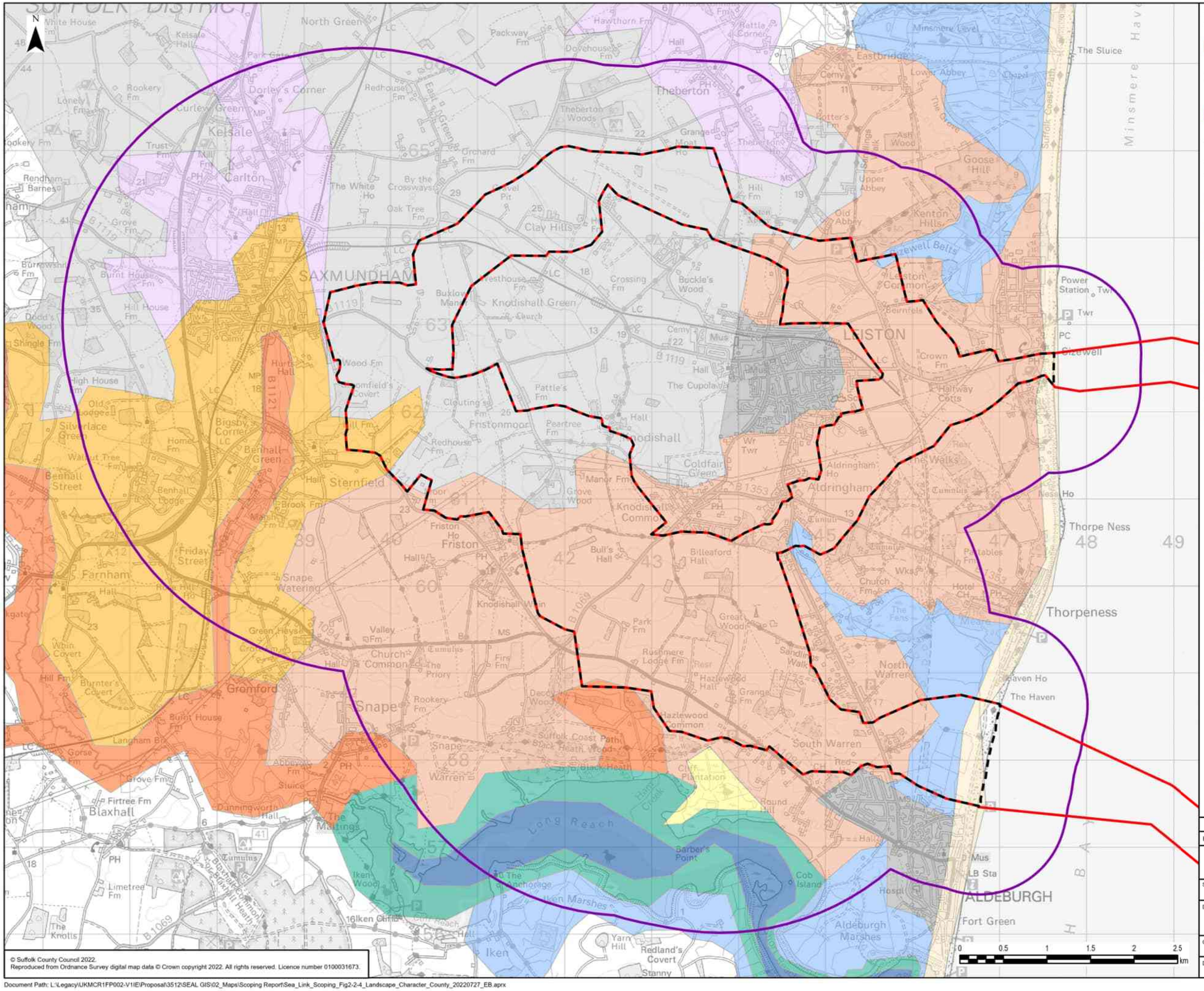
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Document Title: LANDSCAPE CHARACTER - NATIONAL & REGIONAL

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EB	27/07/2022	DF	27/07/2022	CW	27/07/2022

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FIGURE 2.2.3	1:40,000	A3	1	0

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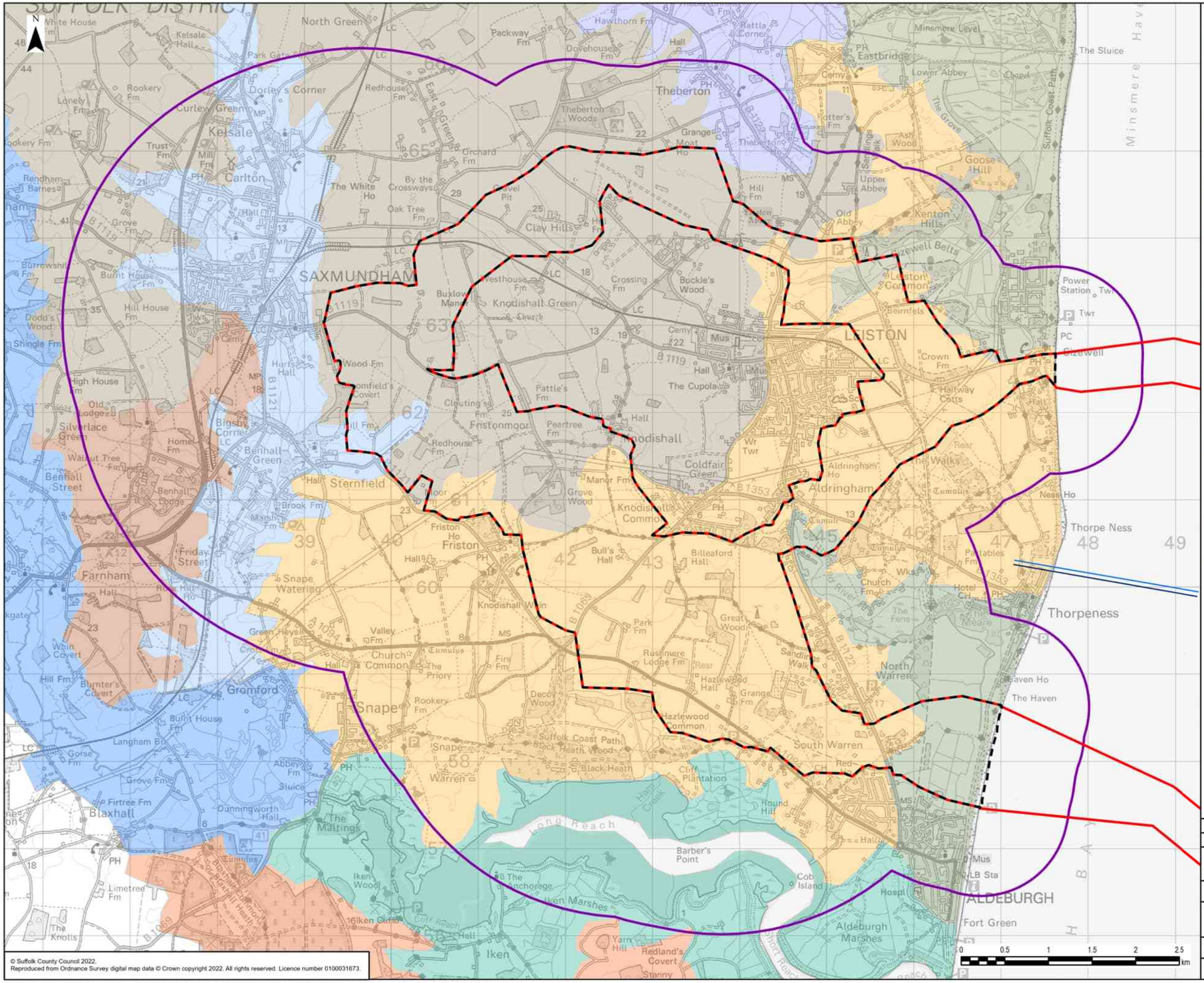
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FIGURE 2.2.4	1:40,000	A3	1	0

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Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Landscape and Visual Study Area

Suffolk Coastal Landscape Character Assessment

- B3: Yox Valley
- B4: Fromus Valley
- B5: Alde Valley
- D3: Minsmere and Sizewell Coast
- D4: Thorpeness to Aldeburgh
- J4: Alde Estuary
- K3: Aldringham and Freston Sandlands
- K4: Rendlesham and Tunstall Sandlands
- L1: Heveningham and Knodishall Estate Claylands
- O1: Benhall Estate Sandlands

Touching the Tide Landscape Character Assessment

- Dunwich to Sizewell Coast Coastal Character Area
- Thorpeness to Aldeburgh Coast Coastal Character Area

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0 0.5 1 1.5 2 2.5 km

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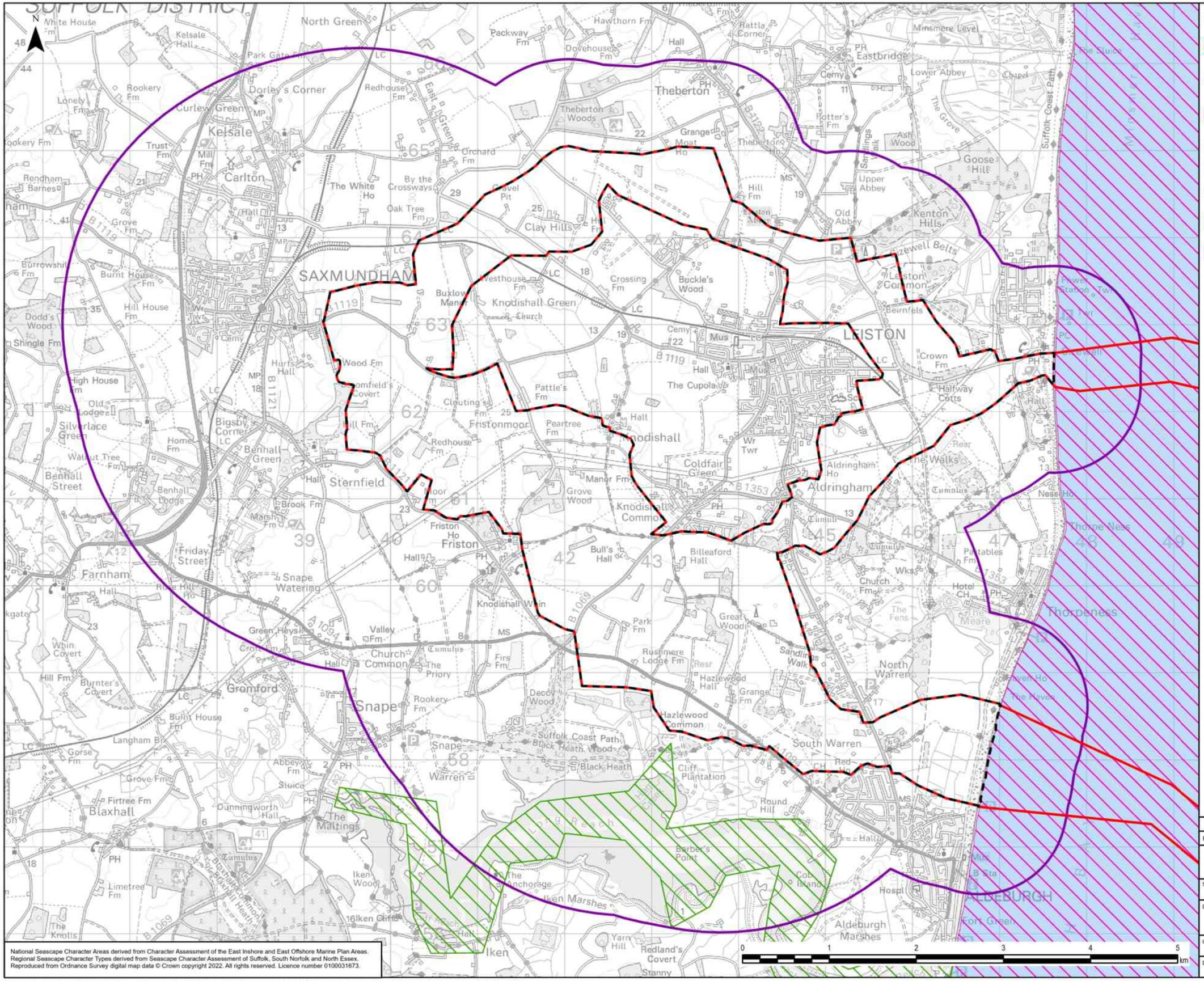
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Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.2.5	1:40,000	A3	1	0

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Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Landscape and Visual Study Area

National Seascape Character Areas

- Suffolk Coastal Waters

Regional Seascape Character Types

- SCT 01: Inland Navigable Waters
- SCT 03: Nearshore Waters

National Seascape Character Areas derived from Character Assessment of the East Inshore and East Offshore Marine Plan Areas. Regional Seascape Character Types derived from Seascape Character Assessment of Suffolk, South Norfolk and North Essex. Reproduced from Ordnance Survey digital map data © Crown copyright 2022. All rights reserved. Licence number 0100031673.

Rev	Date	Description	GIS	Chk	App
0	27/07/2022	SCOPING REPORT	EB	DF	CW

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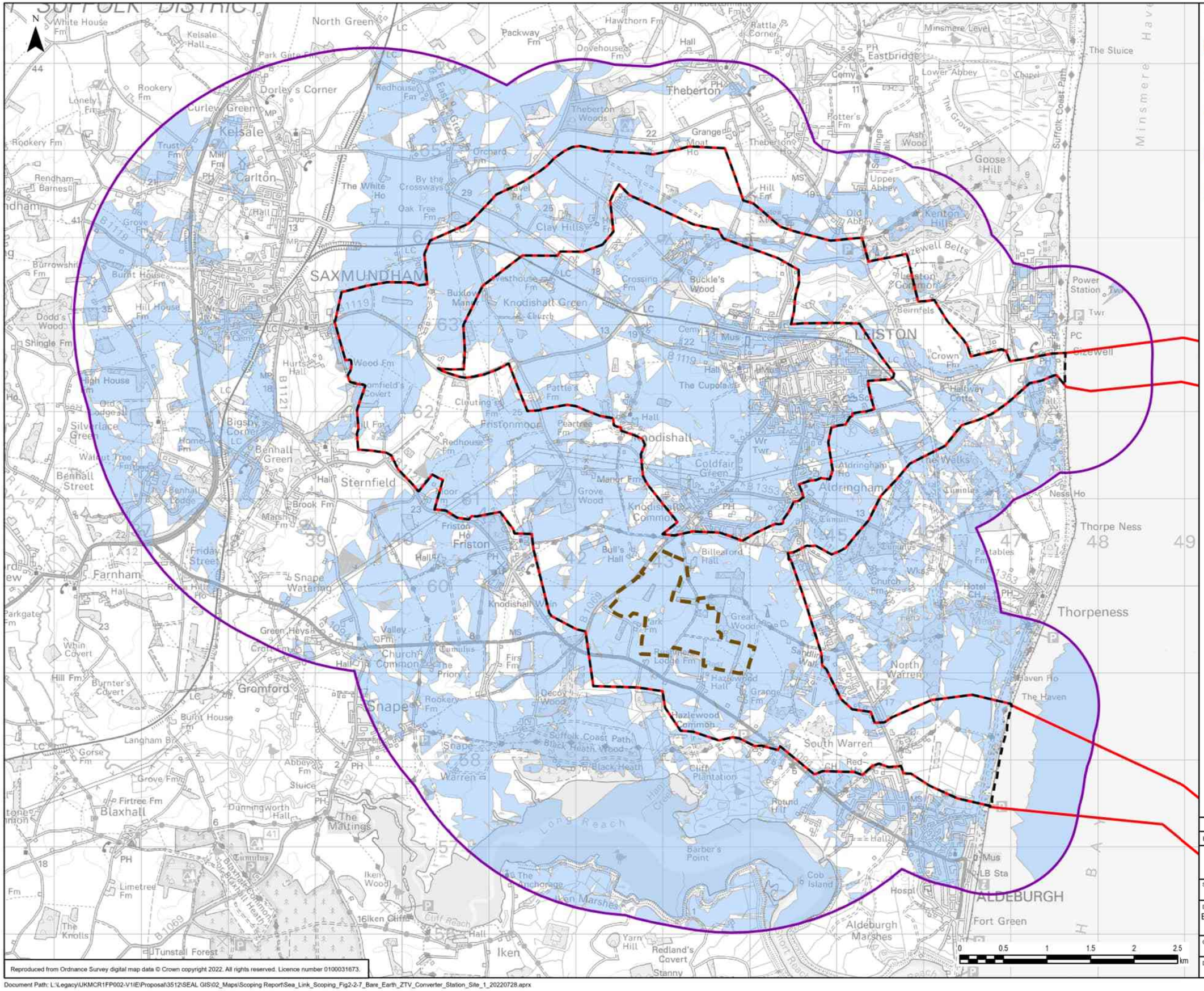
Scheme: SEA LINK

Document Title: SEASCAPE CHARACTER - NATIONAL & REGIONAL

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	27/07/2022	DF	27/07/2022	CW	27/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.2.6	1:40,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1\E\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig2-2-6_Seascape_Character_National_Regional_20220726_EB.aprx



Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Suffolk Converter Site 1 Option Area
- Landscape and Visual Study Area
- Zone of Theoretical Visibility - Bare Earth

The Zone of Theoretical Visibility (ZTV) has been generated using the Ordnance Survey Terrain 5 Digital Terrain Model which does not take account of the screening effects of vegetation, buildings or other structures.
The ZTV is based on an observer point from the centre of the Suffolk Converter Site 1 Emerging Preference graduated swathe area, at an elevation of 30 metres.

Rev	Date	Description	GIS	Chk	App
0	28/07/2022	SCOPING REPORT	EB	DF	CW

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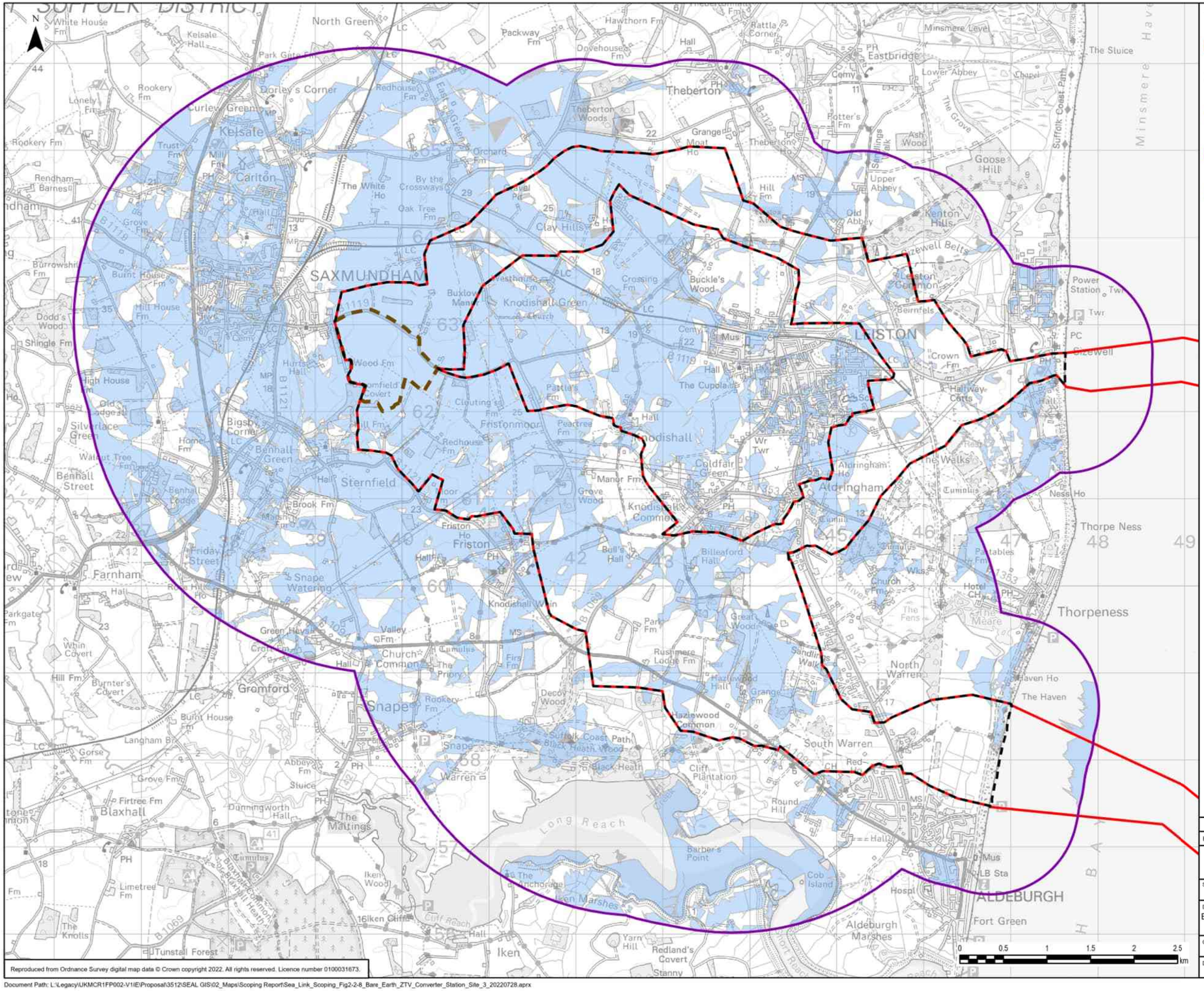
Scheme: SEA LINK

Document Title: BARE EARTH ZONE OF THEORETICAL VISIBILITY - CONVERTER STATION SITE 1

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	28/07/2022	DF	28/07/2022	CW	28/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.2.7	1:40,000	A3	1	0

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The Zone of Theoretical Visibility (ZTV) has been generated using the Ordnance Survey Terrain 5 Digital Terrain Model which does not take account of the screening effects of vegetation, buildings or other structures.
The ZTV is based on an observer point from the centre of the Suffolk Converter Site 3 Emerging Preference graduated swathe area, at an elevation of 30 metres.

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0	28/07/2022	SCOPING REPORT	EB	DF	CW

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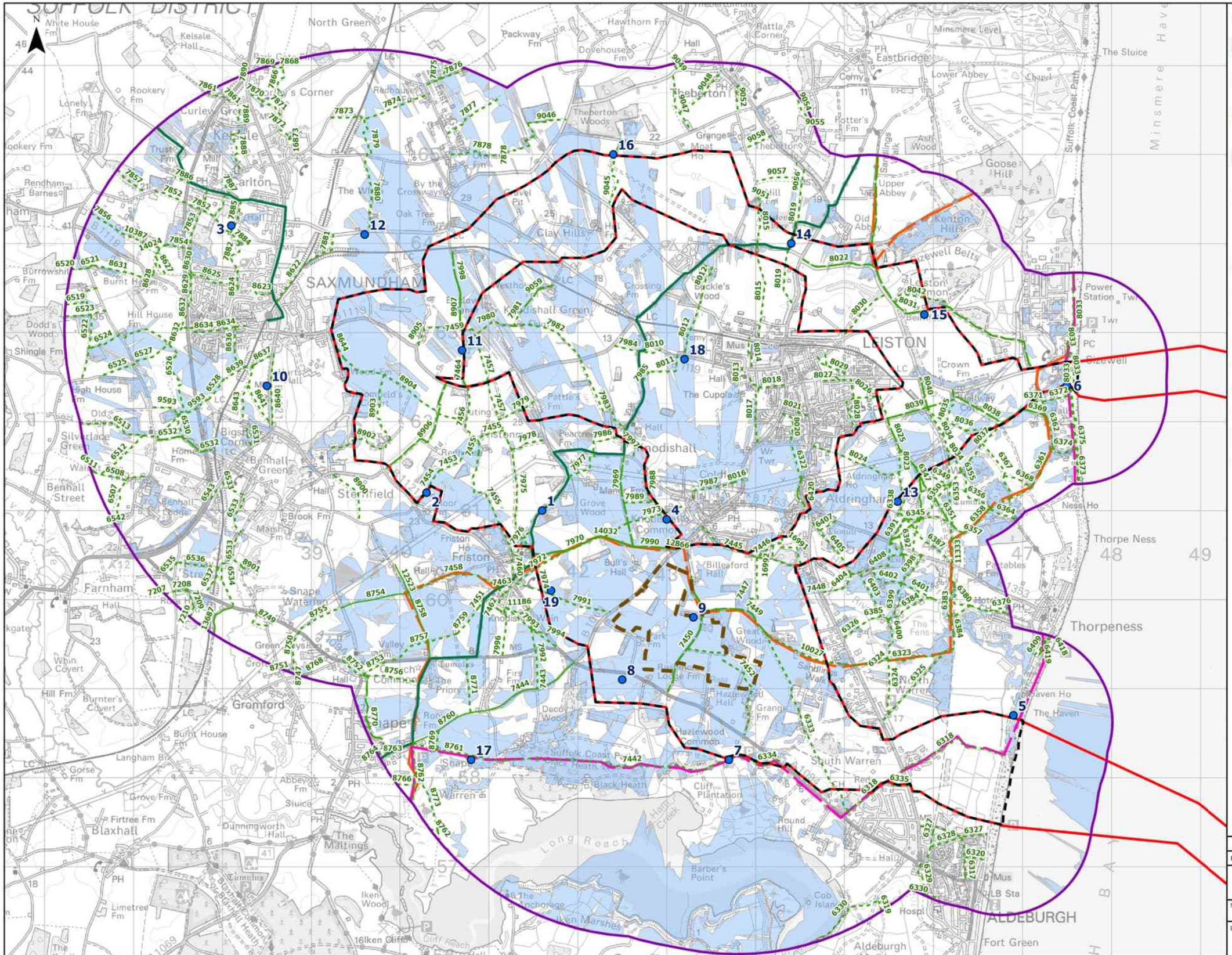
Scheme: SEA LINK

Document Title: BARE EARTH ZONE OF THEORETICAL VISIBILITY - CONVERTER STATION SITE 3

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	28/07/2022	DF	28/07/2022	CW	28/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.2.8	1:40,000	A3	1	0

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Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Suffolk Converter Site 1 Option Area
- Landscape and Visual Study Area
- Zone of Theoretical Visibility - Screened
- Representative Viewpoint Locations
- National Cycle Network

Public Rights of Way

- Public Footpath
- Bridleway
- Byway Open to All Traffic
- Restricted Byway

Recreational Routes

- Sandlings Walk
- Suffolk Coast Path

The Zone of Theoretical Visibility (ZTV) has been generated using the Ordnance Survey Terrain 5 Digital Terrain Model which does not take account of the screening effects of vegetation, buildings or other structures.
Existing buildings have been incorporated into the DTM from OS Open Map Local with an assumed height of 7.5m. Woodland data from the National Forest Inventory has also been incorporated into the DTM with an assumed height of 10m.
The ZTV is based on an observer point from the centre of the Suffolk Converter Site 1 Emerging Preference graduated swathe area, at an elevation of 30 metres.

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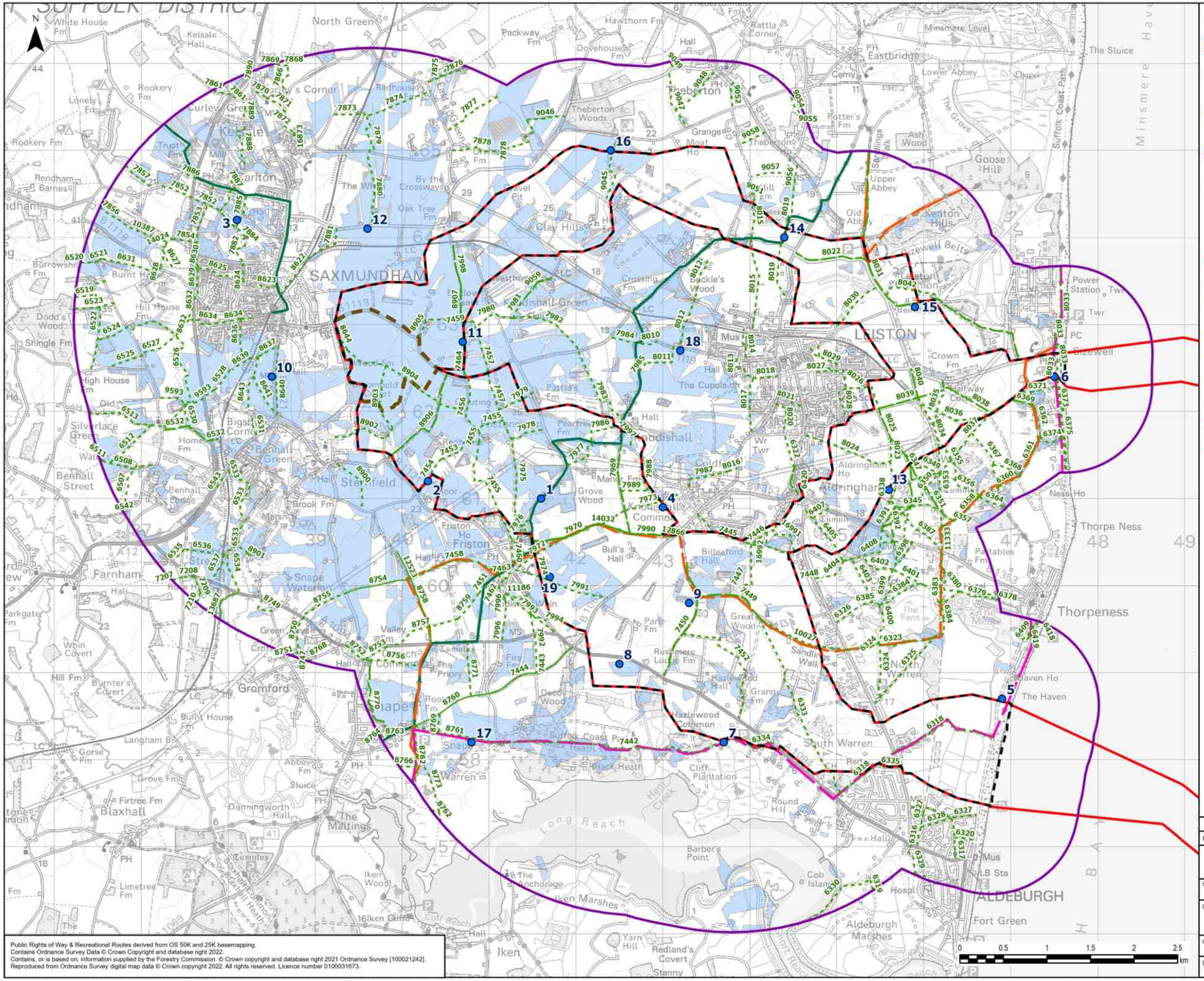
Document Title: REPRESENTATIVE VIEWPOINT LOCATIONS AND SCREENED ZONE OF THEORETICAL VISIBILITY -SITE 1

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	28/07/2022	DF	28/07/2022	CW	28/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.2.9	1:40,037	A3	1	0

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Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Suffolk Converter Site 3 Option Area
- Landscape and Visual Study Area
- Zone of Theoretical Visibility - Screened
- Representative Viewpoint Locations
- National Cycle Network

Public Rights of Way

- Public Footpath
- Bridleway
- Byway Open to All Traffic
- Restricted Byway

Recreational Routes

- Sandlings Walk
- Suffolk Coast Path

The Zone of Theoretical Visibility (ZTV) has been generated using the Ordnance Survey Terrain 5 Digital Terrain Model which does not take account of the screening effects of vegetation, buildings or other structures.
Existing buildings have been incorporated into the DTM from OS Open Map Local with an assumed height of 7.5m. Woodland data from the National Forest Inventory has also been incorporated into the DTM with an assumed height of 10m.
The ZTV is based on an observer point from the centre of the Suffolk Converter Site 3 Emerging Preference graduated swathe area, at an elevation of 30 metres.

Rev	Date	Description	EB	DF	CW
0	28/07/2022	SCOPING REPORT	EB	DF	CW

nationalgrid

Scheme: SEA LINK

Document Title: REPRESENTATIVE VIEWPOINT LOCATIONS AND SCREENED ZONE OF THEORETICAL VISIBILITY -SITE 3

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	28/07/2022	DF	28/07/2022	CW	28/07/2022

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FIGURE 2.2.10	1:40,000	A3	1	0

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N

DEW'S PONDS SAC

MINSMERE-WALBERSWICK SPA

WESTLETON HEATH NNR

MINSMERE TO WALBERSWICK HEATHS & MARSHES SAC

MINSMERE-WALBERSWICK HEATHS AND MARSHES SSSI

EAST SUFFOLK DISTRICT

MINSMERE-WALBERSWICK RAMSAR

SIZEWELL MARSHES SSSI

SOUTHERN NORTH SEA SAC

OUTER THAMES ESTUARY SPA

GROMFORD MEADOW SSSI

SNAPE WARREN SSSI

ALDEBURGH BRICK PIT SSSI

LEISTON-ALDEBURGH SSSI

THE HAVEN, ALDEBURGH LNR

CRAG PIT, ALDEBURGH SSSI

ROUND HILL PIT, ALDEBURGH SSSI

BLAXHALL HEATH SSSI

ALDEBURGH HALL PIT SSSI

IKEN WOOD SSSI

ALDE-ORE ESTUARY RAMSAR

RED HOUSE FARM PIT, SUDBOURNE SSSI

VALLEY FARM PIT, SUDBOURNE SSSI

SANDLINGS FOREST SSSI

SANDLINGS SPA

STAVERTON PARK & THE THICKS, WANTISDEN SAC

ALDE-ORE & BUTLEY ESTUARIES SAC

ALDE-ORE ESTUARY SSSI

ORFORDNESS-SHINGLE STREET SAC

ALDE-ORE ESTUARY SPA

ORFORDNESS-HAVERGATE NNR

0 1 2 3 4 5 km

Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary - 5km Buffer
- Suffolk Onshore Scheme Scoping Boundary - 10km Buffer
- Suffolk Site 1 Emerging Preference Boundary
- National Nature Reserve (NNR)
- Local Nature Reserve (LNR)
- Ramsar
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Site of Special Scientific Interest (SSSI)

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Document Title: STATUTORY DESIGNATED ECOLOGICAL FEATURES - SHEET 1 OF 5

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FIGURE 2.3.1	1:100,000	A3	1	0

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N

DEW'S PONDS SAC

MINSMERE-WALBERSWICK SPA

WESTLETON HEATH NNR

MINSMERE TO WALBERSWICK HEATHS & MARSHES SAC

MINSMERE-WALBERSWICK HEATHS AND MARSHES SSSI

EAST SUFFOLK DISTRICT

MINSMERE-WALBERSWICK RAMSAR

SIZEWELL MARSHES SSSI

SOUTHERN NORTH SEA SAC

OUTER THAMES ESTUARY SPA

GROMFORD MEADOW SSSI

SNAPE WARREN SSSI

ALDEBURGH BRICK PIT SSSI

LEISTON - ALDEBURGH SSSI

THE HAVEN, ALDEBURGH LNR

CRAG PIT, ALDEBURGH SSSI

ROUND HILL PIT, ALDEBURGH SSSI

BLAXHALL HEATH SSSI

ALDEBURGH HALL PIT SSSI

IKEN WOOD SSSI

ALDE-ORE ESTUARY RAMSAR

RED HOUSE FARM PIT, SUDBOURNE SSSI

VALLEY FARM PIT, SUDBOURNE SSSI

SANDLINGS FOREST SSSI

SANDLINGS SPA

STAVERTON PARK & THE THICKS, WANTISDEN SAC

ALDE-ORE & BUTLEY ESTUARIES SAC

ALDE-ORE ESTUARY SSSI

ORFORDNESS-SHINGLE STREET SAC

ALDE-ORE ESTUARY SPA

ORFORDNESS-HAVERGATE NNR

0 1 2 3 4 5 km

Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary - 5km Buffer
- Suffolk Onshore Scheme Scoping Boundary - 10km Buffer
- Suffolk Site 1 Alternative Option Area Boundary
- National Nature Reserve (NNR)
- Local Nature Reserve (LNR)
- Ramsar
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Site of Special Scientific Interest (SSSI)

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Document Title: STATUTORY DESIGNATED ECOLOGICAL FEATURES - SHEET 2 OF 5

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N

DEW'S PONDS SAC

MINSMERE-WALBERSWICK SPA

WESTLETON HEATH NNR

MINSMERE TO WALBERSWICK HEATHS & MARSHES SAC

MINSMERE-WALBERSWICK HEATHS AND MARSHES SSSI

EAST SUFFOLK DISTRICT

MINSMERE-WALBERSWICK RAMSAR

SIZEWELL MARSHES SSSI

SOUTHERN NORTH SEA SAC

OUTER THAMES ESTUARY SPA

GROMFORD MEADOW SSSI

SNAPE WARREN SSSI

ALDEBURGH BRICK PIT SSSI

LEISTON-ALDEBURGH SSSI

THE HAVEN, ALDEBURGH LNR

CRAG PIT, ALDEBURGH SSSI

ROUND HILL PIT, ALDEBURGH SSSI

BLAXHALL HEATH SSSI

ALDEBURGH HALL PIT SSSI

IKEN WOOD SSSI

ALDE-ORE ESTUARY RAMSAR

RED HOUSE FARM PIT, SUDBOURNE SSSI

VALLEY FARM PIT, SUDBOURNE SSSI

SANDLINGS FOREST SSSI

SANDLINGS SPA

STAVERTON PARK & THE THICKS, WANTISDEN SAC

ALDE-ORE & BUTLEY ESTUARIES SAC

ALDE-ORE ESTUARY SSSI

ORFORDNESS-SHINGLE STREET SAC

ALDE-ORE ESTUARY SPA

ORFORDNESS-HAVERGATE NNR

0 1 2 3 4 5 km

Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary - 5km Buffer
- Suffolk Onshore Scheme Scoping Boundary - 10km Buffer
- Suffolk Site 3 Emerging Preference Boundary
- National Nature Reserve (NNR)
- Local Nature Reserve (LNR)
- Ramsar
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Site of Special Scientific Interest (SSSI)

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Document Title: STATUTORY DESIGNATED ECOLOGICAL FEATURES - SHEET 3 OF 5

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EB	19/07/2022	DF	19/07/2022	JR	19/07/2022

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N

DEW'S PONDS SAC

MINSMERE-WALBERSWICK SPA

WESTLETON HEATH NNR

MINSMERE TO WALBERSWICK HEATHS & MARSHES SAC

MINSMERE-WALBERSWICK HEATHS AND MARSHES SSSI

EAST SUFFOLK DISTRICT

MINSMERE-WALBERSWICK RAMSAR

FRAMLINGHAM

SIZEWELL MARSHES SSSI

SOUTHERN NORTH SEA SAC

OUTER THAMES ESTUARY SPA

GROMFORD MEADOW SSSI

SNAPE WARREN SSSI

ALDEBURGH BRICK PIT SSSI

LEISTON - ALDEBURGH SSSI

THE HAVEN, ALDEBURGH LNR

CRAG PIT, ALDEBURGH SSSI

ROUND HILL PIT, ALDEBURGH SSSI

ALDEBURGH HALL PIT SSSI

BLAXHALL HEATH SSSI

IKEN WOOD SSSI

ALDE-ORE ESTUARY RAMSAR

RED HOUSE FARM PIT, SUDBOURNE SSSI

VALLEY FARM PIT, SUDBOURNE SSSI

WICKHAM MARKET

SANDLINGS FOREST SSSI

SANDLINGS SPA

STAVERTON PARK & THE THICKS, WANTISDEN SAC

ALDE-ORE & BUTLEY ESTUARIES SAC

ALDE-ORE ESTUARY SSSI

ORFORDNESS-SHINGLE STREET SAC

ALDE-ORE ESTUARY SPA

ORFORDNESS-HAVERGATE NNR

0 1 2 3 4 5 km

Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary - 5km Buffer
- Suffolk Onshore Scheme Scoping Boundary - 10km Buffer
- Suffolk Site 3 Alternative (Option 1) Boundary
- National Nature Reserve (NNR)
- Local Nature Reserve (LNR)
- Ramsar
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Site of Special Scientific Interest (SSSI)

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EB	19/07/2022	DF	19/07/2022	JR	19/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.3.1	1:100,000	A3	1	0

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N

DEW'S PONDS SAC

MINSMERE-WALBERSWICK SPA

WESTLETON HEATH NNR

MINSMERE TO WALBERSWICK HEATHS & MARSHES SAC

MINSMERE-WALBERSWICK HEATHS AND MARSHES SSSI

EAST SUFFOLK DISTRICT

MINSMERE-WALBERSWICK RAMSAR

SIZEWELL MARSHES SSSI

SOUTHERN NORTH SEA SAC

OUTER THAMES ESTUARY SPA

GROMFORD MEADOW SSSI

SNAPE WARREN SSSI

ALDEBURGH BRICK PIT SSSI

LEISTON - ALDEBURGH SSSI

THE HAVEN, ALDEBURGH LNR

CRAG PIT, ALDEBURGH SSSI

ROUND HILL PIT, ALDEBURGH SSSI

BLAXHALL HEATH SSSI

ALDEBURGH HALL PIT SSSI

IKEN WOOD SSSI

ALDE-ORE ESTUARY RAMSAR

RED HOUSE FARM PIT, SUDBOURNE SSSI

VALLEY FARM PIT, SUDBOURNE SSSI

SANDLINGS FOREST SSSI

SANDLINGS SPA

STAVERTON PARK & THE THICKS, WANTISDEN SAC

ALDE-ORE & BUTLEY ESTUARIES SAC

ORFORDNESS-SHINGLE STREET SAC

ALDE-ORE ESTUARY SSSI

ALDE-ORE ESTUARY SPA

ORFORDNESS-HAVERGATE NNR

0 1 2 3 4 5 km

Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary - 5km Buffer
- Suffolk Onshore Scheme Scoping Boundary - 10km Buffer
- Suffolk Site 3 Alternative (Option 2) Boundary
- National Nature Reserve (NNR)
- Local Nature Reserve (LNR)
- Ramsar
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Site of Special Scientific Interest (SSSI)

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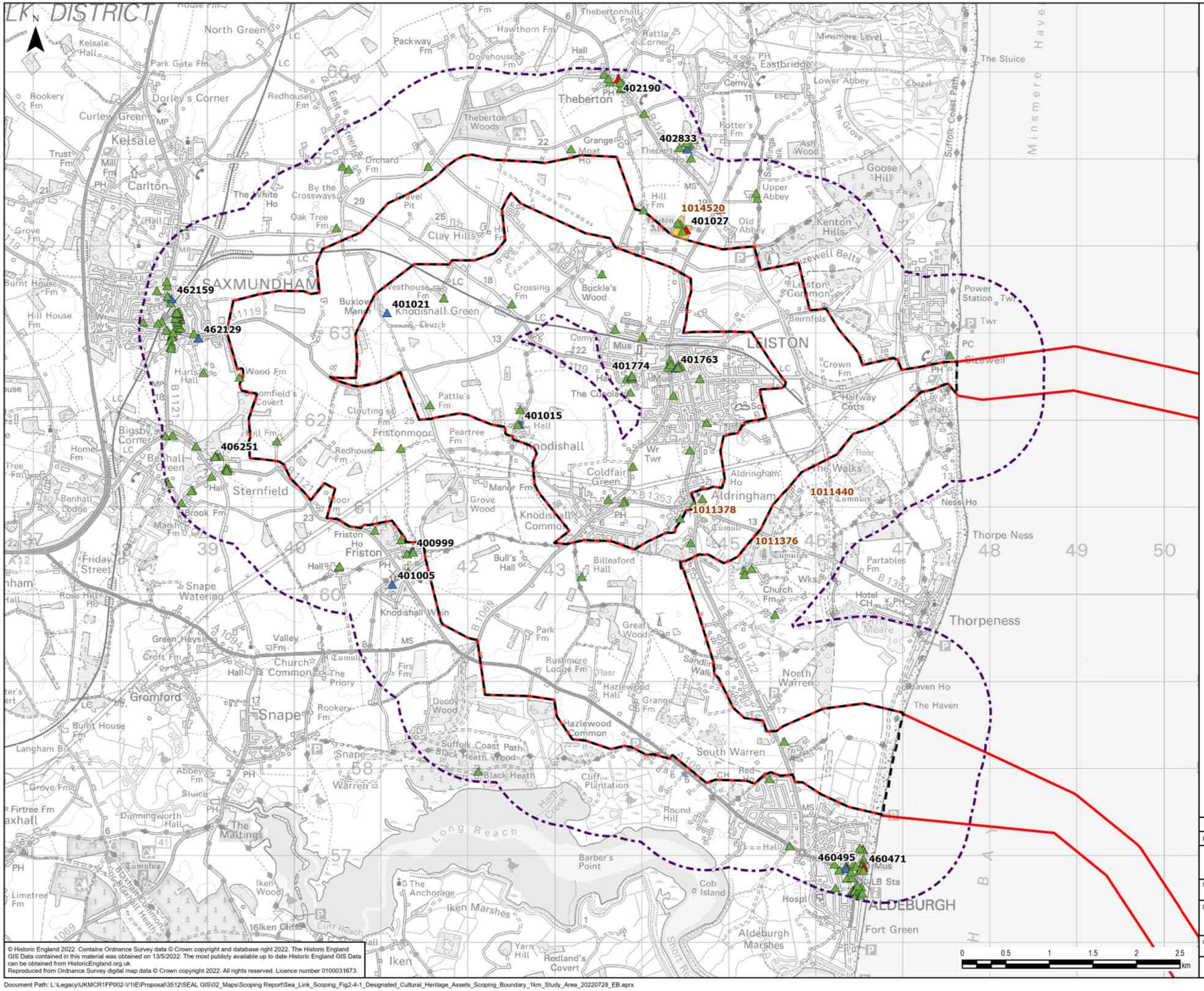
Scheme: SEA LINK

Document Title: STATUTORY DESIGNATED ECOLOGICAL FEATURES - SHEET 5 OF 5

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	19/07/2022	DF	19/07/2022	JR	19/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.3.1	1:100,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig2-3-1_Statutory_Designated_Eco_Features_Sheet_5_of_5_20220719_EB.aprx



Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary - 1km Buffer

Listed Building

- Grade I
- Grade II
- Grade II*

- Scheduled Monuments
- Conservation Area

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Rev	Date	Description			
0	28/07/2022	SCOPING REPORT	EB	DF	JS

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Scheme: SEA LINK

Document Title: DESIGNATED CULTURAL HERITAGE ASSETS WITHIN THE SCOPING BOUNDARY AND WIDER 1KM STUDY AREA

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	28/07/2022	DF	28/07/2022	JS	28/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.4.1	1:40,000	A3	1	0

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Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Suffolk HER Non-Designated Asset (point)
- Suffolk HER Non-Designated Asset (polyline)
- Suffolk HER Non-Designated Asset (polygon)

Rev	Date	Description	GIS	Chk	App
0	28/07/2022	SCOPING REPORT	EB	DF	JS

nationalgrid

Scheme: SEA LINK

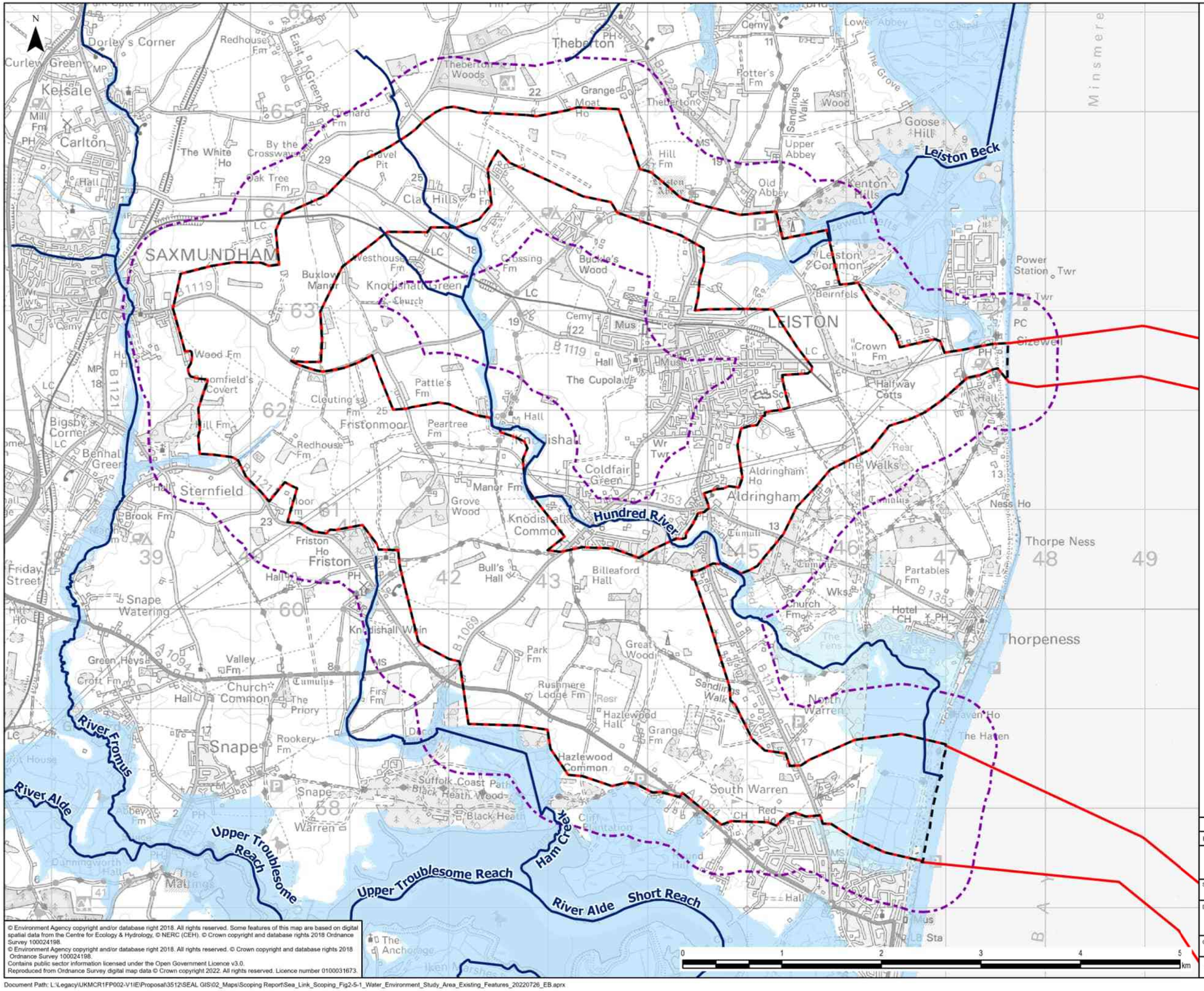
Document Title: NON-DESIGNATED CULTURAL HERITAGE ASSETS WITHIN THE SCOPING BOUNDARY

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	28/07/2022	DF	28/07/2022	JS	28/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.4.2	1:30,000	A3	1	0

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Rev	Date	Description			
0	26/07/2022	SCOPING REPORT	EB	DF	CC

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Scheme: SEA LINK

Document Title: WATER ENVIRONMENT STUDY AREA AND EXISTING FEATURES

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	26/07/2022	DF	26/07/2022	CC	26/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.5.1	1:35,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig2-5-1_Water_Environment_Study_Area_Existing_Features_20220726_EB.aprx

N

Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary

Superficial Geology

- Alluvium - Clay, Silt, Sand and Gravel
- Blown Sand - Sand
- Head - Clay, Silt, Sand and Gravel
- Kesgrave Catchment Subgroup - Sand and Gravel
- Lowestoft Formation - Clay and Silt
- Lowestoft Formation - Diamicton
- Lowestoft Formation - Sand and Gravel
- Marine Beach Deposits - Sand and Gravel
- Peat - Peat
- Sand and Gravel of Uncertain Age and Origin - Sand and Gravel
- Tidal Flat Deposits - Clay and Silt
- Tidal Flat Deposits, 1 - Clay and Silt

Rev	Date	Description			
0	11/08/2022	SCOPING REPORT	EB	DF	NC

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Scheme: SEA LINK

Document Title: SUPERFICIAL GEOLOGY

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	11/08/2022	DF	11/08/2022	NC	11/08/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.6.1	1:35,000	A3	1	0

0 1 2 3 4 5 km

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Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig2-6-1_Superficial_Geology_20220811_EB.aprx

N

Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary

Bedrock Geology

- Chillesford Church Sand Member - Sand
- Chillesford Clay Member - Clay, Silty
- Coralline Crag Formation - Calcarenite
- Crag Group - Sand
- Red Crag Formation - Sand

0 1 2 3 4 5 km

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Rev	Date	Description			
0	11/08/2022	SCOPING REPORT	EB	DF	NC

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Scheme: SEA LINK

Document Title: BEDROCK GEOLOGY

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	11/08/2022	DF	11/08/2022	NC	11/08/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.6.2	1:35,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig2-6-2_Bedrock_Geology_20220811_EB aprx

N

Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary - 500m Buffer

Source Protection Zone

- Zone I - Inner Protection Zone
- Zone II - Outer Protection Zone
- Zone III - Total Catchment

0 1 2 3 4 5 km

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Scheme: SEA LINK

Document Title: HYDROGEOLOGY

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	26/07/2022	DF	26/07/2022	NC	26/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.6.3	1:35,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig2-6-3_Hydrogeology_20220726_EB.aprx

Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary - 250m Buffer

Potential Sources of Contamination (line)

- Very Low / Low Risk

Potential Sources of Contamination (area)

- Very Low / Low Risk
- Moderate Risk
- Moderate / High Risk

Rev	Date	Description			
0	09/08/2022	SCOPING REPORT	EB	DF	NC

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Document Title: POTENTIAL SOURCES OF CONTAMINATION

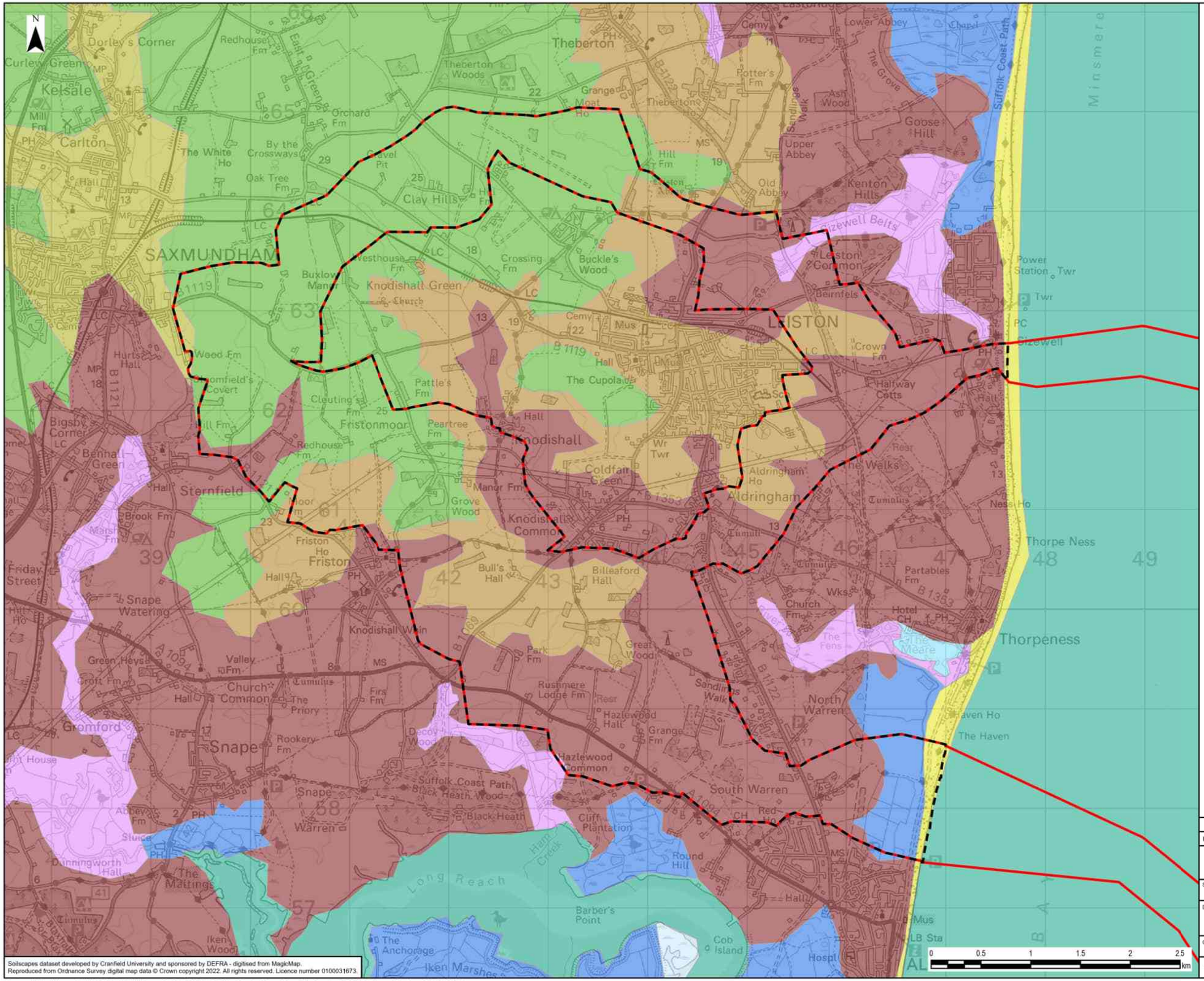
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EB	09/08/2022	DF	09/08/2022	NC	09/08/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.6.4	1:35,000	A3	1	0

0 1 2 3 4 5 km

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Document Title: SOILSCAPE MAPPING

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EB	16/08/2022	DF	16/08/2022	BL	16/08/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.7.1	1:35,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig2-7-1_Soilscape_Mapping_20220816_EB.aprx

N

Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary

Agricultural Land Classification

- Grade 2
- Grade 3
- Grade 4
- Non Agricultural
- Urban

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0 0.5 1 1.5 2 2.5 km

Rev	Date	Description			
0	26/07/2022	SCOPING REPORT	EB	DF	BL

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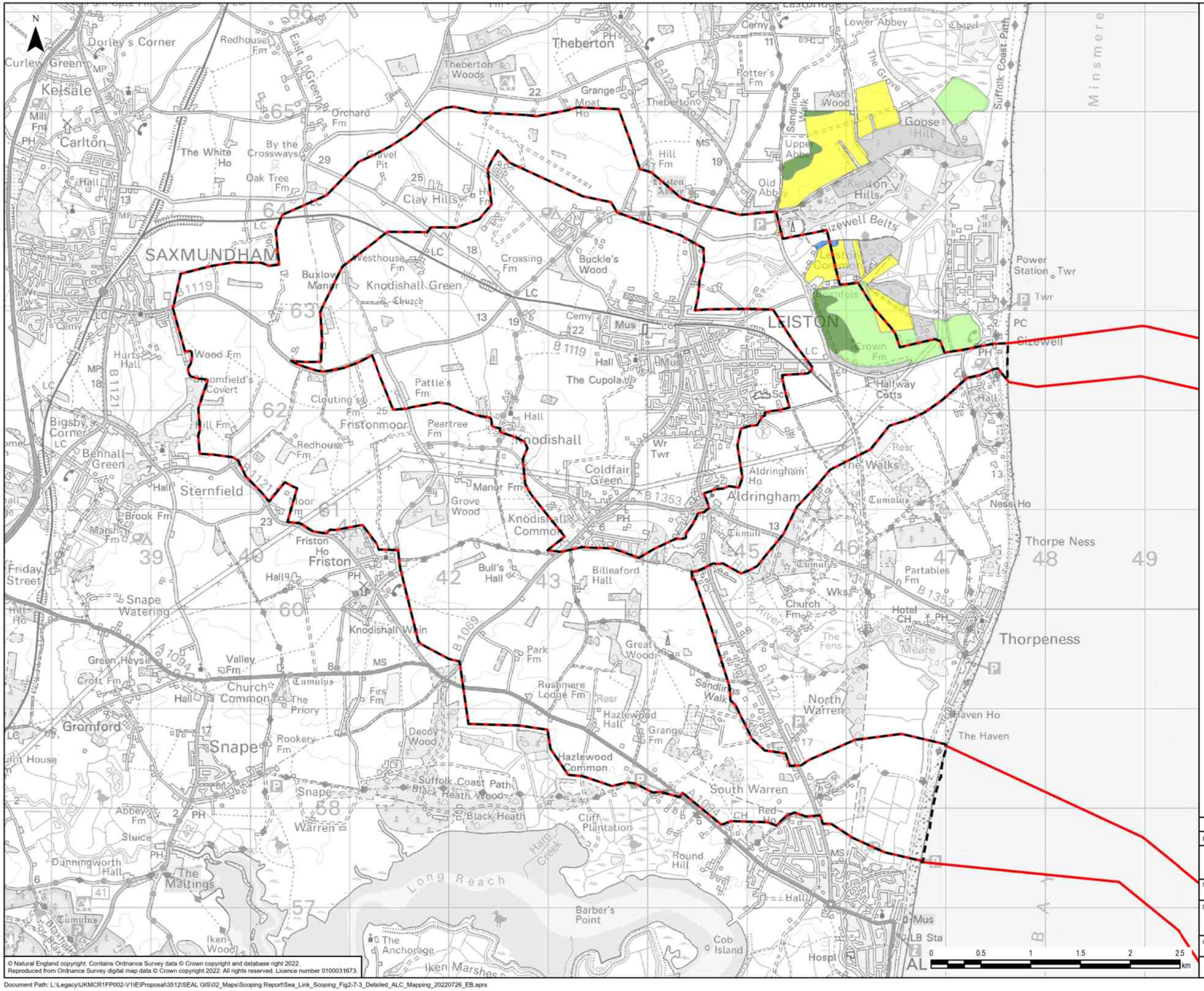
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Document Title: PROVISIONAL AGRICULTURAL LAND CLASSIFICATION MAPPING

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	26/07/2022	DF	26/07/2022	BL	26/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.7.2	1:35,000	A3	1	0

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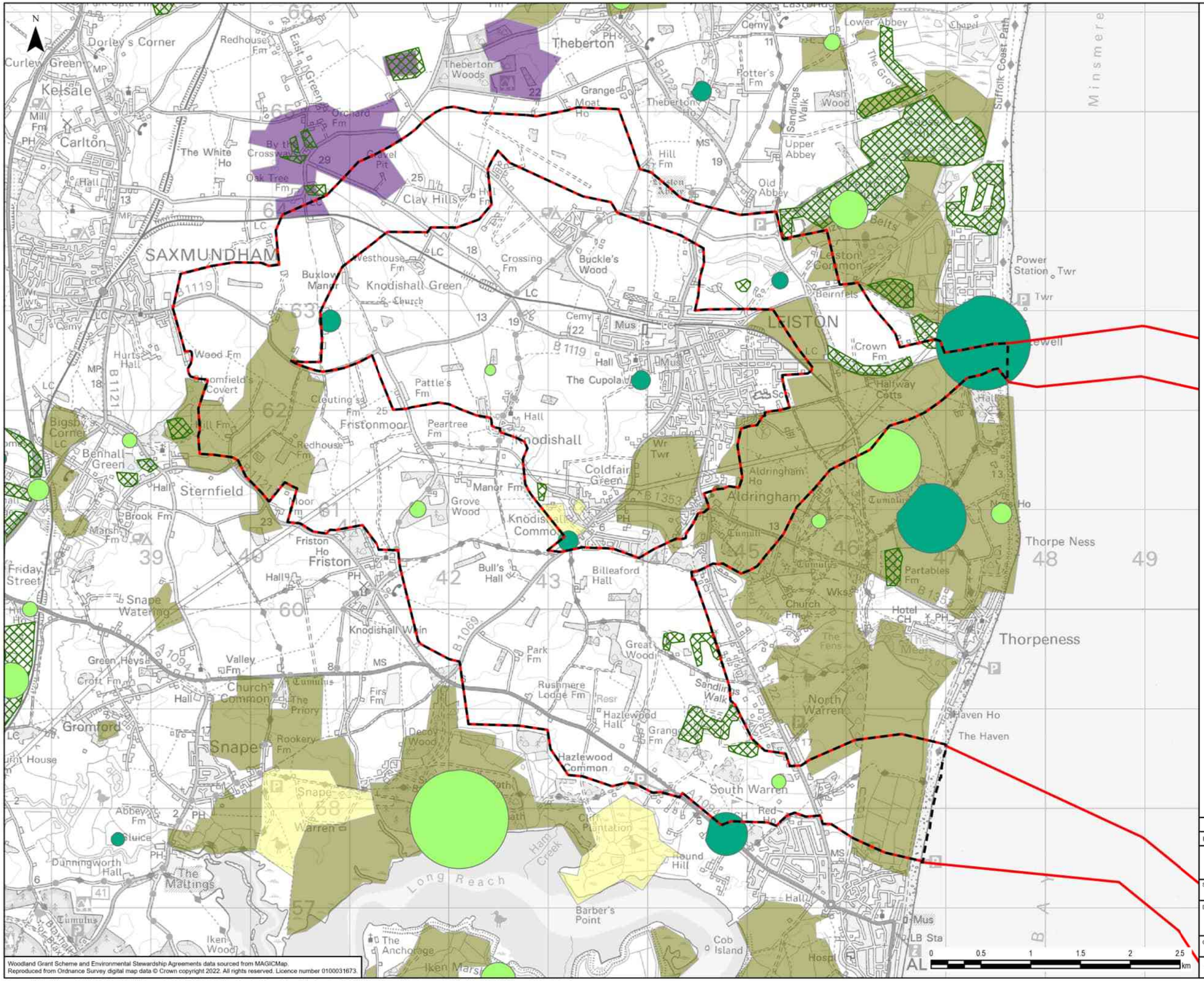
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Document Title: DETAILED AGRICULTURAL LAND CLASSIFICATION MAPPING

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	26/07/2022	DF	26/07/2022	BL	26/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.7.3	1:35,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig2-7-3_Detailed_ALC_Mapping_20220726_EB.aprx



Rev	Date	Description	GIS	Chk	App
0	09/08/2022	SCOPING REPORT	EB	DF	BL

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Scheme: SEA LINK

Document Title: ENVIRONMENTAL STEWARDSHIP AGREEMENTS AND WOODLAND GRANT SCHEMES

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	09/08/2022	DF	09/08/2022	BL	09/08/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.7.4	1:35,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig2-7-4_Env_Stewardship_Agreements_Woodland_Grant_Schemes_20220809_EB.aprx

Legend

- Suffolk Onshore Scheme Scoping Boundary
- Suffolk Traffic & Transport Study Area Boundary

Public Rights of Way

- Footpath
- Bridleway
- Byway Open to All Traffic
- Restricted Byway

Rev	Date	Description			
0	28/07/2022	SCOPING REPORT	EB	DF	MA

nationalgrid

Scheme: SEA LINK

Document Title: PROPOSED STUDY AREA IN SUFFOLK (TRAFFIC AND TRANSPORT)

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	28/07/2022	DF	28/07/2022	MA	28/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.8.1	1:35,000	A3	1	0

0 1 2 3 4 km

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Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- 300m Construction Noise Study Area
- 100m Construction Vibration Study Area
- 1km Operational Noise Study Area
- Friston Substation Site Area
- Converter Station Sites
- Noise and Vibration Sensitive Receptors
- Noise Important Area

Defra Road Traffic Noise, dBA

- 55.0-59.9
- 60.0-64.9
- 65.0-69.9
- 70.0-74.9

Site 3

Site 1

0 0.5 1 1.5 2 2.5 km

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Rev	Date	Description			
0	15/07/2022	SCOPING REPORT	EB	DF	DG

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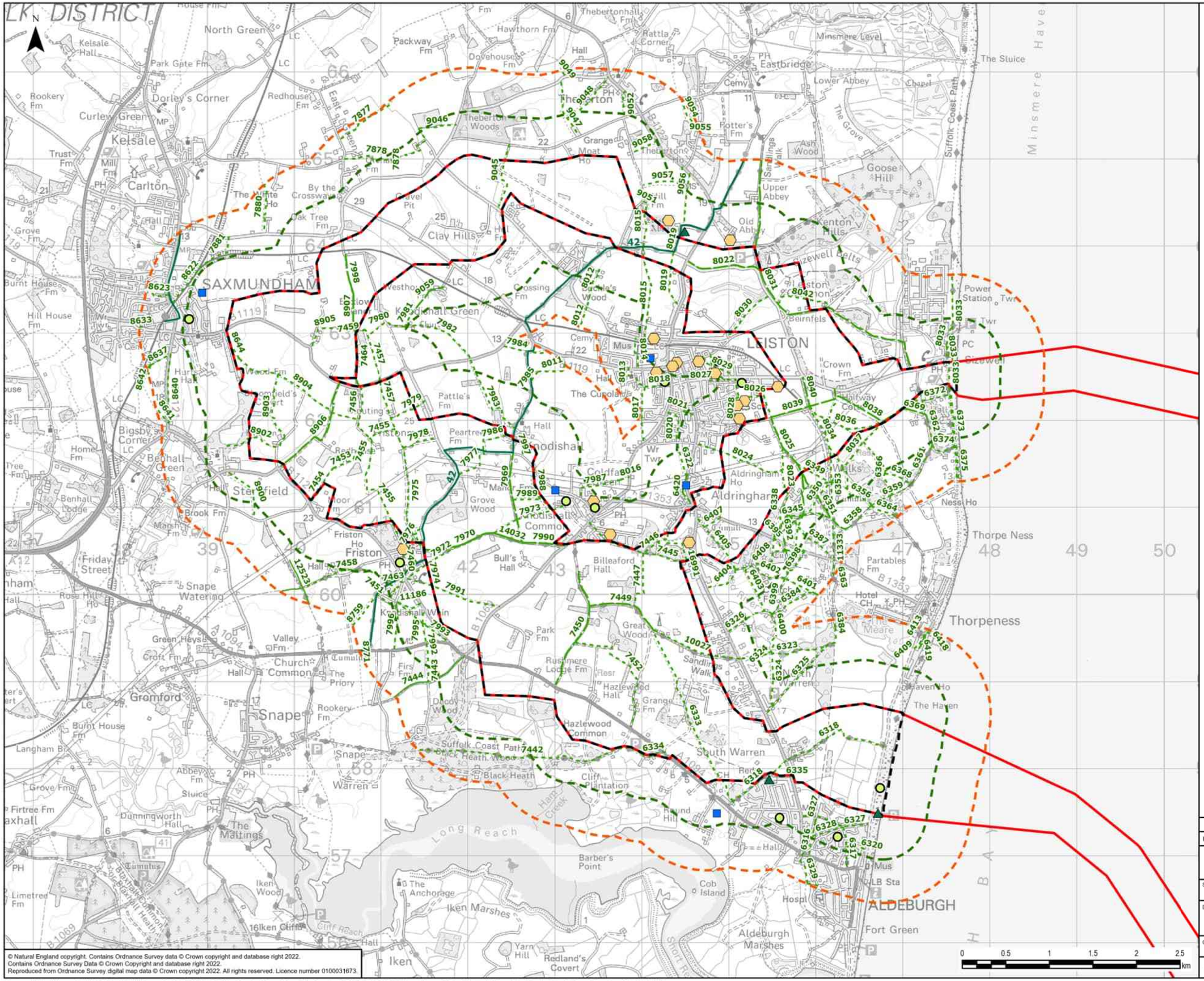
Scheme: SEA LINK

Document Title: NOISE AND VIBRATION BASELINE - SUFFOLK

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	15/07/2022	DF	15/07/2022	DG	15/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.10.1	1:37,500	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1\E\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig2-10-1_Noise_Vibration_Baseline_Suffolk_20220715_EB.aprx



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Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary - 500m Buffer
- Suffolk Onshore Scheme Scoping Boundary - 1km Buffer
- Open Space
- Community Facilities
- Visitor Attractions
- Development Land
- National Cycle Network Route

Public Rights of Way

- Public Footpath
- Bridleway
- Byway Open to All Traffic
- Restricted Byway

Rev	Date	Description			
0	22/07/2022	SCOPING REPORT	EB	DF	JR

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Scheme: SEA LINK

Document Title: SUFFOLK ONSHORE SCHEME SOCIO-ECONOMIC, RECREATION AND TOURISM - STUDY AREAS AND RECEPTORS

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	22/07/2022	DF	22/07/2022	EW	22/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.11.1	1:40,000	A3	1	0

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N

EAST SUFFOLK DISTRICT

Saxmundham Ward

Aldeburgh & Leiston Ward

Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary - 500m Buffer
- Human Health Profile Baseline Study Area
- Open Space within 500m
- Community Facilities within 500m
- National Cycle Network Route within 500m

Public Rights of Way within 500m

- Public Footpath
- Bridleway
- Byway Open to All Traffic
- Restricted Byway

0 0.5 1 1.5 2 2.5 km

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Rev	Date	Description			
0	26/09/2022	SCOPING REPORT	EB	DF	EW

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Scheme:	SEA LINK
Document Title:	SUFFOLK ONSHORE SCHEME HEALTH AND WELLBEING STUDY AREAS AND RECEPTORS

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	26/09/2022	DF	26/09/2022	EW	26/09/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.12.1	1:55,000	A3	1	0

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Legend

- Project Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary
- Suffolk Onshore Scheme Scoping Boundary - Cumulative Zone of Influence

Rev	Date	Description			
0	01/08/2022	SCOPING REPORT	EB	DF	SA

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Scheme: SEA LINK

Document Title: ZONE OF INFLUENCE FOR SUFFOLK ONSHORE SCHEME

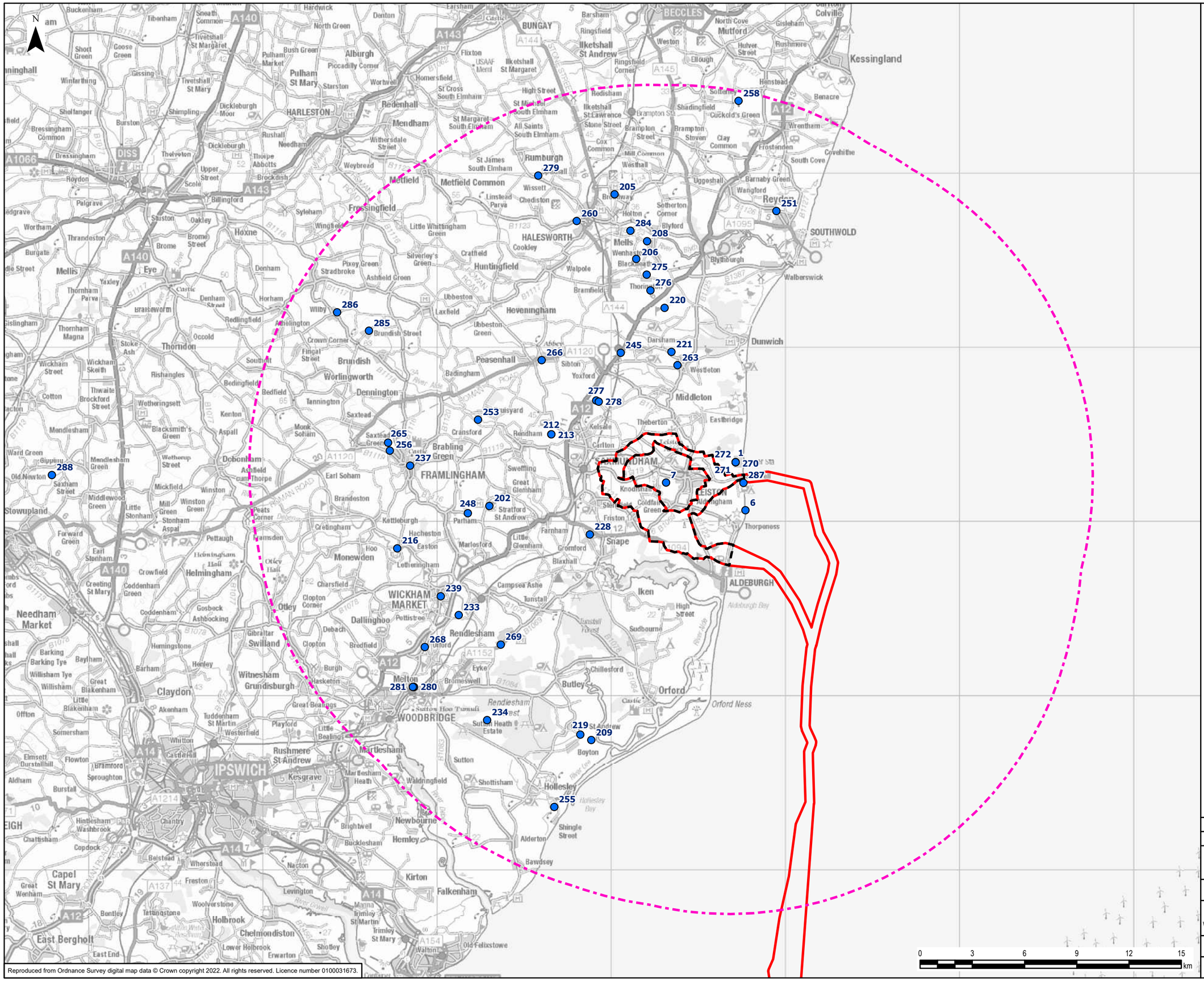
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EB	01/08/2022	DF	01/08/2022	SA	01/08/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.13.1	1:200,000	A3	1	0

0 3 6 9 12 15 km

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Rev	Date	Description	GIS	Chk	App
0	29/09/2022	SCOPING REPORT	EB	DF	SA

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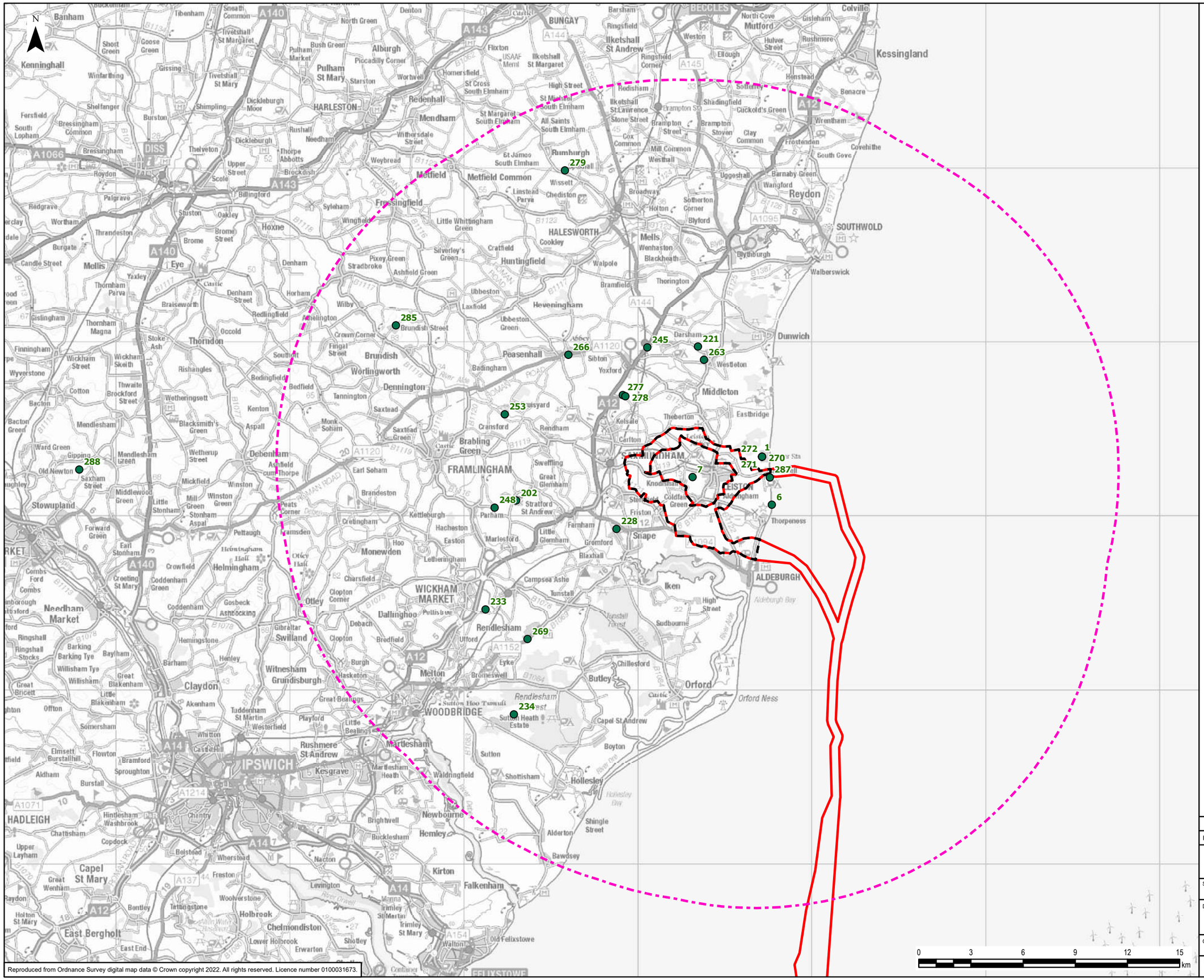
Scheme: SEA LINK

Document Title: ALL PROJECTS AND DEVELOPMENT PLANS LOCATED WITHIN THE ZONE OF INFLUENCE FOR SUFFOLK ONSHORE SCHEME

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	29/09/2022	DF	29/09/2022	SA	29/09/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.13.2	1:200,000	A3	1	0

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0	30/09/2022	SCOPING REPORT	EB	DF	SA

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Scheme: SEA LINK

Document Title: PROJECTS PROPOSED TO BE TAKEN FORWARD TO STAGE 2 FOR SUFFOLK ONSHORE SCHEME

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	30/09/2022	DF	30/09/2022	SA	30/09/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 2.13.3	1:200,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig2-13-3_Projects_Proposed_to_be_Taken_Forward_Stage_2_Suffolk_Onshore_Scheme_20220929_EB.aprx

Part 3- Kent Onshore Scheme

N

K1a
K1
K2
K3
K4
K5
A
B

Legend

- Routeing and Siting Study Area
- National Grid Overhead Line - 400kV
- Converter Site Option Areas
- Landfall Area of Search
- Marine Final Routes

North Kent Coast
- Green
- Red
- Blue

Broadstairs
- Green

Pegwell Bay
- Green
- Red
- Blue

0	21/07/2022	SCOPING REPORT	EB	DF	CC
Rev	Date	Description	GIS	Chk	App

nationalgrid

Scheme: SEA LINK

Document Title: EVOLUTION OF THE KENT ONSHORE SCHEME - SHEET 1 OF 4

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	21/07/2022	DF	21/07/2022	CC	21/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 3.1.1	1:75,000	A3	1	0

0 1 2 3 4 5 km

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N

MARGATE AND LONG SANDS SAC

K1a

K1

K2

K3

K4

K5

A

B

MARGATE

NORTH FORELAND

BROADSTAIRS

RAMSGATE

HERNE BAY

SANDWICH

SANDWICH BAY

DOVER DISTRICT

THANET DISTRICT

LYDDEN VALLEY

Legend

- Routeing and Siting Study Area
- National Grid Overhead Line - 400kV
- Converter Site Option Areas
- Landfall Area of Search
- Marine Final Routes

North Kent Coast

- Green
- Red
- Blue

Broadstairs

- Green

Pegwell Bay

- Green
- Red
- Blue

- Special Area of Conservation (SAC)

0 1 2 3 4 5 km

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0	21/07/2022	SCOPING REPORT	EB	DF	CC

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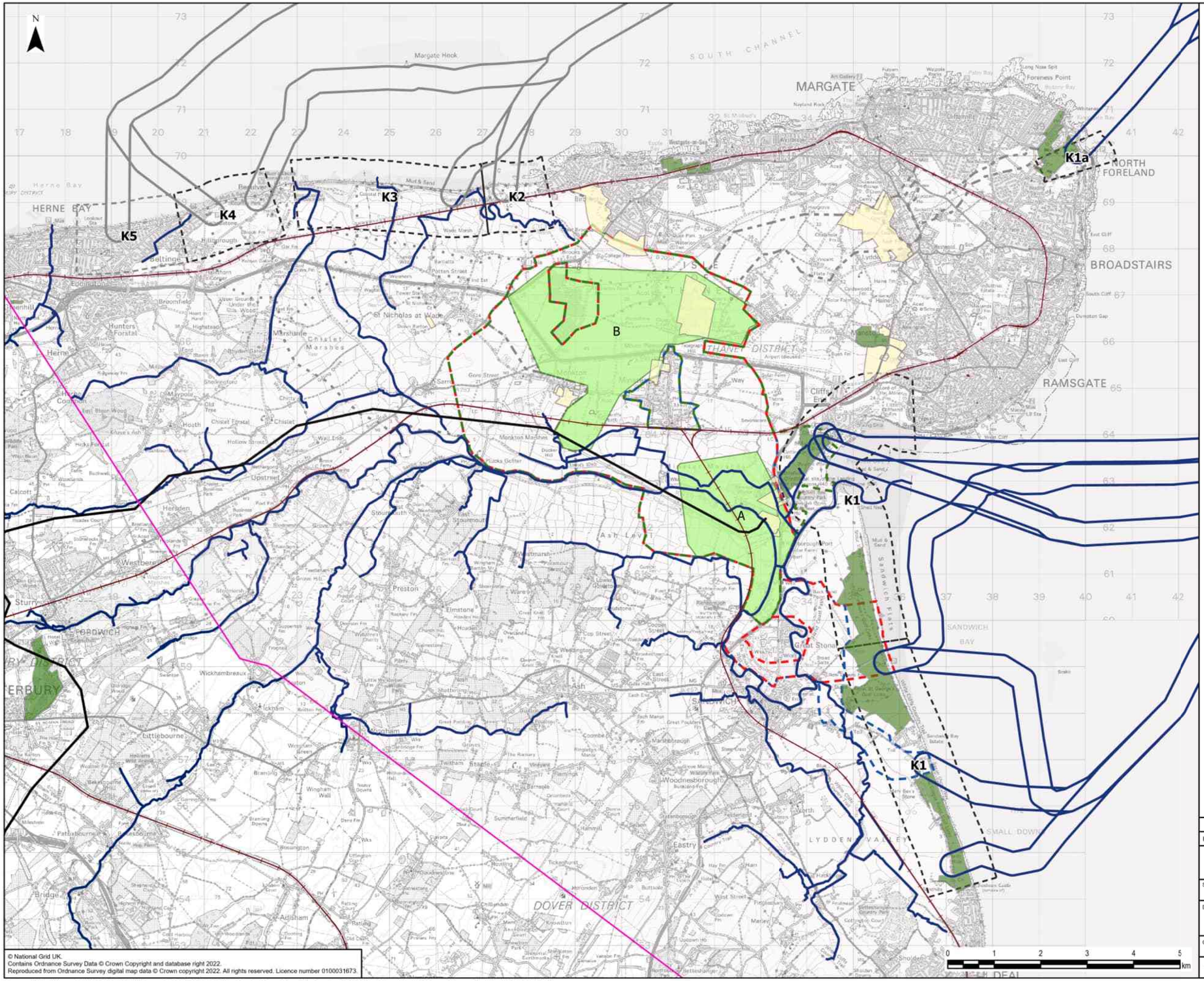
Scheme: SEA LINK

Document Title: EVOLUTION OF THE KENT ONSHORE SCHEME - SHEET 2 OF 4

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	21/07/2022	DF	21/07/2022	CC	21/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 3.1.1	1:75,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig3-1-1_Evolution_of_Kent_Onshore_Scheme_Sheet_2_of_4_20220721_EB.aprx



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Scheme: SEA LINK

Document Title: EVOLUTION OF THE KENT ONSHORE SCHEME - SHEET 3 OF 4

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	21/07/2022	DF	21/07/2022	CC	21/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 3.1.1	1:75,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig3-1-1_Evolution_of_Kent_Onshore_Scheme_Sheet_3_of_4_20220721_EB.aprx

N

MARGATE AND LONG SANDS SAC
THANET COAST SAC
THANET COAST & SANDWICH BAY SPA
NORTH FORELAND GOLF COURSE
THANET COAST SSSI
NORTH FORELAND
WESTGATE AND BIRCHINGTON GOLF CLUB
MANSTON GOLF CENTRE
ST AUGUSTINE'S GOLF COURSE
PRINCES GOLF CLUB
SANDWICH BAY SAC
SANDWICH & PEGWELL BAY NNR
ROYAL ST GEORGE'S
SANDWICH BAY TO HACKLINGE MARSHES SSSI
ROYAL CINQUE PORTS GOLF CLUB
THANET COAST & SANDWICH BAY RAMSAR
BLEAN WOODS NNR
BLEAN COMPLEX SAC
EAST BLEAN WOODS SSSI
WEST BLEAN AND THORNDEN WOODS SSSI
STODMARSH SAC
STODMARSH NNR
STODMARSH RAMSAR
STODMARSH SSSI
PRESTON MARSHES SSSI
STURRY PIT SSSI
CANTERBURY GOLF COURSE
CHEQUER'S WOOD AND OLD PARK SSSI
K1
K1a
K2
K3
K4
K5
A
B
HERNE BAY
BROADSTAIRS
RAMSGATE
MARGATE
ISLE OF THANET
THANET DISTRICT
DOVER DISTRICT
SANDWICH

Legend

- Routeing and Siting Study Area
- National Grid Overhead Line - 400kV
- Converter Site Option Areas
- Landfall Area of Search
- Marine Final Routes

North Kent Coast
- Green
- Red
- Blue

Broadstairs
- Green

Pegwell Bay
- Green
- Red
- Blue

- Ramsar
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Site of Special Scientific Interest (SSSI)
- National Nature Reserve (NNR)
- Golf Course

0 1 2 3 4 5 km

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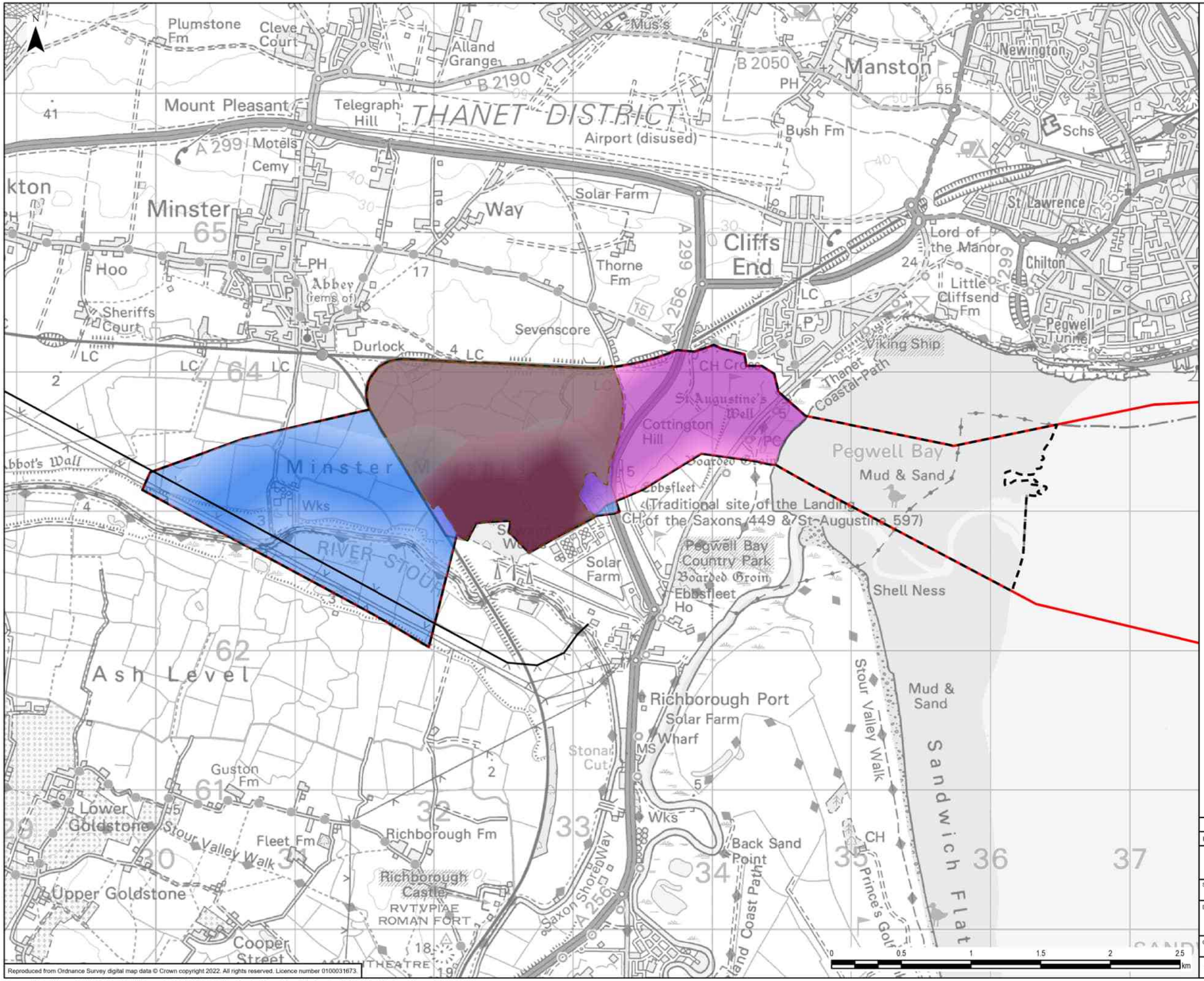
Scheme: SEA LINK

Document Title: EVOLUTION OF THE KENT ONSHORE SCHEME - SHEET 4 OF 4

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	21/07/2022	DF	21/07/2022	CC	21/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 3.1.1	1:75,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig3-1-1_Evolution_of_Kent_Onshore_Scheme_Sheet_4_of_4_20220721_EB.aprx



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Document Title: KENT ONSHORE SCHEME

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FIGURE 3.1.2	1:25,000	A3	1	0

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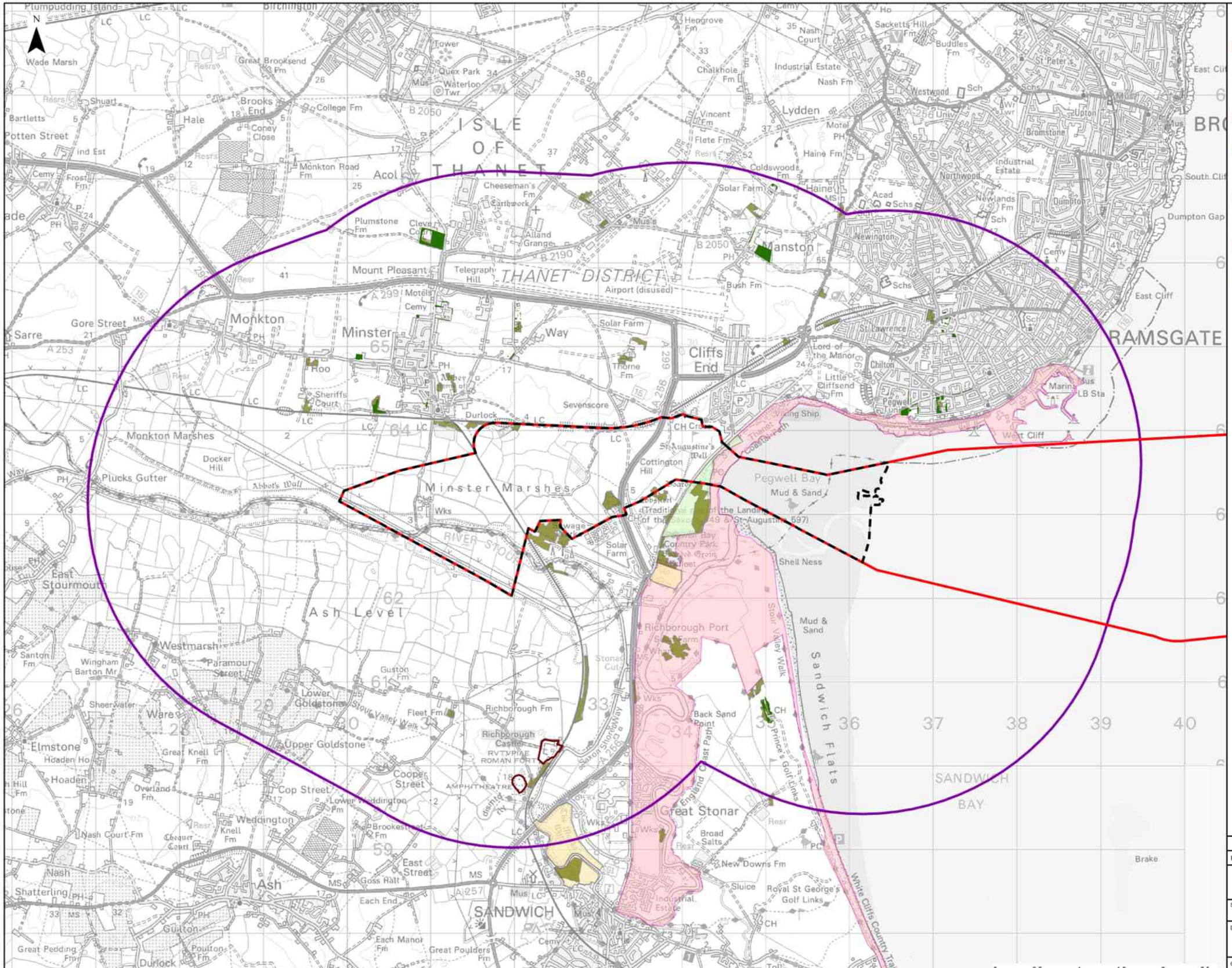
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Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	15/07/2022	DF	15/07/2022	CW	15/07/2022

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FIGURE 3.2.1	1:40,000	A3	1	0

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Document Title: LANDSCAPE CONTEXT AND DESIGNATIONS

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EB	15/07/2022	DF	15/07/2022	CW	15/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 3.2.2	1:42,500	A3	1	0

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N

Legend

- Project Scoping Boundary
- Kent Onshore Scheme Scoping Boundary
- Landscape and Visual Study Area

National Character Area

- 113: North Kent Plain

South East Marine Character Area

- 11: Goodwin Sands and North Dover Strait

Kent Character Areas

- East Kent Horticultural Belt
- Thanet
- The Wantsum and Lower Stour Marshes

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0 1 2 3 4 5 km

Rev	Date	Description			
0	27/07/2022	SCOPING REPORT	EB	DF	CW

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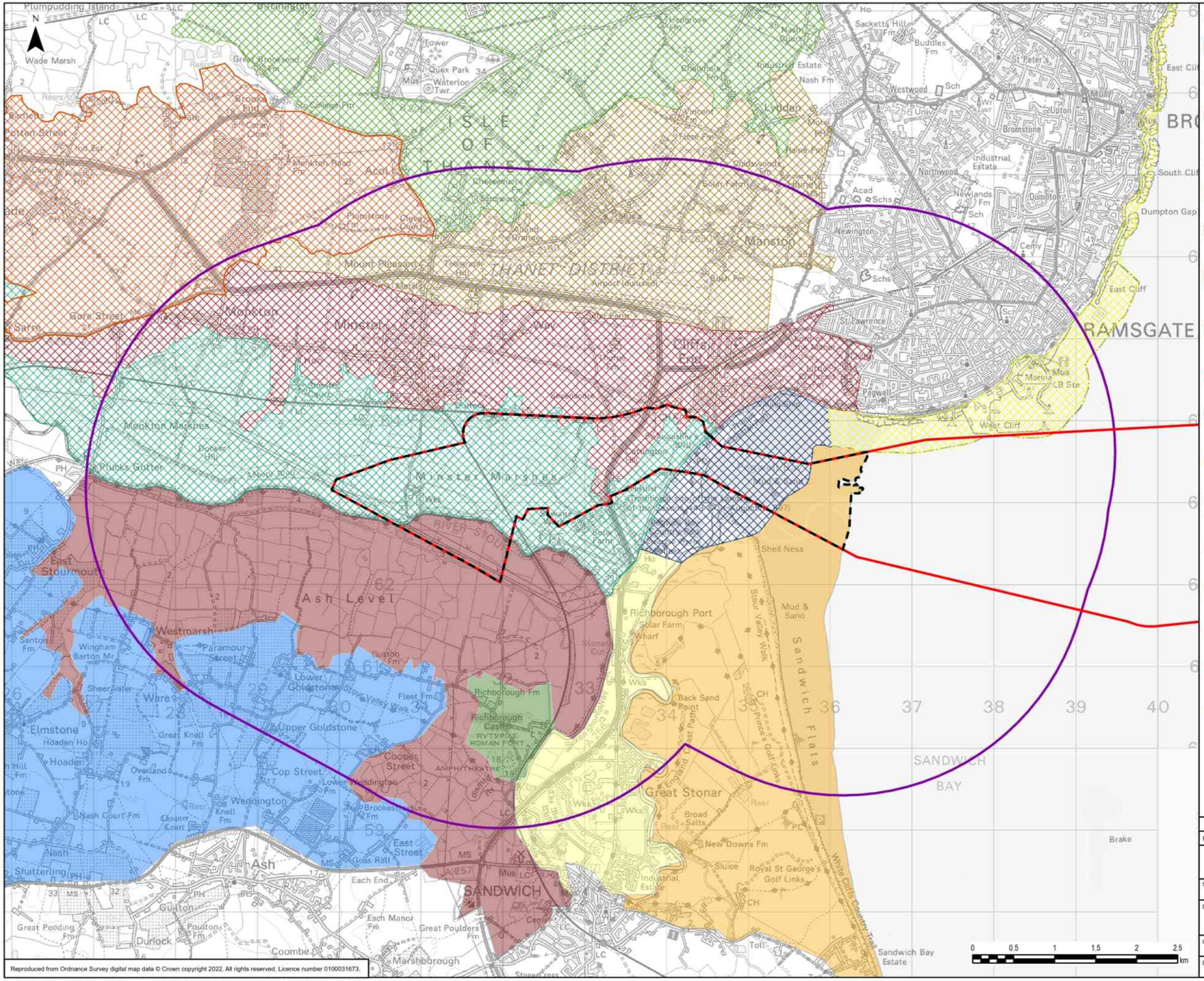
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Document Title: LANDSCAPE & SEASCAPE CHARACTER - NATIONAL & COUNTY

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	27/07/2022	DF	27/07/2022	CW	27/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 3.2.3	1:42,500	A3	1	0

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Scheme: SEA LINK

Document Title: LANDSCAPE CHARACTER - DISTRICT

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EB	14/07/2022	DF	14/07/2022	CW	14/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 3.2.4	1:42,500	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig3_2_4_Landscape_Character_Area_District_20220712_EB.aprx

Legend

- Project Scoping Boundary
- Kent Onshore Scheme Scoping Boundary
- Kent Converter Site Option Area
- Landscape and Visual Study Area
- Zone of Theoretical Visibility - Bare Earth

The Zone of Theoretical Visibility (ZTV) has been generated using the Ordnance Survey Terrain 5 Digital Terrain Model which does not take account of the screening effects of vegetation, buildings or other structures.
The ZTVs are based on an observer point from the centre of the Kent Converter Station Emerging Preference graduated swathe area, at an elevation of 30 metres.

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Scheme: SEA LINK

Document Title: BARE EARTH ZONE OF THEORETICAL VISIBILITY

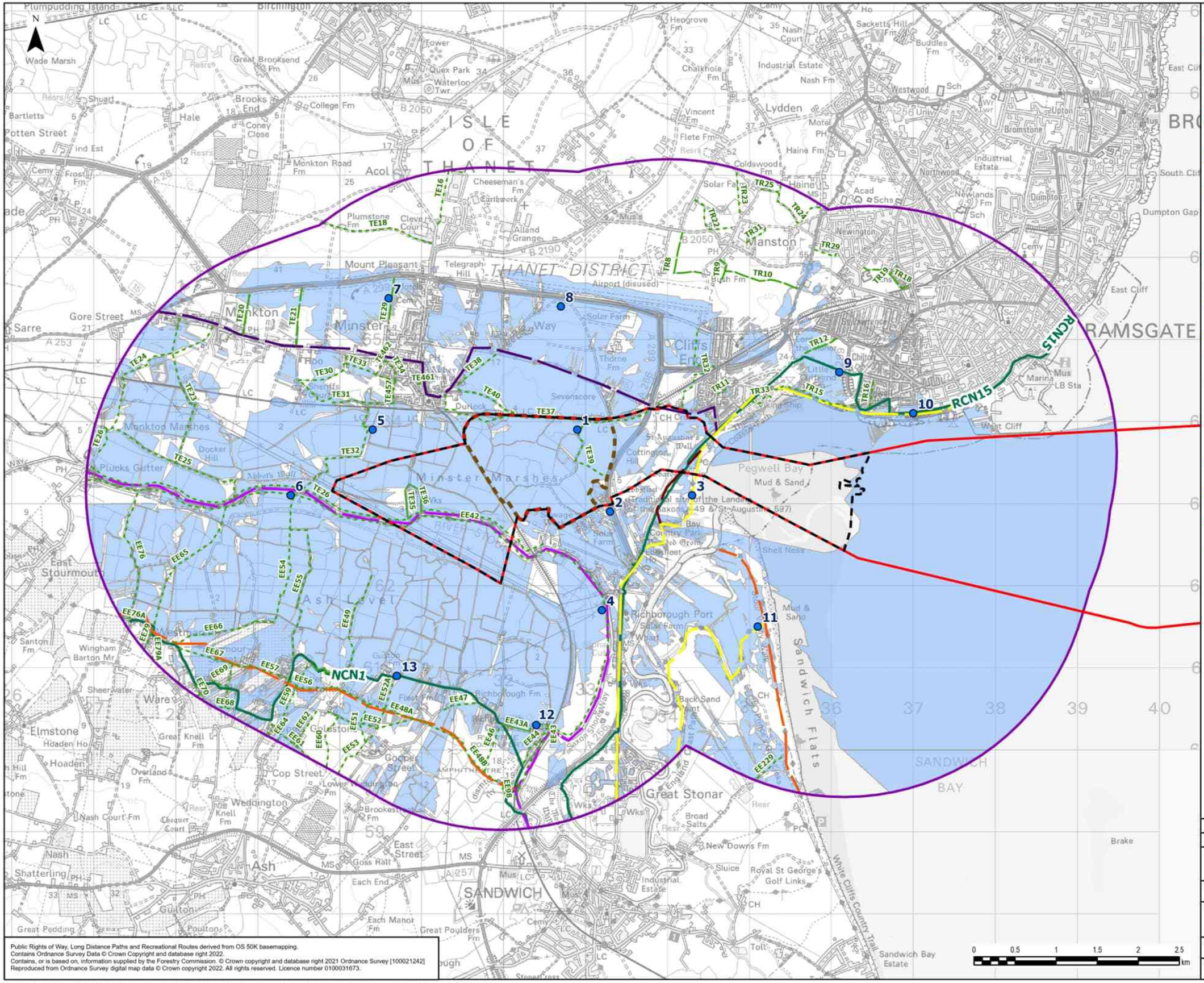
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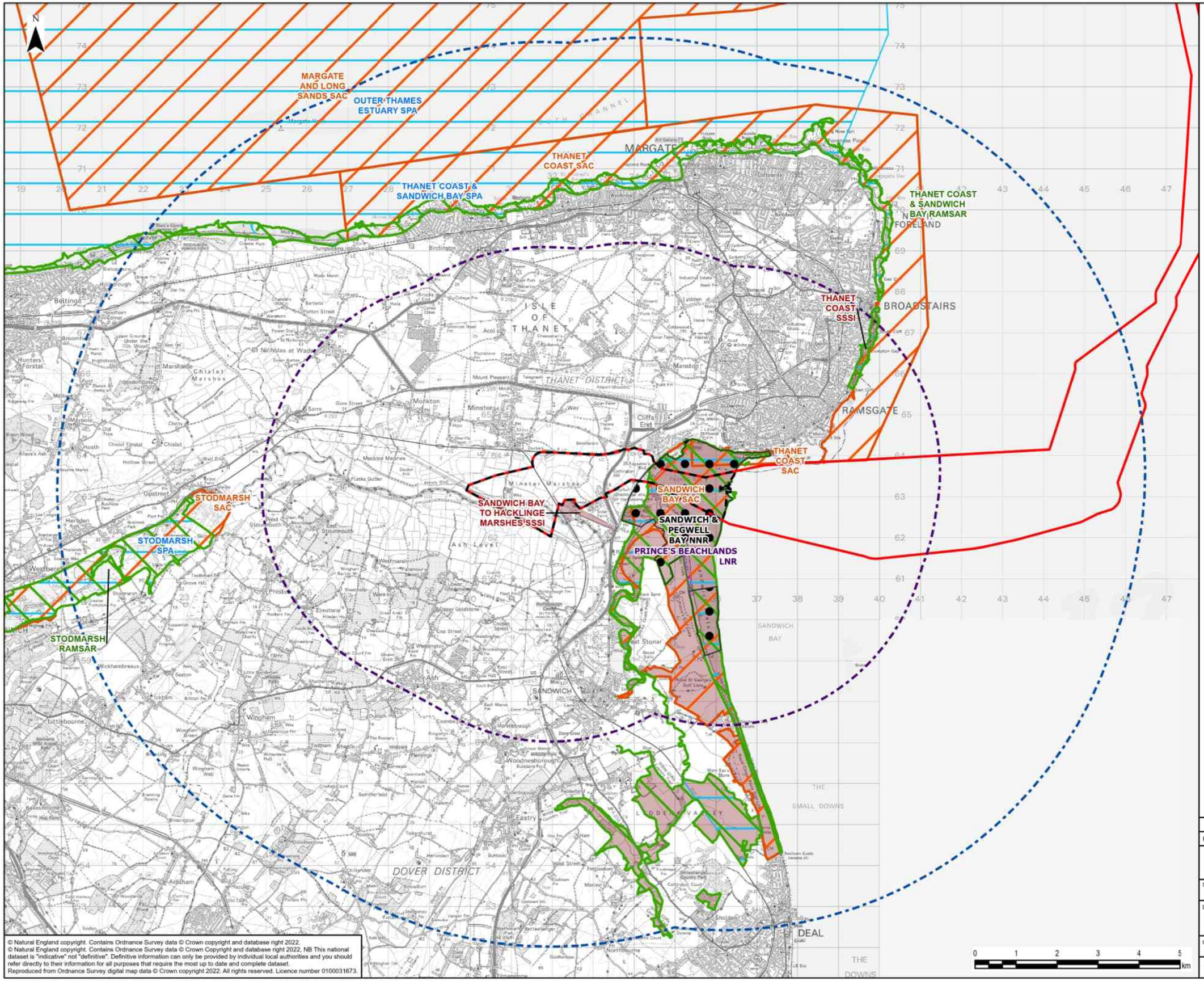
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FIGURE 3.2.5	1:40,000	A3	1	0

0 0.5 1 1.5 2 2.5 km

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ISLE OF THANET
THANET DISTRICT
RAMSGATE
Manston
Minster
Monkton
Ramsgate
Pegwell Bay
Sandwich Flats
SANDWICH BAY
Great Stonar
SANDWICH
Richborough Port
Ash
Westwood
Lydden
Haine
Cliffs End
Minster Marshes
Monkton Marshes
Mount Pleasant
Acol
Wade Marsh
East Stourmouth
Elmstone
Ware
Weddington
Nash
Shatterling
Guilton
Great Pedding
Poulton
Sheerwater
Wingham
Barton Mr
Hoaden
Hoaden Ho
Cop Street
Gooseneck Street
Each End
Each Manor Fm
Great Poulders Fm
Sandwich Bay Estate
Brake
Shell Ness
Mud & Sand
Back Sand Point
Richborough Fm
Solar Farm
Airport (disused)
Earthwork
Cheeseman's Fm
Alland Grange
Plumstone Fm
Cleves Court
Telegraph Hill
Thorne Fm
Sevenscore
Cottington Hill
Abbot's Dell
Docker Hill
Plucks Gutter
Durlock
Chilton
Newington
Northwood
Newlands Fm
Dumpton
Dumpton Gap
East Cliff
West Cliff
Marina
LB Sta
Viking Ship
Industrial Estate
Nash Fm
Chalkhole Fm
Vincent Fm
Flete Fm
Haine Fm
Coldswood Fm
Buddles Fm
Sacketts Hill Fm
Nash Court
Heugrove Fm
Great Brooksend Fm
Brooks End
College Fm
Monkton Road Fm
Coney Close
Hale
Bromstone
Upton
Industrial Estate
Northwood
Newington
Dumpton
Cemy
Sch
Acad
Motel
PH
Mus
Resrs
Wks
CH
LC
MS
Rest
Fm
Twr
Quex Park
Waterloo
Birchington
Plumpudding Island
Potten Street
Bartletts
Shuart
Ind Est
Frost Fm
Gore Street
Sarre
Monkton
Hale
Brooks End
Coney Close
Monkton Road Fm
College Fm
Great Brooksend Fm



Legend

- Project Scoping Boundary
- Kent Onshore Scheme Scoping Boundary
- Kent Onshore Scheme Scoping Boundary - 5km Buffer
- Kent Onshore Scheme Scoping Boundary - 10km Buffer
- National Nature Reserve (NNR)
- Local Nature Reserve (LNR)
- Ramsar
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Site of Special Scientific Interest (SSSI)

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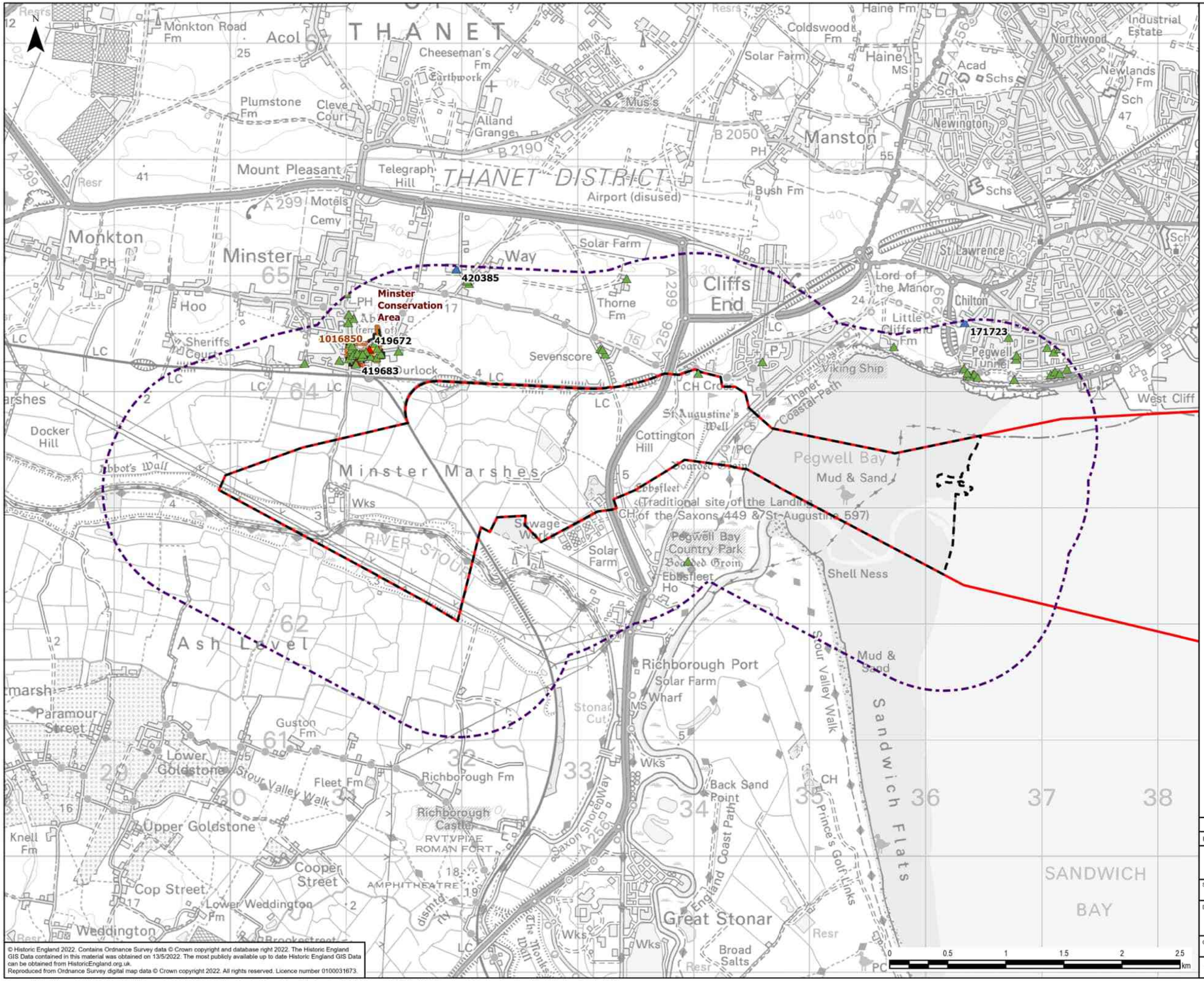
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Document Title: STATUTORY DESIGNATED ECOLOGICAL FEATURES

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	19/07/2022	DF	19/07/2022	JR	19/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
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Legend

- Project Scoping Boundary
- Kent Onshore Scheme Scoping Boundary
- Kent Onshore Scheme Scoping Boundary - 1km Buffer

Listed Building

- Grade I
- Grade II
- Grade II*

- Scheduled Monuments
- Conservation Area

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Document Title: DESIGNATED CULTURAL HERITAGE ASSETS WITHIN THE SCOPING BOUNDARY AND WIDER 1KM STUDY AREA

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	28/07/2022	DF	28/07/2022	JS	28/07/2022

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FIGURE 3.4.1	1:30,000	A3	1	0

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THANET DISTRICT

Legend

- Project Scoping Boundary
- Kent Onshore Scheme Scoping Boundary
- Kent HER Non-Designated Asset (point)
- Kent HER Non-Designated Asset (polyline)
- Kent HER Non-Designated Asset (polygon)

Mount Pleasant
Telegraph Hill
A 299
Motels
Cemy
Minster
65
Airport (disused)
Bush Fm
Solar Farm
Way
Thorne Fm
A 299
Cliffs End
Lord of the Manor
Chilton
Little Cliffsend Fm
A 256
PH
Abbey (rems of)
Sevenscore
Durlock
LC
64
Viking Ship
Thanet Coastal Path
St Augustine's Well
Cottington Hill
PC
Boarded Groin
Pegwell Bay
Mud & Sand
Minster Marshes
Wks
Sewage Works
Solar Farm
Ebbsfleet
(Traditional site of the Landing CH of the Saxons 449 & St Augustine 597)
Pegwell Bay Country Park
Boarded Groin
Ebbsfleet Ho
Shell Ness
62
h Level
Richborough Port
Solar Farm
Wharf
MS
Stonar Cut
Stour Valley Walk
Mud & Sand
Sandwich
Guston Fm
61
Fleet Fm
32
Richborough Fm
33
Wks
Back Sand
CH
0 0.5 1 1.5 2 2.5 km

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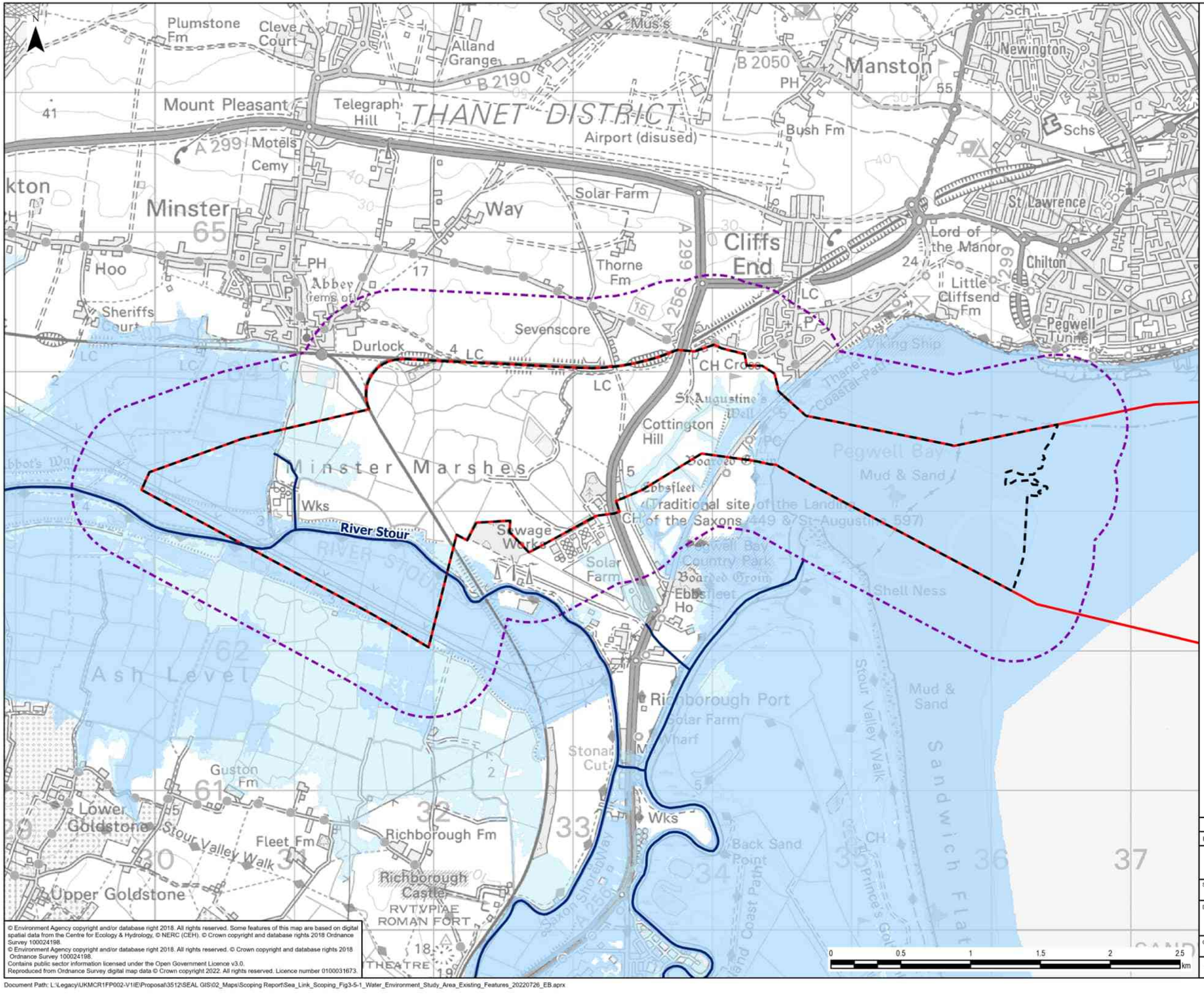
Scheme: SEA LINK

Document Title: NON-DESIGNATED CULTURAL HERITAGE ASSETS WITHIN THE SCOPING BOUNDARY

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	28/07/2022	DF	28/07/2022	JS	28/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 3.4.2	1:20,000	A3	1	0

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Legend

- Project Scoping Boundary
- Kent Onshore Scheme Scoping Boundary
- Kent Onshore Scheme Scoping Boundary - 500m Buffer
- Main River
- Flood Zone 2
- Flood Zone 3

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0 0.5 1 1.5 2 2.5 km

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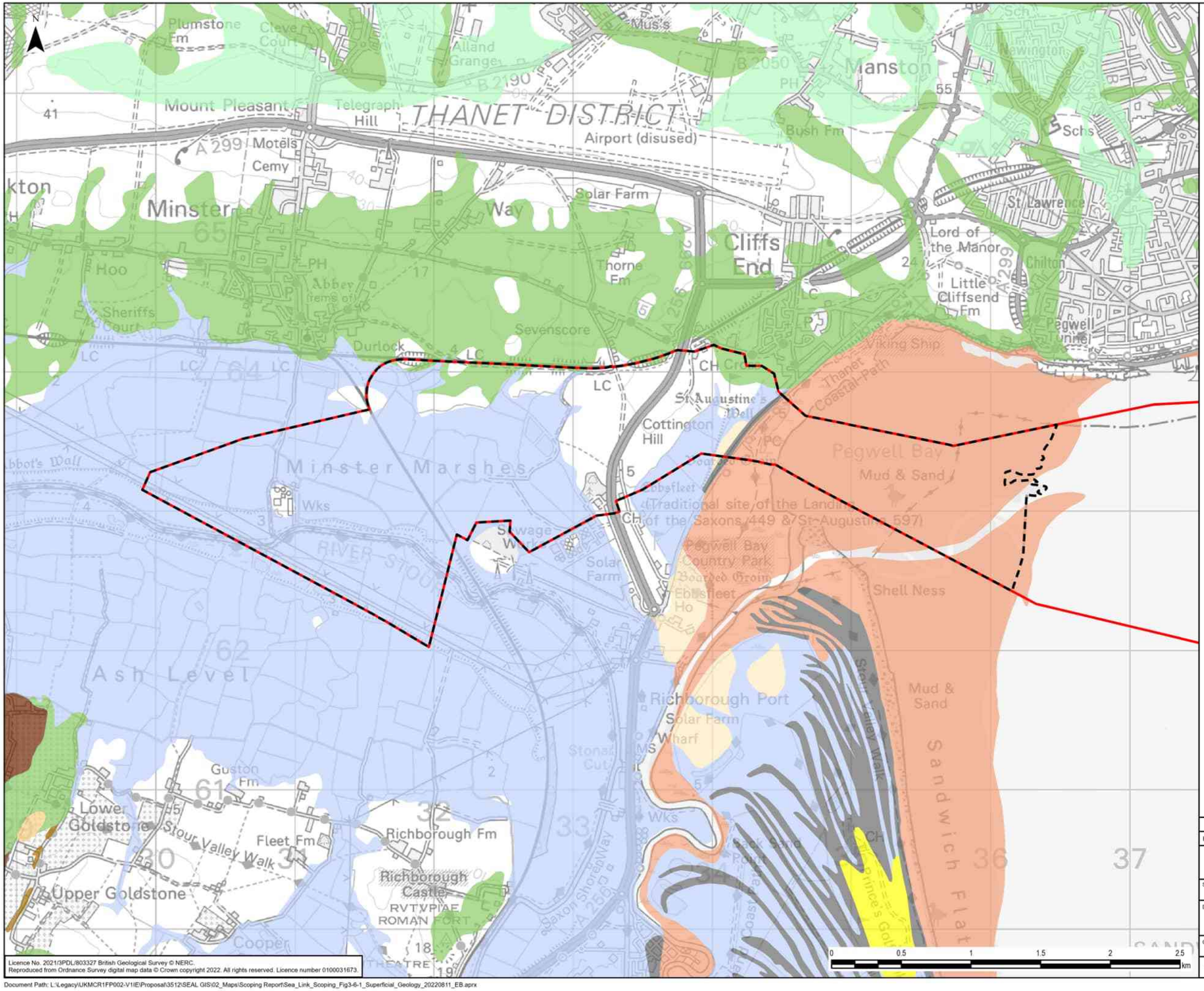
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Document Title: WATER ENVIRONMENT STUDY AREA AND EXISTING FEATURES

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	26/07/2022	DF	26/07/2022	CC	26/07/2022

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FIGURE 3.5.1	1:24,957	A3	1	0

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Legend

- Project Scoping Boundary
- Kent Onshore Scheme Scoping Boundary

Superficial Geology

- Alluvium - Clay, Silt, Sand and Gravel
- Beach and Tidal Flat Deposits (Undifferentiated) - Sand and Gravek
- Beach and Tidal Flat Deposits (Undifferentiated) - Sand, Silt and Clay
- Blown Sand - Sand
- Head - Clay, Silt, Sand and Gravel
- Head - Gravel, Sand, Silt And Clay
- Head, 1 - Clay and Silt
- Head, 2 - Clay and Silt
- Storm Beach Deposits - Sand and Gravel
- Tidal Flat Deposits - Clay and Silt

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0	11/08/2022	SCOPING REPORT	EB	DF	NC

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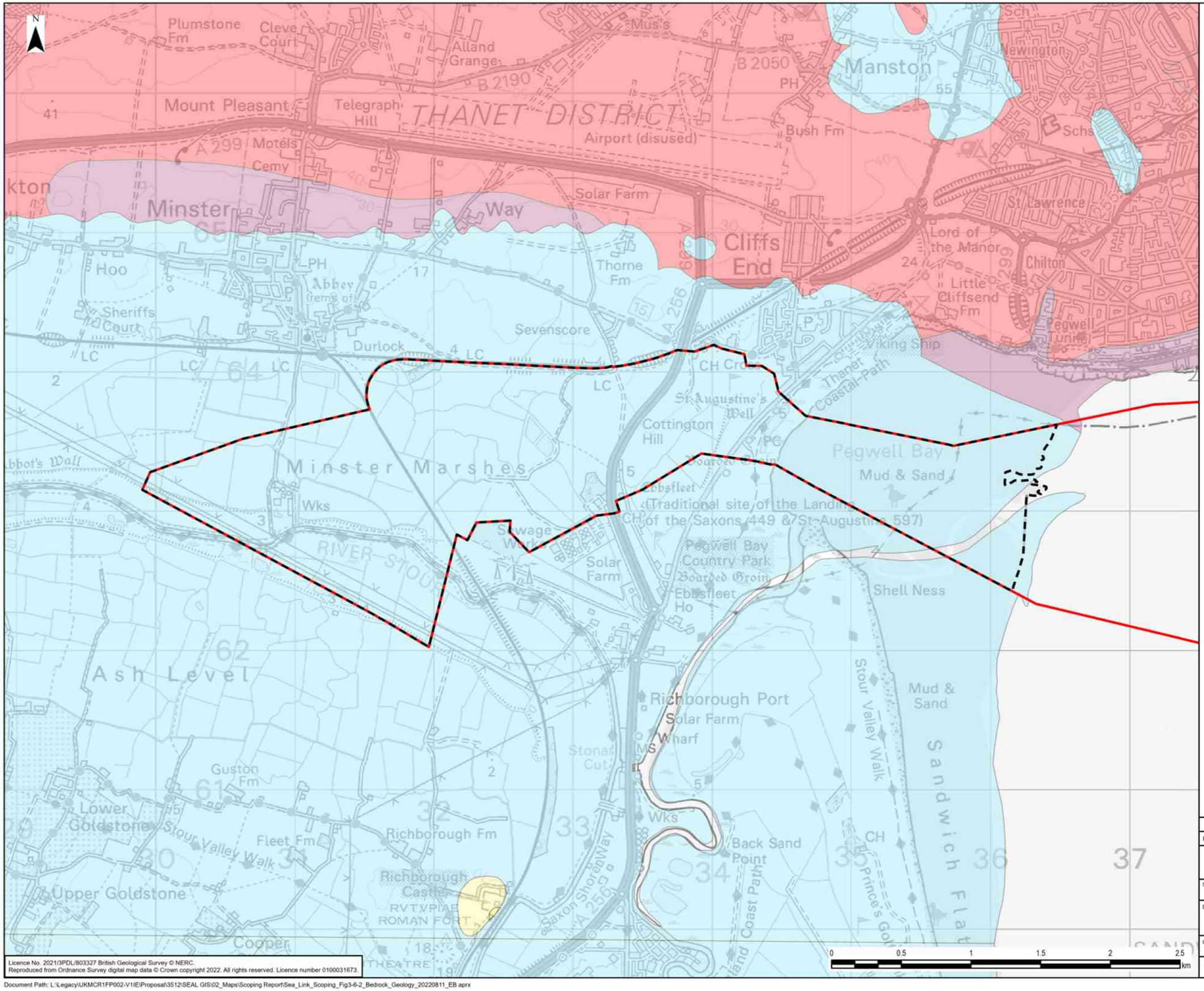
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Document Title: SUPERFICIAL GEOLOGY

Creator:	Date:	Checker:	Date:	Approver:	Date:
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Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 3.6.1	1:25,000	A3	1	0

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Legend

- Project Scoping Boundary
- Kent Onshore Scheme Scoping Boundary

Bedrock Geology

- Harwich Formation - Sand and Gravel
- Lambeth Group - Sand
- Margate Chalf Member - Chalk
- Seaford Chalk Formation - Chalk
- Thanet Formation - Sand, Silt and Clay

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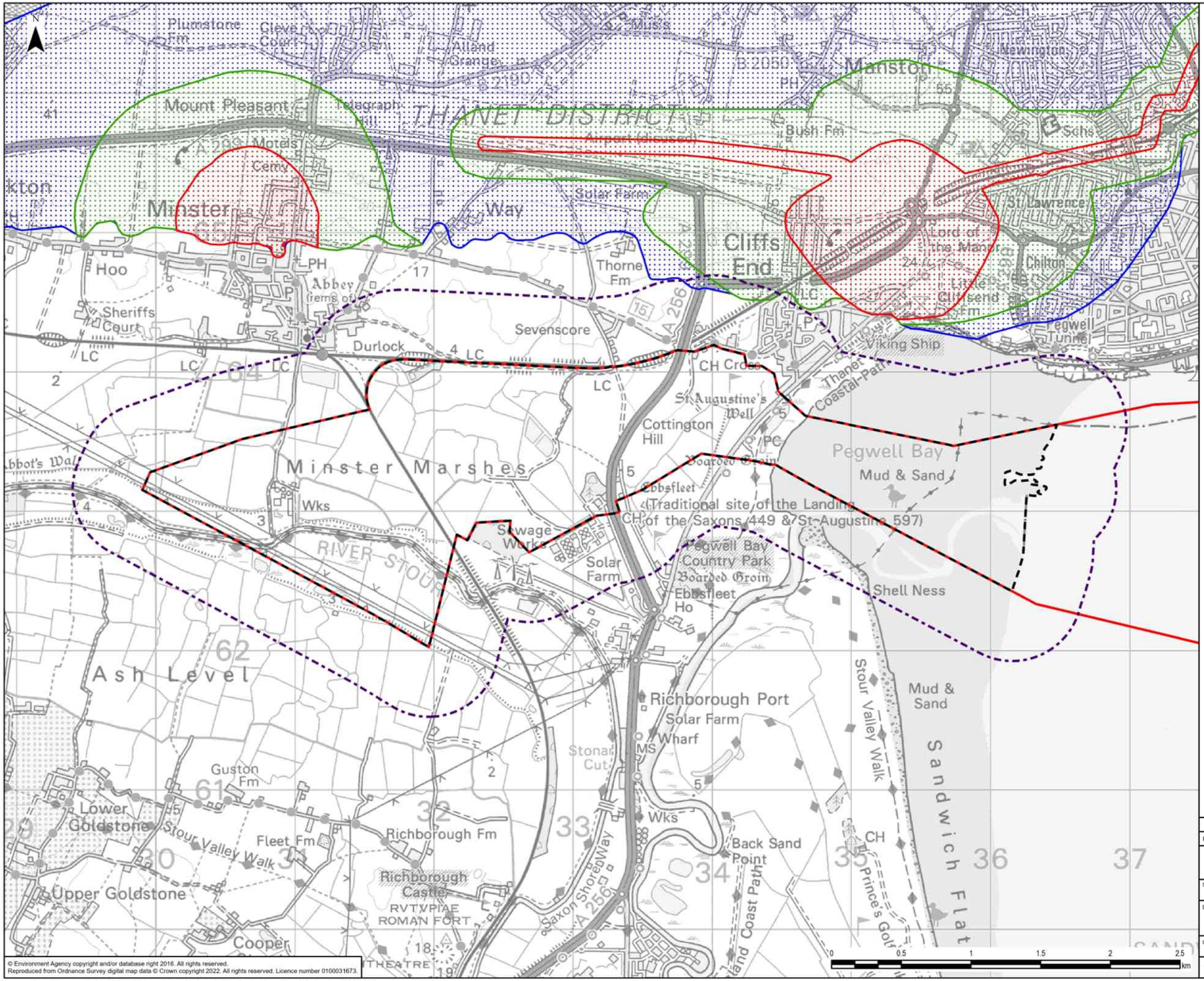
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Document Title: BEDROCK GEOLOGY

Creator:	Date:	Checker:	Date:	Approver:	Date:
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Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 3.6.2	1:25,000	A3	1	0

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Legend

- Project Scoping Boundary
- Kent Onshore Scheme Scoping Boundary
- Kent Onshore Scheme Scoping Boundary - 500m Buffer

Source Protection Zone

- Zone I - Inner Protection Zone
- Zone II - Outer Protection Zone
- Zone III - Total Catchment

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Scheme: SEA LINK

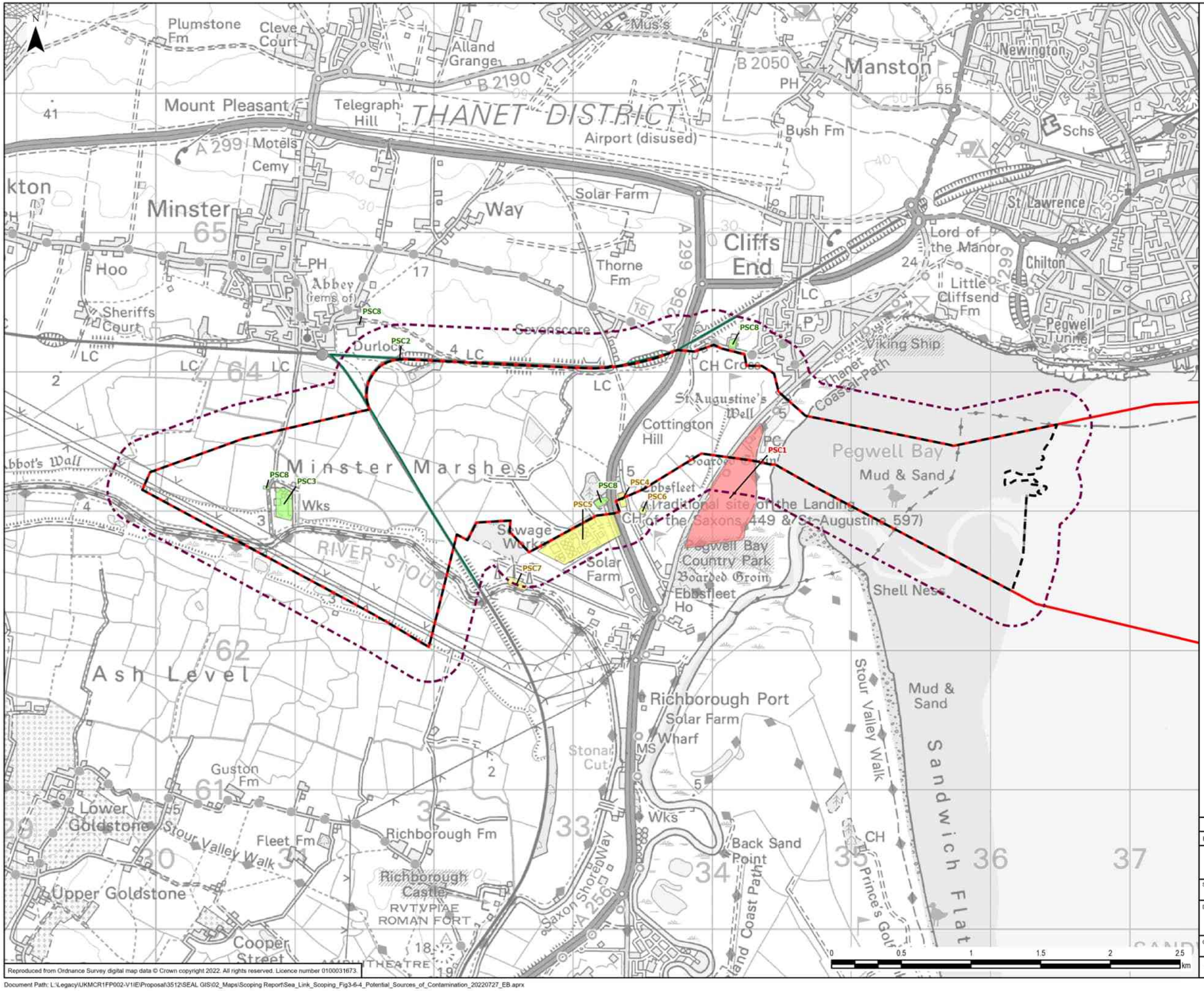
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FIGURE 3.6.3	1:25,000	A3	1	0

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Legend

- Project Scoping Boundary
- Kent Onshore Scheme Scoping Boundary
- Kent Onshore Scheme Scoping Boundary - 250m Buffer

Potential Sources of Contamination (line)

- Very Low / Low Risk

Potential Sources of Contamination (area)

- Very Low / Low Risk
- Moderate Risk
- High Risk

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Scheme: SEA LINK

Document Title: POTENTIAL SOURCES OF CONTAMINATION

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	27/07/2022	DF	27/07/2022	NC	27/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 3.6.4	1:25,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig3-6-4_Potential_Sources_of_Contamination_20220727_EB.aprx

Legend

- Project Scoping Boundary
- Kent Onshore Scheme Scoping Boundary

Soilscapes

- 4 - Sand Dune Soils
- 5 - Freely draining lime-rich loamy soils
- 6 - Freely draining slightly acid loamy soils
- 21 - Loamy and clayey soils of coastal flats with naturally high groundwate
- 28 - Sea

Soilscapes dataset developed by Cranfield University and sponsored by DEFRA - digitised from MagicMap.
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0 0.5 1 1.5 2 2.5 km

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0	16/08/2022	SCOPING REPORT	EB	DF	BL

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Scheme: SEA LINK

Document Title: SOILSCAPE MAPPING

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	16/08/2022	DF	16/08/2022	BL	16/08/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 3.7.1	1:25,000	A3	1	0

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Legend

- Project Scoping Boundary
- Kent Onshore Scheme Scoping Boundary

Agricultural Land Classification

- Grade 1
- Grade 2
- Grade 3
- Grade 4
- Grade 5
- Non Agricultural
- Urban

Rev	Date	Description	GIS	Chk	App
0	26/07/2022	SCOPING REPORT	EB	DF	BL

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Scheme: SEA LINK

Document Title: PROVISIONAL AGRICULTURAL LAND CLASSIFICATION MAPPING

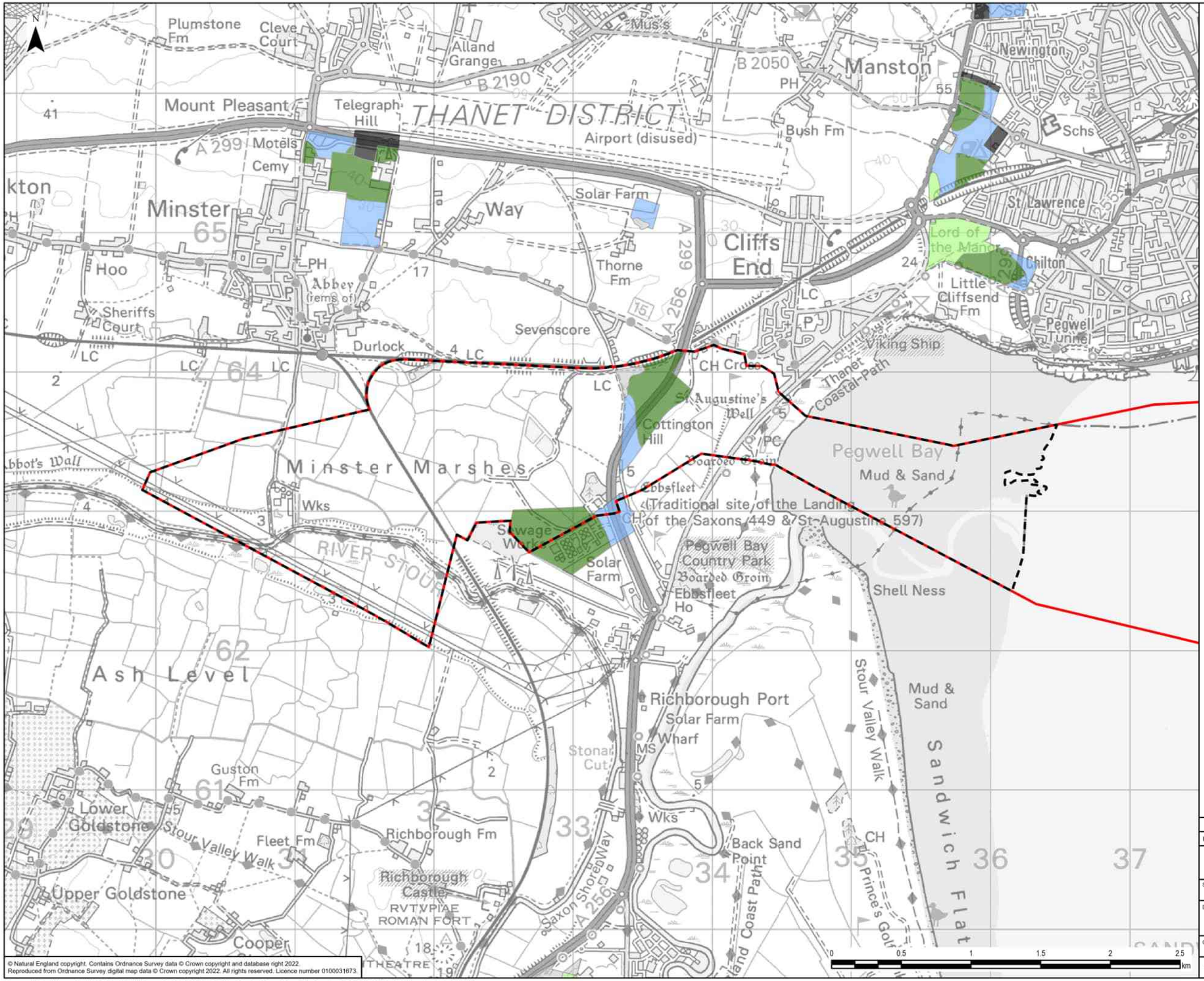
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EB	26/07/2022	DF	26/07/2022	BL	26/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 3.7.2	1:25,000	A3	1	0

0 0.5 1 1.5 2 2.5 km

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Legend

- Project Scoping Boundary
- Kent Onshore Scheme Scoping Boundary

Post 1988 Agricultural Land Classification

- Grade 2
- Grade 3a
- Grade 3b
- Not Surveyed
- Other

Rev	Date	Description			
0	26/07/2022	SCOPING REPORT	EB	DF	BL

nationalgrid

Scheme: SEA LINK

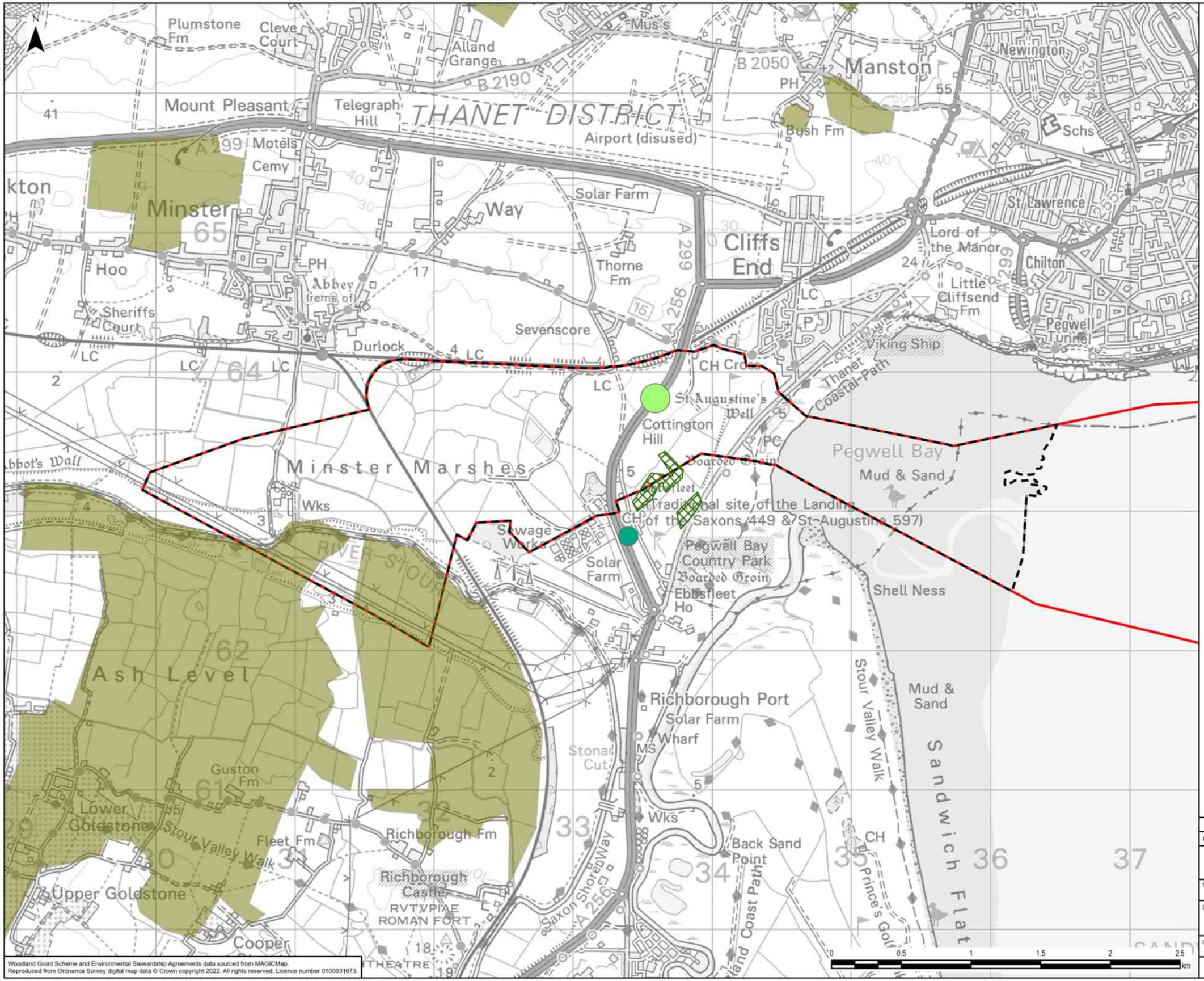
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Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	26/07/2022	DF	26/07/2022	BL	26/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 3.7.3	1:25,000	A3	1	0

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Woodland Grant Scheme and Environmental Stewardship Agreements data sourced from MAGICMap.
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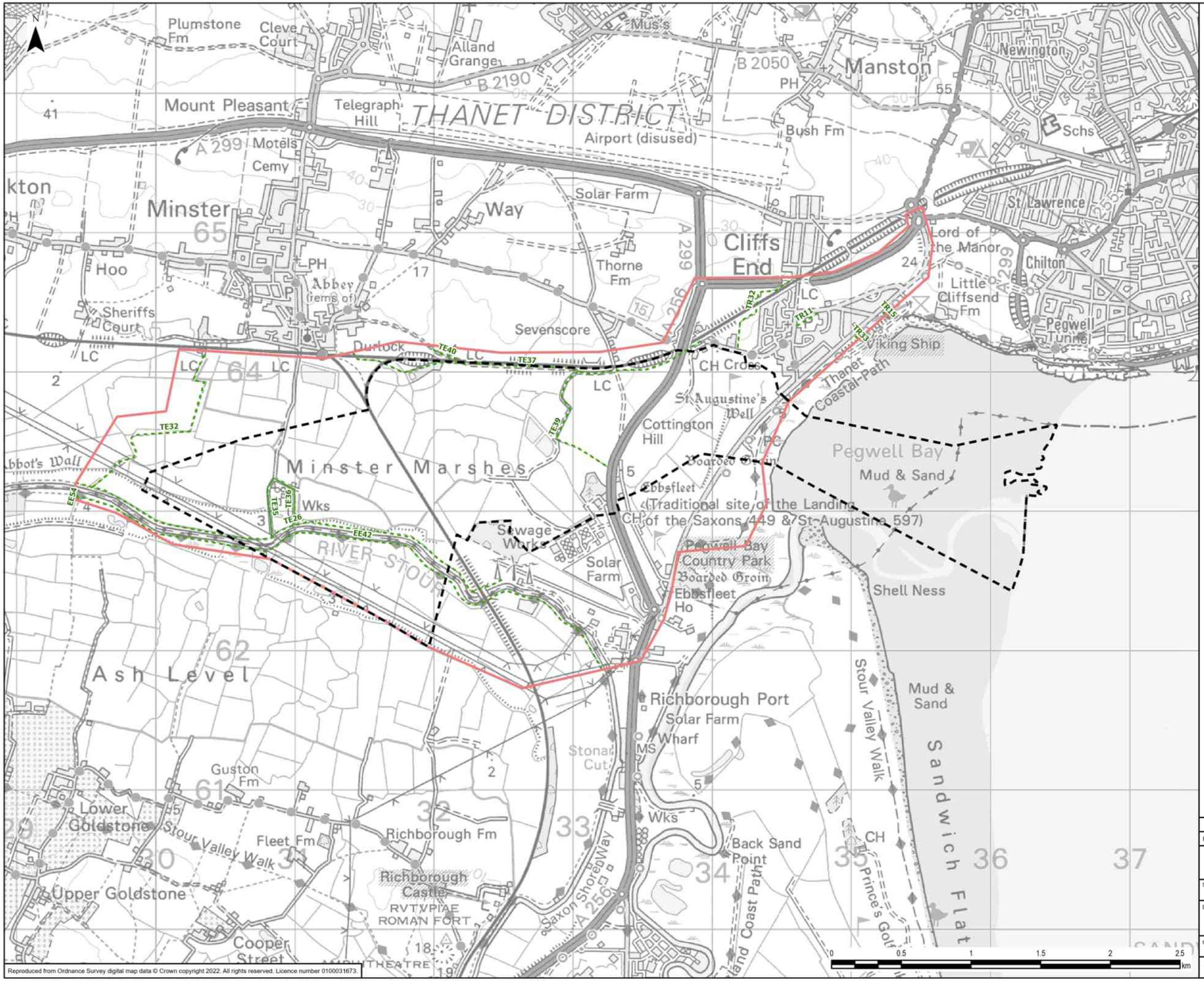
Scheme: SEA LINK

Document Title: ENVIRONMENTAL STEWARDSHIP AGREEMENTS AND WOODLAND GRANT SCHEMES

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	09/08/2022	DF	09/08/2022	BL	09/08/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 3.7.4	1:25,000	A3	1	0

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Legend

- Kent Onshore Scheme Scoping Boundary
- Kent Traffic & Transport Study Area Boundary

Public Rights of Way

- Public Footpath
- Restricted Byway

0 0.5 1 1.5 2 2.5 km

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Rev	Date	Description	GIS	Chk	App
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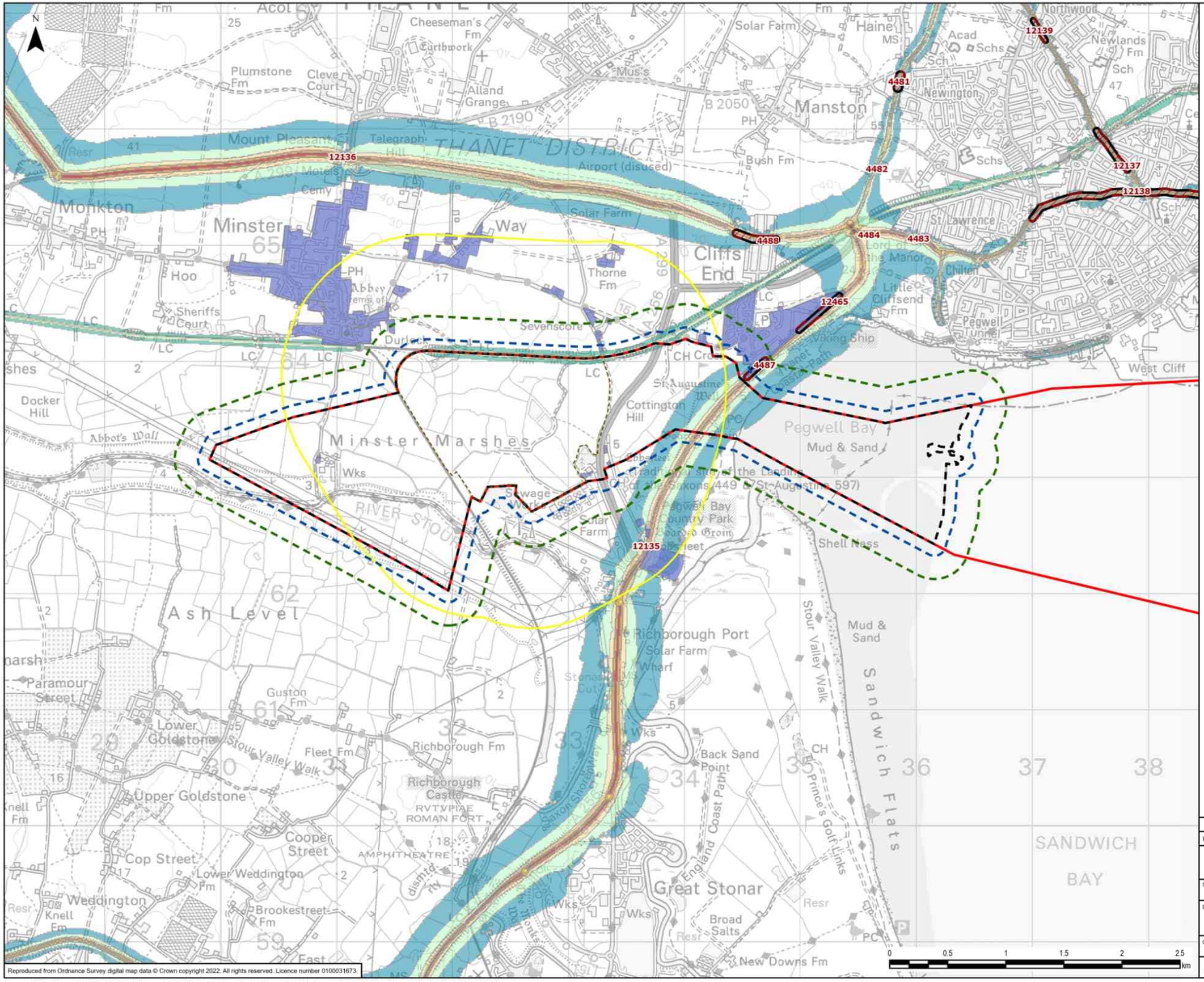
Scheme: SEA LINK

Document Title: PROPOSED STUDY AREA IN KENT (TRAFFIC AND TRANSPORT)

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	28/07/2022	DF	28/07/2022	MA	28/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 3.8.1	1:25,000	A3	1	0

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Legend

- Project Scoping Boundary
- Kent Onshore Scheme Scoping Boundary
- Kent Converter Site Option Area
- 300m Construction Noise Study Area
- 100m Construction Vibration Study Area
- 1km Operational Noise Study Area
- Noise and Vibration Sensitive Receptors
- Noise Important Area

Defra Road Traffic Noise, dBA

- 55.0-59.9
- 60.0-64.9
- 65.0-69.9
- 70.0-74.9
- >=75.0

Defra Rail Noise, dBA

- 55.0-59.9
- 60.0-64.9
- 65.0-69.9

0 0.5 1 1.5 2 2.5 km

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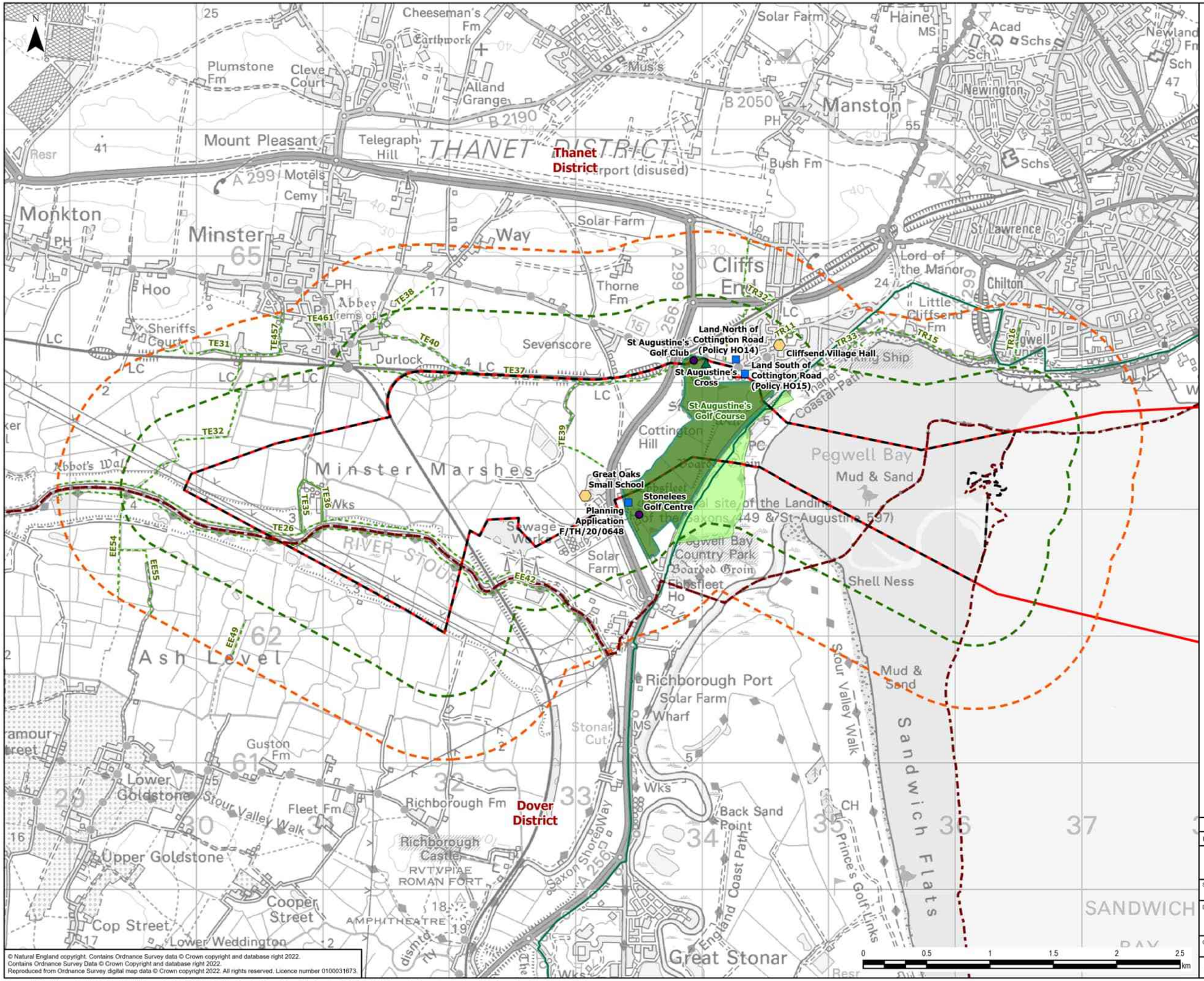
Scheme: SEA LINK

Document Title: NOISE AND VIBRATION BASELINE - KENT

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	22/07/2022	DF	22/07/2022	DG	22/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 3.10.1	1:30,000	A3	1	0

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Legend

- Project Scoping Boundary
- Kent Onshore Scheme Scoping Boundary
- Kent Onshore Scheme Scoping Boundary - 500m Buffer
- Kent Onshore Scheme Scoping Boundary - 1km Buffer
- District Borough Unitary Boundary
- Visitor Attractions
- Development Land
- Community Facilities
- Business Premises

Public Rights of Way

- Public Footpath
- Restricted Byway
- National Cycle Network Route 15
- Pegwell Bay Country Park
- Golf Course

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0 0.5 1 1.5 2 2.5 km

Rev	Date	Description			
0	11/07/2022	SCOPING REPORT	EB	DF	JR

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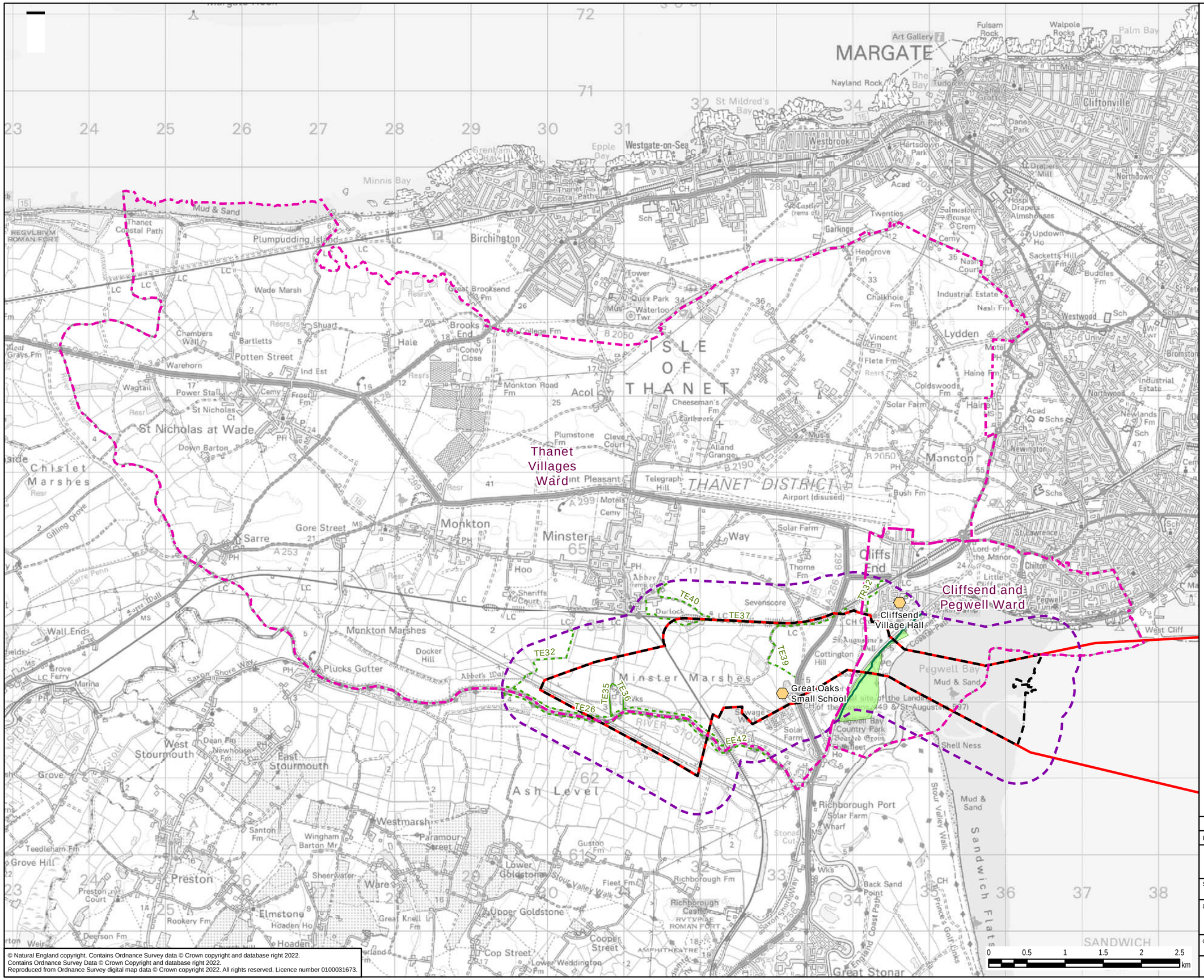
Scheme: SEA LINK

Document Title: SOCIO-ECONOMIC, RECREATION AND TOURISM - STUDY AREAS AND RECEPTORS

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	11/07/2022	DF	11/07/2022	EW	11/07/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 3.11.1	1:27,500	A3	1	0

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Legend

- Project Scoping Boundary
- Kent Onshore Scheme Scoping Boundary
- Kent Onshore Scheme Scoping Boundary - 500m Buffer
- Human Health Profile Baseline Study Area
- Community Facilities within 500m

Public Rights of Way within 500m

- Public Footpath
- Restricted Byway
- National Cycle Network Route within 500m
- Pegwell Bay Country Park

0 0.5 1 1.5 2 2.5 km

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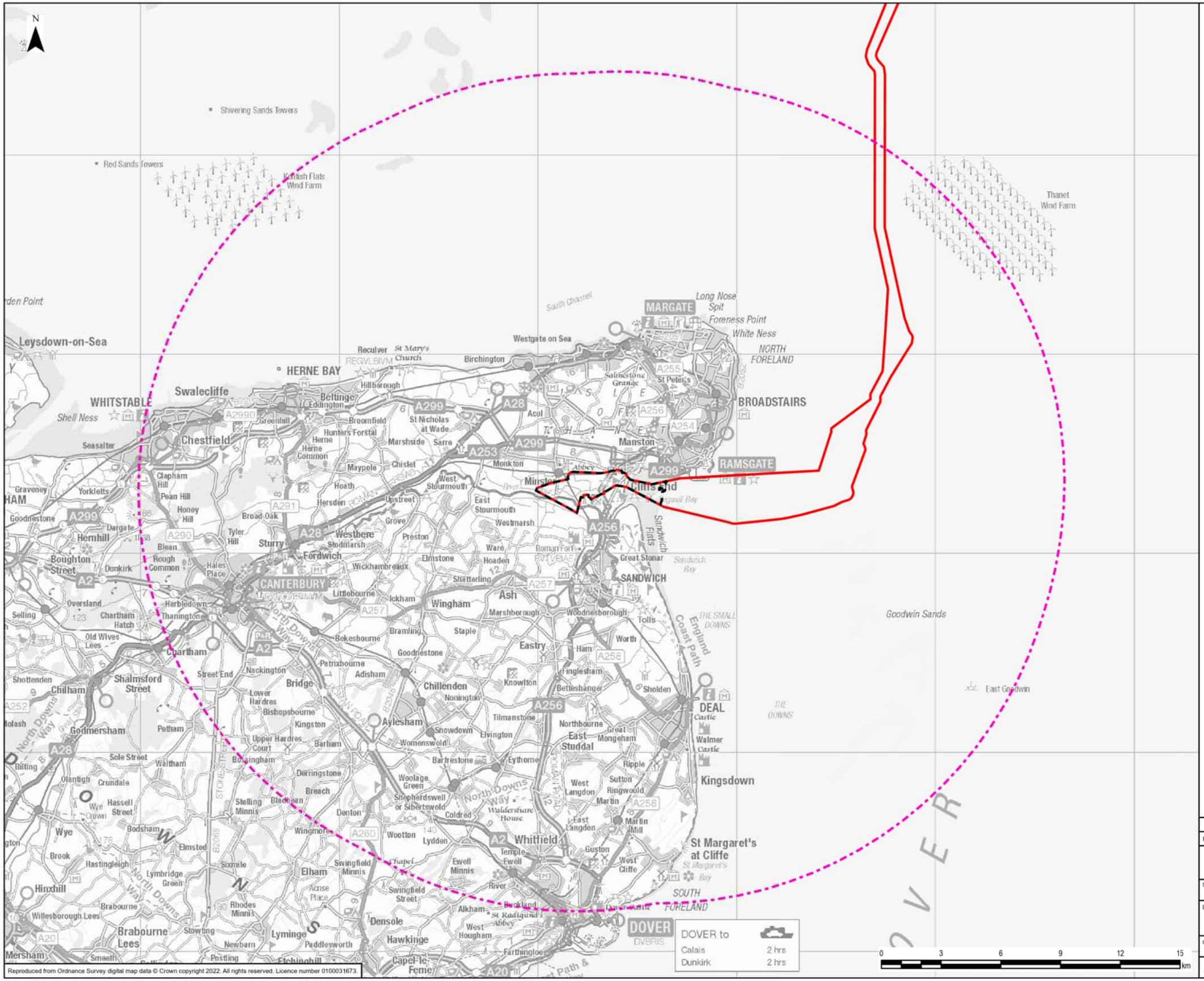
Scheme: SEA LINK

Document Title: KENT ONSHORE SCHEME HEALTH AND WELLBEING STUDY AREAS AND RECEPTORS

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	20/10/2022	DF	20/10/2022	EW	20/10/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 3.12.1	1:45,550	A3	1	0

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Legend

- Project Scoping Boundary
- Kent Onshore Scheme Scoping Boundary
- Kent Onshore Scheme Scoping Boundary - Cumulative Zone of Influence

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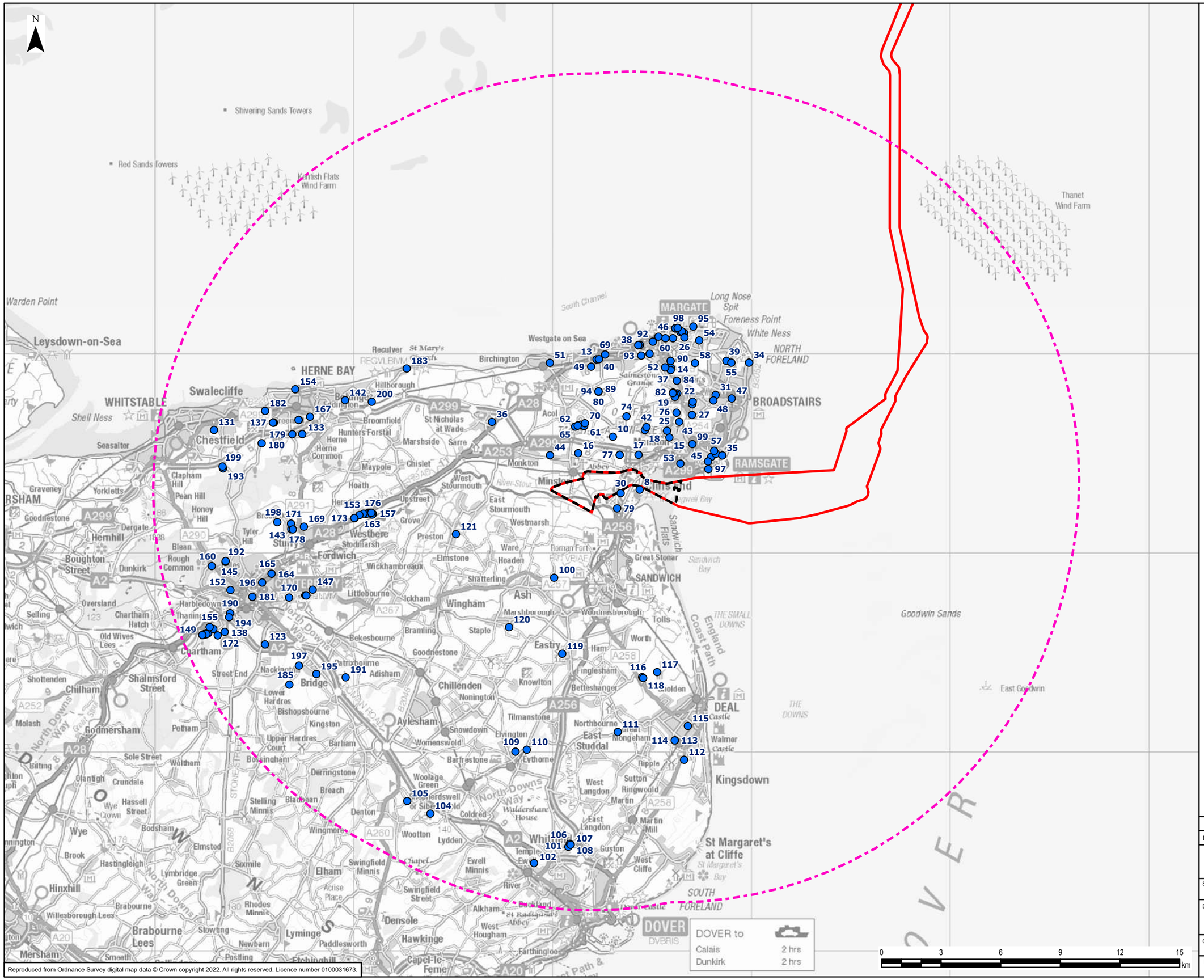
Scheme: SEA LINK

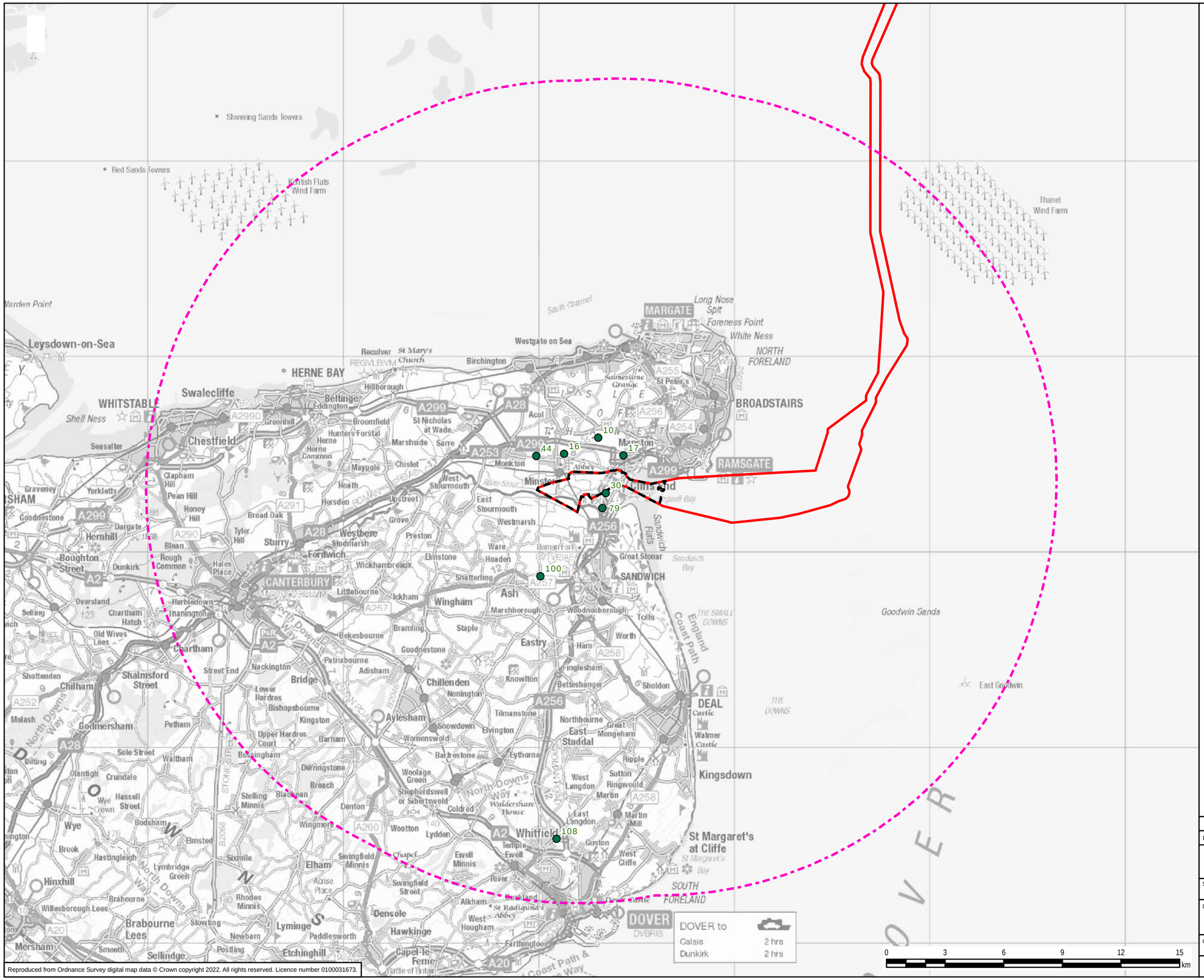
Document Title: ZONE OF INFLUENCE FOR KENT ONSHORE SCHEME

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	01/08/2022	DF	01/08/2022	SA	01/08/2022

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FIGURE 3.13.1	1:175,000	A3	1	0

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N
Shivering Sands Towers
Red Sands Towers
Kentish Flats Wind Farm
Thanet Wind Farm
Warden Point
Leysdown-on-Sea
HERNE BAY
WHITSTABLE
Swalecliffe
Chestfield
Seasalter
Shell Ness
Reculver
St Mary's
Birchington
Westgate on Sea
MARGATE
Long Nose Spit
Foreness Point
White Ness
NORTH FORELAND
BROADSTAIRS
RAMSGATE
Minster
Ramsgate
Broomfield
Hillborough
Hunters Forstal
Herne
Herne Common
Marshside
Sarre
St Nicholas at Wade
Acol
Monkton
Abbey
Chislet
Maypole
Clapham Hill
Pean Hill
Honey Hill
Yorkletts
Graveney
Goodnestone
Hernhill
Dargate
Boughton Street
Dunkirk
Rough Common
Blean
Tyler Hill
Stuppington
Fordwich
Westbere
Stodmarsh
Upstreet
East Stourmouth
West Stourmouth
Preston
Elmstone
Wickhambreaux
Littlebourne
Ickham
Wingham
Ash
Staple
Bramling
Bekesbourne
Goodnestone
Nonington
Adisham
Chillenden
Knowlton
Eastry
Ham
Finglesham
Worth
Woodnesborough
Sandwich
Great Stonar
Roman Fort
Hoaden
Ware
Shatterling
Westmarsh
Sandwich Flats
Sandwich Bay
Goodwin Sands
East Goodwin
THE SMALL DOWNS
THE DOWNS
Coast Path
England
Tolls
Oversland
Selling
Chartham Hatch
Old Wives Lees
Harbledown
Thanington
Chartham
Shottenden
Chilham
Shalmsford Street
Molash
Godmersham
Petham
Street End
Nackington
Bridge
Lower Hardres
Bishopsbourne
Kingston
Upper Hardres Court
Barham
Bossingham
Sole Street
Waltham
Crundale
Olantigh
Hassell Street
Wye
Bodsham
Elmsted
Sixmile
Lymbridge Green
Hinxhill
Brook
Hastingleigh
Willesborough Lees
Brabourne
Brabourne Lees
Stowting
Newbarn
Lyminge
Paddlesworth
Smeeth
Mersham
Postling
Etchinghill
Densole
Hawkinge
Capel-le-Ferne
Folkestone
Elham
Acrise Place
Swingfield Minnis
Swingfield Street
Alkham
West Hougham
Farthingloe
Denton
Wootton
Lydden
Coldred
Barfrestone
Eythorne
Tilmanstone
Northbourne
East Studdal
Womenswold
Elvington
Snowdown
Aylesham
Woolage Green
Woolage Village
Waldershare
Waldershare House
Temple Ewell
Whitfield
Guston
East Langdon
West Langdon
Martin
Martin Mill
Sutton
Ringwould
Ripple
Kingsdown
DEAL
Castle
Walmer Castle
Mongeham
Great Mongeham
Betteshanger
Golden
Northbourne
Tilmanstone
St Margaret's at Cliffe
St Margaret's Bay
West Cliffe
SOUTH FORELAND
DOVER
DVBRS
Dover Castle
River
Buckland
St Radigunds Abbey
Alkham
Densole
Hawkinge
Capel-le-Ferne
Folkestone
Farthingloe
Saltwood
Hythe
Sandgate
Shorncliffe
Cheriton
Newington
Stanford
Postling
Etchinghill
Lyminge
Paddlesworth
Smeeth
Mersham
Brabourne Lees
Brabourne
Willesborough Lees
Hinxhill
Brook
Hastingleigh
Lymbridge Green
Elham
Acrise Place
Swingfield Minnis
Swingfield Street
Densole
Hawkinge
Capel-le-Ferne
Folkestone



Legend

- Project Scoping Boundary
- Kent Onshore Scheme Scoping Boundary
- Kent Onshore Scheme Scoping Boundary - Cumulative Zone of Influence
- Cumulative Long List Developments

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Scheme: SEA LINK

Document Title: PROJECTS TAKEN FORWARD TO STAGE 2 FOR KENT ONSHORE SCHEME

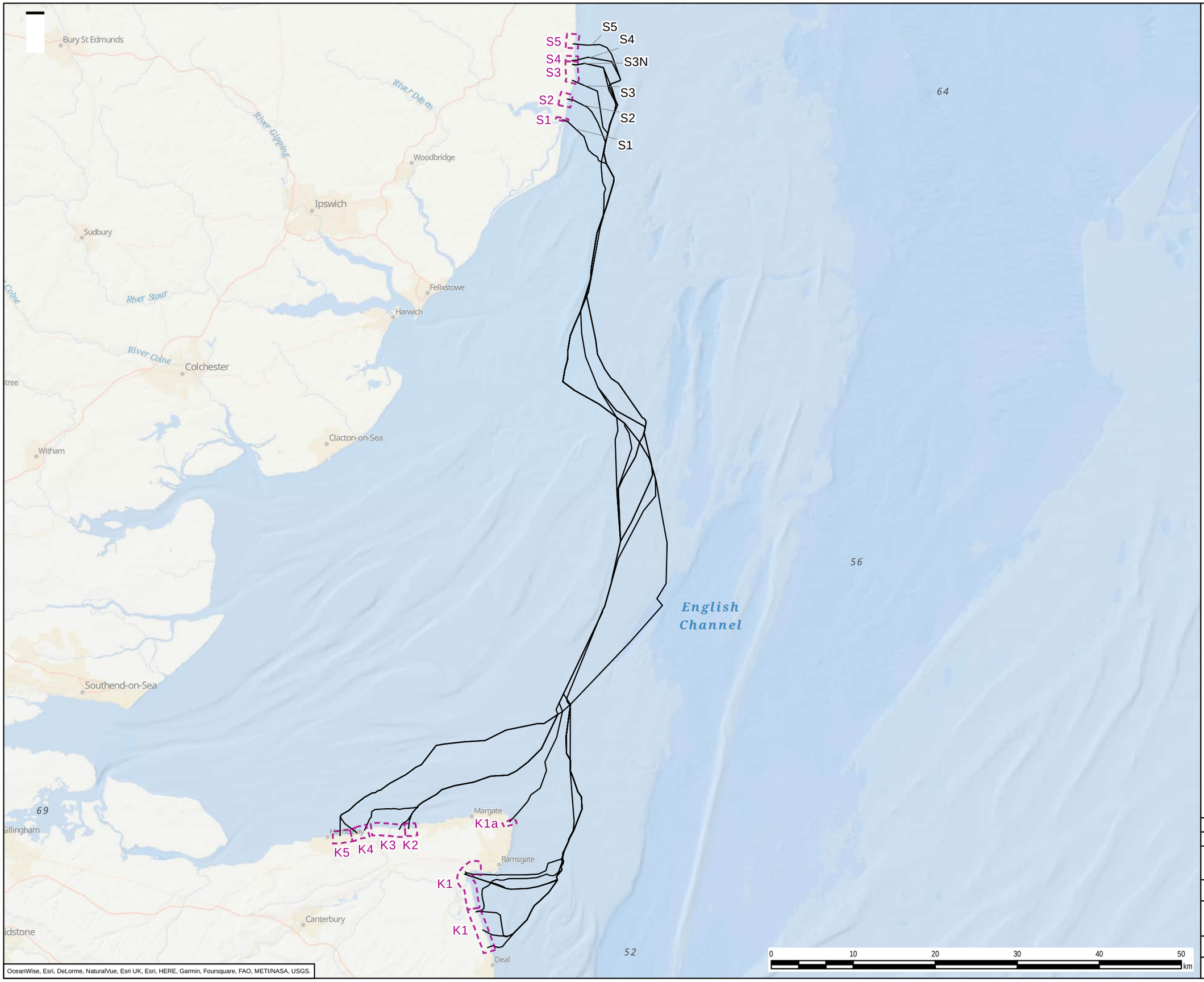
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EB	17/10/2022	DF	17/10/2022	SA	17/10/2022

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FIGURE 3.13.3	1:177,964	A3	1	0

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Part 4- Offshore Scheme



Legend

- Marine Alignment
- Landfall Area of Search

Rev	Date	Description	GIS	Chk	App
0	18/10/2022	SCOPING REPORT	EB	DF	KS

nationalgrid

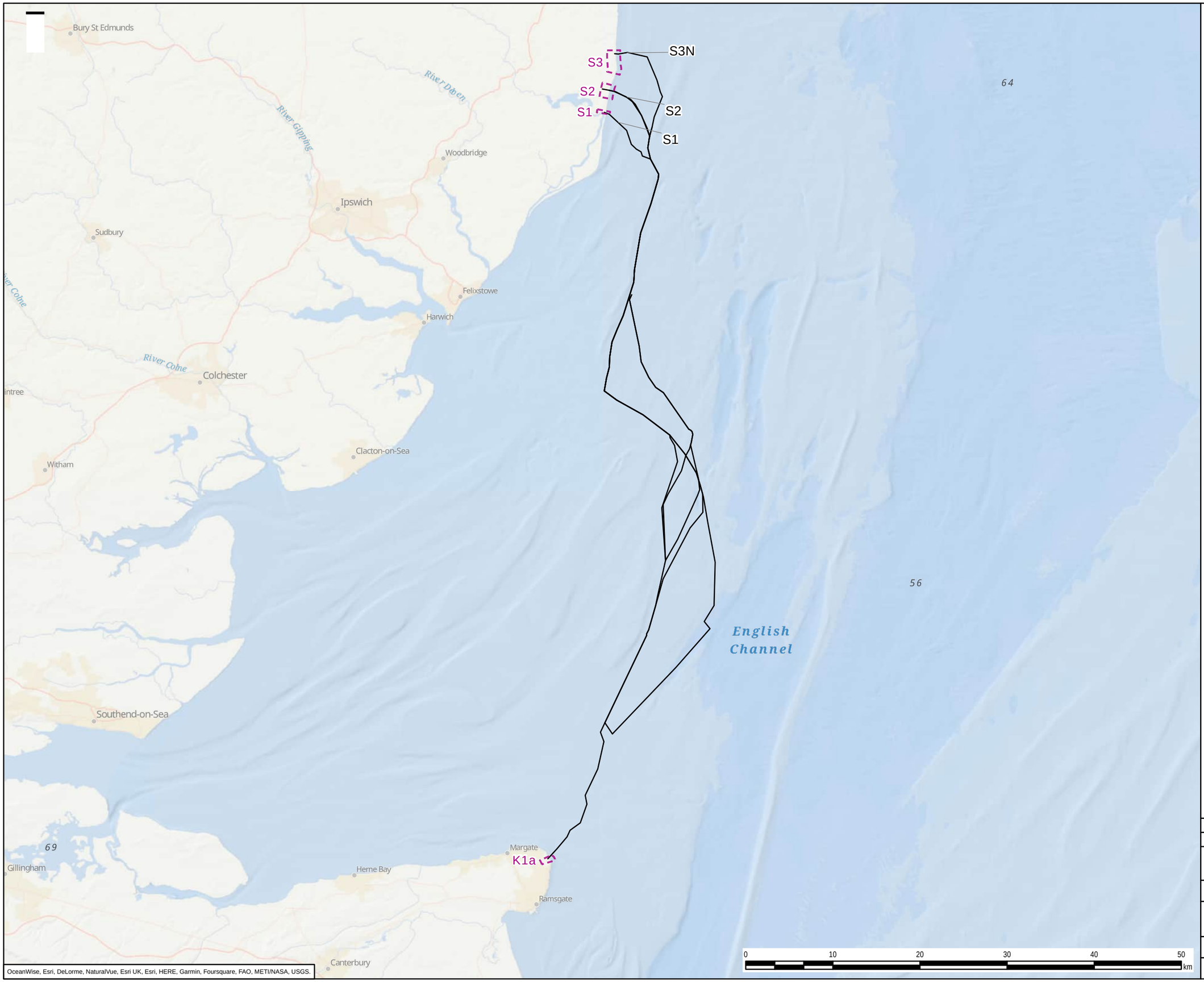
Scheme: SEA LINK

Document Title: EVOLUTION OF THE OFFSHORE SCHEME - SHEET 1 OF 4

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	18/10/2022	DF	18/10/2022	KS	18/10/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.1.1	1:425,000	A3	1	0

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Legend

- Marine Alignment
- Landfall Area of Search

Rev	Date	Description	GIS	Chk	App
0	18/10/2022	SCOPING REPORT	EB	DF	KS

nationalgrid

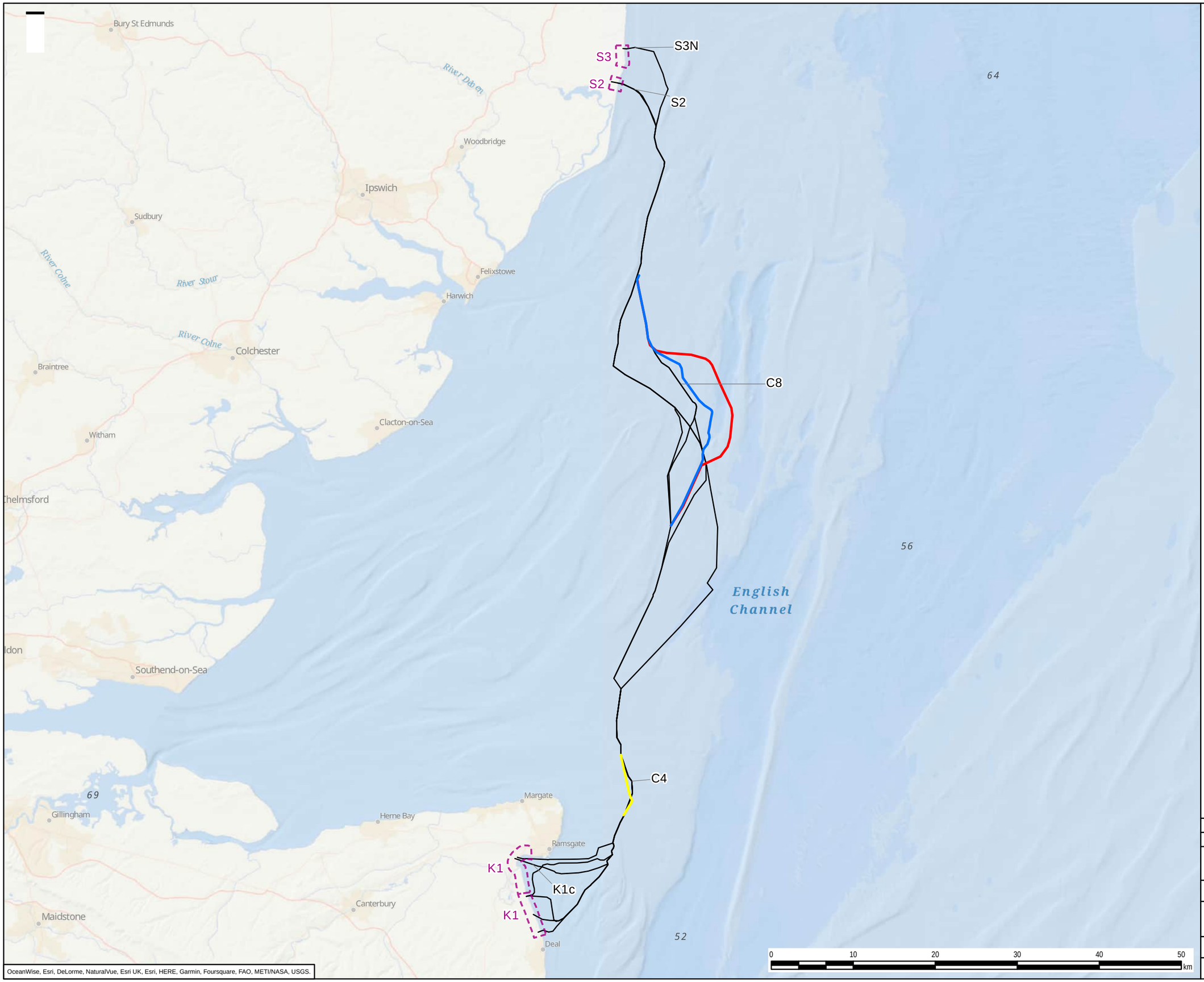
Scheme: SEA LINK

Document Title: EVOLUTION OF THE OFFSHORE SCHEME - SHEET 2 OF 4

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EB	18/10/2022	DF	18/10/2022	KS	18/10/2022

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FIGURE 4.1.1	1:400,000	A3	1	0

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Legend

- Marine Alignment
- Alignment C4A
- Alignment C8A
- Alignment C8B
- Landfall Area of Search

OceanWise, Esri, DeLorme, NaturalVue, Esri UK, Esri, HERE, Garmin, Foursquare, FAO, METI/NASA, USGS.

Rev	Date	Description	GIS	Chk	App
0	18/10/2022	SCOPING REPORT	EB	DF	KS

nationalgrid

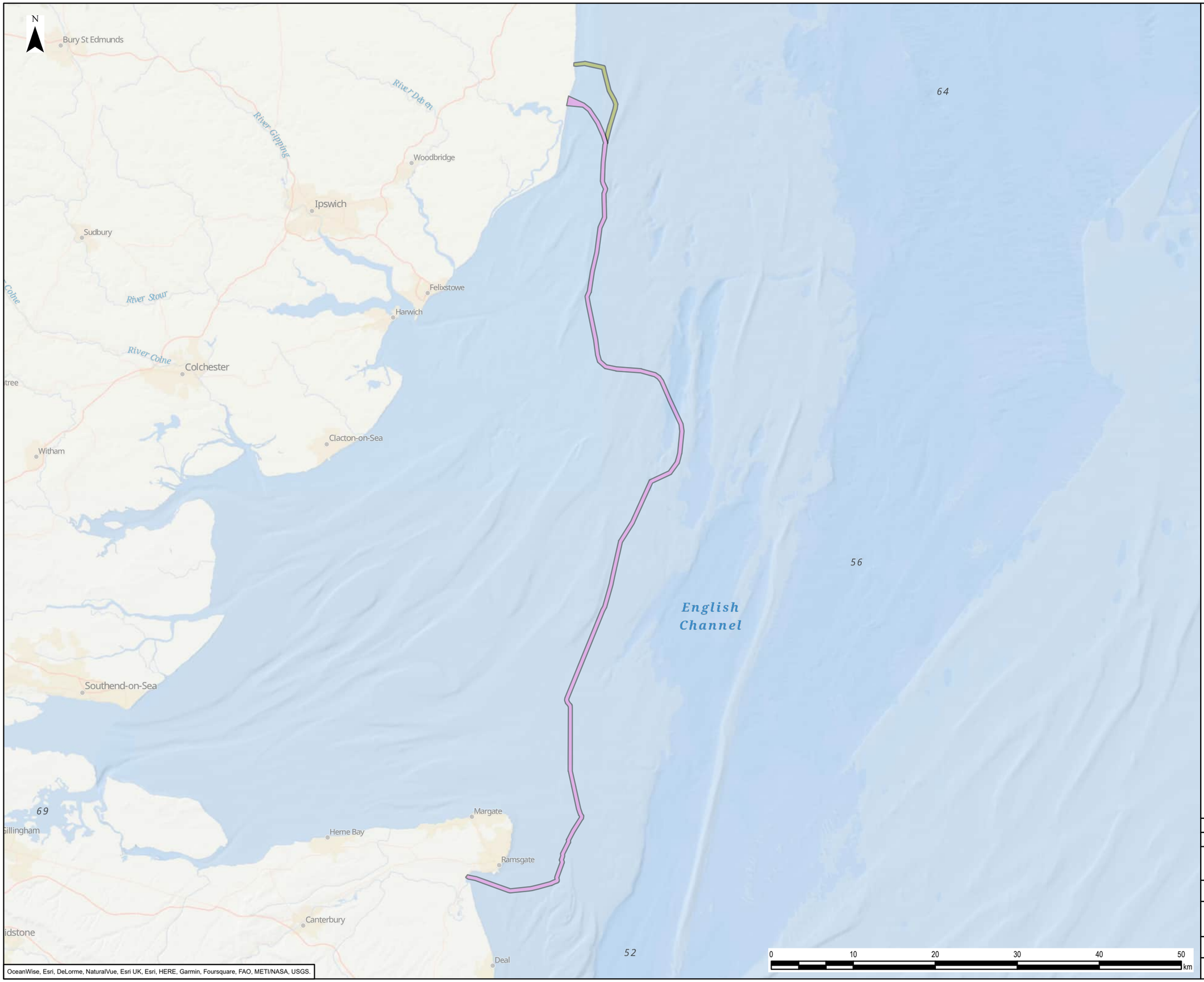
Scheme: SEA LINK

Document Title: EVOLUTION OF THE OFFSHORE SCHEME - SHEET 3 OF 4

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EB	18/10/2022	DF	18/10/2022	KS	18/10/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.1.1	1:425,000	A3	1	0

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Legend

- Marine Route Emerging Preference
- Marine Route Alternative

Rev	Date	Description	GIS	Chk	App
0	07/10/2022	SCOPING REPORT	EB	DF	KS

nationalgrid

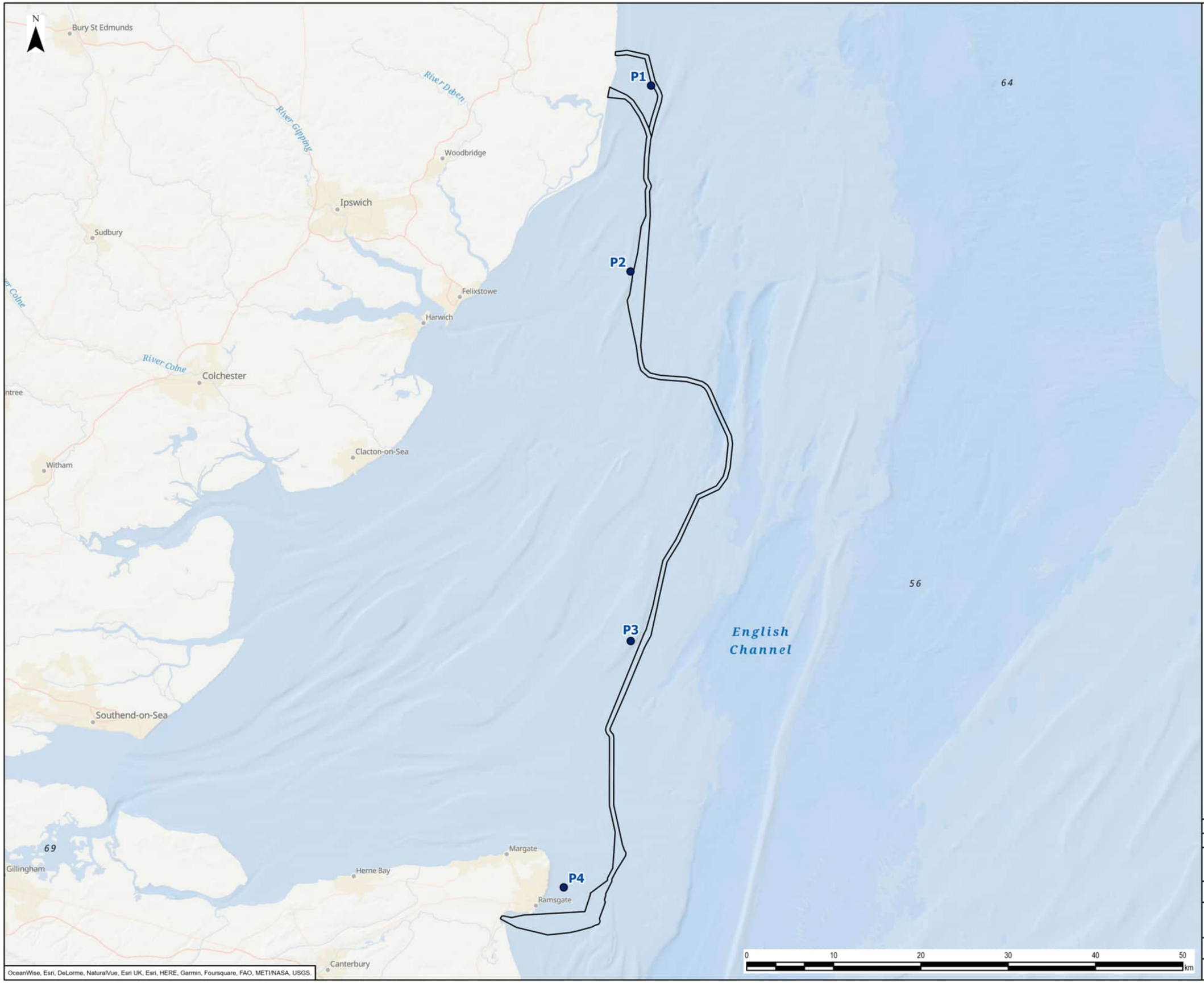
Scheme: SEA LINK

Document Title: EVOLUTION OF THE OFFSHORE SCHEME - SHEET 4 OF 4

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	07/10/2022	DF	07/10/2022	KS	07/10/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.1.1	1:425,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig4-1-1_Evolution_of_Offshore_Scheme_Sheet_4_of_4_20221007_EB.aprx



Legend

- Offshore Scheme Scoping Boundary
- Metocean Data Sites

Rev	Date	Description	GIS	Chk	App
0	09/08/2022	SCOPING REPORT	EB	DF	KS

nationalgrid

Scheme: SEA LINK

Document Title: PHYSICAL ENVIRONMENT STUDY AREA AND METOCEAN DATA SITES

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	09/08/2022	DF	09/08/2022	KS	09/08/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.2.1	1:400,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig4-2-1_Physical_Env_Study_Area_Metocean_Data_Sites_20220809_EB.aprx

Bury St Edmunds
River Deben
River Gipping
Woodbridge
Ipswich
Sudbury
Felixstowe
Harwich
River Colne
Colchester
Clacton-on-Sea
Witham
Southend-on-Sea
Gillingham
Herne Bay
Margate
Ramsgate
Canterbury
64
56
69
English Channel

0 10 20 30 40 50 km

Bathymetry data derived from EMODnet
OceanWise, Esri, DeLorme, NaturalVue, Esri UK, Esri, HERE, Garmin, Foursquare, FAO, METI/NASA, USGS.

Legend

Offshore Scheme Scoping Boundary

Elevation (m)

29.4

-103.85

Rev	Date	Description	GIS	Chk	App
0	07/09/2022	SCOPING REPORT	EB	DF	KS

nationalgrid

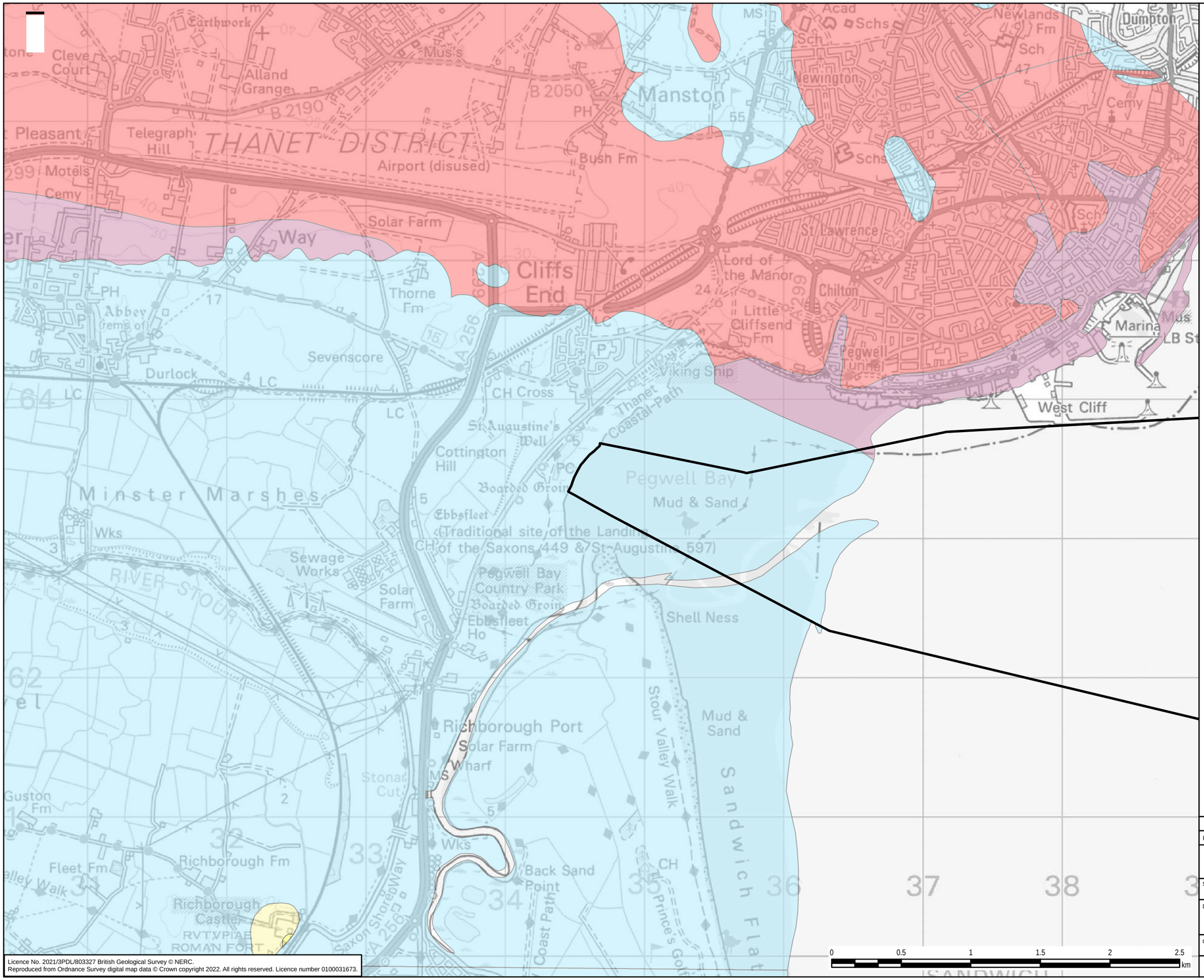
Scheme: SEA LINK

Document Title: BATHYMETRY OF THE STUDY AREA

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	07/09/2022	DF	07/09/2022	KS	07/09/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.2.4	1:400,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig4-2-4_Bathymetry_of_the_Study_Area_20220907_EB.aprx



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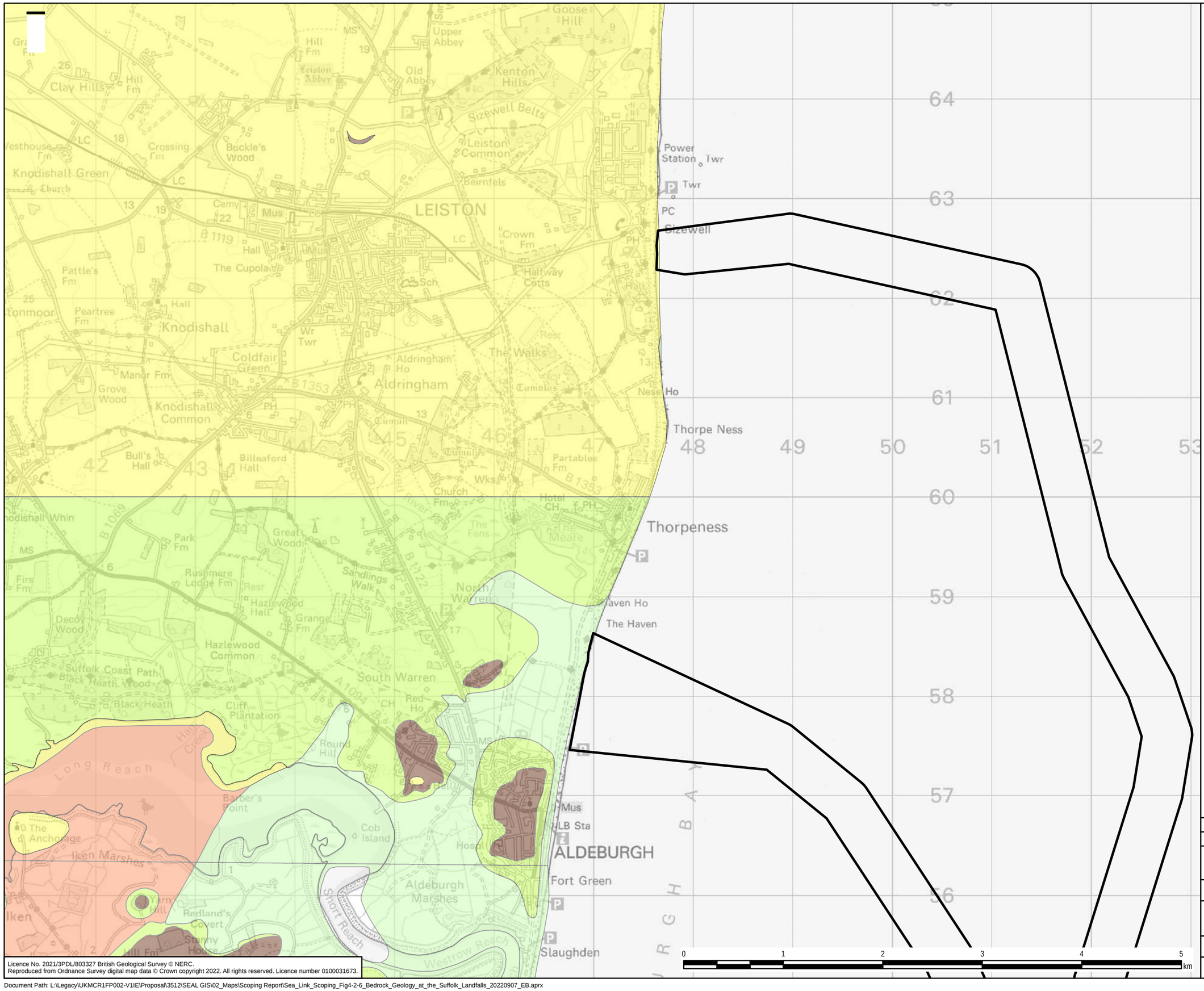
Scheme: SEA LINK

Document Title: BEDROCK GEOLOGY AT THE KENT LANDFALL

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	07/09/2022	DF	07/09/2022	KS	07/09/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.2.5	1:25,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig4-2-5_Bedrock_Geology_at_the_Kent_Landfall_20220907_EB.aprx



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Rev	Date	Description	GIS	Chk	App
0	07/09/2022	SCOPING REPORT	EB	DF	KS

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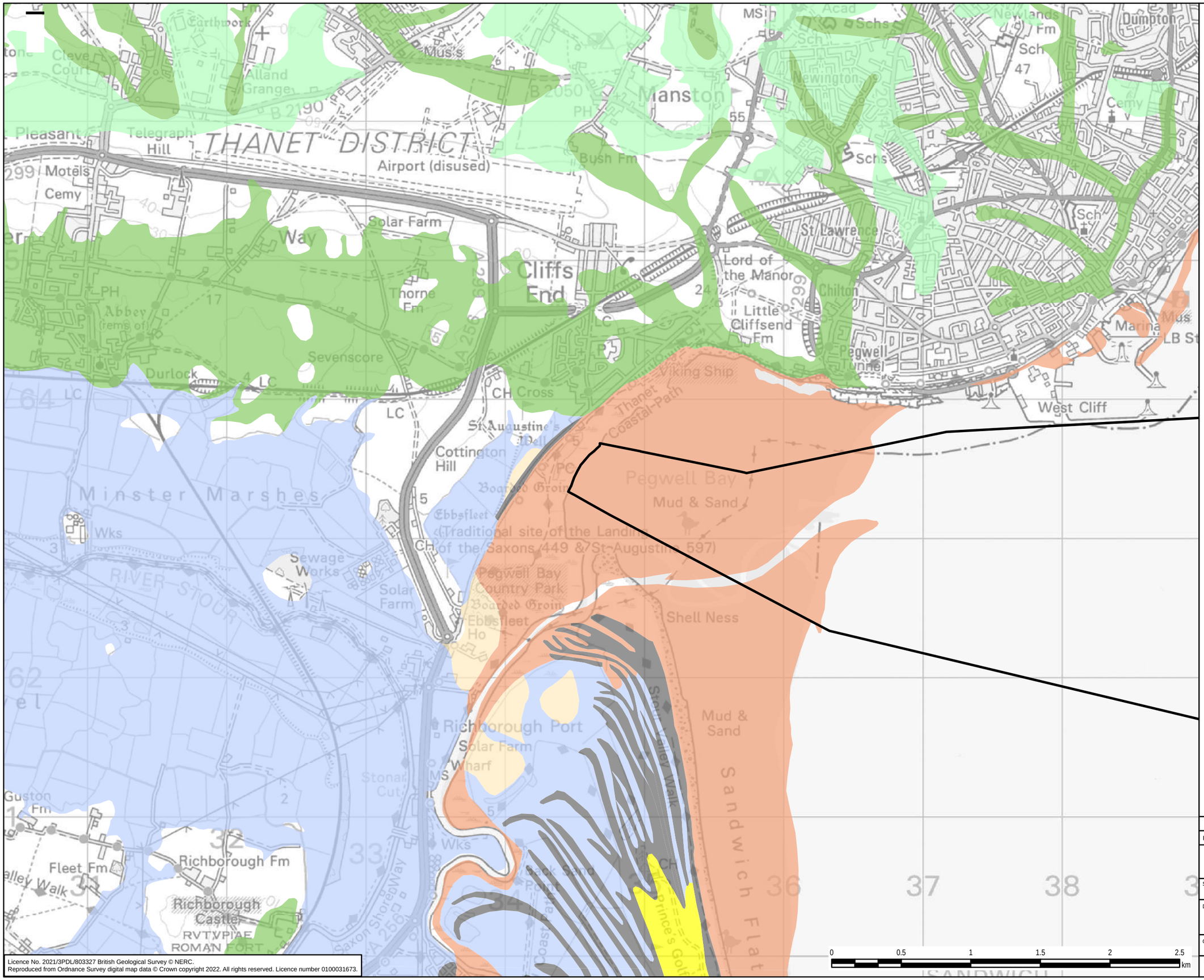
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Document Title: BEDROCK GEOLOGY AT THE SUFFOLK LANDFALLS

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	07/09/2022	DF	07/09/2022	KS	07/09/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.2.6	1:35,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig4-2-6_Bedrock_Geology_at_the_Suffolk_Landfalls_20220907_EB.aprx



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Rev	Date	Description	GIS	Chk	App
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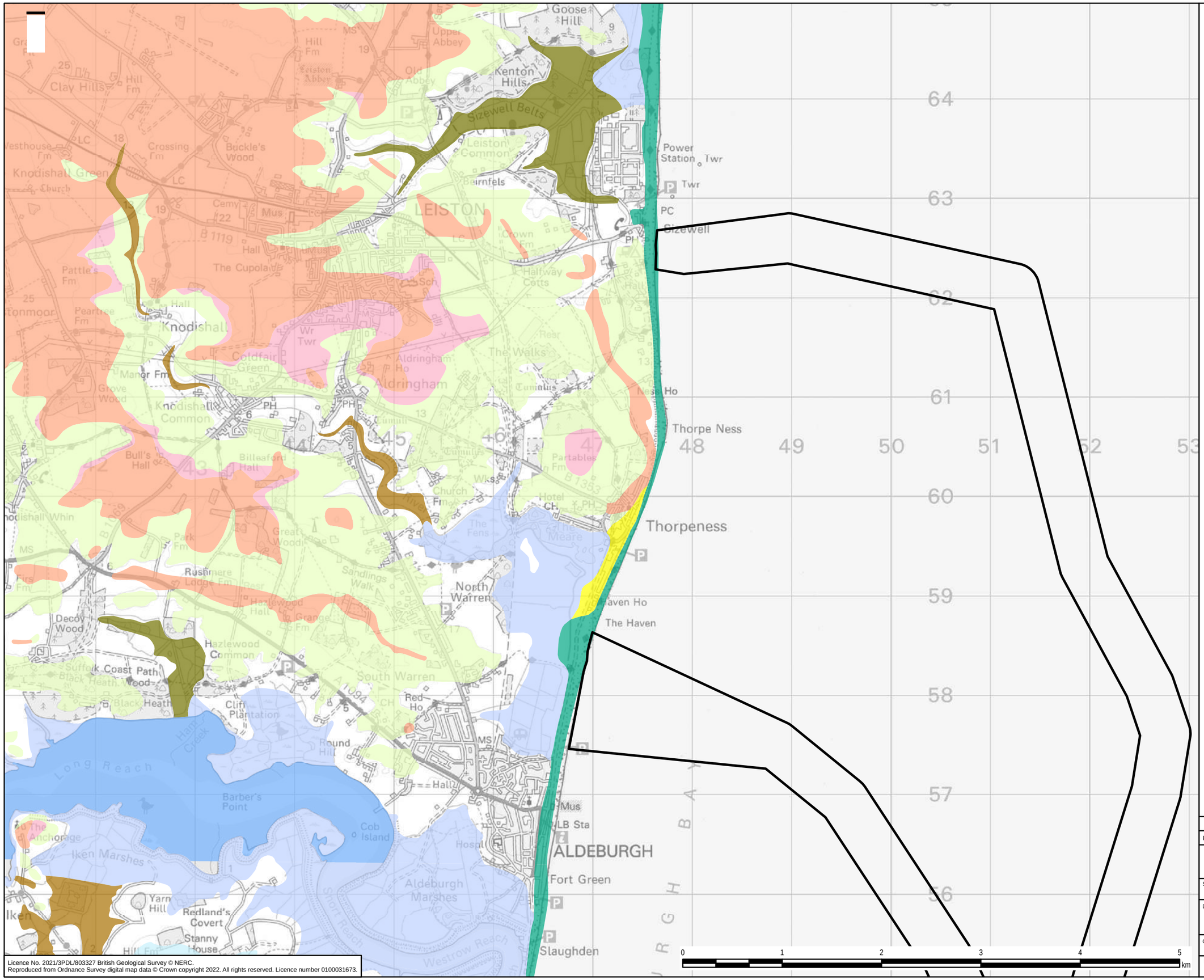
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Document Title: SUPERFICIAL GEOLOGY AT THE KENT LANDFALL

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	07/09/2022	DF	07/09/2022	KS	07/09/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.2.7	1:25,000	A3	1	0

Document Path: L:\Legacy\UKMCR1FP002-V1IE\Proposal\3512\SEAL GIS\02_Maps\Scoping Report\Sea_Link_Scoping_Fig4-2-7_Superficial_Geology_at_the_Kent_Landfall_20220907_EB.aprx



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Rev	Date	Description	GIS	Chk	App
0	07/09/2022	SCOPING REPORT	EB	DF	KS

nationalgrid

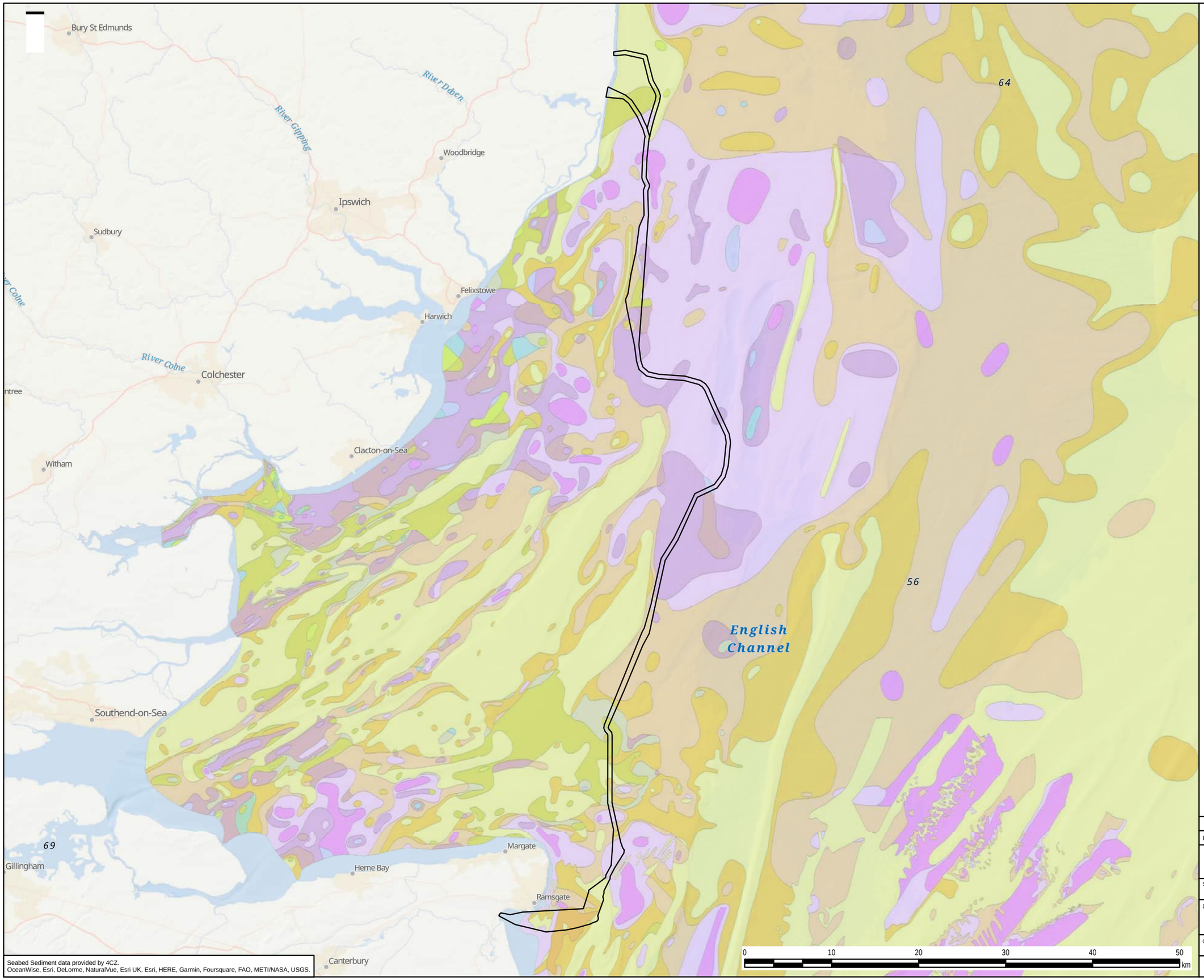
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Document Title: SUPERFICIAL GEOLOGY AT THE SUFFOLK LANDFALLS

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	07/09/2022	DF	07/09/2022	KS	07/09/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.2.8	1:35,000	A3	1	0

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Seabed Sediment data provided by 4CZ.
OceanWise, Esri, DeLorme, NaturalVue, Esri UK, Esri, HERE, Garmin, Foursquare, FAO, METI/NASA, USGS.

Legend

- Offshore Scheme Scoping Boundary

Seabed Sediment[1]

- Gravel
- Gravelly Mud
- Gravelly Muddy Sand
- Gravelly Sand
- Muddy Gravel
- Muddy Sand
- Muddy Sandy Gravel
- Sand
- Sandy Gravel
- Sandy Mud
- Slightly Gravelly Muddy Sand
- Slightly Gravelly Sand
- Slightly Gravelly Sandy Mud

1: All seabed sediment types belong to the Marine Sediments, Holocene (Undifferentiated) group.

Rev	Date	Description	GIS	Chk	App
0	07/09/2022	SCOPING REPORT	EB	DF	KS

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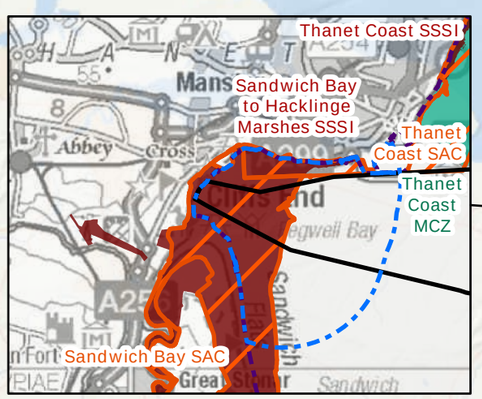
Document Title: SEABED SEDIMENTS ACROSS THE STUDY AREA

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	07/09/2022	DF	07/09/2022	KS	07/09/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.2.9	1:400,000	A3	1	0

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Orford Inshore MCZ

Kentish Knock East MCZ

Margate and Long Sands SAC

Thanet Coast SSSI

Thanet Coast MCZ

Thanet Coast SAC

Sandwich Bay SAC

Sandwich Bay to Hacklinge Marshes SSSI

Goodwin Sands MCZ

Legend

- Offshore Scheme Scoping Boundary
- Intertidal Benthic Ecology Study Area
- Subtidal Benthic Ecology Study Area
- Special Area of Conservation
- Site of Special Scientific Interest
- Marine Conservation Zone

0 10 20 30 40 50 km

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Rev	Date	Description	GIS	Chk	App
0	25/08/2022	SCOPING REPORT	EB	DF	CC

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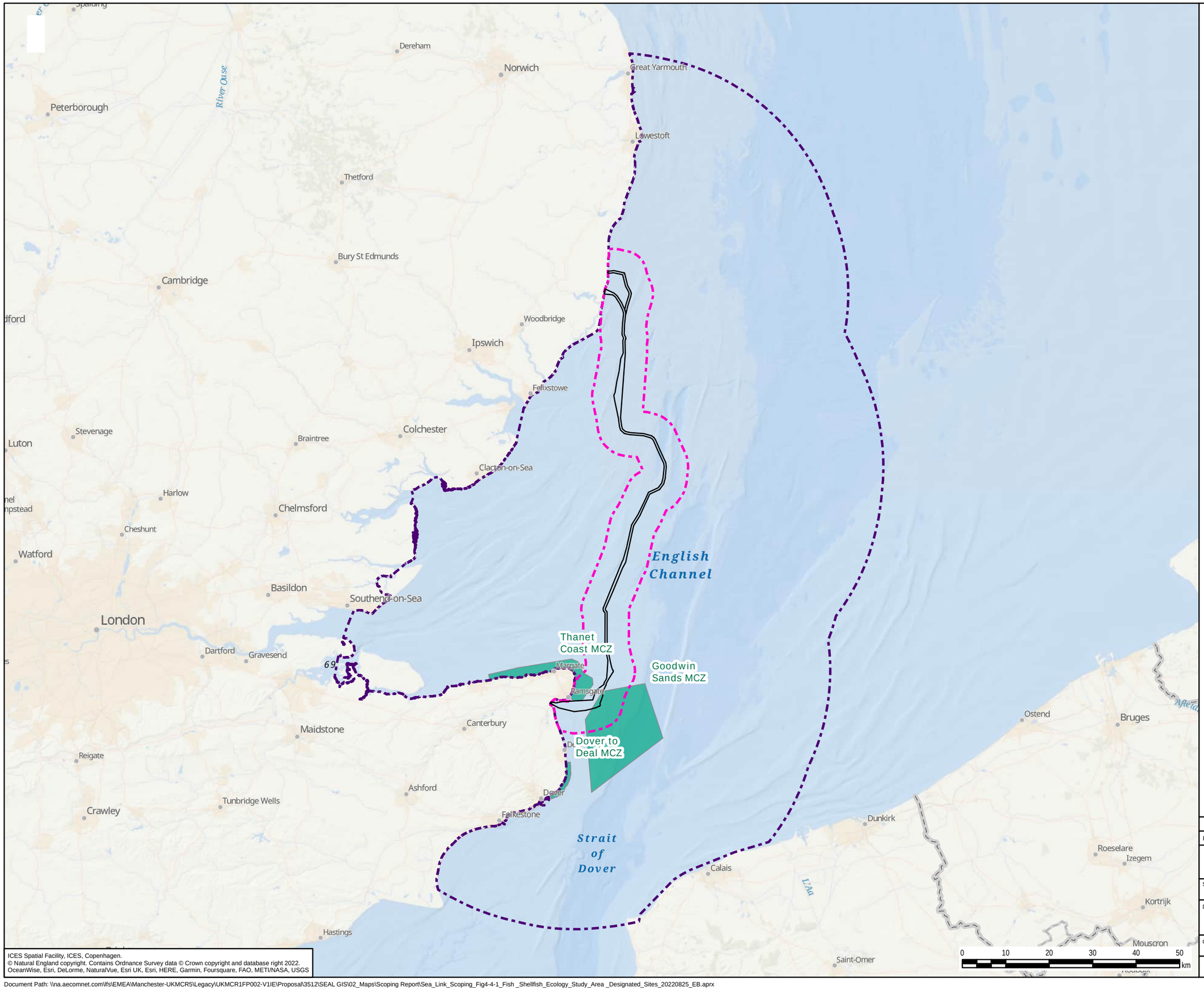
Scheme: SEA LINK

Document Title: BENTHIC ECOLOGY STUDY AREA AND DESIGNATED SITES

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	25/08/2022	DF	25/08/2022	CC	25/08/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.3.1	1:500,000	A3	1	0

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Rev	Date	Description	GIS	Chk	App
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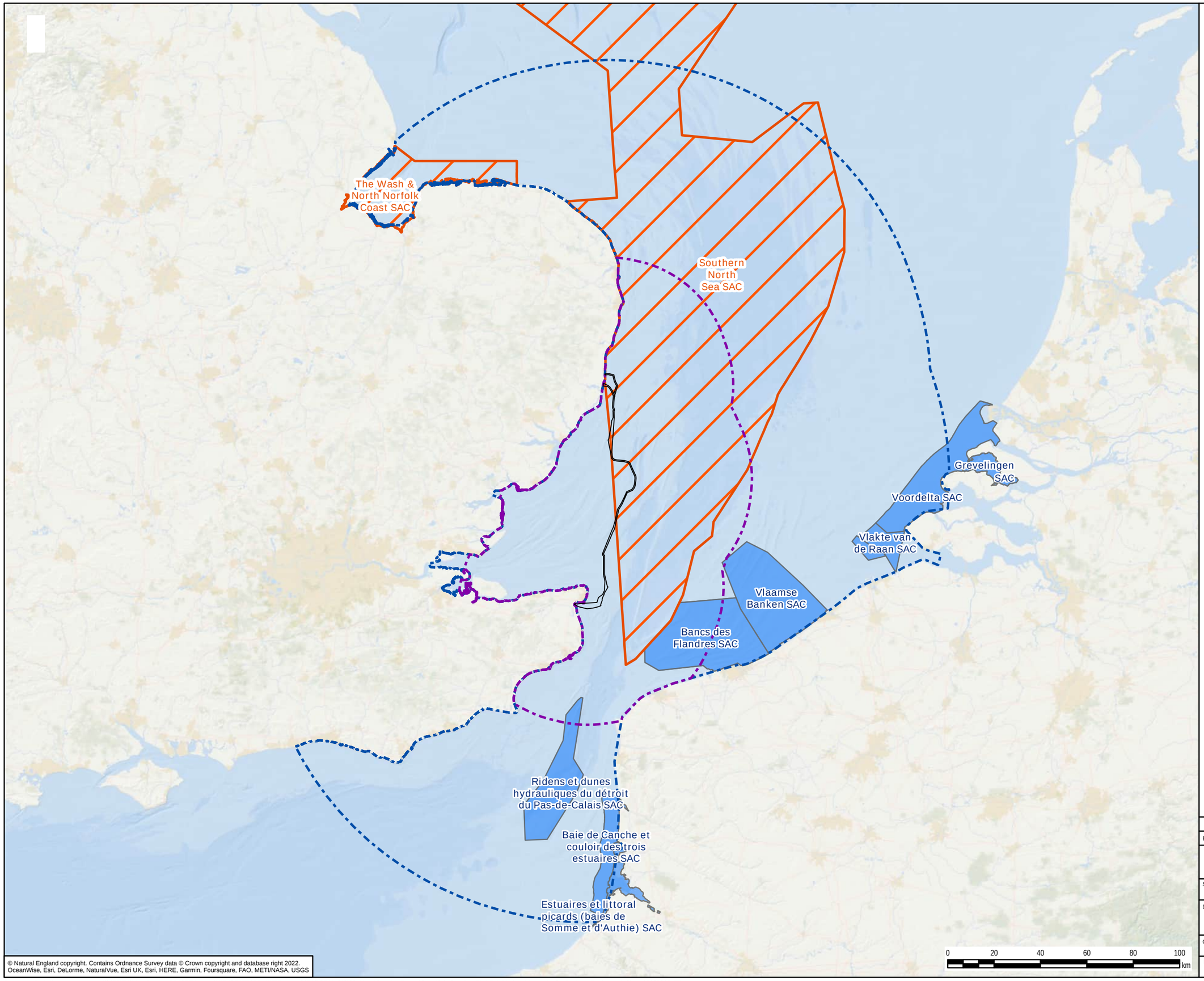
Scheme: SEA LINK

Document Title: FISH AND SHELLFISH ECOLOGY STUDY AREA AND DESIGNATED SITES

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	25/08/2022	DF	25/08/2022	KS	25/08/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.4.1	1:800,000	A3	1	0

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Legend

- Offshore Scheme Scoping Boundary
- Cetacean and Harbour Seal Designated Sites Screening Area (50km)
- Grey Seal Designated Sites Screening Area (135km)
- Special Area of Conservation (SAC)
- Special Area of Conservation (European)

Rev	Date	Description	GIS	Chk	App
0	25/08/2022	SCOPING REPORT	EB	DF	CC

nationalgrid

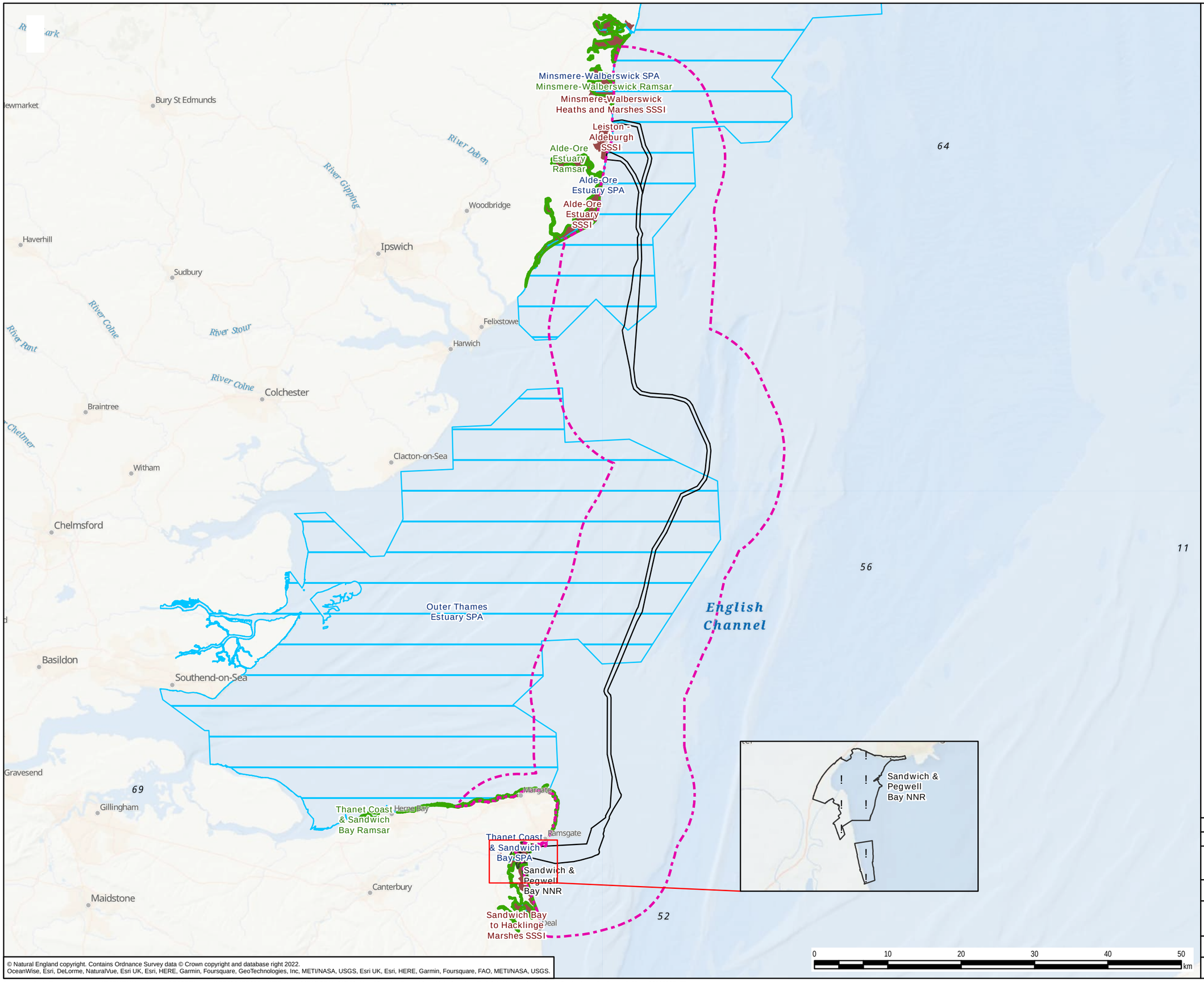
Scheme: SEA LINK

Document Title: MARINE MAMMALS STUDY AREA AND DESIGNATED SITES

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	25/08/2022	DF	25/08/2022	CC	25/08/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.5.1	1:1,500,000	A3	1	0

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Legend

- Offshore Scheme Scoping Boundary
- Marine Ornithology Study Area
- Ramsar
- Special Protection Area (SPA)
- Site of Special Scientific Interest (SSSI)
- National Nature Reserve

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Rev	Date	Description	GIS	Chk	App
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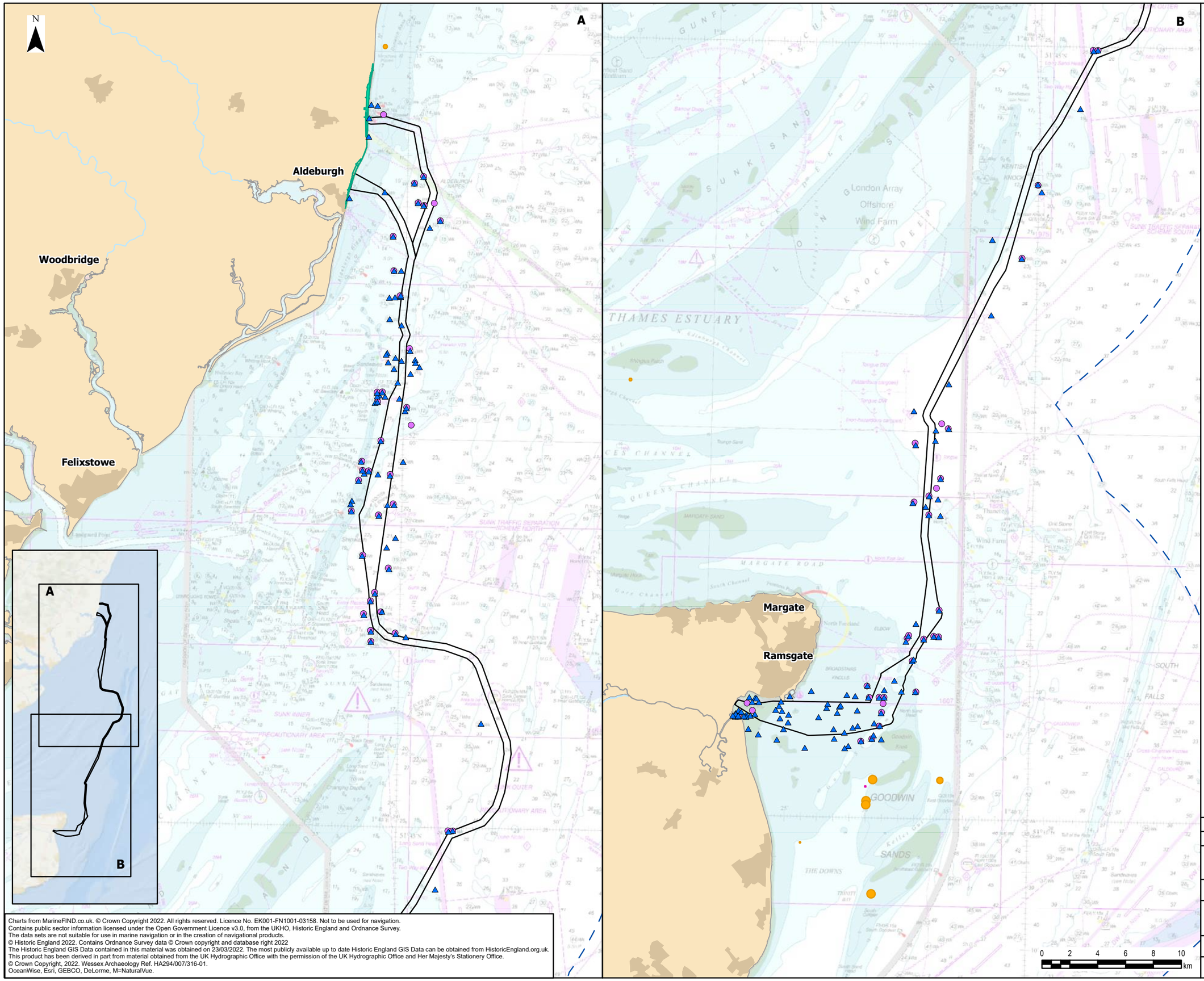
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Document Title: MARINE ORNITHOLOGY STUDY AREA AND DESIGNATED SITES

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	25/08/2022	DF	25/08/2022	KS	25/08/2022

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FIGURE 4.6.1	1:475,000	A3	1	0

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Legend

- Offshore Scheme Scoping Boundary
- English Territorial Waters
- Marine and intertidal scheduled monuments (AMAA 1979)
- Protected wreck sites (PWA 1973)
- Suffolk HER sites
- UKHO sites
- NMHR sites

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Rev	Date	Description	GIS	Chk	App
0	14/09/2022	SCOPING REPORT	KF	VL	VL

nationalgrid

Scheme: SEA LINK

Document Title: LOCATION OF RECORDED SEABED AND INTERTIDAL FEATURES WITHIN, AND IN PROXIMITY TO, THE STUDY AREA

Creator:	Date:	Checker:	Date:	Approver:	Date:
KF	14/09/2022	VL	14/09/2022	VL	14/09/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.7.1	1:250,000	A3	1	0

Document Path: W:\Projects\244370\Graphics_Office\Rep figs\Scoping\2022_09_14\244370_ArcPro\244370_ArcPro.aprx

N

Newmarket
Bury St Edmunds
SUFFOLK
Haverhill
Woodbridge
Ipswich
IPSWICH
Sudbury
HARWICH
Harwich
Braintree
COLCHESTER
ESSEX
Witham
Clacton-on-Sea
Chelmsford
Basildon
Southend-on-Sea
Grays
Gravesend
SHEERNESS
THAMESPORT
CHATHAM DOCKS
Gillingham
WHITSTABLE
Herne Bay
Margate
RAMSGATE
Maidstone
Canterbury
KENT
Deal
Ashford
Dover
THAMES ESTUARY
English Channel
Netherlands - United Kingdom
Belgium - Netherlands
Belgium - United Kingdom
France - United Kingdom
Belgium - France

0 10 20 30 40 50 km

Esri UK, Esri, HERE, Garmin, Foursquare, FAO, METI/NASA, USGS

Legend

- Offshore Scoping Boundary
- Study area (10 NM buffer)
- Port
- UK Territorial Sea Limit
- EEZ Boundaries

Rev	Date	Description	GIS	Chk	App
0	20/09/2022	SCOPING REPORT	LM	JDM	DB

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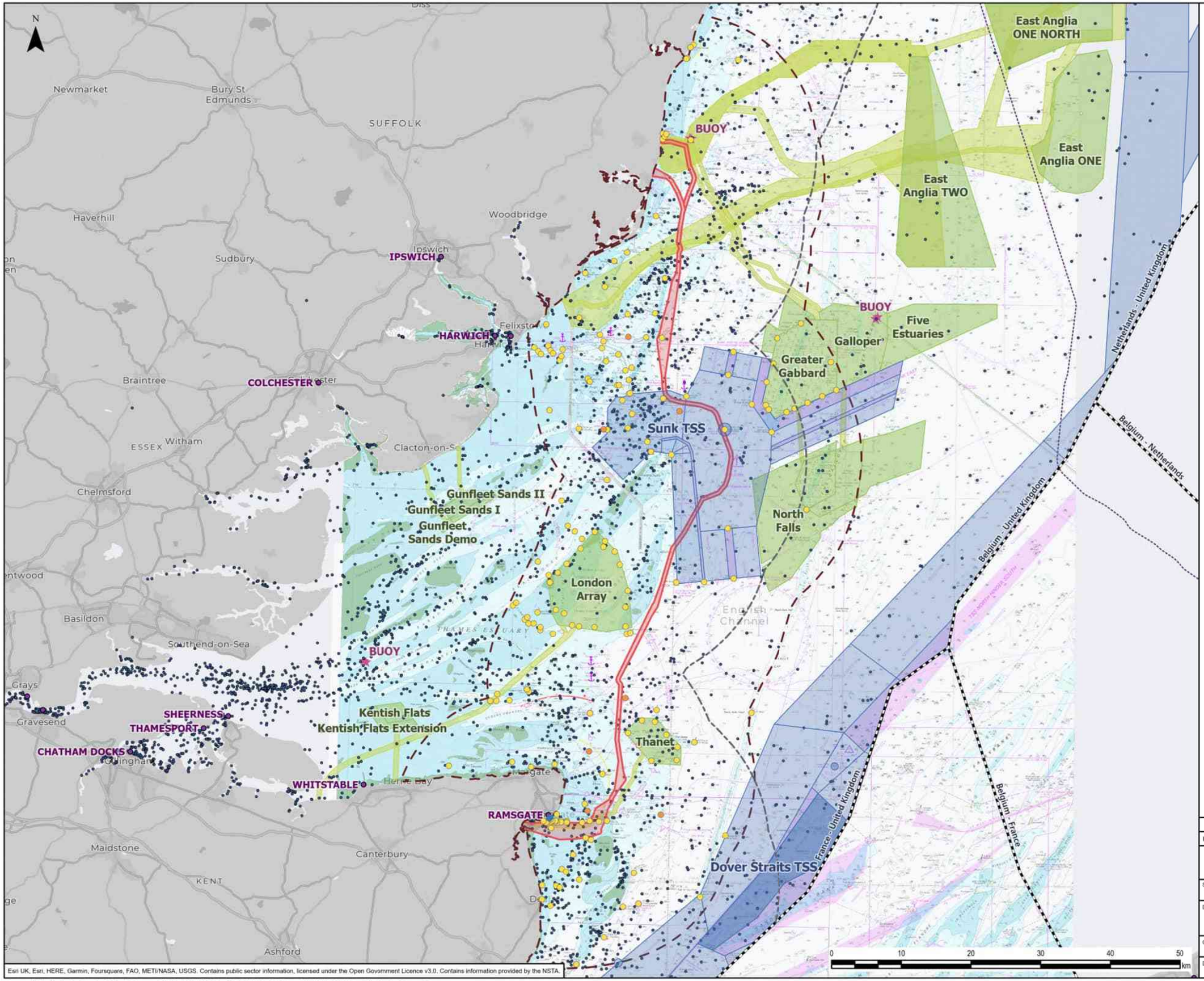
Scheme: SEA LINK

Document Title: STUDY AREA FOR SHIPPING AND NAVIGATION

Creator:	Date:	Checker:	Date:	Approver:	Date:
LM	20/09/2022	JDM	20/09/2022	DB	20/09/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.8.1	1:500,000	A3	1	0

Document Path: \\xodus.local\london\Xodus\Assignments\L100695\S00\Working Files\GIS\Output\03_Scoping\L100695_S00_SeaLink_ScopingFigures_v2.aprx



Legend

- Offshore Scoping Boundary
- Study area (10 NM buffer)
- Port
- UK Territorial Sea Limit
- EEZ Boundaries

Navigational features

- Anchorage
- Pilotage
- AtoN
- Marina
- IMO routing measures
- Wrecks
- Surface infrastructure
- Pipelines
- Offshore wind site agreements
- Offshore wind cable agreements

Rev	Date	Description	GIS	Chk	App
0	20/09/2022	SCOPING REPORT	LM	JDM	DB

nationalgrid

Scheme: SEA LINK

Document Title: KEY NAVIGATIONAL FEATURES

Creator:	Date:	Checker:	Date:	Approver:	Date:
LM	20/09/2022	JDM	20/09/2022	DB	20/09/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.8.2	1:500,000	A3	1	0

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N

Newmarket
Bury St Edmunds
SUFFOLK
Haverhill
Woodbridge
Ipswich
IPSWICH
Sudbury
HARWICH
Harwich
Braintree
COLCHESTER
ESSEX
Witham
Clacton-on-Sea
Chelmsford
Basildon
Southend-on-Sea
THAMES ESTUARY
Grays
Gravesend
SHEERNESS
THAMESPORT
CHATHAM DOCKS
Gillingham
WHITSTABLE
Herne Bay
RAMSGATE
Maidstone
Canterbury
KENT
Ashford
Netherlands - United Kingdom
Belgium - Netherlands
Belgium - United Kingdom
France - United Kingdom
Belgium - France

0 10 20 30 40 50 km

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Legend

- Offshore Scoping Boundary
- Study area (10 NM buffer)
- Port
- UK Territorial Sea Limit
- EEZ Boundaries

Ship type group

- Cargo
- Tankers
- Passenger
- Recreational
- Fishing
- Non-port service craft
- Port service craft
- Dredging/ underwater operations
- High-speed craft
- Military/law enforcement
- Unknown

Rev	Date	Description			
0	20/09/2022	SCOPING REPORT	LM	JDM	DB

nationalgrid

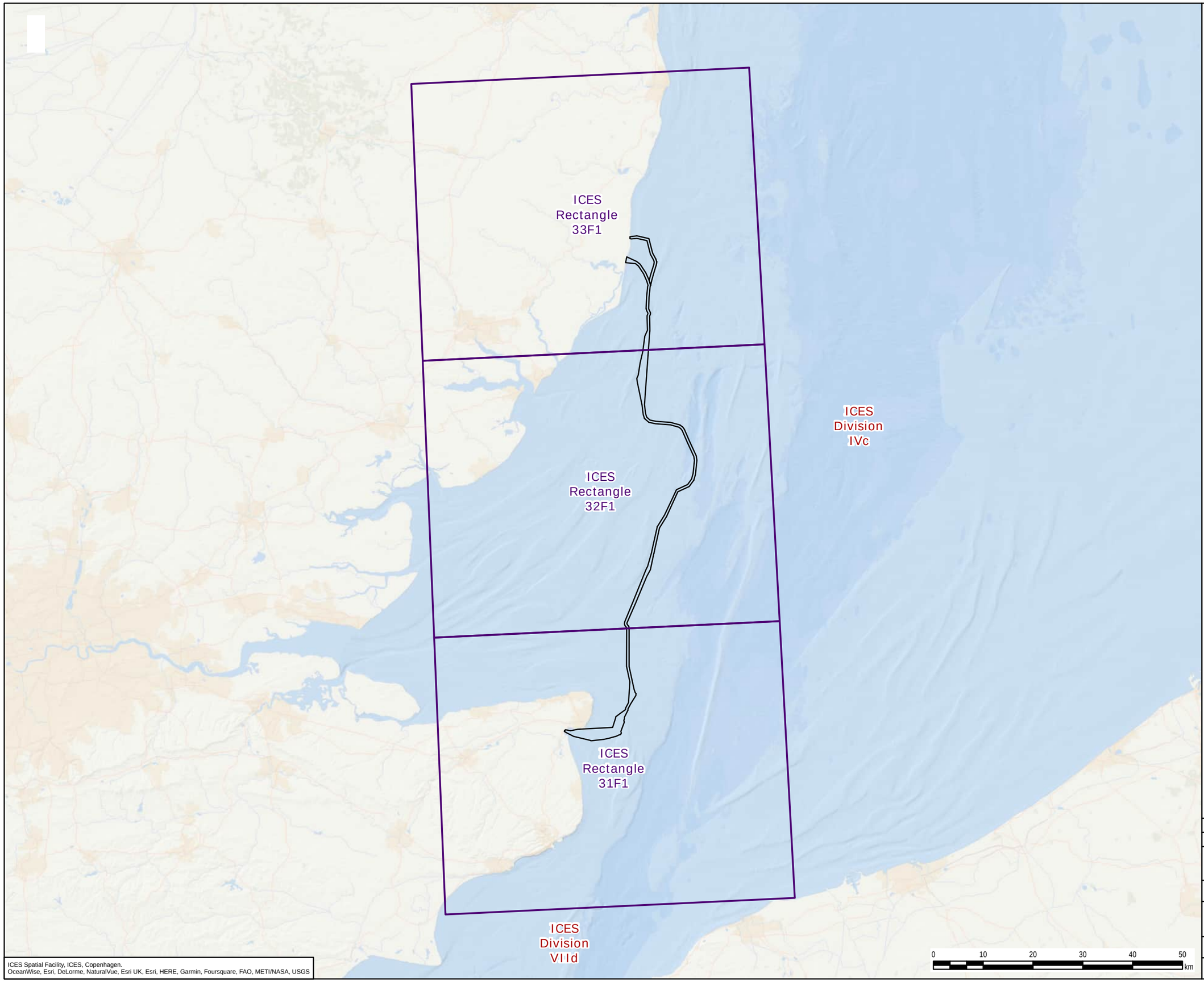
Scheme: SEA LINK

Document Title: AIS TRACKS DATA BY SHIP TYPE GROUP (2019)

Creator:	Date:	Checker:	Date:	Approver:	Date:
LM	20/09/2022	JDM	20/09/2022	DB	20/09/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.8.4	1:500,000	A3	1	0

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Legend

- Offshore Scheme Scoping Boundary
- ICES Rectangles

Rev	Date	Description	GIS	Chk	App
0	25/08/2022	SCOPING REPORT	EB	DF	CC

nationalgrid

Scheme: SEA LINK

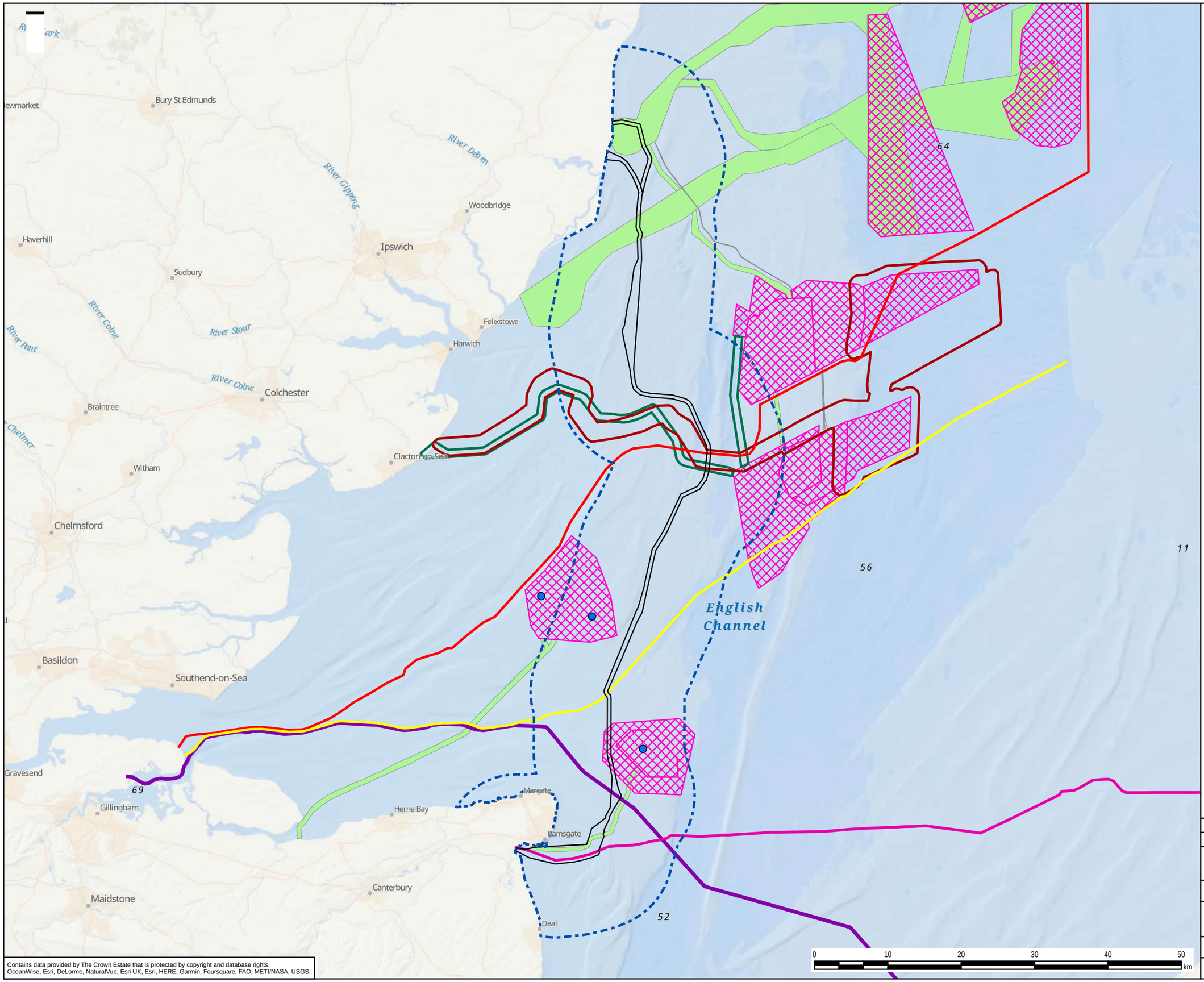
Document Title: COMMMERCIAL FISHERIES STUDY AREA

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	25/08/2022	DF	25/08/2022	CC	25/08/2022

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FIGURE 4.9.1	1:700,000	A3	1	0

ICES Spatial Facility, ICES, Copenhagen.
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Legend

- Offshore Scheme Scoping Boundary
- Other Sea Users Study Area
- Offshore Substation

Cables & Pipelines

- BritNed
- GridLink
- Nemo Link
- NeuConnect
- North Falls Cable Corridors
- Five Estuaries Offshore Site Investigation

Wind Farms

- Offshore Wind Farms & Site Agreements
- Offshore Wind Farm Export Cable

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Rev	Date	Description	GIS	Chk	App
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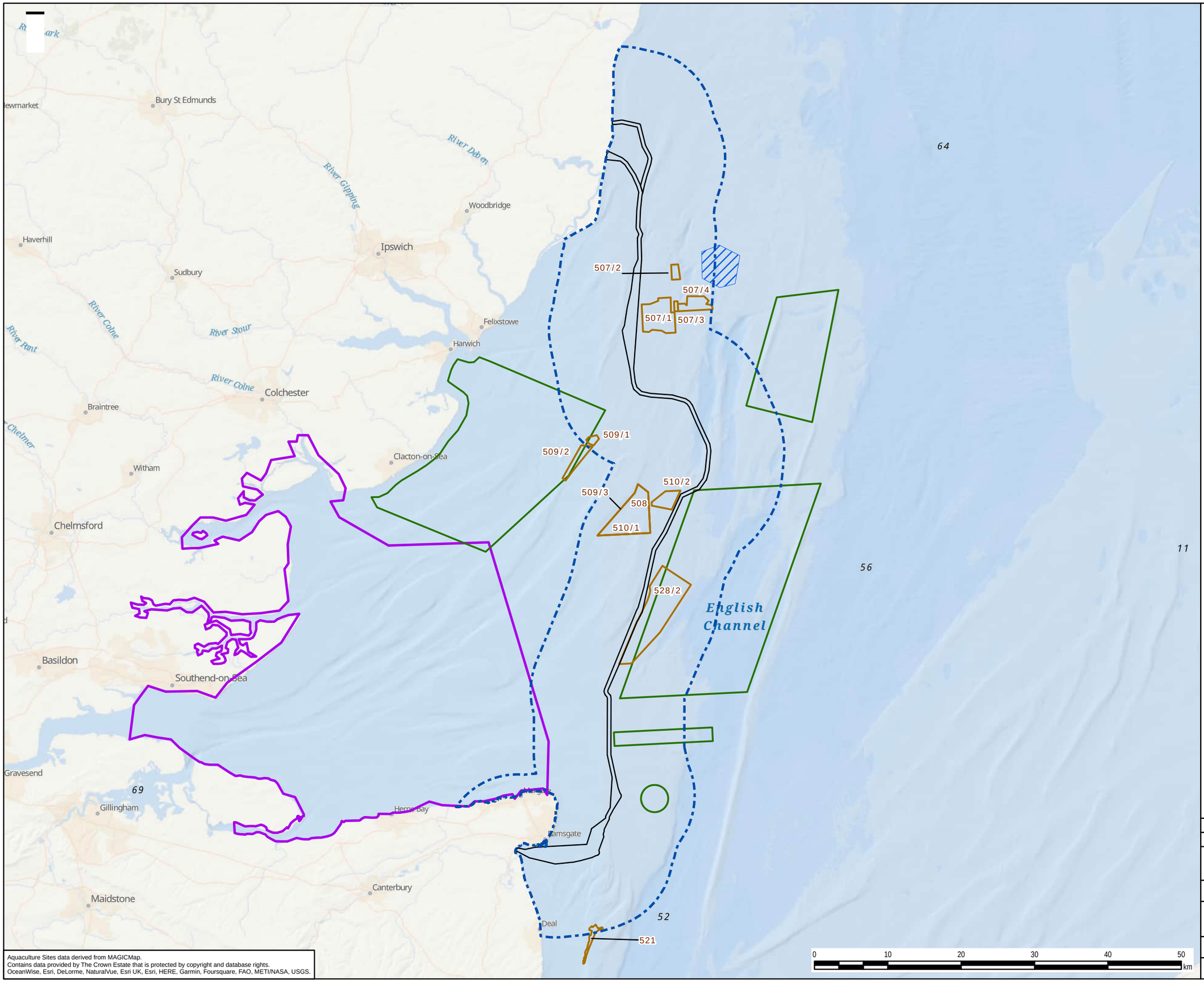
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Document Title: OFFSHORE INFRASTRUCTURE IN THE STUDY AREA - SHEET 1 OF 3

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	25/08/2022	DF	25/08/2022	KS	25/08/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.10.1	1:475,000	A3	1	0

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Document Title: OFFSHORE INFRASTRUCTURE IN THE STUDY AREA - SHEET 2 OF 3

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	19/10/2022	DF	19/10/2022	KS	19/10/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.10.1	1:475,000	A3	1	0

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N

Bury St Edmunds
ewmarket
Haverhill
Sudbury
Ipswich
Woodbridge
Felixstowe
Harwich
Colchester
Braintree
Witham
Clacton-on-Sea
Chelmsford
Basildon
Southend-on-Sea
Gravesend
Gillingham
Herne Bay
Ramsgate
Canterbury
Maidstone
Deal

River Deben
River Gipping
River Stour
River Colne
River Colne
River Crouch
River Roach
River Chelmer

64
56
11
69
52

English Channel

507/2
507/4
507/1
507/3
509/1
509/2
509/3
508
510/2
510/1
528/2
521

0 10 20 30 40 50 km

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Legend

- Offshore Scheme Scoping Boundary
- Other Sea Users Study Area
- Military Practice Area
- Mineral & Aggregate Extraction Site
- Shellfish Waters

Marine Cable

- Mooring cable/chain
- Power line
- Telephone
- Undefined

Rev	Date	Description	GIS	Chk	App
0	07/10/2022	SCOPING REPORT	EB	DF	KS

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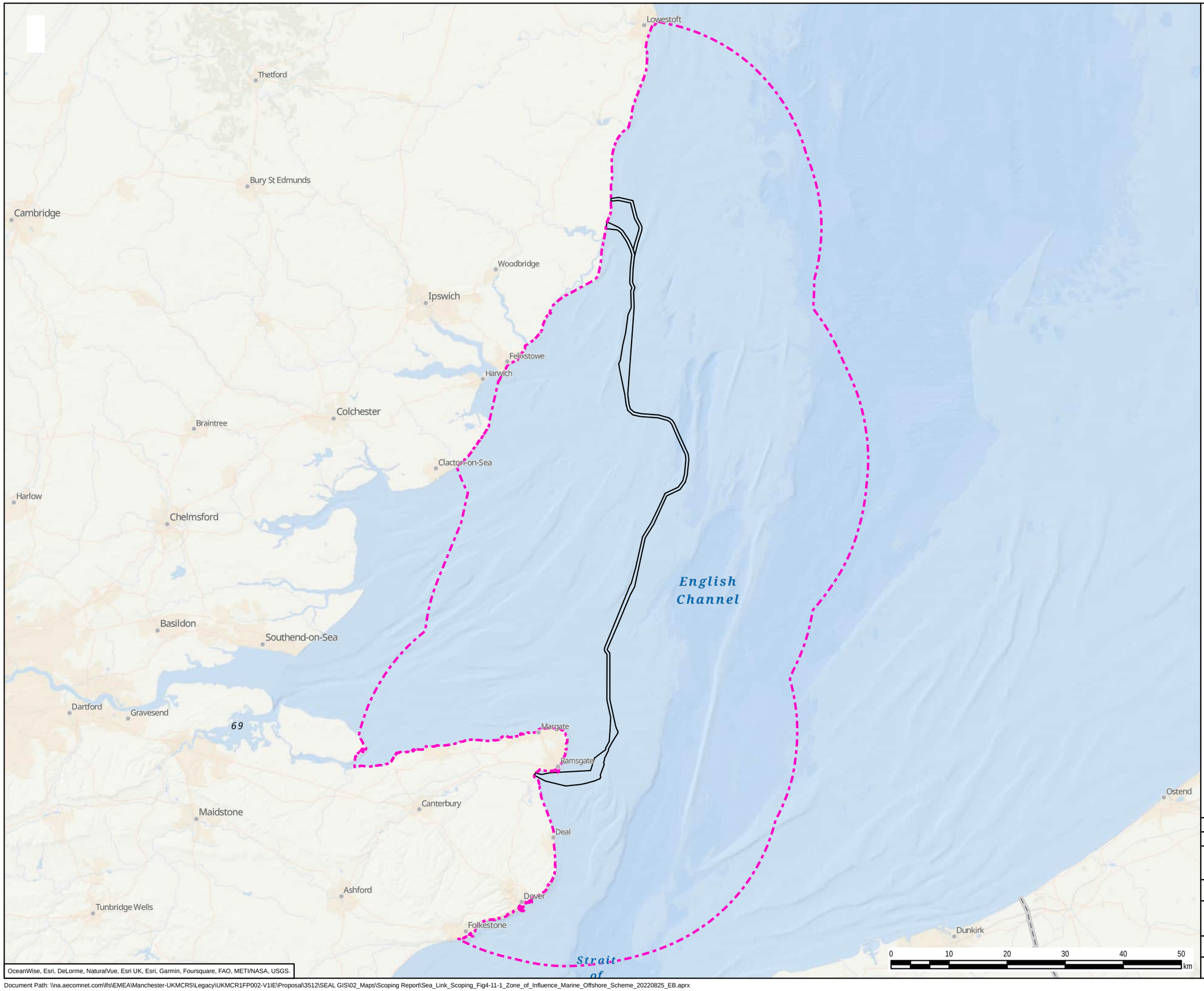
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Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	07/10/2022	DF	07/10/2022	KS	07/10/2022

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Legend

- Offshore Scheme Scoping Boundary
- Cumulative Assessment Zone of Influence

Rev	Date	Description	GIS	Chk	App
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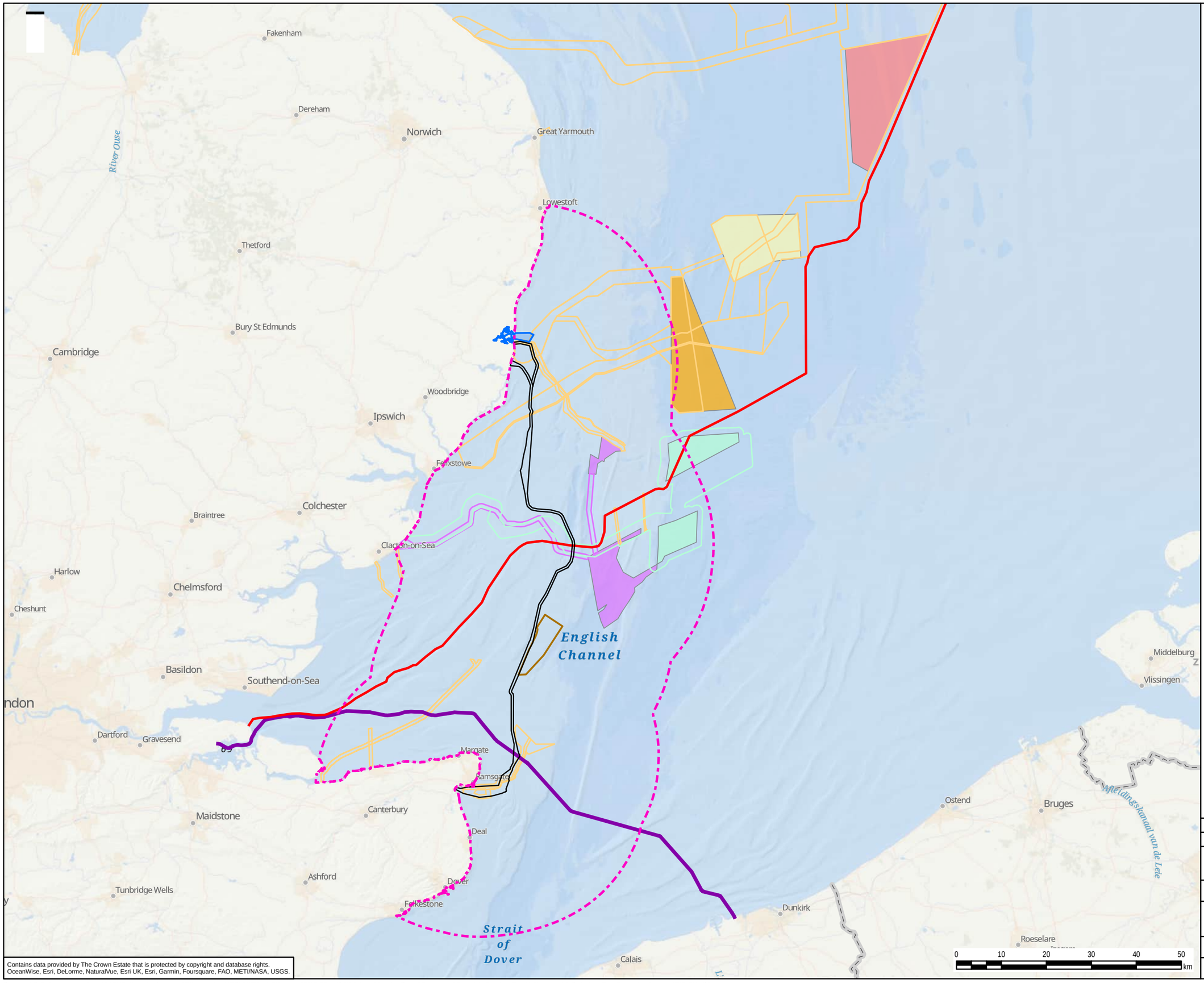
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Document Title: ZONE OF INFLUENCE FOR MARINE OFFSHORE SCHEME

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	25/08/2022	DF	25/08/2022	SA	25/08/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.11.1	1:600,000	A3	1	0

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Legend

- Offshore Scheme Scoping Boundary
- Cumulative Assessment Zone of Influence
- GridLink
- NeuConnect
- Sizewell C Nuclear Power Station
- North Falls Cable Corridors
- Five Estuaries Cable Corridors
- Export Cable Corridors
- North Falls Offshore Wind Farm
- East Anglia One North Offshore Wind Farm
- East Anglia Two Offshore Wind Farm
- Five Estuaries Offshore Wind Farm
- East Anglia Three Offshore Wind Farm
- Hanson Aggregates Marine Ltd Area 528/2

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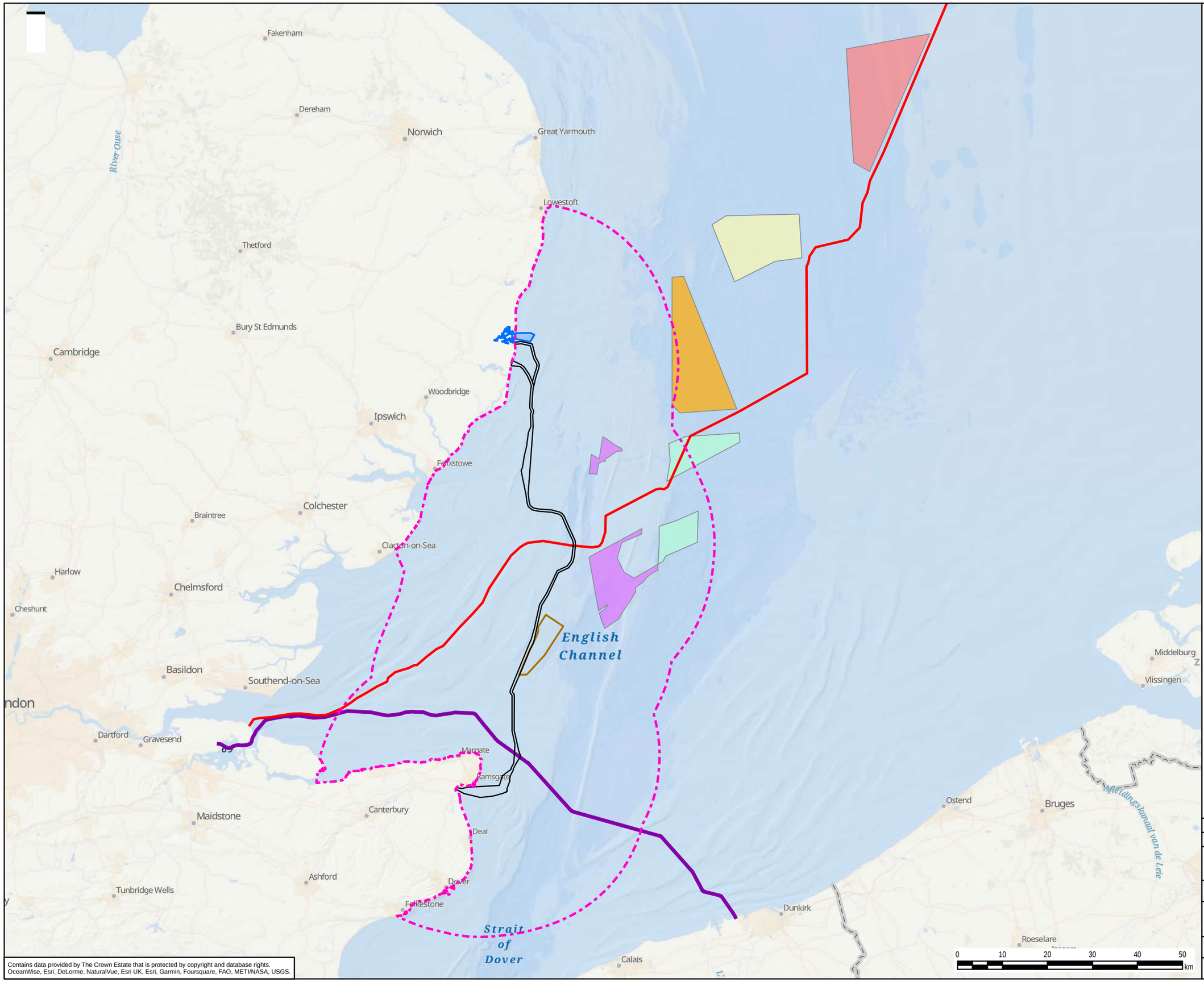
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Document Title: LONG LIST PROJECTS WITHIN THE ZONE OF INFLUENCE

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	21/10/2022	DF	21/10/2022	SA	21/10/2022

Document Ref:	Scale:	Format:	Sheets:	Rev:
FIGURE 4.11.2	1:775,000	A3	1	0

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Legend

- Offshore Scheme Scoping Boundary
- Cumulative Assessment Zone of Influence
- GridLink
- NeuConnect
- Sizewell C Nuclear Power Station
- North Falls Offshore Wind Farm
- East Anglia One North Offshore Wind Farm
- East Anglia Two Offshore Wind Farm
- Five Estuaries Offshore Wind Farm
- East Anglia Three Offshore Wind Farm
- Hanson Aggregates Marine Ltd Area 528/2

Rev	Date	Description	GIS	Chk	App
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Document Title: PROJECTS PROPOSED TO BE TAKEN TO STAGE 2 FOR THE OFFSHORE SCHEME

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FIGURE 4.11.3	1:775,000	A3	1	0

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National Grid plc
National Grid House,
Warwick Technology Park,
Gallows Hill, Warwick.
CV34 6DA United Kingdom

Registered in England and Wales
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