

The Solent CO₂ Pipeline Project Pipeline Corridor Consultation

July 2024



Have your say

It's easy to contribute to this consultation.

We welcome your views, ideas and opinions.

The fastest way to respond is online. Simply go to

www.solentco2pipeline.co.uk

This consultation closes at 6pm on 12 September 2024.



Thank you for taking the time to read through this consultation brochure.

Our Project aims to install an underground pipeline through which captured carbon dioxide (CO₂) from our Fawley Manufacturing Complex, and potentially the wider Solent area, can be transported to a deep rock formation in the English Channel where it can be safely stored. We are calling it the Solent CO₂ Pipeline Project.

While Carbon Capture and Storage (CCS) technology is still a new concept to many people, the UK Climate Change Committee considers it to be key to achieving a significant reduction in industrial CO₂ emissions.

The UK Government has set a goal of achieving net zero emissions by 2050. We have created this document to give you an introduction to the Solent CO₂ Pipeline Project and an overview of the technology involved.

With more than 30 years of experience in carbon capture, ExxonMobil leads the industry in successful deployment of this technology at scale. We also own and operate over 700km of fuel pipelines here in the UK and have extensive experience in safely operating pipelines around the world.

Finding a route for any new pipeline is always challenging. The first step in the process is to identify a corridor (typically 500m wide) that we will then take forward and work in greater detail to create a route, which will be narrower, typically 50m wide.

Our Project team now needs your feedback to enhance our understanding of how the proposed consultation corridors perform. The information set out in this brochure describes the three consultation corridors.

Please do consider the information we have presented in this brochure and let us know your thoughts by completing the online response form.

I hope you find this information useful in understanding our proposals. Your feedback will help us select a preferred corridor (typically 500m wide). We will then refine the preferred corridor down to a route (50m wide) after which there will be a further consultation.

If you have any questions, please do not hesitate to get in touch with the Project team by emailing us at info@solentco2pipeline.co.uk or calling us on 07845 608 322.

Yours sincerely,

Michael Foley | UK Low Carbon Solutions Executive

01 Our journey towards decarbonisation in the Solent region

The Solent industries include our Fawley Manufacturing Complex. These industries produce essential products that we rely on every day and are internationally recognised as hard-to-decarbonise. One of the ways to reduce emissions is to safely capture and store CO₂.

02 Carbon Capture and Storage technology

Carbon Capture and Storage (CCS) is the process of capturing CO₂ that would otherwise be released into the atmosphere. CO₂ is then transported via a pipeline to an underground storage location. The only storage location in the English Channel is the one we hope to use for CCS technology in the Solent region.*

03 This Pipeline Project

The Solent CO₂ Pipeline Project is seeking permission to install an underground pipeline to transport captured CO₂ from the Fawley Manufacturing Complex to a safe and secure storage location in the English Channel.

04 Project development

We assessed the pipeline corridor proposals using the Project's aims and guiding principles.

05 Pipeline corridor elements not taken forward

We began by reviewing the start and end points and reviewed a range of corridors between the two points. Some elements didn't perform well against our aims and guiding principles.

* Based on UK Government data from CO₂ Stored - developed by the UK Storage Appraisal Project (UKSAP), commissioned and funded by the Energy Technologies Institute (ETI).

06 The consultation corridors

The three pipeline corridors we are seeking your views on all perform well, but in different ways and have different merits. We have preliminarily identified two favoured corridors - Isle of Wight North to West, and Isle of Wight North to South.

07 About the pipeline

Once installed, the pipeline is buried underground. There are a small number of points along the pipeline where we will need to install above-ground equipment and this may require fenced enclosures.

08 Building the pipeline

The most common technique for installation of the pipeline is open-cut trenches. At times, we will need to use trenchless techniques to install the pipeline, for example under railway lines, major roads and at coastlines.

09 Environmental and habitats assessment

As part of our Development Consent Order (DCO) application, we will clearly identify the potential environmental impacts and produce an environmental assessment and habitats assessment.

10 Working with landowners

We value our long-term relationships with people who have our pipelines on their land. We have a land agent team, led by the specialist company Fisher German LLP, which will be landowners' first point of contact.

11 How you can respond to the consultation

We value your feedback as it is key to helping us further shape the Project.

01

Our journey towards decarbonisation in the Solent region

The Solent region is one of the largest and most successful industrial areas of the UK, supporting around 90,000 businesses and a £50bn economy.¹

The Solent industries include our Fawley Manufacturing Complex and other areas such as power generation, shipping and manufacturing. These industries produce essential products that we rely on every day. At Fawley, we produce products such as transport fuels, medical rubber products and car tyre linings. These sectors are internationally recognised as hard-to-decarbonise², as noted by the UK's Climate Change Committee, who described Carbon Capture and Storage (CCS) as a 'necessity, not an option' for the UK's transition to net zero.³

CCS technology enables the delivery of a range of low carbon solutions with sufficient scale to decarbonise our site in Fawley and the industrial economy across the Solent region. This pipeline project is the linchpin for establishing CCS technology in southern England.

We are progressing our CCS technology plans in a distinct and achievable manner to reflect the different application and consenting routes as required by UK law for all elements required to operate this essential technology. We are starting the pipeline Project now to reflect the development and application time required for a Development Consent Order.

The pipeline will be able to transport millions of tonnes per year of captured CO₂, paving the way for carbon reduction developments at Fawley and across the region. Its planned capacity is equivalent to removing over five million cars off the road each year*.

The investment in these technologies will support the Solent region's economy, maintain world class high-skilled jobs and make a significant contribution towards the Government's goal of achieving net zero by 2050.

Ultimately, this Development Consent Order project is the linchpin to enable the Solent region to reduce emissions. It is essential that we find a route from our existing site at Fawley to the English Channel storage site to safely transport CO₂ and help us achieve low carbon projects in our region.

Hard to decarbonise industries

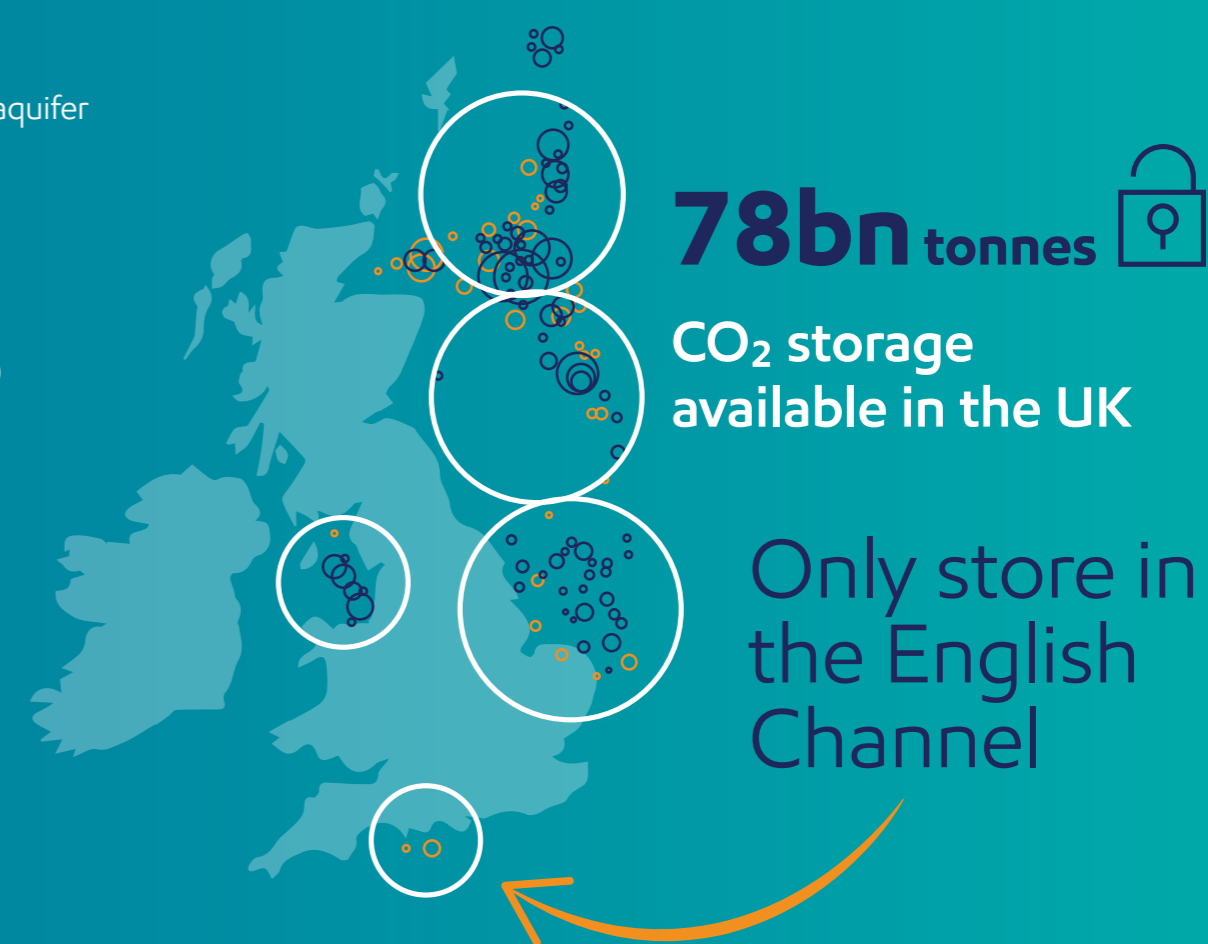


...which make every day products

Saline aquifer

SizeMT*

- 10
- 100
- 1,000



78bn tonnes

CO₂ storage available in the UK

Only store in the English Channel

*Based on UK Government data from CO₂ Stored - developed by the UK Storage Appraisal Project (UKSAP), commissioned and funded by the Energy Technologies Institute (ETI).

¹ The Solent Cluster (2024). About The Solent Cluster. Helping the UK achieve a Net Zero carbon economy by 2050.

² IRENA (2024). Decarbonising hard-to-abate sectors with renewables: Perspectives for the G7, International Renewable Energy Agency, Abu Dhabi, Page 3.

³ Committee on Climate Change (2019). Net Zero, The UK's contribution to stopping global warming. Page 23.

*Based on the UK's Government Greenhouse Gas Emissions Factors (2023), for petrol cars.



Carbon Capture and Storage technology

Carbon Capture and Storage (CCS) is the process of capturing CO₂ that would otherwise be released into the atmosphere. CO₂ is then transported via a pipeline to an underground storage location. Storage locations are typically deep rock formations which can provide the conditions for safe, secure and permanent storage.

CCS uses readily available technology that can reduce emissions at scale from sectors like power generation, shipping and manufacturing.

The process is as follows:

- **CAPTURE:** CO₂ is captured, or separated, from the emissions source.
- **TRANSPORT:** Captured CO₂ is transported to the storage site.
- **STORAGE:** CO₂ is injected deep underground for safe, secure and permanent storage.

Why we are taking CCS forward

CCS has been around since 1972 and is being used globally to reduce CO₂ emissions. ExxonMobil has more than 30 years of experience capturing and storing CO₂, including the design, construction and safe operation of facilities around the world.

In 2021, we established our Low Carbon Solutions business, leveraging our unique combination of capabilities, such as geophysics expertise and complex project management.

Explained: CO₂ storage in the UK

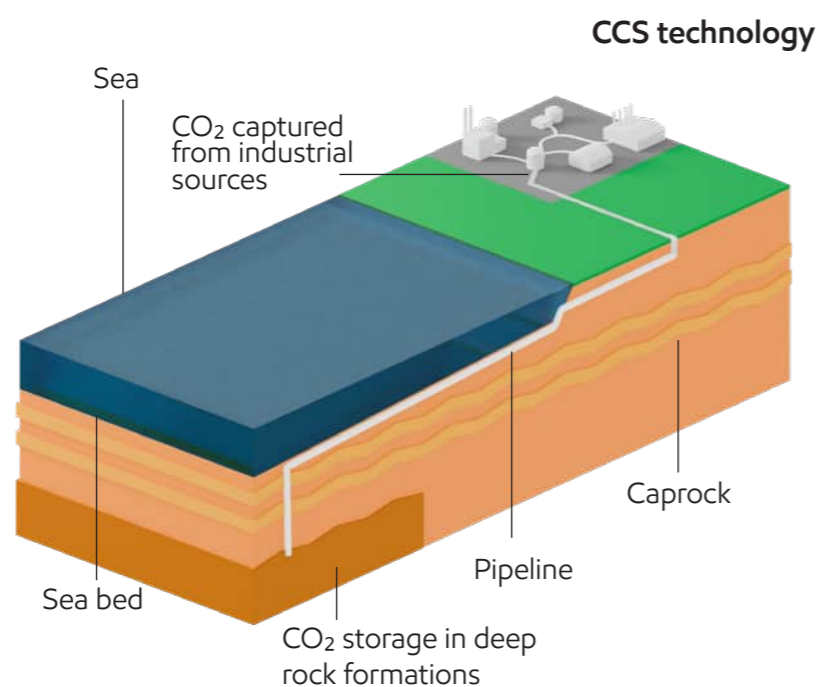
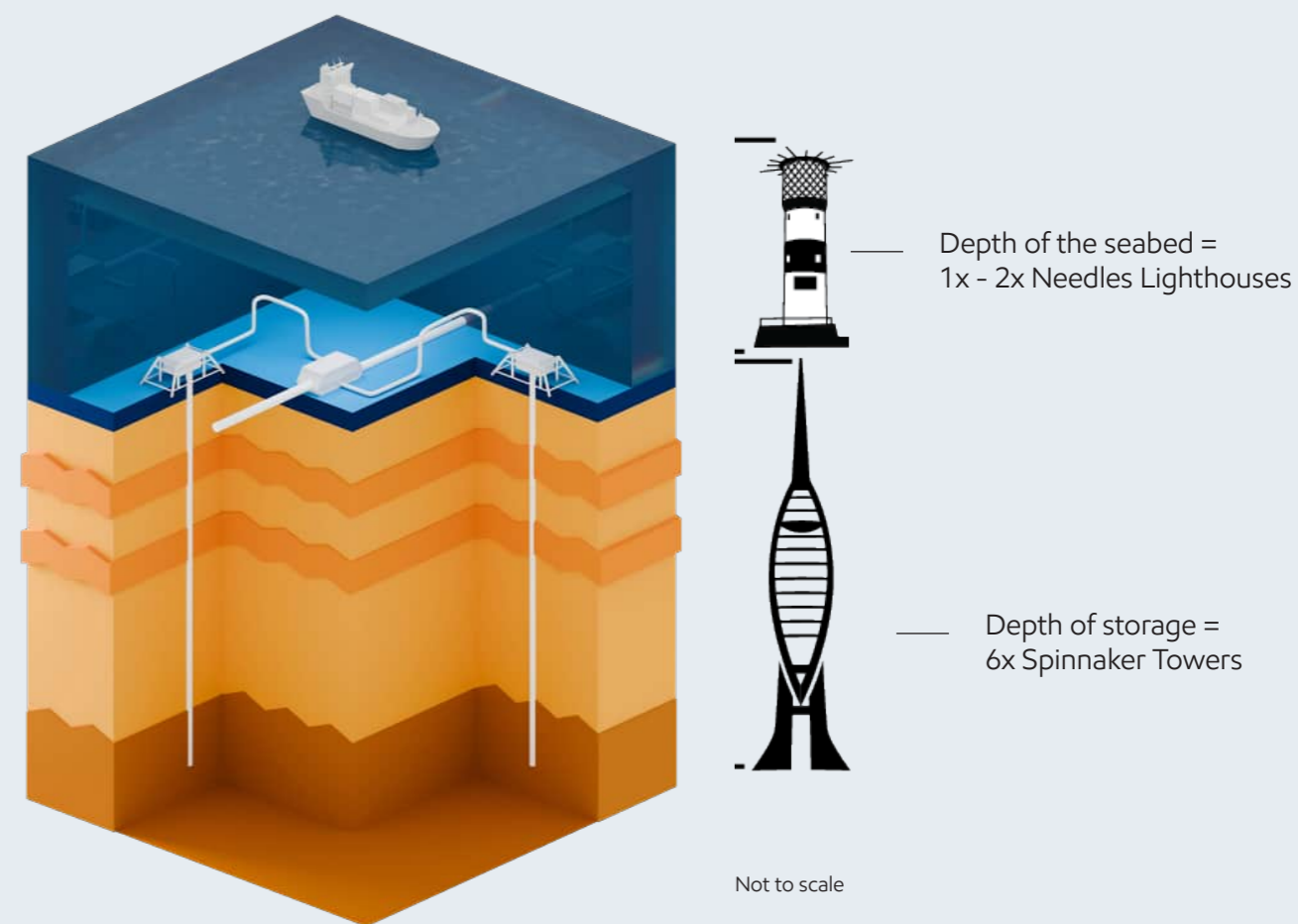
The saline aquifers that are used for storage are typically over 1,000m below the seabed. They are made of porous and permeable rocks filled with salt (saline) water, which typically exceeds the salt content of sea water.

The Government has identified over 500 potential CO₂ storage sites around the UK*. These include saline aquifers, like the one to the southwest of the Solent in the English Channel.

The particles that make up rocks in saline aquifers are like marbles in a jar. The spaces between particles in a saline aquifer are filled with very strong salt water (brine).

Injected CO₂ is trapped in the small (pore) spaces within the aquifer where it is securely contained deep below ground. Many layers of impermeable rock formations above the aquifer create a caprock that prevents CO₂ from escaping to the surface.

CCS technology - marine elements

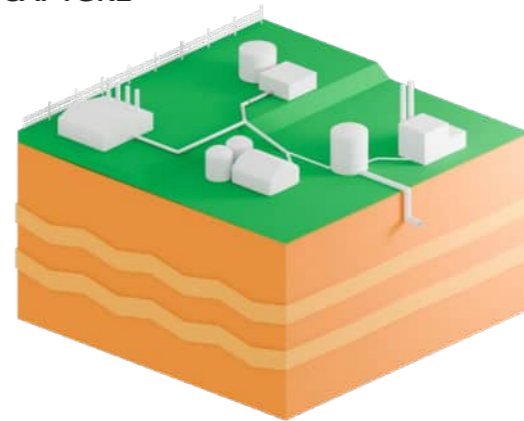


Not to scale

* Based on UK Government data from CO₂ Stored - developed by the UK Storage Appraisal Project (UKSAP), commissioned and funded by the Energy Technologies Institute (ETI).

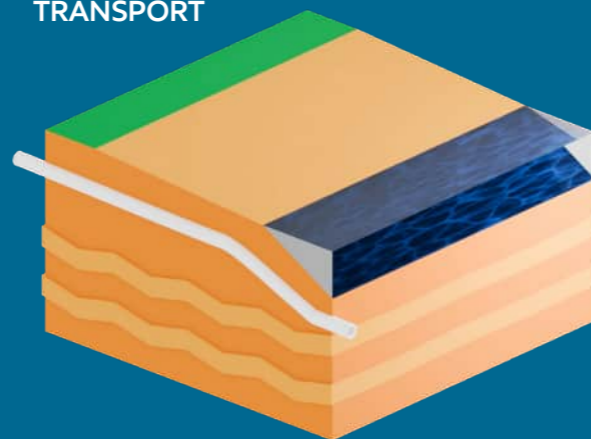
Due to the nature and scale of Carbon Capture and Storage infrastructure there are different permissions, known as consents or licences, for different parts of the technology.

CAPTURE



The delivery of other low carbon solutions, both at our site in Fawley and across the Solent region are not a part of this Project.

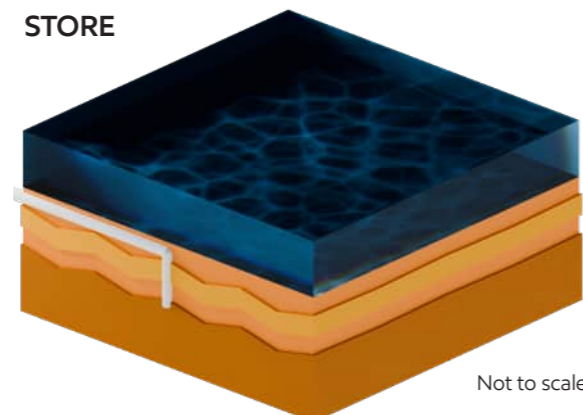
TRANSPORT



This Project is seeking permission to install an underground pipeline and all equipment needed to safely operate the pipeline. Please see Chapter 7 for more information on pipeline equipment.

The permission that the Project is seeking is a Development Consent Order, known as a DCO.

STORE



Not to scale

The marine section of the pipeline is not a Nationally Significant Infrastructure Project (NSIP) and is separately consented under a Pipeline Works Authorisation. Similarly, CO₂ storage is not part of this Project and is separately consented by the North Sea Transition Authority.

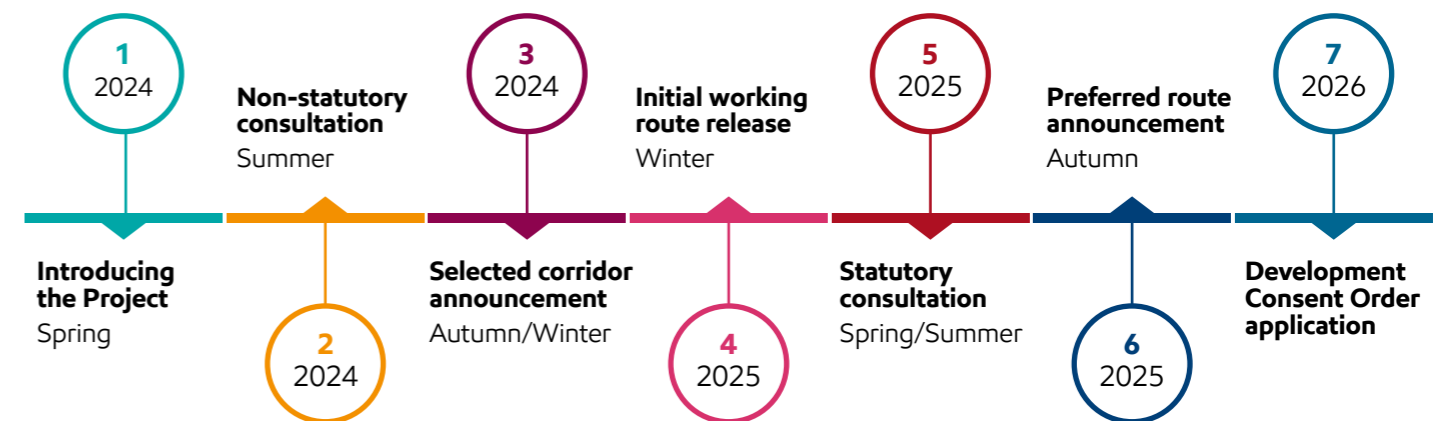
Development Consent Orders explained

Under the Planning Act 2008, a Development Consent Order (DCO) is the means of obtaining permission to construct and maintain developments categorised as Nationally Significant Infrastructure Projects (NSIPs).

A DCO application is made to the Planning Inspectorate, who will consider the application and make a recommendation to the UK Government. It is the relevant Secretary of State who makes the decision on whether to grant development consent.

Due to the length and purpose of the pipeline, the Project is categorised as an NSIP.

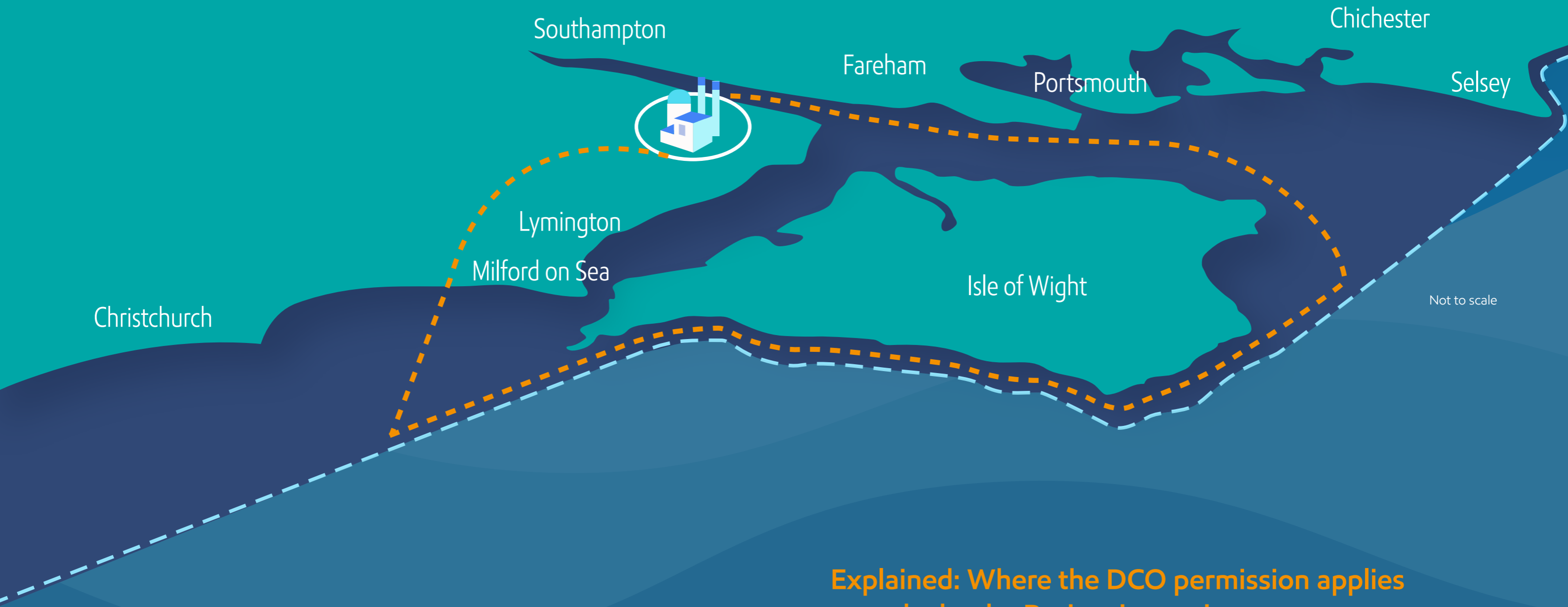
The process to obtain a DCO can take around three to four years to complete and typically involves two public consultations.



Have your say....



Scan the code





Not to scale

KEY

-  The English Channel: Any developments below this line are separately consented.
-  ExxonMobil Fawley Manufacturing Complex: The Development Consent Order for this project starts at the Fawley Manufacturing Complex boundary.
-  Area covered by this consultation, which would be permitted through an application known as a Development Consent Order.

Explained: Where the DCO permission applies to and why the Project is starting now.

The Planning Act 2008 means that a DCO only covers the section of pipeline that is onshore or in inland waters, which includes bays and any crossing of the Solent, if required.

We are consulting on the onshore section of the pipeline, as the DCO process takes the longest amount of time to apply for and receive approval on (in comparison to other consenting applications needed).

Here we explain how the pipeline corridor proposals were created.

To develop the pipeline corridor proposals, we first set out what we wanted to achieve – **our objectives for the Project:**

- to install a CO₂ pipeline from Fawley to a safe and secure storage area in the English Channel.
- to meet all the relevant planning requirements.
- to develop and install a safe, buildable, operational and economically viable pipeline.

We then set out the guiding principles for how we assess the relative merits of the options. These are:

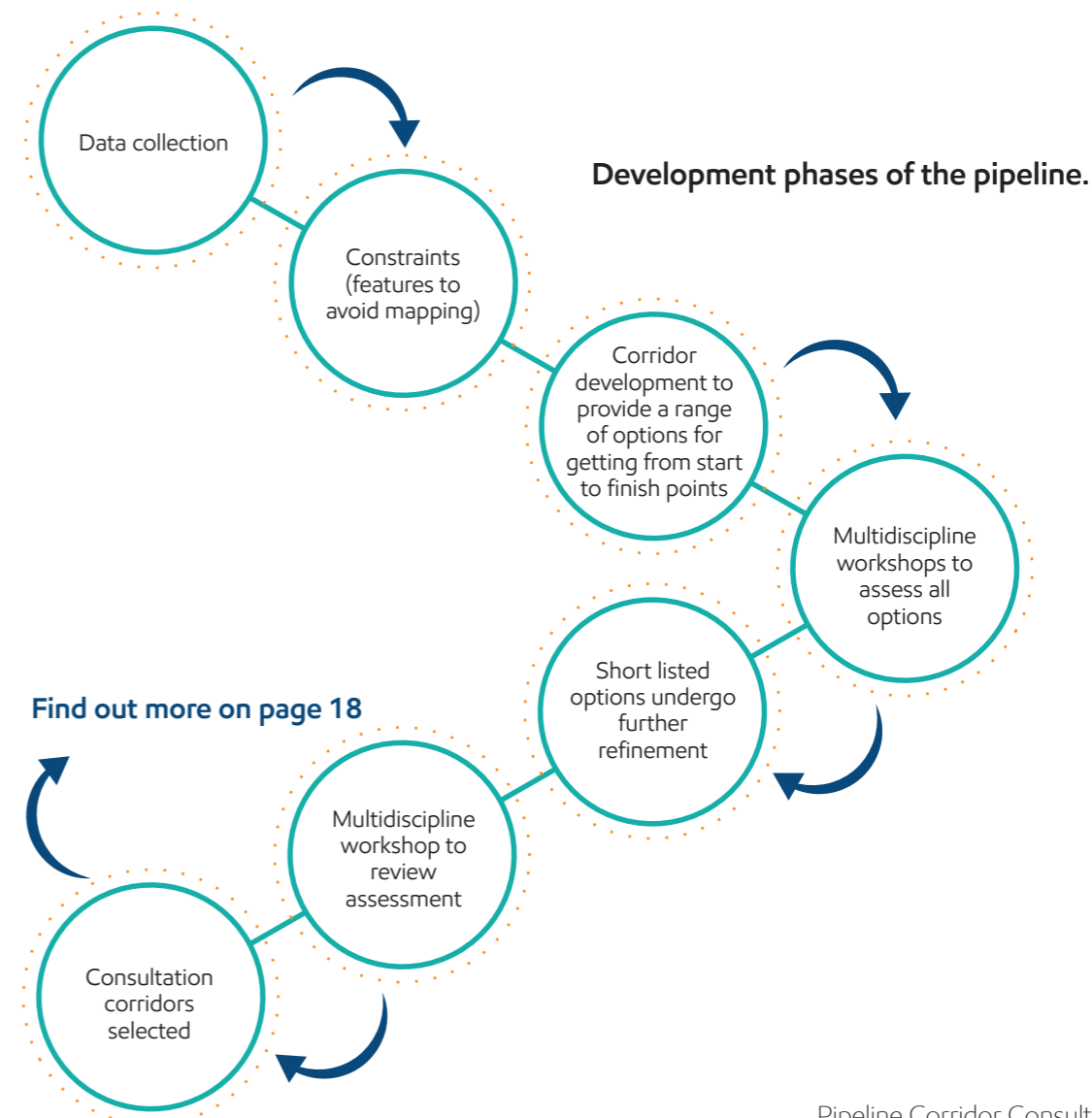
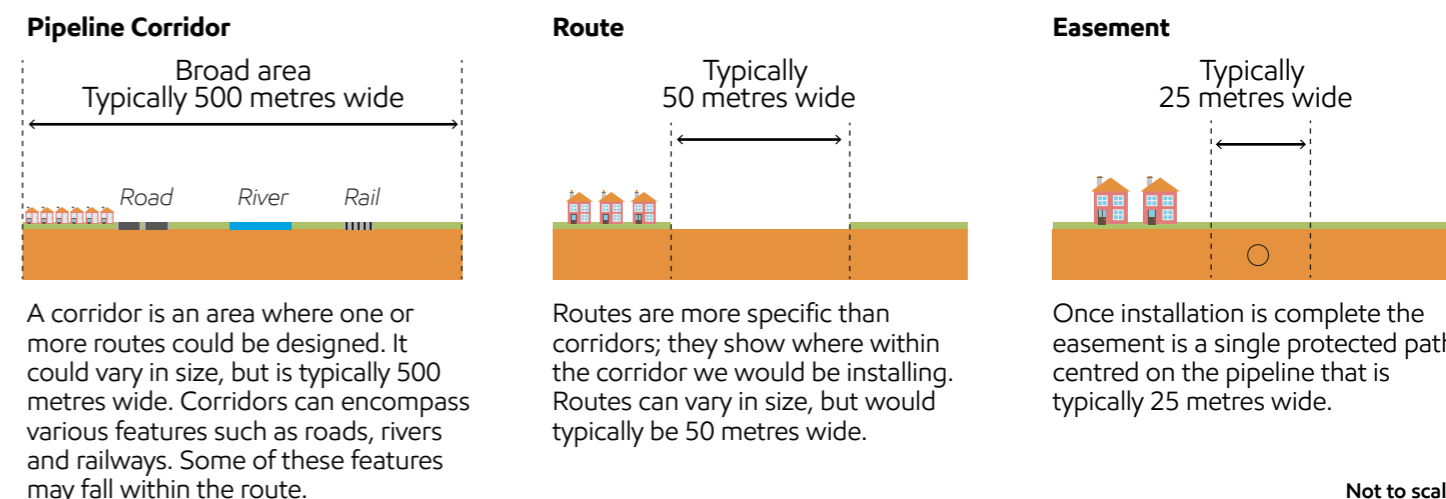
- are likely to have better environmental outcomes versus the other options considered, especially relating to internationally and nationally important features along the final route;
- will reduce social and economic impacts on local communities compared to the other corridors;
- if possible, pass through less complex or less built up areas;
- take account of the marine elements and any associated environmental impacts; and
- can be installed in a timely and realistic manner at reasonable cost.

The environmental and socio-economic considerations mentioned here include the potential for temporary disruption to local communities; the location of community areas and buildings; and consideration of valued natural features such as National Parks, Areas of Outstanding Natural Beauty, Special Protection Areas, Special Areas of Conservation, Ramsar designated wetlands (wetlands of international importance), Sites of Special Scientific Interest, Scheduled Monuments and ancient woodlands.

It is not intended for the final pipeline and protective easement (which is typically 25m wide) to pass under any existing houses within the corridor. Given the width of the corridor, it is likely a route (typically 50m wide) could be designed to reduce the temporary impacts of construction to existing nearby homes and communities.

We will avoid ancient woodland as it is very difficult to restore, recreate or replace.

Development phases of the pipeline





Corridor Element A This was not taken forward due to the likely significant impact on high value areas of protected habitat in the National Park, which could not be avoided through routing or engineering solutions. There was also an engineering, community and construction pinch point to the west of the Fawley Manufacturing Complex that would have been significantly challenging.

Corridor Element B This is a consultation corridor, with the exception of the section that travels south of Milford on Sea.
This alternative coastline approach was not taken forward as it was the lower performing of the two options due to community and environmental constraints.

Corridor Element C This is part of a consultation corridor.

Corridor Element D This corridor would temporarily suspend use of the Southampton Water to all large vessels for a significant period of time. The economic, employment and business impact was deemed too significant to progress this option. There were also significant engineering constraints due to the number of utilities on the seabed in this area and laying the pipe in the shipping channel.

Corridor Element E This corridor element considered how to open-cut across the Hurst Spit as well as how to use a trenchless crossing to install under the spit and lay the pipeline on the seabed in the narrows. This corridor element was not taken forward due to the environmental and cultural heritage impacts. The narrows were not taken forward due to the condition of the seabed and powerful (under)water movement in this area.

Corridor Element F This corridor element was not taken forward due to the impact on the Yarmouth to Cowes Marine Conservation Zone and the Solent Maritime Special Area of Conservation. There was also deemed to be a significant local economy and community impact due to installation along the seabed requiring a large no-traffic (restricted) zone in the Solent for several spring/summer seasons.

Corridor Element G Combined with the Lepe corridor element, this is part of a consultation corridor.

Corridor Element H This was not taken forward as the pipeline would need to be laid on the seabed in the shipping channel requiring a large no-traffic (restricted) zone in the Solent for at least several spring/summer seasons. There were also challenges with the condition of the seabed and powerful (under) water movement in this area.

Corridor Element K This was not taken forward following the decision to not take forward the connecting Solent West Corridor Element F.

Corridor Element M This is part of a consultation corridor.

Corridor Element N This is part of a consultation corridor.

Corridor Element O This was not taken forward, due to the unstable ground conditions of the coast.

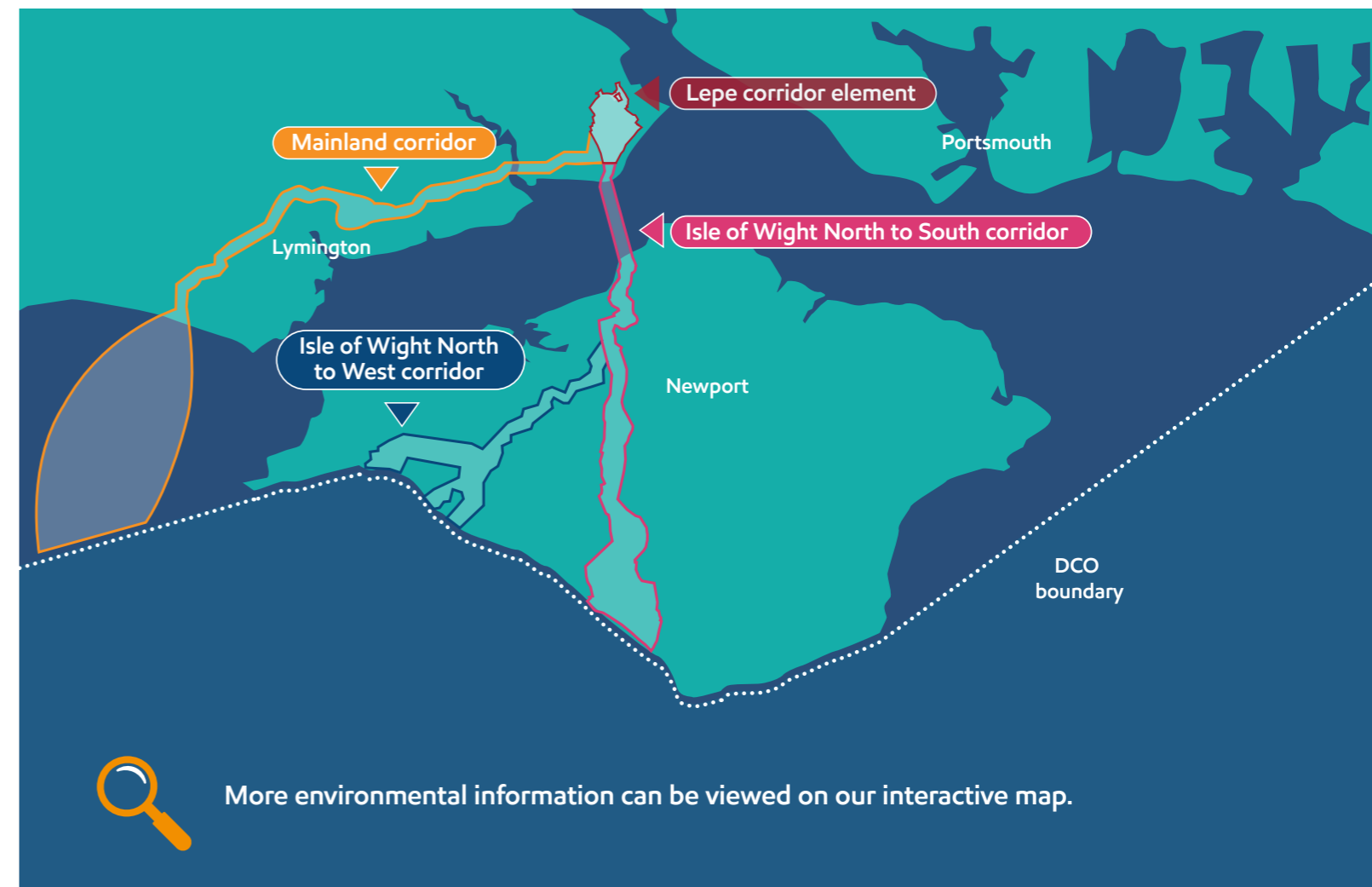
Corridor Element P This was not taken forward as the land to sea location was very low performing due to the ground conditions, seabed, water movement and environmental designations .

This section sets out the corridors we are seeking your views on as part of this corridor consultation.

The pipeline corridors all perform well, but in different ways and have different merits. We are seeking your views to help us select a preferred corridor to progress to the next stage – where we develop a typically 50m wide route within the preferred corridor.

We have preliminarily identified two favoured corridors - Isle of Wight North to West, and Isle of Wight North to South. Following our initial assessments, these two corridors currently perform best when measured against our guiding principles. For example, they both pass through less complex areas, less impacts on local communities and provide greater opportunities to avoid environmental features through route selection.

The Lepe corridor element is part of all three proposed corridors taken forward to consultation. We have separated this section out in the corridor descriptions below to help readers.



More environmental information can be viewed on our interactive map.

Find out more ...

Scan here



Alternatively ...

Look here

See the interactive map www.solentco2pipeline.co.uk

Lepe corridor element

06 The consultation corridors



Overview

This corridor element is around 5.5km long, travels around Fawley and Blackfield villages before crossing open countryside, and heading towards the coast at Lepe. This area contains many environmental and community features. The next stage, defining a route within a corridor, would likely be able to avoid or reduce impacts to these features, where necessary, through design, engineering solutions, or mitigation. This corridor element is part of all the consultation corridors and should be considered together with the descriptions for the Mainland, Isle of Wight North to South and Isle of Wight North to West corridor options.

Corridor description

The corridor has two starting points. One is between the villages of Fawley and Blackfield, and the second starts to the east of Fawley. Both options cross the B3053 (Fawley Bypass) and pass by Langley Village before continuing south near to the operational quarry. The corridor continues south crossing Stanswood Road before continuing to the coast towards Lepe Country Park. This corridor is very wide at present to take into account future proposed developments and areas to be avoided such as irreplaceable habitat.

Community

This corridor travels along the boundary of the Blackfield and Fawley communities before continuing into open countryside with several semi-rural communities within or skirting the corridor edge. The final pipeline and protective easement (which is typically 25m wide) would not pass under any existing houses within the corridor. Given the width of the corridor it is

likely a route (typically 50m) would be designed to reduce the temporary impacts of construction to nearby homes and communities.

Engineering and land

The terrain includes sloped areas with clay soils where landslides may be present and low-lying areas in clay soils prone to surface and groundwater issues. These factors will require ground investigations to understand potential impacts on construction methods, duration, and practicality.

Ecology and biodiversity

This corridor element includes habitats that would be technically very difficult to restore, recreate, or replace. These include several areas of ancient woodland. There are also areas of lowland fen, which are almost entirely within the North Solent Site of Special Scientific Interest (SSSI). We will avoid ancient woodland by routing or other engineering solutions.

Cultural heritage

Many Grade II listed buildings sit within the corridor.

Landscape

The majority of this corridor element falls within the New Forest National Park, reflecting its environmental sensitivity.

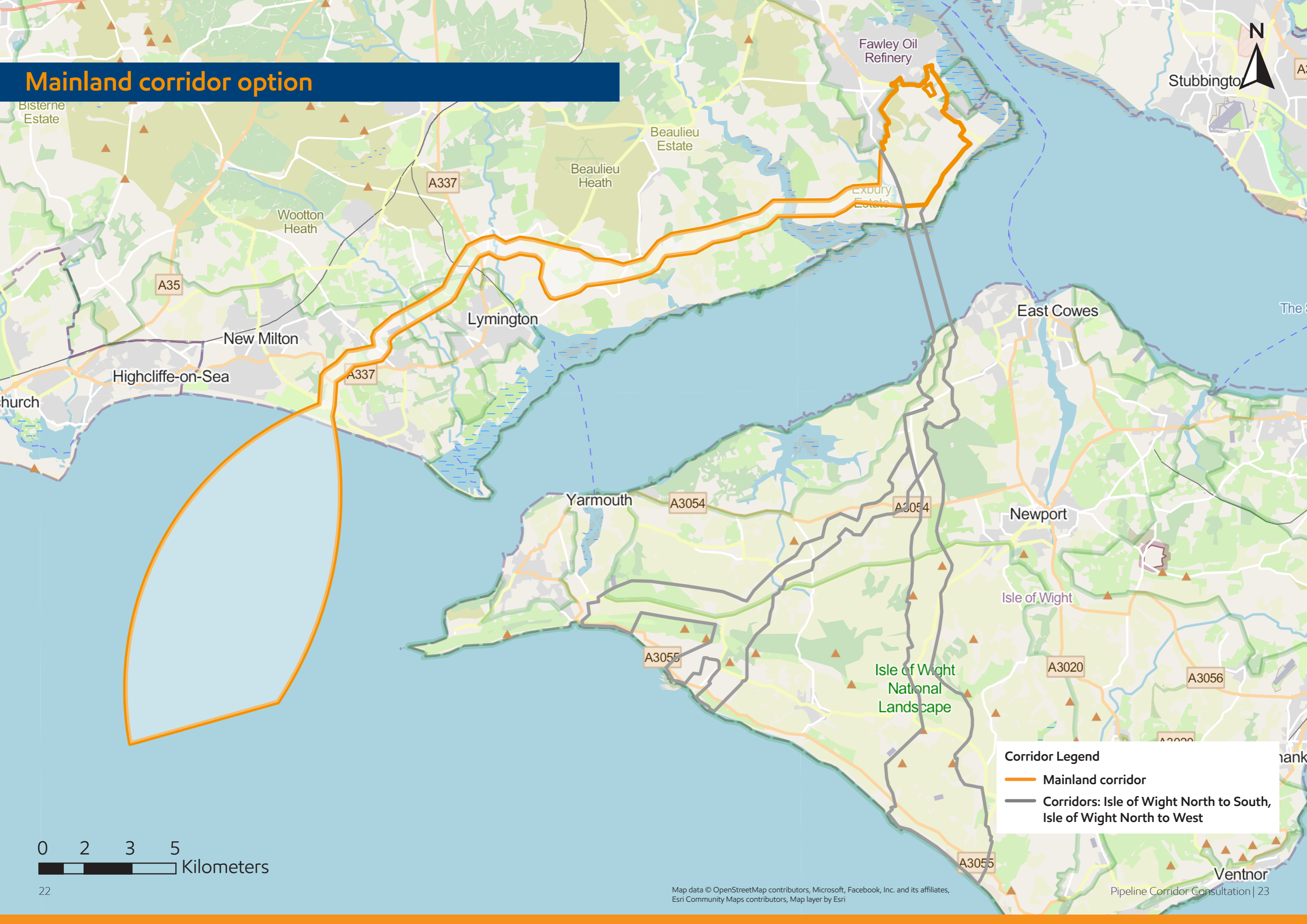
Landfills / soil and geology

Fawley and Fawley Heath historical landfill sites and historical gravel pits lie within the corridor.

Water

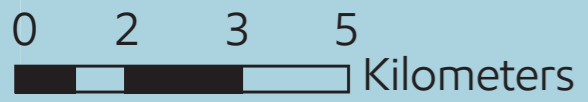
This corridor element would cross one or two areas of Flood Zone 2, centered on two small streams designated as main rivers that flow through the North Solent SSSI.

Mainland corridor option



Corridor Legend

- Mainland corridor
- Corridors: Isle of Wight North to South, Isle of Wight North to West



Mainland corridor option

Overview

This corridor is 33km long and travels around areas of highly valued environmental features in the New Forest National Park. While it skirts many large communities, it avoids all built up areas. This area contains many environmental and community features. The next stage, defining a route within a corridor, would likely be able to avoid or reduce impacts to these features, where necessary, through design, engineering solutions, or mitigation. This is the only consultation corridor which avoids installation under the Solent and across the Isle of Wight.

Corridor description

The Mainland corridor includes the Lepe corridor element, described on pages 20-21. It then turns west, crossing Lepe Road and Darkwater Stream. It then crosses under Beaulieu River before heading in a westerly direction towards Lymington to the south of Norleywood through open farmland and areas of woodland. Before reaching the edge of Lymington, the corridor turns north to avoid Walhampton School and the village of Portmore as it crosses the B3054 Main Road. The corridor continues west, crossing Boldre Lane and the A337 Southampton Road. The corridor then turns south crossing under the Lymington Branch railway line and continuing towards Everton. At this point the corridor travels to the west towards the A337 Christchurch

Road and the B3058 Milford Road. From here it crosses from land to sea. The trenchless section would typically be approximately 150m–200m from the coastline and would typically extend approximately 800m beyond the shoreline to the exit point on the seabed. The corridor then travels south westerly to the DCO boundary around 9km from the coastline of Christchurch Bay.

Community

This corridor travels through a rural area with several semi-rural communities within or skirting the corridor edge. It is not intended for the final pipeline and protective easement (which is typically 25m wide) to pass under any existing houses within the corridor. Given the width of the corridor it is likely a route (typically 50m) could be designed to reduce the temporary impacts of construction to existing nearby homes and communities.

Engineering and land

This corridor will require trenchless installation under the Beaulieu River and Lymington Branch railway line. Both proposed installations are considered complex. A further seven areas have been identified which are highly likely to require trenchless crossing installation.

The length of time needed for each identified trenchless installation area may be up to six times longer than the time needed to open-cut a similar distance. In particular as the corridor travels north of Lymington, an approximately 1.8km section is highly likely to require three trenchless crossings, including the railway line. This may result in area construction works taking place over two or more years

For most of the known and highly likely trenchless crossing locations, additional land would be needed to create access tracks to reach the installation areas at each side of each crossing. Construction traffic would also need to use minor roads to reach these access tracks.

Network Rail

Network Rail require specific protections for railway lines during the installation of any new pipeline under its network. Any proposed works require the approval of Network Rail.

Network Rail's requirements for this complex crossing could extend the duration of construction activities in the areas neighbouring the Lymington Branch railway line. There is the potential that a 40m x 40m above ground valve compound would also be required each side of the railway.

Land to sea transitions

Construction of a landfall at the southern end of the corridor would require works in the seabed which is also within the Solent and Dorset Coast Special Protection Area (SPA). The land to sea transition would typically extend 800m from the coastline. The pipeline would then continue to the boundary of the DCO area in Christchurch Bay.

Ecology and biodiversity

The corridor includes areas of habitat which would be technically very difficult to restore, recreate or replace. These include many areas of ancient woodland, which we will avoid by routing or other engineering solutions.

The corridor crosses several Site of Special Scientific Interest (SSSI) designations, including the Beaulieu River, Lymington River and close to the coast near Milford on Sea.

These designations also abut or extend into the corridor at other locations: northeast of Pennington, north of Lymington and south of East End.

Four of the roads that cross the width of the corridor are also designated as part of the New Forest SSSI.

The Solent and Dorset Coast SPA abuts the southern coastline.

Priority habitats cross the width of the corridor.

The Solent and Southampton Water Ramsar and SPA extends inland either side of Lepe Country Park, in an area also within the North Solent SSSI, and also abuts the northern end of the corridor near Fawley.

Cultural heritage

Several Grade II* and Grade II listed buildings sit within the corridor.

Landscape

Around 65% of the corridor is within the New Forest National Park.

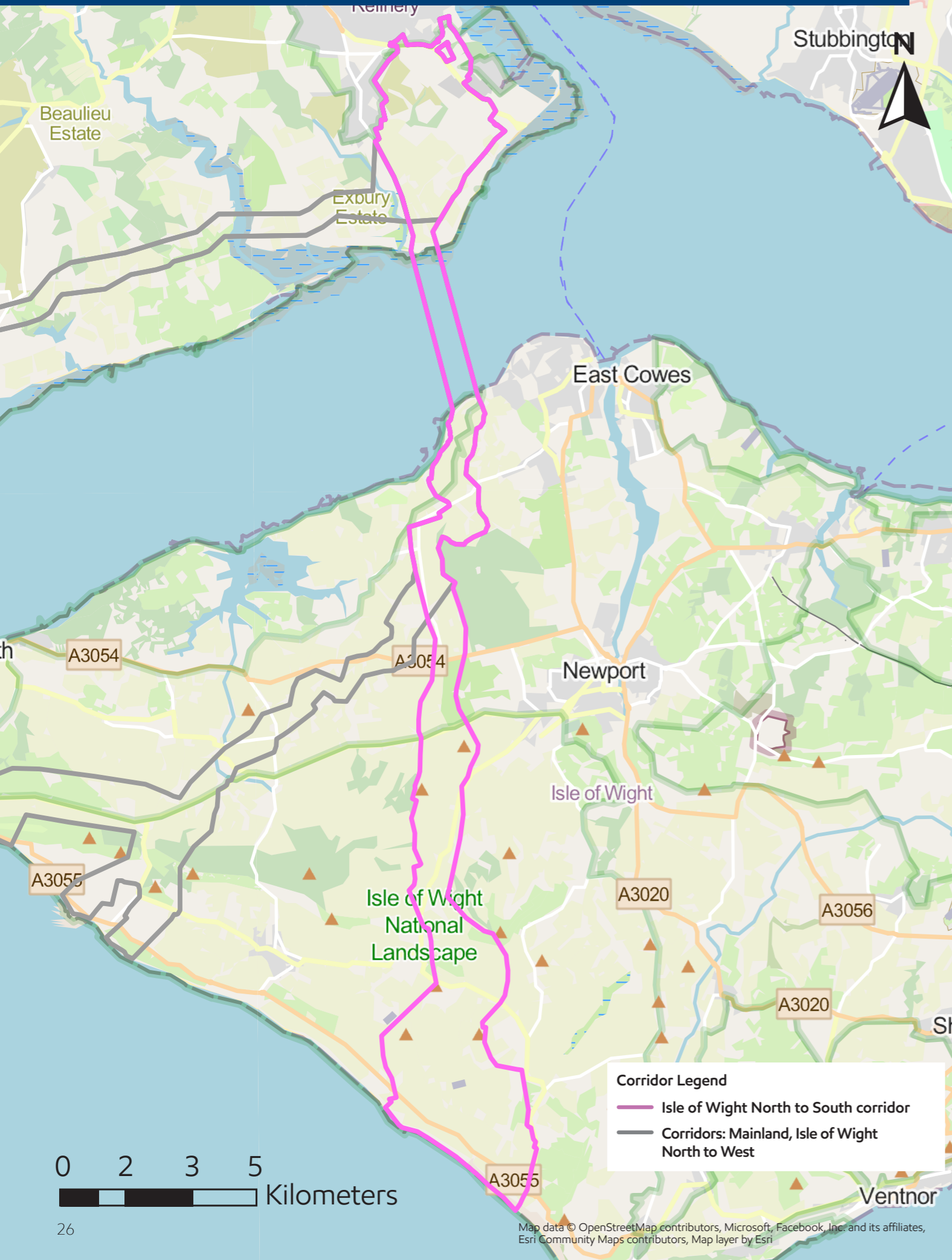
Landfills / soil and geology

Historical gravel pits lie within the corridor.

Water

This corridor crosses several main rivers and associated areas of Flood Zone 2 would be required including larger crossings at Lymington River and Beaulieu River as well as smaller rivers and streams including Avon Water, Passford Water, Plummers Water and Crockford Stream. This includes an area of the Beaulieu River Shellfish Waters.

Isle of Wight North to South corridor option



Overview

This corridor is 26km long and travels south towards Lepe, before using a trenchless crossing under the Solent seabed to the west of Gurnard. It then continues south to Little Atherfield. It skirts a few communities and avoids all built up areas. This area contains many environmental and community features. The next stage, defining a route within a corridor, would likely be able to avoid or reduce impacts to these features, where necessary, through design, engineering solutions, or mitigation.

Corridor description

The corridor includes the Lepe corridor element, described on pages 20-21. After that it continues traveling southward around 600m to the coastline before using a trenchless crossing to install under the Solent to enter land in open countryside on the Isle of Wight. The working areas for the trenchless installation under the Solent would typically be at least 150m-200m back from the shoreline. From Gurnard, the corridor then continues south, following Rew Street and crossing Westview Road and Rolls Hill Road. At this point the corridor turns west towards Little Whitehouse Road to avoid Parkhurst Forest.

Turning south, the corridor follows Whitehouse Road. To the east of Porchfield Village this corridor is the same as the Isle of Wight North to West corridor.

From this point, the corridor continues south, crossing Coleman's Lane, Forest Road and Calbourne Road. The corridor then follows Bowcombe Road south before turning southeast to avoid the village of Shorwell. It then continues south crossing Sandy Way / Presford Shute B3399 before widening to include open countryside on either side of Little Atherfield before reaching Military Road. The corridor is widened along the coast to provide options for land to sea installation. A trenchless crossing technique would be used to move from land to the English Channel. At this point this corridor crosses the DCO boundary and the pipeline would be beneath the seabed.

Community

This option avoids disruption to recreational and business use of the Solent by using a trenchless crossing to pass under the seabed from Lepe to the west of Gurnard.

The corridor travels through a largely rural area on the Isle of Wight with several small communities within or skirting the corridor edge. It is not intended for the final pipeline and protective easement (which is typically 25m wide) to pass under any existing houses within the corridor. Given the width of the corridor it is likely a route (typically 50m) would be designed to reduce the temporary impacts of construction to nearby homes and communities.

Engineering and land

One trenchless crossing is highly likely to be required. It is unlikely to require any additional access roads.

The length of time needed for each identified trenchless installation area may be up to six times longer than the time needed to open-cut a similar distance..

Isle of Wight North to South corridor option continued

Installation under the Solent

This construction of landfalls at each end of the trenchless section under the Solent would be a minimum of 150m back from the coastline.

Land to sea transitions

Existing information regarding coastal cliff instability and erosion has been considered. While installation works would be set back from the coastline, further engineering is expected to ensure appropriate management of risks relating to ground movement and exposure.

Construction of a landfall at the southern end of the corridor would be a minimum of 150m back from the coastline. The land to sea trenchless installation is not wholly within the DCO boundary which ends at the coastline. The sea section of the installation would emerge from the seabed in the South Wight Maritime Special Area of Conservation (SAC) and the Solent and Dorset Coast Special Protection Area (SPA).

Ecology and biodiversity

The corridor includes areas of habitat which would be technically very difficult to restore, recreate or replace. These include several areas of ancient woodland, which we will avoid by routing or other engineering solutions.

Priority habitats cross the width of the corridor.

The northern end of the corridor abuts part of the Solent Maritime SAC, the Yarmouth to Cowes Marine Conservation Zone and Thorness Bay SSSI. Compton Chine to Steephill Cove SSSI extends along the southern landfall coastline, though it is anticipated that this would be avoided through the engineering solution for the landfall.

Cultural heritage

The corridor contains a scattering of Grade II listed buildings including Northcourt Grade II Registered Park and Garden (near Shorwell), several Scheduled Monuments.

The Hamstead Heritage Coast extends across the corridor to the south of the northern Isle of Wight coast and may be difficult to completely avoid in this area. The Tennyson Heritage Coast spans the width of the corridor on the south coast.

Landscape

Approximately 53% of this corridor is covered by Areas of Outstanding Natural Beauty (AONB), also known as National Landscape, which could not be avoided. These areas lie within the southern half of the corridor, and the northern end in the area of the Solent trenchless crossing.

Landfills / soil and geology

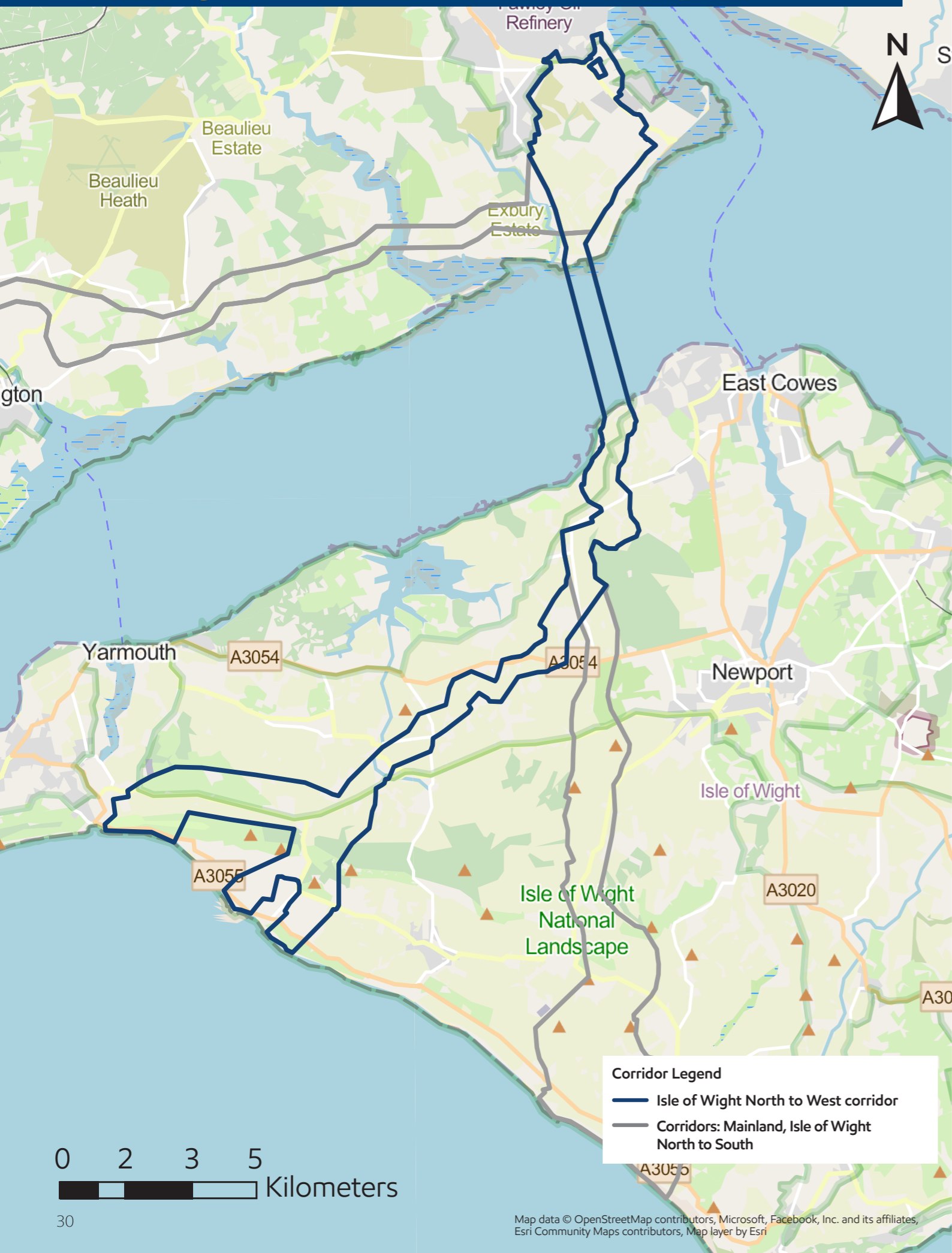
There are a few areas of small historical industrial land use.

Water

Main river crossings would be needed within the corridor section running to the west of Little Atherfield.

Groundwater Protection Zone 2 extends across the corridor near Bowcombe Road, east of Rowridge and includes a sizeable area of Groundwater Protection Zone 1.

Isle of Wight North to West corridor option



Overview

This corridor is 24km long and travels south towards Lepe, before using a trenchless crossing under the Solent seabed to the west of Gurnard. It then continues south westward towards Dunsbury. While it skirts a few communities, it avoids all built up areas. This area contains many environmental and community features. The next stage, defining a route within a corridor, would likely be able to avoid or reduce impacts to these features, where necessary, through design, engineering solutions, or mitigation. This corridor is the shortest across the Isle of Wight before entering the English Channel.

Corridor description

The corridor includes the Lepe corridor element, described on pages 20-21. After that it continues traveling southward around 600m to the coastline before using a trenchless crossing to install under the Solent to enter land in open countryside on the Isle of Wight. The working areas for the trenchless installation under the Solent would typically be at least 150m-200m back from the shoreline. From Gurnard, the corridor then continues south, following Rew Street and crossing Westview Road and Rolls Hill Road. At this point the corridor turns west towards Little Whitehouse Road to avoid Parkhurst Forest.

Turning south, the corridor follows Whitehouse Road. To the east of Porchfield Village this corridor is the same as the Isle of Wight North to South corridor.

From this point, the corridor turns southwest, crossing Coleman's Lane and Yarmouth Road.

The corridor avoids Guyers Heath to the north and Northpark Copse to the south before crossing Pound Lane and Elm Lane, continuing southwest across Quarry Lane and Newbridge Road B3041, and crossing under the Caul Bourne and following the Newport Road. It then crosses the junction with Dodpits Lane, at which point the corridor splits in two directions.

The northern corridor sub-option follows Newport Road before turning south before the Freshwater Bay Golf Club.

The southern corridor sub-option continues south, and then splits again to bypass the village of Brook, with the southernmost section crossing the B3399 before reaching the coastline.

A trenchless crossing technique would be used to move from land to the English Channel. At the point this corridor crosses the DCO boundary, any pipeline route would be beneath the seabed.

Community

This option avoids disruption to recreational and business use of the Solent by using a trenchless crossing to pass under the seabed from Lepe to the west of Gurnard.

The corridor travels through a largely rural area on the Isle of Wight with a few small communities skirting the corridor edge and only one village, Little Whitehouse, within the corridor. It is not intended for the final pipeline and protective easement (which is typically 25m wide) to pass under any existing houses within the corridor. Given the width of the corridor it is likely a route (typically 50m) would be designed to reduce the temporary impacts of construction to existing nearby homes and communities.

Isle of Wight North to West corridor option continued

Engineering and land

Two trenchless crossings are highly likely to be required and are unlikely to need any additional access roads.

The length of time needed for each identified trenchless installation area may be up to six times longer than the time needed to open-cut a similar distance.

Land to sea transitions

Existing information regarding coastal cliff instability and erosion has been considered. While installation works would be set back from the coastline, further engineering is expected to ensure appropriate management of risks relating to ground movement and exposure.

Construction of a landfall on the west coast of the Isle of Wight would require works in the seabed within the South Wight Maritime SAC, and the Solent and Dorset Coast SPA.

Ecology and biodiversity

The corridor includes areas of habitat which would be technically very difficult to restore, recreate or replace. These include several areas of ancient woodland, which we will avoid by routing or other engineering solutions.

Prospect Quarry SSSI is located to the north of the corridor. It is anticipated that routing or other engineering solutions could be found to avoid direct impacts to the onshore parts of the SAC and SSSI designated areas although care would be needed to avoid indirect effects on habitat including functionally linked habitat.

The Isle of Wight Downs SAC / Compton Down SSSI cross the corridor in an east / west direction near Freshwater Bay Golf Club and further east, to the south of Shalcombe. The Compton Chine to Steephill Cove SSSI / Compton Down SSSI and the South Wight Maritime SAC extend across the entire coastline to the south.

Priority habitats cross the width of the corridor.

Cultural heritage

Shalcombe Manor (Grade II*) and a scattering of Grade II listed buildings are sited across the corridor.

There is a notable cluster of Scheduled Monuments within a gap in the ridgeline south of Shalcombe. These could be avoided, but routing in this area is highly constrained by hills (topography) and the proximity of other area environmental designations (Isle of Wight Downs SAC and Compton Down SSSI) and woodland blocks.

The Tennyson Heritage Coast covers much of the southern half of this corridor.

Landscape

The Isle of Wight Area of Outstanding Natural Beauty (AONB) extends into a small part of the corridor at its western end south of the Newport Road near Chessell. The northern end of the corridor in the area of the Solent trenchless crossing also lies within the Isle of Wight AONB. Approximately 28% of this corridor is covered by AONB.

There is a large open space area along the ridge of the Isle of Wight Downs SAC, including National Trust open access land. Whilst there is a gap directly south of Shalcombe, pipeline routing in this area would be constrained by the cultural heritage features discussed above.

Landfills / soil and geology

There are a few small historical landfills, industrial land uses, quarries and cuttings, but these could be avoided.

Water

Several streams, all tributaries of the Newtown River, a small stream near the coast at Brook and associated areas of flood zone would need to be crossed and could not be avoided.

07 About the pipeline

We are seeking to install a steel pipeline. This will typically be 60cm in diameter.

For very long trenchless crossings, including under the Solent or from land to sea, we may need to install two 30cm pipelines. This is because of technical factors and ground conditions. We will set out the pipe sizing as part of the statutory consultation.

Once installed, the pipeline is buried underground. There will be a small number of points along the pipeline where we will need to install above-ground equipment, and this may require a fenced enclosure. A single pipeline corridor would need to be selected before the exact locations for any above-ground equipment can be determined.

Pipeline markers

Pipeline markers are a safety requirement and are found at key points such as road crossings and field boundaries. The marker posts indicate the presence of a pipeline below the ground.

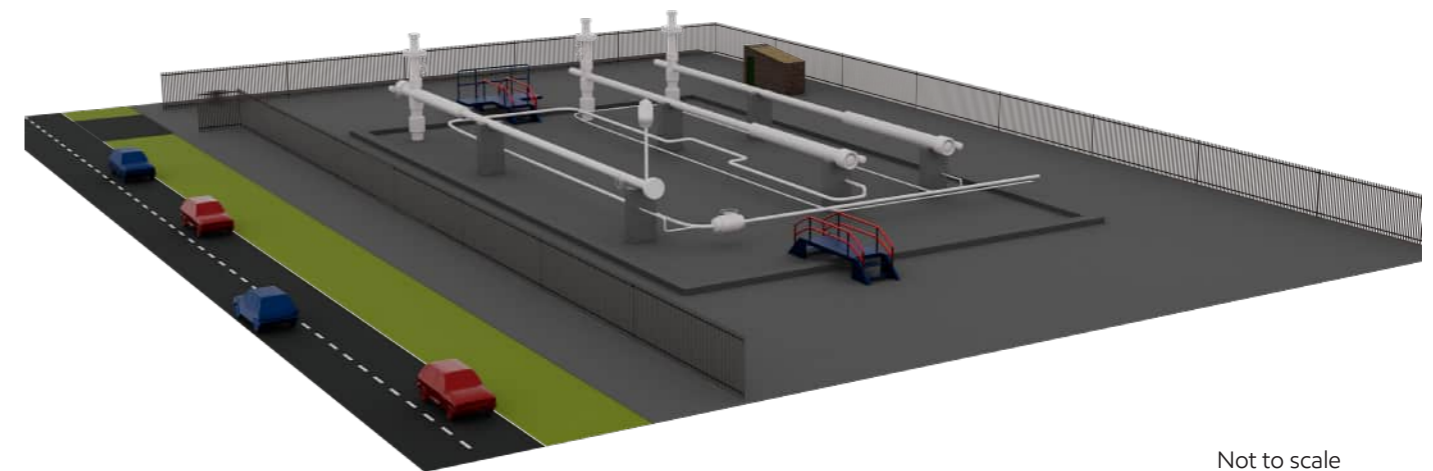
Valves

A small number of valves will also be required along the pipeline route.

The valve stations control the flow of CO₂. They will be remotely operated from our control room. They are likely to be installed above ground and typically have a footprint of 40m x 40m within a fenced enclosure.

This information will be part of the statutory consultation. This will include proposed locations, how many are needed and the size.

Pigging station



Not to scale

Pigging stations

Pigging stations allow the entry and exit points for pipeline inspection gauges or 'PIGs'. These are part of the maintenance system that ensures the pipeline remains safe. We will install pigging stations where there is a change in diameter of the pipe, or a strategic operational location. We are likely to need pigging stations where the pipeline transitions from land to water. See the image above showing what a pigging station may look like. They are likely to be installed above ground and typically have a footprint of 90m x 90m wide and may be up to 4m high. This will sit within a fenced enclosure.

Power and communications

Power and communications supplies will be required for the above-ground equipment such as valves and pigging stations as well as connections to offshore equipment.

Corrosion protection cabinets

Corrosion protection cabinets will be located next to the pipeline. Visually, you would only see a cabinet above the ground which can be sited a short distance away from the pipeline.

Once we have selected a preferred corridor and released an initial working route, we will be able to provide more detail about installation techniques in specific areas of the pipeline route.

Installation techniques

The installation of the pipeline will take between two to three years, but it is unlikely that installation activity would be continuous in all areas throughout this period. Installation would follow good industry practice and use established installation techniques.

Pre-installation works are seasonal and are likely to take place in early autumn and spring. Pipe

installation is preferably undertaken in drier weather and so will take place from late spring to early autumn. Replacing topsoil and replanting are seasonal/weather dependent and so will take place in the next available season after installation is completed.

Installation in the sea (such as in Christchurch Bay if required) is weather dependent and so is likely to take place in between spring and autumn.

Site facilities during construction

Temporary facilities will be needed during the installation phase. These would be set up to provide site teams with office space, staff welfare and storage facilities during the installation period. Details of these will be developed after we have identified the preferred pipeline corridor.

Reinstatement after installation

Once the pipeline has been installed, we will reinstate the land to its former state where possible. Typically, this includes:

- replacing topsoil;
- restoring access routes and fencing;
- reinstating drainage; and
- reseeded and replanting as appropriate.

Open-cut installation

The most common technique for installation of the pipeline would be open-cut trenches. The working width needed for the safe installation using this technique is usually 50m. The working width allows sufficient space for digging the trench, laying a pipe alongside the trench before installation, storing topsoil and subsoil separately during installation and enabling access for construction vehicles. At times, we will need to use narrower working widths for short distances, for example to avoid or reduce impact on protected environmental features in areas.

Trenchless crossing installation

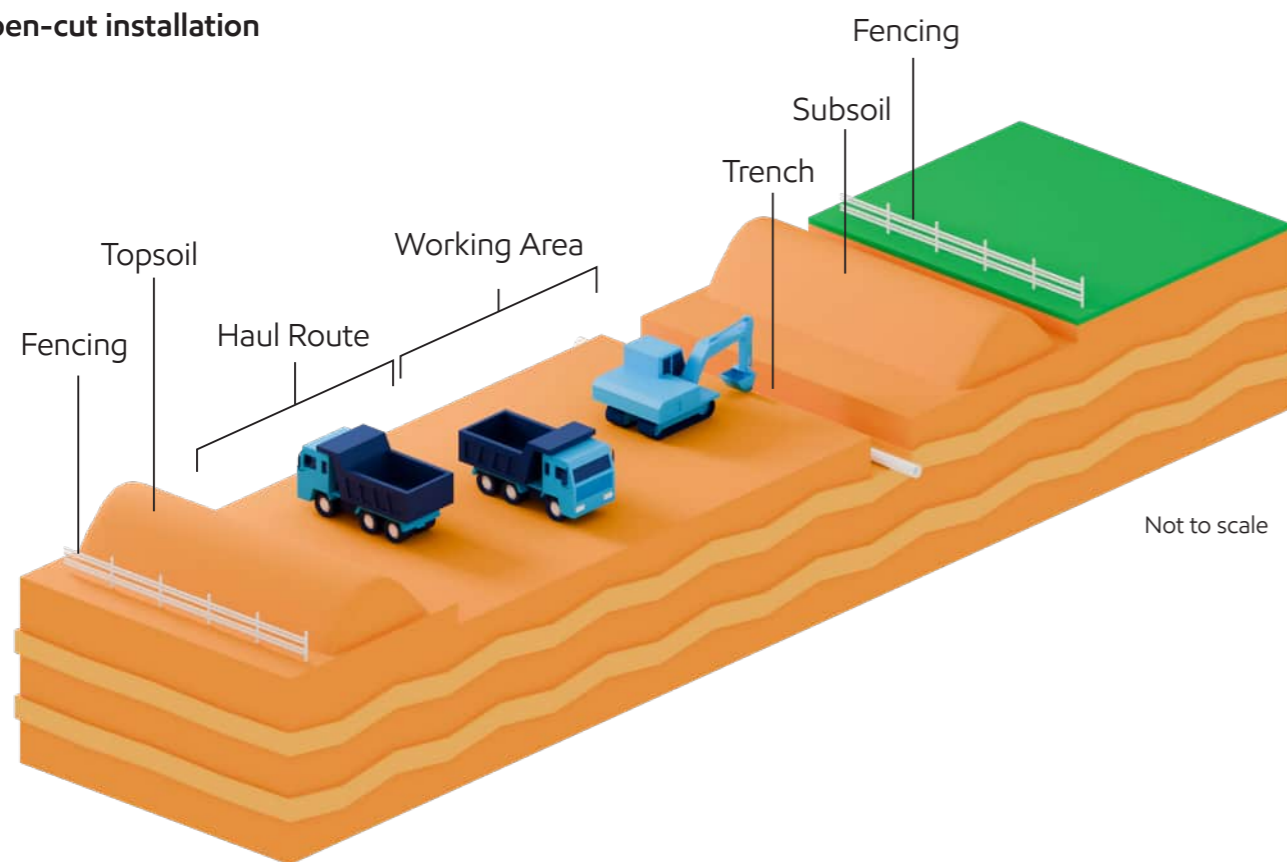
At times, we will need to use trenchless techniques to install the pipeline, for example under railway lines. In these cases, we will use methods such as horizontal directional drilling (HDD) or micro tunnelling. These involve drilling a hole beneath obstacles like roads or bodies of water, allowing the pipeline to be pulled through the drilled path.

Micro tunnelling employs remote-controlled machines to bore tunnels beneath obstacles for pipeline installation.

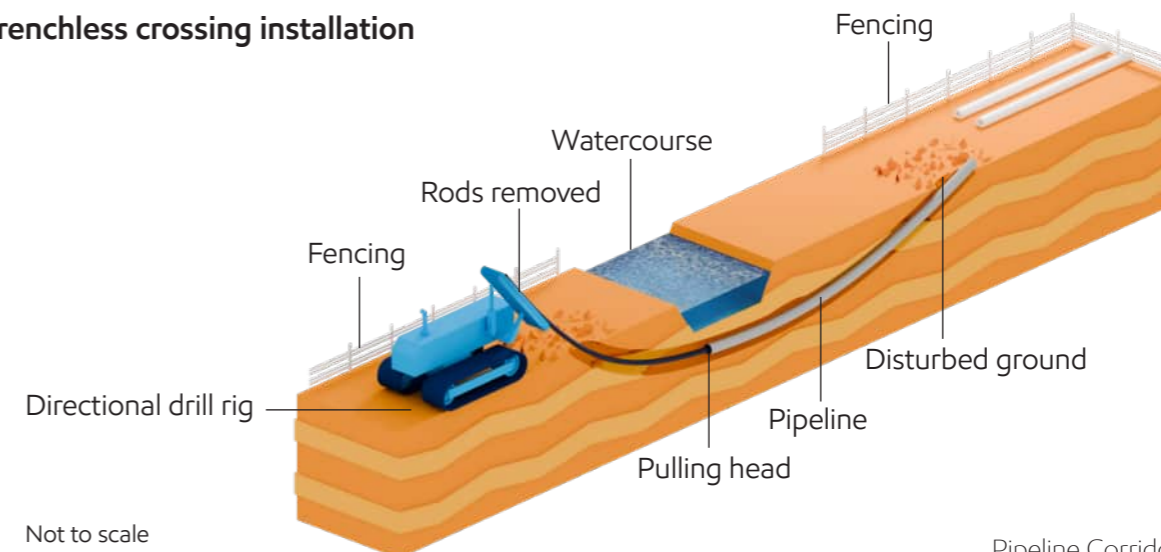
While trenchless crossing techniques cause less disturbance at ground level, allowing roads and railways to remain open and rivers to continue flowing, more land may be temporarily required. For example, HDD installation requires the same length above ground as the length being installed underground. This is typically a straight area of land behind the exit point of this drill. For methods such as micro tunnelling, wider working areas are needed to manage the larger size and amount of equipment needed for trenchless installation.

Trenchless installation may take up to six times longer than the time needed to open-cut a similar distance. Aspects of trenchless crossings may also require 24/7 works. This is typically around one to two weeks in duration for example, while drilling the hole (bore) and installing the pipe.

Open-cut installation



Trenchless crossing installation



For each trenchless crossing an access point is required each side of the feature being crossed. This may require creating access roads each side, which can result in construction activity, such as vegetation clearance and topsoil stripping, taking place some distance from where the pipeline is being installed.

Installation under the Solent and from land to sea

Installation in these sections is similar to the HDD method described above.

The working areas for the trenchless installation under the Solent or to Christchurch Bay or the southwest coast of the Isle of Wight, would typically be at least 150m inland from the shoreline. These working areas are typically around 80m x 110m.

Only the Mainland corridor includes installation works on the seabed. This is because at the DCO boundary point, this corridor option is 9km from the Christchurch Bay coastline.

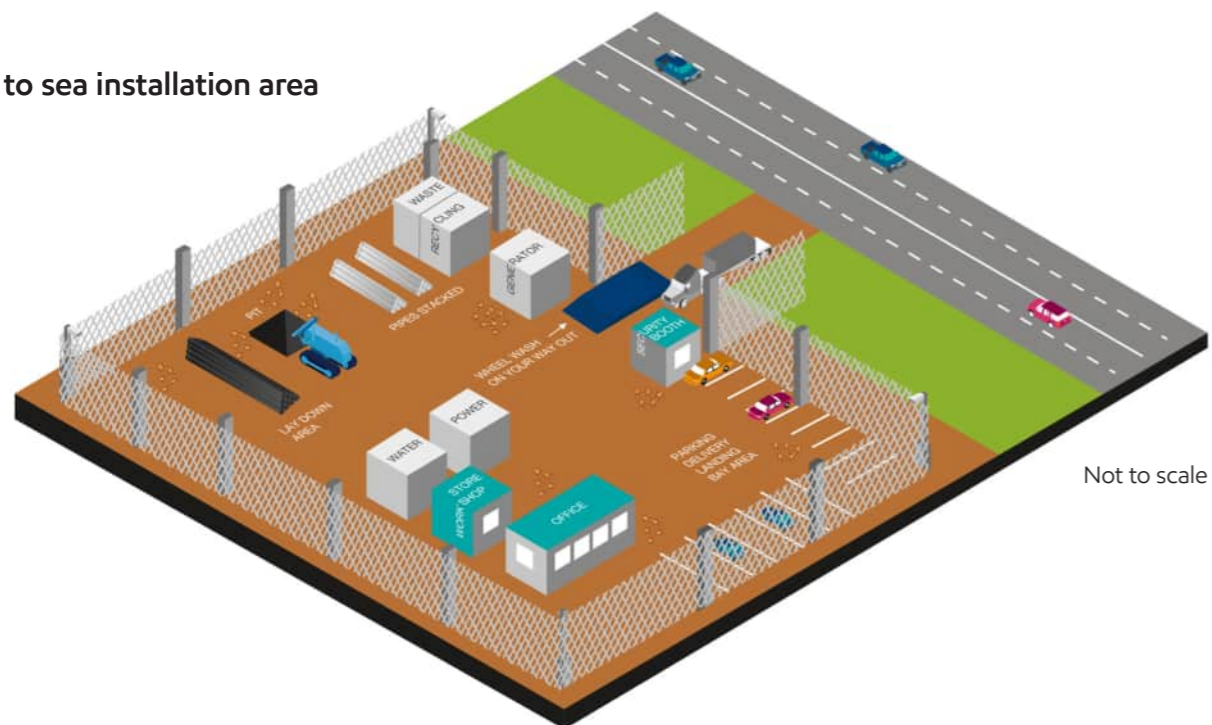
For the two Isle of Wight corridors the land to sea installation would still be under the seabed and

any pipeline installed from this point would be consented under a different process.

In Christchurch Bay, (mainland corridor), a trenchless land to sea installation technology would be used to install a pipeline. The start of this trenchless section would typically be approximately 150m–200m from the coastline and would typically extend approximately 800m beyond the shoreline to the exit point on the seabed. To install this trenchless section an anchored crane or large barge which is typically 100m long x 40m wide, would be required to be moored on location for several weeks.

At this point, the pipeline would be connected to a pipeline 9km long that runs to the DCO boundary in the sea at Christchurch Bay. This pipeline is laid on the seabed then protected. Laying the pipeline on the seabed with protection requires a large construction barge and some support vessels. This would slowly move along the pipeline corridor as the pipeline is installed. For safety reasons there is typically an exclusion area around the main pipeline construction barge of 1500m in diameter.

Land to sea installation area



09

Environmental and habitats assessment

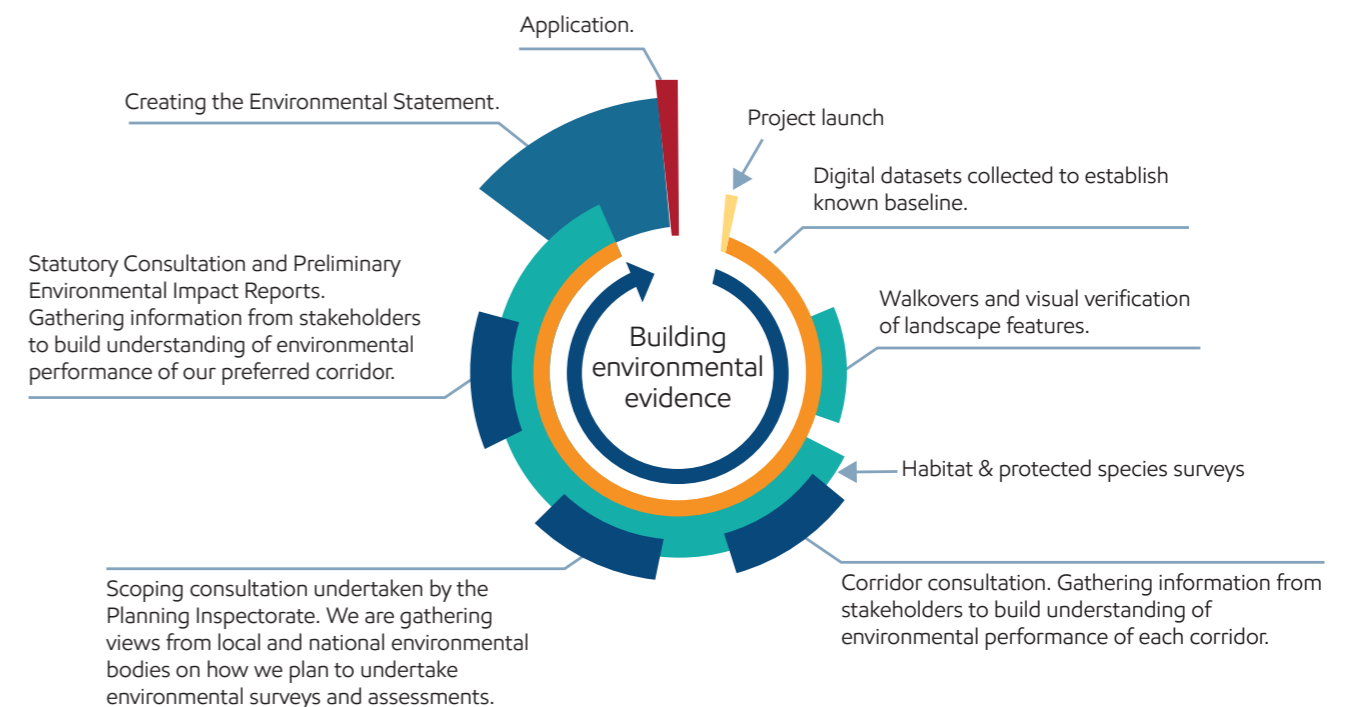
As part of our Development Consent Order application, we will clearly identify the potential environmental impacts and our proposed mitigations.

So far, we have gathered existing data about a wide range of sources covering environmental, historical, community and engineering features in our study area. Our environmental teams have surveyed local areas from Public Rights of Way. We have also had discussions with local councils and environmental statutory bodies. Following the launch of this consultation we will be continuing our survey programme.

To inform our Environmental Impact Assessment (EIA) and Habitats Regulation Assessment (HRA), between 2024 and 2026 we will do the following:

- Undertake surveys. It is important to establish the baseline conditions and the sensitivity of features that may be affected by the proposals at an early stage.
- Seek input from statutory and relevant environmental organisations to develop our assessment and potential mitigation.
- Develop mitigation where significant adverse effects are identified.
- Identify opportunities for enhancements either as part of the DCO or elsewhere to deliver Biodiversity Net Gain.

The process of building environmental evidence to support a DCO application



Explained: Biodiversity Net Gain

Biodiversity Net Gain (BNG) is a way of creating and improving natural habitats that may be affected by development activity⁴. BNG makes sure development has a measurably positive impact ('net gain') on biodiversity, compared to what was there before. A DCO application submitted after November 2025 is required to deliver Biodiversity Net Gain as a condition of its consent.

Explained: Environmental mitigation

Our aim is to carefully design the pipeline to avoid or reduce environmental impacts. At this stage we have identified and considered a broad range of potential environmental impacts. Where practicable, the design of the pipeline corridors has avoided areas where there could be significant impacts.

In the future, examples of mitigation could be:

- retaining notable trees to reduce impacts to the visual landscape;
- installing temporary bales of hay to retain hedgerow connectivity for wildlife; and
- installing noise barriers to reduce temporary construction impacts.

Explained: Environmental Statement

This document provides the findings of the Environmental Impact Assessment, including our proposed mitigation measures.

The Environmental Statement sets out:

- current (baseline) conditions;
- the 'do nothing' environmental impacts (without locally specific actions to mitigate potentially significant impacts); and finally
- the likely significant environmental impacts taking into account the legally binding mitigation commitments that the Project intends to secure in its DCO application.

Explained: Habitats Regulation Assessment

Some ecologically important areas have special status as 'European Sites' and are protected by the Conservation of Habitats and Species Regulations 2017 (known as the Habitats Regulations).

Where there are likely significant effects on the conservation objectives of a European Site, a Habitat Regulation Assessment or 'appropriate assessment' is required to help the DCO decision maker, the Secretary of State, understand the implications of the proposed development on the European Sites. Natural England supports the Secretary of State in this process.

⁴ Department for Environment, Food & Rural Affairs (2024). Biodiversity net gain. Biodiversity and ecosystems.

We value our long-term relationships with people who have our pipelines on their land and are keen to build those relationships with landowners where any potential corridors interact with private land.

Working with you to develop routing and secure land rights.

In the future we will need to speak to all potentially affected landowners. Currently, we are in the very early stages of the Project development. Once we have an initial working route, we will be able to provide specific information to potentially impacted landowners.

Land within corridors

At this point the typically 500m wide corridor is a broad area where one or more routes could be designed. Following the announcement of a preferred corridor, if your land is in this area, we may need to contact you directly in the future as part of statutory consultation and in order to identify Persons with an Interest in Land.

During this consultation, we may be identifying and contacting landowners within consultation corridors to request access to land for environmental surveys, as necessary to support our proposals.

Our survey schedule will continue right up to the submission of our application, and potentially beyond to make sure we have a robust understanding of the natural environment.

Environmental surveys are, typically, non-invasive. We conduct walkover surveys to assess habitats, including animal, vegetation, landscape and visual surveys.

Other walkover surveys, such as noise monitoring, traffic assessments, public use and landscape work may also be required.

We also conduct engineering surveys to assist with the feasibility of design work, including topographical surveying, which help us to assess the lay of the land.

It is important that we fully understand land, ground, groundwater and soil conditions so that we can highlight any potential installation challenges, such as in those areas close to railways, main roads, rivers and other watercourses. To do this we need to install boreholes, which may require monitoring for longer periods of time (two years or more).

We may also conduct archaeological surveys in areas where there may be historical interest or archaeological remains present.

Explained: Persons with an Interest in Land

The Planning Act 2008 requires applicants to make diligent enquiries as to who has an Interest in the Land subject to the application.

Land interests include owners, lessees, tenants and occupiers. As well as those who have rights, these could be people with access rights to driveways or mortgage companies who have a financial interest in the land.

We are legally required to consult everyone with an Interest in Land that may be affected by the proposed development.

Once a preferred corridor is selected, we will write to all landowners within the corridor to establish contact details and we will include an initial questionnaire about known land interests.

Once we have an initial working route we will undertake further enquires to identify any additional Interests in Land.

Thank you for your interest in the Solent CO₂ Pipeline Project.

In this brochure, we have tried to give you as much information as we can about the Project so that you can carefully consider the consultation corridor options and provide us with feedback for the consultation. Please also refer to the material available on our website.

Your views and those of others will contribute significantly to this process, and we encourage you to take part.

Michael Foley | UK Low Carbon Solutions Executive

Contact details: info@solentco2pipeline.co.uk

Website: www.solentco2pipeline.co.uk

Have your say....

Scan the code



How to take part

It's easy to take part, and we do hope you will. We welcome your views, ideas and opinions. This consultation starts on 18 July 2024 and closes at 6pm on 12 September 2024.

- **Online:** The fastest way to respond is online. Simply go to our website: www.solentco2pipeline.co.uk to do this.
- **Email:** If you are unable to respond online, then you can also email us at info@solentco2pipeline.co.uk. If possible, please use the Word document version of our response form. This can be downloaded at www.solentco2pipeline.co.uk
- **Post:** If possible, please use the response form at the back of this consultation document, and post your response to us at Solent CO₂ Pipeline Project, 1180 Eskdale Road, Winnersh, Wokingham, RG41 5TU | UK. If you post your submission, please include your name and postcode to avoid double counting of responses.

Please only respond using one of the approved channels as outlined above, which have been set up specifically to receive responses to this consultation. If you choose to send us a submission without using our response form, then please include your name and postcode to avoid double-counting of responses.

We cannot accept responsibility for ensuring responses that are sent to addresses other than those described above are included in the consultation process.

When submitting your response, please note the privacy statement on the response form, which explains how the information that you provide will be processed and used.

Community consultation

We have released our Commitment to Community Consultation, which outlines how we intend to carry out our consultation with people living in the vicinity of the preferred corridors. It outlines who we will consult with, how we will consult with them and how people will be able to get involved. You can read this document on our website.

Consultation materials

We will make the following consultation materials available:

- This brochure
- Direct mail leaflet
- Map book
- Commitment to community consultation
- Posters

When this consultation closes

We will review and analyse all responses. A report will be produced on the views shared by respondents, highlighting any issues and concerns, and additional information provided in responses. This report, along with other information, will help inform the selection of a preferred corridor.

The report will be published on our website.

We are grateful for all contributions, but we will not be responding individually to everyone taking part in the consultation.

Contact us

Phone: 07845 608 322

Email: info@solentco2pipeline.co.uk

Have your say

It's easy to contribute to this consultation, and we do hope you will.

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Accessing the feedback form

Scan here



Look here

See the interactive map www.solentco2pipeline.co.uk

Feedback form

We are committed to listening to organisations, communities, landowners and members of the public as the Project progresses.

Please respond using one of the approved channels listed. These have been set up specifically to receive responses to this consultation. We cannot accept responsibility for ensuring responses that are sent to addresses other than those listed are included in the consultation process. When submitting your response, please note the privacy statement on the response form, which explains how the information that you provide will be processed and used.

If you would like a large text, a print copy or alternative format of this document, please contact us by email on info@solentco2pipeline.co.uk.

Requests for alternative formats will be considered on a case-by-case basis. We will, as far as possible and proportionate, respond to any requests that help you to take part in this consultation.

Thank you for taking the time to read our consultation material. The questions below are designed to gather your feedback that will help us shape the Project going forward.

Your views on the consultation corridor options.

Your details

Title

First name*

Surname*

Full address

Postcode*

Email address

Please tick here if you would like to sign up to our e-newsletter for Project updates

I confirm that Solent CO₂ Pipeline e-newsletter can be sent to the email address I have provided above.

Are you completing this as*:

- An individual
- An organisation

The category of your organisation - (if applicable):

- A Unitary, County, District or Parish Council
- A statutory body
- A voluntary or community sector organisation
- A business
- Other

Your views on the consultation corridor options (continued...)

Please rank the consultation corridors on a scale of one to three. With one being your preferred option and three being least preferred:

- Mainland corridor
- Isle of Wight North to South corridor
- Isle of Wight North to West corridor

In 100 words or less, please provide a summary of why you selected your preferred corridor (ranked one).

On our website you can tag a specific location and provide comments. If you wish to do this on this form, please provide a What3words reference (<https://what3words.com>) or a clear description of the location, as well as your comments.

Do you have any other comments about the Mainland consultation corridor option?

Do you have any other comments about the Isle of Wight North to South consultation corridor option?

Do you have any other comments about the Isle of Wight North to West consultation corridor option?

ExxonMobil