highways england

Lower Thames Crossing

Utilities Update

Supplementary consultation 2020

About this document

Since our statutory consultation in 2018, we have continued to work with the utility companies and other stakeholders to progress our plans and to ensure the Lower Thames Crossing can be built safely and with minimum disruption.

This document outlines our current proposals for utility diversions and installation, both above and below ground. It includes the proposed positioning of overhead electricity cables (including the relocation of pylons), plus work to install utilities for the construction and operation of the Lower Thames Crossing. We are seeking views on these proposals, which have evolved since statutory consultation.

Highways England

Highways England is a government-owned company that works with the Department for Transport.

We operate, maintain and improve England's motorways and major A-roads, also known as the strategic road network.

Our aim is to ensure that road users have safer and more reliable journeys, and that businesses have the high-quality, effective road links they need to prosper.

Contents

Introduction

Along the proposed Lower Thames Crossing there are a number of existing utilities including overhead electricity cables, gas pipes, water pipes, sewers, fibre-optic and telecoms cables/ overhead cables. To build the Lower Thames Crossing safely, protect existing supplies and enable future maintenance, utility diversions would be required.

Works would also be required to connect utilities such as communications, water, electricity and waste water to construction sites along the route, as well as to the service buildings located at the southern and northern tunnel entrances.

Where local residents and businesses may be affected by these works, we would liaise closely with them to minimise any potential disruption. We are already talking with landowners and occupiers who may be significantly affected and will continue to work with them as plans progress.

Have your say

To comment on our utilities proposal, answer question 6 in the response form

We recognise that our proposal will impact on woodlands, open space and communities and we are determined to keep this to a minimum as much as possible. Ahead of our DCO application, we are working closely with the utility companies to agree how these works should be carried out and to identify the best possible diversion routes, so we can seek to reduce the impacts.

Details regarding the potential environmental impacts of the utility diversions, and our mitigation proposals, can be found in our Environmental Impacts Update.

As we continue to develop our proposals we are focusing on:

- reducing working areas
- minimising the environmental impact
- minimising the amount and duration of traffic management
- using the same corridors to combine multiple utilities
- minimising separation between pipes and cables
- improving use of stockpiling and storage areas

Find out more

Please see our Map Books and Environmental Impacts Update for more information.

Land requirements

The utility design is still under development and over the coming months we will continue to work with all our stakeholders and statutory consultees to develop our design and approach to minimise the land required. We have allowed for the areas of land required temporarily and permanently to accommodate the proposals outlined in this document and we are continuing to engage with utility companies and landowners as part of the ongoing development of the Lower Thames Crossing.

Much of the land required for the utility works would only be occupied temporarily. Once the works are completed, much of the land used would be restored and the utilities would either be underground or carried by overhead electricity cables. Permanent rights over land will be required to operate and maintain the utility infrastructure.

Throughout this document, references are provided to Map Books. These illustrate the full extent of the land that is currently considered necessary for carrying out the utility works. To view the full extent of the works, please refer to Map Book 2: Land Use.

Mitigating the impacts of works

To reduce disruption for road users and the local community, we would look to use trenchless technology (see explanation overleaf) to install utilities beneath railways, watercourses and major roads.

Where this is not possible, and we need to work alongside roads, we would aim to keep any closures to a minimum. Where roads are affected by short-term closures and diversions, temporary traffic lights or lane restrictions, we would ensure people know in advance so they can plan their travel accordingly. We would also ensure people have access to their properties at all times.

Some local footpaths may be affected and we are working with the relevant local authorities to assess potential diversions. We aim to keep disruption to a minimum and limit full route closures and provide alternative routes. Wherever a right of way is affected, we would provide a nearby alternative.

While we have tried to minimise the impacts on sensitive areas, some of the proposals for utilities include works in woodland, some of which is ancient woodland, local parks and open spaces, the Kent Downs Area of Outstanding Natural Beauty (AONB) and the Shorne and Ashenbank Woods Site of Special Scientific Interest (SSSI). This is to avoid residential areas and ensure customer supply is maintained. It does mean however that some woodland may need to be removed in certain areas and we are looking at ways to maximise replanting opportunities at these locations as much as possible.

The utilities diversions we are currently proposing around the A2 have increased the impacts on woodland and environmentally protected areas. We are seeking to address this as we continue to develop our designs. We will continue to work closely with the utilities companies to refine diversion routes where we can, with the aim of avoiding or significantly reducing these impacts ahead of our DCO submission.

As previously mentioned, details regarding the potential environmental impacts of the utility diversions, and our mitigation proposals, can be found in the Environmental Impacts Update.

Example of an open-cut trench technique

Example of an HDD trenchless technique

Example of pylon stringing

Example of an electricity pylon

Typical working techniques

Until the project secures development consent and contractors are appointed for the utility works, we are unable to specify the exact techniques that would be used to carry out the utility works. However, some typical methods which are likely to be used are described below.

Open-cut trench technique

One of the most common techniques for utility works includes open-cut trenching methods. These works involve excavation works for a trench, laying pipe and back-filling.

Trenchless techniques

Trenchless techniques are often used for utility works that need to cross beneath railway lines, roads and watercourses. Common types of techniques include horizontal directional drilling (HDD), and thrust-bore or pipejacking. These methods require few trenches or none as they involve either drilling or pulling pipes and cables below the road, railway line or watercourse.

Restringing overhead electricity cables

Where electricity cables are being moved, working areas would be required for removing existing electricity pylons and setting up and pulling new overhead cables through newly installed temporary and permanent pylons. This involves pulling the overhead cables into position under tension with vehicles such as tractors. Temporary access routes would also be required to these working areas.

Our current proposals

For the purpose of describing our proposed utilities work, we have divided the route into sections. First, we will describe our proposals south of the river, then work our way north of the river. In each section that follows we explain our current utility proposals for that area and reference a diagram. Further details for each section (in Map Book 2: Land Use) are referenced in the corresponding legend.

NOTE: The construction sites shown in this document not only relate to utilities works but also to the construction works required to build the Lower Thames Crossing. In some cases, the diagrams in this document show the proposed undergrounding of existing overhead electricity cables as multi-utility diversions. They also show indicative lines and alignments. The development boundary is not shown on these diagrams. To view this please refer to Map Book 2: Land Use.

Next steps

As well as taking into account responses to this consultation, we will continue to engage with the utility companies, key stakeholders and landowners regarding our proposals. Any refinements to the proposed utility works, the land required and utility alignments will be reflected in our DCO application. Should development consent to be granted late in 2021, we would start works in 2022.

A2 junction and corridor

There are a number of factors in this area that need to be carefully considered to minimise impacts and ensure safety for the public and our contractors. These include:

- working in proximity to a live railway (High Speed 1) and the sufficient safety clearance
- works near major roads such as the A2 and M2
- the impacts on the Kent Downs AONB, SSSI, ancient woodland and public open space areas
- the multitude of existing services that run parallel to the A2

Gas works

In this area, works are likely to involve a combination of open-cut trenching techniques along minor roads and in open fields and trenchless methods to divert utilities under major roads including the A2 and M2.

Roads such as Thong Lane and the Hever Court Roundabout (Gravesend East junction in the associated diagram) are likely to be temporarily impacted by closures and diversions or lane restrictions. We would ensure road users are given advance notice, so they can plan their travel accordingly, and that local residents have access to their properties at all times.

Works are likely to use some open space at Claylane Wood, which would include clearing a portion of ancient woodland and we would maximise opportunities for replanting where possible.

Overhead electricity cable diversions

At our 2018 statutory consultation we proposed the existing pylons located in Claylane Wood would be replaced by a new, taller pylon and that the route of the overhead lines would stay the same through Claylane Wood. The proposal has remained the same and the two existing pylons north of the A2, within the Claylane Wood, will be replaced with a new in-line pylon that is approximately 75 metres in height. In order to build the new pylons and maintain continued electricity supply, two temporary pylons on a temporary alignment to the east of the existing overhead cables would need to be installed. These would need to be in place for approximately one year.

At the statutory consultation we also proposed that near Thong and Riverview Park, two pylons would be removed – one on the proposed route of the Lower Thames Crossing – and three new pylons would be built. This is still the proposed solution. In order to build the new pylons and maintain continued electricity supply we would need to install one temporary pylon on a temporary alignment to the north of the existing overhead line and to the east of Thong Lane. This would be in place for approximately one year.

Multi-utility works

In this area, the multi-utility diversions required are extensive and our revised proposal includes a number of diversion routes. To reduce the impacts on the local community, we are considering a number of routes north and south of the A2 and south of HS1.

There would be a diversion along the southern route of the A2 for water, communications and electricity cables. We are working closely with utility companies and stakeholders to help reduce impacts.

To divert the gas pipeline along the northern route of the A2 and to ensure the required separation between other utilities, areas of ancient woodland would be impacted. We are currently looking at how we can reduce these impacts as much as possible, for example by using trenchless technology under the local access road (the eastbound collector for the A2). We are also working with local stakeholders to ensure installation and future maintenance is possible in this location.

If either the northern or southern routes are not feasible, we have made provision for a diversion through Jeskyns Community Woodland/County Park. This route, south of HS1, ensures there is enough space for the installation and future maintenance of all the diverted utilities. It would also follow the positioning of other utilities through open space to avoid impacting trees. However, this would mean that there is a reduction in woodland areas that can be accessed while the works are being carried out. This would be temporary and the land would be returned to its previous state wherever possible. We will agree the level of compensatory tree planting required for the loss of any areas of ancient woodland with statutory stakeholders.

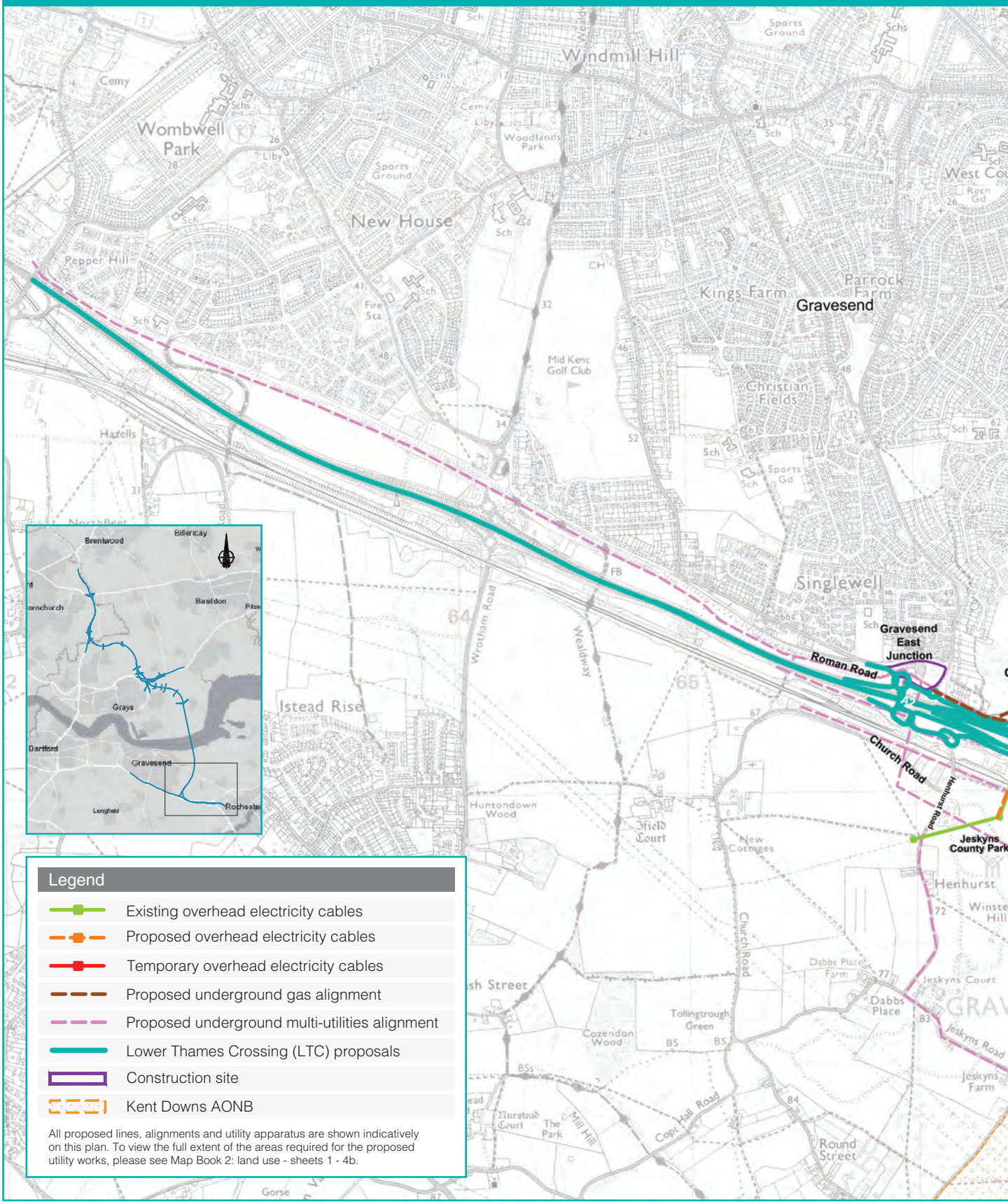
Subject to this consultation, further investigations and stakeholder engagement, we will be exploring opportunities to reduce the land required for multi-utility works in this area. In particular, we will focus on sensitive habitats, such as the SSSI, areas of ancient woodland, the AONB and cultural heritage assets.

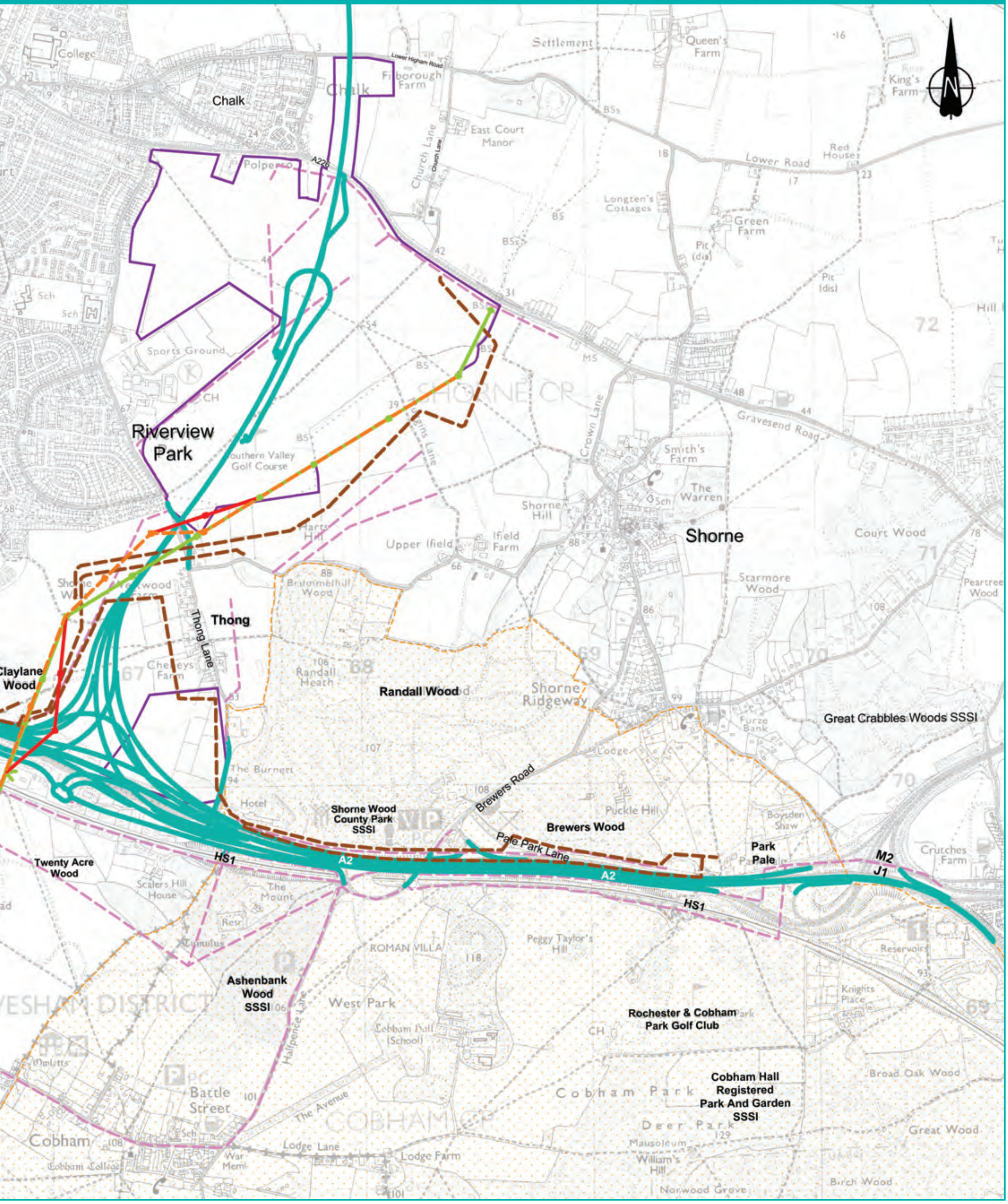
In the vicinity of Roman Road, we are also looking to upgrade existing utilities as part of a permanent power supply for the southern tunnel entrance service building.

To view the full extent of the areas required for the proposed utility works, please see Map Book 2: Land Use – sheets 1 – 4b.

Multi-utility diversions include local electricity, gas and water pipes, sewers and fibre-optic and communications cables.

A2 junction and corridor




Chalk
Riverview Park
Thong
Thong Lane
Claylane Wood
Shorne
Randall Wood
Great Crabbles Woods SSSI
Shorne Wood County Park SSSI
Brewers Wood
Brewers Road
Pale Park Lane
Park Pale
Twenty Acre Wood
HS1
A2
M2 J1
Ashenbank Wood SSSI
Rochester & Cobham Park Golf Club
Cobham Hall Registered Park And Garden SSSI
Lower Higham Road
Gravesend Road
Lower Road

Southern tunnels entrance

The works in this area include installing utilities to supply power and services to the construction site on a temporary basis and the tunnels on a permanent basis. The working area includes open fields, which are away from residential properties. We would also carefully consider the impact on environmentally sensitive areas to the south and the Thames Estuary and Marshes Ramsar site to the north.

Gas works

As described in the previous section – 'A2 junction and corridor'.

Overhead electricity cable diversions

As described in the previous section – 'A2 junction and corridor'.

Multi-utility works

This would include installing utilities to the tunnels and to the temporary construction site. Electricity is needed during construction and for the on-going operation of the tunnels. These works are likely to involve open-cut trenching techniques in non-residential areas.

We are currently working with the utility companies to assess locations for an electricity substation within the temporary construction site in this area. The substation area would be approximately 50 metres by 50 metres and would be part of the permanent above ground infrastructure that would remain at the southern tunnel entrance. It is anticipated that the buildings would be architecturally designed to blend in with their surroundings.

Given the potential size of the substation area, we want to take on-board local views. Please note, the circles on the diagram show the potential location areas for the substation, rather than the actual size. The location options include:

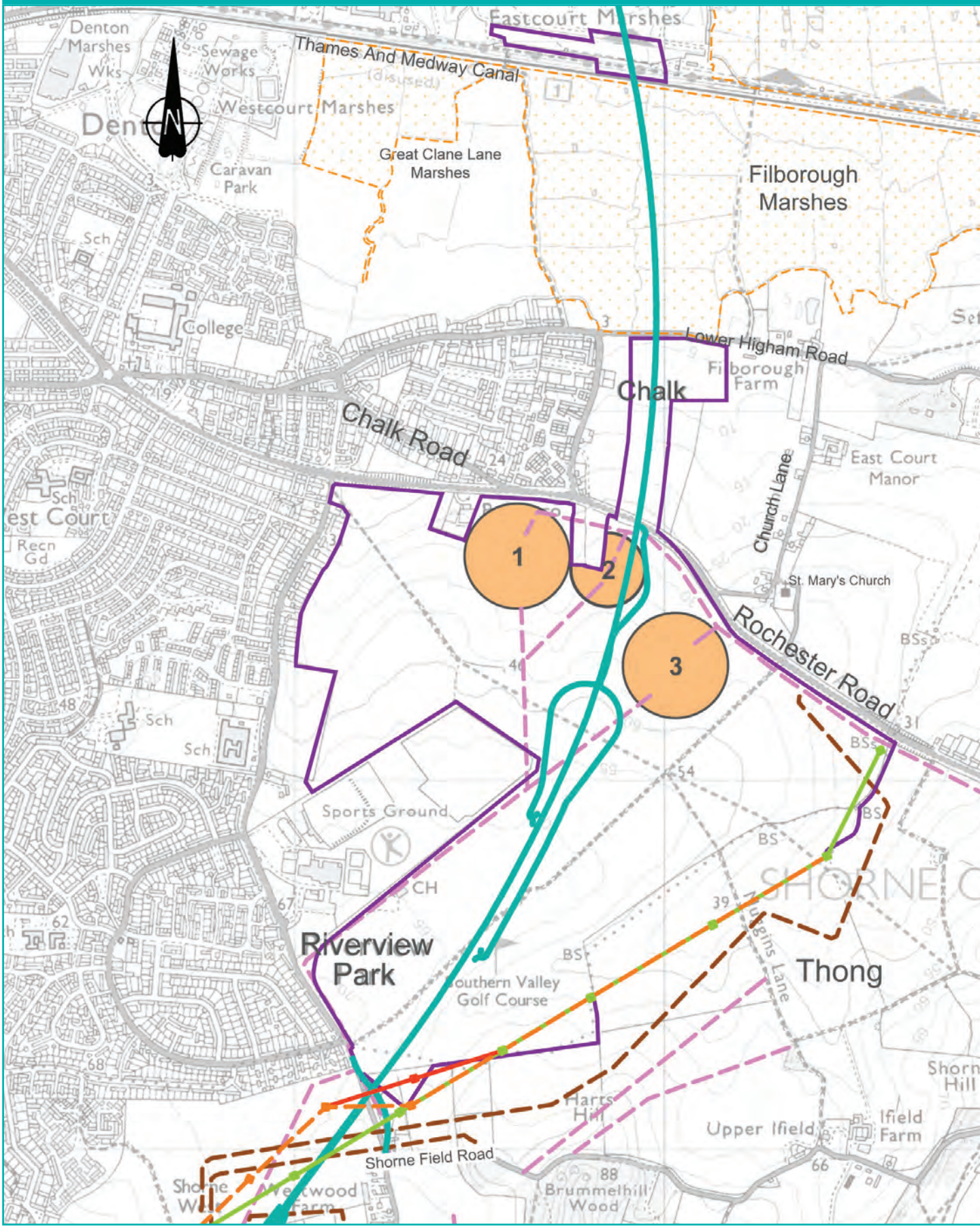
1. Opposite Chalk Road as shown in the diagram. This option allows for future maintenance but it is not as accessible as other options due to the existing road alignment. It may also have visual impacts for the local community.

2. Between options 1 and 3, we are also considering a location that is away from the majority of the residential areas and St. Mary's Church. This option is accessible for future maintenance works and there would be no need to work around construction activity, so this option would not present phasing challenges.

3. Near Rochester Road as shown in the diagram. This provides good accessibility for the ongoing maintenance of services which is critical. It is also a good distance away from residential areas to avoid any potential visual impacts. However, it is also located adjacent to St. Mary's Church.

To view the full extent of the areas required for the proposed utility works, please see Map Book 2: Land Use – sheets 5 - 7.

Southern tunnels entrance



Legend

- Existing overhead electricity cables
- Proposed overhead electricity cables
- Temporary overhead electricity cables
- Proposed underground gas alignment
- Proposed underground multi-utilities alignment
- Lower Thames Crossing (LTC) proposals
- Construction site
- Potential permanent substation location
- Thames Estuary and Marshes Ramsar site

All proposed lines, alignments and utility apparatus are shown indicatively on this plan. To view the full extent of the areas required for the proposed utility works, please see Map Book 2: land use - sheets 5 - 7.

Tilbury

Utility works in this area are needed for diversions and to supply the construction works and the tunnels with communications, gas, power and water. One of the main factors for us to consider in this area is working around a live railway and ensuring that we do not impact local train services.

Gas works

Key works in this location involve installing a new connection to existing utility assets located north of Station Road.

Overhead electricity cable diversions

At our 2018 statutory consultation, we proposed new 400kV pylons that would be parallel to two existing pylon routes in the area west of Low Street Lane, East Tilbury. At that stage we thought that five pylons would be removed and five new ones would be installed, so there would be no net increase in the number of pylons. We also said the existing 132kV line on the new 400kV alignment would go underground prior to a new line being built. In addition, we proposed replacing a pylon at Muckingford Road as it would not be practical to make the existing pylons higher to accommodate Muckingford Road passing over the Lower Thames Crossing.

Following further investigations, stakeholder engagement and the new proposed road route, the works would not be as extensive as previously thought. Instead, the new proposal requires the diversion of three overhead cable routes and includes:

- installation of a new 132kV overhead cable route consisting of five new pylons, modification to two and demolition of four. The location of the diversion would be to the east of Blue Anchor Lane and to the west of Low Street Lane and the village of Linford

- modification of two existing pylons and the installation of 3.5km of 132kV cable underground between the two pylons. These modifications include the installation of baskets so cables can be connected. This would allow the demolition of nine pylons. The location of the diversion would be to the east of Low Street Lane and to the west of the village of Linford
- redirection of the 400kV overhead cables. To do this we would need to install five new pylons. Once redirected, four existing pylons would be removed. The location of the diversion is south of Station Road up to the west of the village of Linford. To install the diversion in this location and maintain continued electricity supply, we would need to erect two temporary pylons, along a temporary alignment either side of Muckingford Road. These would be in place for approximately two years

Overall, between Chadwell St. Mary and Tilbury, we propose removing 17 existing pylons and installing 10 new pylons resulting in seven fewer pylons.

To complete these works, pylon restringing sections have also been identified. Please see earlier in this document for an explanation of restringing. This work is currently earmarked to take place in the vicinity of Linford.

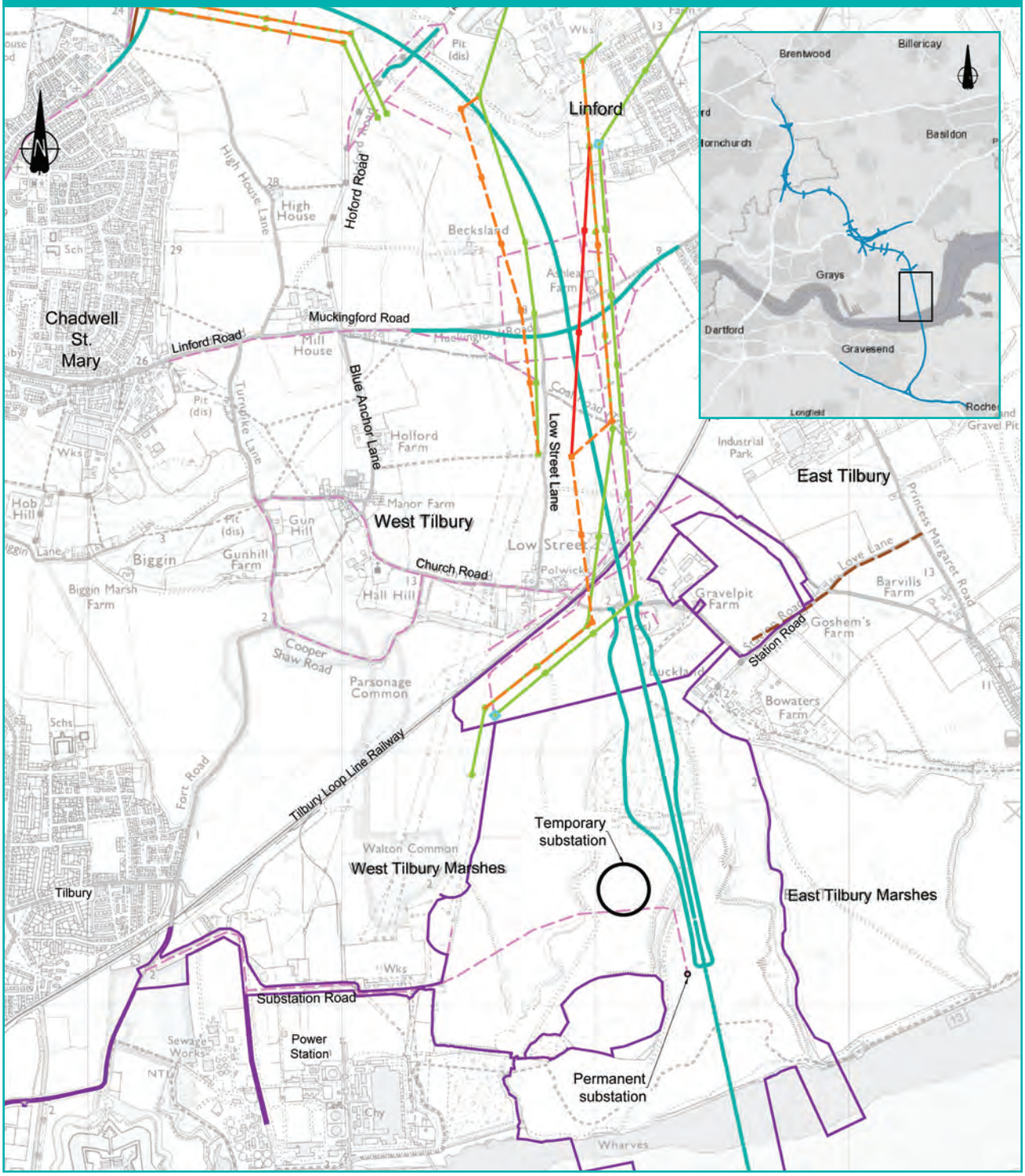
Multi-utility works

This would include:

- a diversion south of the existing Muckingford Road to facilitate the construction of Lower Thames Crossing infrastructure in this area
- diversions to the north of Hoford Road to facilitate the new proposed Lower Thames Crossing infrastructure
- diversion of water pipes west of Muckingford Road to accommodate a shared walking and cycling path adjacent to Muckingford Road and Linford Road
- protection of existing utilities in the area including at Muckingford Road/East Tilbury
- installation of utilities along Church Road that are required for the construction site in this area
- installation of utilities for the temporary substation that would power the tunnel boring machine. The temporary substation would be within the construction area. Its size is estimated to be 65 metres by 45 metres and the design for this is currently in development. Please note, the circle on the diagram shows the location area for the substation, rather than the actual size
- installation of utilities along Substation Road to provide permanent power to the northern side of the tunnel. A new permanent substation would be located in the service area next to the northern tunnel entrance. It's estimated to be 10 metres by 10 metres and the design for this is currently in development
- additional works for pylon restringing in the Linford area

To view the full extent of the areas required for the proposed utility works, please see Map Book 2: Land Use – sheets 8 – 10b.

Tilbury



Legend

- Existing overhead electricity cables
- Proposed overhead electricity cables
- Temporary overhead electricity cables
- Existing overhead electrical towers to be modified
- Proposed underground gas alignment
- Proposed underground multi-utilities alignment
- Lower Thames Crossing (LTC) proposals
- Construction site
- Potential substation location

All proposed lines, alignments and utility apparatus are shown indicatively on this plan. To view the full extent of the areas required for the proposed utility works, please see Map Book 2: land use - sheets 8 - 10b.

A13/A1089 junction (east)

There are a number of factors that need to be carefully considered when carrying out the utility works in this area. These include minimising impacts on residential communities, local roads and areas of archaeological and ecological significance. Due to the number and location of the existing utilities, trenchless techniques will be used to divert them beneath the A13/A1089 and to ensure this major route is not significantly impacted. Subject to this consultation, further investigations and stakeholder engagement, we will continue to explore opportunities to reduce the land required for gas and multi-utility works in this area.

Gas works

Works in this area include diversions along Brentwood Road to the south of High House Lane using trenchless techniques.

Another diversion is also proposed for a gas pipeline that currently runs along the existing A1013. There are currently two options, both of which would overlap the Orsett Showground in parts.

1. A diversion through the north of the A13/A1089 junction, which then runs through the southern edge of Orsett Showground and across the A13/A1089 to connect with the existing gas pipeline. This is currently the preferred alignment subject to consultation, additional feasibility studies and engagement with local stakeholders. This route minimises interaction with the construction of the Lower Thames Crossing, ensures safety for the gas pipeline during installation and in the future, and avoids impacting A13/A1089 road users. However, it does present challenges as it would run close to the scheduled monuments north of the A13/A1089 near Baker Street. It would also run along the southern edge of the Orsett Showground.

2. A diversion route that runs south of the new A13/A1089 junction is also being considered. This route would mean the diversion works would be carried out within the Lower Thames Crossing construction area, which poses safety concerns. This option would also make it more difficult to sequence the respective works involved in each case. This diversion would require a long and complex trenchless crossing under the A13/A1089 with the works and working area located near local businesses and a scheduled moment adjacent to Brentwood Road. This diversion would run along the southern edge of the Orsett Showground as per the alignment diversion described previously.

For safety reasons, the area above the gas pipeline would require an exclusion zone. This would mean that certain activities such as housing development, parking, picnic areas, open air markets and other outdoor activities such as concerts would be restricted. We will continue to work with all our stakeholders and statutory consultees to minimise the extent of this zone as much as possible. The exact location of the exclusion zone would depend on the position of the pipeline and this would be submitted as part of our DCO application.

Overhead electricity cable diversions

At our 2018 statutory consultation, we said that west of the proposed A13/A1089 junction two parallel pylon routes would be diverted and we were considering a number of options for the best route for the two realigned overhead cables. The two pylon routes affected were:

1. 275kV: six new towers would be installed and 12 pylons would be taken down.

2. 400kV: 13 new towers would be installed and six towers would be taken down.

At statutory consultation, we also showed that Hornsby Lane would be moved. However, we now plan to close the lane as highlighted in the Changes to the route chapter of our Guide to Supplementary Consultation. This means we would avoid relocating some of the pylons as outlined at statutory consultation.

We are now considering the proposal shown in the diagram. This includes:

- the 275kV route being diverted from the area of Hornsby Lane to the west of the A13/A1089/Lower Thames Crossing junction and joining back to the existing overhead cable in the area of Stifford Clays Road Road (also see the A13/A1089 junction (west) diagram which is in the next section). This would mean constructing nine new pylons and demolishing eight
- the 400kV route being diverted from the area of Hornsby Lane to the west of the A13/A1089/Lower Thames Crossing junction and joining back to the existing overhead cable located to the north of Long Lane. This would involve constructing four new pylons and demolishing four

Along these routes, 13 new pylons would be installed and 12 would be demolished, resulting in an increase of one pylon. This is the same number as presented during our statutory consultation.

To install the above diversions and maintain continued electricity supply, we would need to install four temporary pylons on four temporary alignments. Two pylons would be located west of Hornsby Lane, one to the north of Long Lane and one to the north of Stifford Clays Road (see A13/A1089 junction (west) diagram which is in the next section). These would be in place for approximately two years.

To facilitate these diversions, restringing work would also be required from Hoford Road in the west, to Hornsby Lane and up to the north of Green Lane (also see the A13/A1089 junction (west) diagram which is in the next section). We are in discussion with the local authority to minimise any disruption associated with these works.

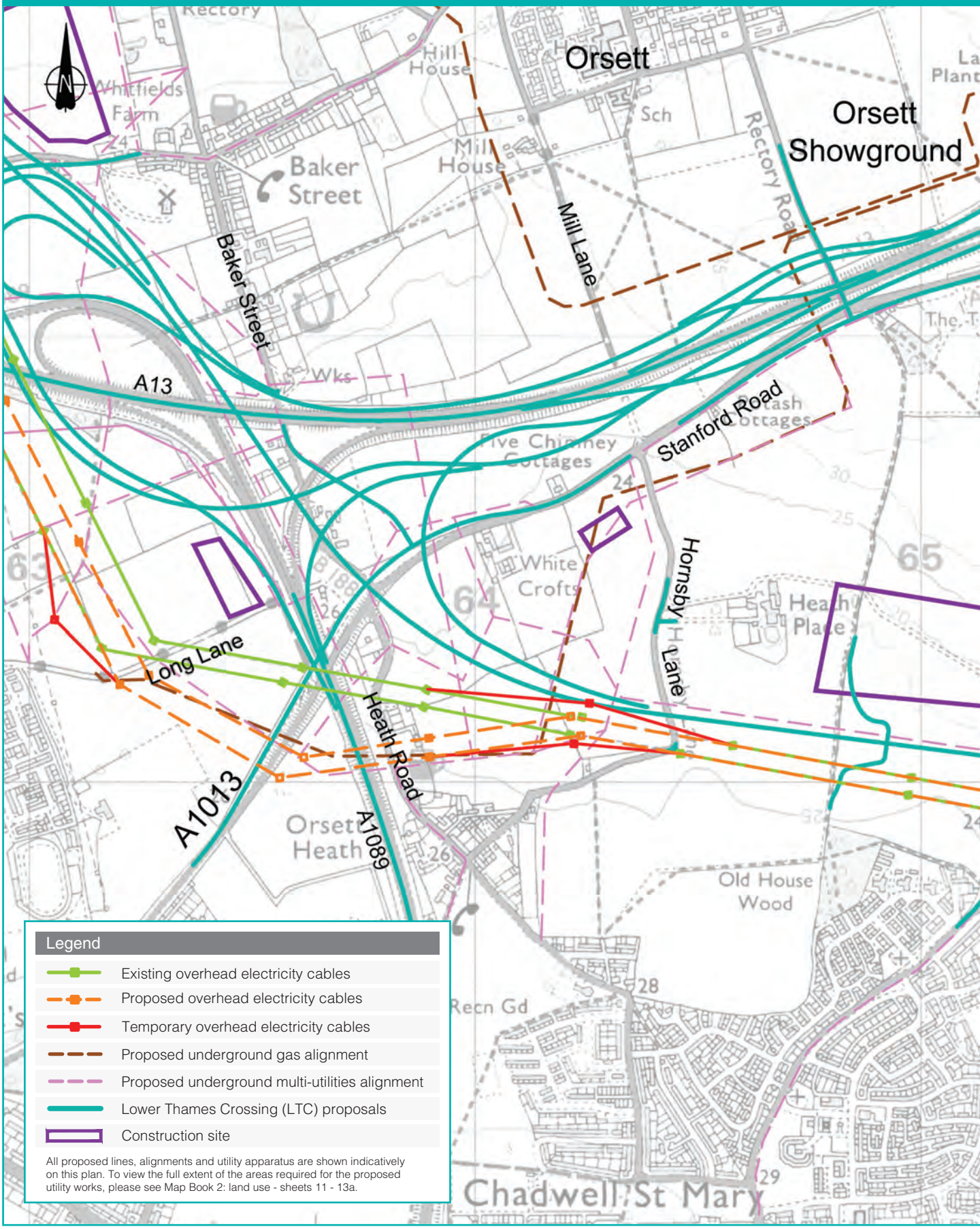
Multi-utility works

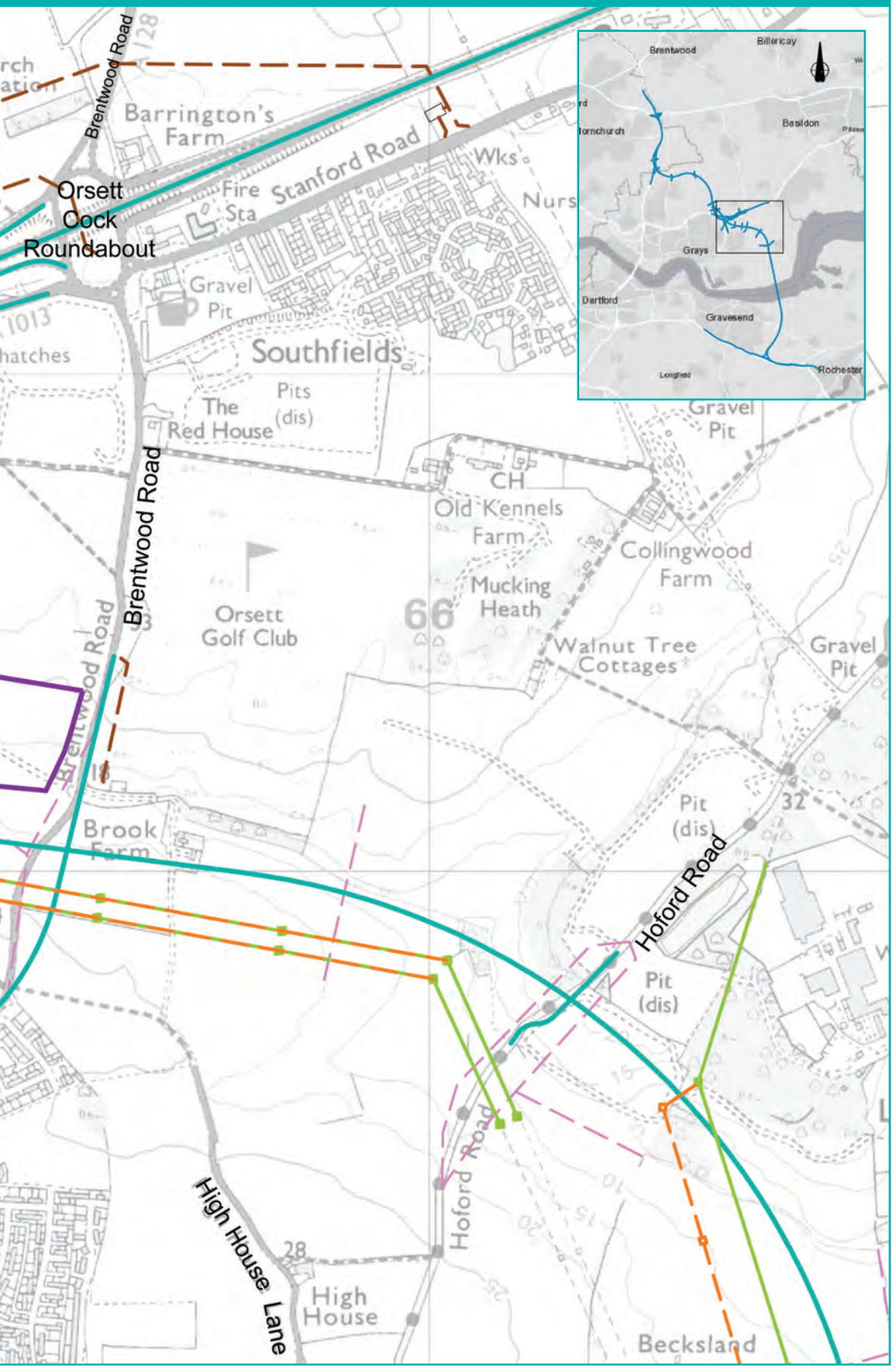
As there are a significant number of existing utilities in the area, some services would need to be diverted around the new junction of the Lower Thames Crossing and the A13/A1089. Due to this, and the space required to carry out these works safely, there is the potential for some road diversions and lane closures in this area for example at Baker Street, the A1013 and other local roads.

We also need to carry out temporary works to supply power and other services to the construction sites located near Brentwood Road. There may be road diversions and lane closures associated with these works.

To view the full extent of the areas required for the proposed utility works, please see Map Book 2: Land Use – sheets 11 – 13a.

A13/A1089 junction (east)




Brentwood Road
Barrington's Farm
Orsett Cock Roundabout
Fire Sta
Stanford Road
Wks
Nurs
Gravel Pit
Southfields
The Red House
Pits (dis)
Brentwood Road
CH
Old Kennels Farm
Collingwood Farm
Mucking Heath
Orsett Golf Club
66
Walnut Tree Cottages
Gravel Pit
Brook Farm
Pit (dis)
32
Hoford Road
Pit (dis)
Hoford Road
High House Lane
28
High House
Beckslands
Brentwood
Billericay
Basildon
Grays
Dartford
Gravesend
Rochester
Longfield

A13/A1089 junction (west)

The constraints in this area are similar to those in the previous A13/A1089 junction (east) section and include consideration of the A13/A1089 and a number of existing services. There are also large sections of farmland and ecologically sensitive areas as well as open space and scheduled monuments that we need to consider. We are working with farmers, landowners and statutory consultees to minimise any potential impacts.

Gas works

These works include the diversion of a pipeline that currently runs beneath the existing A1013. This is described in the previous section – A13/A1089 junction (east). An additional diversion is also required for another pipeline located to the north of Green Lane. This diversion would be carried out through a combination of open-cut and trenchless techniques and it will need to be installed at a significant depth beneath the Lower Thames Crossing.

Overhead electricity cable diversions

The proposals we showed at statutory consultation, and our proposals for supplementary consultation, are detailed in the previous section - A13/A1089 junction (east).

Multi-utility works

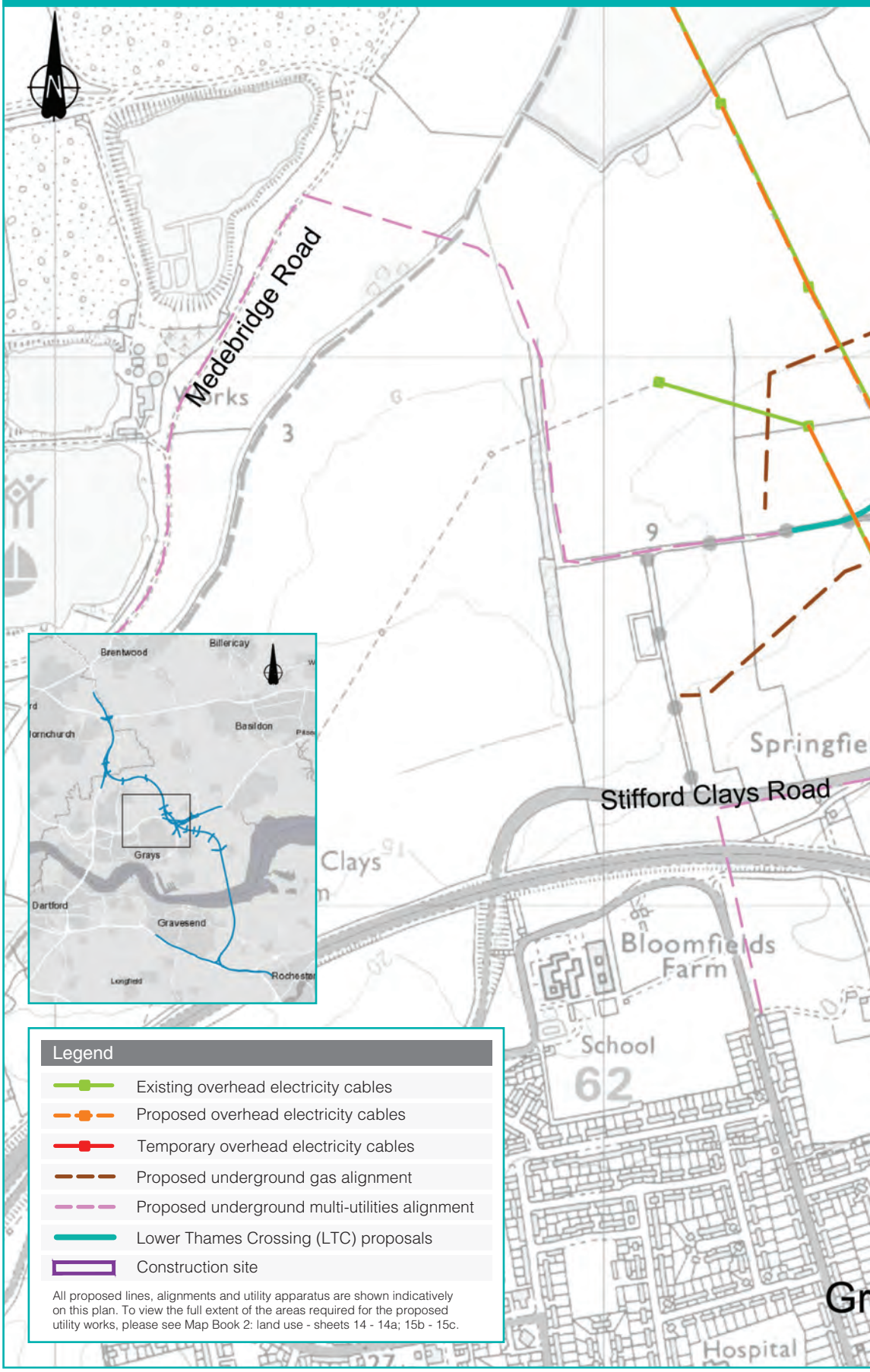
These would involve installing underground utilities to avoid the Lower Thames Crossing main construction works in the area. They would require a combination of trenchless and open-cut methods, with trenchless techniques used for diverting utilities beneath the A13/A1089 and avoiding disruption for road users.

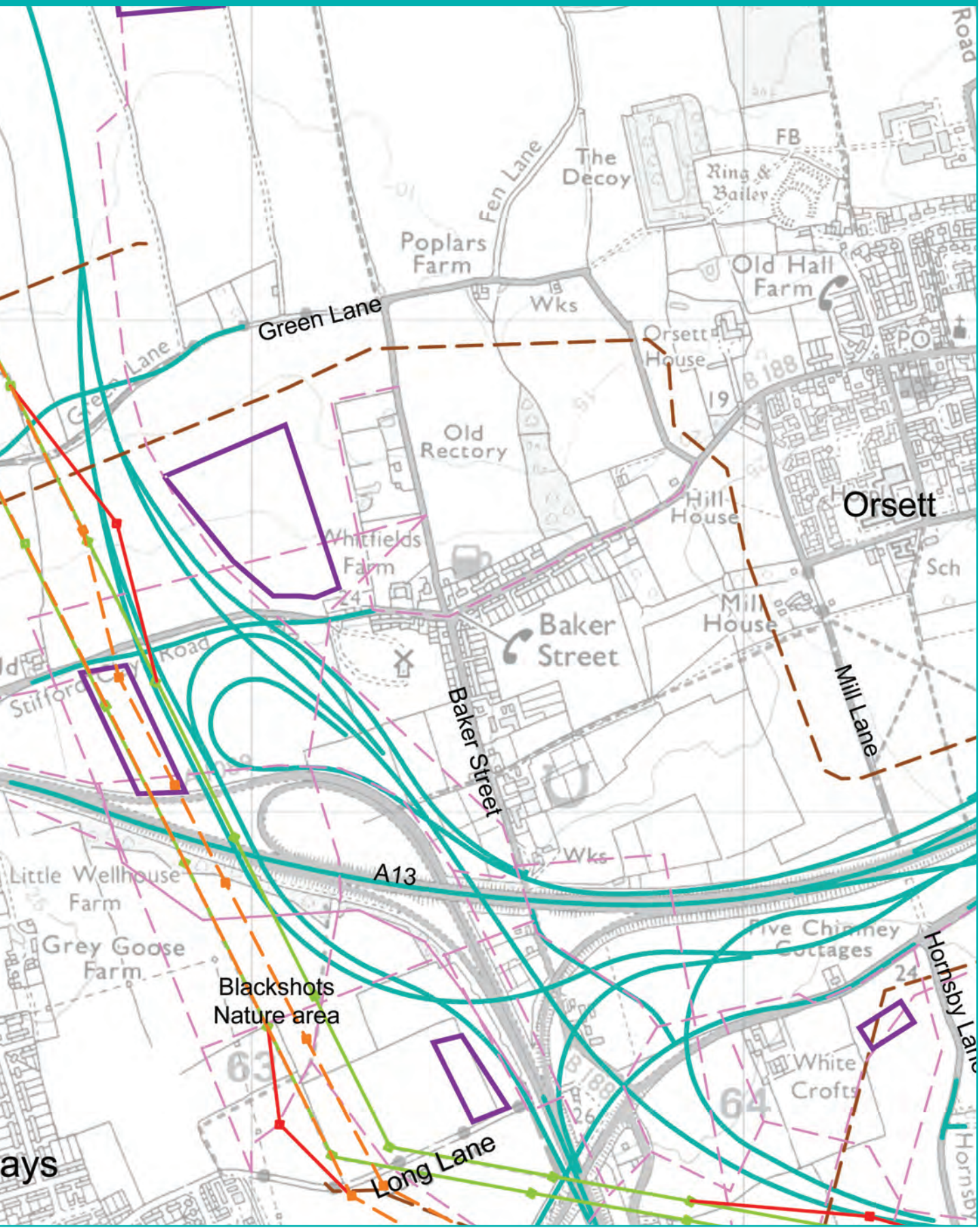
There is an access road proposed from Medebridge Road and along Green Lane, which would be used for the installation of underground power and other services required to supply the construction sites. Other utilities for the construction site would be installed east of the Lower Thames Crossing and west of Baker Street. These works are in open fields and are likely to involve open-cut trench techniques, with trenchless methods likely to be used where the diversion crosses beneath the A13/A1089.

Due to the anticipated number of Lower Thames Crossing construction vehicles and the utilities works required in this area, there is the potential for disruption including long-term road closures and diversions.

To view the full extent of the areas required for the proposed utility works, please see Map Book 2: Land Use – sheets 14 - 14a; 15b – 15c.

A13/A1089 junction (west)




Green Lane
Poplars Farm
Fen Lane
The Decoy
Ring & Bailey
FB
Old Hall Farm
Wks
Orsett House
PO
B188
19
Old Rectory
Hill House
Orsett
Whitfields Farm
24
Baker Street
Mill House
Sch
Mill Lane
Baker Street
A13
Wks
Little Wellhouse Farm
Grey Goose Farm
Blackshots Nature area
Five Chimney Cottages
Hornsby Lane
White Crofts
64
63
Long Lane

Ockendon

The land in this area has a range of uses including farmland, a landfill site and the residential communities of North and South Ockendon. We will carefully consider how we work in the vicinity of the Mardyke River, M25 junction, local woodland and the railway line when designing and carrying out these works. There are also construction sites that would require utilities provision.

Although much of the utility diversion work would take place on private land and off public roads, the B186 would be temporarily impacted. We would ensure people are given advance notice of any closures, diversions or restrictions so they can plan their travel accordingly. Local footpaths may also be affected.

Gas works

A mix of trenchless and open-cut techniques, depending on constraints, would be required to divert a number of existing utilities around the Lower Thames Crossing in this area.

Overhead electricity cable diversions

At our 2018 statutory consultation, we proposed that south of Fen Lane and west of the Mardyke, one existing pylon would be removed and one would be installed. The new pylon would be further away from the Lower Thames Crossing and therefore would need to be approximately six metres higher.

Our plans for this area remain largely the same with one existing pylon being removed and one being installed. The general location of the new pylon also remains the same, although there is a slight change from statutory consultation that takes into account an alteration to the design of the crossing in this area.

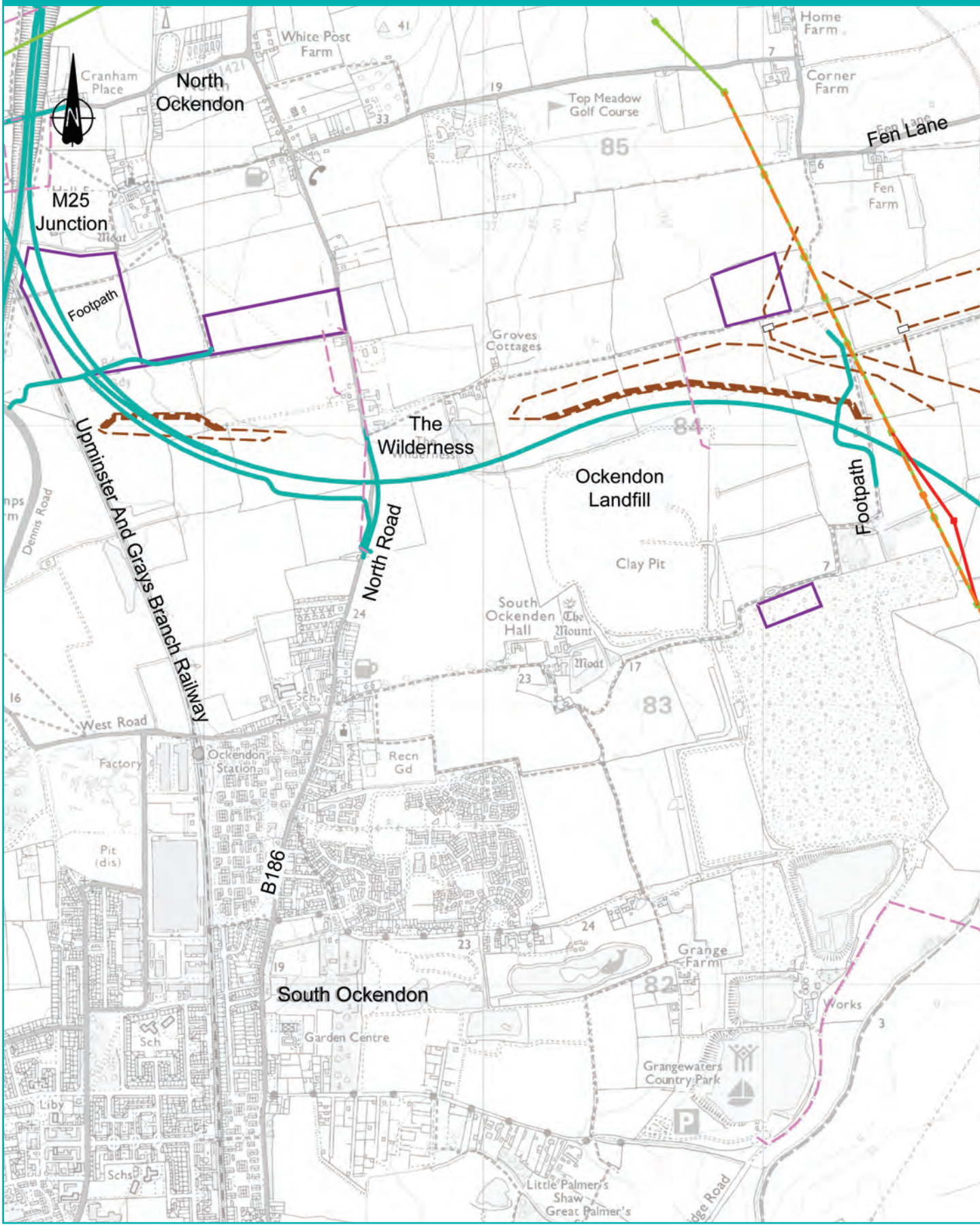
To enable the diversion in this location, and maintain continual electricity supply, we would need to install one temporary pylon on a temporary alignment to the east of the existing overhead cable. This would be in place for approximately one year.

Multi-utility works

These works include diversions and the installation of utilities for construction sites. Trenchless techniques may be used to cross beneath major roads to minimise disruption for road users.

To view the full extent of the areas required for the proposed utility works, please see Map Book 2: Land Use – sheets 15 – 15a; 16 - 18b.

Ockendon


North Ockendon
M25 Junction
Footpath
Upminster And Grays Branch Railway
The Wilderness
North Road
Ockendon Landfill
Fen Lane
Footpath
B186
South Ockendon
Grangewaters Country Park
Grange Farm
Clay Pit
Top Meadow Golf Course
Home Farm
Corner Farm
Fen Farm
White Post Farm
Groves Cottages
South Ockenden Hall
The Mount
West Road
Ockendon Station
Factory
Recn Gd
Garden Centre
Cranham Place
Dennis Road
Pit (dis)
Liby
Sch
Schs
Works
Little Palmer's
Shaw
Great Palmer's

Legend

- Existing overhead electricity cables
- Proposed overhead electricity cables
- Temporary overhead electricity cables
- Proposed underground gas alignment
- Proposed underground multi-utilities alignment
- Lower Thames Crossing (LTC) proposals
- Construction site

All proposed lines, alignments and utility apparatus are shown indicatively on this plan. To view the full extent of the areas required for the proposed utility works, please see Map Book 2: land use - sheets 15 - 15a; 16 - 18b.

LTC/M25 junction

Considerations in this area include the community of North Ockendon, Thames Chase Community Forest/Woodland, the railway line and a number of existing utility services. There are also listed buildings in the area and we would ensure diversions around any protected buildings.

Gas works

As described in the previous section – 'Ockendon'.

Overhead electricity cable diversions

As our designs have developed since our 2018 statutory consultation, we have identified a need for a diversion within the Thames Chase Community Forest area. The location of this diversion is east to west at the LTC/M25 junction. We are looking at techniques that would minimise impacts on Thames Chase Community Forest as much as possible but some areas of tree removal maybe be required.

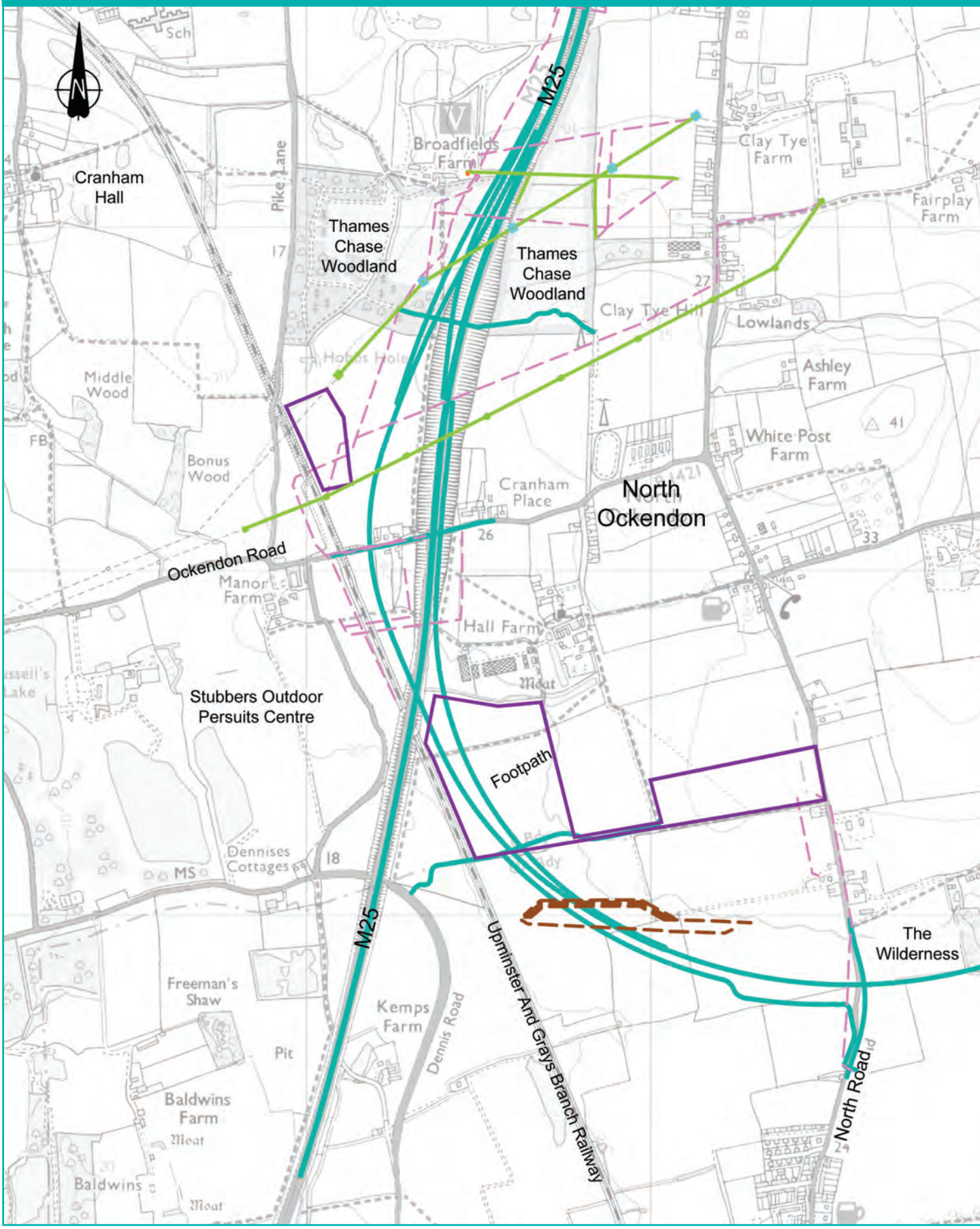
Working areas would also be needed within the Thames Chase Community Forest, so we can modify existing pylons, restring overhead cables and install underground cables. The pylon modifications include installation of baskets to allow cables to be connected. This would mean using trenchless techniques to cross beneath the M25 and placing electricity connections underground in this area. This solution may result in the removal of a pylon and associated overhead cables from the forest. It is possible the forest areas temporarily required for this work would be reduced and we are carrying out further investigations and stakeholder engagement to progress our plans.

Multi-utility works

These would be needed in this section to divert electricity, water, gas pipes and communications. This would include works along Ockendon Road and within Thames Chase Community Forest. We are currently working with the utility owners and stakeholders to reduce the amount of land required for these temporary works and any potential impacts on the area.

To view the full extent of the areas required for the proposed utility works, please see Map Book 2: Land Use – sheets 17 - 19a.

LTC/M25 junction



Legend

- Existing overhead electricity cables
- Proposed overhead electricity cables
- Existing overhead electrical towers to be modified
- Proposed underground gas alignment
- Proposed underground multi-utilities alignment
- Lower Thames Crossing (LTC) proposals
- Construction site

All proposed lines, alignments and utility apparatus are shown indicatively on this plan. To view the full extent of the areas required for the proposed utility works, please see Map Book 2: land use - sheets 17 - 19a.

M25 junction 29

Key considerations in this area include the operation of junction 29 of the M25 and the railway line during the proposed works.

Gas works

There are three potential diversions in this area: at Folkes Lane, the M25 junction and in fields south east of the M25 junction. A trenchless crossing is currently being considered under the M25. However, we are also exploring design refinements to the Lower Thames Crossing that may potentially mean we can avoid some of the necessary gas diversions in this area.

Overhead electricity cable diversions

At our 2018 statutory consultation, we proposed removing three 275kV pylons and building three new 275kV pylons at junction 29 of the M25.

Following design development and stakeholder engagement, this proposal is no longer required.

Other overhead electricity cables may also need to be diverted around the B186 Warley Street. As a result, this road may be affected by lane closures and diversions, temporary traffic lights or restrictions. We would ensure people are given advance notice so they can plan their travel arrangements accordingly.

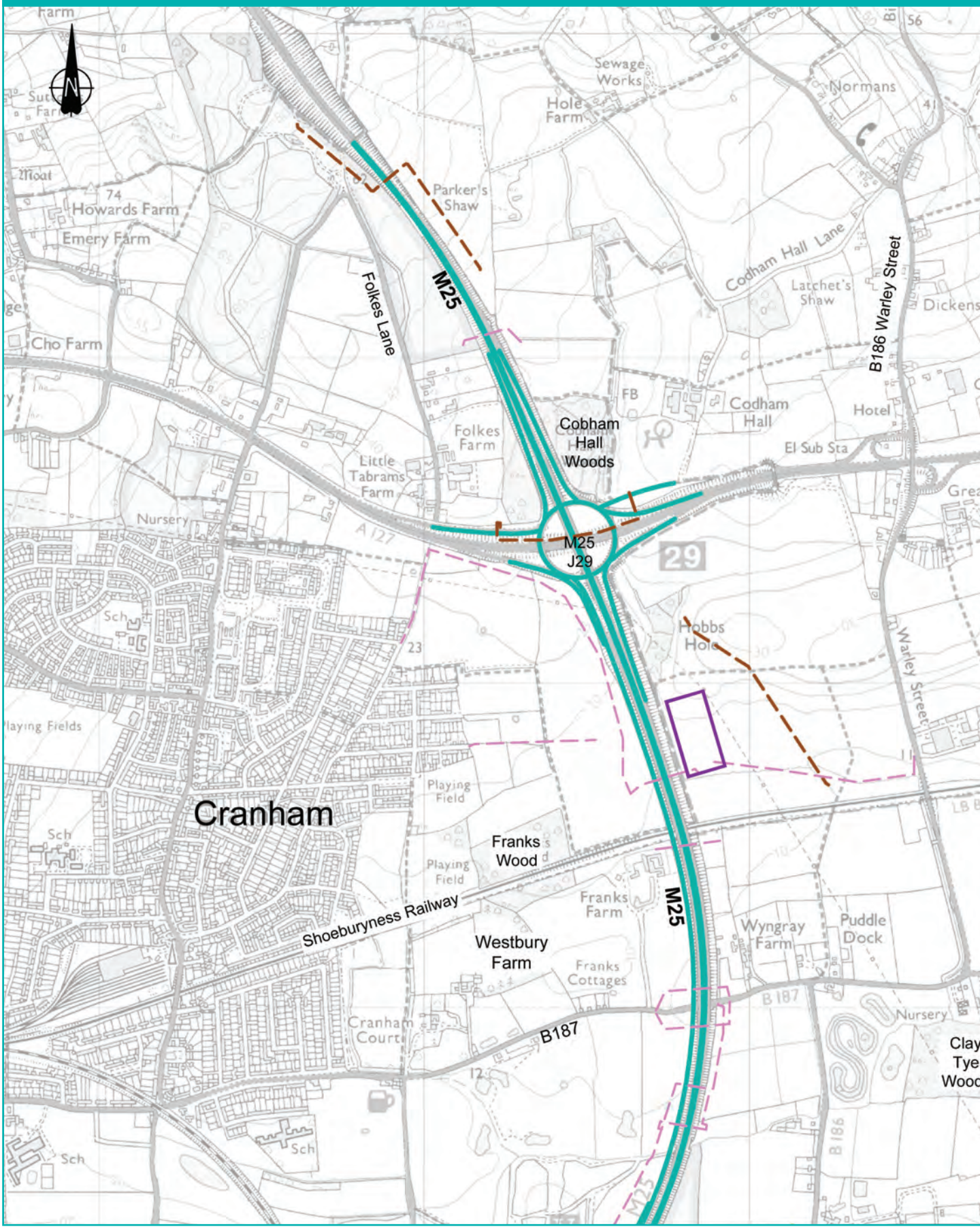
Multi-utility works

A mix of open-cut and trenchless techniques would be used in this area to minimise impacts on the local community and junction 29 of the M25.

To avoid impacting major roads in this location, we would look to use trenchless techniques to divert utilities under the Lower Thames Crossing and the M25. St Marys Lane (B187) may be affected by closures and diversions, temporary traffic lights or lane restrictions and we would ensure people are given advance notice so they can plan their travel accordingly.

To view the full extent of the areas required for the proposed utility works, please see Map Book 2: Land Use – sheets 19 – 21a.

M25 junction 29



Legend

- Proposed underground gas alignment
- Proposed underground multi-utilities alignment
- Lower Thames Crossing (LTC) proposals
- Construction site

All proposed lines, alignments and utility apparatus are shown indicatively on this plan. To view the full extent of the areas required for the proposed utility works, please see Map Book 2: land use - sheets 19 - 21a.

How to have your say

Please take this opportunity to give us your views on the changes we have made to our proposals for the crossing.
You can find all the information about the consultation and events, and download a response form, at **www.lowerthamescrossing.co.uk/consultation-2020.**
Alternatively, you can pick one up from:

- Consultation events
- Information points
- Deposit locations

You can also ask us to send you a form by:

- Emailing us at info@lowerthamescrossing.co.uk
- Calling us on 0300 123 5000

Send your completed response form using one of the communication channels below. These are all free to use.
We cannot guarantee that responses sent by any other means will be included in our analysis and reporting.

Online

Fill in the online survey at
www.lowerthamescrossing.co.uk/consultation-2020

Post

Send your response form or comments to:
FREEPOST LTC CONSULTATION
The Freepost address is the only text needed on the envelope and no stamp is required.

Email

Comments or electronic copies of the response form should be emailed to **LTC.CONSULTATION@TRAVERSE.LTD**

Public information events

Fill in and submit the response form at our public information events.

Scan me

Use your phone to scan this QR code to go straight to the consultation.

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