

Lower Thames Crossing

Guide to design refinement consultation



July 2020

About this guide

Following our statutory consultation in 2018 and non-statutory supplementary consultation in early 2020, we are proposing a number of design refinements to the Lower Thames Crossing as set out in this guide.

This design refinement consultation is the latest stage in the planning process and is an opportunity for you to have your say on the changes we have made since our non-statutory consultation in early 2020.

We want to get all aspects of the design, construction and operation of the Lower Thames Crossing right. Your views play a vital role in helping us to do this and shape this project.

This guide provides a project update, outlines our latest design refinements and revised development boundary, explains our environmental assessments and details how you can give us your feedback and how to find out more.

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.

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Throughout this guide we have highlighted the other documents that give more detail about our consultation, which are available on our website. Images used throughout this guide are illustrative for this consultation and may change in the future.

Foreword



Chris Taylor, Director, Complex Infrastructure Programme

Welcome to the Lower Thames Crossing design refinement consultation.

Following our statutory consultation in late 2018 and non-statutory supplementary consultation in early 2020, we are now proposing a number of design refinements to the project, as set out in this guide. This is your opportunity to consider and comment on these refinements.

We are in uncertain times and in recent months all of us have been faced with immense challenges due to Coronavirus (COVID-19).

At times like these, nationally significant infrastructure projects, such as the Lower Thames Crossing, have an important role to play in supporting our future economic growth. The Lower Thames Crossing will boost local, regional and national economies, while offering new connections, better journeys and fewer delays.

This consultation explains the refinements we have made to the design of the project. The changes described in this guide have been informed by feedback received from our supplementary consultation, continued engagement with our stakeholders, ongoing design work and a greater understanding of technical constraints.

With social distancing measures still in place, and in line with government guidance, we have adopted a 'digital first' approach to this consultation. This means that all the information you need is available within this guide and the additional documents on our website. This includes our response form, which can be completed online or downloaded and sent to us.

We are also offering to provide any requested printed consultation materials by post and we will be running a telephone surgery to support you further. Additional information is available in the 'How to have your say' chapter.

This consultation is an important opportunity for you to have your say and will help us to better understand the implications of our proposed design changes. When we submit our Development Consent Order (DCO) application to the Planning Inspectorate later this year, we will include a Consultation Report that explains whether, and how, we have changed the proposals in response to feedback received from our statutory consultation in 2018, our supplementary consultation earlier this year and this design refinement consultation.

I appreciate that we are all facing unprecedented challenges, but please do take the opportunity to let us know what you think of our design refinements. Your views will help shape the best solution for the local area in the future.

Many thanks,

Chris Taylor

Director, Complex Infrastructure Programme,
Highways England

 www.lowerthamescrossing.co.uk/design-consultation

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Project updates

We carried out a comprehensive 10-week statutory consultation in 2018. After considering the responses received from that statutory consultation, we then carried out a nine-week non-statutory supplementary consultation earlier this year on a number of proposed changes to the project.

The changes described in this guide have been informed by feedback received from our supplementary consultation, continued engagement with our stakeholders, ongoing design work and a greater understanding of technical constraints. This process has resulted in a number of additional refinements to our proposals and we would like to know your views on these. This design refinement consultation is the next key step in our planning for the project.

Following this design refinement consultation, we will consider the feedback received and use that to inform our DCO application, which we will submit to the Planning Inspectorate later this year.

To read more about the project's timeline and the DCO process, please refer to the 'Design and build' section of our website at www.lowerthamescrossing.co.uk

What is the Lower Thames Crossing?

The Lower Thames Crossing is a proposed new road connecting Kent, Thurrock and Essex through a tunnel beneath the River Thames. It would provide much-needed new road capacity across the river east of London and deliver the other scheme objectives set out in the consultation materials.

On the south side of the River Thames, the new road would link to the A2 and M2 in Kent. On the north side, it would link to the A13 in Thurrock and the M25 in Havering.

The tunnel crossing is located to the east of Gravesend on the south side of the River Thames and to the west of East Tilbury on the north side.

The Lower Thames Crossing proposals include:

- approximately 14.3 miles (23km) of new roads connecting the tunnel to the existing road network
- three lanes in both directions, apart from the southbound connection between the M25 and A13, where it would be two lanes, and around junctions
- technology providing lane control and variable speed limits up to 70mph
- upgrades to the M25, A2 and A13 where it connects to those roads
- new structures and changes to existing ones including bridges, viaducts and utilities such as electricity pylons
- two 2.6-mile (4.3km) tunnels crossing beneath the river, one for southbound traffic, one for northbound traffic
- a free-flow charging system, where drivers do not need to stop but pay remotely, similar to that at the Dartford Crossing
- traffic regulation measures that include prohibiting use by pedestrians, low-powered motorcycles, cyclists, horse riders and agricultural vehicles
- provision of environment mitigation and replacement of special category land

Aims of the Lower Thames Crossing

We have worked with the Department for Transport (DfT) to agree the following objectives that we want the Lower Thames Crossing to achieve:

- to support sustainable local development and regional economic growth in the medium to long term
- to be affordable to government and users
- to achieve value for money
- to minimise adverse impacts on health and the environment
- to relieve the congested Dartford Crossing and approach roads, and improve their performance by providing free-flowing, north-south capacity
- to improve resilience of the Thames crossings and the major road network
- to improve safety

As well as the scheme objectives above, we are developing the Lower Thames Crossing in line with the National Policy Statement for National Networks, which sets out government policies for nationally significant infrastructure road projects for England.

Why have we made changes to the project?

The refinements described in this guide have been informed by feedback received from our supplementary consultation, continued engagement with our stakeholders, ongoing design work and a greater understanding of technical constraints. Some changes are to provide additional mitigation in areas such as environmental impacts. Others are as a result of critical work to deliver the scheme safely, including where utility companies would need to move some of their pylons or assets.

We have tried to be sensitive to the needs of interested parties, especially those living in the vicinity of the project, while always being aware that we must deliver a viable scheme that satisfies national policy and the scheme objectives agreed with the DfT.

Outside of the proposals highlighted in this guide and our associated consultation materials, we are not currently proposing further changes to the elements of the project presented during statutory and supplementary consultation.

This consultation is an important opportunity for you to comment on the proposals outlined in this guide and our associated consultation materials. Please see 'How to have your say' for information about how you can give your feedback on the proposed changes.

When we submit our DCO application to the Planning Inspectorate later this year, we will include a Consultation Report that explains how we have considered feedback received from our statutory consultation in 2018, our supplementary consultation earlier this year and this consultation.

Additional updates

As well as the refinements presented in detail in this guide, we would like to take this opportunity to provide the following updates:

Road standard

The Lower Thames Crossing route would be defined as an all-purpose trunk road. This means the road would use green signage instead of the blue signage that is seen on conventional motorways. Whereas an all-purpose trunk road is usually accessible for all vehicles, there would be a restriction so only vehicles allowed on motorways would be able to use the Lower Thames Crossing. This is because it connects into existing roads on the strategic road network that can only be used by motorway traffic. The existing M25 and M2 would remain as motorways.

All of the Lower Thames Crossing, from the M25 junction to the M2/A2 junction, would be three lanes in each direction, except for the southbound link between the M25 and A13, and around junctions, which would be two lanes.

It would operate as an all-lane running trunk road, where there is no hard shoulder (with the exception of sections of the A13 interchange where lane drop/lane gain arrangements are introduced).

The route would be designed to the latest standards and use smart technology and signalling to help manage traffic. For more information on road standards, please visit www.standardsforhighways.co.uk/dmrb

Road safety

The design and operation of the Lower Thames Crossing will be guided by industry standards.

The design features include emergency areas spaced at intervals of between 800 metres and 1.6km, with the exception of the tunnel where enhanced operational and technology measures would be used. We are also assessing the feasibility of spacing emergency areas at intervals of 1.2km.

If a vehicle needs to stop before it reaches an emergency area, technology used along the route would detect the stopped vehicle and change the overhead lane control signals to indicate that the affected lane is closed to traffic.

Reducing the land required for works

As described at supplementary consultation, we have been working with our stakeholders, including the utility companies, to refine our proposals and minimise the land required for works. We have also been able to reduce the overall area within the development boundary by refining the design of utility diversions in some areas along the route.

In particular, following feedback from our supplementary consultation, we have been able to refine the land required for utility diversions shown at supplementary consultation around the A2 area and, in doing so, reduce the impacts on Shorne and Ashenbank Woods Site of Special Scientific Interest (SSSI) and in other environmentally sensitive locations. This includes south of the river at Jeskyns Community Woodland and around Claylane Wood, where there is ancient woodland.

Property and landowners

There are approximately 150 residential and business properties within the revised development boundary. This has been reduced from approximately 270 properties presented at supplementary consultation. Around 70 would only be affected by works to adjust existing electricity cables above the properties, so would not need to be purchased for the project. At supplementary consultation, this figure was around 190.

User charging

It remains our proposal to apply a user charge for the Lower Thames Crossing, with a local resident discount scheme for those living in Thurrock and Gravesham. The level of the charge and the charging regime would replicate the approach applied on the Dartford Crossing. Therefore, the need for a Lower Thames Crossing charging consultation forum as suggested at statutory consultation is not considered necessary.

Design refinements

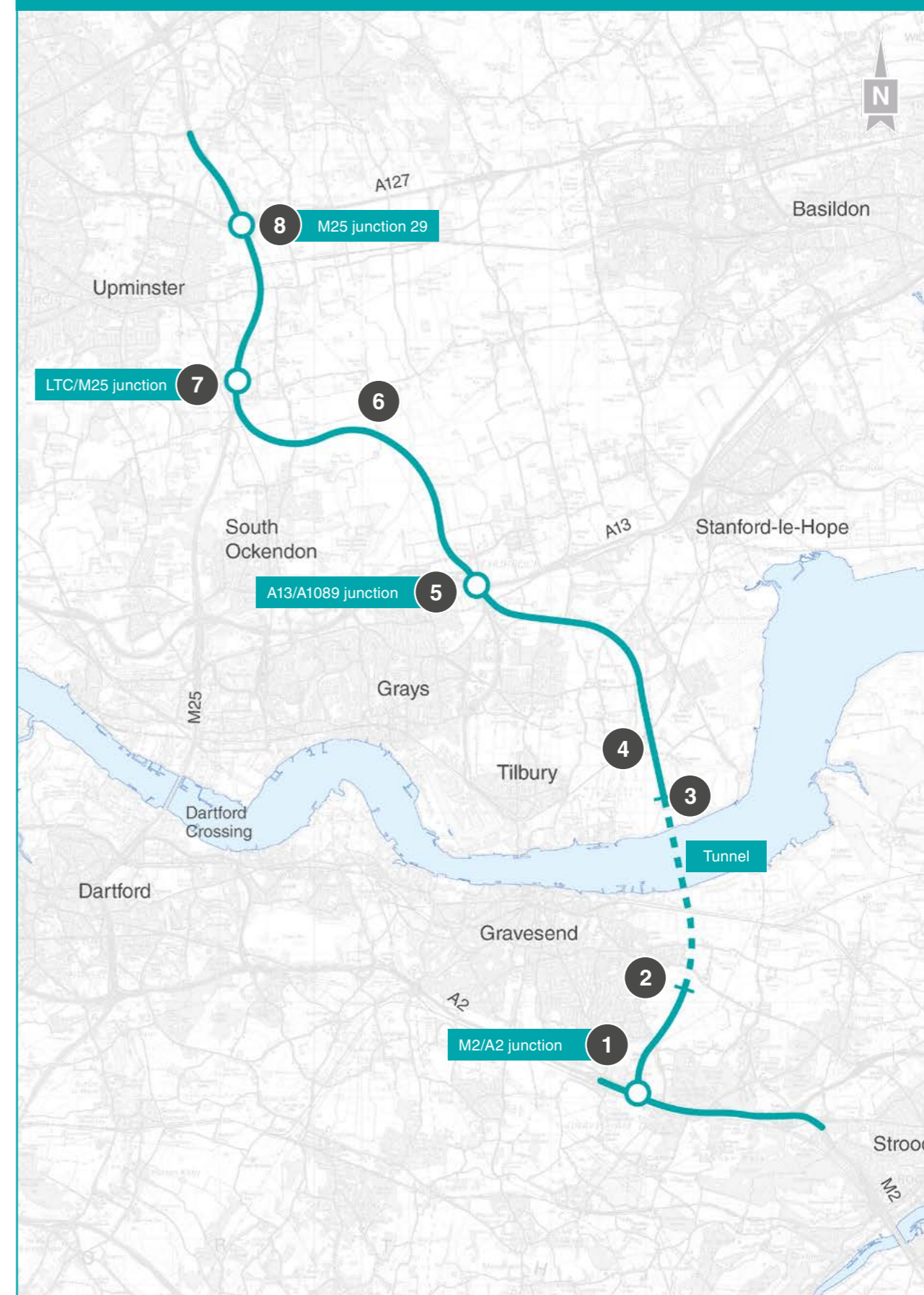
Following our supplementary consultation held earlier this year, we have continued to work with our stakeholders and statutory consultees to develop our design. This has resulted in a number of design refinements, which we are now consulting on.

Your views will help shape our proposals, ahead of us submitting our DCO application to the Planning Inspectorate later this year.

We want to get all aspects of the design, construction and operation of the Lower Thames Crossing right. Our approach to the project's design has also been guided by highways standards and good industry practice, which seek to ensure the Lower Thames Crossing is safe to construct and operate, is sustainable and will create a positive legacy for future generations.

NOTE: Throughout this section, we refer to the Lower Thames Crossing as 'LTC'. Any distances provided are approximate and subject to change. The images used are illustrative for this consultation and may change as a result of our ongoing assessments and the feedback we receive. The pictures of our design refinement consultation proposals illustrate how locations might look 15 years after the opening of the LTC.

Overview of design changes



Small substations

Substations are part of the electricity supply network and take the high voltage from powerlines or underground cables and transform it into the lower voltages that we use in our homes. They vary in size, depending on whether they serve mainly residential properties, or also commercial and industrial premises.



Example of a typical substation that serves residential/commercial properties with electricity

Switching station

Local electricity suppliers use switching stations to distribute electricity throughout a community. The electricity can come from below or above the ground and feeds into above-ground switches. The switches then redistribute the electricity to substations. These smaller substations convert the electricity into an appropriate voltage, depending on what is required, for example if they are supplying power for homes or large businesses. Their equipment, such as above-ground transmission lines and switches, is often fenced off to ensure security.

Design refinements

The information we are presenting during this design refinement consultation focuses on changes to the project since our supplementary consultation, carried out earlier this year. The main refinements are summarised below and set out in more detail in this chapter.

South of the river in Kent

1 M2/A2 junction:

- The Thong Lane green bridge over the A2 would move approximately five metres west and the green space would be amalgamated to improve species habitat, the landscape and ecological connectivity.
- The Thong Lane green bridge over the LTC would move approximately 20 metres north, resulting in enhanced green space on the bridge. Due to the bridge moving, refinements would also be required to the overhead electricity transmission cable diversion that was shown in this area at supplementary consultation. A new informal parking area is also proposed.
- A new electricity switching station at Thong Lane would be required to distribute electricity to all new and existing smaller substations along the LTC route.
- Following feedback from our supplementary consultation, we have developed our landscaping proposals to include further detail on our proposed ancient woodland mitigation and compensation planting.
- Following feedback from our supplementary consultation, we have refined the utility diversions around the A2 area and reduced the impacts on environmentally sensitive locations.

- #### 2 Southern tunnel entrance:
- After further investigation and consideration of the feedback from supplementary consultation, we have developed our landscaping proposals around the electricity substation at the southern tunnel entrance to help integrate the infrastructure into the existing landscape.

North of the river in Thurrock and Essex

3 Northern tunnel entrance:

- Works would be required to install the utilities needed to power the tunnel boring machine (TBM) and provide power supply to the northern tunnel entrance and the construction site in the area.
- A new landform proposal would provide wide-ranging views overlooking the Thames Estuary.

- #### 4 Route near Tilbury:
- Two footpaths in the area would be slightly realigned and the option of a shared path along the south of Muckingford Road would be progressed. This would allow for better connectivity between Chadwell St. Mary and East Tilbury.

5 A13/A1089 junction:

- Following further design work and feedback from our supplementary consultation, we are now proposing a new area of land for the relocation of the traveller site. This would be adjacent to its current location, with access off Gammonfields Way.
- Utility proposals in this area include a new, permanent compound at Stanford Road to supply gas to the local community.
- As part of our woodland planting proposals and in line with feedback from our supplementary consultation, we have identified two separate woodland areas near Baker Street that we would look to make accessible to the public.
- A noise barrier, approximately six metres high and less than 150 metres long, is proposed along the LTC east of Brentwood Road to help reduce road noise.

- #### 6 In the vicinity of the Mardyke:
- Some utility works in the vicinity of the Mardyke would be required to create an access off Green Lane for future National Grid maintenance works.

7 LTC/M25 junction:

- Utility proposals include some sewer diversion works from Ockendon Road to St. Mary's Lane via the B186 and overhead electricity cable diversion works around the B186 North Road.
- North of the Thames Chase Forest Centre, we are proposing a new maintenance access track and a multi-utilities diversion. We have located these within the same area to limit the reduction in woodland compensation that is required to accommodate these changes.

Did you know?

If woodland is lost or damaged, woodland compensation proposals might include the creation of new woodland, or the restoration of an existing one.

Did you know?

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

8 M25 junction 29:

- Following feedback from our supplementary consultation, a new footbridge over the A127 is proposed to link existing footpaths.
- Utility proposals include gas diversion works near Folkes Lane and moving overhead electricity cables underground near the B186 Warley Street to avoid the proposed LTC route.

Utilities

We have continued to refine our proposals for utility diversions across the LTC route and are now proposing some further changes to the position presented at supplementary consultation. This information is provided in this chapter. In some cases, these changes result in a refinement to utility works and land required, particularly around the A2 area. In others, however, we now know that some additional land, from what was shown at supplementary consultation, would be required.

Also, since our utilities proposals were first presented at statutory consultation, we have continued to review the extent to which these would qualify as Nationally Significant Infrastructure Projects (NSIPs) as the design has developed. Currently, it is considered possible that a small number of diversions may qualify as NSIPs. If so, these utility diversions would still be consented as part of the Lower Thames Crossing DCO, as with the other diversions. We would confirm the position as part of our DCO application and ensure that the relevant energy National Policy Statements are considered.

Small permanent electricity substations

A number of small permanent electricity substations, approximately three metres wide by three metres long and 2.5 metres in height, would be installed across the route. These would be located within a total area of approximately five metres by four metres to allow for maintenance of the substations.

The provision of access for maintenance would also be required in some cases. The substations, and any access, would be located within the development boundary shown at this consultation.

Installation would be carried out as part of the wider utility works proposed for the area. The exact number and location of these substations, as described in this guide, are indicative only

and are not shown in the maps in this document. The precise number and locations would be confirmed following further design work and continued engagement with our stakeholders.

We would look to minimise any impacts on residential and commercial properties, such as visual impacts, when developing the detailed design.

Landscaping

Also included in this chapter is information regarding our landscaping proposals. As we have progressed the design of the LTC, we have also developed more detailed landscaping proposals to mitigate the visual impacts of the project's above-ground infrastructure. Since supplementary consultation, we have added more detail on the specific type of ecological mitigation proposed across the route, such as grassland, woodland and further detail around watercourses.

We have also developed our proposals for integrating drainage ponds into the landscape and for making the area of land around these assets easier to manage for landowners and for any maintenance work. For example, at a number of locations along the route, we have extended the land required around the drainage ponds to include existing boundaries such as hedgerows. Similarly, we also propose alterations to the shape of some areas of land for planting to make the boundary edges easier to maintain.

Maintenance access tracks

We propose a number of maintenance access tracks along the LTC route and more information is available throughout this chapter. Some of these feature a parking bay for maintenance vehicles. These tracks would provide access to ponds, fields, culverts, pylons and technology assets. They are not for public use or 'rat-running' and would be secured with an access control system. They would only be used for the purposes of operating and maintaining the LTC and associated infrastructure. This would include maintenance access to infrastructure owned by the utility companies. In some instances, we have combined the access tracks with routes for walkers, cyclists and horse riders.

Noise barriers

Following the Preliminary Environmental Information Report published at statutory consultation, where the need for noise mitigation was identified, detailed noise assessments have been carried out. These assessments have identified locations along

Did you know?

A technology asset is a piece of electronic equipment that provides motorists with road traffic information, e.g. signals for lane control and variable speed limits.

Environmental impacts

For more information on the environmental impacts of our design refinements, please see our Environmental Impacts Update document.

the route where noise barriers could be used to reduce road traffic noise. As a result, we are now proposing to install 17 noise barriers at specific locations along the route.

For further details on the indicative location and sizes of the noise barriers, please refer to the maps presented throughout this guide.



Have your say

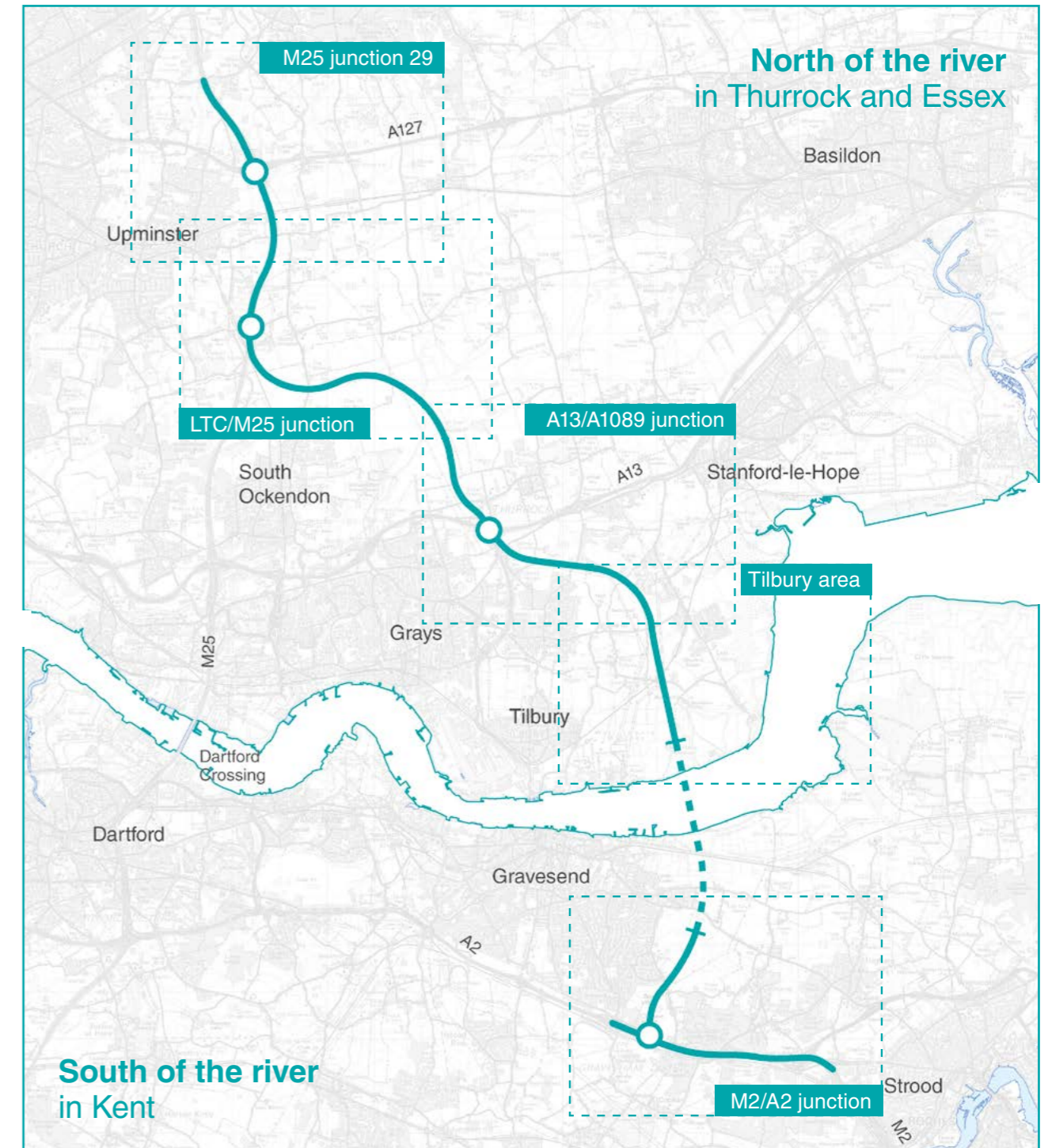
If you would like to comment on areas of the project that are not covered by a specific question on our design refinement consultation response form, please use question 4: 'Other comments'.

The route explained

For the purpose of describing the changes in more detail, we have divided the route into two sections:

- South of the river in Kent: M2/A2 junction and southern tunnel entrance.
- North of the river in Thurrock and Essex: Northern tunnel entrance, Tilbury area, A13/A1089 junction, LTC/M25 junction and M25 junction 29.

First, we will describe our proposals south of the river, then work our way north of the river.



Find out more

To view the technical drawings for this section of the route, please refer to Map Book 1: General Arrangements and Map Book 2: Land Use, sheets 1 – 7a.

Did you know?

Earthworks involve excavating the existing land to a suitable level to allow a road to be constructed. It can also involve the construction of artificial embankments made of soil to carry an elevated road.

South of the river in Kent

M2/A2 area proposals

Around the M2/A2 junction, we have developed our landscaping proposals and have included further detail on our proposed ancient woodland mitigation.

Ancient woodland compensation

To the west of the A2 between Claylane Wood and Shorne Woods, the proposed ancient woodland compensation has been refined. Due to utility diversions required within Claylane Wood, the ancient woodland compensation in this area would be reduced. As a result, we would increase the proposed ancient woodland compensation planting, to the north on the edge of Gravesend, as much as is reasonably practical.

Between Brewers Wood and Great Crabbles Wood, we have included more detail on the ancient woodland compensation, which comprises woodland and grassland areas. The landscaping in this area would be designed to connect both woodlands and proposed replacement open space land.

To the south of High Speed 1 (HS1), we would reduce the proposed ancient woodland compensation due to the presence of a cultural heritage building and to maintain a sense of open space at this location. It has also been reduced in response to fewer utility works required than presented at supplementary consultation.

To the north of Shorne Woods, we would redesign the original block planting layout of our ancient woodland compensation, so that it follows the existing topography of the land and better reflects the landscape character of the area. The redesigned area would also accommodate the utility works proposed close to this location.

Electricity substation landscaping

At supplementary consultation we were considering three locations for an electricity substation at the southern tunnel entrance. We are currently looking to progress option two, which is located away from the majority of residential areas and St. Mary's Church. In relation to this, we have also developed our landscaping proposals around this substation. The proposed earthworks and woodland planting are intended to help integrate the infrastructure into the existing landscape and provide suitable visual screening.

Refinements to Brewers Road green bridge

The Brewers Road green bridge over the A2 would be moved approximately six metres east. The green space would be amalgamated on the eastern side of Brewers Road green bridge over the A2 to provide better connectivity for the landscape, ecology and habitats.

Also in this area, a small section of the proposed National Cycle Route 177, south of Brewers Road green bridge, would be amended to cater for a more gentle incline.

Retaining wall added alongside HS1 land

To the east of Thong Lane over the A2, a concrete retaining wall approximately 20 metres long and two metres high would be added alongside HS1 land. This is to prevent earthworks from the LTC project moving on to HS1 land. The retaining wall would only be visible from the HS1 side.

Refinements to Thong Lane green bridge over the A2

The Thong Lane green bridge over the A2 would move approximately five metres west. Further green space would be amalgamated on the western side of the bridge to improve species habitat, the landscape and ecological connectivity. There would be no change to the proposed provision for walkers, cyclists and horse riders that was shown at supplementary consultation as a result of moving the green bridge or the green space.

Refinements to Thong Lane green bridge over the LTC

The Thong Lane green bridge over the LTC would move approximately 20 metres north to avoid clashing with a proposed gantry and to allow for tree planting that was previously restricted by overhead electricity cables. It would also be raised by less than half a metre as a result of the LTC alignment change (see below) and to maintain the minimum clearance required under the bridge.

As a result of the bridge moving, the proposed new shared path for walkers, cyclists and horse riders on Thong Lane over the LTC is also moving. This would allow for more woodland planting on and around the southern part of the bridge, providing a wooded connection between Shorne Woods and Claylane Wood.

See the 'Routes for walkers, cyclists and horse riders' diagram.

This means the overhead electricity transmission cable diversion that was shown at supplementary consultation would also need

Did you know?

A gantry is an overhead bridge-like structure supporting equipment such as traffic signs or cameras.

to be changed. More information about this proposal can be found further on in this chapter in relation to the utility refinements within this section of the route.

LTC alignment raised, south of Thong Lane over the LTC

The position of the LTC, to the south of Thong Lane over the LTC, would be raised by between two and three metres to improve driver visibility. This change would result in the Thong Lane green bridge over the LTC being raised by less than half a metre.

New parking area to the east of Thong Lane green bridge over the LTC

A new informal parking area is proposed to the east of Thong Lane green bridge over the LTC. The proposal includes a good level of parking to help ease the current parking issues along Brewers Road and alleviate problems caused by the lack of capacity at the Shorne Woods Country Park Visitor Centre.

This location is easily accessible to residents of Gravesend and there are footpaths linking the proposed parking area to Shorne Woods. The new paths remain as shown in our proposals at supplementary consultation. It is also proposed that access to the car park would be shared with a permanent maintenance route that would be required.

Claylane Wood drainage pond relocation

The location of the Claylane Wood drainage pond would be moved approximately 20 metres north and five metres west to avoid a proposed gas pipeline diversion in the area.

Maintenance access tracks

In this section of the route, we propose maintenance tracks to provide access to ponds and a substation at the southern tunnel entrance. These tracks are not for public use or 'rat-running' and would be secured with an access control system. They would only be used for the purposes of operating and maintaining the LTC and associated infrastructure. This would include maintenance access to infrastructure owned by the utility companies. There is one maintenance track that is shared with part of a route for walkers, cyclists and horse riders.

Permit requirement to stockpile excavated clean chalk

We are exploring the opportunity to stockpile excavated clean chalk from our construction works east and west of the southern tunnel entrance. We would expect the stockpile to be in place

during the construction phase of the project and for up to three years following the opening of the LTC. During this time the stockpile would vary in size and location.

We have been advised by the Environment Agency that, due to the length of time the stockpiles may be present, we are likely to require an environmental permit.

We are not proposing any permanent landfill as material stockpiled under these permits would be removed from the site and the permit would be for a temporary operation only.

This would be a regulatory change as a result of engagement with the Environment Agency, not a permanent, physical or visual change. The application would be assessed against the temporary landfill permit option, as this allows for longer timescales of stockpile storage and provides flexibility for the contractor.

The following utility refinements are also proposed for this section of the route:

As described at supplementary consultation, we have been working with our stakeholders, including the utility companies, to refine our proposals and minimise the land required for works.

In particular, we have been able to refine the land required for utility diversions shown at supplementary consultation around the A2 area and, in doing so, reduce the impacts on Shorne and Ashenbank Woods SSSI and in other environmentally sensitive locations. This includes south of the river at Jeskyns Community Woodland and around Claylane Wood, where there is ancient woodland.

Upgrade works for the existing overhead electricity distribution cables

Some additional works to those shown at supplementary consultation would be required to upgrade electricity cables on the existing overhead line between the A2/LTC junction and the A226. In conjunction with these works, we may need to install some new electricity cables underground.

These works are to ensure there is enough electricity supply to the southern tunnel for requirements such as lighting and ventilation. Some additional land to that shown at supplementary

consultation would be required for us to complete the installation and upgrade.

Refined gas alignment diversion

A short extension to the gas diversion along Valley Drive shown at supplementary consultation would be required. This is for approximately 35 metres north along the road and would require additional land outside the development boundary shown at supplementary consultation.

New permanent electricity switching station, Thong Lane

A new 33 kilovolt (kV) permanent electricity switching station, contained within an area approximately 50 metres long and 15 metres wide, would be required to distribute electricity to all new and existing smaller substations along the LTC route. The area would also include fencing.

Permanent vehicle access would also be required so the utility provider can access the site for future maintenance. This may include a new lay-by close to the site. We are currently working with the utility company on these plans and our final design will be submitted as part of our DCO application.

The switching station itself would be silent and would be regularly maintained by the utility provider. We do appreciate, however, that there would be a visual impact and we will continue to work with our stakeholders to determine how this can be minimised.

Refinement to the overhead electricity transmission cable diversion

Due to the proposed changes to the Thong Lane green bridge over the LTC, refinements would be required to the overhead electricity transmission cable diversion that we showed in this area at supplementary consultation.

The diversion would be moved approximately 235 metres south of that proposed at supplementary consultation, which is approximately 90 metres south of the existing overhead electricity transmission cable. This means it would move away from Riverview Park and closer to Thong. Some small additional pockets of land to that shown at supplementary consultation would also be required for these works and for future maintenance of the overhead electricity cables.

To build the new pylons in this area and maintain continued electricity supply for the community, the temporary pylons and alignment shown at supplementary consultation may also need to be moved. This information would be confirmed as part of our ongoing detailed design.

Small permanent electricity substations

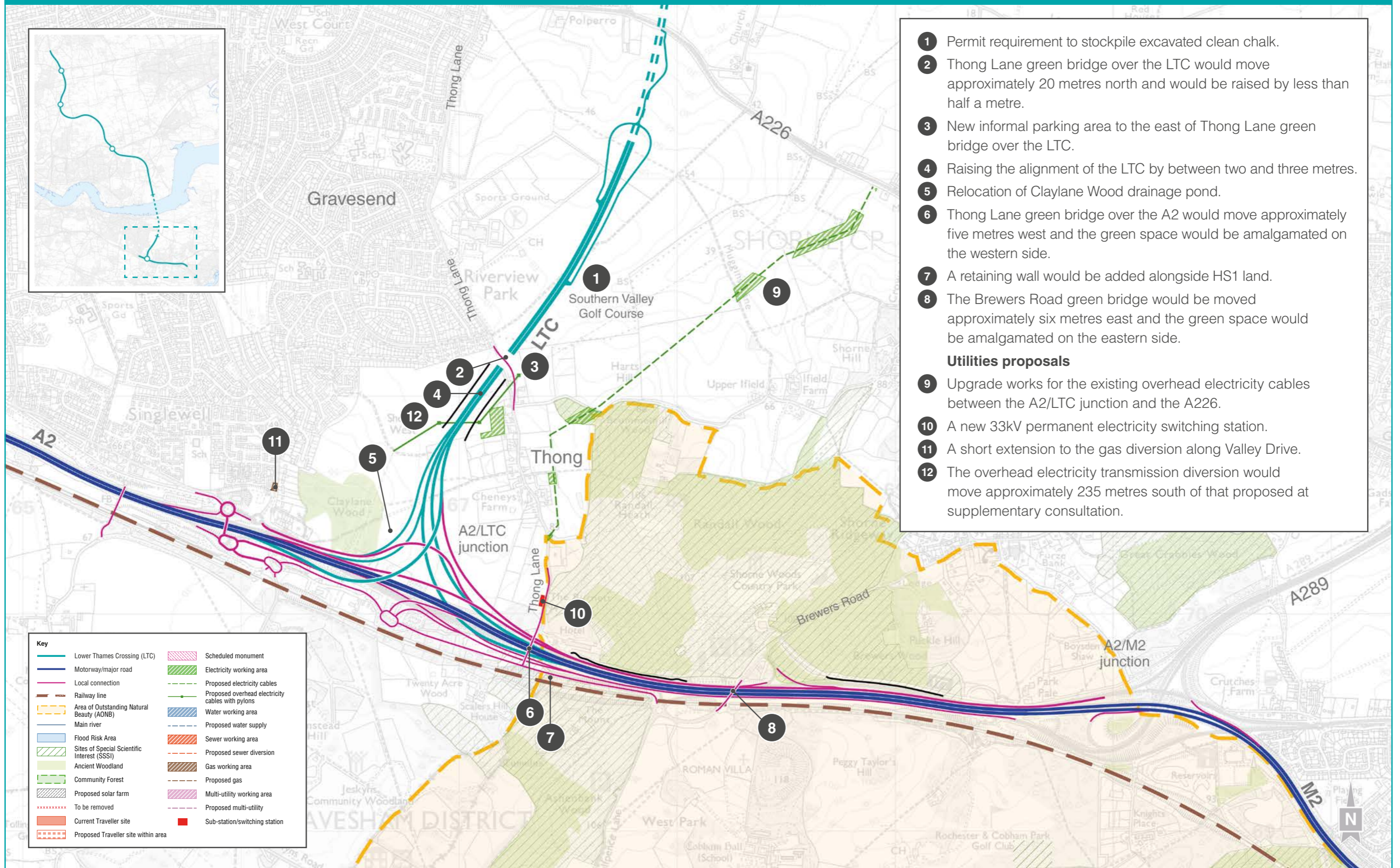
We currently propose five small electricity substations (approximately three metres by three metres in size within a total area of five metres by four metres, and maintenance access tracks as required) in the following locations:

- in the vicinity of Henhurst Road and the access to HS1's Maintenance Depot
- two substations in the vicinity of the existing Cobham Service area
- two substations on Thong Lane in the vicinity of Gravelhill Wood

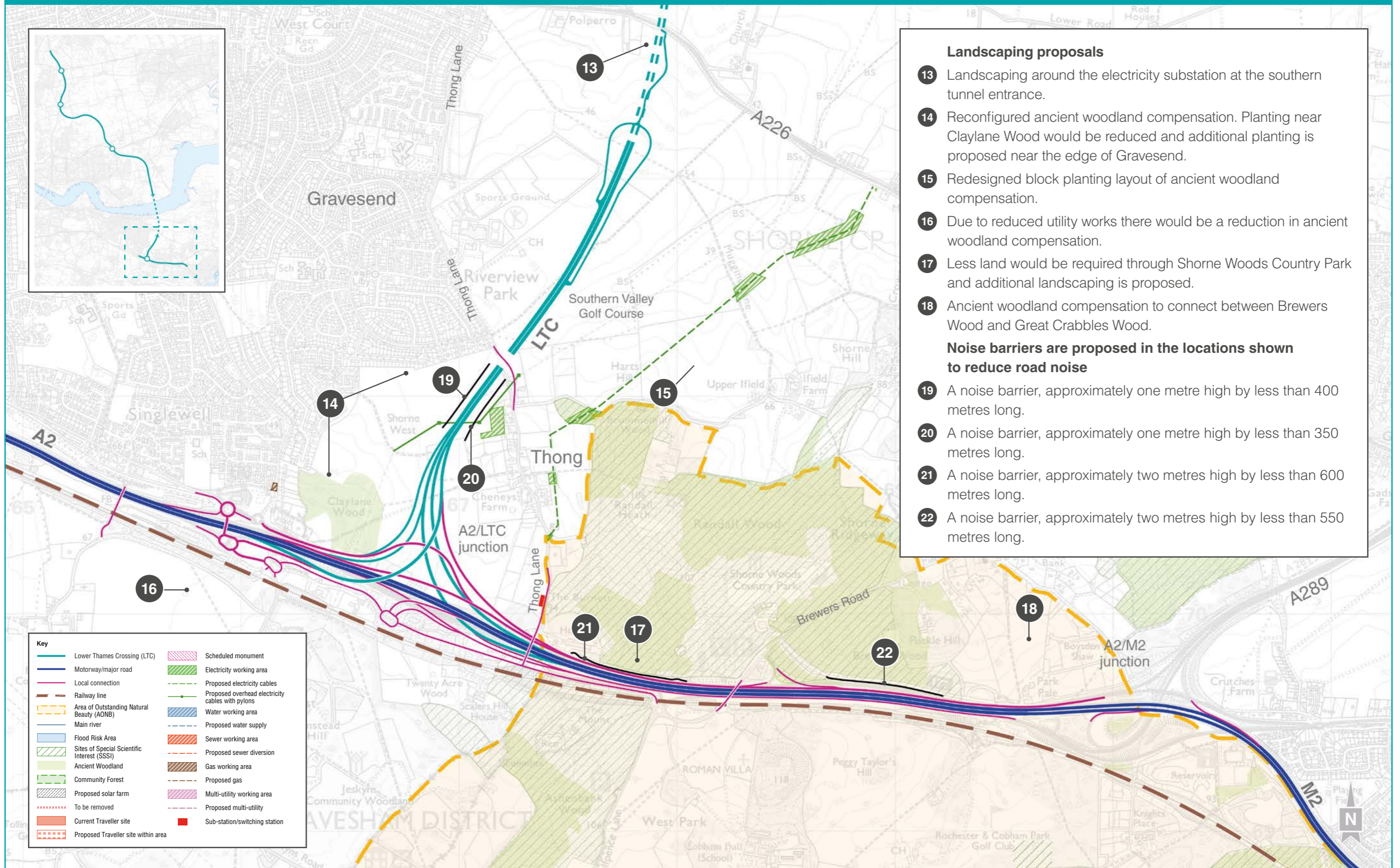


Have your say

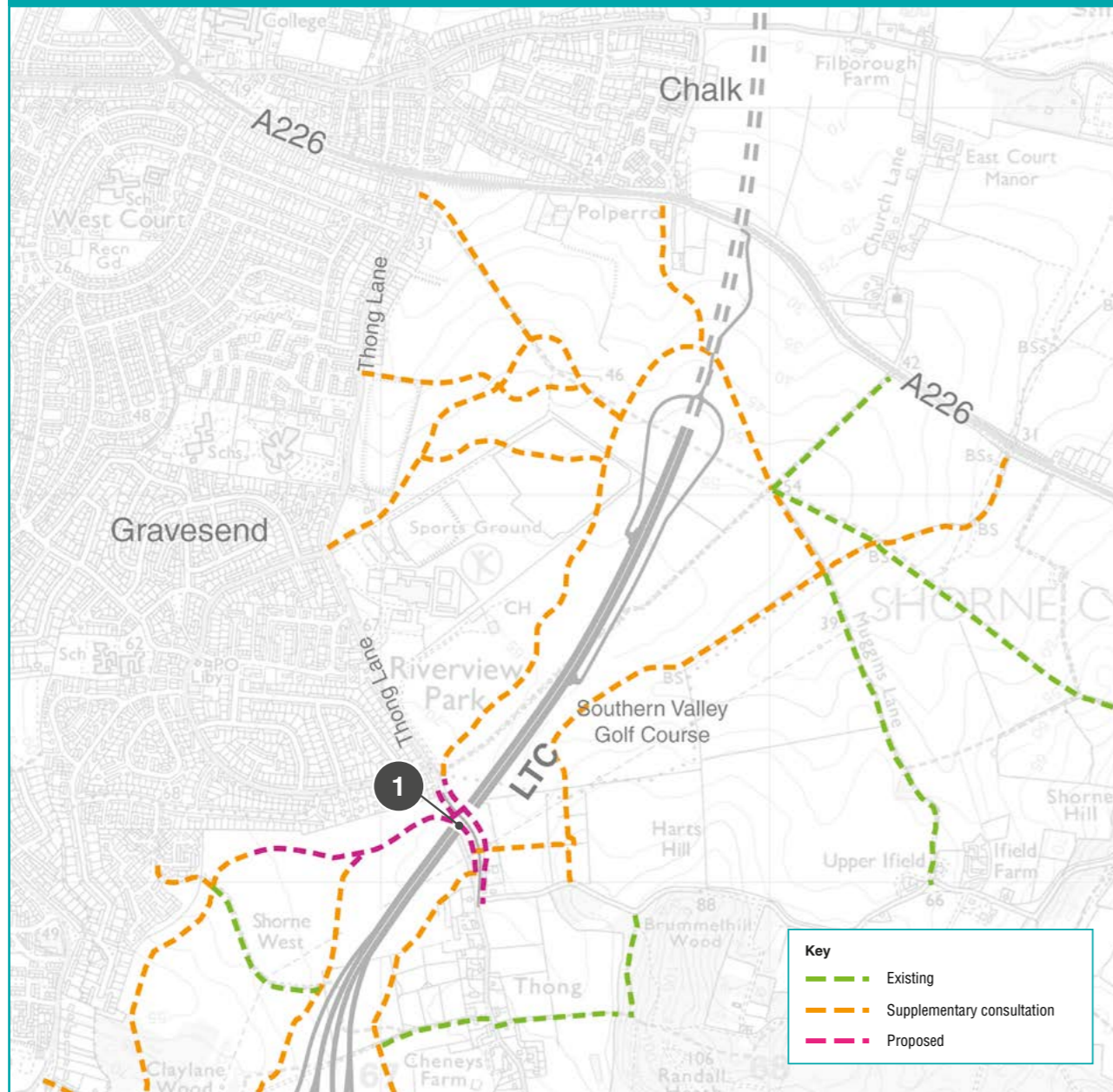
To comment on the changes to the route south of the river, answer questions 1a and 1b in the response form.



- 1 Permit requirement to stockpile excavated clean chalk.
 - 2 Thong Lane green bridge over the LTC would move approximately 20 metres north and would be raised by less than half a metre.
 - 3 New informal parking area to the east of Thong Lane green bridge over the LTC.
 - 4 Raising the alignment of the LTC by between two and three metres.
 - 5 Relocation of Claylane Wood drainage pond.
 - 6 Thong Lane green bridge over the A2 would move approximately five metres west and the green space would be amalgamated on the western side.
 - 7 A retaining wall would be added alongside HS1 land.
 - 8 The Brewers Road green bridge would be moved approximately six metres east and the green space would be amalgamated on the eastern side.
- Utilities proposals**
- 9 Upgrade works for the existing overhead electricity cables between the A2/LTC junction and the A226.
 - 10 A new 33kV permanent electricity switching station.
 - 11 A short extension to the gas diversion along Valley Drive.
 - 12 The overhead electricity transmission diversion would move approximately 235 metres south of that proposed at supplementary consultation.



Routes for walkers, cyclists and horse riders



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1 Refinement to shared path at Thong Lane green bridge over the LTC.

Existing view



Figure 3-1. Existing M2/A2 along the A2 near Park Pale bridge, looking west

Proposed in 2020 supplementary consultation



Figure 3-3. Supplementary consultation – proposed M2/A2 along the A2 near Park Pale bridge, looking west

Proposed in 2018 statutory consultation



Figure 3-2. Statutory consultation – proposed M2/A2 along the A2 near Park Pale bridge, looking west

Proposed new in 2020 design refinement consultation



Figure 3-4. Design refinement consultation – proposed M2/A2 along the A2 near Park Pale bridge, looking west



Figure 3-5. Existing A2, looking north



Figure 3-7. Supplementary consultation – proposed M2/A2/LTC junction, looking north



Figure 3-6. Statutory consultation – proposed M2/A2/LTC junction, looking north



Figure 3-8. Design refinement consultation – proposed M2/A2/LTC junction, looking north



Figure 3-9. Existing Thong Lane and A2, looking north



Figure 3-11. Design refinement consultation – proposed Thong Lane green bridge and A2, looking north



Figure 3-10. Supplementary consultation – proposed Thong Lane green bridge and A2, looking north



Figure 3-12. Existing Thong Lane linking Gravesend and Thong, looking north



Figure 3-14. Supplementary consultation – proposed Thong Lane green bridge linking Gravesend and Thong and the approach to the southern tunnel entrance, looking north



Figure 3-13. Statutory consultation – proposed Thong Lane green bridge linking Gravesend and Thong and the approach to the southern tunnel entrance, looking north



Figure 3-15. Design refinement consultation – proposed Thong Lane green bridge linking Gravesend and Thong and the approach to the southern tunnel entrance, looking north

Find out more

To view the technical drawings for this section of the route, please refer to Map Book 1: General Arrangements and Map Book 2: Land Use Plans, sheets 8 – 10b.

Did you know?

A culvert is a tunnel carrying a stream or open drain under a road or railway.

North of the river in Thurrock and Essex

Tilbury area proposals

Landscaping

At the northern tunnel entrance we propose creating a new landform with footpaths leading up to elevated viewpoints looking out to the south, east and west, from where Coalhouse and Tilbury forts would be visible. The landform design would be created using excavated material from the tunnel and the surrounding area would be restored for grazing agricultural use, in keeping with the existing land use.

Northern tunnel entrance layout

In this area, following landowner and environmental stakeholder feedback, the maintenance access tracks would be moved closer to the LTC to allow for a shorter culvert length (approximately 60 metres instead of 80 metres). A shorter culvert would minimise the impact on the local ecology and allow wildlife, such as water voles, fish and eels, to navigate through the culvert more easily.

Realignment of footpath 61

The proposed realignment of footpath 61 presented at supplementary consultation would be slightly amended to use more of the existing footpath and to follow the existing field boundary. The refinement reduces the amount of land that would be required permanently in this area.

See the 'Routes for walkers, cyclists and horse riders' diagram.

Realignment of footpath 200

Footpath 200 would be diverted around the edge of the field rather than pass through it, as was proposed at supplementary consultation, and would connect with the existing footpath at either end. This proposal is closer to the original alignment.

See the 'Routes for walkers, cyclists and horse riders' diagram.

Muckingford Road realigned and widened to accommodate the new shared path route

At supplementary consultation, two options were shown for a path for walkers and cyclists adjacent to Muckingford Road. The first option was longer and ran behind the houses while the second option was a more direct route along Muckingford Road, in front of the houses.

Since then, option two has been taken forward, which would allow for better connectivity between Chadwell St. Mary and East Tilbury. As a result, Muckingford Road would be realigned and widened to accommodate the new shared path route along the south side.

Maintenance access tracks

In this section of the route, we have proposed maintenance tracks to provide access to culverts, ponds and technology assets. These tracks are not for public use or 'rat-running' and would be secured with an access control system. They would only be used for the purposes of operating and maintaining the LTC and associated infrastructure. This would include maintenance access to infrastructure owned by the utility companies. There is one maintenance track that is shared with part of a route for walkers, cyclists and horse riders.

Tilbury watercourse

Following further site investigations, the existing watercourse, which has currently dried out at Tilbury, south of the railway and north of Station Road, would be re-established to maintain water flow.

Flood mitigation

There would be a minor increase in the size of the compensatory flood storage area south of the railway at Tilbury to align with existing field boundaries.

The following utility refinements are also proposed for this section of the route:

New water supply from the Linford borehole and a local water main

The TBM would need a water supply to assist with the excavation process. A water supply would also be required for the construction site in this area. To connect the water supplies to the TBM and construction site, some land outside the development boundary shown at supplementary consultation would be required.

The proposed routes for these new temporary water supplies are:

- from the Linford borehole site on Lower Crescent, across Muckingford Road and Station Road to the construction area
- from a water main located near the junction of Fort Road and Gun Hill, and running along Coopers Shaw Road and beneath the local railway to the construction area

Potential upgrade of the existing water network

In addition to supplying water from the Linford borehole and local water main near Fort Road and Gun Hill, water may also need to be sourced from a main located at the southern section of the water main near Fort Road. This is to ensure there is enough water for the TBM, construction site and other critical activities.

These works would involve upgrading this water main and works along Dock Road and Hume Avenue.

Part of these works would fall outside of the development boundary shown at supplementary consultation.

Multi-utilities provision to the construction site and northern tunnel entrance

To supply temporary utilities to the construction site and permanent supply to the northern tunnel entrance, some works would be required that fall approximately 1.5km outside of the development boundary shown at supplementary consultation.

These works would largely occur alongside the Tilbury Loop railway to the west of the LTC.

Small permanent electricity substations

We currently propose two small substations (approximately three metres by three metres in size within a total area of five metres by four metres, and maintenance access tracks as required) in the following locations:

- along Muckingford Road in the vicinity of Ashlea Farm
- to the north of the Tilbury Loop railway and south-west of Cole Road

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Have your say

To comment on the changes to the route around the Tilbury area, answer questions 1c and 1d in the response form.

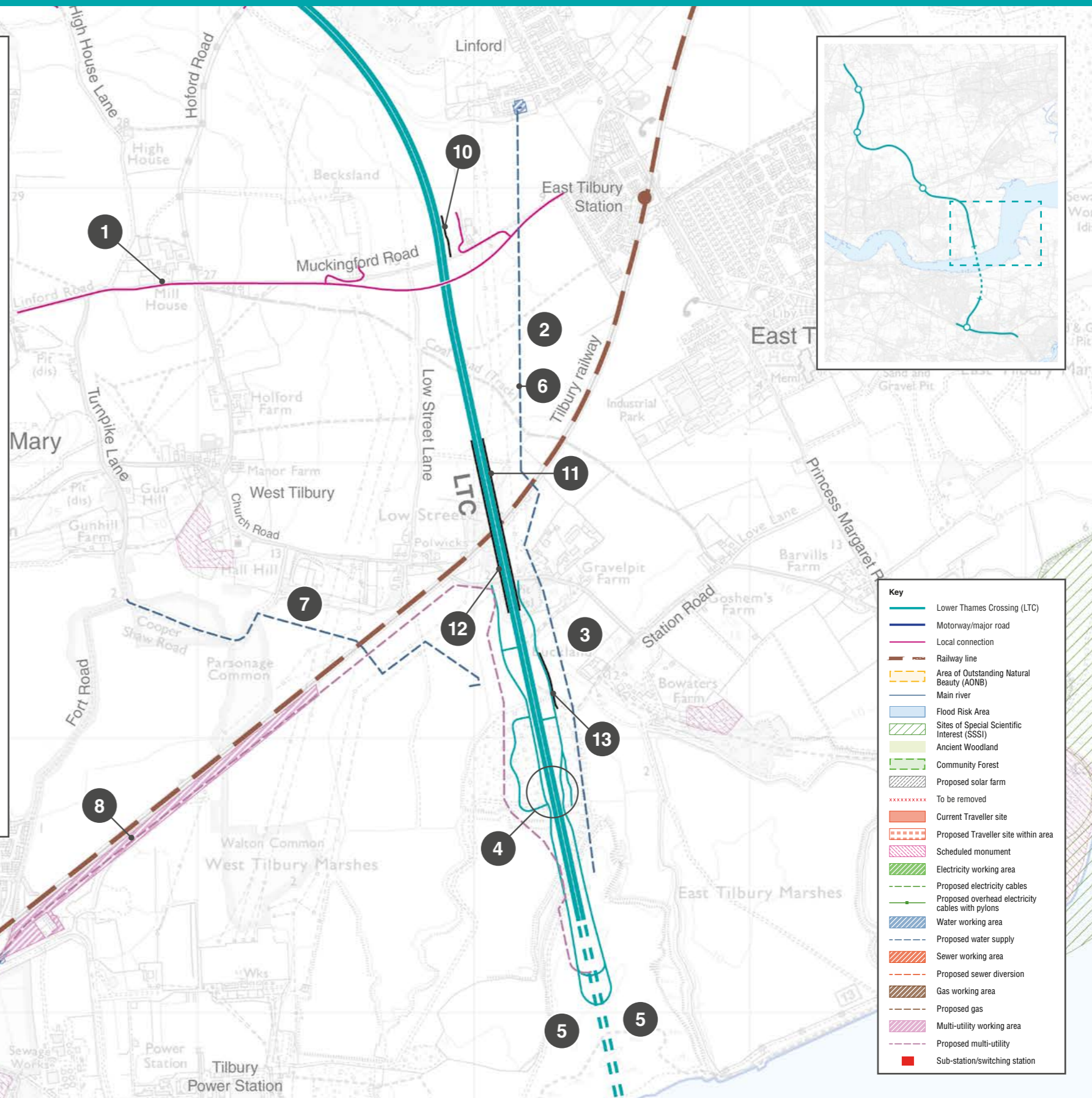
- 1 Muckingford Road would be realigned and widened to accommodate the new shared path route along the southern side.
- 2 The alignment of footpath 61 would be amended to use more of the existing footpath. See the diagram on the next page.
- 3 Footpath 200 would be diverted around the edge of the field. See the diagram on the next page.
- 4 Maintenance access tracks realigned closer to the LTC to allow for a shorter culvert.
- 5 A new landscaping proposal at the northern tunnel entrance.

Utilities proposals

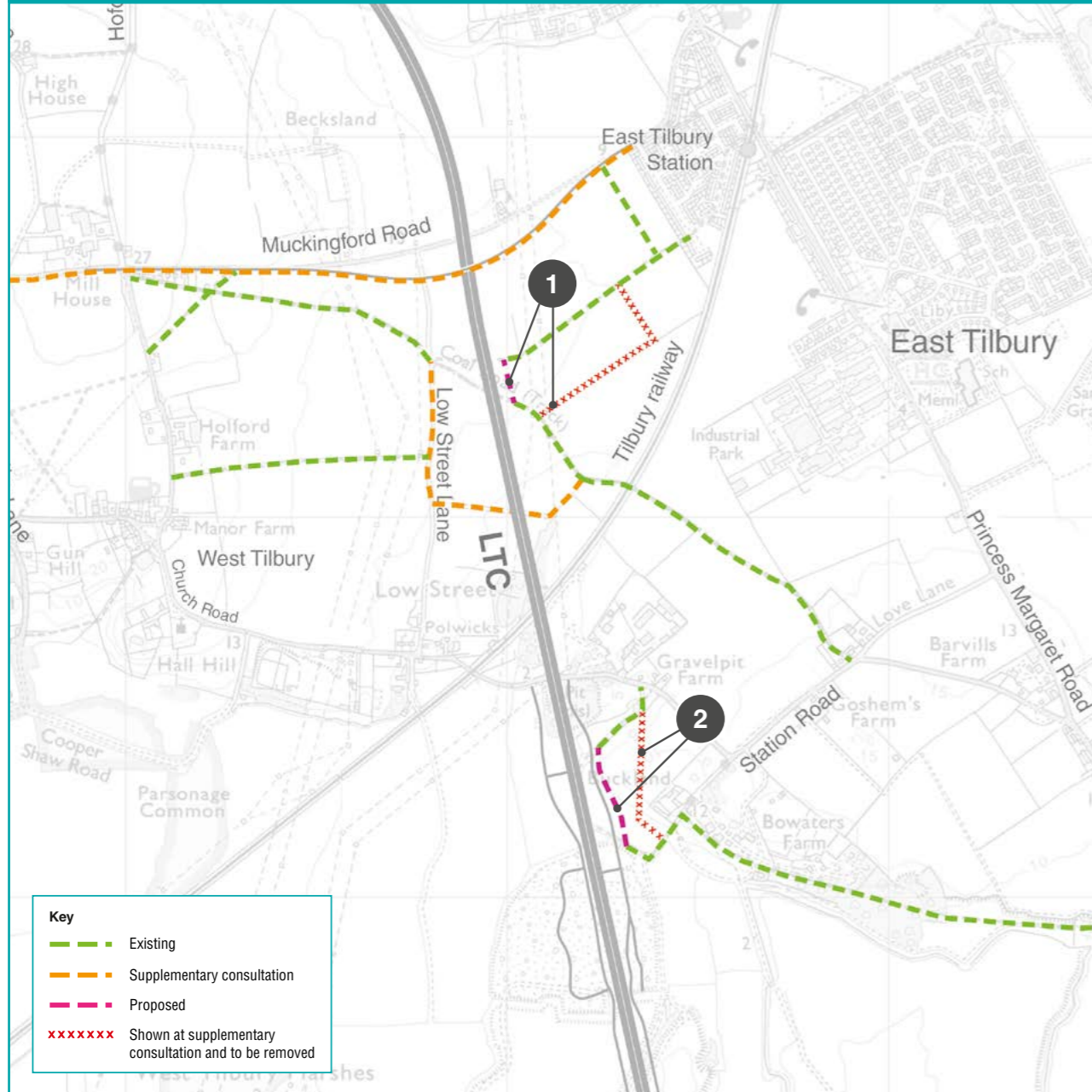
- 6 A new indicative alignment to connect water supply from the Linford borehole to the TBM and construction site.
- 7 A new indicative alignment to connect water supply from a local water main to the TBM and construction site.
- 8 A revised indicative alignment for multi-utilities to the construction site and northern tunnel entrance.
- 9 A potential upgrade of the existing Tilbury water main to supply water to the TBM and construction site.

Noise barriers are proposed in the locations shown to reduce road noise

- 10 A noise barrier, approximately two metres high by less than 200 metres long.
- 11 A noise barrier, approximately one metre high by less than 700 metres long.
- 12 A noise barrier, approximately one metre high by less than 700 metres long.
- 13 A noise barrier, approximately two metres high by less than 250 metres long.



Routes for walkers, cyclists and horse riders



1 Realignment of footpath 61.

2 Realignment of footpath 200.

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Existing view



Figure 3-16. Existing landscape near East Tilbury, looking south

Proposed in 2020 supplementary consultation



Figure 3-18. Supplementary consultation – proposed northern tunnel entrance approach, looking south

Proposed in 2018 statutory consultation



Figure 3-17. Statutory consultation – proposed northern tunnel entrance approach, looking south

Proposed new in 2020 design refinement consultation



Figure 3-19. Design refinement consultation – proposed northern tunnel entrance approach, looking south



Figure 3-20. Existing landscape near Tilbury Power Station, looking north-east



Figure 3-22. Design refinement consultation – Tilbury area, looking north-east from Tilbury Power Station



Figure 3-21. Supplementary consultation – Tilbury area, looking north-east from Tilbury Power Station

Find out more

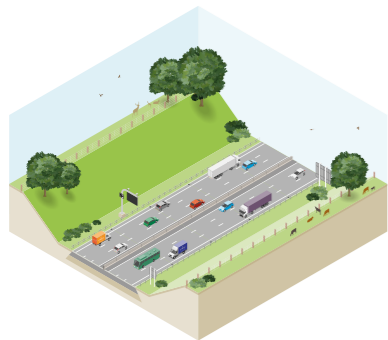
To view the technical drawings for this section of the route, please refer to Map Book 1: General Arrangements and Map Book 2: Land Use, sheets 11 – 14b.

Did you know?

A watercourse is the channel that a flowing body of water follows, for example a river, ditch, drain or dyke.

Did you know?

A false cutting is a means of screening a road by creating embankments on one or both sides of the road to reduce noise and/or visual impacts associated with vehicles passing.



A13/A1089 area proposals

Landscaping

As part of our woodland planting proposals at the A13/A1089 junction, we have identified two separate woodland areas off Baker Street that we would look to make accessible to the public.

Watercourse diversion at Chadwell St. Mary

We are proposing a minor change to the alignment of the watercourse diversion, before the A13 junction, to align with suggested landscape refinements in this area.

Removal of a false cutting

A false cutting between the A128 Brentwood Road and Hoford Road would be removed from the proposals. This is because it was proposed to be in the same location as a watercourse (see above), which also required realigning to avoid the LTC.

Removing this false cutting would mean losing visual and noise screening, so fencing and additional planting are proposed to help conceal the LTC. In addition, to strengthen an existing hedgerow to the north of the road (east of the golf course), additional planting to help further visually screen the new section of road is planned. Noise reduction measures, such as noise barriers, may be required. Assessments are ongoing and further mitigation measures may be provided if necessary and will form part of our application for development consent.

Changes to two A13 merge layouts

Following further detailed analysis of the traffic modelling presented during supplementary consultation, we propose changes to two A13 merges:

- where the A13 westbound/A1089 northbound slip road joins the LTC northbound. Our modelling forecasts that more heavy goods vehicles (HGVs) would join the LTC northbound from the A1089, so a different merge layout would be required
- where the slip road from the Orsett Cock roundabout joins the existing A13 westbound, there is a slight increase in forecast traffic flows meaning a different merge layout would be needed

Amendments to shared paths in the A13/A1089 area

At supplementary consultation we were exploring the feasibility of a new footpath connection under the A13. Following further investigations, this has not been progressed due to its close proximity to the A13 and slip roads connecting to the LTC northbound. As a result, the open space to the north of the A13 that was proposed at supplementary consultation is also no longer proposed because it would not be accessible by walkers, cyclists or horse riders.

Also in this area, the shared path proposed at supplementary consultation for walkers, cyclists and horse riders between Green Lane and Stifford Clays Road would be amended so it's slightly closer to the LTC to avoid impacting farmland.

See the 'Routes for walkers, cyclists and horse riders' diagram.

Traveller site relocation

During supplementary consultation, we presented two potential areas for the relocation of the traveller site at the A13/A1089 junction. One was adjacent to its current location with access off Long Lane, the other was further to the west along Long Lane opposite the junction with Kerry Road.

Following further design work and feedback from our supplementary consultation, we are now proposing a new site adjacent to its current location, with access off Gammonfields Way. The relocated traveller site would remain approximately 1.5 hectares in area (the same as at present), with an additional 1.5 hectares set aside for appropriate access and landscaping.

We will continue to engage with our stakeholders to refine this proposal.

Emergency access

At supplementary consultation, emergency access off Brentwood Road on to the LTC was added. We have now refined this and propose emergency access from the LTC on to Brentwood Road. This access will not be open to the public.

Maintenance access tracks

In this section of the route, we have proposed maintenance tracks to provide access to a culvert, pylon, field, pond and technology assets at various locations. These tracks are not for public use or 'rat-running' and would be secured with an access

control system. They would only be used for the purposes of operating and maintaining the LTC and associated infrastructure. This would also include maintenance access to infrastructure owned by the utility companies. There is one maintenance track that is shared with part of a route for walkers, cyclists and horse riders.

The following utility refinements are also proposed for this section of the route:

Multi-utility diversion extension

We now propose extending the works along the B188 High Road, towards Orsett, so that we can ensure communications supply is maintained for the local area.

These works would also impact some land slightly outside of the development boundary shown at supplementary consultation.

Moving overhead electricity distribution cables underground

At the corner of Hornsby Lane and Foxes Green, we would move some of the cables underground to cater for the proposed LTC route. These works would also impact on some additional land outside the development boundary presented at supplementary consultation.

Permanent gas pipeline compound at Stanford Road

A permanent compound east of Orsett Cock roundabout, along Stanford Road, is planned for the operation and maintenance of a proposed gas pipeline in this area.

The facility, including equipment, would be located within an area approximately 35 metres by 35 metres and would include fencing for security reasons.

Access for future maintenance would also be required off Stanford Road. Some land outside of the development boundary shown at supplementary consultation would also be required for these works.

Additional land for overhead electricity distribution cable diversion works

Some additional land to that shown at supplementary consultation would be required for overhead electricity distribution cable diversion works north of Heath Place.

Additional working area for multi-utility construction

Some additional land, from what was shown at supplementary consultation, would be required off Mill Lane. This is for multi-utility works in this area, which includes permanent access that may be required by the utility provider for future maintenance.

Small permanent electricity substations

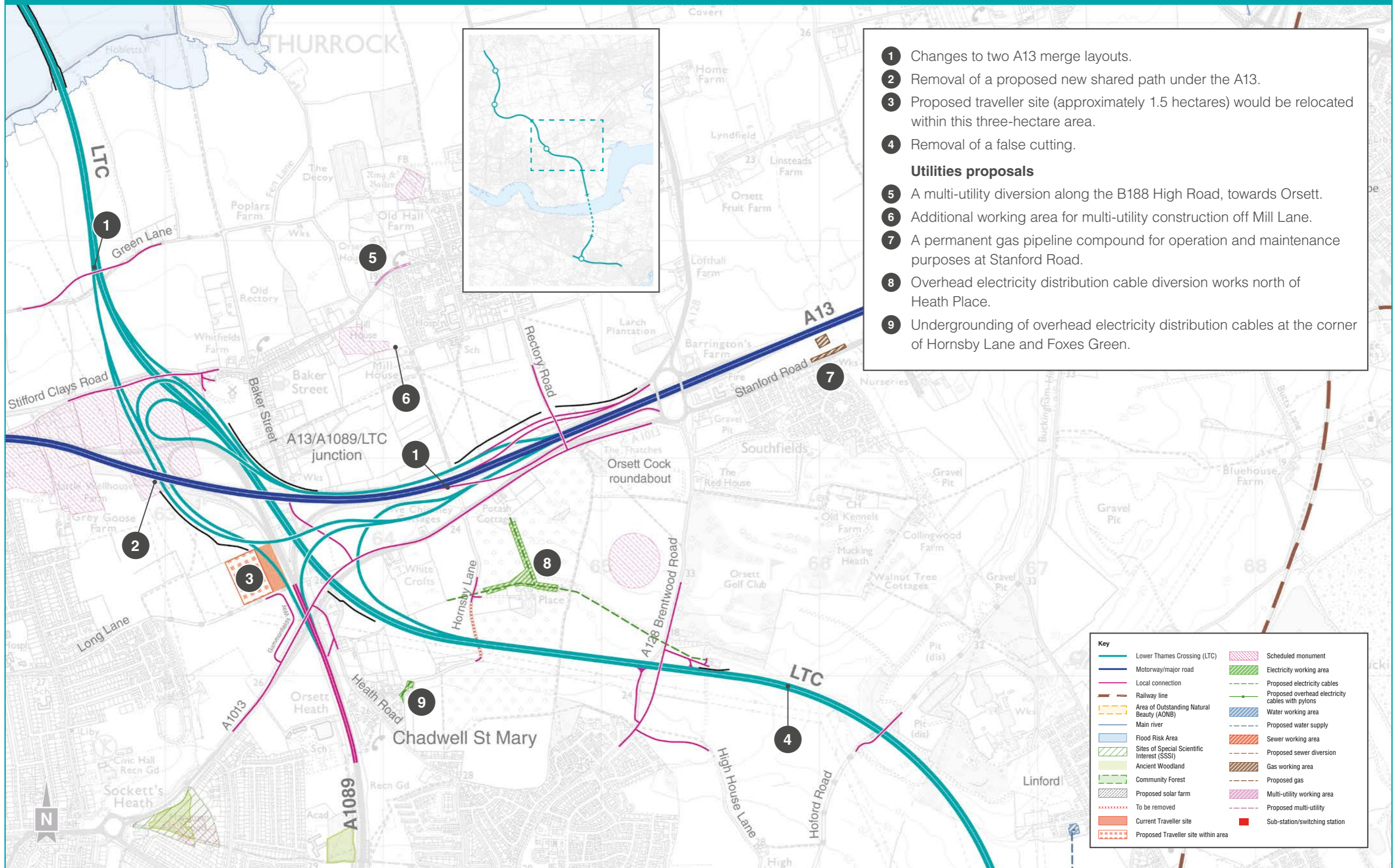
We currently propose seven small substations (approximately three metres by three metres in size within a total area of five metres by four metres and maintenance access tracks as required) in the following locations:

- in the vicinity of Brook Farm off Brentwood Road and High House Lane
- along Hornsby Lane in the vicinity of Heath Place
- along Hornsby lane, up to 250 metres north-east of Gower Lane
- in the vicinity of Hornsby Lane and Foxes Green
- along Heath Road in the vicinity of Stanford Road (A1013)
- along Baker Street in the vicinity of Woolings Close
- in the vicinity of Stanford Road and Rectory Road

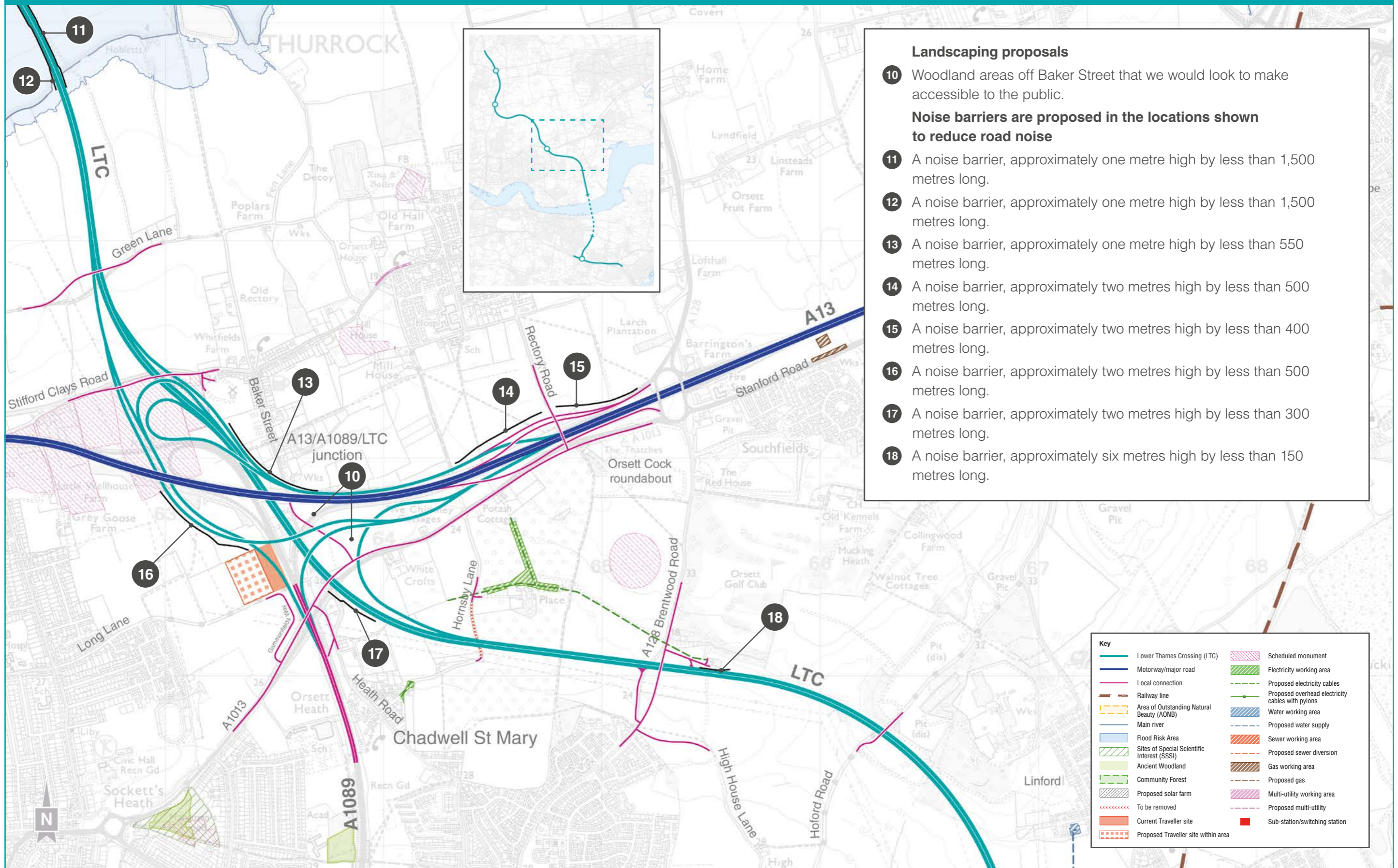


Have your say

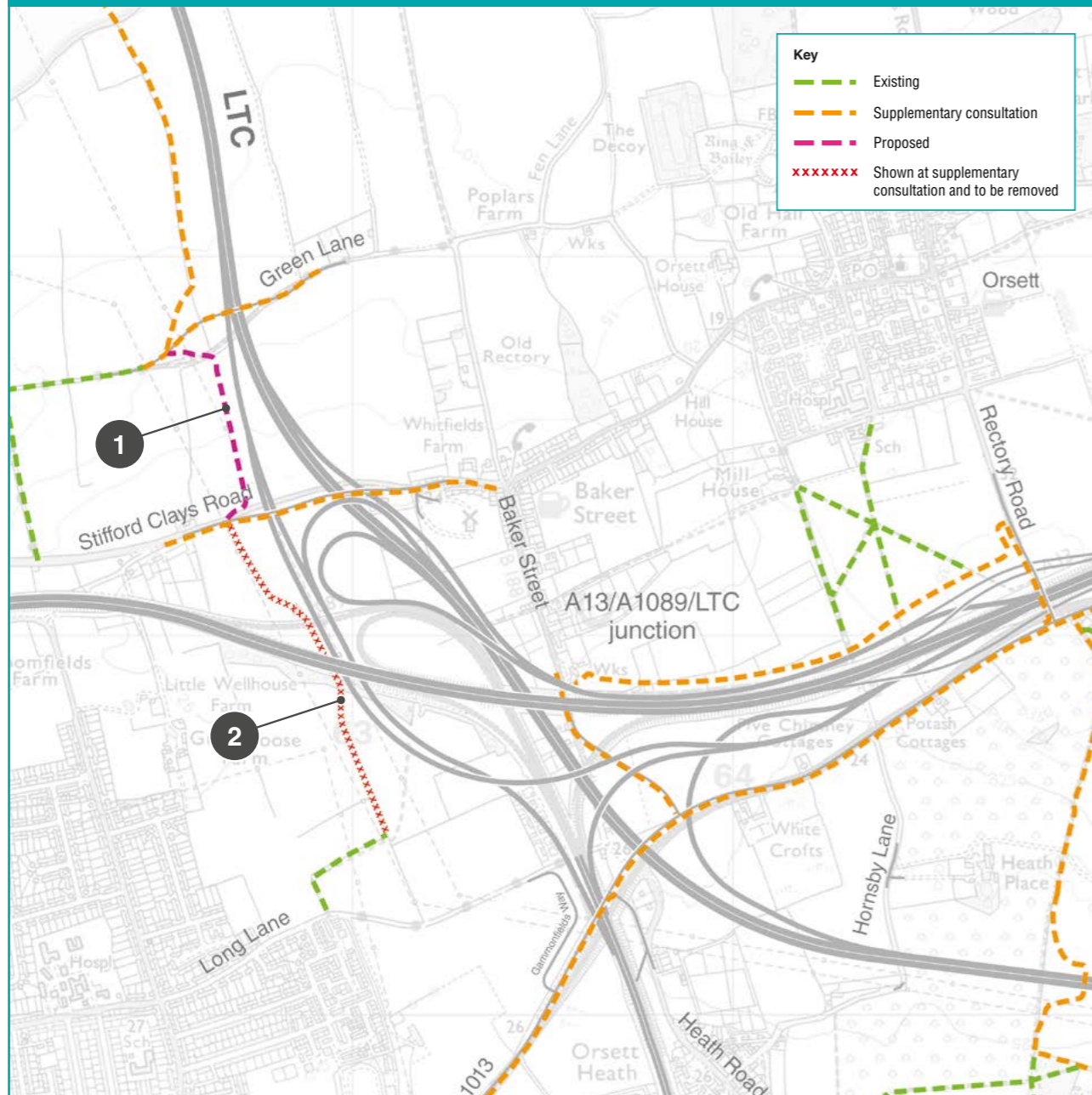
To comment on the changes to the route around the A13/A1089 junction, answer questions 1e and 1f in the response form.



- 1 Changes to two A13 merge layouts.
 - 2 Removal of a proposed new shared path under the A13.
 - 3 Proposed traveller site (approximately 1.5 hectares) would be relocated within this three-hectare area.
 - 4 Removal of a false cutting.
- Utilities proposals**
- 5 A multi-utility diversion along the B188 High Road, towards Orsett.
 - 6 Additional working area for multi-utility construction off Mill Lane.
 - 7 A permanent gas pipeline compound for operation and maintenance purposes at Stanford Road.
 - 8 Overhead electricity distribution cable diversion works north of Heath Place.
 - 9 Undergrounding of overhead electricity distribution cables at the corner of Hornsby Lane and Foxes Green.



Routes for walkers, cyclists and horse riders



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1 Shared path amended to avoid impacting farmland.

2 Removal of proposed shared path under the A13.

Existing view



Figure 3-23. Existing A13/A1089 junction, looking south

Proposed in 2020 supplementary consultation



Figure 3-25. Supplementary consultation – proposed LTC and A13/A1089 junction, looking south

Proposed in 2018 statutory consultation



Figure 3-24. Statutory consultation – proposed LTC and A13/A1089 junction, looking south

Proposed new in 2020 design refinement consultation



Figure 3-26. Design refinement consultation – proposed LTC and A13/A1089 junction, looking south. Please note, the location of the traveller site in this image is indicative only. See number 3 on the first A13/A1089 junction map for the proposed location.



Figure 3-27. Existing view east of A13/Orsett Cock roundabout and A1013 Stanford Road, looking west

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Figure 3-28. Design refinement consultation – proposed view east of A13/Orsett Cock roundabout and A1013 Stanford Road, looking west

Find out more

To view the technical drawings for this section of the route, please refer to Map Book 1: General Arrangements and Map Book 2: Land Use, sheets 15 – 19a.

LTC/M25 area proposals

Landscaping

North of the Thames Chase Forest Centre, we are proposing a new maintenance access track and a multi-utilities diversion. We have located these within the same area to limit the reduction in woodland compensation that is required to accommodate these changes.

We are also diverting a watercourse within an area called The Wilderness. To accommodate this we are proposing a reduction in woodland planting in this area.

Modifications at Ockendon landfill (south of the LTC)

As a result of ongoing design development and to avoid encroachment into the Ockendon landfill site, we would divert a local watercourse, remove earthworks and introduce a retaining wall, which is approximately six metres high by 200 metres long.

Relocation of construction site 13

Construction site 13 would be moved approximately 200 metres west of the location proposed at supplementary consultation to avoid a cemetery in this area.

Relocation of footpath 136

Footpath 136 over the LTC would be moved approximately 40 metres west to avoid a gas pipeline compound located on the north side of the LTC. As a result, the existing vegetation in this area can now largely be retained.

See the 'Routes for walkers, cyclists and horse riders' diagram.

Realignment of footpath 252

Footpath 252 would be realigned on the western side near Dennis Road to provide access to a farm.

Maintenance access tracks

In this section of the route, we have proposed maintenance tracks to provide access to ponds, culverts, pylons and technology assets at various locations. These tracks are not for public use or 'rat-running' and would be secured with an access control system. They would only be used for the purposes of operating and maintaining the LTC and associated infrastructure. This would include maintenance access to infrastructure owned by the utility companies. There is one maintenance track that

would be shared with part of a route for walkers, cyclists and horse riders.

Flood mitigation

Following further investigations at Orsett Fen near the Orsett Fen Sewer and Golden Bridge Sewer, we propose reducing compensatory flood storage areas:

- to the west of the proposed LTC to align with existing land boundaries
- to the east of the proposed LTC to avoid a nearby property boundary

The following utility refinements are also proposed for this section of the route:

Proposed reconfiguration of land required for multi-utility works

The land required for utility works has changed slightly since supplementary consultation. This caters for the proposed LTC route and the construction of the viaduct in this area.

B186 North Road multi-utility diversion works

Some above and below-ground multi-utilities within the vicinity of the B186 North Road would need to be diverted to facilitate the proposed LTC route. Some of the overhead electricity distribution cables in this area may also need to be placed underground to avoid the proposed LTC route.

The area required for these works has increased slightly since supplementary consultation.

Ockendon Road sewer diversion works

A sewer diversion may be required from Ockendon Road to St. Mary's Lane via the B186. This is due to the proximity of the existing sewer pipes to the proposed LTC route and the proposed Ockendon Road bridge construction works in this area.

If the sewer diversion works are required, some additional land from what was shown at supplementary consultation would be required.



Have your say

To comment on the changes to the route around the LTC and its junction with the M25, answer questions 1g and 1h in the response form.

Works in the Mardyke area for National Grid maintenance access

National Grid would require access from Green Lane for the maintenance of its overhead electricity transmission cables on a permanent basis. This access would be required during the diversion works for the lines and afterwards for the operation of the network.

These works would require the use of some land outside of the development boundary shown at supplementary consultation.

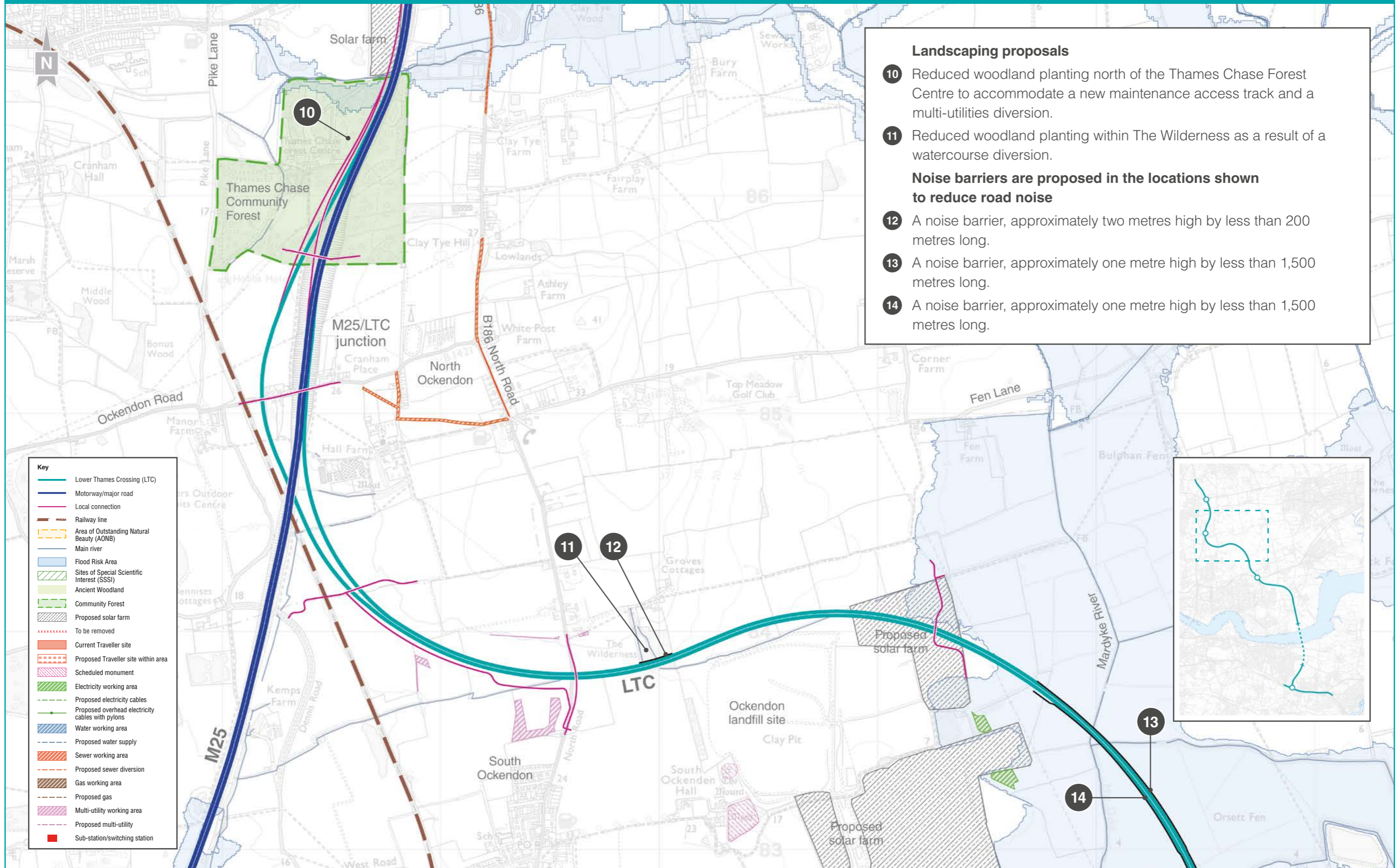
By increasing the land for the works required in this location, we have more space and can avoid impacting vegetation.

Small permanent electricity substations

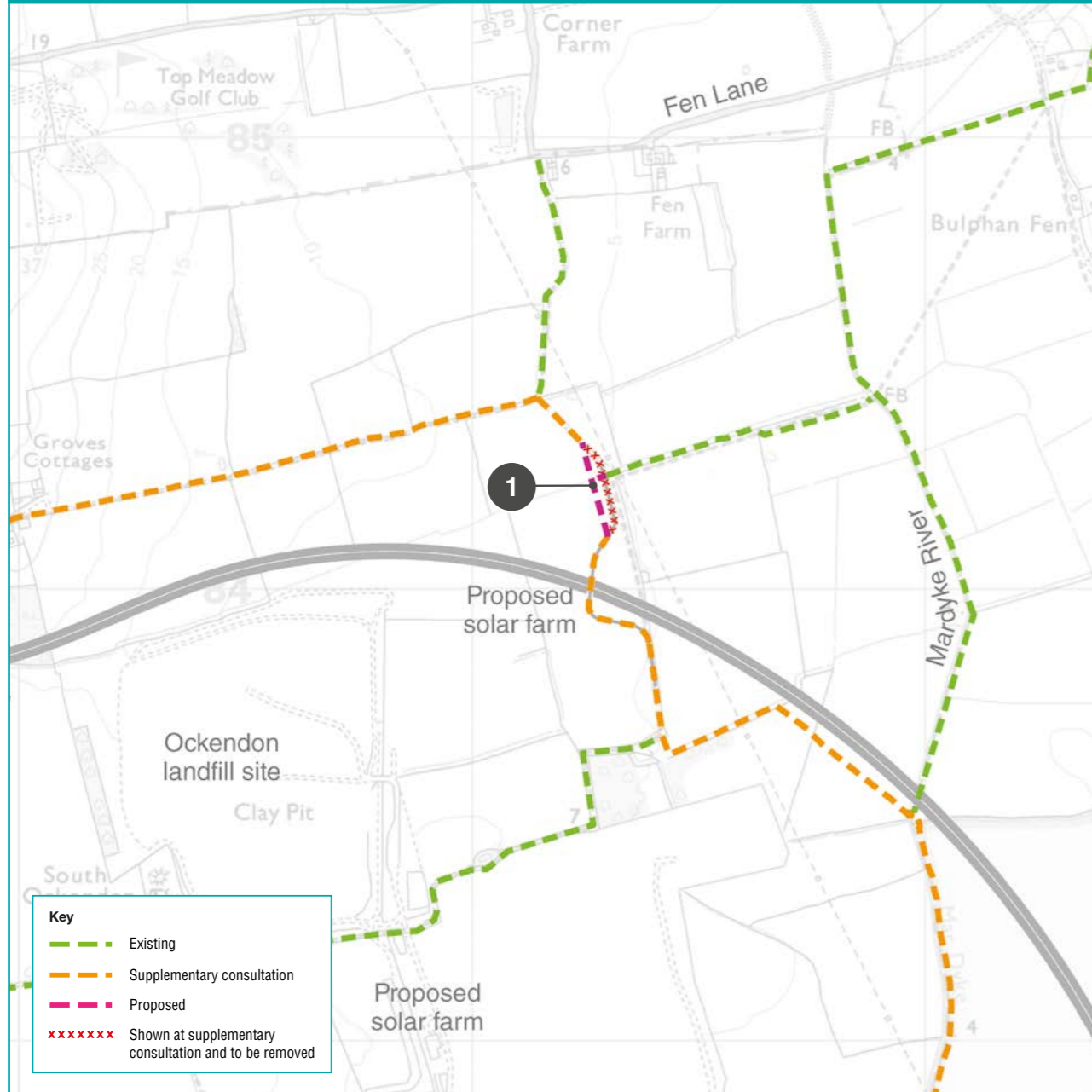
We currently propose one small substation (approximately three metres by three metres in size within a total area of five metres by four metres, and maintenance access tracks as required) off Clay Tye Road in the vicinity of the access to Clay Tye Farm.

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Routes for walkers, cyclists and horse riders



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1 Realignment of footpath 136.

Existing view



Figure 3-29. Existing North Road, looking west

Proposed in 2020 design refinement consultation



Figure 3-31. Design refinement consultation – proposed North Road green bridge over the LTC, looking west

Proposed in 2020 supplementary consultation



Figure 3-30. Supplementary consultation – proposed North Road green bridge over the LTC, looking west



Figure 3-32. Existing M25 and Ockendon Road, looking north



Figure 3-34. Design refinement consultation – proposed LTC/M25 junction, with new Ockendon Road bridge, looking north



Figure 3-33. Supplementary consultation – proposed LTC/M25 junction, with new Ockendon Road bridge, looking north

Find out more

To view the technical drawings for this section of the route, please refer to Map Book 1: General Arrangements and Map Book 2: Land Use, sheets 20 – 21a.

M25 junction 29 area proposals

Amendments to walking, cycling and horse riding routes

At supplementary consultation, we showed an existing path next to the south side of the A127 that was impacted due to the addition of segregated left-turn lanes. These lanes meant the existing crossing points to the south of the junction would no longer be feasible. We have been exploring solutions to maintain connectivity in this area and now propose a new footbridge over the A127, which would link to existing routes.

A new route and signalised crossings are proposed at the northern side of the junction to improve pedestrian connectivity.

The existing bridleway adjacent to the A127 and M25 junction would be re-aligned to prevent it clashing with the proposed slip road.

The bridleway south of the M25 junction 29 would be amended to accommodate shared use of the route with utility company maintenance vehicles.

See the 'Routes for walkers, cyclists and horse riders' diagram.

Maintenance access tracks

In this section of the route, we have proposed a maintenance track to provide access to a pylon and ponds. These tracks are not for public use or 'rat-running' and would be secured with an access control system. They would only be used for the purposes of operating and maintaining the LTC and associated infrastructure. This would include maintenance access to infrastructure owned by the utility companies. There is one maintenance track that is shared with part of a route for walkers, cyclists and horse riders.

The following utility refinements are also proposed for this section of the route:

Additional land required for underground electricity distribution cable works

Further to the proposals shown at supplementary consultation, some additional land would be required to carry out underground electricity distribution cable diversion works near Franks Farm. However, the positioning of the underground multi-utility alignment, as shown at supplementary consultation, is unchanged.

Overhead electricity distribution cables repositioned underground

Some of the overhead electricity distribution cables near the B186 Warley Street would need repositioning underground to accommodate the proposed LTC route. Some additional land to that shown at supplementary consultation would also be required to carry out these works.

Additional land required for gas diversion works

Near Folkes Lane, a small amount of additional land to that shown at supplementary consultation would be required for gas diversion works. This would ensure the gas pipeline is a sufficient distance from our main works. However, the positioning of the underground multi-utility alignment, as shown at supplementary consultation, is unchanged.

Additional land for maintenance of the overhead electricity transmission cables

Some additional land to that shown at supplementary consultation would be required, south-west of the M25 junction 29. This is so that permanent access can be provided for the future maintenance of overhead electricity transmission cables in this location.

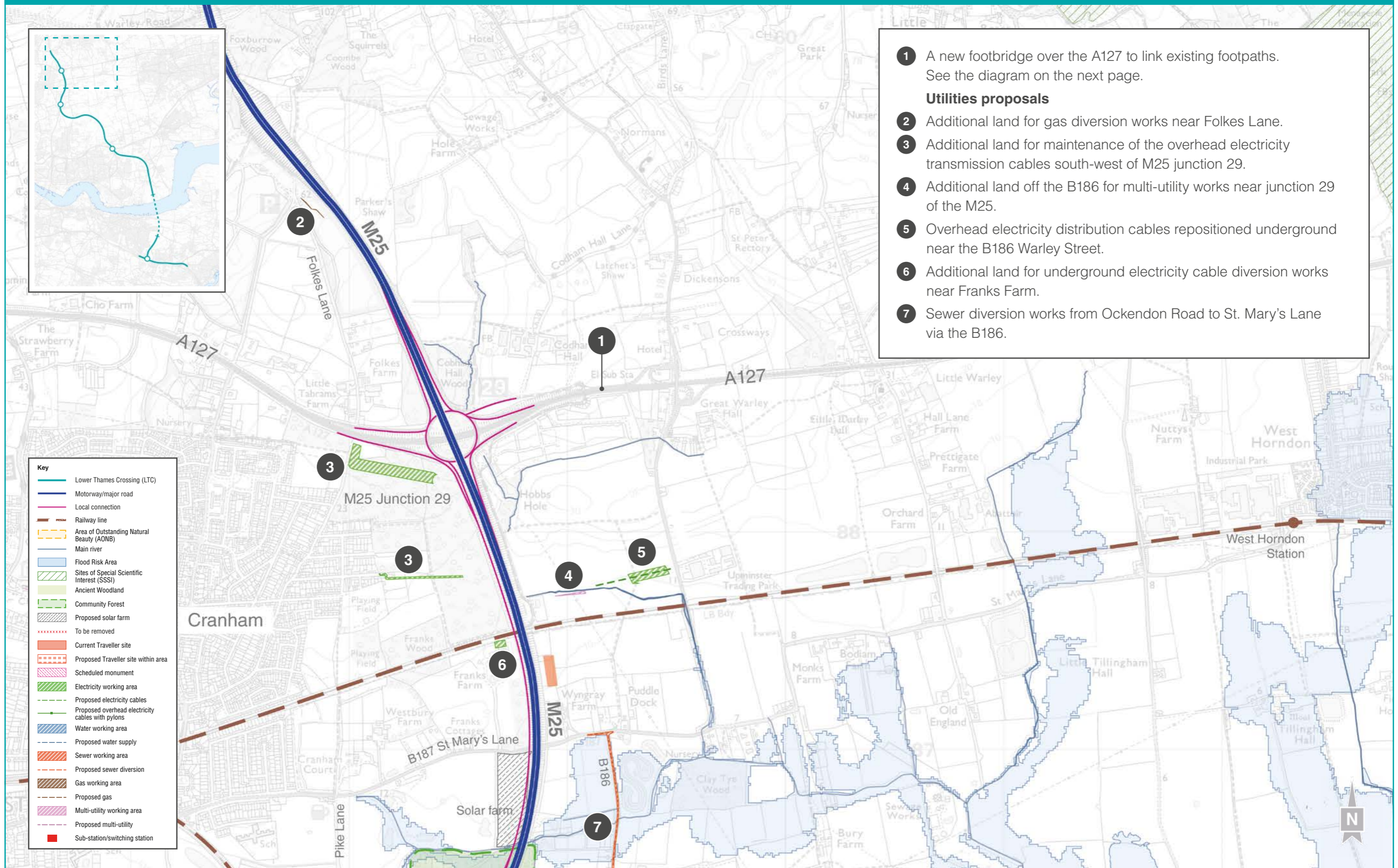
Additional land for multi-utility works

Off the B186 near junction 29 of the M25, some additional land to that shown at supplementary consultation would be required for the multi-utility works proposed in this location.

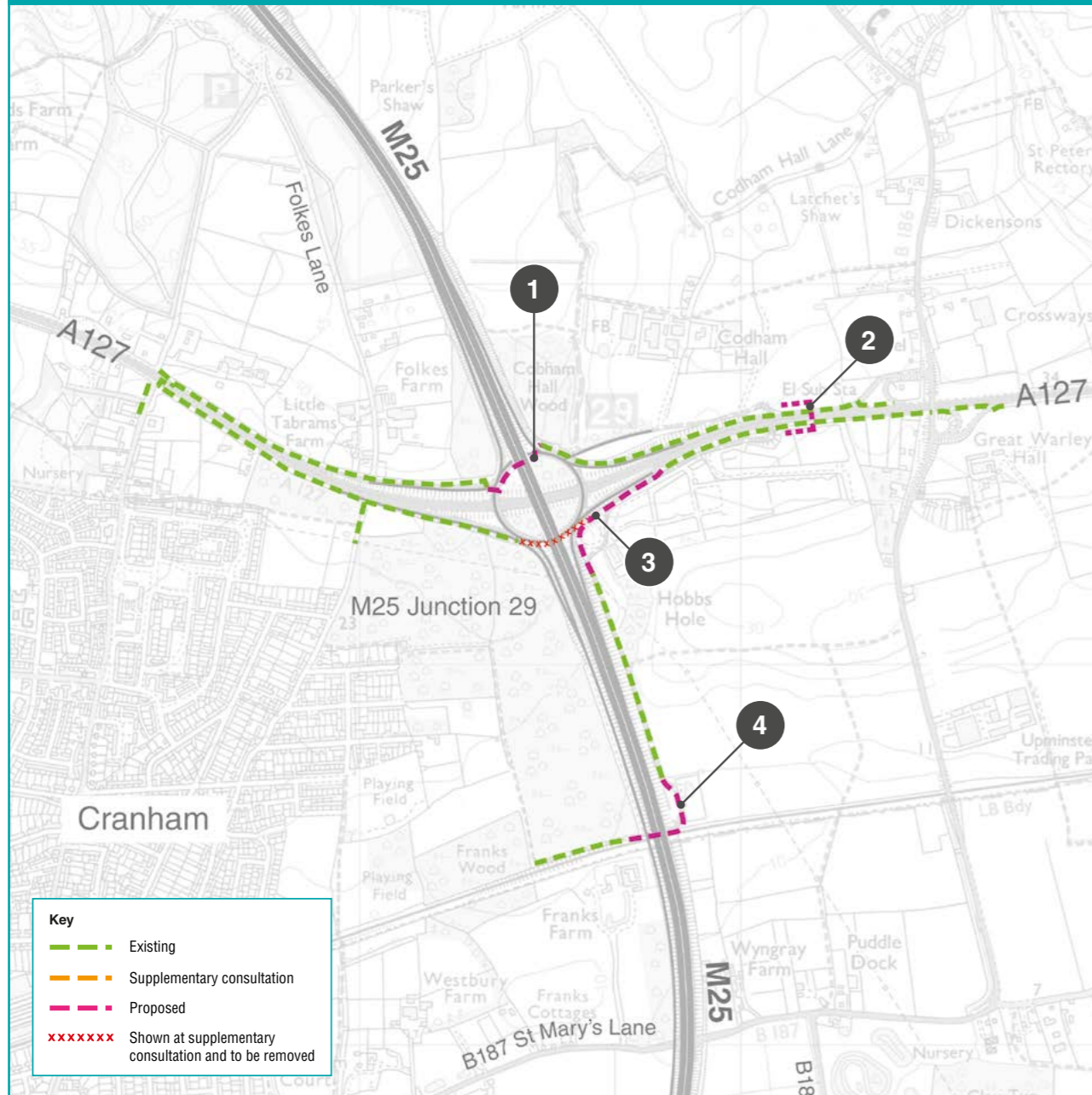


Have your say

To comment on the changes to the route around the M25 junction 29, answer questions 1i and 1j in the response form.



Routes for walkers, cyclists and horse riders



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- 1 A new route and signalised crossings.
- 2 A new footbridge over the A127.
- 3 Realigned bridleway adjacent to the A127 and M25 junction.
- 4 Bridleway amended to accommodate shared use with maintenance vehicles.

Property and landowners

We have revised our development boundary to reflect the changes that we are now proposing for this design refinement consultation.

At supplementary consultation, the development boundary comprised over 26km² of land. Allowing for the changes we are now consulting on, the land within the revised development boundary is now slightly below 23km². We have been able to reduce this area by refining the design of utility diversions in some areas along the route.

A comparison of the development boundary presented at supplementary consultation, and the revised boundary, is shown on the following pages. Within this revised development boundary, there is now some additional land along the Lower Thames Crossing route that would be required permanently.

There are approximately 150 residential and business properties within the revised development boundary. This has been reduced from approximately 270 properties presented at supplementary consultation. Around 70 would only be affected by works to adjust existing electricity cables above the properties, so would not need to be purchased for the project. At supplementary consultation, this figure was around 190. Of the other 80 properties, around 40 would require demolition and the remainder would be impacted by construction works or would need changes to how they are accessed.

We want everyone who lives in, or owns, land or property in the revised development boundary to have the opportunity to understand our proposals. We have a dedicated land and property team who are active in the community and are happy to discuss with any landowner their concerns and explain any rights they may have. See our 'Find out more' chapter to get in touch.

At the time we submit our DCO application, the revised development boundary will be referred to as the Order Limits.

Utility diversions

Where we are diverting utilities, such as power lines or gas pipelines, we would normally use the land temporarily but retain permanent rights over it to allow the utility owner to operate and maintain the utility infrastructure. This would allow ownership of the land to remain with the existing landowner. Other areas, for example construction sites, would also only be needed temporarily. When work is complete, any land would be reinstated and returned to its owner.

Special category land

In some locations, the Lower Thames Crossing is impacting existing areas of special category land.

Due to this, our revised development boundary includes replacement land for some of the special category land, or rights over land, that we propose to compulsory purchase.

In some cases, in accordance with the Planning Act 2008, replacement land has not been included. This is because, for example, the use of this land would be temporary, or because we are only proposing to divert utilities through the land. This means that its previous use can continue once our works are finished.

Did you know?

Special category land includes, but is not limited to, land that forms part of common and open space. The compulsory purchase of this land, or of rights over this land, such as a right of access, is subject to specific rules. The Lower Thames Crossing would have an impact on special category land including common land and open space.

Compulsory purchase is the acquisition of land or rights compulsorily, a power that we would seek in our DCO application.

Open space land can include public gardens, land used for public recreation and disused burial grounds.

Common land is private land with rights that allow the public to access and freely roam over it unless an exception applies.

Where replacement land is being provided for any special category land, or rights over this land, it would be no less advantageous and of at least the same size.

Any replacement land has been indicated within Map Book 1: General Arrangements, and a breakdown of temporary and permanent land use can be found in Map Book 2: Land Use Plans.

In the table below, we have set out our current understanding of the special category land that would be directly impacted by the project. This land would be subject to compulsory purchase, either of the land itself or rights over the land, or would be subject to temporary possession to construct the project.

For each site, we describe the special category land, the impact that the project would have on it and our proposals.

Section of the route	Land description	Impact on the land	Lower Thames Crossing proposals
M2/A2 junction	Shorne Woods Country Park and Ashenbank Wood – The current use of the site is for recreational purposes and consists of woodland, walking tracks and educational walks.	We propose to permanently acquire land for the realignment of Thong Lane and the new road north of the A2. Permanent rights would also be required for the diversion of a gas pipeline, which may limit public use of the area.	We propose acquiring replacement land for the affected area to the east of Brewers Wood, part of Shorne Woods Country Park. The area would be designed to complement the existing site. We propose to include woodland planting and a footpath would be located through the replacement land.
M2/A2 junction	Jeskyns Community Woodland – The site is used for outdoor recreation, walking and cycling.	We propose using an area within the site for restringing existing overhead electricity distribution cables.	The use of the site is temporary and the land would be reinstated once the works are complete.
M2/A2 junction	Cyclopark – The site in Gravesend includes walking and cycling facilities.	We propose to place an underground power supply through the site.	The use of the site is temporary and the land would be reinstated once the works are complete. Permanent rights would be required in relation to the underground power supply, however the use of land as open space would be unaffected.

Section of the route	Land description	Impact on the land	Lower Thames Crossing proposals
M2/A2 junction	Shorne Marshes – The site is a grazing marsh.	The Lower Thames Crossing tunnel passes underneath the site but there would be no surface works.	There would be restrictions on the land to protect the tunnel, but the current use of the land on the surface would be unaffected.
M2/A2 junction	North-east of the M2/A2 junction, at the eastern end of Park Pale – The site is an open field with a footpath.	We propose to use this site for ancient woodland compensation.	Once these environmental mitigation works are complete, the site would be open to the public.
M2/A2 junction	Michael Gardens play area, Gravesend – This site is a play space within a public park.	We propose to upgrade a footpath running through the site, to connect with other footpaths across the project area.	Once the upgrade works are complete, the path and play area would remain open to the public.
Tilbury area	Tilbury Green – This area of land is designated as common land and allows the public to freely roam over it. This land includes footpath 200 and links into other footpaths within the surrounding area.	We propose to permanently acquire part of footpath 200 for the new road and landscaping. This would remove the ability to freely roam over the affected section of the footpath.	We propose an alternative route for the footpath. The land on which this lies would be designated as common land. It would have the same rights as the affected part of the footpath.
Tilbury area	West Tilbury Marshes – Part of this area of land is designated as common land and provides marsh and scrub habitat, which is valuable for wildlife.	We propose to acquire permanent rights over the land for the utility works required for the northern tunnel entrance. The land would be used for temporary access and construction purposes.	The use of the site is temporary, and as the permanent rights would relate to underground equipment, the land would be returned to its current use when the works are complete.
Tilbury area	Walton Common and Parsonage Common – The land is designated as common land and provides scrub and grassland habitat, which is valuable for wildlife, and drainage.	We propose to acquire permanent rights over the land for the utility works required for the northern tunnel entrance. The land would be used for temporary access and construction purposes.	The use of the site is temporary, and as the permanent rights would relate to underground equipment, the land would be returned to its current use when the works are complete.

Section of the route	Land description	Impact on the land	Lower Thames Crossing proposals
A13/A1089 junction	Ron Evans Memorial Field – The Ron Evans Memorial Field is located beside the A13/A1089 junction and is used by dog walkers and cyclists.	We propose to permanently acquire part of the site for a new section of road and landscaping.	We propose to acquire an area of replacement land next to the existing site. The replacement site would be landscaped and connected to the existing site.
North-west of A13/A1089 junction	Grangewaters Outdoor Education Centre – The affected area is a car park.	We propose to use the car park for temporary works to make utility connections.	The use of the site is temporary and the land would be reinstated following completion of the works.
LTC/M25 junction	Orsett Fen – This area of land is designated as common land that is not accessible to the public as an exception applies. It provides agricultural rights to certain parties (common rights holders).	We propose to permanently acquire land for the new road through the Mardkye. Land is also required permanently for the provision of environmental mitigation. This would affect the agricultural rights of the common rights holders.	We propose to remove the common land designation from the affected area of Orsett Fen and instead acquire and designate replacement land to the north and south of the existing site as common land. This land would have the same common rights and exceptions attached to it.
LTC/M25 junction	Thames Chase Forest Centre – The site consists of open fields, walking tracks and a mix of vegetation including memorial trees.	We propose to permanently acquire part of the site for the new road and earthworks. Permanent rights would also be required for the diversion of utilities.	We propose to acquire replacement land to the north and south of the Thames Chase Forest Centre. This would be landscaped to match the current site and would connect to the existing paths. The replacement land would be designed to complement the existing forest. As part of the mitigation, we propose a footbridge over the M25 to improve the connection between the western and eastern sections of the Thames Chase Community Forest.
M25 junction 29	Folkes Lane Woodland – The site consists of open fields, walking tracks and a mix of vegetation.	We propose to permanently acquire rights for the diversion of a gas pipeline, which may limit public use of the area.	We propose replacement land adjacent to the existing woodland, with landscaping to match the existing site and use, and to allow the spaces to link together.

Sports clubs and Orsett Showground

In addition to impacting special category land, the Lower Thames Crossing would also impact a number of sports clubs, as well as the Orsett Showground site. This is either because we propose purchasing all or part of those sites (or rights over those sites) or taking temporary possession of them to build the project. Our proposals for each site are described in the table below.

Section of the route	Description of the impact on the land
M2/A2 junction	Southern Valley Golf Club The site consists of a private members golf club. We propose to permanently acquire the site for the Lower Thames Crossing route and for landscaping. We are not proposing to replace the golf club. Instead we propose to create a new parkland area on part of the site, which would be accessible to the public following construction.
M2/A2 junction	Gravesend Golf Centre The site consists of a nine-hole pitch and putt golf facility with a driving range. We propose to permanently acquire part of the Centre, the pitch and putt, for the landscaped parkland area around the southern tunnel entrance. We would provide an alternative site to the south-east of the Cascades Leisure Centre, currently part of the Southern Valley Golf Club site, enabling the Gravesend Golf Centre business to continue.
A13/A1089 junction	Orsett Showground site Part of this site is required permanently for the construction of link roads to the Orsett Cock roundabout and the A13. We propose to move a gas pipeline and permanent rights would be required over a limited corridor of land within this site, to operate and maintain the gas pipeline. A replacement site for part of the Orsett Showground has been proposed within the development boundary. It is adjacent to the existing showground and is shown within Map Book 1: General Arrangements.
A13/A1089 junction	Orsett Royals Football Club The site includes a number of football pitches. We propose to move a gas pipeline and permanent rights would be required over a limited corridor of land within this site, to operate and maintain the gas pipeline.
A13/A1089 junction	Orsett Golf Club Part of this site would be used for construction and for diversion of a gas pipeline, but Orsett Golf Club would remain open during construction and the impact would be kept to a minimum. Permanent rights would be required over a limited corridor of land within this site, to operate and maintain the gas pipeline.
A13/A1089 junction	Thurrock Rugby Football Club Part of this site would be used for the diversion of overhead electricity transmission cables, but we do not expect these works to impact the use of the rugby club. Permanent rights would be required over this site for the operation and maintenance of those utilities.
LTC/M25 junction	Top Meadow Golf Club Part of this site would be used for restringing of the existing overhead electricity transmission cables for a limited period. Permanent rights would be required over this site for the operation and maintenance of those cables. We do not expect these works to significantly impact the use of the golf club.



Have your say

To comment on the revised development boundary, answer questions 2a and 2b in the response form.

To comment on our proposals for special category land and sports clubs, answer questions 2c and 2d.

More information

To see the revised development boundary and the land affected, please refer to Map Books 1 and 2. For a more detailed breakdown of temporary and permanent land use, please refer to Map Book 2: Land Use Plans.

Information about the Statutory Blight process and when compensation may be available can be found in the Highways England publications listed below. To access them, go to <https://highwaysengland.co.uk/lower-thames-crossing-communities>. If you are not able to view them online, get in touch using the contact details in the 'Find out more' chapter of this guide and we will send you the information.

Your Property and Blight

Information for property owners within the development boundary.

Your Property and Discretionary Purchase

Information for those who live outside the development boundary but may need to sell their property.

Your Property and Compulsory Purchase

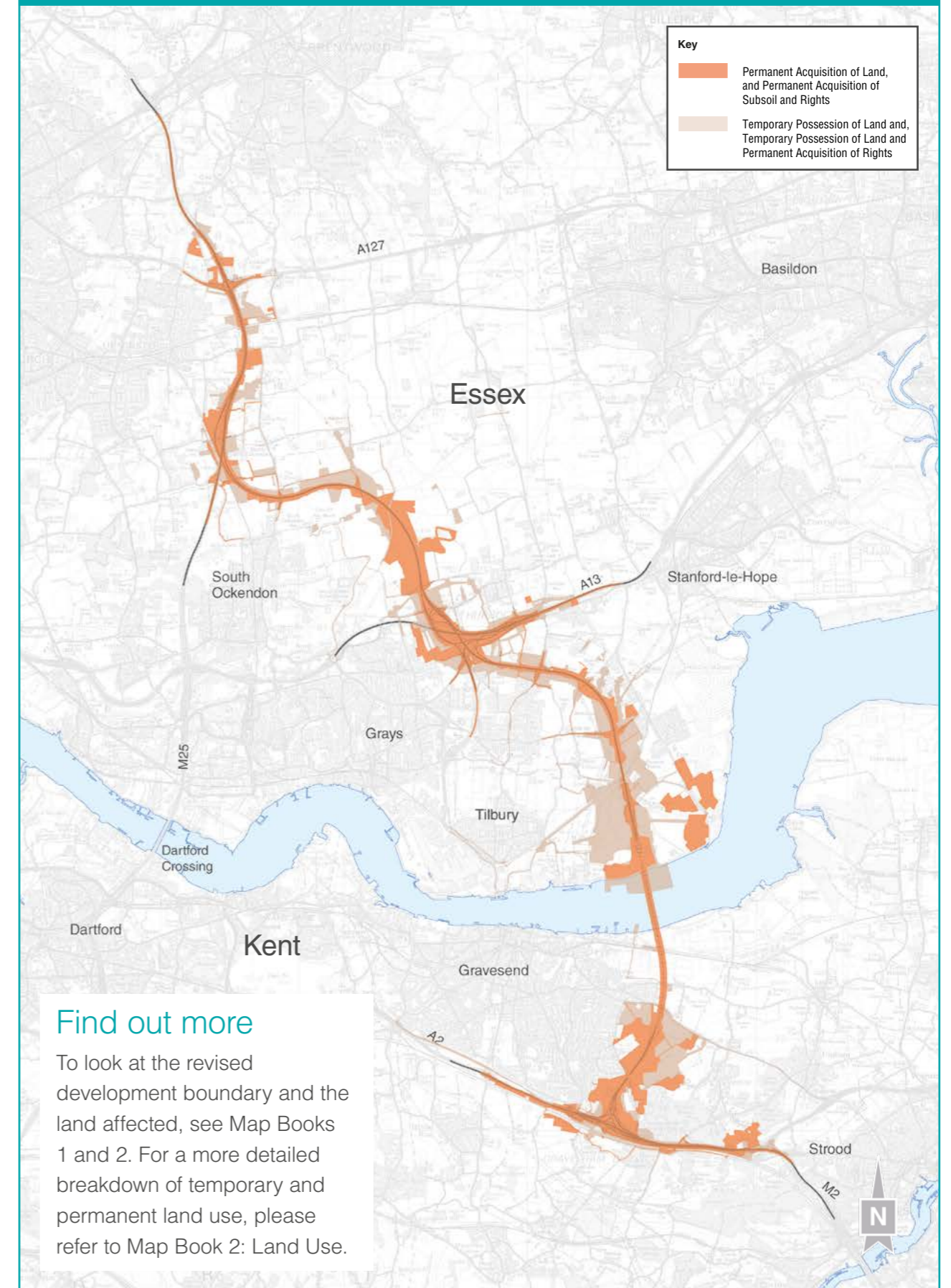
How compulsory purchase works.

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Supplementary consultation development boundary (early 2020)



Revised development boundary



Environmental impacts

As part of our statutory consultation in 2018, we produced a Preliminary Environmental Information Report (PEIR). This provided the public, statutory consultees and other stakeholders with preliminary information about the project's likely significant environmental effects, and the measures being considered to avoid or minimise them.

Earlier this year, we produced an Environmental Impacts Update document, which considered the environmental effects of the changes proposed at our supplementary consultation, compared with those considered in the 2018 PEIR.

For this consultation we are proposing a number of refinements to the Lower Thames Crossing, outlined in preceding chapters of this guide. Our latest Environmental Impacts Update for this consultation explains the environmental effects associated with the proposed refinements, again compared with those considered in the 2018 PEIR and, where relevant, the 2020 supplementary consultation update.

In the latest Environmental Impacts Update, the expected effects on the following aspects of the environment are considered for the proposed refinements (where applicable), during both construction and operation:

- Air quality
- Noise and vibration
- Cultural heritage
- Landscape and visual
- Biodiversity (terrestrial and marine)
- Road drainage and water environment
- Geology and soils
- Materials and waste
- People and communities
- Climate

The document also explains what we are doing to reduce impacts (mitigation measures) and why.

Next steps

Further assessments and the development of detailed measures to reduce environmental effects are ongoing as part of our Environmental Impact Assessment (EIA). These will be reported in the Environmental Statement (ES), which will also be informed by the project's consideration of consultation responses, and further survey and design work. The ES will be submitted as part of the DCO application later this year.

We are continuing to work with stakeholders and statutory consultees to develop our design.

The Environmental Impacts Update document can be found online at www.lowerthamescrossing.co.uk/design-consultation.

If you do not have access to the internet, please call us on **0300 123 5000** to request a printed consultation pack.



Have your say

To comment on the environmental impacts and how we plan to reduce them, answer questions 3a and 3b in the response form.

How to have your say

Please take this opportunity to let us know your views on the design changes we are proposing for the Lower Thames Crossing. All of our consultation information, including the response form, is available at www.lowerthamescrossing.co.uk/design-consultation

Home delivery

If you do not have access to the internet, we can send a printed consultation pack (one copy per household) to your home, free of charge. You may request a guide to consultation, maps, a response form and Freepost return envelope. Please call us on **0300 123 5000** to request a consultation pack.

Telephone surgery

You can book a call back from a member of the project team who will answer your questions on the proposed changes.

The surgery will be held between 14 July and 12 August. You can book an appointment from 14 July by visiting www.lowerthamescrossing.co.uk/design-consultation or by calling **0300 123 5000**.



Scan me

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

Submitting your response form

Our response form can either be completed online or downloaded and sent by email or to our Freepost address (details are set out below). You can also request a printed copy of the form by emailing us at info@lowerthamescrossing.co.uk or calling us on **0300 123 5000**.

The following response methods are available and are all free to use. Please note, we cannot guarantee that responses sent to any other address will be considered.



Online

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



Freepost

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



Telephone

Due to the restrictions in place relating to the COVID-19 pandemic, we are offering additional support to help you provide feedback over the phone. Please call us on **0300 123 5000** to book an appointment.

Data privacy notice

We are committed to protecting your personal information. Whenever you provide such information, we are legally obliged to use it in line with all applicable laws concerning the protection of personal data, including the General Data Protection Regulation (GDPR).

How will Highways England use the information we collect about you?

We will use your personal data collected via this consultation for a number of purposes, including:

- to analyse your feedback to the consultation
- to produce a summary report, based on our analysis of responses (individuals will not be identified in our Consultation Report)
- to write to you with updates about the results of the consultation and other developments
- to keep up-to-date records of our communications with individuals and organisations

Any personal information you include in this form will be handled and used by (or made available to) the following recipients to record, analyse and report on the feedback we receive:

- Highways England
- Traverse (which has been contracted by us to analyse feedback to the consultation)
- The Planning Inspectorate (which will consider our application for permission to build the Lower Thames Crossing)
- The Secretary of State (who will take the decision on our application)
- our legal advisers
- consultants working on the Lower Thames Crossing project

It is also possible that trusted third-party providers, for example construction companies, may later use the contact details provided in your responses to communicate with you.

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Find out more

Under the terms of the GDPR you have certain rights over how your personal data is retained and used by Highways England. For more information, see our full data privacy statement: www.highwaysengland.co.uk/privacy

Please submit your response by
23:59 on 12 August 2020.

Find out more

All of our consultation materials including the guide to consultation, Environmental Impacts Update, map books and response form are available online.

To view these and have your say, go to

www.lowerthamescrossing.co.uk/design-consultation

You can also stay in touch via

Twitter and Facebook **@lowerthames**

Previous Lower Thames Crossing consultations

All the documents from our previous consultations are available online at the addresses set out below.

2020 supplementary consultation

<https://highwaysengland.citizenspace.com/ltc/consultation-2020/>

2018 statutory consultation

<https://highwaysengland.citizenspace.com/ltc/consultation/>

2016 non-statutory consultation

<https://highwaysengland.citizenspace.com/ltc/lower-thames-crossing-consultation/>

**Please submit your response by
23:59 on 12 August 2020.**

If you need help accessing this or any other Highways England information, please call **0300 123 5000** and we will help you.

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For an accessible version of this publication please call **0300 123 5000** and we will help you.

If you have any enquiries about this publication email info@highwaysengland.co.uk or call **0300 123 5000***. Please quote the Highways England publications code **PR19/20**

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