

# Lower Thames Crossing

## **The case for the project**

# Lower Thames Crossing

## Case for the Project

### List of contents

	Page number
<b>1 Introduction .....</b>	<b>1</b>
<b>2 About the Lower Thames Crossing .....</b>	<b>2</b>
2.1 Background.....	2
2.2 The Project .....	2
2.3 Development consent .....	2
2.4 Highways England .....	3
2.5 Glossary.....	3
<b>3 Why we need the Lower Thames Crossing .....</b>	<b>4</b>
3.1 Traffic problems east of London .....	4
<b>4 Benefits of a new crossing .....</b>	<b>7</b>
4.1 Quicker, more reliable journeys .....	7
4.2 Connecting communities and business.....	7
4.3 Economy .....	7
4.4 Environment.....	7
<b>5 How the route was chosen .....</b>	<b>8</b>
<b>6 Our objectives .....</b>	<b>14</b>
6.1 Introduction .....	14
6.2 How we achieve these objectives .....	14
<b>7 Road user charging.....</b>	<b>24</b>
7.1 Policy and objectives .....	24
7.2 Proposal.....	24
<b>8 Regulatory framework.....</b>	<b>25</b>
8.1 Introduction.....	25
8.2 European and national policy.....	25
8.3 National policy statements .....	27
8.4 Local planning policy.....	28
8.5 Local transport policy .....	29
<b>References .....</b>	<b>31</b>
<b>Glossary .....</b>	<b>32</b>

## List of figures

	<b>Page number</b>
Figure 3.1 Alternative road crossings.....	4
Figure 5.1 Six locations investigated in the 2009 DfT study.....	8
Figure 5.2 Shortlisted routes considered in the 2016 study .....	9
Figure 5.3 The preferred route announced in April 2017 .....	10
Figure 6.1 Average hourly flows at Dartford Crossing (Nov 2016–Nov 2017).....	20

## List of tables

	<b>Page number</b>
Table 5.1 Thames crossing options considered.....	11
Table 6.1 Scheme objectives.....	14
Table 6.2 Journey time savings between locations in the Project area (2026) .....	20
Table 8.1 European policy requirements .....	25
Table 8.2 National policy requirements.....	26
Table 8.3 National Policy Statement for National Networks DfT, Jan 2015 .....	27
Table 8.4 National Policy Statement for Energy .....	28
Table 8.5 Local Planning Policy .....	28
Table 8.6 Highway authority transport plans, local policies.....	29

# 1 Introduction

- 1.1.1 This document describes why we need the Lower Thames Crossing. It discusses the current problems on the strategic road network (SRN) (made up of motorways and major 'A' roads) and how we have developed our proposal to address these problems.
- 1.1.2 This report forms part of a suite of documents that we have published as part of the statutory consultation we are carrying out to support the DCO application process.
- 1.1.3 Statutory consultation is the stage where we present our proposals and listen to your feedback to help us develop the Lower Thames Crossing. The next stage is applying for a DCO.

## 2 About the Lower Thames Crossing

### 2.1 Background

- 2.1.1 The Lower Thames Crossing (the 'Project') is a proposed new motorway connecting Kent, Thurrock and Essex through a tunnel beneath the river Thames. The Project will provide over 90% additional road capacity across the Thames east of London.
- 2.1.2 The Project is classified as a Nationally Significant Infrastructure Project (NSIP), as defined by the Planning Act 2008 and was identified by HM Treasury as one of the top 40 priority investments in their National Infrastructure Plan 2013.
- 2.1.3 The Lower Thames Crossing is being developed as part of the Government's £15 billion Road Investment Strategy over the period 2015-2020.

### 2.2 The Project

- 2.2.1 The Lower Thames Crossing will comprise:
- a. approximately 14.5 miles (23km) of new motorway connecting to the existing road network from the A2/M2 to the M25
  - b. two 2.5-mile (4km) tunnels, one southbound and one northbound
  - c. three lanes in both directions with a maximum speed limit of 70mph
  - d. improvements to the M25, A2 and A13, where the Lower Thames Crossing connects to the road network
  - e. new structures and changes to existing ones (including bridges, buildings, tunnel entrances, viaducts, and utilities such as electricity pylons) along the length of the new road
  - f. a free-flow charging system, where drivers don't need to stop but pay remotely, similar to that at the Dartford Crossing

### 2.3 Development consent

- 2.3.1 As the Lower Thames Crossing is an NSIP, we are required to make an application for a DCO to build, operate and maintain the Project. A DCO is similar to planning permission but is designed for NSIPs to make the process clearer, faster and fairer. It does this by allowing many of the consents and permissions needed for the Project to be considered at the same time.
- 2.3.2 An Examining Authority, appointed by the Planning Inspectorate on behalf of the Secretary of State for Transport, has six months to examine the DCO application. During this process, local authorities, regulatory agencies, local communities and the public are invited to comment on the application.
- 2.3.3 After the examination is complete, the Examining Authority has three months to prepare and publish a report on the application to the Secretary of State for Transport with its recommendation.

- 2.3.4 The Secretary of State for Transport then has a further three months to decide whether to grant or refuse development consent. The Government has published a National Policy Statement for National Networks (NPSNN), which provides the framework within which the Examining Authority makes this recommendation, as required by the Planning Act 2008.
- 2.3.5 Once the decision has been made, there is a six-week period in which the decision may be challenged by judicial review.
- 2.3.6 If the development consent is granted, the DCO will be made by the Secretary of State and we would start construction in 2021. Contractors will be appointed to carry out the work as set out in the DCO and the road will be open for traffic in 2027.
- 2.3.7 We will seek appropriate consents and comply with relevant legislation for Project-related activity that does not fall within the DCO scope.

## 2.4 Highways England

- 2.4.1 Highways England is responsible for the delivery of the Lower Thames Crossing.
- 2.4.2 We are a government-owned company who work with the Department for Transport (DfT). We operate, maintain and improve England's motorways and major A-roads, also known as the strategic road network (SRN). Our aim is to ensure that road users have safer and more reliable journeys and that businesses have the effective road links they need to prosper.

## 2.5 Glossary

- 2.5.1 You can find explanations of terms and abbreviations used here in the glossary at the back of this document.

## 3 Why we need the Lower Thames Crossing

### 3.1 Traffic problems east of London

- 3.1.1 The Dartford Crossing is the only crossing of the River Thames east of London. Even though it was designed for 135,000 vehicles per day, it carried over 180,000 vehicles on some days in the year to September 2017. Traffic flows above the design capacity of a road result in congestion and poor reliability, making the Dartford Crossing one of the least reliable sections of the SRN.
- 3.1.2 Traffic disruptions at the Dartford Crossing impact communities and businesses locally and regionally by reducing connectivity and even discouraging travel. National commercial traffic is also affected as there is no viable alternative to cross the Thames.
- 3.1.3 These existing traffic problems highlight the need for an additional crossing of the Thames east of London.

#### Alternative routes

- 3.1.4 Existing alternative road crossings of the Thames, such as the Woolwich Ferry and the Blackwall Tunnel, are located more than 10 miles from the Dartford Crossing, as shown in Figure 3.1. Both routes have restrictions over their use.
- 3.1.5 The closest alternative route for vehicles crossing the Thames east of London is the Woolwich Ferry which is approximately 10 miles from the Dartford Crossing. This option does not provide a 24-hour service and offers limited capacity.
- 3.1.6 The Blackwall Tunnel is next at approximately 15 miles from the Dartford Crossing but is not suitable for heavy goods vehicles (HGVs) and is already on a heavily congested road network.
- 3.1.7 The Silvertown Tunnel, which has recently been granted a DCO, is planned to open in 2023. This will offer an additional alternative route to cross the Thames but is not a viable alternative to local and regional traffic across Kent, Thurrock and Essex due to the distance of the detour, approximately 15 miles from the Dartford Crossing. The Silvertown Tunnel is intended to reduce congestion at the nearby Blackwall Tunnel.

Figure 3.1 Alternative road crossings



## Traffic forecasts

- 3.1.8 Traffic modelling indicates that vehicle numbers on the Dartford Crossing will increase by 17% in the period 2016–2026. This will mean that queuing on the approaches to the Dartford Crossing, on the SRN and on the local road network during peak hours will increase. The Dartford area, which is already under severe traffic pressure, will be the most affected with heavy traffic extending beyond current peak hours.

## Environmental issues

- 3.1.9 When congestion and closures occur at the Dartford Crossing, the quality of the environment is heavily impacted by the queuing traffic, with local communities being exposed to high levels of air pollution and noise. In line with the traffic forecasting, these environmental issues are expected to increase.

## Incidents

- 3.1.10 In the period from September 2015–August 2016, over 1,500 incidents (during weekday charging hours) were recorded at the Dartford Crossing that resulted in single or multi-lane closures which had the effect of closing a lane for over 15 minutes. Over 400 of these incidents resulted in closures which caused delays equivalent to closing a lane for over 60 minutes. Depending on the location, timing and scale of the incident, it can take up to 5 hours for queues to clear and for journeys to return to average times.

## Free-flow charging

- 3.1.11 The removal of the barriers and introduction of free-flow charging technology at the Dartford Crossing in November 2014 (ie, the ‘Dart Charge’ scheme) improved traffic flow and journey times but, as it was designed as a medium-term solution, did not fully address the need for increased capacity. With traffic volumes using the Dartford Crossing forecast to increase, the Dart Charge scheme will only relieve congestion in the medium term and major improvements are needed to provide a long-term solution.

## Hazardous and oversized transportation

- 3.1.12 Apart from under exceptional circumstances, Dartford Crossing northbound traffic uses the two tunnels, while southbound traffic uses the bridge. However, for safety reasons, general traffic travelling north is held back when certain hazardous loads have to be escorted through. At peak periods this can increase congestion which can take a long time to clear.
- 3.1.13 Data from 2016 shows that over 2,000 escorts take place every month, with convoys of restricted vehicles dispatched approximately every 15 minutes during weekday peak and inter-peak periods. Each escort resulted in approximately 90 seconds of closure on average which equates to 5-7 minutes of closures each hour, leading to a loss of between 8-12% of capacity. The process of removing escorted vehicles from general traffic lanes can also result in additional disruptions and loss of capacity.



## Summary

- 3.1.14 Current and forecast conditions at the Dartford Crossing highlight the significant traffic and environmental issues in the surrounding areas. These conditions create a need for an additional crossing to reduce these adverse effects.

## 4 Benefits of a new crossing

### 4.1 Quicker, more reliable journeys

4.1.1 The new road network, with a tunnel beneath the Thames connecting Gravesham south of the river and Thurrock north of the river, will increase road capacity across the Thames east of London by over 90%. It will link with the A2 in the south and the M25 in the north.

4.1.2 The new route will have a maximum speed limit of 70mph. It will provide quicker, more reliable journeys locally and regionally between Kent, Thurrock and Essex, as well as nationally. This will help meet the demands of future traffic growth east of London.

At approximately 2.5 miles long, the tunnel will be the longest road tunnel in the UK and, at 16m, one of the largest tunnels by diameter in the world

### 4.2 Connecting communities and business

4.2.1 As the volume of traffic crossing the Thames Estuary east of London has increased, it has resulted in slow-moving traffic and long and uncertain journey times. As such, it has been difficult to build strong connections between communities and businesses in Kent, Thurrock and Essex.

4.2.2 The new route will create better access on both sides of the river. This will improve journey times and reliability for communities and businesses, whether travelling short distances across the Thames to visit family or looking for better access to job or business opportunities.

### 4.3 Economy

4.3.1 The Lower Thames Crossing will provide access for local and regional communities to jobs, leisure and retail, benefiting development and economic growth on both sides of the Thames.

4.3.2 The crossing will also improve journey times for national commercial traffic north and south of the river. It will serve south London, Kent and Sussex, as well as continental Europe via the South East and East of England's ports and the Channel Tunnel.

4.3.3 The region's ports, including Dover, Folkestone, Tilbury and London Gateway, are the country's commercial gateways to the world. They will benefit from quicker and more reliable access to key markets, resources and employees.

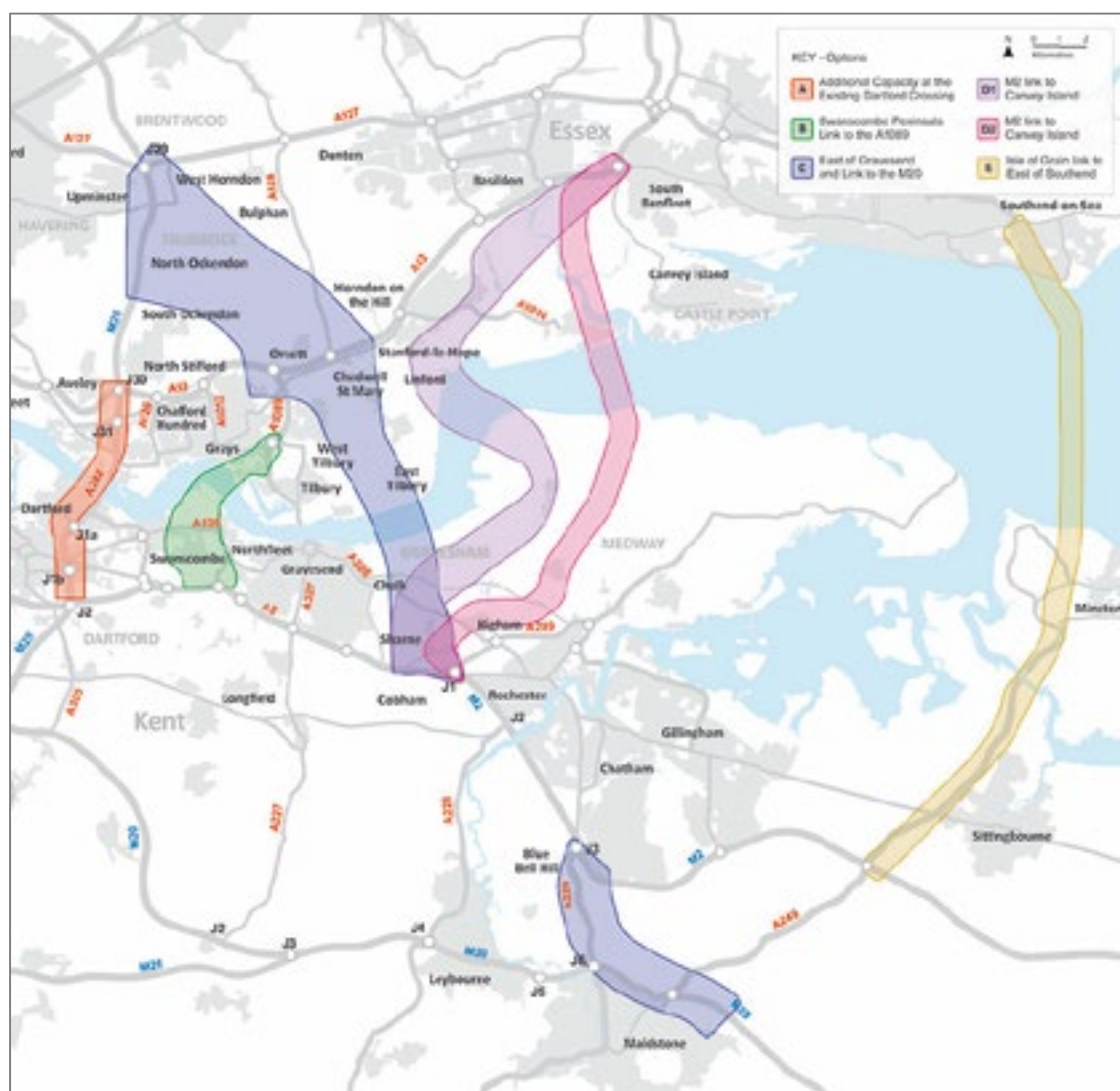
### 4.4 Environment

4.4.1 The Lower Thames Crossing will help reduce congestion in the Dartford area. This will decrease forecasted high levels of pollution, benefiting local communities.

## 5 How the route was chosen

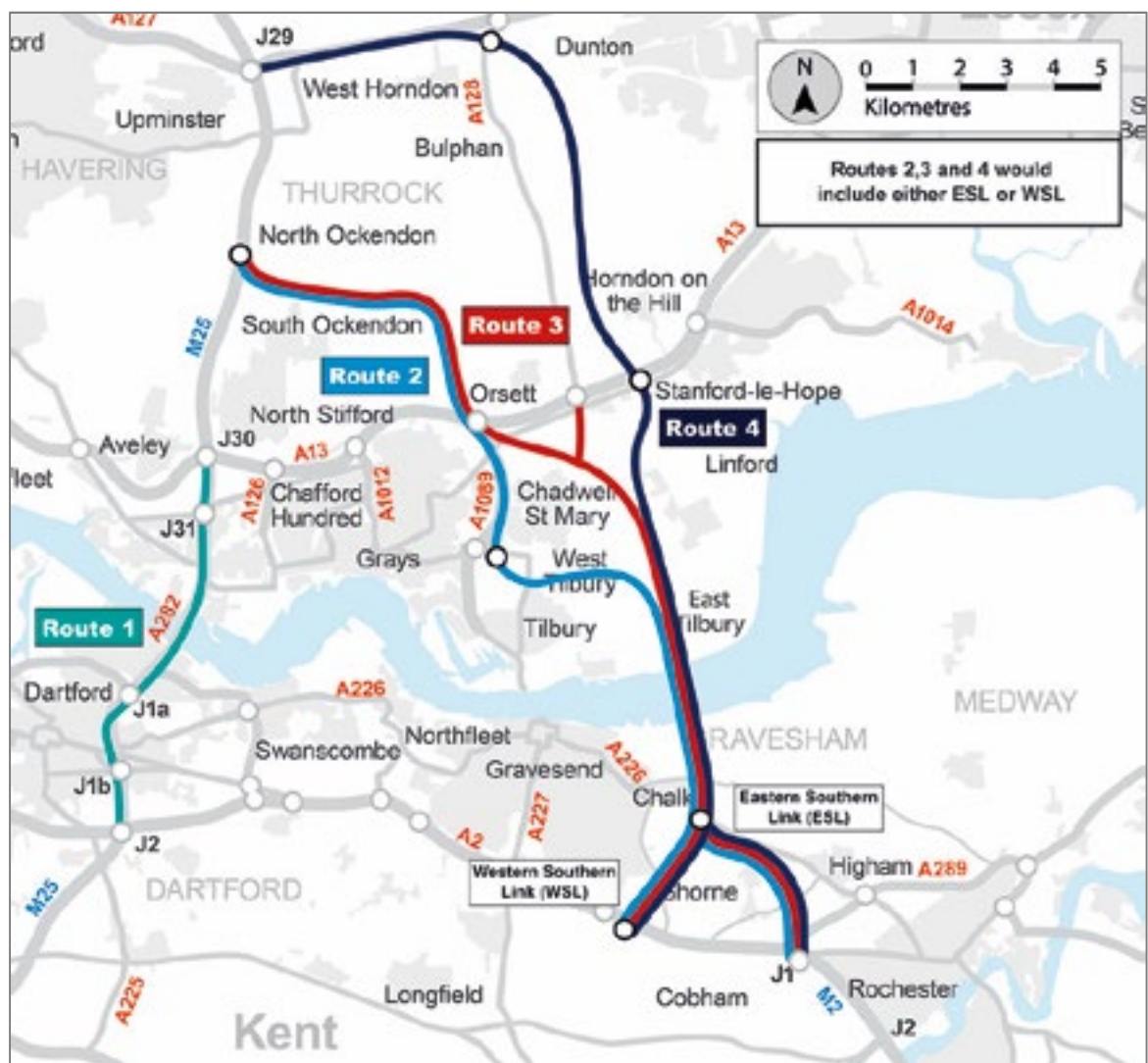
- 5.1.1 A structured process has been followed by DfT and Highways England to identify and assess potential options for the Project. A summary of the identified locations and the timelines associated with the assessment of each is provided in Table 5.1.
- 5.1.2 DfT carried out a study in 2009 that reviewed six potential crossing locations, identified as A, B, C, D1, D2 and E (Figure 5.1). This study found that the two location D options and the location E option would not relieve the congested Dartford Crossing, and so were not selected for further assessment. Further work was carried out by DfT in 2013 to consider three of the potential crossing locations in more detail, A, B and C. Following public consultation, two crossing locations, A and C, were taken forward for further consideration. Option B was not taken forward due to conflict with the development of Ebbsfleet Garden City and the Swanscombe Peninsula. As a result, no viable solutions could be developed at this location.

**Figure 5.1 Six locations investigated in the 2009 DfT study**



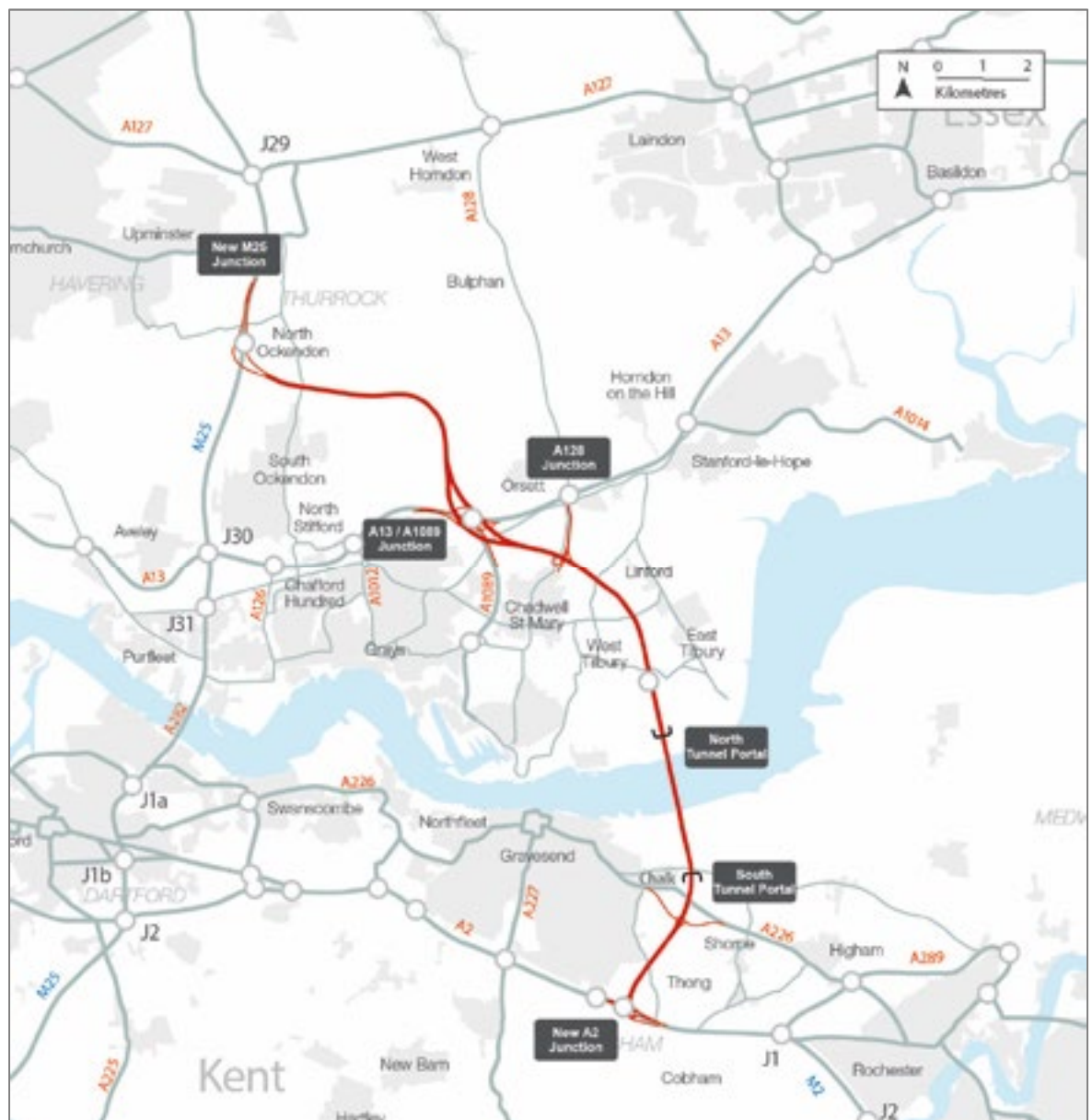
- 5.1.3 We then carried out a detailed option identification and route selection process at the two crossing locations. Several options were considered at location A and location C. A potential modification was considered to location C, which included changes to the roads connecting the M20 and M2, known as C variant.
- 5.1.4 Location A was assessed and found not to meet the scheme objectives (see section 6). Assessment of the C variant options determined that they did not help to transfer traffic from the existing Dartford Crossing on to the new route at location C. It also had substantial impacts on the Kent Downs Area of Outstanding Natural Beauty (AONB). As a result, the C variant options were not considered further.
- 5.1.5 We held a non-statutory public consultation in 2016 which proposed a crossing at location C and presented three route options. These were identified as routes 2, 3 and 4. Each option included two different routes south of the Thames: the Western Southern Link and the Eastern Southern Link (see Figure 5.2).
- 5.1.6 A further appraisal was undertaken, considering the findings of the public consultation, and this resulted in the selection of the preferred route announced in April 2017.

**Figure 5.2 Shortlisted routes considered in the 2016 study**



- 5.1.7 The preferred route announced by the Secretary of State was route 3 north of the Thames, with a tunnel crossing under the Thames east of Gravesend and Tilbury and a new road south of the Thames which will join the A2 east of Gravesend (the Western Southern Link – see Figure 5.3).
- 5.1.8 The preferred route was selected based on the information obtained before, during and after the public consultation. This route met the scheme objectives (see section 6), while having the lowest impact on several environmentally sensitive areas. These included the Thames Estuary and Marshes Special Protection Area (SPA) and Ramsar site, ancient woodlands in the area, and the Kent Downs AONB, as well as on the communities close to the route. The assessment that resulted in the identification of the preferred route is presented in the *Post-Consultation Scheme Assessment Report* (Highways England, 2017).

**Figure 5.3 The preferred route announced in April 2017**



- 5.1.9 Following the Secretary of State for Transport's announcement of the preferred route in April 2017, we have continued to develop our proposals and now have a more detailed understanding which has helped us to develop the Project we are presenting in this consultation.
- 5.1.10 We have reassessed the previous options appraisal process, conducting further studies where necessary. This assessment has confirmed the selection of the preferred route, taking account of changes made to the proposals for the Project following the announcement in April 2017. Information on changes to the Project and this reassessment is provided in the *Approach to Design, Construction and Operation* report.
- 5.1.11 The further work we have carried out to develop our proposals has strengthened the overall benefits delivered by this route.

**Table 5.1 Thames crossing options considered**

Location	Key dates	Assessment
<b>A</b> – Additional capacity at the existing Dartford Crossing	<ul style="list-style-type: none"> <li>2009 – Identified in the study carried out on behalf of DfT <i>Dartford River Crossing Study Final Report</i>, 2009, DfT</li> <li>2013 – Appraised and presented for public consultation by DfT</li> <li><i>Options for a New Lower Thames Crossing</i>, 2013, DfT</li> <li>2016 – Appraised in further detail and considered not to meet scheme objectives</li> <li><i>Scheme Assessment Report</i>, 2016, Highways England</li> <li><i>Lower Thames Crossing Route Consultation 2016</i></li> <li>2017 – Reappraised and not selected as the preferred route</li> <li><i>Post Consultation Scheme Assessment Report</i>, 2017, Highways England</li> </ul>	<p>Location A was identified as a potential option in public consultation undertaken in 2013. It was then assessed in further detail but was considered not to meet the scheme objectives. Public consultation in 2016 invited feedback on our proposal to locate the crossing at location C. Further appraisal of location A took place following conclusion of that consultation.</p> <p>Location A could not be developed into a solution that met the scheme objectives. The identified solutions were not viable because they failed to relieve the congestion on the approaches to the Dartford Crossing as they did not provide a suitable alternative route for traffic travelling along the A2 and A13. Solutions that relied on the connection at junction 2 and junction 30 of the M25 failed to relieve congestion at or on the approaches to these key junctions. Solutions that did not include these connections failed to provide the necessary relief to the Dartford Crossing itself.</p>
<b>B</b> – Swanscombe Peninsula Link to the A1089	<ul style="list-style-type: none"> <li>2009 – Identified in the study carried out on behalf of DfT <i>Dartford River Crossing Study Final Report</i>, 2009, DfT</li> <li>2013 – Appraised and taken to public consultation by DfT</li> <li><i>Options for a New Lower Thames Crossing</i>, 2013, DfT</li> <li>2013 – The decision was made not to carry out further work on this location</li> </ul>	<p>Location B was presented at public consultation in 2013. Following the consultation, this location was not taken forward for further assessment. The identified solutions conflict with the local development plans, particularly including Ebbsfleet Garden City and the Swanscombe Peninsula. As a result, no viable solutions could be developed at this location.</p>

Location	Key dates	Assessment
	<ul style="list-style-type: none"> <li>Options for a New Lower Thames Crossing – Consultation Response Summary, 2013, DfT</li> </ul>	
<p><b>C</b> – East of Gravesend and Link to the M20</p>	<ul style="list-style-type: none"> <li>2009 – Identified in the study carried out on behalf of DfT <i>Dartford River Crossing Study Final Report</i>, 2009, DfT</li> <li>2013 – Appraised and taken to public consultation by DfT</li> <li><i>Options for a New Lower Thames Crossing</i>, 2013, DfT</li> <li>2016 – Multiple options were developed, and three different options were taken forward to public consultation</li> <li><i>Scheme Assessment Report</i>, 2016, Highways England</li> <li><i>Lower Thames Crossing Route Consultation 2016</i></li> <li>2017 – Reappraised following consultation and the preferred route was identified at location C <i>Post Consultation Scheme Assessment Report</i>, 2017, Highways England</li> </ul>	<p>Following early studies and the public consultation in 2013, location C was developed into a series of potential solutions which were appraised in detail in the 2016 assessment.</p> <p>Three routes to the north of the Thames, identified as routes 2, 3 and 4, and two routes to the south, identified as the Eastern Southern Link and Western Southern Link, were considered as able to meet the scheme objectives. Each of these potential routes would be connected across the Thames by a tunnel to minimise impacts on the local environmentally sensitive areas. These routes were presented at public consultation in 2016. Information gathered during and following the consultation was then used to reappraise each of the routes. Following this appraisal, it was identified that route 3, with the Western Southern Link would have the lowest impact on several environmentally sensitive areas, particularly on the Thames Estuary and Marshes SPA and Ramsar site, the ancient woodland and the Kent Downs AONB, as well as on the communities close to the route.</p> <p>On 12 April 2017 the Secretary of State for Transport confirmed the preferred route as follows:</p> <ul style="list-style-type: none"> <li>a tunnel crossing under the Thames east of Gravesend and Tilbury (location C)</li> <li>a new road north of the Thames which will join the M25 between junctions 29 and 30 (route 3)</li> <li>a new road south of the river which will join the A2 east of Gravesend (the Western Southern Link)</li> </ul>
<p><b>D1</b> – M2 Link to A130 via Cliffe/Pitsea</p>	<p>2009 – Identified in the study carried out on behalf of DfT. The decision was made not to carry out further work on these locations</p>	<p>The two alternative location D options were not taken forward following the first stage of location identification and appraisal. The location D options were found to be located too far to the east and modelling showed that they failed to provide the necessary relief to the congested Dartford Crossing as they did not support the key traffic movements across the Thames.</p>
<p><b>D2</b> – M2 to A130 via Canvey Island</p>	<p><i>Dartford River Crossing Study Final Report</i>, 2009, DfT</p>	

Location	Key dates	Assessment
		As a result, no viable solutions could be developed at this location that would meet the scheme objectives.
<b>E</b> – Isle of Grain Link to East of Southend	2009 – Identified in the study carried out on behalf of DfT. The decision was made not to carry out further work on this location <i>Dartford River Crossing Study Final Report, 2009, DfT</i>	As with the two alternative location D options, location E was not taken forward following the first stage of location identification and appraisal. Like the D options, location E was located too far to the east and did not provide the necessary relief to the congested Dartford Crossing as it did not provide for the key traffic movements across the Thames. As a result, no viable solutions could be developed at this location that would meet the scheme objectives.



## 6 Our objectives

### 6.1 Introduction

- 6.1.1 To provide specific focus for the Project, several key objectives were agreed by DfT and Highways England, which cover strategy, transport, charging and the environment.
- 6.1.2 They comprise three principal categories: economic, community and environmental, and transport (see Table 6.1).

**Table 6.1 Scheme objectives**

Scheme objectives	
Economic	<ol style="list-style-type: none"> <li>1. To support sustainable local development and regional economic growth in the medium to long term</li> <li>2. To be affordable to government and users</li> <li>3. To achieve value for money</li> </ol>
Community & environment	<ol style="list-style-type: none"> <li>4. To minimise adverse impacts on health and the environment</li> </ol>
Transport	<ol style="list-style-type: none"> <li>5. To relieve the congested Dartford Crossing and approach roads and improve their performance by providing free-flowing north-south capacity</li> <li>6. To improve the resilience of the Thames crossings and the major road network</li> <li>7. To improve safety</li> </ol>

### 6.2 How we achieve these objectives

- 6.2.1 The following section sets out each of these objectives and discusses how the Project meets each of them.

#### **Objective 1: To support sustainable local development and regional economic growth in the medium to long term**

- 6.2.2 The Lower Thames Crossing will reduce journey times and improve journey reliability between Kent, Thurrock and Essex. This will lead to a substantial increase in accessibility for local and regional communities and businesses, providing the potential for improved productivity and economic growth through better connectivity.
- 6.2.3 The new route will be an important part of the SRN, which provides critical local, regional and national links between communities and business and connects our major ports, airports and rail terminals. A well-functioning SRN is essential for better, more reliable journeys, enabling the movement of goods to support national and regional economies. This drives prosperity by supporting new and existing development, encouraging trade and attracting investment.
- 6.2.4 The Lower Thames Crossing not only provides over 90% additional cross-river road capacity, it enables more reliable journeys; something which is key in freight delivery regionally and nationally.

## Local growth

- 6.2.5 Currently, the Dartford Crossing is the only road crossing of the Thames east of London and is subject to severe congestion. This affects strategic and local road users, which constrains economic growth in the region.
- 6.2.6 Poor connectivity severs local labour and product markets, impacting economies in the surrounding area. Currently, only 4% of traffic at the Dartford Crossing starts and ends in the local area, which includes Purfleet, Grays, Dartford and Gravesend. The additional connectivity offered by the Lower Thames Crossing will improve the ability for local traffic to cross the Thames.
- 6.2.7 Key industries in the local authority areas near to the Project, such as distribution and transportation, rely on good connectivity. Local authority plans support business and employment growth in these sectors:
- a. Gravesham Borough Council aims to support the creation of 4,600 new jobs in these sectors between 2014 and 2028 (*Gravesham Local Plan Core Strategy*, adopted September 2014).
  - b. Thurrock Council also recognises the importance of these sectors, having made land allocations to support their continued growth (*Thurrock Core Strategy and Policies for the Management of Development (as amended)*, adopted January 2015).
- 6.2.8 The Lower Thames Crossing will relieve congestion on both sides of the Thames east of London, opening up opportunities for local economic growth.

## Regional development

- 6.2.9 The Lower Thames Crossing will support business growth across the region. A report prepared for Kent County Council and Essex County Council, *Assessment of Lower Thames Crossing Capacity* (November 2008), stated:
- “One of the main planning objectives for south Essex and north Kent is to enable development in order to regenerate the areas. A new crossing can help achieve these objectives and indeed can also open up new areas thought inaccessible for new development.”
- “The economic vitality of the areas either side of the Thames are already affected by their coastal locations and would benefit from greater cross-Thames capacity and journey reliability.”
- 6.2.10 The Federation of Small Businesses surveyed their members in June 2018 on their views of the proposed Lower Thames Crossing. The findings were as follows:
- a. 63% reported transport congestion as the major challenge to their business
  - b. 82% support the Lower Thames Crossing
  - c. 50% think the Lower Thames Crossing will help their business grow by providing better access to new customers

- 6.2.11 A range of small-to-medium enterprises and large businesses across the region have voiced their support for the scheme.

“I have absolutely no doubt that the Lower Thames Crossing will make a massive difference to this business. It’s going to be a big big big advantage to us.” Glyn Jones, Chief Operating Officer of Stobart Aviation, which owns Southend Airport.

“To enable us to have growth, we need the proper transport links. We need the Lower Thames Crossing now.” Denise Rossiter, Chief Executive, Essex Chambers of Commerce.

“Once the new crossing is open, our members will be able to plan with much more certainty, which will open up much more opportunities regionally and also nationally.” Jo James, Chief Executive, Kent Invicta Chamber of Commerce.

### Ports

- 6.2.12 The crossing will provide improved accessibility to international ports in the region. The *Economic Connectivity Review* by Transport for the South East was published as a draft for consultation in May 2018. This study identifies the A2-M2 Chatham-Dover as a key transport corridor that provides connections to the London Ports and Port of Dover.

- 6.2.13 The crossing will open up a more reliable route across the Thames for some of the most important UK ports, servicing the local and national import and export markets. For example, the Port of Tilbury is a key centre of logistics and employment, with the potential for an additional 2,700 jobs within the existing port and the proposed expansion at Tilbury2 (*Outline Business Case, Port of Tilbury London, 2017*). London Gateway has development plans with the potential to create 11,000 to 13,000 jobs (*Thurrock Core Strategy and Policies for the Management of Development (as amended)*, adopted January 2015).

The Lower Thames Crossing will connect communities in Kent, Thurrock and Essex and provide better access to jobs, leisure and retail facilities on both sides of the river

### Objective 2: To be affordable to government and users

- 6.2.14 The current total estimated cost of developing and constructing the Project is between £5.3–£6.8 billion.
- 6.2.15 Making the right decision on financial and delivery models is vital in driving value for taxpayer money and for making the Project affordable to the government. It is proposed that:
- a. the tunnel (ie, estuarial crossing) is publicly funded
  - b. the approach roads, including the junctions, are privately financed
- 6.2.16 The use of private finance will provide greater certainty with respect to cost and timeframes and bring affordability advantages as payment can be deferred until the Project is operational and can be spread out over 25–30 years.

- 6.2.17 Given the scale of capital expenditure and the capacity of the private finance market, the use of private finance is not considered to be efficient for the delivery of the tunnel package.
- 6.2.18 We also expect to introduce road user charging to the tunnel. The primary objective for road user charging is to manage traffic using the new crossing and the connecting SRN. Although the road user charges will need to be set at a level that enables us to meet our traffic management objectives, affordability to users will also be a key consideration. See section 7 for more information on charging.

### **Objective 3: To achieve value for money**

- 6.2.19 The Government describes value for money as ‘using public resources in a way that creates and maximises public value’ and this is defined in DfT’s Value for Money Framework. For road projects such as the Lower Thames Crossing, the Web-based Transport Analysis Guidance (WebTAG) framework provides guidance on assessing benefits and costs.
- 6.2.20 A transport project’s value for money is defined in part by its Benefit Cost Ratio (BCR). A BCR indicates how much benefit a project would provide on a cost basis. DfT uses six value for money categories, ranging from Very High to Very Poor.
- 6.2.21 Since the previous value for money assessment was undertaken by the Project, DfT has made some key changes to the WebTAG framework. Therefore, any value for money assessment produced using the current WebTAG framework is not directly comparable to previous assessments undertaken for the Project at earlier stages.
- 6.2.22 We are continuing to appraise the Project to assess value for money using the Lower Thames Area Model<sup>1</sup>, incorporating both the developments to the Project since the announcement of the preferred route and the recent updates to the WebTAG framework. We are confident the Lower Thames Crossing will deliver value for money in line with the Government’s framework. At the current stage of development our initial assessment suggests the Project achieving Medium value for money<sup>2</sup>. The most significant monetary benefits from the Project are expected to be the time savings that road users experience when making journeys and the productivity benefits that businesses experience from improved connectivity and journey time savings.
- 6.2.23 We are continuing to develop the BCR for the Lower Thames Crossing as part of our Outline Business Case. This is scheduled for completion ahead of our DCO submission.

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<sup>1</sup> The Lower Thames Area Model is a strategic highway model produced by Highways England to assess the impact of the Project on the highway network. It also provides traffic data for use in the environmental, social and economic assessment of the Project.

<sup>2</sup> Medium value for money generally has a BCR between 1.5 and 2. This indicates that for every pound spent building the Lower Thames Crossing, the Project will return between £1.50 and £2 in benefits.

## Objective 4: To minimise adverse impacts on health and the environment

- 6.2.24 We intend to develop a new road crossing for the lower Thames Estuary and associated road network that is designed to work with its surroundings. Environmental sustainable development is at the centre of all our activities and the decisions we make.
- 6.2.25 The options studies and consultations carried out before the selection of the preferred route for the Project considered the impacts of the options on people and the environment. The preferred route was recommended as the option that best met scheme objectives, including minimising adverse impacts on health and the environment.
- 6.2.26 A tunnel under the river, rather than a bridge crossing, provides the best opportunity to avoid adverse impacts on sensitive and valuable habitats on and adjacent to the Thames, such as the Thames Estuary and Marshes Ramsar and Special Protection Area sites. This option minimises any potential disturbance, both during construction and operation, of the river and any associated indirect impacts on the adjacent international and European designations. The Project route option chosen was also considered to have the least adverse effect on environmentally sensitive areas, particularly on ancient woodland and the Kent Downs AONB, and on the communities adjacent to the Project route, compared to other options considered.
- 6.2.27 Since the preferred route announcement, the design has been further refined, considering the findings of ongoing environmental studies and surveys, and community and stakeholder feedback in order to minimise adverse effects where practicable. For example, some stretches of the proposed road have been lowered in the landscape, and the Lower Thames Crossing junction with the M25 has been revised to cross under the M25 rather than over it, which reduces the potential visual impact. The location of the south portal has also been adjusted, which reduces the potential for impacts on the Thames Estuary and Marshes Ramsar site, which is protected for nature conservation.
- 6.2.28 We recognise that the Project will have an adverse effect on the environment elsewhere, and we are carrying out an Environmental Impact Assessment and Health Impact Assessment to understand the potential effects of the Project on people and the environment. The Project is still being refined, so where adverse effects are currently anticipated, for example in the AONB, we are seeking ways to avoid or reduce these through further development of the design.
- 6.2.29 Where negative effects on the environment cannot be avoided, measures to reduce or mitigate these will be developed where practicable, including the use of noise barriers, landscape planting and creation of new habitats.
- 6.2.30 Initial indications are that, while there will be some adverse effects near the new alignment, such as in Orsett and Grays, the present environment near the Dartford Crossing will be improved because of the Project. The Lower Thames Crossing will reduce the severance and pollution currently caused by the existing congested approaches, with benefits to air quality in these areas.
- 6.2.31 As well as the effects after the Project opens, we are also considering the potential impacts during the construction of the Project. A Code of Construction

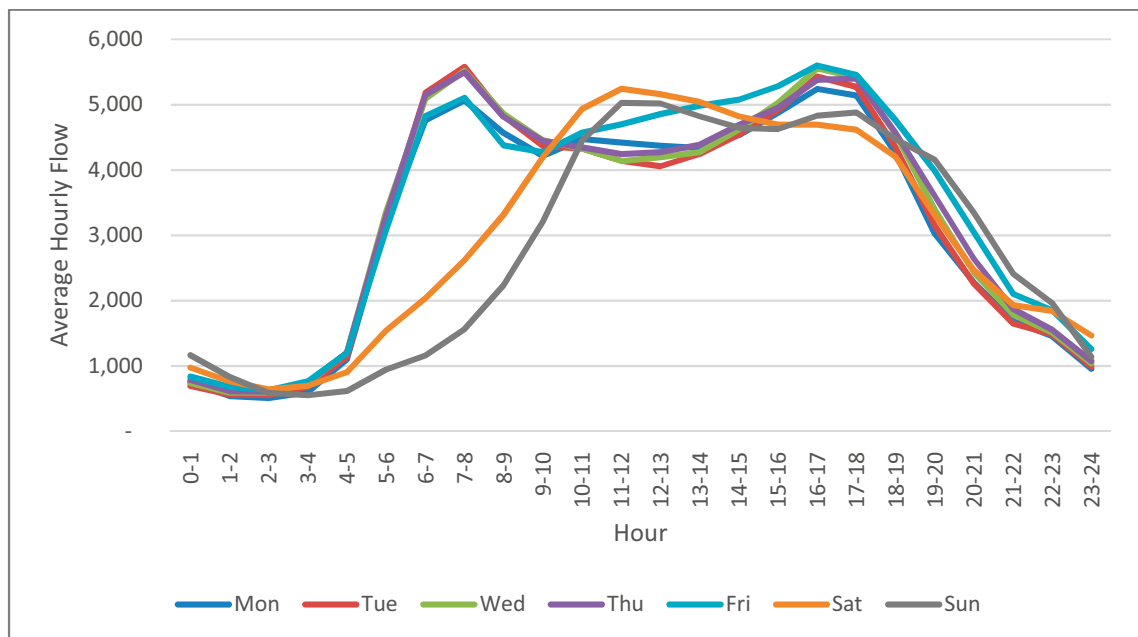
Practice will be developed, which will set out the measures that the Project will implement to reduce disruption and environmental effects during construction. This will include industry standard practice and control measures for environmental impacts arising during construction, such as the control of dust and the approach to waste management on site.

### **Objective 5: To relieve the congested Dartford Crossing and approach roads and improve their performance by providing free-flowing north-south capacity**

- 6.2.32 Traffic at the Dartford Crossing has increased significantly over time. On some days traffic using the Dartford Crossing exceeds 180,000 vehicles which is some 45,000 vehicles more than it was designed to take. This volume of traffic causes congestion and can reduce traffic in peak periods to a standstill.
- 6.2.33 Traffic volumes across the Dartford Crossing between peak periods and at the weekend do not drop as seen elsewhere on the SRN due to limited alternative routes across the Thames east of London (see Figure 6.1). Because of these high volumes, speeds are reduced and there is an increased risk of incidents which leads to further congestion.
- 6.2.34 The Lower Thames Crossing has been designed to provide a free-flow, connection between the A2 and M25 with a maximum speed of 70mph. This includes free-flow junctions at either end as well as free-flow user charging facilities, as is the case at the Dartford Crossing.
- 6.2.35 Government strategies, including DfT's *Road Investment Strategy for the 2015/2016 – 2016/2020 Road Period* and the *HM Treasury National Infrastructure Delivery Plan 2016 – 2021*, recognise that congestion is a major issue on the road network and in certain places the SRN has already reached capacity. The Lower Thames Crossing has been identified within these strategies as a way to tackle congestion at the Dartford Crossing.
- 6.2.36 As well as affecting journeys crossing the Thames, this congestion affects journeys on local roads around the Dartford Crossing due to busy roads and backed up traffic. Local people's daily routines are impacted, leading to wasted time for people and industry, and affecting economic productivity.
- 6.2.37 The average daily traffic flow using the Dartford Crossing without the Lower Thames Crossing is predicted to increase by 17% in the period 2016–2026. This will lead to increased congestion at the Dartford Crossing, on key approach roads such as the A2, M20, A13 and A127, and on the local road network in Dartford and Thurrock.
- 6.2.38 The Lower Thames Crossing will reduce congestion on key approach roads to the existing Dartford Crossing, including the A13 approach to junction 30 of the M25 and the A2 approach to junction 2. It will provide a quicker, more reliable alternative for those wishing to travel across the Thames east of London.

The Lower Thames Crossing will reduce traffic flows at the Dartford Crossing, variability in journey times, and day-to-day delays and help relieve congestion

**Figure 6.1 Average hourly flows at Dartford Crossing: Nov 2016–Nov 2017**



6.2.39 Before opening the Lower Thames Crossing, the average daily traffic flow using the Dartford Crossing is forecast to rise to 166,000 vehicles. This is forecast to reduce to 129,000 when the Project opens.

6.2.40 Table 6.2 shows how average minimum and maximum journey times during the AM and PM peaks will change in the Project area once the Lower Thames Crossing is operational (based on 2026, a representative opening year covering a range between 2025 and 2027). These locations have been chosen to give a wide cross-section of the area but only represent a few possible journeys. For more detail on journey time savings you can refer to the *Traffic Forecasting Report* (available on the Highways England webpage) which contains many more examples of journeys.

**Table 6.2 Journey time savings between locations in the Project area (2026)**

Journey	Minimum time savings (minutes)	Maximum time savings (minutes)
Cheshunt to/from Maidstone	2.5	4.8
Basildon to/from Rainham	17.0	23.0
Romford to/from Bexley	1.1	4.6
Godstone to/from Brentwood	1.6	6.5

6.2.41 The new crossing will give vehicles carrying hazardous materials an alternative route across the Thames without the need for escort, therefore potentially further alleviating congestion.

## Objective 6: To improve resilience of the Thames crossings and the major road network

### Pressures on resilience of SRN east of London

- 6.2.42 As the Dartford Crossing is the only road crossing of the Thames east of London, the SRN can be severely impacted by incident-related and other closures. As discussed previously, such closures can take up to five hours for queues to clear and for journeys to return to average times, depending on the location, timing and scale of the incident.
- 6.2.43 Unplanned closures also arise due to high winds on the southbound bridge.
- 6.2.44 As outlined previously, in the period from September 2015–August 2016, over 1,500 incidents (during weekday charging hours) were recorded at the Dartford Crossing that resulted in single or multi-lane closures which had the effect of closing a lane for over 15 minutes. Over 400 of these incidents resulted in closures which caused delays equivalent to closing a lane for over 60 minutes. There are approximately 1.6 incidents of this magnitude every weekday during charging hours.
- 6.2.45 Delays are also associated with traffic management activities in the northbound direction, including the safe escort of vehicles carrying hazardous materials and other restricted vehicles including oversized and abnormal loads. In addition, the tunnels are regularly closed outside peak times to allow for routine maintenance.
- 6.2.46 As well as affecting immediate approach roads to the crossing, incidents and accidents and the related congestion they cause can lead to knock-on effects on the local road network, including local town centres, and the roads which connect between Dartford, Greenhithe and Bluewater.

### Alternative routes

- 6.2.47 When incidents and congestion occur at the Dartford Crossing, there are limited alternative routes for traffic to cross the Thames. The Woolwich Ferry is approximately 10 miles from the crossing by road and offers restricted capacity as it only operates 14 hours a day, has size limitations and cannot carry vehicles with hazardous loads.
- 6.2.48 The Blackwall Tunnel is 15 miles from the crossing by road and prohibits vehicles that carry hazardous materials. Routes around the Blackwall Tunnel experience severe congestion during peak periods.
- 6.2.49 The Silvertown Tunnel is planned to become operational in 2023. This will offer an additional alternative to crossing the Thames east of London but will require a detour of approximately 15 miles through London and so will not represent a viable route for users unable to cross at Dartford.
- 6.2.50 There are also additional crossings of the Thames through central London, but these require detours through busy London roads. Additionally, many of the London river crossings are located within the London congestion charge zone and attract an additional charge. Many of these also fall within the existing Low Emission Zone, T-Charge zone, and the planned Ultra-Low Emission Zone and its extension.



- 6.2.51 Larger vehicles or those carrying hazardous materials that need an alternative route to the Dartford Crossing have to detour via the M25 (ie, via Heathrow). This can be up to an additional 100 miles.

### Lower Thames Crossing solution

- 6.2.52 The Lower Thames Crossing will provide an alternative route east of the Dartford Crossing for local, regional and national traffic. The additional crossing will allow for more convenient diversionary routes during any closure of the Dartford Crossing. It will provide effective incident management during closures at the Dartford Crossing, leading to faster recovery times. This will lessen the impact of incidents on local communities by reducing the overflow of traffic onto the local network and decreasing the amount of time that the network suffers from incident-related congestion.
- 6.2.53 For example, in the event of a closure, strategic electronic message signing will direct traffic away from the Dartford Crossing. This will improve the resilience of the SRN and allow it to continue to support freight, commuter, leisure and business travel across south-east England.

The Lower Thames Crossing will provide quicker, more reliable journeys locally, regionally and nationally

### Objective 7: To improve safety

- 6.2.54 Building the Project and providing additional capacity across the Thames will result in more traffic movements and faster travel than is currently possible on the SRN in this area.
- 6.2.55 We are designing a Project with safety at its heart, incorporating the latest operational safety technology throughout. For example, monitoring equipment works with highly visible messaging to relay the most up-to-date traffic information. Clear motorway messaging can also help to reduce confusion at junctions and, therefore, the number of incidents.
- 6.2.56 Inside the tunnel, safety features will include monitoring equipment to detect broken-down vehicles, onsite vehicle recovery, and access routes at both entrances for the emergency services. Providing an alternative route for HGVs away from the Dartford Crossing and for lorries carrying dangerous goods to pass through the new tunnel will also significantly improve safety and reduce incidents. The tunnel will incorporate the latest fire and safety technology.
- 6.2.57 The Lower Thames Crossing will make provision for a Rest and Service Area (RaSA) for road users along its route. RaSAs provide an important road safety function by allowing road users to stop and take a break during their journey. The RaSA will provide parking for cars, HGVs and coaches as well as the potential for fuel, food, drink and bathroom facilities. The RaSA will also provide charging points for electric vehicles at designated parking bays.
- 6.2.58 We are passionate about improving road safety and we view the safety of road users and road workers as paramount. Therefore, our aim is that no-one should be harmed who builds, operates, maintains and uses the new road network.

- 6.2.59 Highways England's target is for the number of people killed or seriously injured on our network to be approaching zero by 2040. The Project is committed to playing a key role in achieving this target. We intend to do this by working in three key customer areas: safer roads, safer people, safer vehicles.

### Safer roads

- 6.2.60 Safer roads are achieved through operational control, engineering and design solutions that reduce the number and severity of incidents.
- 6.2.61 While we will design the Lower Thames Crossing to current standards, we must go beyond this to achieve our vision. We are using safe road design to plan the safety objectives and to risk-assess options to determine the most effective solutions. We are working with the International Road Assessment Programme to determine the impact design decisions have on road safety.
- 6.2.62 As an example, maintenance requirements on the Lower Thames Crossing will be automated using remote monitoring and telemetry to reduce the number of physical inspections and on-road activity.

### Safer people

- 6.2.63 The Project seeks to influence driver behaviour through improved journey management data and accurate communication to road users.
- 6.2.64 When designing the road, we will consider the impact for all drivers and the ability to understand what is required at any given location. The road layout, signage and messaging will be self-explanatory, clear and consistent, ensuring drivers understand what is required at any given location. This is fundamental at complex junctions and will reduce the number of incidents. This will be further supported through improved education and communication media.
- 6.2.65 The use of future driver information systems to communicate to connected vehicles will influence driver behaviours and assist in real time journey management.

### Safer vehicles

- 6.2.66 The wider transport industry is working nationally to influence and improve vehicle safety on the SRN.
- 6.2.67 In-vehicle technology is leading to improvements in safety, with systems such as lane departure warning or low speed braking becoming more prevalent. By the time the Lower Thames Crossing is due to open in 2027, the proportion of vehicles with these and more advanced technologies will have grown, and this is likely to have a positive impact on safety on the network. We will look for opportunities to use data and capabilities from in-vehicle technology to increase our network understanding and to improve safety.

Our objective, when designing the Lower Thames Crossing, is to provide increased capacity while delivering a road designed to the highest possible safety requirements

## 7 Road user charging

### 7.1 Policy and objectives

- 7.1.1 In December 2014, the Government stated in the NPSNN that “The Government will consider tolling as a means of funding new road capacity on the SRN. New road capacity would include entirely new roads and existing roads where they are transformed by an improvement scheme. River and estuarial crossings will normally be funded by tolls or road user charges”.
- 7.1.2 It is intended that the Lower Thames Crossing DCO will provide powers for us to impose, operate and enforce road user charges at the new crossing in a similar way to the existing Dartford Crossing. Charging powers are being sought to help Highways England manage traffic using the Lower Thames Crossing and the connecting SRN.
- 7.1.3 Powers to impose a road user charge at the Lower Thames Crossing are needed to provide a long-term tool for managing network performance. The road user charge will be used to ensure the continuing benefits of the additional road capacity provided by the Project.

### 7.2 Proposal

- 7.2.1 To align with NPSNN policy, we propose that the road user charge will only apply to vehicles using the new Lower Thames Crossing tunnel.
- 7.2.2 Road user charging powers for traffic using the new Lower Thames Crossing tunnel could be introduced either through the DCO, or by way of an Order under the Transport Act 2000. As charging is considered integral to achieving the scheme objectives due to its fundamental role in managing demand, we consider it appropriate to include the charging powers within the DCO.
- 7.2.3 For more information on charging see our statutory consultation report *Approach to Design, Construction and Operation*.

## 8 Regulatory framework

### 8.1 Introduction

- 8.1.1 This chapter summarises the European, national and local planning and transport policy context relevant to the ‘need case’ for the Lower Thames Crossing.
- 8.1.2 The following tables provide a high-level summary of a range of the key policy documents and guidance of relevance to the consideration of the need for the Project. This includes reference to the NPSNN, as the primary policy consideration in the determination of the DCO.

### 8.2 European and national policy

- 8.2.1 The following European policy framework (see Table 8.1) applies to the Project, setting out both the strategic vision (Policy 2.1) and what needs to be done (Policy 3.3) to achieve a single European transport area as part of a Europe 2020 strategy.

**Table 8.1 European policy requirements**

Ref	Policy guidance
2.1	Growing transport and supporting mobility while reaching the 60% emission reduction target
3.3	Modern infrastructure, smart pricing and funding

*Roadmap to a single European transport area – towards a competitive and resource-efficient transport system (2011)*

- 8.2.2 Highways England is responsible for operating, maintaining and improving England’s motorways and major A-roads: the SRN, which is part of the European transport system. The Dartford Crossing is a Trans-European Network core route, while the M2-A2 corridor from Dover to the M25 is part of the comprehensive Trans-European Network.
- 8.2.3 The Lower Thames Crossing proposals will ensure that the SRN continues to support competitiveness across the European transport area. Although the future relevance of European policy is unclear following the intended withdrawal of the UK from the European Union, the United Kingdom will need to remain competitive on a global scale.
- 8.2.4 At a national level, the following Government strategies (see Table 8.2) highlight the importance of the Project, as a key strategic highways project, in meeting the identified need for reducing congestion on the existing highways network and to accommodate forecast traffic growth.

**Table 8.2 National policy requirements**

<b>HM Treasury National Infrastructure Delivery Plan 2016–2021</b>	
<b>Para</b>	<b>Policy guidance</b>
3.12	The Government is committed to increasing capacity on the SRN and throughout the course of this Parliament will start work to add 1,300 extra lane miles and improve over 60 problem junctions, to address existing bottlenecks, and transform regional connectivity across the UK.
3.15	Lower Thames Crossing – A new crossing to reduce congestion at the Dartford Crossing and support economic growth. After careful assessment, Highways England has proposed connecting junction 1 of the M2 to the M25 between junctions 29 and 30. This crosses under the Thames just east of Gravesend and Tilbury.
<b>Action for Roads: A network for the 21st century Department for Transport. July 2013</b>	
<b>Para</b>	<b>Policy guidance</b>
1.6	Well-connected road infrastructure with sufficient capacity for our needs is a vital component of economic success. However, our roads must overcome significant challenges if they are to keep supporting our economy and driving growth into the future.
1.22	Our latest estimates show that even in the worst economic circumstances and assuming low population growth, traffic levels on strategic roads will be 24% higher in 2040 than they are today. In our central case traffic will rise by 46% above today's levels.
1.23	Even under our lowest growth forecasts we would expect traffic growth to cause major increases in congestion, greater delays and more unpredictable journeys. Without action, growing demand will place unsustainable pressure on our roads, constraining the economy, limiting our personal mobility and forcing us to spend more time stuck in traffic. This will mean more pollution and more frustration for motorists.
1.25	Without investment, conditions on the most important routes are expected to worsen by 2040. By then, around 15% of the entire strategic road network may experience regular peak-time congestion and often suffer poor conditions at other times of the day.
<b>Department for Transport. Road Investment Strategy for the 2015/16 – 2019/20 Road Period</b>	
<b>Page</b>	<b>Policy guidance</b>
13	Capacity has become a major issue in recent years, with parts of the network becoming increasingly congested. It is important that we continue to address this to ensure that the network drives, instead of constrains, growth.
19	In certain places, our strategic roads have already reached or exceeded capacity, resulting in areas of significant congestion, particularly around larger cities. Relative congestion levels across Europe highlight the challenges we face, even accounting for differences in respective networks. For instance, traffic density on UK motorways is 113 million vehicle miles per mile of road compared to 47 million in Germany and 39 million in France.

46	Schemes developed for the next Road Period (including): Lower Thames Crossing – the Government continues to consult on the different route options for a new Lower Thames Crossing. A decision on a preferred option will be reached during this Road Period, and design work is likely to begin.
<b>HM Treasury Investing in Britain's future. June 2013</b>	
<b>Ref</b>	<b>Policy guidance</b>
Para. 2.11	The Government will build all available Highways Agency road projects, tackling the most congested parts of the network, subject to the usual tests of value for money and deliverability.
Para. 2.13	Government will tackle some of the most notorious and long-standing road hot spots in the country. Roads which are widely recognised as being in need of a solution to alleviate congestion and tackle enduring problems that have been avoided by successive governments.
Fig. 1.A	Long-term capital investment includes Lower Thames Crossing.

8.2.5 Through their policy framework, the Government has clearly stated its support for the Project in both policy and funding terms as part of a long-term commitment to support investment in the SRN.

## 8.3 National policy statements

8.3.1 The NPSNN is the principal policy framework against which DCO applications for major road and rail infrastructure at a strategic level will be assessed by the Secretary of State. In the NPSNN Section 2 'Summary of need', the following vision and strategic objectives are set out:

**Table 8.3 National Policy Statement for National Networks DfT, Jan 2015**

Ref	Policy guidance
Page 9	Government's vision and strategic objectives for the national networks. The Government will deliver national networks that meet the country's long-term needs; supporting a prosperous and competitive economy and improving overall quality of life, as part of a wider transport system. This means: <ul style="list-style-type: none"> <li>• Networks with the capacity and connectivity and resilience to support national and local economic activity and facilitate growth and create jobs.</li> <li>• Networks which support and improve journey quality, reliability and safety.</li> <li>• Networks which support the delivery of environmental goals and the move to a low carbon economy.</li> <li>• Networks which join up our communities and link effectively to each other.</li> </ul>
Para 2.20	The Government has therefore concluded that at a strategic level there is a compelling need for development of the national networks – both as individual networks and as an integrated system. The Examining Authority and the Secretary of State should therefore start their assessment of applications for infrastructure covered by this NPS on that basis.

- 8.3.2 The Project also involves the diversion of an overhead power line to accommodate the proposed route alignment, which is to be considered against the policy framework of both the Overarching National Policy Statement for Energy (EN-1) and the National Policy Statement for Electricity Networks Infrastructure (EN-5). Other than the following reference within EN-1, the primary focus of the policy guidance in terms of need is on new energy infrastructure projects.

**Table 8.4 National Policy Statement for Energy**

Ref	Policy guidance
Para. 3.1.3	The IPC <sup>3</sup> should therefore assess all applications for development consent for the types of infrastructure covered by the energy NPSs on the basis that the Government has demonstrated that there is a need for those types of infrastructure and that the scale and urgency of that need is as described for each of them in this Part.
Para. 3.1.4	The IPC should give substantial weight to the contribution which projects would make towards satisfying this need when considering applications for development consent under the Planning Act 2008.

*Overarching National Policy Statement for Energy (EN-1). Department of Energy and Climate Change. July 2011*

- 8.3.3 The need for the development of the national road network is established by Government policy, as set out within the NPSNN. This recognises that without improvements to the SRN, it will be difficult to support further economic development, employment and housing across the UK. The Lower Thames Crossing will provide improved network capacity, connectivity and resilience, along with reduced journey times, both in meeting the Project objectives (section 6) and in line with the NPSNN.

## 8.4 Local planning policy

- 8.4.1 Table 8.5 sets out the key transport objectives within the Local Plans of the local planning authorities listed below, noting the references to local growth set out in paragraphs 6.2.6–6.2.8.

**Table 8.5 Local Planning Policy**

<b>Gravesham Local Plan: Core Strategy Adopted 2014</b>	
Page	Strategic objectives
61	S017 – Increase accessibility, reduce the need to travel, minimise congestion and improve air quality through improved provision of local public transport and the provision of local jobs and services.
<b>Thurrock Core Strategy and Policies for Management of Development (as amended) Adopted 2015</b>	
Page	Strategic spatial objectives
25	SS07 – Plan for provision of transport and utility infrastructure that will support and underpin a sustainable level of development in new and existing

<sup>3</sup> The IPC was the predecessor to the Planning Inspectorate in terms of its role in examining DCO applications.

	communities and address current deficits to include key interchanges at Grays and Lakeside.
<b>Adopted Kent and Medway Structure Plan (2006)</b>	
<b>Page</b>	<b>Core principles</b>
11	Promoting and investing in efficient transport that will serve future needs, tackle congestion, avoid unacceptable damage to the environment and make best use of the existing road and rail infrastructure

8.4.2 In addition, for certain Plan policies issues of overriding need may have to be demonstrated for the Project to comply with the policy requirements.

8.4.3 This applies particularly in the case of Green Belt land, where a justification of the ‘very special circumstances’ will be needed to support an exception to the policy restriction on highway development. Issues of overriding need may also apply in relation to the proposed route alignment within the Kent Downs AONB, and within areas of ancient woodland, and considering the potential impacts on heritage sites, recreation land and open space, Sites of Specific Scientific Interest, and the Ramsar site and SPAs.

8.4.4 Where the proposed development is shown to be contrary to planning policy presumptions, a substantive justification for the Project being sited in a particular location may be regarded as a significant material planning consideration in meeting wider strategic highway needs.

8.4.5 We are confident that the strength of the case for the Project, as outline above, will ensure that those policy tests requiring overriding need to be established will be met.

## 8.5 Local transport policy

8.5.1 This section identifies the strategic transport policies contained within the respective Local Transport Plans of the affected highway authorities.

**Table 8.6 Highway authority transport plans, local policies**

<b>Kent County Council. Local Transport Plan 4: Delivering Growth without Gridlock 2016–2031</b>	
<b>Page</b>	<b>Policy guidance</b>
13	<p>The existing Dartford Crossing is the shortest freight route between Kent and the major distribution centres in the Midlands and the North. However, the capacity is overloaded for large periods of the day and it is extremely vulnerable to incidents – over 300 times a year the Crossing is fully or partially closed. Due to congestion and delays, it affects productivity and constrains economic growth.</p> <p>We are clear that a new Lower Thames Crossing, to the east of Gravesend, is required to unlock growth, improve journey time reliability, improve network resilience, and enable opportunities for regeneration.</p>
<b>Essex County Council Essex Transport Strategy: The Local Transport Plan for Essex</b>	



Para	Policy guidance
4.2.4	Strategic links to 'Greater Essex', London, Kent, Cambridgeshire, Suffolk and Hertfordshire Cross-Thames movements, linking Kent and Essex are also currently constrained by limited capacity at Dartford Crossing.....Significant growth is planned adjacent to Essex which is likely to add further pressure to strategic transport networks.
4.2.5	Summary of key issues Key issues to emerge from the Plan's preceding analysis of the three challenges which need to be met if the Council are to provide reliable connectivity within Essex, include the, 'limited capacity at Dartford Crossing, potentially compromising economic growth in the Thames Gateway.'
4.3	The Council's approach to meeting the three challenges is to seek the following outcome: 'Provide reliable connectivity for international gateways and Essex communities to support sustainable economic growth and regeneration.'
<b>Greater London Authority: Mayor's Transport Strategy, March 2018</b>	
Ref	Policy guidance
201	Wider South East Economic growth and the provision of new housing in London and the Wider South East – the economic powerhouse of the country – depend on improvements to the connectivity and capacity of the strategic transport network..... Figure 35 shows the initial strategic infrastructure priorities the Wider South East partners have broadly agreed for further investment.
Fig 35	Includes reference to Lower Thames Crossing
<b>Thurrock Borough Council: Thurrock Transport Strategy 2013–2026</b>	
Ref	Policy guidance
-	The Challenge High numbers of HGVs and high traffic flows on strategic roads are adversely impacting on local air quality, CO <sub>2</sub> emissions, and congestion. Growth could well make this worse. Worsening air quality will increase respiratory problems whilst increasing congestion could harm job creation and economic performance, particularly with regard to international gateways, such as London Gateway.
-	Tackling Congestion Promoting capacity improvements on the Strategic Road Network, with priority for freight routes to key strategic economic hubs and interurban bus routes, where modal shift and network management are insufficient. Improvements have been identified on M25, A13 and A1014.

- 8.5.2 Each of the highway authorities' Transport Plans has identified:
- a. the constraints on the existing strategic network within their area
  - b. the need for improved connectivity and capacity across the Thames to address these problems and to support wider economic growth and regeneration

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## Glossary

Term	Explanation
<b>2026 Opening year</b>	A modelled year in the LTC traffic model in which flows are estimated for each option.
<b>Alignment</b>	The alignment is the horizontal and vertical route of a road, defined as a series of horizontal tangents and curves or vertical crest and sag curves, and the gradients connecting them.
<b>AONB</b>	Area of Outstanding Natural Beauty: statutory designation intended to conserve and enhance the ecology, natural heritage and landscape value of an area of countryside.
<b>BCR</b>	Benefit-Cost Ratio: the net benefit of a scheme divided by the net cost to government. The ratio of present value of benefits to present value of costs, an indication of value for money.
<b>Bluewater</b>	Bluewater Shopping Centre: an out of town shopping centre in Stone, Kent
<b>Dart Charge</b>	The Dartford Crossing free-flow electronic number plate recognition charging system (operates between 0600 and 2200).
<b>DCO</b>	Development Consent Order
<b>DfT</b>	Department for Transport: the government department responsible for the English transport network and a limited number of transport matters in Scotland, Wales and Northern Ireland that have not been devolved.
<b>Eastern Southern Link</b>	The Eastern Southern Link is an alternative for shortlist Routes 2, 3 and 4 to the south of the River Thames. The route would connect into junction 1 of the M2 and would pass to the east of Shorne and then north-west towards Church Lane and Lower Higham Road. This route could connect into any of the Routes 2, 3 and 4 north of the river using all of the crossing options for these route options.
<b>HGV</b>	heavy goods vehicle
<b>International Road Assessment Programme</b>	The International Road Assessment Programme is the umbrella programme for Road Assessment Programmes (RAPs) worldwide that are working to save lives.
<b>Lakeside</b>	Lakeside Shopping Centre, branded as Intu Lakeside, is a large out-of-town shopping centre located in West Thurrock, in the borough of Thurrock, Essex just beyond the eastern boundary of Greater London.
<b>Location A</b>	The location for Project route options close to the existing Dartford crossing.
<b>Location B</b>	Location B: the location for a new crossing in the vicinity of the Swanscombe peninsula. It would connect the A2 to the south in the vicinity of Dartford to the A1089 to the north in the vicinity of Tilbury Docks. This route would cross the Eastern Quarry development site and the Swanscombe Peninsular.
<b>Location C</b>	The location for Project route options connecting the A2/M2 east of Gravesend with the A13 and M25 (between junctions 29 and 30) north of the River Thames.
<b>Location C Variant</b>	As for options at Locations C and A with additional widening of the A229 between the M2 and the M20.

Term	Explanation
<b>Locations D and E</b>	The two most easterly of five locations originally examined by the DfT for the proposed Lower Thames Crossing; both were eliminated from further consideration.
<b>London Gateway</b>	A new deep-water port, able to handle the biggest container ships in the world, and part the London Gateway development on the north bank of the River Thames in Thurrock, Essex, 20 miles (32 km) east of central London.
<b>Lower Thames Area Model</b>	The Lower Thames Area Model is a strategic highway model produced by Highways England to assess the impact of the Project on the highway network. It also provides traffic data for use in the environmental, social and economic assessment of the Project.
<b>M25</b>	London's orbital motorway
<b>NPS</b>	National Policy Statement (see NPSNN)
<b>NPSNN</b>	National Policy Statement for National Networks: The NPSNN sets out the need for, and Government's policies to deliver, development of nationally significant infrastructure projects on the national road and rail networks in England. It provides planning guidance for promoters of nationally significant infrastructure projects on the road and rail networks, and the basis for the examination by the Examining Authority and decisions by the Secretary of State.
<b>NSIP</b>	Nationally Significant Infrastructure Project: major infrastructure developments in England and Wales, such as proposals for power plants, large renewable energy projects, new airports and airport extensions, major road projects.
<b>Outline Business Case</b>	Outline Business Case: this comprises the Economic Case, the Strategic Case, Financial Case, Commercial Case and Management Case. The OBC is required by HM Treasury in order to approve funding for the next stage of the Lower Thames Crossing project and make progress towards application for the Development Consent Order.
<b>Ramsar site</b>	A wetland of international importance, designated under the Ramsar convention.
<b>RaSA</b>	Rest and Service Area
<b>Route 2</b>	A new trunk road connecting A2 (2 km east of Gravesend) to M25 between Junctions 29 and 30, using A1089 (upgrading), with dual-2 lane crossing option of a bridge/twin-bored tunnel/immersed tunnel. See also Eastern Southern Link and Western Southern Link.
<b>Route 3</b>	A new trunk road connecting the A2 (2 km east of Gravesend) to the M25 (between Junctions 29 and 30), with dual 2 lane crossing option of a bridge/twin-bored tunnel/immersed tunnel. Junction with the A13 at the existing junction with the A13 and A1089 and a junction with Brentwood Road, with Brentwood Road upgraded to dual-2 lane to Orsett Cock interchange. See also Eastern Southern Link and Western Southern Link.
<b>Route 4</b>	A new trunk road connecting A2 (2 km east of Gravesend) to M25 at Junction 29, using A127 (upgrading), with dual 2 lane crossing option of a bridge/twin-bored tunnel/immersed tunnel. Single carriageway road provided from B186 to A128 parallel with the A127. See also Eastern Southern Link and Western Southern Link.
<b>Severance</b>	Severance occurs when roads act as a barrier for people who need to cross the road to access employment, education, services, and everyday activities.
<b>SPA</b>	Special Protection Area: a designation under the European Union Directive on the Conservation of Wild Birds.

Term	Explanation
<b>SRN</b>	Strategic road network, the core road network, managed in England by Highways England.
<b>WebTAG</b>	Department for Transport's web-based multi-modal guidance on appraising transport projects and proposals.
<b>WSL - Western Southern Link</b>	The Western Southern Link (WSL) is an alternative for shortlist Routes 2, 3 and 4 to the south of the River Thames. The route would connect into the A2 to the east of Gravesend and would go to the west of Thong and Shorne and east of Chalk towards Church Lane and Lower Higham Road. This route could connect into any of the Routes 2, 3 and 4 north of the river using all of the crossing options for these route options.

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