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Dear Sir/Madam

ICE's Response to Highways England's Lower Thames Crossing Consultation

Introduction

The Institution of Civil Engineers (ICE) is an international membership organisation that promotes and advances civil engineering around the world. ICE is a qualifying body, a centre for the exchange of specialist knowledge, and a provider of resources to encourage innovation and excellence in the profession worldwide.

This response has been prepared by the ICE South East England Transport Panel and the ICE Kent and East Sussex Branch Committee. The Panel and Committee bring together ICE members and other experts with knowledge and experience of transport matters and the local area. They are appointed to assess the evidence and arrive at a considered opinion on the best infrastructure solutions for the Region on behalf of the Institution.

Our Response

ICE South East England welcomes the proposed Lower Thames Crossing scheme connecting Essex with Kent across the River Thames. The scheme is essential if congestion is to be reduced on the current Dartford Crossing, to lower journey times and to increase the resilience of one of the UK's major transport nodes. A new crossing will help boost productivity in the region and benefit the UK as a whole, by alleviating one of the central connections for trade with Europe.

To ensure that the scheme delivers the most benefits to the area, ICE South East England believes the Highways England must commit to increasing capacity fully. Below, a number of recommendations are provided to ensure a Lower Thames Crossing would have the maximum benefit:

- **Location:** ICE South East England agrees that Location C is preferable to Location A. As shown by Highways England's evidence, Location A would have a lesser effect on traffic levels around the Dartford Crossing due to constraints on the current junctions. Disruption to the Dartford Crossing during the construction of a new river crossing would also not be preferable and Location C would provide the most resilience against adverse weather conditions or emergency incidents.

However, ICE South East England believes that the C Variant is a necessary part of the scheme. Without widening the A229, the approach to the new crossing would become regularly congested and overloaded. This may mean vehicles opt for the Dartford Crossing, leading to continued congestion on the current crossing and limited use of the new one.

By widening the A229 between the M2 and M20, a scheme that would not be technically or financially burdensome, the new river crossing would be able to be utilised to the full extent. ICE South East England

therefore calls on Highways England to include the C Variant in the scheme and to ensure the approaches to the crossing secures Motorway and TEN status.

- **Route:** ICE South East England agrees that Route 3 is the optimal choice of the four considered routes. Route 2, on the north of the river, is too close to a dense urban area, causing unnecessary disruption to residents during construction. Route 4 similarly would cause unnecessary disruption to junctions on the A217 and Junction 29.

South of the river, the Eastern link provides the most benefit to road users as Junction 1 provides the best location for the additional connection.

- **Crossing:** ICE South East England agrees that a tunnel would be the best option for a crossing as a tunnel crossing would be more resilient, less intrusive to the local area and be more ecologically and environmentally beneficial. In particular, a tunnel would be less affected by adverse weather conditions such as strong winds. Additionally, a tunnel scheme is technically straight forward, using tried and tested technology.
- **Public transport:** While commuter traffic between north and south of the river is currently low, the growth of East London may soon see the need for local residents to make greater use of the river crossings. Highways England must therefore take consideration of future public transport needs, particularly in relation to cycling, pedestrians, busses and rail.

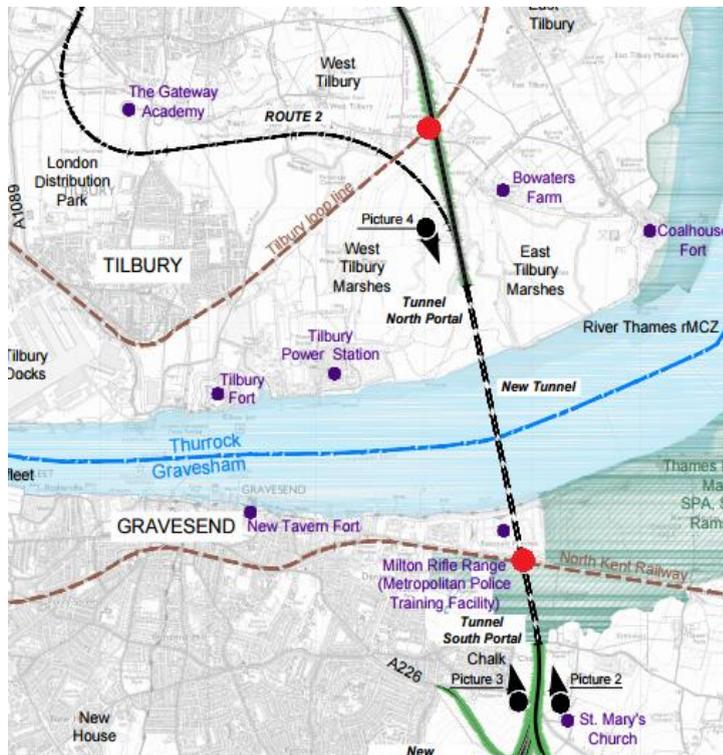


Illustration 1

To harness the greatest benefit of the new tunnel, Highways England should consider the option of installing an additional rail link. A light rail link, connecting the Tilbury loop line and the North Kent Railway would ensure that the scheme is future proof for increases in commuter demand.

As shown by Illustration 1, the Route 3 tunnel will intersect both railways, making the scheme an optimal opportunity to connect the two lines.

ICE South East England calls on Highways England to work with Network Rail to assess the feasibility of such a scheme. If demand is found to be too low to currently justify a new rail service, Highways England should consider building extra capacity in the tunnel to ensure a rail link could be installed at a future date.

Highways England should also consider lower cost options such as a Park and Ride scheme and provisions for cycling and pedestrians wanting to cross the river. While it would not be suitable to give pedestrians and cyclists their own road space, a transit bus service with priority on the local network to provide speedy access would be beneficial. The bus service could connect Higham Station with East Tilbury Station, so that there is better connectivity between Essex and Kent.

- **Cost:** ICE South East England notes that the costs do not vary heavily between various routes proposed, but is pleased to see that Highways England have considered the whole life cost of the project (including maintenance) over a sixty year period.

Highways England can reduce the risk of increased costs of the main construction by carrying out advanced works such as utility diversions, environmental mitigations (like habitat relocations) and archaeological investigations early. By having a separate contract and the enabling works completed well in advance, the main project risk will be fully under control of the client.

- **Funding:** ICE South East England believes that a Public Private Partnership (PPP) may provide the greatest benefits for the scheme and calls on Highways England to reconsider using a PPP model. In particular, the procurement process for PPPs has markedly shortened in recent years and may mean better management of the crossing once built.

In particular, ICE South East England requests that Highways England clarify the arrangements for management of the new crossing. Currently, the Dart Charge is managed by Sanef, but once the new crossing is built Highways England should consider subcontracting out the tolling, maintenance and warranty management of both crossings together to ensure the best service for road users, most resilience and greatest cost-savings. This would mean that, rather than managing a number of different contracts, Highways England would manage just one subcontractor. With tolls and crossing integrated into one management contract, toll income should recover the construction investment quickly with additional income ring-fenced to fund maintenance, renewal and improvements (such as the pedestrian/cycle transit or rail facilities). Funding could also be designated for a third crossing required over the next 100 years.

ICE South East England also calls for the implementation of a Minimum Speed performance based operating contract, whereby the concessionaire would suffer a deduction if the traffic speed fell below a certain level (e.g. 40mph). The Mersey Gateway Bridge is a prime example of how such an arrangement can benefit road user experience by reducing disruption and driving a whole life cost approach to design and build.

Tolling should be free-flow collected electronically from the beginning of the crossing's life.

Summary

ICE South East England supports the development of a new river crossing and recommends that the Secretary of State grants the Development Consent Order (DCO) to authorise the construction of the scheme. The inclusion of new public transport links, funding arrangements and the widening of the A229 are key priorities in ensuring that maximum benefits are achieved from the scheme.

ICE South East England will continue to work with Highways England to ensure the region gets the investment in transport infrastructure it requires.

Yours sincerely,



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The content of this document represent the views of the Panel and not those of the employers named above.

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