

## National Infrastructure Commission – Call for Evidence

**Subject:** London's Transport Infrastructure – **Connecting East London – Low Level River Crossings**  
**To:** National Infrastructure Commission ([londonevidence@Infrastructure-Commission.gsi.gov.uk](mailto:londonevidence@Infrastructure-Commission.gsi.gov.uk))  
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### 1. What are the major economic and social challenges facing London and its commuter hinterland over the next two to three decades?

London's population growth has accelerated to an extent much greater than anticipated, to a Victorian rate of change. A year ago, London's population surpassed its 1939 peak of 8.6 million and latest predictions foresee London's population exceeding 10 million by 2035. This creates opportunities, but also brings with it major challenges. London is one of the most thriving and growing urban economies. It is a centre for innovation, creativity, and culture. In order to remain the global city London is today and to lead the world in sustainable, resilient urban growth, London however needs to address its **most pressing challenges: Housing and infrastructure provision for a growing population and economy, social and economic inequality, and the impacts of climate change.**

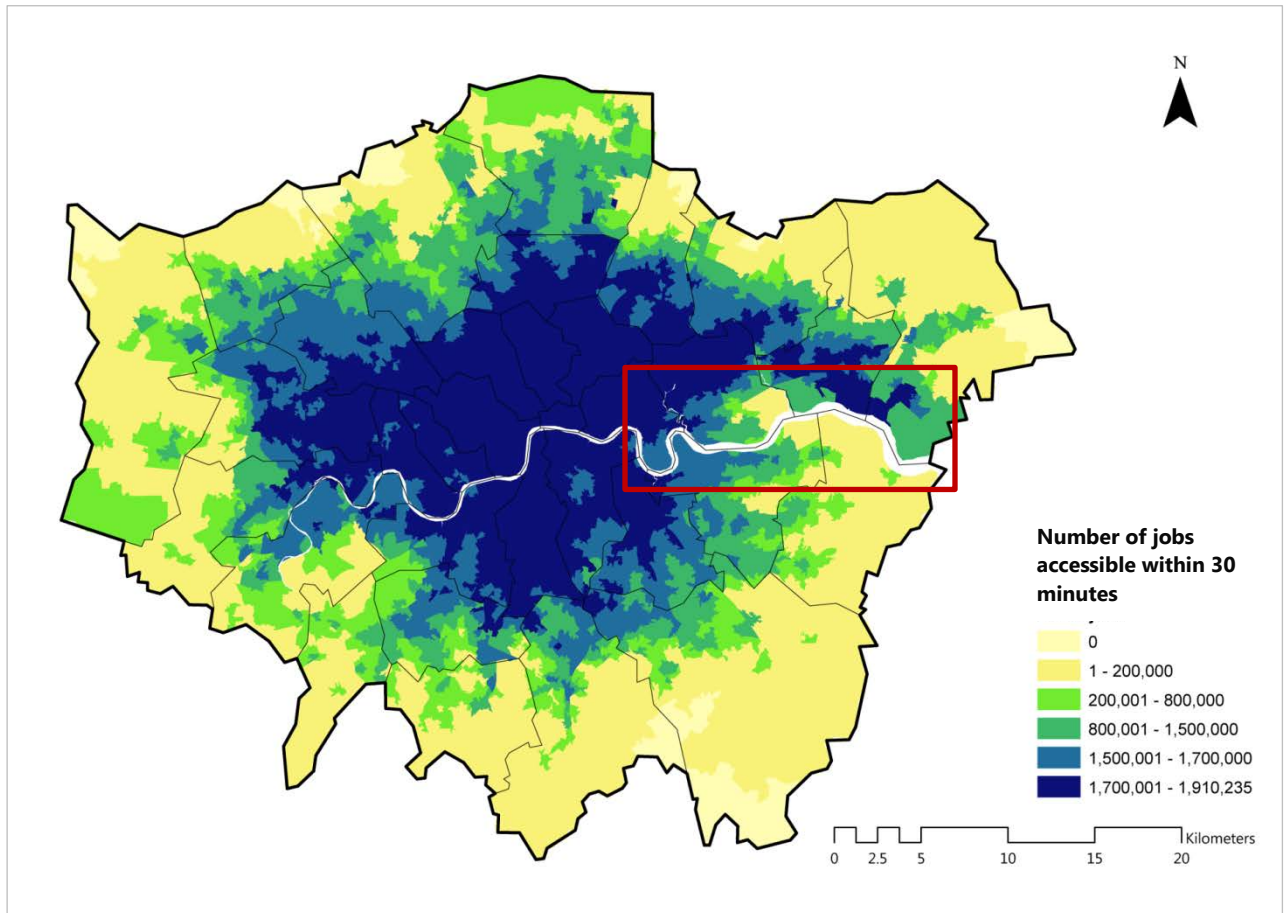
Providing **housing** for those already in London and its future population growth is one of the key challenges that London faces today. Official estimates assume the need to build almost 50,000 homes a year over the next twenty years, supply levels far beyond those currently achieved. With local authorities reducing or abandoning their housebuilding activities since the early 1990s, the private sector and housing associations have not managed to build more than 20,000 units per year on average. Moreover, London needs to provide these **homes for all income levels**. Around 70% of all homes need to be affordable – social rented housing, intermediate housing, and housing in the lowest market band – according to estimates. London has only managed to build around 2,000 homes for social and affordable rent per year since 2008.

Solving the housing crisis is as much about new housing policy, innovative financing and governance mechanisms, and technical innovation as it is about **spatial planning and unlocking land for development**. The GLA and TfL have responded to this with bold infrastructure projects, from the London Overground to Crossrail; and there are further ambitious plans (e.g., Crossrail 2) to increase accessibility of underserved areas in London. This will support both employment creation and home building at increased density. However, more needs to be done, across London

In recent times it has become clear that only **East London** has the spatial capacity and ability to accommodate growth on a larger scale. Shoreditch and Hackney have become desirable places to live and work whilst Canary Wharf has become a major finance centre with a mix of shops, homes, and a cultural offer with superb connectivity. The London Olympics Legacy has helped support growth in Tower Hamlets and Newham and the Royal Docks is at last attracting sustained investment. However, large areas of East London have seen little or no growth. A lack of transport accessibility (see Figure 1) has held back housing delivery in

East London and too much has consisted of low-density sprawl in featureless dormitory suburbs. While the London Plan identifies East London as the area with the greatest potential for growth (40% of the opportunity areas), it will be hugely challenging to find investors if land is not unlocked by making it more accessible to employment throughout London and the south east.

**Figure 1: Accessibility to jobs**



## 2. What are the strategic options for future investment in large-scale transport infrastructure improvements in London - on road, rail and underground - including, but not limited to Crossrail 2?

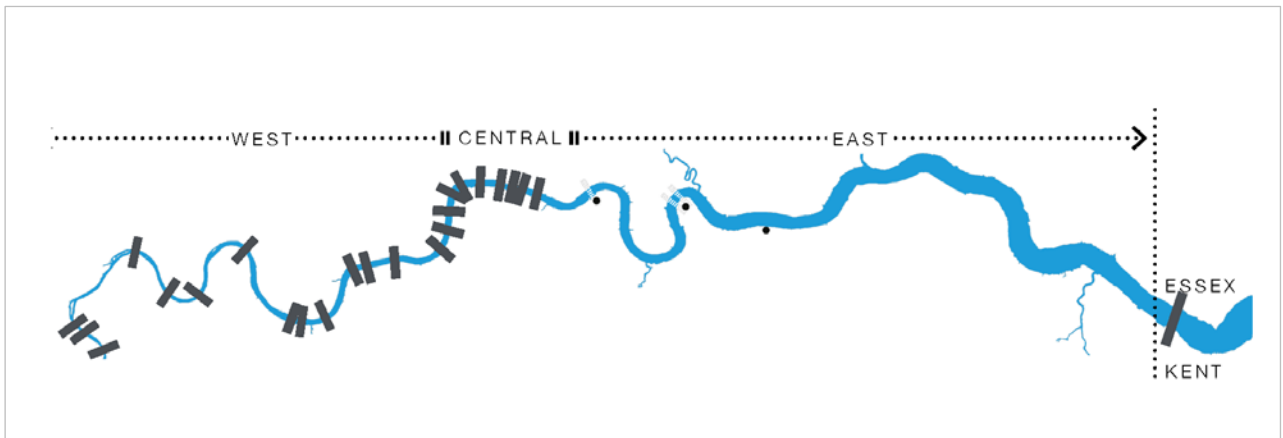
To address the challenges outlined above, **new river crossings in East London** should be part of any future investment in infrastructure improvements. TfL has started investigating different options and is preparing for the planning and construction of strategic through traffic crossings such as the Silvertown Tunnel, a crossing at Gallions Reach, and one at Belvedere. While necessary, these crossings will however not be sufficient to address the local accessibility needs of local communities that are being planned and built in East London. Moreover, these crossings – currently conceptualized as tunnels and high-level bridges – will sterilize large areas of land on either side of the river due to their long approach ramps, often stretching a mile back from

the river bank. Future investment in transport infrastructure therefore needs to include the building of **low-level bridges and other local crossings such as high frequency ferry services in East London**, enabling walking and cycling and conveniently connecting people to transport nodes on either side of the river – effectively extending the network of transport connections to the river.

Historically, West London grew and flourished because areas north and south of the river were connected by bridges, improving connectivity and unlocking new land for development. To provide one example: In 1842, the Commission of Woods, Forests, and Land Revenues recommended “the building of an embankment at Chelsea to free new land for development, and proposed the building of a new bridge downstream of Battersea Bridge” (Roberts, C. 2005. Cross River Traffic. London: Granta, p. 130).

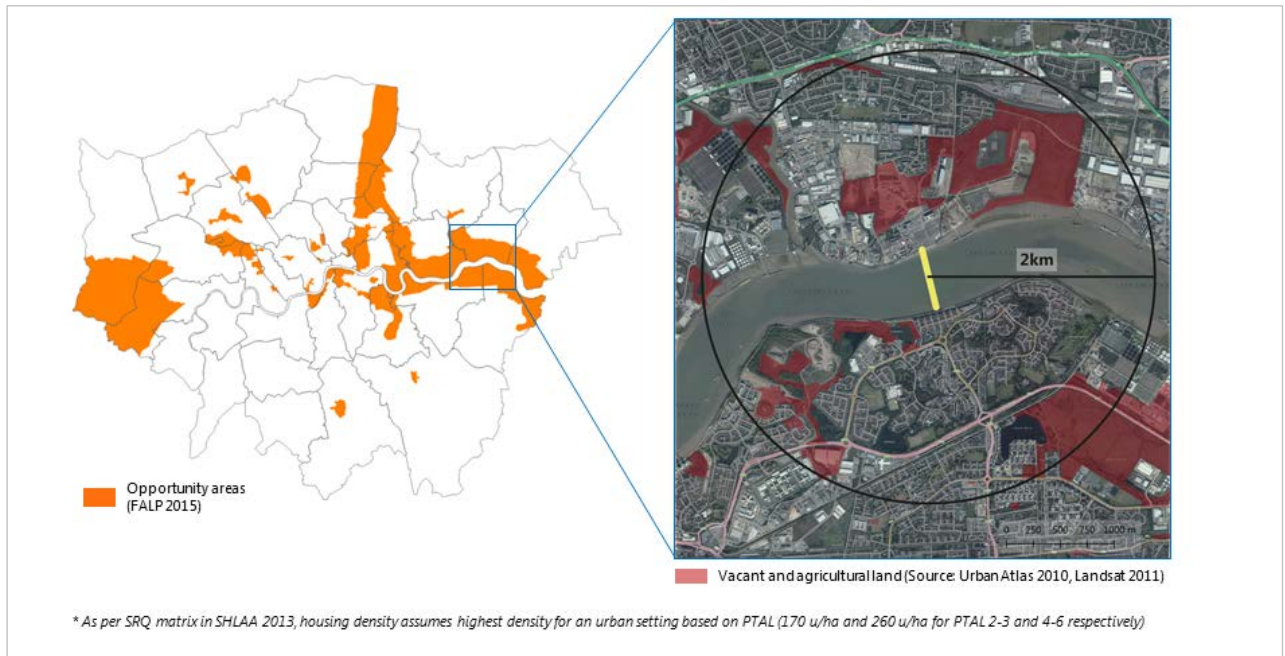
Currently, there are 34 bridges across the Thames, but **only one bridge east of Tower Bridge** – the high-level bridge at Dartford (see Figure 1).

**Figure 2: Bridges across the river Thames**



Building local crossings will help unlock land for housing development and improve job accessibility for existing and future communities. Analysis suggests that within a 2km radius of a potential bridge connecting Thamesmead with Barking Riverside, almost 50,000 new homes could be built (see Figure 3) – this is one year of the housing supply currently required for London’s growth. A bus connection over the bridge that would link Abbey Wood Crossrail station in the south with the future Barking Riverside Overground station in the north would increase job accessibility for existing and future communities in the area.

Figure 3: Housing capacity in Thamesmead / Barking Riverside



Low-level bridges will allow private and public developers to take advantage of increases in land value to **create vibrant urban communities** along the river front and further inland. It will re-connect settlements on the North and South banks with the Thames and **enhance the East London riverfront** through landscape restoration and the animation of the waterfront with shops, cafes, and public spaces for people to linger, walk, and enjoy. This addresses one of the key goals in the current Port of London Authority Vision (i.e., "Riverside as a magnet for ramblers, historians, artists, and others", PLA Thames Vision Consultation on Goals and Priority Actions, Dec 2015).

Low-level bridges will also help **reduce pressure on over-burdened parts of the transport network** by **providing sustainable alternative modes of transport**. With the development under way in North Greenwich and the Royal Docks, a low-level bridge could increase crossing capacity. TfL's *River Crossings: East of Silvertown Crossings* (Jul 2014) report demonstrates the need to increase capacity of the Woolwich Ferry crossing. It also shows that this crossing is mainly used by people originating in the boroughs north and south of the river. A low-level bridge will reduce the pressure on the Woolwich Ferry. It will also help achieve TfL's goal of reducing dependence on road-based transport and improve air quality. The same report indicates that road-based travel in East London is the main transport mode in connecting people to employment. Low-level crossings will improve the infrastructure for alternative modes of transport such as walking and cycling.

We are fully aware of the **challenges that low-level bridges pose to river traffic**. The River Thames poses several constraints due to its topography and its tidal nature. It requires highly experienced pilots to manoeuvre ships and the more obstacles in the river, the more difficult it becomes to manoeuvre. We are also aware of the cultural, environmental, and economic importance of the river traffic. In 2014, the port handled 44.5 million tonnes of goods and materials and provided direct employment for 27,000 people. 5.5 million goods and materials were moved between the wharves on the river, taking 550,000 lorry trips off the region's road (PLA Thames Vision Consultation on Goals and Priority Actions, Dec 2015). This reduces congestion on London roads, increases road safety, reduces greenhouse gas emissions, and improves air quality.

Taking these challenges into account, we however strongly believe that by exploiting today's smart traffic systems and the variety of designs for opening bridges, **both interests can be served; creating vibrant communities in East London while achieving PLA's goal of being the busiest ever Port of London.** Examples of other cities might be able to teach us something (see section 5 below).

#### 4. What are the options for the funding, financing and delivery of large-scale transport infrastructure improvements in London, including Crossrail 2?

Low-level bridges **can be more affordable** than high-level bridges and tunnels. Rough costing of a potential bridge between Thamesmead and Barking Riverside allowing for cycling lanes, walking space, and a one-way bus lane supported by sensors and lights showed that bridge construction between banks could be under £150 million – about fifty percent less than a high-level bridge (this does not include additional costs beyond the banks with approach works and ramps). This would potentially also be cheaper than TfL's idea of an Overground tunnel extension from Barking Riverside to Thamesmead (TfL, *New river crossings for London*, Dec 2015). A more detailed analysis and costing would of course have to be undertaken in order to move forward.

One of the fundamental principles that should govern infrastructure funding is that those that benefit most, should help pay for it. In regards to a low-level bridge, this **benefactor-pays** principle can be achieved through tolls by those using the bridge (especially if vehicles are allowed), land value capture mechanisms whereby land owners and developers are charged a fee as they are benefiting from increasing property values, or through business rates whereas businesses that profit from increased economic activity are charged a fee. The appropriateness of each of these financing mechanisms depends on the users the bridge serves (e.g., public transport, private vehicles) and the location (e.g., it might be easier to get funding from developers in locations where investment interest is already existent than in locations where land still needs to be unlocked).

There is also a **rationale for public investment** as the socio-economic benefits of regeneration in a traditionally deprived and underserved area as well as the opportunity to unlock land for much needed housing largely outweigh the costs involved. Contributions from national government and the GLA would demonstrate their commitment to a more balanced growth in London. Boroughs could make contributions as they will benefit from tax revenue growth from increased economic activity and population growth.

#### 5. How have major metropolitan areas in other countries responded to similar challenges and priorities? Are there any lessons to be learned and applied in London?

While we appreciate that each city deals with different opportunities and challenges and each river has different physical constraints, there are examples that show how local bridges can improve accessibility and unlock development and how the technology of opening-bridges can work in other cities.

##### *Baakenhafen Bridge, Hamburg*

The Baakenhafen bridge in Hamburg is a local vehicle, pedestrian, and cycling bridge that connects two areas of the new district Hafencity and greatly increases accessibility to Hamburg's inner city. The construction of the bridge allowed for the development of 1,800 housing units, shops, offices, and community spaces. Without the bridge, development would have been much harder to achieve.

##### *Ponte della Musica, Rome*

The Ponte della Musica crosses the river Tiber in Rome and connects the former Olympic stadium on the west bank of the river with the Quartiere Flaminio for the first time in 1,000 years. The bridge was designed to

serve as an open public space that can be used for festivals, exhibitions and fairs. It also has the facility to operate as a tram and bus route. It connects Rome's most significant cultural institutions and provides ease of access for residents to enjoy these institutions fully.

*The New Botlek Bridge, Rotterdam*

The new Botlek bridge across the Oude Maas in Rotterdam is an example of advanced bridge technology. It is one of the largest moveable bridges in the world. The bridge will be opened around once every hour, or 9,000 times per year and only 120 seconds are required for the entire opening or closing procedure. The bridge will remove a bottleneck for ships, caused by the existing low and narrow moveable bridge's limited navigation clearance while also improving the flow of road traffic.

*Kattwyk Bridge, Hamburg*

The Kattwyk bridge across the South Elbe in Hamburg is an opening bridge across a tidal and curvy river that opens during the day every two hours for river traffic. Built back in the 1970s, the opening mechanisms is not as fast as the new Botlek bridge and disrupts vehicle traffic across the river for about 15-20 minutes each time.