

# Strategic River Crossings

**Consultation response**

**September 2014**

## Strategic River Crossings

This response to the UK Parliament's request for written submissions of 12<sup>th</sup> June 2014 presents the views of the Roads Sector Interest Group within the ACE and addresses the seven specific questions posed by the Transport Committee.

### Executive Summary

The principal points made in this submission are as follows:-

- Cooperation and collaboration between local and national government for delivery of major river projects is variable. The Forth bridge in Scotland currently provides the best example of “working together”.
- The loss of Regional Planning bodies has made coordination between local and national government more difficult – a situation that Local Enterprise Partnerships has partially addressed.
- The Mersey Gateway crossing was a good example of the promoting authority recruiting a project leader with appropriate skills and experience.
- Local authorities will generally need to call on private sector planning, engineering and environmental consultants for development of a strategic river crossing scheme. This expertise is readily available in the UK.
- The last three major river crossings in the UK have been, or are being, built by consortia which were led by European rather than UK companies.
- Design for Maintenance and the use of technology in asset management are skills which are available in the UK and continually improving.
- There are clear examples, such as the Thames Estuary, where the lack of a strategic crossing adversely affects economic development.
- Existing Cost Benefit methods do not capture the full benefits of providing a new strategic crossing.
- Tolling and Privately Financed Concessions are appropriate for major strategic river crossing schemes.
- Allocation of the Traffic Forecast risk is the main factor affecting the appetite of the private sector to invest in the provision of new strategic river crossings.
- Dynamic charging linking tolls to the time of day and demand should be pursued.

### Q1 – How well does local and national government work together to plan and deliver river crossing projects?

1.1 There are recent examples of promotion of major river crossings in the UK which are relevant in responding to this question. These are:

- Mersey
- Forth (Scotland)
- Lower Thames Crossing

Whilst we note that the committee's remit relates only to England the experience at Forth is instructive in that it was widely viewed to be a good example of collaboration between Transport Scotland and the regional and local government bodies during the development stage of the project.

1.2 In England the Mersey Gateway project took some time to come through to construction principally as a result of funding and PFI credits negotiated between the local authority Halton Borough Council and central government, principally the Department for Transport. This project eventually overcame the hurdles but not without some tension between local and national government bodies.

1.3 The Lower Thames Crossing is still in its early stages and the recent change of lead organisation from the Department of Transport to the Highways Agency following a Public Consultation on Options has given the project new impetus but it remains on a very long programme for delivery. In this case the local government interest spans two counties and also encompasses a number of London boroughs who will experience effects of the scheme. This particular scheme therefore has a complex combination of local government stakeholders with a range of views and desires. At present the extent of the connections between Transport for London and the Highways Agency in relation to this project are not clear.

1.4 From the three examples above it is clear that the picture varies across the country and is complicated by the nature of regional vision and cooperation between local authorities. Local Enterprise Partnerships have been formed to recognise the regional importance of transport investment but in many instances these bodies are in the early stages of maturity. There are risks of entrenched attitudes and individual counties' (or authorities') self interest dominating decision making and agreement of investment priorities. This is particularly acute where regional transport budgets are limited and a strategic river crossing would absorb most or all of available funds thus severely limiting the number of other projects that could be delivered in that Local Enterprise Partnership region. This has sometimes been referred to as the 'Whale in the pond' syndrome. The question that arises is who decides what is 'strategic' and whether that is for the Local Enterprise Partnerships to promote to National Government or vice versa.

1.5 There are also aspects of regional and national boundaries which need to be considered. Local Enterprise Partnership boundaries do not always span major rivers. Although this is the case with the South East Local Enterprise Partnership which covers both the Kent and Essex side of the Thames it is not for rivers such as the Tamar or Stour. Loss of the Regional Planning Bodies has meant that in the shires Local Enterprise Partnerships sit above the individual counties and can take a coordinated view of strategic regional requirements. However their remit is limited to local government led schemes and there is a need for an overview regionally when crossings are promoted by national bodies such as Highways Agency, Network Rail, Welsh Government or Transport Scotland. The Local Enterprise Partnerships are still in their early stages and coverage is not yet country wide so at present this overview is patchy at best.

1.6 In metropolitan areas the strength of planning and engineering expertise is variable from borough to borough and is generally limited. In virtually all cases, even where an overarching body such as Transport for London exists, outside expertise will be needed by these boroughs to promote or participate in the planning and development of a strategic river crossing.

1.7 Overall our view is that the loss of the Regional planning bodies has made coordination and collaboration between local and national government more difficult – a situation which the Local Enterprise Partnerships have partially but not fully addressed. The regional view is important as a strategic crossing usually generates a strategic transport corridor perhaps

some 20 miles wide and needs to be seen as part of a regional transport plan with complimentary improvements to the road network, bus routes and rail services within this corridor and the 'hinterland'.

**Q2 – What knowledge, resources and experience does the public sector need to deliver large, strategically significant river crossing projects?**

2.1 New Strategic River Crossing schemes are usually an order of magnitude above any scheme that a local authority has delivered in the recent past and consequently the planning, project management and engineering design skills within the authority need to be supplemented substantially by private sector involvement.

2.2 The Mersey Crossing was a good example of where the borough council recognised this at an early stage and recruited a project leader with appropriate experience who led the engagement and co-ordination of a range of private sector planning, engineering and environmental consultants to successfully develop the scheme. There is no shortage of such consultants in the UK and most of the major players have a track record which includes not only major river crossings in the UK but many important crossings all around the world. There is no doubt that the expertise exists in abundance in the UK.

2.3 Whilst consultancy planning, environmental and engineering resources are not a concern some comment is appropriate in relation to UK civil engineering contractors. The last three strategic river crossings in the UK have all been constructed by consortia led by major European contractors rather than those based in the UK. These are:

- Tyne (new tunnel) – Boyugues (France)
- Forth (new bridge) – Hochtief (Germany)
- Mersey (new bridge) – FCC (Spain)

It must be a concern that UK contractors are unable to be sufficiently competitive to win such major UK civil engineering contracts. It is notable that whilst the European contractors are aggressively competing for business worldwide UK Contractors have, by and large, re-trenched and focused almost exclusively on the UK market.

2.4 For strategic crossings maintenance costs and longevity are important considerations. The reduction of maintenance costs starts with the design, and UK engineering consultants are schooled in design for maintenance. This involves specification of materials for durability and the inbuilt design of corrosion protection mechanisms. Access for maintenance is today a fundamental consideration at concept design stage and is progressed through the subsequent preliminary and detailed design stages.

2.5 Technology too has its place and arrangements for incorporation during construction of, for example, corrosion monitoring equipment has been industry practice for some time. An example of this is the inclusion of corrosion 'ladders' within the steel reinforcement arrangements for the Dartford Tunnel concrete deck units supporting the road carriageway in the tunnel when the tunnel was refurbished a few years ago. Installation of monitoring equipment linked to technology is always more effective when done as an integral part of the design and included as part of the construction contract rather than when subsequently retro-fitted.

**Q3 – What other government priorities, such as new house building, urban regeneration and new business opportunities, can be delivered through additional strategic crossings?**

3.1 Strategic river crossings can support other government priorities in opening up the necessary connectivity to stimulate regeneration or enhanced regional economic activity. Such attempts have not always succeeded, for example the Humber Bridge did not stimulate much new activity in North Lincolnshire, but there are more recent examples where house building and economic development which has occurred is directly attributable to the existence of a new or significantly improved river crossing. The crossing of the Swale onto the Isle of Sheppey is a particular example.

3.2 There are clear examples where lack of a crossing has an impact with perhaps the Thames Estuary being a prime case. Kent and Essex are two large adjacent counties on the outskirts of London and both have benefitted from the original construction of the Dartford Tunnel and its subsequent bridge crossing. No such connectivity exists between the counties further downstream and this creates a huge barrier between the Medway towns and the Southend region which if connected would almost certainly stimulate further trade between the counties. This lack of crossing east of Dartford needs to be viewed in the context of major development proposals including a 'new town' in North Kent.

**Q4 – Do existing cost benefit methods adequately capture any potential transformative effects of new river crossings?**

4.1 Our view is that existing cost benefit analysis methods do not capture those benefits which are difficult to quantify in monetary terms and which are significant in terms of transformative effects of new river crossings. Cost benefit analyses take account of known development proposals but not the knock-on effect of the economic stimulus provided to an area resulting from increased connectivity. Cost benefit analyses linked to traffic models also tend to under-estimate the generation of new cross river trips stimulated by a crossing being in place.

4.2 A factor often overlooked in the cost benefit analysis of tolled crossings is the effect of pursuit of toll violators. In some privately financed projects the consortia bidding for the concession have to carry the risk of failing to capture all toll payments.

4.3 Some schemes have failed to progress to construction because of an unwillingness to combine road and rail modes in a single crossing. Local political factors sometimes force a rail only crossing to be promoted and then the return on investment fails the benefit/cost ratio test when a combined road/rail crossing would have been viable. The Gosport-Portsmouth link across Portsmouth Harbour is a case in point.

**Q5 – What are the best methods for financing additional river crossings?**

5.1 There is general acceptance by the public that road crossings of estuaries or major rivers can be subject to tolls. Tolled crossings currently exist at Dartford, Mersey, Tyne, Clyde, Tamar, Itchen, Forth and Severn. This is in marked contrast to public acceptance of tolled roads in general. Given the above it seems that real tolls paid by users should continue to form an element of the financing of construction, operation and maintenance of major strategic river crossings.

5.2 Concession arrangements of the Design Build Finance and Operate model over at least a 30 year period are appropriate as this provides for the full effects of the economic growth stimulated by the crossing to be captured.

5.3 The proportion of the total costs that can be met by real tolls will vary from 100% in some cases to a much lesser percentage in others. Where existing capacity is constrained and a new or supplementary river crossing is provided (for example Dartford) 100% of the financing may be by real tolls. In other instances the potential for capture of cross river traffic and willingness of a concessionaire to take the traffic forecasting risk in full may require some proportion of the costs to be met from public funds. This was the case at Mersey where Halton Borough Council was sufficiently concerned that they took this risk themselves. In that case, the Promoter's own traffic forecasts were provided to all bidders. The Concession Contract was structured such that the Council took the toll revenue and made payment to the concessionaire based on the availability of lanes over the crossing.

#### **Q6 – How can the public sector attract greater investment from the private sector for the delivery and maintenance of river crossings?**

6.1 For any major river crossing scheme there can be a challenge in balancing the parameters to make the project attractive to a private sector investor/concessionaire by maximising toll revenue whilst meeting local and national policy objectives such as managing traffic demand and regulating flows. At present there seems to be no shortage of bidders from the private sector for major river crossing road schemes. This appetite will however only be sustained for schemes where the traffic demand is sufficient for the private sector to accept the traffic forecast risk unless, as at Mersey, the promoting authority accepts a share of this risk. In less obvious situations where the benefit is likely to accrue from development and economic activity stimulated by the crossing itself then opening up greater opportunity for the concessionaire to promote and sponsor that development within the transport corridor and hinterland could be considered. This concept is being applied elsewhere in the world, most notably in Thailand.

#### **Q7 – Should strategic river crossings be tolled? How should tolling be implemented? How can technology be used to improve strategic river crossings for road users (e.g. better management of traffic flows)**

7.1 Unlike on the general road network, tolling of major strategic river crossings in the UK is the norm so there is no political hurdle to overcome in perpetuating this for new schemes. The crucial element is in setting the toll at a level which does not deter the vast majority of potential traffic from using the crossing.

7.2 With automated toll collection becoming more prominent the next step is to move towards dynamic charging where the rate can vary throughout the day dependent on the degree of traffic congestion in order to regulate demand. This is akin to the way train companies offer discounted off-peak journeys. Dynamic charging should provide a range of toll levels rather than just a day-time charge and a night-time level which currently applies at some crossings, for example, Dartford. There is evidence that at such crossings heavy vehicles arriving shortly before the toll charge changeover tend to stop and park, sometimes on the motorway hard-shoulder, to wait for the lower charge to be implemented. A graduated charge progressively changing to the night rate over a period of a few hours would be likely to overcome these issues.



7.3 Another aspect to be considered is the differential between cars and heavy good vehicles. On the M6 Toll (the only major tolled road in the UK which is not a strategic river crossing) the concessionaire has freedom to set the tolls and has set a reasonable rate for cars but a much higher toll for heavy good vehicles. This has resulted in a high proportion of heavy vehicles remaining on the “free” M6. The definition, in a concession agreement, of a permitted multiplier of the car toll that could be applied to heavy vehicles could overcome this issue.

-----

Evidence prepared by a sub-group of the Association of Consulting and Engineering’s Road Sector Interest Group comprising Tim Healey, Tony Marshall, Mike Llywelyn-Jones and Peter Campbell.

### About ACE

As the leading business association in the sector, ACE represents the interests of professional consultancy and engineering companies large and small in the UK. Many of our member companies have gained international recognition and acclaim and employ over 250,000 staff worldwide.

ACE members are at the heart of delivering, maintaining and upgrading our buildings, structures and infrastructure. They provide specialist services to a diverse range of sectors including water, transportation, housing and energy.

The ACE membership acts as the bridge between consultants, engineers and the wider construction sector who make an estimated contribution of £15bn to the nation’s economy with the wider construction market contributing a further £90bn.

ACE’s powerful representation and lobbying to government, major clients, the media and other key stakeholders, enables it to promote the critical contribution that engineers and consultants make to the nation’s developing infrastructure.

Through our publications, market intelligence, events and networking, business guidance and personal contact, we provide a cohesive approach and direction for our members and the wider industry. In recognising the dynamics of our industry, we support and encourage our members in all aspects of their business, helping them to optimise performance and embrace opportunity.

### Further information

For further details about this publication please contact

Peter Campbell  
Policy Manager  
ACE Policy and External Affairs Group  
0207 227 1885  
pcampbell@acenet.co.uk  
[www.acenet.co.uk](http://www.acenet.co.uk)