

National Infrastructure Commission Call for Evidence



London's Transport Infrastructure
Nichols Response - January 2016

Question 3 – What are the opportunities to increase the benefits and reduce the costs of the proposed Crossrail 2 scheme?

Introduction

Crossrail 2 is a critical programme for London's future economic and social sustainability. Its importance in solving the south-west commuter capacity constraints, unlocking land for affordable housing and its link to High Speed 2 at Euston, make it a regional and national priority delivering benefits beyond London. However whilst over half its estimated capital cost can be met by private funding sources the need for a strong Benefit to Cost Ratio (BCR) remains. Using our experience of numerous major rail and other infrastructure schemes, including 26 years working on Crossrail 1, we are pleased to have the opportunity to convey our thinking on how Crossrail 2 can increase its benefits, reduce its costs and meet its funding challenges.

A structured value management process to objectively challenge benefits and costs

The challenges can only be effectively addressed by adopting a structured and systematic value management (VM) process, which identifies solutions and objectively assesses them. We understand that TfL is leading this process, which should include other key stakeholders, including DfT, Network Rail, as well as its supply chain. Nichols staff led this approach on Crossrail 1, reducing capital cost to improve its BCR.

Opportunities to enhance benefits

The business case includes the transport, social, economic, regeneration and housing benefits. The VM process should ensure that each of these aspects are robustly challenged so that the wider, and sometimes less tangible, benefits in the business case are appropriately quantified and included. Conventional business case methodologies do not capture the transformational benefits associated with schemes such as Crossrail 2, nor the wider national benefits of supporting the growth of a global city. In this regard, Crossrail 2 could be used as a means of instigating a change to conventional business case methodologies.

Crossrail 2 can be used to further develop the proactive approach to realising socio economic development, seen on London 2012 Olympic and Paralympic Games and Crossrail 1, and should be positioned as a scheme benefiting the national as well as London economy. It should fund, in part, local representatives to act as brokers for opportunities with local suppliers for Crossrail 2. Therefore, the national economic supply chain benefits should be robustly reviewed. Creating a 'push-pull' effect in the regions is critical to ensuring robust advocacy for the Crossrail 2 in regional economies.

Crossrail 2 creates construction jobs and will support building a skills legacy; these are areas which require robust quantification and inclusion in the business case. Supply chain advocacy needs to be harnessed to ensure a weight of support for the scheme, ensuring a strong link with the Government’s transport and infrastructure skills strategy being led by Terry Morgan.

We previously convened a “Creative London Crossrail 2 initiation seminar” which included key stakeholders to Crossrail 2, as well as those involved in Crossrail 1 and other major programmes. A key theme which emerged from this seminar was the importance of any scheme having ‘strategic anchors’. In part, Crossrail 2 has these strategic anchors in relation to important developments at Euston (with HS2), Clapham Junction (through its proximity to Nine Elms development) and Wimbledon as an emerging opportunity area. However, unlike the Jubilee Line Extension and Crossrail 1, where the links to Canary Wharf were key anchors, Crossrail 2 does not appear to have such a key anchor. This is important from an economic justification perspective, and for leveraging private funding. We therefore recommend a review of Crossrail 2 route and station locations to take account of likely post Crossrail 1 centres of economic activity.

An alternative approach would be to build those parts of the railway that are mainly intended to link to new housing only when there is demand, similar to how the Metropolitan line expanded over an extended period. Where the business case is not strong, for example, the new Southgate branch, demand could be demonstrated by a substantial contribution from the housing developers who could be encouraged to progress developments through efficient use of the Mayor’s planning powers. A similar approach occurred on Crossrail 1 at Woolwich, which only acquired a station when a developer contributed to its costs, in turn linking the development to obtaining planning consents for a large housing scheme. The sale or lease of development land could also be used to generate capital or revenue receipts to off set costs.

Benefits can also be enhanced by designing additional functionality from the start. For example, full integration of oversite and associated urban realm developments, geothermal heat recovery or protected duct routes for voice and data connectivity, which could generate long term revenue streams.

Opportunities to reduce costs

Opportunities to reduce cost in a generic sense will already be well recognised, including: reducing risk; improving incentivisation of suppliers; use of standardised designs; benefits of off-site manufacturer; application of BIM as a single source of truth; and value engineering of high risk and sensitive locations (such as shafts).

From our involvement in the planning and delivery of major rail and other infrastructure programmes, we recommend exploring the following additional ideas to reduce cost:

- EU procurement regulations impose an unnecessarily constraint, they do not provide adequately for the acquisition of a Programme. Each ‘call for competition’ is independent and cannot sufficiently allow for externalities that in practice erode value and build in redundant costs. We would advocate exploring opportunities to create an entity which is classified as ‘private’ and therefore does not need to comply with EU procurement regulations. The obligations of transparency and prevention of fraud and corruption would still be maintained to ensure fair and equitable competitions.
- The development and management of the outer areas works, on the existing rail network, should be fully integrated with the management and development of the core route. This would be maintained under TfL’s overall leadership ensuring that all activities are integrated and opportunities to challenge scope, reduce risk and drive economies of scale are taken.
- Ensuring that wider industry opportunities to reduce risk and enhance value are taken in a system-wide structured manner. For example, ensuring that the DfT, as franchising authority, factor into the South West trains franchising process the potential for Crossrail 2’s impact on the network. In a similar vein, our work on the Thameslink Franchise ensured that the TOC would play a key role in delivering and facilitating the programme through both contractual obligations and aligned incentives with Network Rail and the train service provider.
- Phasing should be explored, as an incremental approach to delivery may result in efficiencies. There is evidence from Madrid and other successful metros of keen pricing from such approaches.
- Different delivery models should be considered, particularly for off-network aspects of scope such as depots and stations. Depots and rolling stock could be privately financed, generating affordability benefits which could assist the programme’s Benefit Cost Ratio.
- From our experience of Crossrail 1, cost reduction opportunities exist through innovation, and the programme must proactively seek to generate, capture and deploy innovation. This innovation should be delivered through a platform similar to Innovate18 or a discrete Innovation Engine.
- Procurement efficiencies through smart packaging and building a liquid supply chain. On Crossrail 1, the use of larger construction packages generated savings and reduced interface risk.

