

LONDON'S TRANSPORT INFRASTRUCTURE

Contribution to

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.

Introduction

In 2018 there will be two major infrastructure events, the opening of Crossrail and Thameslink, the biggest such schemes since the Channel Tunnel and Rail Link, and the upgrading of the West Coast Main Line.

The next major project to follow these is HS2. Due to open between 2026 and 2033, this dwarfs the other schemes. It will provide fast interconnection between many of the major cities of the Midlands and northern England. It will also free up urgently needed capacity on the existing main rail lines, rapidly increasing passenger numbers and freight.

The objective now must be to fully utilise the potential these projects have created. There are many transportation needs to be met, constrictions to be alleviated and pollution to be reduced. With tight budgets, integrated forward looking infrastructure planning is the only way to proceed.

The Elephant in the Room

Looming over much of Greater London's infrastructure forward planning is the lack of a decision on an upgraded or new hub airport capable of meeting the long-term needs of long distance travel; the elephant in the room.

The Airports Commission have recommended adding a new north west runway at Heathrow adequate to meet demand up to 2050. The Government have deferred a decision accepting these recommendations until a proper study of the impact of expansion on air quality and noise levels. Aircraft noise pollution already inflicts unacceptable misery on hundreds of thousands people in London who have repeatedly been told that new quieter aircraft will bring relief; the Airports Commission report shows otherwise. Even more serious for Heathrow's expansion is air quality. If studies show it is likely to exceed legal limits, then expansion cannot go ahead.

The Airports Commission admit their alternative solution, expansion at Gatwick, will not result in an adequate international hub for UK's economic future. The only real alternative to an expanded Heathrow, the one the Commission rejected, is the Thames Estuary site on the Isle of Grain. This was presented as having an unmanageable capital cost, partly due to the need for extensive new transportation infrastructure. This needs to be examined objectively in relation to the needs of other proposed developments in the same area.

Thames Gateway Regeneration Zone

The Regeneration Zone stretches forty miles along the estuary from Canary Warf in London to Southend in Essex and Sittingbourne in Kent. This concept is aimed at expanding London's economic activity along the Thames Estuary encouraging business enterprise, employment and new housing by providing improved infrastructure. It has succeeded beyond anyone's expectation in the Docklands at the western end of the Zone. It is undoubtedly in need of an employment catalyst to spread it eastward, together with improved rail and road links such as the extension of Crossrail eastward from Abbeywood and the construction of a Lower Thames crossing proposed to alleviate the lack of capacity at the Dartford Crossing on the M25. This will also overcome the barrier to economic activity between Kent and Essex.

London is desperately in need of additional affordable housing, either within the Greater London Area or outside with adequate commuter links. Thames Gateway Regeneration Zone can offer this once Crossrail is completed and the south spur extended.

The Employment Catalyst

It is hard to imagine a more effective catalyst to set in motion the regeneration of the Thames Estuary than the construction of a new hub airport on the Isle of Grains. There is only need for one hub to serve the UK and for a new one to succeed economically, the closure of Heathrow is a prerequisite. Employment priority would be given to Heathrow staff who are prepared to move near to or travel to the new airport. It can be anticipated that well in excess of 50,000 new jobs will be available for people living in the regeneration zone. A lower Thames crossing would spread the benefits to Essex.

Lower Thames Crossing

The Dartford Crossing on the M25 is already operating close to capacity. Studies have been carried out to compare providing extra capacity at Dartford with two alternatives further down the Thames. The appraisal report "Review of Lower Thames Crossing Options, April 2013" discarded the middle route. The lower route leaves the A2/M2 junction east of Gravesend and crosses the Thames east of Tilbury joining the M25 between junctions 29 and 30. Improvements to the A229 linking the M20 and M2 were also considered but were found to be very expensive for such a short road. The crossing and M20-M2 link are presently being studied on its own merits. In the event that the hub is to be constructed on the Isle of Grain, consideration should be given to building the link further west where it could also act as the main access route to the airport for airport traffic originating west of junction 5 on the M25.

Consideration should also be given to a combined road and rail crossing structure, although a separate rail tunnel will probably prove more economical.

Airport, Rail and Road Access

Heathrow has grown over the years with poor rail access, encouraging unacceptable levels of road usage, contributing to air pollution and congestion on roads leading to the airport. Closure of Heathrow would help solve both problems.

Infrastructure already in place would mean that rail links to a new estuary airport can be world class with little extra investment cost to be set against the airport alone.

- The extensions of Crossrail beyond Gravesend would provide a high capacity frequent service. Travel times of under one hour from Old Oak Common and ten minutes less from Tottenham Court Road would be expected.
- An airport link to HS1 would allow provision of express services in under half an hour on the “javelin” trains to Kent from St Pancras and Stratford. These trains are presently running 6 carriages whilst 12 are allowed for in the train design and platform length. The track has been built to UIC GC loading gauge which allows for double-decker trains which are being increasingly used on the Continent. There is definitely adequate latent capacity to meet the need for express travel to the airport. The two halves of the “javelin” trains can be separated automatically allowing even more flexibility.
- Of equal importance to the London links is the possibility to establish fast rail travel to other parts of the UK. With HS2 in place, many of the major cities of the north, Midlands and the west can be provided with a through service to the airport in under two hours. The main capital expenditure will be a direct link between HS2 and HS1. With this in place, up to four HS2 trains per hour could bypass Euston and stop at Stratford for Docklands, at Ebbsfleet to connect with Eurostar services, and terminate at the hub airport. There would be no loss of capacity to serve London, as passengers for other destinations could change at Old Oak Common onto Crossrail, avoiding poorly connected Euston. Passengers from the west would join at Old Oak Common.
- It has been assumed that HS1 has a maximum capacity of 16 paths per hour in both directions between St Pancras and Cobham before the Medway crossing. Of these, six could be allocated to Eurostar, six to “javelin” services and the remaining four to HS2. Beyond Cobham, there would be a lot of extra capacity allowing for freight services which would have to join the Kent lines into London, or use a new rail link to Essex if one is built. This would tie in well with the new London Gateway Port and Logistics Park already in use downstream of Tilbury. There would also be capacity for trains from the Continent to what could become one of the world’s best airports for range of international connections.
- The rail route to Waterloo, in use for Eurostar services before Phase 2 of HS1 was built, could be reinstated to provide an adequate semi-fast service to Waterloo. There is an extra-ordinary provision in the costs presented in the “Airport Commission’s Inner Thames Estuary Airport Summary and Decision Paper, September 2014” for a new express rail service from Waterloo via Barking Riverside bringing their enhanced rail package provisions to £26.9 billion! This, together with estimated road improvements of up to £17.2 billion, adds a £44.1 billion infrastructure bill to the airport development without any attempt to discuss what would be built in the without airport scenario. This approach to dismissing an apparently unwanted project would surely be more in place in a script for Yes Minister than a document intended to decide the long-term provision of hub airport capacity in the UK.

- The above rail access would be more than adequate to support a hub airport with capacity to meet demand beyond 2050. The demand on road access would be reduced to a much more manageable level than at Heathrow. A further route could be added if a rail tunnel is built at the Lower Thames Crossing. The north-eastern Crossrail line could be connected to the airport by a line from Romford or Brentwood. This would provide additional capacity but, even more important, would add resilience to rail access when maintenance is carried out on other lines.
- Thameslink, the proposed Crossrail 2 and the existing rail network could play an important part in providing acceptable linkage to the airport from the zone outside Greater London.

HS1 – HS2 Link

An HS2 Phase 1 report, Review of HS2 – HS1 connectivity and Rail Links to the Continent – November 2015, is now available. It suggests numerous tunnel alternatives that could connect the two lines, plus several involving passengers leaving HS2 trains at Euston and walking or being carried on travellers to St Pancras.

The only realistic solution which meets the simple requirement for HS2 trains to join HS1 and terminate at the airport is a variation of option R6. The pair of rail tunnels from Old Oak Common would bifurcate near Chalk Farm, with one pair to Euston and the other pair joining the HS1 line north of St Pancras before it enters the tunnel to Stratford. The bifurcation would be of a similar design to that already built on Crossrail near Stepney Green. The report rightly points out the difficulties this solution would meet at the St Pancras end, but probably no more difficult than those recently solved by Crossrail. The Thameslink canal tunnels completed recently under St Pancras should provide useful information on shallow tunnelling in the area.

Closure of Heathrow

The closure of Heathrow is inevitable if a new hub airport is built. Airport staff will be seriously affected if they are not able to move to the new airport unless good transport links are available. A grade separated interchange between the Great Western lines/Crossrail and HS2 at Old Oak Common would serve this purpose for a few years until HS2 and HS1 lines are fully utilised.

Many businesses have located near Heathrow to take advantage of the freight services it can provide. A freight consolidation and distribution centre should be retained there with a fast and frequent rail freight service established, if possible, to reduce road haulage between the two sites. Heathrow airport site, with its forthcoming Crossrail services, will be a prime site for commercial and residential development.

Overview

The delay in deciding whether to proceed with a third runway at Heathrow is a major impediment to preparing a long-term plan for London's transport infrastructure. However, this review suggests that most of the components needed to support a change in location of UK's hub airport, if it occurred, are already being actively progressed to meet other identified needs.

The only scheme warranting immediate action is the HS2-HS1 link tunnel. This should be studied in detail so that it could be built with HS2 Phase 1. Any other approach would be very short-sighted and hugely disruptive for adjacent rail services.

There is real need to reduce the strain on commuter trains into London and improve access to areas of more affordable housing which is rapidly disappearing from Inner London. Crossrail 2 can play a major part in this at a high price. This is inevitable for any scheme requiring long tunnels under London. A useful intervention would be a study covering the Greater London area and commuter links to identify which routes could carry double-decker trains without excessive infrastructure rebuilding.

The author regrets only noticing the call for submissions shortly before the closing date, otherwise a more polished presentation could have been made.

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