

# CROSSRAIL 2 – ROUTE SAFEGUARDING CONSULTATION

by John Hawkins

On 14 May 2013 consultation commenced for updated route safeguarding of the Crossrail 2 line, with submissions welcomed by TfL until 2 August 2013. The proposals are in line with the final report of London First (see *Underground News* May 2013) and were publicly launched with their support. There remains a choice between two schemes for which additional details have been revealed.

The Metro option route from Alexandra Palace to Wimbledon is now identical with that of the Regional option, but has an additional station at Piccadilly Circus where there is insufficient space for larger Network Rail platforms. Possible south-west destinations for the Regional option have been trimmed with Shepperton no longer featured. Twickenham, Surbiton and Epsom are all shown, with possible routes beyond Surbiton and from Motspur Park towards Chessington South.

The North-east route to Cheshunt could also be extended to Hertford East. All of these Network Rail routes are shown as possible options, with the Metro route being the only part of the Regional scheme shown with solid colour. It would appear that Network Rail are less advanced in evaluating options than are TfL. The tunnel route starts at Alexandra Palace and calls at Turnpike Lane, Seven Sisters and Dalston Junction, being joined at Angel by the possible lower-frequency route from Tottenham Hale that calls also at a Hackney Overground interchange. Euston St. Pancras would also serve the relegated King's Cross terminus. From there the line calls at Tottenham Court Road, Victoria, King's Road Chelsea, Clapham Junction, Tooting Broadway and Wimbledon before surfacing. No depot locations are revealed.

The Regional option would offer a service similar to that envisaged for Crossrail 1, with possibly 30 trains per hour (tph) of 10 coaches, with a platform length of 250 metres to allow for future lengthening to 12 coaches. The tunnel diameter would be 6.4 metres, larger than the currently safeguarded 6.2 metres. Total capacity could be up to 45,000 passengers an hour each way. The diversion of some National Rail services over this route would free terminal capacity for other routes, and surface route flexibility would allow a service to Stanstead in the future. A staged construction is said to be possible, which might mean that the Cheshunt route could follow later.

The Metro option is of more interest, proposing a DLR type of service in tunnel with 40 tph of 4 articulated units with a length of 120 metres, carrying up to 38,500 passengers an hour each way. The train type could also be like the Paris Métro line 14. A DLR tunnel diameter of 5.5 metres would mean that any future extension would need its own right of way rather than linking with National Rail.

Completion of either scheme is expected in the early 2030s. The running time from Alexandra Palace to Wimbledon is forecast at 31 minutes with the Regional option and only 28 minutes with the Metro option despite its additional stop at Piccadilly Circus.

A summary of option development, dated May 2013, shows details of so-called current 'committed' improvements on page 4 which include current unfunded improvements. The sub-surface line upgrades are promised by 2018, with 22% increase in Metropolitan Line capacity, 24% on the District Line and 61% on the Circle and Hammersmith lines. A new programme called 'World Class Capacity 36tph service' is shown for the Victoria Line in 2017/18 and on the Jubilee Line in 2019/20. The 'partial separation' of Northern Line services to permit 33tph is not expected before 2021/22. New trains and signalling for the Piccadilly, Bakerloo and Central lines, listed in that order, are not expected to be completed before the 2030s! However discussion about the Central Line on page 7 predicts an upgrade around 2030 and before Crossrail 2 opens, negating earlier proposals for the new route to reach Epping.

The April/May 2013 edition of *On The Move*, the LU staff magazine, put the Bakerloo Line upgrade beyond ten years away, with the Piccadilly Line to follow later. It was only in the 6 February 2011 Rail Engineer magazine that LU's Capital Programmes Director, David Waboso, forecast the Bakerloo upgrade for 2017/19, the Piccadilly in 2019/22, the Central by 2025, the Northern by 2027, the Jubilee Line around 2030, with the Victoria Line the last to change. At that time, new signalling and EVO trains, together with some infrastructure work to remove pinch-points, were forecast to permit 30 tph on each line.

A chart of peak crowding shows the Victoria line and Northern Line Bank branch worst affected by 2031. Possible further investment beyond current committed improvements offers small relief to the

District, Victoria, Piccadilly and Charing Cross Northern Line branch, but not to the Bank branch or Central Line. Crossrail 2 plans offer significant benefits to all of these lines, with an additional advantage to the congested Victoria Line from the Regional option, but a preference for the Metro option on the less congested Charing Cross branch.

A chart of peak crowding on selected National Rail trains shows that further investment beyond current committed improvements offers significant relief to all but the Moorgate and Waterloo routes. The Metro option eliminates problems at King's Cross, significantly aids London Bridge and gives some benefit to Victoria. The Regional option eliminates most crowding into Waterloo, providing similar benefits to the smaller scheme at other termini, but with further benefit at Moorgate and Victoria. It notes that diversion of some Hertford East services to the Regional option results in marginally increased crowding on remaining services into Liverpool Street, and this will be subject to further study.

A timeline for developing the scheme does not see the finalising of a single preferred option until 2016-19, and the submission of a powers application in 2018-20. Whilst both proposals feature a similar route, they do not follow the same alignment. The Metro route features a minimum curvature of 50 metres with a maximum gradient of 6%. Overall costs are estimated at £9.5-16bn.

The Regional route is designed with a minimum curvature of 300 metres and a maximum gradient of 3%. Overall costs are estimated at £12-20bn. The benefit to cost ratio for the Metro Option is between 1.2:1 and 3.5:1, depending on methodology, whilst the Regional Option shows between 1.8:1 and 4.1:1. There is therefore a choice between a cheaper option and a value-for-money option. Given its flexibility for future service routings, London First gave preference for the more expensive scheme.

Members can have their say at:

**<http://www.tfl.gov.uk/corporate/projectsandschemes/27405.aspx>** until 2 August 2013.