The Case for Electrifying the GOSPEL OAK - BARKING Railway

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The Gospel Oak to Barking Line is a 21st century anomaly for London's railways. It is a 12 mile non-electrified rail route linked to electrified lines at each end.

Along the route it links to four more; the Midland Main Line, the East Coast Main Line, the Lea Valley Line (Stratford to Stansted and Cambridge) and the Enfield and Southbury Loop suburban lines.

Since the line can only be operated by diesel trains, electric trains (whether passenger or freight) from other routes cannot use it. These have to use the North London Line, and pass through very busy junctions at Camden Road and, more importantly, Stratford, where freight trains can sometimes delay passenger services.

This short briefing puts the case for electrifying this crucial missing link.

No longer a Cinderella Line backwater

For many years, Gospel Oak - Barking was one of London's forgotten railways; neglected and unreliable. Its trains were among the oldest on the network and lightly used as a consequence. It was a route to be avoided.

The last few years have seen major changes, including newer trains with better reliability, improved frequencies and wider publicity. This has led to a significant upturn in passenger numbers. Also more freight trains are being routed over the line.

Committed passenger service improvements

It will receive a further boost when Transport for London (TfL) and the new train operator MTR Laing (now to be known as London Overground Rail Operations) take over from November 2007. The existing 2-car diesel trains already struggle to cope during rush hours. But, users are worried that even the new 2-car diesel units, running every 15 minutes from 2009, will become overcrowded quickly. This is very likely once the line is on the Tube Map and Oyster pre-pay is available.

Benefits for passengers and train operations

Electrification would enable 3-coach electric trains to operate, transferred from the North London Line, when TfL's new trains take over that route during 2009. Electric trains would be fully overhauled and have 3 coaches, instead of just 2 coaches on the diesel trains which would be unable to cope with the peak loadings. Users want the new TfL Overground service to be popular and a success - as does TfL. If trains are overcrowded and uncomfortable, it will damage significantly TfL's credibility as a good rail operator.

Electric trains have better acceleration and could carry more passengers, relieving overcrowding. This would also ensure better use of the line's capacity. The Barking - Clapham Junction service, which TfL wants to run and was originally planned for 2011, could then be all-electric, instead of running diesel trains under electric wires for half their journey, as TfL once suggested. 14 of these renovated class 313 trains could provide the Barking to Gospel Oak Service from 2009, which could then continue on to Clapham Junction, a big benefit for passengers, and for London from 2011, once the promised signalling improvements are completed!

2-car diesel trains simply would not have enough capacity on journeys between Barking, Gospel Oak and Clapham Junction. As a bonus, train maintenance would be simpler, as the operator would not have the additional burden of fuelling and maintaining a special small fleet of diesel units, as well as the electric trains.

Freight Strategy benefits

The Gospel Oak - Barking Line is already earmarked for development as a key freight route, due to new port expansion at Felixstowe and Thames Gateway Port (Shell-haven). Electrification would help this as freight trains hauled by electric locomotives can then use the line; presently they cannot do this. This will relieve pressure on the North London Line, and the busy junction at Stratford, crucial for the 2012 Olympic Strategy.

The Department for Transport has approved an £18.5m grant from the Transport Innovation Fund to increase the track loading gauge between Woodgrange Park and Willesden to accommodate the 9'6" high-cube international containers. As this work is now authorised, very little extra work would be required to provide the additional clearances for overhead line equipment.

Electrification adds operating flexibility

Electrifying the Gospel Oak - Barking route and its connections would give rail operators greater flexibility for maintaining services during disruptions and engineering work. Also it would provide an important alternative route for electric Freightliner trains from Tilbury, and any traffic that comes from the Channel Tunnel high-speed line at Ripple Lane Barking.

Electric passenger and freight services between Stratford and Gospel Oak could be diverted through Temple Mills and South Tottenham, away from the North London Line, particularly important while the North London upgrade work is ongoing. During weekend engineering works, or even during an extended blockade of the Camden Road to Stratford section, some North London Line trains could also operate this way to Stratford.

Thameslink and Great Northern Suburban train operator, First Capital Connect, could move its electric trains more easily between its Bedford and Hornsey Depots as an operating bonus.

What might electrification cost?

Transport for London has suggested this electrification project could cost as much as £40m, according to an unpublished consultant's report. But neither TfL nor Network Rail have fully worked up costings. Network Rail apparently dismisses the idea, claiming there is not a 'business case'. Many disagree with this, including some people at TfL! If the benefits to both passenger services and freight movements were fully evaluated, there could be a very strong case for this important and crucial improvement.

Using costings quoted by rail industry specialist Roger Ford, in the professional journal Modern Railways (February 2007), the estimate could be very different, at a cost of £400,000 per track mile.

Gospel Oak Junction - South Tottenham (West Junction) is 4 route miles, 8 track miles (double track). South Tottenham (East Junction) - Woodgrange Park Junction is 7 route miles, 14 track miles, at £400,000 per single track mile. The cost for a total of 22 track miles could be as little as £9m! However as there is no ongoing electrification programme or work team ready, along with some more complex work being needed, 4 miles of the railway is elevated on a viaduct, the basic cost might double to about £20m.

Even then, £20m should pay for electrifying the whole line and links to two other electrified lines. These are to Carlton Road Junction on the Midland Main Line, and the Harringay Park curve to Ferme Park, providing a strategic link to the East Coast Main Line. Some other works are needed, including new platforms and subways at Gospel Oak, which could cost about £5 - 6m, a similar cost to the new Imperial Wharf station.

As a comparison, the M6 widening was costed at £27m for a mile of new single lane motorway.

A better greener image - improving the environment

Electric trains are cleaner and quieter than diesels, and would fit in much better with TfL's aim of promoting the Overground as a fast and modern equivalent of the Underground. This in turn would boost the image of the service and areas served by the line, thus assisting regeneration.

Cutting emissions

The Mayor plans to make all of London a Low Emissions Zone from February 2008, initially by regulating heavy lorries, then buses and coaches from July. Electric passenger and freight trains will help to reach these targets, a cut of 60% by 2025. This estimates a reduction of 7.1m tonnes of CO_2, from an estimated 11.7m tonnes in 2025, the Mayor hopes his policies will amount to cutting 30% of the total. This is across an area where motor vehicle pollution is a major problem, so cutting out fossil-fuelled trains will benefit the policy.

(CO_2 Emissions -1999 - 9.5m tonnes; 2006 - 9.6m; estimate for 2025 - 11.7m, if nothing is done. The 2025 target is 4.6m.)

Commitment to Electrification needed

The line's users and other rail experts are convinced of the case for electrification. Transport for London and the local authority led North Orbital Rail Partnership both say they remain fully committed to electrification. Since the Gospel Oak - Barking route will have gauge enhancement work carried out for the larger containers, if electrification were carried out at the same time, the total cost of the two schemes could be reduced.

TfL, the DfT and Network Rail need to embrace these basic principles. These bodies must now recognise that all of these upgrades are essential for effective network operation before 2012. The stance that this project is un-affordable and that there is no business case, is totally unacceptable.

This is the right option for the Gospel Oak to Barking Line - the sooner we start the new works, the better!