

Introduction

The Department for Transport is undertaking a consultation on the Abbey line between St Albans and Watford Junction with a view to running light rail (trams) in place of the existing "heavy rail" train service.

This is the St Albans Rail response to the consultation.

Policy Context

Strategic Policy Context : Land Use - European

The European Spatial Development Perspective and the North West European Spatial Vision identify London and the South East of England as the most significant infrastructure bottleneck in the whole of north western Europe, essentially hindering the movement of people and goods within a wider European context, with implications for all English regional economies (ref 1, section 2.27).

Strategic Policy Context : Transport - European

The most important European document is the **European Transport Policy for 2010 : time to decide**. Here a number of fundamental policies are relevant, particularly:

- Shifting the Balance between Modes of Transport, including: Revitalising the Railways for both passengers and freight, and Intermodal Transport for "door to door" movement of goods and technical harmonisation of systems, plus
- Eliminating Bottlenecks, including Multimodal corridors with priority for freight (ref 1, section 2.16).

Strategic Policy Context : Transport - National

National policy as set out in the Integrated Transport White Paper- **A New Deal for Transport** - and in **Transport 2010 – the ten year plan**, adds to these overarching objectives, with aims to achieve:

- A 50% increase in rail passengers
- An 80% increase in rail freight use, and
- Improved public transport for people in towns and villages (ref 1, section 2.17).

The Abbey line in relation to European and National Policy

The basic assumption of the proposal to run light rail on the Abbey line is that this line can be separated, to no longer form a part of the national rail network.

A casual reading of both European and National Policy suggests that the national rail network is likely to expand and particularly in the South East of England. The removal of bottlenecks, an infrastructure that supports regional economies, revitalised railways, a 50 % increase in rail passengers as also an 80 % increase in rail freight will not be achieved by simply adding more trains to existing lines, particularly where these lines are already congested.

In these circumstances, it is not unnatural to seek a strategic plan for national railways with a view to achieving at least some of the stated aims. We cannot be sure that this will happen, nevertheless it seems a little sad to assume that it won't.

There has been discussion of Orbital rail routes around London for some years. The East West Rail Consortium has been addressing this question for some time but has been unable, as yet, to define a route that is widely recognised as offering value for money, that is sensible and of strategic value (as compared, for example, with Inner London Orbital routes).

Within the local context, we note that Watford has the capability for East West rail in addition to the existing North South railway line. A key question, in response to published policies, is to consider whether there are

Orbital rail possibilities via Watford Junction. Our inquiries to date suggest that the answer is yes. Expansion of the existing network by joining together branch lines that in themselves currently require subsidies may prove to be a sound proposition, both on business and environmental grounds.

The basic assumption of the proposal to run light rail on the Abbey line is that this line can be separated, to no longer form a part of the national rail network. This would seem to be incompatible with the results of our inquiries.

There are recurring issues with national rail lines regarding local stations for stopping services and capacity for regional services. The proposal for trams on the Abbey line can be thought of, albeit on the assumption that no regional services are currently envisaged, as entirely favouring one viewpoint against the other. This is in keeping with a local council perspective.

Context for the consultation

The Abbey line light rail consultation seems to be a hurried proposal with scant regard for clearly stated policy and potential implications.

The announcement regarding trams on the Abbey line was unexpected. From then until now has been a time of pressure.

A possible Orbital route around London provides us with new rail links in the St Albans area, opening up possibilities for a more suitable site than the former Radlett aerodrome for a Strategic Rail Freight Interchange. M25 junction 22 seems to us to be a suitable area to investigate for such a possible freight terminal. (A station stop might also be provided.) There may be alternative possible locations. An Orbital route around London, in the St Albans area, requires a passenger interchange with the Midland Mainline. A passenger interchange could be provided at London Colney, where an additional stop on the Midland Mainline is already considered to be a possibility. However the proposed Radlett freight terminal effectively blocks this.

This is not the first time that light transport has been proposed for the Abbey line. It was intended to incorporate the line into the Central Herts Passenger Transport Scheme (CHPTS). CHPTS was based on the idea that trains carry many passengers by running on rails and that it would be cheaper to transport passengers in longish vehicles without the expense of rails. Hence, vehicles that can run on rails and can also run on roads. The problem was that without the rails the vehicles would inevitably be difficult to control. The proposed vehicles had already been tested in Paris. Drivers found they were unable to control them. A lamp-post was hit and the drivers went on strike. Despite this, the intention was to proceed with such vehicles in Hertfordshire. Particularly sad was that this was a one-way road in that it was proposed to turn the Abbey line into a concreted-over track for the purposes of the experiment - an experiment that had already failed in Paris. Thankfully the scheme was quietly dropped. Had objectors not raised concerns, the proposal might have gone ahead. Lives might have been lost. This is an important lesson in the importance of common-sense review. (Information on CHPTS by recollection.)

Specific response : capacity

Currently a four-car train runs every 45 minutes on the Abbey line from Watford to St Albans. It is proposed to replace this with a more frequent service, every 30 minutes, by the use of two or more trams. It seems these trams, together, will provide less capacity than is currently provided by the four-car train, although section 2.6 of the consultation document states otherwise. Passengers may need to stand, as reported in section 4 Frequently Asked Questions of the consultation document. However, with a more frequent service, it is clearly to be expected that ridership will increase. It is easy to anticipate what will happen. The line will suffer from overcrowding. Anticipated overcrowding is not new, as users of the Gospel Oak to Barking line know all too well. The short term solution for that line is to take out some of the seats, to permit more standing room.

Two ways to fix the Abbey line overcrowding problem. One method would be to re-introduce heavy rail trains. Therefore any proposed passing loop really ought to be built to heavy rail standards, even if used by trams in the short term without a heavy rail signalling system. Any proposed Statutory Instrument would do well to prevent prejudice against heavy rail operation and, in particular, specify that any passing loops built are

suitable for heavy rail operation by four-car trains.

A second method to fix the overcrowding problem, with trams, is to run more trams. In such a case, the operator will have run up a large bill building a single passing loop at Bricket Wood only to discover that more than one loop is needed and the existing one is in the wrong place.

New information was received on 26 February. We had thought (let us refer to this as case A) that anticipated increases in ridership as a result of increased frequency of service could lead to overcrowding. We are now asking (let us refer to this as case B) whether perhaps it is anticipated that trams on the line might not provide sufficient capacity to meet current peak-time demand. These are quite different. If case B applies, then we are being offered a "service" that is worse than current provision, the problem of under-utilised trains being replaced by a problem of crowded trams and that only to cater for current ridership. If case B applies, then proceeding with the current tram proposal would be a bold move, not least since passengers would be less than happy.

If the tram proposal is likely to result in overcrowding, can the proposal be defended as a response to the challenges of global warming? It would seem not. Even without increased service frequency, we might expect ridership to increase as awareness of the need for lifestyle changes establishes itself in our thinking and our consciences. To find that a proposal is before us that anticipates introducing a problem of overcrowding not previously present is to invite criticism.

The problem of overcrowding runs deeper than this. There are readily available alternatives to the railway line, including regular bus services and travel by car. It seems to have been assumed that passengers will simply tolerate overcrowding as they might, for example, in busy London suburbs or on popular commuter routes. However, passengers faced with overcrowding may choose an alternative method of travel. There is nothing to indicate that "stickiness" has been assessed. Overcrowding may prove to be self-regulating, with reduced ridership. This in turn could lead to reduced revenue and hence a need for increased subsidy.

If the service were no longer considered sustainable, might the line close? If the line were to close, might the land become available for housing? (Let us hope no-one would consider conversion of the line to a Formula One test track. Perhaps an assurance should be sought on this... straw poll... houses or Formula One test track?)

The Statutory Instrument as proposed does nothing to safeguard the future of the Abbey line. Indeed, it does quite the reverse, by removing statutory protections.

The consultation document provides no details on applicable closure procedures if statutory protections are removed from the line, as proposed. A vague statement in the consultation document that a consultation process would be undertaken by Hertfordshire County Council prior to any line closure is nowhere substantiated.

It would seem better, if trams are to run on the line, to offer fall-back provision. If the tram scheme fails for financial reasons, it would surely be desirable to leave passengers in a situation no worse than the current heavy rail service provides. Sadly, fall-back provision risks being costly, not least since the operator would need to be compensated for termination of contract, thereby perhaps removing the (apparent) financial advantages of the tram proposal.

It is a great shame that the tram proposal gives no consideration to such a key matter.

Direct trains to London

There has been a campaign for many years for direct trains on the Abbey line to London Euston. This has been argued against using a variety of arguments. It was argued that the slow lines to Euston ran too fast for trains from the Abbey line to run on to the slow lines, an argument that disappeared when a shuttle service from Watford Junction to Clapham Junction and Gatwick, itself running on to these slow lines south of Watford, commenced.

Another argument used against direct trains to London is that there is no capacity on the slow lines. Indeed, this is restated in the consultation document in section 1.6 and the Frequently Asked Questions section of the consultation document. However, we also read in the Abbey Line Community Rail Partnership newsletter (Winter 2009) that as of 13th December 2009 there will be - and presumably now is - a new shuttle service

departing Watford Junction at 08:15 for Euston. In terms of capacity, this train could commence service at St Albans Abbey station. Direct trains are most valued at peak commuter times so this train would be ideal. In other words, there is capacity on the slow lines.

It is a shame that the apparently rushed preparation of the consultation document did not permit verification of accuracy.

Incorporating the Abbey line into an Orbital route around London

If a London Rail Orbital were to be implemented as proposed, the Abbey line would be incorporated into it.

In such a case, we should expect part of the Abbey line to be upgraded from single track to dual track, and certainly that part of the line that became part of the Orbital. From How Wood station to St Albans, there is elevation of the line and also a cutting. We would expect this part of the line to remain as single track. Watford Junction would incorporate a flyover from the Croxley rail link to the Abbey line. In these circumstances, it is reasonable to envisage the connecting link from the Abbey line to the West Coast Main Line as becoming a signalled link, as indeed it was in the past, which would permit direct services from the Abbey line to London.

Heavy rail services on the Abbey line would certainly be different from the 45-minute service currently provided. Some stations on the line would be classified as minor stations. We do not know which stations would be minor stations on the Orbital until we know the route chosen for the Orbital. Stations incorporated into the Orbital would almost certainly include Watford North and Garston. Services do not stop at minor stations on the Orbital more frequently than once an hour. Therefore it is anticipated service frequency at these stations on the Abbey line would become one per hour. Regrettably, this is in contradiction to the proposed tram scheme which envisages increasing the frequency of stopping services at all stations on the line. Any decision to increase frequency is however made knowingly.

Whilst we cannot predict whether an Orbital route around London will become a reality, it would seem a little awkward to set expectations in terms of service frequency that could subsequently prove impossible to maintain.

A separate note about Bricket Wood : Bricket Wood might be classified, in Orbital scheduling terminology, as an intermediate station, just as Higham on the line from London to Strood and Chatham. Therefore we might envisage two trains an hour stopping at Bricket Wood.

A philosophical point : a cut-off point could be reached where the cost of upgrading the Abbey line to dual track is less than the cost, over many years of discussion, of avoiding it.

Heavy rail on the Abbey line

The tram proposal suffers from hidden problems. The overcrowding problem would seem to have not been resolved. This could lead to financial liabilities. There is no guarantee that the scheme will function as expected. The line might close. The consultation document would seem to have been prepared in haste and is not accurate. Expectations in terms of service frequency would be set that could subsequently prove impossible to maintain. There is a lack of financial information.

In these circumstances, could a heavy rail service on the Abbey line run more frequently than currently, without costing the earth? Here we will outline a possible method.

Some years ago a request was made for an official journey time from Watford Junction to St Albans Abbey non-stop. The official answer was 11 minutes. There are 5 intermediate stations on the Abbey line and the journey time for a stopping service is 16 minutes. We note that the non-stop journey time is equivalent to saving one minute for each intermediate station, thus reducing the journey time from 16 minutes to 11 minutes.

With a turn-round time of 3 minutes instead of the current 5 minutes at St Albans Abbey, a stopping service departing Watford Junction completes the journey to St Albans and back in 35 minutes (16 + 16 + 3). A non-stopping service departing Watford Junction completes the journey to St Albans and back in 25 minutes (11

+ 11 + 3). 35 minutes + 25 minutes = 1 hour. Therefore we can run two trains per hour if one is a stopping service and the other an express service.

Replacing How Wood and Park Street stations, which are relatively close to each other, with a station at the mid point, provisionally named Tippendale, would seem to be a possibility. From How Wood to such a new station, one only needs to walk down Park Street Lane. From Park Street station, one only needs to walk down Park Street and Park Street Lane or, alternatively, use the existing footpath that runs alongside the railway line directly from Park Street station to Tippendale.

These two stations being combined would save 1 minute in each direction for the stopping service. A half-hourly service at Bricket Wood then becomes a possibility, thus a half-hourly service at Watford Junction, St Albans Abbey, Bricket Wood together with an hourly service at the remaining stations and which are less utilised.

Two platforms would be required at Watford Junction. Only one train would access the Abbey line at any one time. No passing loop would be required. As one train pulls into Watford Junction, the other would be ready to depart.

Two train crews would be needed, one for each train. We might consider this as sub-optimal utilisation of the train crews giving rise to relatively high running costs in relation to revenue. However, there is currently no financial information to suggest that this would be any worse than the costs of a 30-minute tram service. It is possible the service could be operated with 3 members of staff.

Two trains based at Watford Junction offer flexibility. A four-car train, for example, might be taken out of service or divided to provide two two-car trains. Operational matters such as this will not be considered further here.

To estimate capital costs, let us consider the required infrastructure. Points are needed to enable access to the line from the two platforms at Watford Junction. Therefore, signalling is needed. This is where things have a habit of becoming expensive! Let us imagine what might have been provided in the past. The points might have been manually operated. There being only one train on the line at any time, access to the line might have been controlled by a staff. Instructions in those days might have been :

1. Obtain staff.
2. Set points.
3. Proceed to St Albans.
4. Return from St Albans.
5. Pass staff to other driver.

This overview of what might have been provided gives us an indication of what might be required, today : basically a modern-day equivalent.

How might we envisage the signalling functionality being provided? Two events would seem to make it possible. The first of these events would be a significant upgrade to or replacement of the West Coast Main Line signalling system, at which point incorporation of Abbey line signalling would be feasible in terms of cost, being a small feature of a significantly upgraded or replaced system. We note that little technology endures for many years even when replacement costs are high. Mainline signalling systems have a habit of being upgraded or replaced as technology evolves and new requirements emerge. They tend to be subject to regular upgrade cycles.

The second event could be construction of an Orbital route around London, in which case we would expect the Abbey line to be incorporated as part of Orbital signalling provision.

We have two events that could reasonably give rise to provision of Abbey line signalling functionality. However, we have no detailed knowledge as to when one or other of these events might occur. Also, we have no signalling in the meantime. This leads us to conclude that if a signalling system were to be procured specifically for the Abbey line, i.e. as a stand-alone system, this would be no more than an interim system. It would be replaced when one or other of the events listed above occurred.

There are downsides to a stand-alone system. However, we can be confident that it would be only an interim system. Perhaps we have a case for developing a stand-alone signalling system for the Abbey line, being an interim system. The implications of this in terms of cost are significant. In place of millions of pounds on a WCML signalling system upgrade, as has been discussed in relation to a proposed passing loop at Bricket

Wood for trains to pass, a system specifically for use on the Abbey line might be procured.

At this point, let us recall that commentators suggest rail industry costs are higher than we might reasonably hope for. Could it be that we have an opportunity to procure a stand-alone signalling system for the Abbey line as an initiative in reducing rail industry costs?

The more straightforward the required signalling functionality, the more likely it is that we have such an opportunity. Rather crudely (and to exaggerate) a system that is easy to specify could be put together by amateurs. Such a system would however not be acceptable since it would not pass the safety-critical test, i.e. not meet the requirements for a safety-critical system. This brings the issue of costs into focus. Is it possible to distill requirements, methodology, specifications, regulations, industry norms and expectations and in a timely manner so as to enable cost-effective provision?

The best way to determine the answer is to run a project, the results of which could (rather crudely) be assembled by amateurs, were it not for safety-criticality. In other words, a stand-alone signalling system for the Abbey line could be just what we need to put this process into effect.

If the train crew were required to carry a staff (there being only one train on the line at any one time), the signalling system becomes basically a platform allocation (or platform access) system and not a line access system.

Information for amateurs : Let us assume that signals would be required on each of the platforms that can access the Abbey line, as also a line-side signal in the vicinity of Watford Junction for trains returning to Watford. A driver-operated system might be appropriate, with control screens for signallers. There would be several modes of operation including driver operated and controller operated. We might ask what emergency stop provision would be necessary : with only one driver on the line, the procedure is for the driver to shout at himself/herself. More seriously, there would be emergency stop provision.

We recognise that it might be possible to commence procurement of such a platform allocation system and assess whether there is a reasonable prospect of success i.e. cost-effectively, as the project proceeds, prior to a commitment to invest in the associated infrastructure at Watford Junction, that is, prior to any commitment to roll out the system and commit to two-train operation.

Let us return to the question we asked earlier : can a more frequent heavy rail service be provided on the line, without costing the earth?

If cost-effective provision of an Abbey line platform allocation system is feasible, then the capital cost of a more frequent heavy rail service on the Abbey line can be estimated by addition of the costs for the required facilities at Watford Junction.

The capital cost of the proposed tram service includes that of a maintenance and storage facility, of a passing loop and of conversion of the line to light rail use. The capital costs of a more frequent heavy rail service and of the proposed tram scheme can then be compared. We are less than convinced that the proposed tram scheme would win, particularly when other financial factors (e.g. the side-effects of expected overcrowding for trams, as against growth potential for trains) are taken into account. The business case, in terms of operating costs and revenue, for two trains on the line may be better than for trams on the line. The subsidy required to operate a tram service might be greater than for two trains on the line.

We seem to have a case for suggesting a more frequent heavy rail service could be provided on the line, without costing the earth in capital costs.

Returning to the matter of a possible Orbital route around London, local services on the Abbey line incorporated into an Orbital would follow a pattern similar to that obtained by two platforms at Watford having access to the single track line. With part of the Abbey line upgraded to dual track as part of an Orbital, some details would differ e.g. the tight timing constraints of a single-track line would no longer apply. Frequency of service might remain unchanged although a 30-minute service in place of an hourly service might be provided at Tippendale. Also, possibilities would exist for extending the service to a hypothesised St Albans Camp Road station. Services might extend further westwards on the Orbital e.g. to Rickmansworth, Maidenhead, perhaps even via Maidenhead to the Crossrail tunnel, this being a combination of an Orbital route and a London commuter route. More traditionally, there might be direct services from the Abbey line to London Euston.

Passing loop at Bricket Wood

Trams running on the Abbey line require the construction of one or more passing loops, where they can pass. The signalling required is relatively light-weight in comparison with that required for trains to pass.

There has been a debate over many years concerning a passing loop at Bricket Wood. The cost of construction of the loop has not been the main issue. It is the cost of signalling that has been vexing. The Abbey line being connected at Watford Junction to the West Coast Main Line, it was natural to consider an upgrade to the West Coast Main Line signalling system to signal trains through a passing loop at Bricket Wood. This is an expensive option since signalling systems are safety critical and subject to controls to facilitate safe operation. Controls would be applied at every stage were the system to be enhanced. Together with system test, this is, as we understand, what makes such a proposal expensive.

What would happen if a stand-alone system were to be envisaged for trains to pass at Bricket Wood? The question may be academic, however we may learn from considering it.

To obtain an indicative cost of a stand-alone system, let us consider what might have been provided in the past. A staff and token system might have been introduced. The operation of a line with staff and token is more complicated than the operation of a line requiring a single staff. Therefore, a modern-day equivalent is also more complicated. That is life! In other words, a stand-alone signalling system for trains to pass at Bricket Wood would be more complicated, therefore likely to be more expensive, than a stand-alone platform allocation system for access to the Abbey line from two platforms at Watford Junction. Moreover, as far as we know, it has never been envisaged that Bricket Wood would become a staffed station if a passing loop were to be located there. Therefore, manual procedures e.g. for use in exceptional circumstances, are less readily available than at Watford Junction, which is a staffed station and with members of staff who have a relatively high skill level, in terms of train operations. The availability of personnel and their skill level is a key factor when determining system functionality.

Here then is the lesson that we may be able to learn from this : we may have demonstrated that cost-effective procurement of a stand-alone system for access to the Abbey line from two platforms at Watford Junction is more likely to be feasible than of a stand-alone system for controlling trains on the line with a passing loop at Bricket Wood. For heavy rail operation, we are more likely to benefit from two platforms at Watford Junction with access to the line than from a passing loop at Bricket Wood.

Specific requests to conclude

The Abbey line seems to belong best as part of the national rail network, not least because of Orbital route possibilities. If there is insistence on running trams, we have two requests. The first is for a business case for trams as an interim arrangement, this being quite different from a business case for trams as a permanent arrangement. The second is for a Statutory Instrument that provides a framework for return of the Abbey line to heavy rail operation, without quirks.

A consultation with greater accuracy would have been appreciated.

St Albans Rail

31 March 2010

Ref 1 : Policy extracts are from East West Rail Consortium : East West Rail - Western Section, Consolidated Business Case, Final Report, December 2003