

# FREQUENTLY ASKED QUESTIONS

We have addressed the concerns raised by local business people and residents in the FAQ section below. Click on the section topic 1-6 to find our answer, or scroll down the page. Any further feedback would be welcome at [enquiries@harrogateline.org](mailto:enquiries@harrogateline.org)

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## 1. Why an electric Harrogate Metro Line?

There are around 3.5m journeys p.a. currently (ave 10k/day) over this self-contained route. There are no material proposals for improvement of the whole route currently being progressed by any body, including Network Rail, Franchised Train Operators, DfT or WYPTE.

- In our lifetimes and affordable
- To relieve severe peak crowding and passengers being unable to board trains during events on the route (Cricket/Rugby/Shows/York Races etc.)
- To improve the economic well-being of the region through which the route runs
- To unlock the potential for better serving the communities along the route through the development of new stations without increasing journey times beyond current levels
- To drive increased use, modal shift and reduce operating unit costs
- Improve accessibility by large but dispersed population
- To improve connectivity between Harrogate and other key points on the route with main line services at Leeds and York
- Get Leeds & Bradford Airport on the rail map to/from Leeds, Harrogate and York
- More efficient operation, maintenance and energy usage (20-30% lower unit costs)
- To significantly grow usage and revenue and reduce reliance on subsidy
- Realise the significant journey time improvements possible by using Light Rapid Transit vehicles on account of their vastly superior acceleration and braking capabilities, which are particularly suitable over this steeply graded route with many closely spaced stations (which are already less than two miles apart through significant stretches).

## 2. How?

- A McNulty pilot, locally managed route on an "Invest to Save" and improve approach.
- Seek funding to undertake full feasibility study
- Use recently refurbished, modern electric metro rolling stock available in 2014/2015
- Average 40% increase in seating capacity and consistently across all services.
- Wider, more spacious and comfortable seats with extensive legroom and many with armrests
- Walk-up off-peak frequency

- Longer trains using selective door controls
- Park and ride stations providing car parking capacity all day
- Significant standing capacity to deal with spikes in demand during events on the route (Headingley/Harrogate/York)
- Shorter station dwell times
- 12% journey time improvement or up to around 7 additional stations possible without increasing current end-to-end journeys
- Potentially lower cost modern 750 DC electrification system using tried and tested under-running contact system
- Proven reliability
- We expect to use good/best practice already in place across the UK to achieve the best possible outcome for the Harrogate Line.

### 3. Infrastructure

#### 3.1 Is a low level DC electrification scheme not difficult to install and use on an existing railway?

The suggested type of electrification using a low level 3<sup>rd</sup> rail system is already used successfully, fastened to sleeper ends of varying types in Copenhagen, the Docklands Light Railway in London and on several other modern systems overseas. There is nothing fundamentally different with the UK rail infrastructure that means it can't be used successfully. We do not suggest that it is inexpensive, but it should be deliverable at a more affordable cost, substantially lower than the typical railway overhead line infrastructure used on the main lines. That is the point of this proposal, i.e. lower cost, improved services and value for money using available redundant rolling stock. Other rail systems have managed perfectly well in delivering similar projects and Network Rail has thus far found no cause to suggest any major issues. There is also plenty of redundant railway land adjacent to the route for the electrical feeder stations (which incidentally are small and unobtrusive). The suppliers of the equipment have also stated that it can be installed with minimal disruption to existing services.

#### 3.2 The proposal won't work because there is no spare peak-time capacity at Leeds station and because of the two single-track sections between Knaresborough and York.

There is no initial proposal to increase peak frequencies into Leeds or York, so platform capacity is not envisaged to be a problem. A half-hourly frequency of trains between Knaresborough and York could be accommodated over the single track sections but would require the re-routing of trains away from the East Coast Main Line into a new pair of platforms at the west side of York station. This is to avoid conflict with main line services at the busy bottleneck at Skelton Junction (York) and where many trains have 5-7 minutes of additional time in their schedules because of the bottleneck. Resolution is already a part of Network Rail's and York City Council's master plan for the York teardrop and station development. This proposal is therefore entirely consistent with that master plan.

#### 3.3 I live next to the railway and I am concerned that more trains means more noise

Electric trains are much quieter than diesel trains. Therefore we are confident that they will be less intrusive than the current ones, even if there are more services. Where residents may have chosen to live next to the line or a level crossing, we are confident that Network Rail will listen and respond to any issues they may have about audible warning signals to road users. The more people that use the trains, the fewer cars that will be on the roads, and that means less of the continuous background road noise created by road vehicles that we all take for granted.

#### 3.4 Wouldn't it be better to spend any funding on reinstating double track between Knaresborough and York?

Not initially, because the main bottleneck is between Skelton Junction and York, where Harrogate trains conflict with the main line services. When/if this is resolved a 30 minute regular interval service could be comfortably accommodated between Knaresborough and York over the two existing single line sections. If a park and ride facility is developed where the railway intersects with the A1M near Goldsborough (along with resolution of the York bottleneck noted in paragraph 10), it is envisaged that double track would need to be reinstated at least between Knaresborough and Cattal so as to avoid any stations on a single track section, which would exacerbate any delay/disruption. This would be relatively straightforward in signalling terms as it would remove the need for any switches to/from the single line at Knaresborough and Cattal itself, simplifying the track layout with plain line and avoiding future costly renewals of switches (points).

To achieve a 15 minute service interval between Harrogate and York, it is expected that the single line section between Hammerton and Poppleton would also either have to be "re-doubled" or significantly shortened.

### 3.5 In the current economic climate, aren't these proposals doomed to failure from the outset?

Some people have commented about the potential cost of the proposal in the current economic environment. The government have identified that rail infrastructure/service improvement schemes are a vital ingredient in stimulating local economies which also stack up on a benefit cost ratio analysis. Capital funding is therefore being protected for such schemes. Over £24bn is being spent on Network Rail nationally in the current regulatory control period 2009-2014. Therefore it is right and proper that the chamber and politicians unite to bid for some of the investment because nobody else is doing it on our behalf. Harrogate is currently left out of all the UK rail improvements yet desperately needs a value for money improvement. There is no doubt that improved rail services will make Harrogate and other places along the route more attractive for employers and as venues for events. Without this bid, we can be certain of one thing, that there will be no material improvement in the rail services over the route for some time to come and that the full potential of the route to contribute to the local economy and social well being remains seriously frustrated.

### 3.6 The proposals won't work they use an old fashioned third rail electrification system that is not allowed under health and safety legislation

Firstly, we are not proposing an old fashioned system. We are proposing a very modern system elevated approximately 0.5 metre from sleeper level, where the conductor rail is insulated with a protective sheath on all sides except the underside (bottom) of the rail, where current collection takes place. Third rail schemes are permitted under current health and safety legislation and the modern system has some benefits over other types.

### 3.7 Why aren't better top speeds being examined for the line?

The current maximum line speed between Leeds and Harrogate is 60 mph primarily on account of curve radii. Even if marginal higher top line speeds could be achieved in theory, they would not realise meaningful passenger benefits, yet could be very expensive to achieve. There is very small material value in a higher speed railway – trains would barely reach the higher speeds before having to slow down for the next stop or other lower speed restriction (e.g. the 20 mph speed restriction around the tight curve at Crimble) on the route. More journey time benefit is returned through having rolling stock which accelerates and brakes effectively, which is why it's called Light Rapid Transit.

Furthermore, more significant time saving benefits can be achieved through improved segregation of Harrogate Line local trains over the short stretches approaching Leeds and York.

### 3.8 Why isn't 25kv overhead electrification being promoted?

Standard 25kV overhead electrification was our preferred first option if funding were not a constraint. However, in examining the viability of such a proposal, we identified that:-

- (a) No cascaded rolling stock is likely to be available this decade. New rolling stock appears out of the question on grounds of cost.
- (b) Rolling stock that might become available at the end of the decade was both older and less suitable/agile than proper Metro rolling stock
- (c) The expected costs of providing the electrification infrastructure is prohibitive because of the large number of original 1850's overbridge structures on the route that would require reconstruction. Furthermore it is also envisaged that costs would be disproportionately high through the route's tunnels, including Bramhope tunnel (3.4km in length) and across four major viaducts (Kirkstall, Arthington, Crimble and Knaresborough) – all of which are Grade II Listed structures.

Recently published performance statistics also suggest that overhead line electrification imports an increased risk of disruption following incidents/component failure. National statistics show that 5% of all delays originating from rail infrastructure arise from overhead electrification components.

Against this background, we could wait another ten years for a 25kV overhead system with trains and still probably receive no improvement..... or act now and influence the future of the route for the better, as we are doing.

### 3.9 Won't ugly fencing be required?

The line is already well fenced (with so-called ugly fencing) all the way between Leeds and Horsforth. It is increasingly needed to stop trespass whether a line is electrified or not. The trouble is, you have to look hard to see it – it is so well disguised after a few years vegetation growth and weathering. London Underground has very discrete but effective fencing on the Metropolitan line between Aldgate and Amersham/Chesham through Buckinghamshire. Effective fencing does not have to be ugly!

## 4. Rolling Stock

#### 4.1 Wouldn't it be better to seek new rolling stock rather than redeployment of retired tube vehicles from elsewhere?

The rolling stock we propose to use is not retired "Tube" underground trains. They are in fact surface line trains from the early 1980's which already use the same tracks and stations as main line trains in the outer London area serving Richmond (Surrey), Wimbledon, and Upminster (Essex). They are being replaced to allow London Underground to standardise all of its rolling stock on each of its surface routes (Metropolitan Line, district Line, Hammersmith & City Line and Circle Line). Therefore there are no insurmountable issues such as with platform heights as some people have assumed would be the case. The trains all received an extensive £1m (per train) refit and refurbishment as recently as 2007. The bogies that carry the vehicles were replaced with a new design in 2000/2001 – so in many respects they are less than 10 years old and very modern looking. They have at least 20 years life ahead and experience elsewhere demonstrates that electric rolling stock of this type can operate very reliably for over 70 years (though we are not proposing such a period of operation!) This type of train can be moved up to Yorkshire over the main lines hauled by a diesel locomotive as is already the case when London Underground send their trains to Doncaster or Derby for refit and repairs. This type of rolling stock has been suggested because it can share the tracks with the existing direct services to and from London, and for which the Chamber of Commerce is continuing to seek further improvements in journey times and frequency.

The D78 trains would have a number of modifications made, including inter-vehicle gangway connections and an option for a toilet facility. A small First Class area is also under consideration in view of the significant number of business/conference visitors using the route already purchasing premium fares. D78 trains are the same size as main line vehicles, and on the Harrogate Line could on average carry around 40% more seated passengers in greater comfort than the existing trains because of their lower density and wider seating (with significantly greater legroom) spread across more vehicles.

It should also be remembered that most recent electrification schemes outside London have relied upon second hand cascaded rolling stock. The Leeds North Western electrification (Airedale & Wharfedale lines) in the early 1990's relied upon the use of re-deployed class 307 trains initially. These were built in 1956 and were already 40 years old when transferred to West Yorkshire. Despite this they brought an immediate step-change and significant improvement on the services where they replaced diesel trains. They were replaced by the slightly younger class 308 trains (built 1961) before the new class 333 trains were introduced in 2000/2001. So the notion of using second hand rolling stock to make long-term progress is not new. For the future, the new Metropolitan Line "S" trains are superior to the main line equivalents in many respects.

#### 4.2 Wouldn't it be better to use standard main line rolling stock so it can be maintained at Neville Hill depot at Leeds?

Such rolling stock isn't available for the foreseeable future and in any event it is less suitable for the Harrogate line. Part of our proposal also includes a purpose- built maintenance facility located somewhere along the route. This is primarily because the existing facility at Leeds Neville Hill is already working at full capacity and has to accept additional trains for the Airedale and Wharfedale Lines in December 2011. It also has to maintain the proposed new fleet of Intercity Express trains for the East Coast Main Lines, so a new depot is both essential and advantageous. It would bring much needed real employment to the area and a number of potential locations have already been identified. New depots have recently been built for several services across the UK because they can be purpose built to work efficiently with dedicated types of train

#### 4.3 Why not just get more diesel trains?

We have considered seeking to lobby for more diesel vehicles. There are three significant downsides to this. Firstly they will remain expensive to maintain and relatively unreliable in comparison with an electric train. Secondly, they simply cannot match the agility of a modern electric metro vehicle in terms of acceleration and braking, and so will never be able to unlock development of the route with more stations better serving the community without adding in significant extra journey time. Thirdly, there just aren't any suitable trains available (apart from new build) for the foreseeable future. Those that are likely to become available in around four years are either already earmarked for other routes or they are simply a few more 142 type Pacer trains which everyone complains about now! Trains of the type used on the Trans-Pennine route would represent a very costly over -specification. The maximum speed over the route between Leeds and Knaresborough is 60 mph, rising only to 65 mph over the two single line sections. Expensive to buy, maintain and operate 100mph diesel trains would be inappropriate and very costly to run.

#### 4.4 Why is this being proposed when Tram-Trains are being developed?

Firstly, we understand that Tram-Train is only in the first stages of feasibility development for testing and there remain many unanswered questions about its suitability and cost-effectiveness. It is therefore a considerable way off and we are looking for something both deliverable and more appropriate/adequate in our lifetimes.

However, irrespective of that, we believe that that street running is inappropriate for passengers travelling longer distances from places like Harrogate and Knaresborough because of the additional journey time and performance risk it would cause to the passengers who generate the majority of the route's revenue and journeys. A very significant part of the route's revenue earning capability is vested in long-distance journeys particularly from and to places like London and Manchester, so it is vital that the significant numbers of passengers using the route and changing into other services at Leeds and York are not disadvantaged as this would reduce the attractiveness of the region to visitors who are essential to the local economies.

It also appears the tram vehicles would cost more money to build, yet carry significantly fewer passengers than conventional electric trains and could also require improved track quality. This is why we want to encourage a more appropriate, conventional tried and tested yet innovative but value for money approach as per our proposal. The Harrogate line already carries more passengers than the Leeds-Ilkley line and desperately needs both more capacity and reliable trains that can meet the needs of the whole route, not just one or two short sections.

The proposed West Yorkshire Tram-Train services would also make it impossible to make some journeys that are increasingly popular and very well patronised e.g. Burley Park to Harrogate & v.v.

#### 4.5 Aren't ex-underground trains unsuitable for the Harrogate Line?

Many people have asked this question because they immediately perceive small deep level "tube" trains. This is perhaps the most important part of the proposal because the trains are in fact full size surface vehicles providing on average 40% more seats, with plenty of room for bikes, pushchairs and luggage. The seats on the trains are also wider and more comfortable than currently enjoyed on the route, most with armrests and with virtually unlimited legroom. One comment we saw on an underground web forum quotes "The leg room on the District line can be compared with that of a first class airline and you can listen to your iPod in utmost comfort!"

#### 4.6 Won't electric trains be less reliable in bad weather and the winter?

Bad weather is always a challenge for all forms of transport and does need to be managed carefully to ensure both infrastructure and rolling stock are resilient. In very deep snow for example, and for the greater good, Network Rail's strategy is to avoid operating risky junctions like the one at Skelton outside York, meaning that the Harrogate line sometimes can't be accessed at all. Our proposal to provide segregated operation via an alternative route would alleviate this scenario however occasionally it might arise.

On future performance – with every train a reliable electric vehicle of the same type, locally maintained and managed and with a much improved managerial focus on the infrastructure as well, we envisage a step change in overall performance of the route.

During the last winter (2010-11) for the current diesel services from November to January, the public performance measure for the route between Leeds and Knaresborough was reduced to around 84-86%, whereas it regularly achieves over 95% in most other months, demonstrating that diesel operated services also suffer from reduced reliability in bad weather.

The suggested form of electrification operates very well in the very cold and icy winters experienced in Denmark because it is the underside rather than the top of the rail where current collection takes place. It is also immune from problems in high winds (unlike overhead electrification systems) and being elevated from the ground by around 1m, unlikely to be affected by flooding.

## 5. Stations

### 5.1 Isn't opening new stations a bad idea because journey time will be increased?

We are aware that some people believe that increased journey times would arise if new stations are built. This is not the case. The proposed trains have been modelled over the Harrogate line's geography to show a 12% reduction in the current journey times or allow up to 7-8 additional stations to be built without extending the current overall journey times because of their vastly superior acceleration and deceleration capabilities. They are also considerably more nimble at stations because of the larger number of conveniently located sliding doors available for entry/egress – which can be operated by the driver. This is why light rapid transit vehicles (LRT) like the ones we propose are vastly superior for a route like the Harrogate line.

### 5.2 Wouldn't it be better to concentrate on other proposals like re-opening the line to Ripon or Otley?

We know that strong aspirations exist for the reinstatement of routes like the ones noted above. Without prejudice to any revised business case and funding for such possibilities, our proposal will significantly help the case for reinstatement because it has the potential to make available sufficient additional rolling stock for such new services at a marginal additional cost. This alone would remove a significant barrier to any possible future reinstatement of e.g. the Ripon Line, which does form a part of our future strategic options along with several other possibilities. It is therefore vital at this juncture to focus on securing the proposition of unlocking the potential of the core route first, before moving on to consider other options.

### 5.3 Are additional stations necessary? Surely if they were needed they would have been built by now?

With the current very limited diesel train resource available and the consequent additional journey time caused by the additional stops, no further stations can be accommodated on the route. In plain English this means that the trains would not get to Leeds in time to turn round and go back towards Harrogate. This is a serious constraint on the development of the route and accessibility to it by people living along it or visiting the region.

On additional stations, we have assembled all known aspirations of various bodies along the route, none of which have ever been considered as a whole previously. It appears that hitherto they have only been examined in isolation without full consideration of the impact/benefit for the whole route.

All are potentially feasible and would be subject to individual business case analyses before being developed further. In several cases they are at or close to the site of existing stations e.g. Goldsborough (A1M Park and ride) and Pool (Arthington). The two new stations that have been opened in recent years on the Harrogate Line (Burley Park and Hornbeam Park) have proved to be within the top ten the top performing new stations in Yorkshire in terms of passenger usage. Leeds & Bradford Airport is little over one mile from the line at the southern end of Bramhope tunnel for example and could easily be linked in with the Airports existing car park shuttle buses which operate all day at regular intervals and already come within half a mile of the line. It would also serve as an excellent park and ride facility for both Bramhope and Yeadon, whilst linking Leeds, Harrogate and York to the Airport. The successful Liverpool South Parkway station serving John Lennon airport is more than three miles from the airport, and yet we have our regional airport just over a mile away from the tracks but still no station.

### 5.4 Recent experience elsewhere suggests that building new stations will be cost prohibitive.

On stations, we do not believe recent cost estimates of between £4m and £7m to represent acceptable value. Much lower cost solutions need to be used and are available. Network Rail themselves have recently completed a new 190m platform with access and lighting for under £0.5m in 2010.

## 6. Services

### 6.1 Isn't it a waste to increase frequencies to 15 minutes between Leeds and Harrogate/Knaresborough?

In terms of value for money, walk up frequency has been consistently shown elsewhere to increase usage by up to 400% (when increased from 30min to 15min) because it is immediately much more attractive as a turn-up-and-go service. It is essential to make public transport more attractive to motorists by improved frequency and accessibility. It is highly cost effective given the electric trains are 25-30% more efficient to operate and low cost to acquire and maintain. Government targets demand a significant reduction in CO2 emissions and growth in the use of public transport is a vital ingredient in achieving this.

### 6.2 The proposals won't work because there is not enough capacity between Harrogate and Leeds

It is envisaged that for operational flexibility, Platforms 1-6 at Leeds and 8-11 at York would be electrified for Harrogate line trains. The signalling system between Leeds and Harrogate is being renewed in 2012 by Network Rail. This will comfortably allow trains between Leeds and Harrogate to operate at 10-15" intervals and removing a long standing operational constraint on the route.

### 6.3 What research has been undertaken to verify what passengers want?

To avoid incurring unnecessary costs, we have used existing verified public opinion already in the public domain through the bi-annual National Passenger Survey (conducted by Passenger Focus) to inform these proposals. The proposals address the top five issues repeatedly stated by passengers to be of importance, including value for money (these proposals would enable a far more efficient operation of the route with more seats/services), punctuality/reliability (electric trains are significantly more reliable than diesels), ability to get a seat (on average the trains provide 40% more seats than currently on offer) and more trains when people want to travel (increased frequency). Passenger Focus research also includes passenger expectations from new rolling stock, which indicates a preference for more comfortable seats, improved ability to get a seat and proper provision for standing passengers. The rolling stock proposed addresses all three of these key expectations.