

**TESTIMONY OF
JIM STEER
FOUNDER AND DIRECTOR OF STEER DAVIES GLEAVE**

**28-32 Upper Ground
London
SE1 9PD
United Kingdom
+44-207-910-5000**

**BEFORE THE
UNITED STATES SENATE COMMITTEE ON COMMERCE, SCIENCE, AND
TRANSPORTATION**

**HEARING ON
“THE FUTURE OF PASSENGER RAIL: WHAT’S NEXT FOR THE NORTHEAST
CORRIDOR?”**

**April 17, 2013
RUSSELL SENATE OFFICE BUILDING, ROOM 253
WASHINGTON, DC**

Good morning Mr. Chairman and members of the committee. Thank you for holding this hearing and for the invitation to testify today.

I am Jim Steer, the founder and Board Director of Steer Davies Gleave, international transportation consultants; and the founder and Director of Greengauge 21, a non-profit public interest group which has undertaken extensive planning and research into high-speed rail in Great Britain. In addition, I am President-Elect of the Chartered Institute of Logistics and Transport, the leading association of transportation professionals in the United Kingdom.

A close parallel to the Northeast Corridor

Before discussing the Northeast Corridor, I think it may be helpful to the Committee to share the experience of a close parallel, the West Coast Main Line in Great Britain. The West Coast Main Line is a 400-mile rail corridor that connects London with some of the UK's largest cities and key economic hubs, including Birmingham, Manchester, Liverpool and Glasgow. The geography and population of the UK are similar to those of the Northeast Corridor region, with about two-thirds of the UK's population of 60 million served by the West Coast Main Line compared with a population in the Northeast Corridor of 52 million.

There are similarities in the constraints faced in the Northeast Corridor and those along the West Coast Main Line:

- There is increasing highway congestion between the cities along the corridor and limited opportunity for additional capacity;
- There is pressure on airport capacity;
- There is strongly growing demand for rail travel;
- Intercity, regional and commuter passenger rail and rail freight compete for paths over the same tracks; and
- There is a need to replace and upgrade whole-system infrastructure while keeping the railway open to traffic.

The existing infrastructure of the West Coast Main Line has been subject to a major renewal and upgrade ('Route Modernization') which is now substantially complete at a cost of

\$13 billion. The modernization was designed to replace life-expired infrastructure and at the same time increase capacity and reduce travel times. The work was undertaken over a period of 10 years, and resulted in considerable disruption to corridor rail travel during this time. Nonetheless, a much improved service has been provided. Intercity train frequencies have been doubled and journey times reduced by about one-fifth. Ridership has increased dramatically as a consequence, but all of the additional capacity provided by this work and subsequent train lengthening is expected to be used by the mid-2020s. As a consequence, there is limited opportunity for the line to service the needs for growing commuter rail and rail freight - or indeed for more intercity travel.

In the early 1990s, the UK government began a major privatization of the railways, establishing a structure whereby track ownership and train operations were separated and operators were required to pay transparent access charges to use the infrastructure. Today, as with nearly all of the UK rail network, the West Coast Main Line track and other infrastructure is owned by one organization, Network Rail, but passenger services are provided by separate private companies operating under a concession structure. The government specifies and organizes a competitive bidding process, and awards concessions to private operators who then provide passenger services along a route (or series of routes). Private sector freight companies operate on an open access basis over Network Rail tracks. To implement this structure, the government established one public sector agency to regulate the access charges and a second public sector agency to award and manage the concession (franchise) agreements.

In 1997, I led Virgin Trains' successful bid for the franchise to run inter-city services over Britain's West Coast Main Line, and helped Sir Richard Branson build a management team to implement the radical changes contained in the franchise bid. After four years in this capacity, I joined the Strategic Rail Authority - a Government agency newly set up to take over responsibility for awarding and monitoring rail franchises while introducing forward planning to the privatized railway. I was responsible for industry-wide planning, and I also chaired the West Coast Program Board which oversaw the introduction of the new fleet of 125 mph inter-city trains, enhanced infrastructure (the Route Modernization program described above), and a transformed service timetable.

When the Strategic Rail Authority was dissolved in 2005, I set up Greengauge 21 to lead a debate on the case for high-speed rail in Britain. In 2007, we proposed that the key first step was a high-speed line in the West Coast corridor, and two years later the Government initiated the project ('HS2'). This will make possible much faster journeys between key city pairs and will also release capacity on the West Coast Main Line to deliver benefits to regional and commuter passenger rail and rail freight operators.

My experience with the West Coast Main Line in Great Britain taught me several lessons:

1. Incremental improvement with proven technology can deliver transformational benefits within 10 years, even when applied to a busy railway - but this entails significant service disruption.
2. Even if the private sector provides little equity, it is able to deliver fleet procurement and service upgrades more quickly and more efficiently than Government. In the West Coast case, there was a clear remit and mandate from Government (through contracted franchise commitments) for the private operator to replace a life-expired train fleet procurement and to upgrade services; without both the government's mandate and Virgin Rail Group's firm commercial resolve, these wouldn't have been delivered.
3. Success is measured in part by rapidly growing demand and revenue. Ridership more than doubled - and was forecast with reasonable accuracy. While this was built into the franchise bid and plan from the outset, a 15-year franchise term still limits the planning horizon. Somebody has to take an even longer-term view. It is clear that the route will have reached capacity (no more train paths) by 2026, if not sooner, despite capacity increases created by the Route Modernization program.
4. Government officials and others question, with hindsight, whether the \$13 billion West Coast Route Modernization should have proceeded, and whether it would have

been better to build a new high-speed line instead. It's a fair question, but over 75% of the Route Modernization cost was incurred on a backlog of infrastructure renewals that would have been needed anyway to support continuing operation of commuter services and freight alongside any new construction.

5. Virgin Trains, which paid significant surcharges on its track access fees to fund the upgrade, was provided with protection from competitive entry by other passenger train operators buying spare slots on the West Coast line (open access operators) for the full 15 year term of the Virgin franchise. The role of an independent Rail Regulator to enforce these arrangements, and the contract between Virgin Trains and the infrastructure owner (Railtrack/Network Rail) was essential to the investment model.

International High-Speed Rail

I have followed the progress of high-speed rail around the world, traveling on the first French TGV line soon after it opened in 1982 with a small delegation from British Rail (then state-owned). At the time, I was responsible for developing a strategy for British Rail's new business sector ('InterCity') to turn it from a loss maker (meeting only 80% of its costs) to a profitable business (which was achieved by the late 1980s). I acted as adviser to the consortium that won the Public Private Partnership (PPP) to develop the Eurostar service and build the new high-speed line between London and the Channel Tunnel (mid 1990s). And I was responsible for a major study for the Spanish government rail operator RENFE, examining the prospects for the Madrid - Barcelona high-speed line before it opened (in 2006). So I have seen and experienced various ways of addressing the challenge of how best to transform traditional inter-city passenger rail services into competitive and prosperous entities.

Why have countries facing this challenge invested in high-speed rail? I believe the reason is simple: they have concluded that the economic benefits to the nation of this investment far outweigh the costs. High-speed rail enables faster, more reliable and more convenient travel. Shorter more dependable travel improves business efficiency. By attracting travelers who would otherwise fly or drive, high-speed rail takes pressure off the wider

transportation network. This also allows time spent traveling to be used more productively. There are important safety, carbon and valued regional & urban redevelopment benefits too. But most important of all, in my view, is the point that high-speed rail builds transportation and thus economic capacity. It achieves this through two parallel strands: the extra capacity created on the high-speed line itself and the opportunity to completely recast timetables for the existing railroad to provide more commuter rail and freight services. It therefore supports businesses, expands commuting catchments and helps industry and trade. The economic returns are huge.

My colleagues at Steer Davies Gleave have worked extensively around the world to develop and apply methodologies that identify and quantify the economic impacts of transportation investments - including documenting and recommending best practice analytical methods for high speed rail for the USDOT Office of Inspector General.

Alongside the economic rationale for high-speed rail investment, I believe that international experience provides lessons that are relevant here in the US - and especially in the Northeast Corridor - when considering how to advance from a conventional to a high-speed passenger rail system. These lessons can be grouped under four headings:

- Funding;
- Organization;
- Leadership; and
- Planning.

Funding

I know of no national high-speed line or network that has started out successfully reliant on private sector funding. All have required the substantial up-front investment to be met by Government. True, this might take different forms - including loan guarantees that provide private sector access to borrowing at low interest rates. But for the private investor, there are simply too many up front risks, such as:

- Planning consent & environmental approvals;
- Construction cost and timescale;
- Network and/or system integration risks;
- Revenue risks; and
- Regulatory and political risks too.

As a high-speed line or network is built out, these risks diminish. The path through planning consent becomes better understood; construction prices get tested in the market-place; and, with a high-speed service in operation, market shares and revenues are revealed. In short, the high-speed rail proposition gets proven, including in commercial terms. Provided that political resolve remains unwavering - and in a democracy, this means there is a broad bipartisan or cross-party support for the overall vision - then there is a chance that private sector input to funding can be obtained for the next stages of the program.

Let me mention three examples - each one different, reflecting the varying circumstances in three European countries - France, Italy and Great Britain where this has happened.

The French TGV network was developed and funded by SNCF, a totally state-owned organization from the early 1980s onwards. The first line between Paris and Lyon is the busiest, and it remains entirely state-owned and operated. Right now plans are being progressed to duplicate it with a second high-speed line serving the same end-points but new intermediate cities.

The pattern of funding French high-speed lines evolved as the network was developed. The line between Paris and Strasbourg ('TGV -Est'), for example, was funded by the French Government through SNCF, but with substantial funding too from the regions and cities served. Again, all funding came from the public sector.

The line currently under construction between Tours and Bordeaux (189 miles) represents an extension to an existing high-speed line between Paris and Tours ('TGV Atlantique'). The most problematic section of the overall route (access to central Paris) has

been built; the market for services is proven; now it's a matter of shortening an already improved journey between Paris and Bordeaux. This project (worth \$10.3 billion) has been privately funded through a PPP structure. As an extension to what is now a core national network, the perceived risks are much lower. Political resolve (for now) remains intact. And the state, through SNCF, is obligated to 'buy' a specified quantum of train paths from the company that will own and maintain the new line on a 50 year concession, thus providing some degree of revenue predictability.

The Italian experience is very different. Construction of the high-speed line between Milan and Rome/Naples was started before WWII. It has opened in stages with fast services (up to 155 mph) starting in 1988. It has been entirely funded and is owned by the Italian State (through the railway owner FS).

My colleagues in Steer Davies Gleave have acted as advisers to a funding group, led by four Italian businessmen, that decided to enter the intercity passenger rail market via the provisions of Europe's open access regulations; these now require EU countries to provide non-discriminatory access to the country's track. The new company, NTV, commissioned its own fleet of 220 mph high-speed trains, built depots to maintain them, recruited its own operating staff and in 2012 introduced a new service in competition with the State operator *Trenitalia* over the State's high-speed line. NTV pays a track charge, as an open access operator, but has not been able to access the busiest stations in Rome and Milan.

In Great Britain, the pace of high-speed rail development has been slower. What is now called High-Speed One (or HS1, the \$8.5 billion 68 mile high-speed rail link between central London and the Channel Tunnel) was opened throughout in 2007 - ultimately on time and on budget, but only after a Government-backed rescue of the private sector consortium that had won the right to build and operate it. Just three years later, the high-speed rail infrastructure (but not the Eurostar service which runs over it, linking London with Brussels and Paris) was tendered as a 30 year concession. This tender was won by a consortium of Canadian Pension Funds, who paid \$3.1 billion, in effect to the UK Treasury. They will earn a return from track access fees from two train service providers (and they hope, in future, a third). So the

Government was able to recoup a substantial part of its capital outlay once the risky period of planning, construction and service introduction had been safely negotiated.

Note that in all three cases, charging for access to high-speed infrastructure is a crucial part of the commercial structure that has enabled the private sector to participate.

Organization

In the three cases I have mentioned in Britain, France and Italy, a single organization was responsible for the crucial stage of planning together the infrastructure and trains - even though, in practice, the new lines have been able to accommodate differing train designs and operators once built. This unified organizational structure is, in my view, important because it removes *interface* risk. Where this has not been the case (the Dutch high-speed line being an example), a more complex funding structure has been necessary and the technical challenges which lie across the track-train interface (in the Dutch case, train control systems) proved problematic.

In the British case, a dedicated team was established to create a high-speed rail project delivery organization that combined expertise from British Rail (which was being privatized at the same time) and the private sector. This provided the single-mindedness that is necessary to deliver complex major construction projects - in this case in a sensitive rural environment (across the County of Kent) and through East London to a much-loved historic station that was transformed as part of the project, in the center of London (St Pancras).

Leadership

In each country, there has been a continuity of political consensus through many changes of government.

In Britain, the underlying basis for the shared political support stemmed from a series of factors:

- Agreement that investment in infrastructure is essential for national economic competitiveness;
- A recognition of the national importance of the corridor and need for transport service and capacity improvements to it;
- Agreement that improvements to other modes serving the corridor are not feasible or as effective;
- Acceptance that the costs are worth bearing and can be managed (HS1 was ultimately delivered on time and budget); and
- Acknowledgement that the private sector can't shoulder the initial financing and consequently that Government has a legitimate role in catalyzing and advancing the project.

In Britain, the political leadership for HS1 came from Lord Heseltine (Conservative) and John Prescott (Labour). The initiative to develop the much more substantial HS2 (the dedicated high-speed line linking London, Birmingham, Manchester and Leeds) came from Secretary of State for Transport Lord Adonis (Labour) a year after the opposition Secretary, Theresa Villiers (Conservative) had committed her party to develop the project and provide \$23 billion funding. The project has since been expanded, and now has a price tag of \$50 billion, but it remains the intention of the current Coalition Government (Conservative and Liberal Democrat) to proceed on essentially a Government-funded basis. This also has the support of the Labour opposition and of the Scottish Nationalist Party.

Planning

The particular challenge to which I would draw the Committee's attention is the need to consider existing rail networks - and their attendant expenditures on maintenance and renewal - *alongside* the arrangements needed for new construction. I contend that it would be wrong to suppose that one type of investment should necessarily follow the other. On the NEC, this is a moment for coordinated strategic planning, using common investment appraisal methods to ensure the best value return on public funds. New build high-speed rail releases capacity that can be used to benefit users of the conventional rail network. This type of benefit is one of the prime motivations for investments in high-speed rail. In France, it is now

accepted that investment in existing lines has been neglected while the new build high-speed line program has progressed.

France also provides useful evidence on another benefit of having clear forward plans. There, experience with the TGV network suggests that urban redevelopment around new high-speed rail stations takes place over a lengthy 15 year timescale. The interesting point is that this development activity - which is of course private sector-led - starts well before the new line is open, typically 7-8 years ahead. In the UK, the 68 mile HS1 project is estimated already to have led to \$15 billion in private sector investment in urban redevelopment projects around the new stations built on the line.

Northeast Corridor

Here in the US, during 2011 and 2012 I acted as Lead Technical adviser to Amtrak, working in a team that blended the expertise of Steer Davies Gleave's Boston team specializing in demand and revenue analysis of transportation projects and the financial expertise of the professional services firm KPMG. Our task was to develop a financial and business plan for Amtrak that embraced:

- The Masterplan program, which would return the Northeast Corridor to a state of good repair and accommodate expected expansion in commuter rail, freight and Amtrak services through to 2030; and
- The NextGen high-speed rail program, which would see a new true high-speed rail network implemented by 2040.

In carrying out this work, I was able to visit the whole of the existing corridor and engage closely with Amtrak at the officer and Board level.

As detailed in the charts below, ridership on Amtrak's Northeast Corridor services (especially Acela Express) has been increasing steadily, and Amtrak is now capturing 60% of the air/rail market between Washington and New York and 50% of the air/rail market between New York and Boston. Running more services, whether intercity or commuter, is constrained

by a series of bottlenecks along the corridor. Capacity limits have been reached on the Acela services, and more growth is now taking place on the Northeast Regional services as a result.

FIGURE 1 AMTRAK NEC RIDERSHIP (IN MILLIONS) BY FISCAL YEAR

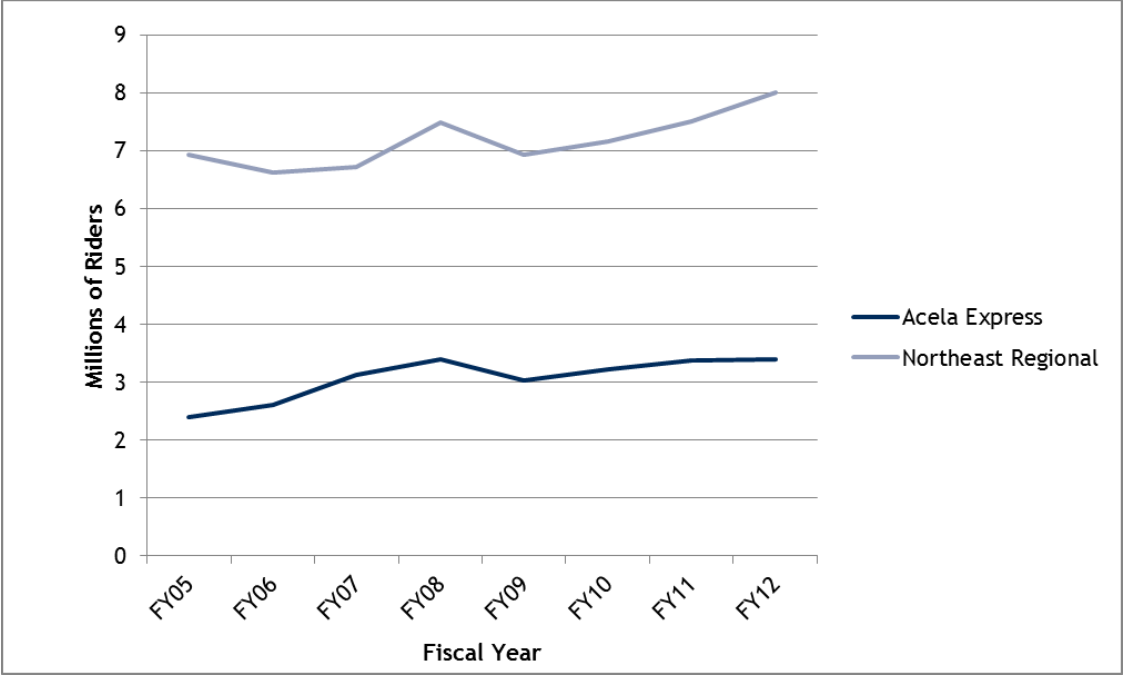


FIGURE 2 AMTRAK NEC ANNUAL RIDERSHIP GROWTH

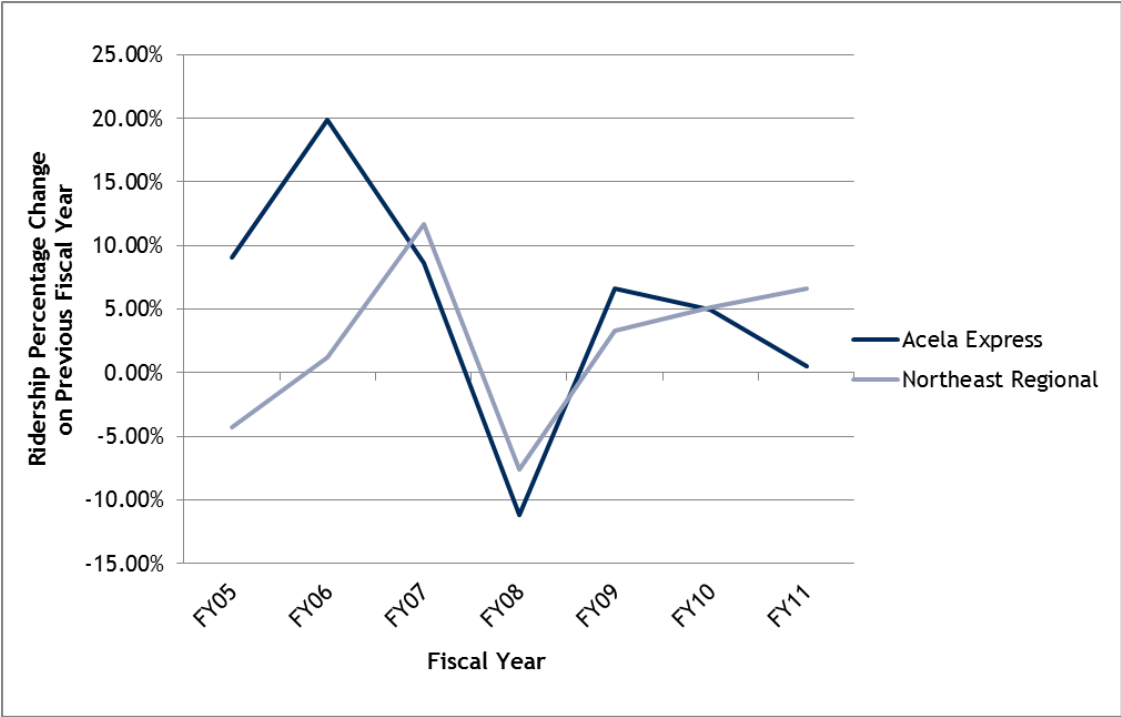


TABLE 1 AMTRAK NEC RIDERSHIP GROWTH

Train Name	FY05-12 CAGR	FY10-12 CAGR
Acela Express	5.1%	2.7%
Northeast Regional	2.1%	5.9%

It is clear to me that there is an overwhelming case for major investment in rail transportation in the NEC.

If the United States Government, the States of the Northeast Corridor, Amtrak and other key stakeholders come to the same conclusion, they will be faced with the challenge of how to implement such a large scale program.

I have ten observations to make on this challenge:

1. There are advantages in having a **single entity with overall responsibility** for at least the early stages of development of a transformational effort such as the introduction of high-speed rail. If Amtrak didn't exist, I believe it has been said, you'd have to invent it - and as far as the prospects for the NEC are concerned, I think that is correct.
2. Major investment as envisaged for the NEC must be broken down into **manageable stages**. The sooner the early success of a separable new product can be created - separable in a verifiable commercial sense - the sooner it would be possible to draw in private sector finance to fund subsequent development stages.
3. There needs to be a **clear mandate from the Federal and NEC state governments setting out the desired outcomes**, and - given the implementation timescales, which spread over decades - a significant level of bipartisan support is essential if there is to be efficient progress made, and stop-start is to be avoided.
4. There also needs to be substantial up-front Federal (or possibly, multi-state) **funding**, on a level above and beyond that available through existing programs.
5. Amtrak's adoption of business lines is an inspired development that retains the necessary integrity of a single agency (see point 1 above) while facilitating the evolution towards an infrastructure owner-operator business that is remunerated through **transparently set track access fees** applied to the multiple operators who use the corridor. As required by the PRIIA legislation, it is extremely helpful for decision-making on investment choices and for attracting future private capital to have track charges that reflect costs in a normal business-like way. In the longer term, this will serve to drive more efficient operating practices and therefore potentially reduce Amtrak's reliance on Federal funding.
6. Along with other interested parties in the Corridor, Amtrak has made submissions to the FRA's ongoing Passenger Rail Corridor Investment Plan (which consists of a Tier 1 Programmatic EIS and a Service Development Plan), setting out differing

scales of investment and outcomes. The best overall approach will probably be a **combined upgrade/new build program**. New build will most likely be to high-speed standards, since study after study shows this delivers the best value return on investment. The right balance requires a serious attempt to look at the alternatives alongside one another in an unbiased way. It would be wrong and wasteful to assume that the priority is to ‘fix the existing railroad’ first - as if that ever reaches a totally acceptable end-state - and then, as that railway gets full to capacity, to start to thinking about new construction (possibly to high-speed standards). You do not face the same situation in the Northeast Corridor as the UK faced 16 years ago with the West Coast Main Line, when new build high-speed rail was not on the agenda at all. Here it is on the agenda, but considered choices still need to be made. New build and upgrade both deliver more capacity and better reliability. New build has the advantages that:

- (a) It is less disruptive on to existing services during construction;
- (b) It can lead to a separation of rail traffics by type and speed, improving overall network efficiency by releasing capacity on existing lines as well as providing separate new capacity for high-speed; and
- (c) It offers the potential for very high-speed service, enabling step change journey time reductions, and it will bring greater benefits including more widely across the other transportation modes in the corridor.

In short, high-speed rail lines are about capacity - with the ability to bring additional benefits from transformational journey times an add-on advantage. The focus on capacity was the key driving factor in countries such as France at the outset of their high-speed line program, and it is the right way to examine the prospect in the NEC as well.

7. My own view is that there are limits to what can be done through upgrading existing lines. The practice adopted in the NEC, which is one of great reluctance to

lose continuity of service while upgrades are in progress, leads to very lengthy implementation times. It may be **best in some situations to build new lines first** so that upgrades can be carried out on the existing corridor with at least some of its traffic load diverted away on to the new line.

8. As for where to make a start, the **Gateway project** is rightly seen as a priority because NEC capacity constraints between Newark and New York City represent a significant bottleneck. Many smaller projects in the Masterplan should also be progressed, once they have been examined together with new sections of high-speed line and incorporated into an integrated program. Sections of new high-speed line such as across the New England States could well be developed away from the existing coastal alignment, perhaps by a third party, as part of an overall plan.
9. In our consulting assignment for Amtrak, we identified an improvement to a section of route across Maryland and into Delaware that offers as much as 25 minutes off journey times, requires no new stations and has a cost estimate of \$12 billion. Along with other options, I believe this should be examined by Amtrak and the FRA for early adoption (by which I mean by the 2020s). It would **showcase a genuine high-speed capability** and allow full testing of 220 mph operation in the USA.
10. In the longer term, with increased capacity available, it would be possible to see new market entrants providing services on the NEC, offering competition and customer choice. It will also be possible to introduce **private sector funding** and direct returns to the US public account - for instance by a long-term concession for new (or possibly enhanced) sections of route. But these are for the future, and it is essential to realize that the risks around investment in the first place need to be minimized, including competition risk. Once the program is underway and the operating and commercial outcomes are more predictable, additional service providers add the prospect of an upside return for infrastructure investors.

Once again, thank you for the opportunity to testify today and I look forward to answering your questions.