

WRITTEN SUBMISSION FROM STRATHCLYDE PARTNERSHIP FOR TRANSPORT  
16 OCTOBER 2008

INQUIRY INTO THE POTENTIAL BENEFITS OF HIGH SPEED RAIL SERVICES

Strathclyde Partnership for Transport (SPT) would like to thank the Committee for the opportunity to contribute to this inquiry.

Established by the Transport (Scotland) Act 2005, SPT is the Regional Transport Partnership for the west of Scotland covering 11 full council areas as well as part of Argyll and Bute, with a population of 2.14 million.

SPT has a variety of planning and operational roles, including preparing the statutory Regional Transport Strategy, operating the Subway, supporting socially necessary bus services, operating the Renfrew-Yoker Ferry, providing integrated ticketing, promoting sustainable travel, operating bus stations, improving interchange between modes, and improving transport access to healthcare<sup>1</sup>.

While SPT's statutory powers in relation to the rail network were transferred to Transport Scotland in 2005, SPT continues to have a role in promoting and supporting projects on the rail network in the west of Scotland. This includes new services, improved interchanges, station facilities, developments, and strategic park and ride sites.

'A Catalyst for Change', the Regional Transport Strategy (RTS) for the west of Scotland 2008-21<sup>2</sup>, was recently approved by Scottish Ministers. The RTS contains a series of Strategic Priorities for transport in the west of Scotland which SPT and partners will work towards to achieve the RTS vision of '*a world-class, sustainable transport system that acts as a catalyst for an improved quality of life for all.*'

The Strategic Priorities of the RTS that support the development of high speed ground transport between Glasgow and Edinburgh, England and Europe are:

- *Developing the mass transit network*
- *Improving access to key gateways*
- *Improving cross-city and cross-region links on strategic corridors*
- *Improving sustainable connectivity for business and freight*
- *Encouraging modal shift to more sustainable modes*

Since its establishment in April 2006, SPT has investigated and promoted the prospect of high speed ground transport (HSGT)<sup>3</sup>, particularly between Glasgow and Edinburgh. SPT is therefore keen to contribute positively to the ongoing debate on the merits of its introduction both between Glasgow and Edinburgh, and in connecting Scotland with the rest of the UK and Europe.

To this end, SPT has visited the Maglev<sup>4</sup> system in Shanghai, has encouraged media interest and debate on HSGT, and furthermore has commissioned the University of Glasgow – in partnership with the Universities of Southampton and Plymouth, and Geoeconomics - to undertake a strategic analysis of the technical issues and wider economic benefits of introducing HSGT on the Glasgow – Edinburgh corridor. This work is due to report in December 2008, and emerging evidence from the study has been used in the preparation of this response.

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<sup>1</sup> More information on SPT's activities is available at [www.spt.co.uk](http://www.spt.co.uk)

<sup>2</sup> A copy of the RTS can be downloaded from [www.spt.co.uk/rts](http://www.spt.co.uk/rts)

<sup>3</sup> The term HSGT covers both conventional high speed rail technologies, and also new technologies such as Maglev.

<sup>4</sup> Maglev, short for Magnetic Levitation train, a transport system that uses magnetic forces to suspend and propel the vehicle.

SPT has also commissioned preparatory work to consider implications for existing transport hubs if a HSGT terminal were required in Glasgow city centre. This work is examining opportunities for the potential integration of an HSGT terminal with the existing transport network, linking HSGT with the national bus and rail networks, with the Subway, and potentially with the Glasgow Airport Rail Link (GARL).

SPT are also contributors to the UK-wide 2008/09 High Speed Rail Development Programme being led by Greengauge 21<sup>5</sup>, a not-for-profit organisation created to research and develop the concept of high speed rail (HSR) in the UK. The 08/09 Development Programme is examining opportunities for a High Speed 2 (HS2) line between London and Scotland.

SPT would like to make clear that the comments contained within this response are based on the potential benefits of the introduction of an HSGT link within Scotland.

***What do you think could be the potential economic and environmental benefits from the development of a high-speed rail link network?***

The introduction of HSGT is a 'step-change' transport intervention. This means an intervention of sufficient magnitude to have long-term, nationally significant effects in economic, environmental and social terms. It is therefore vital that a balanced, long-term view is taken, and that the economic, environmental and social benefits and costs are considered as a whole, as they are not mutually exclusive.

The Scottish Government's (SG) aspirations for a 'step-change in economic performance' would appear to resonate with such a 'step-change' transport intervention. The SG acknowledge that the basis for Scotland's future sustainable economic growth will be a 'critical mass of knowledge, skills and connectivity'<sup>6</sup> i.e. creating and growing a 'knowledge economy'.

The agglomeration forces which drive the growth of a knowledge-intensive economy are primarily dependent on often intangible assets: tacit knowledge and face-to-face contact. Scotland's economic future – of which the Glasgow-Edinburgh axis is the powerhouse – will be increasingly based on this for sustained economic growth. By assessing the current knowledge-intensive nature of the Scottish economy, and its predicted growth, an appropriate context is created for assessing future demand for HSGT.

Within this context, transport is a key enabler for the 'knowledge industry', allowing the building of relationships, the creation of networks and enabling opportunities for discussion and negotiation in business. Interventions that reduce the costs of a dependence on tacit knowledge while increasing opportunities for it create the basis for sustained economic growth. Sustaining and growing a knowledge economy in Scotland in the long-term would therefore appear to create the economic demand for an HSGT link. As the Scottish knowledge economy grows, so does the demand for HSGT.

Wider than this, the introduction of HSGT is an attractor for mobile global investment, and provides significant opportunities for marketing Scotland as an innovative, progressive country. Furthermore, the regeneration opportunities of HSGT are sizeable. In London, High Speed 1<sup>7</sup> (HS1) has generated £10 billion worth of regeneration investment at King's Cross, Stratford and Ebbsfleet, significantly more than was originally estimated.<sup>8</sup>

Regarding the positive environmental benefits of HSGT, it is important that the direct impacts of its introduction – the reduced carbon footprint of passengers who use it – are considered alongside its indirect impacts. Within Scotland, these are likely to be a decrease in private car usage – and a resultant reduction in congestion – meaning a decrease in harmful emissions.

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<sup>5</sup> Further information on the 2008/09 High Speed Rail Development Programme and Greengauge 21 is available at [www.greengauge21.net](http://www.greengauge21.net)

<sup>6</sup> The Government Economic Strategy (2007) Scottish Government (p12)

<sup>7</sup> HS1 is the 'Eurostar' service between London and Europe.

<sup>8</sup> Source: Greengauge 21.

At UK / Europe level, in addition to the above, there is likely to be a significant reduction in air travel. This is evidenced by the fact that the main transport mode between London and Brussels is now High Speed 1, accounting for 70% of all journeys.<sup>9</sup> Furthermore, emissions per Eurostar passenger are 10% of those who travel by air and all journeys are now carbon neutral.<sup>10</sup>

An issue for any HSGT scheme is that in any assessment of the benefits and costs, there is often a focus on the start-up capital costs, and therefore the environmental benefits are not given the attention they deserve. As mentioned above, this is not conducive to a long-term, balanced assessment of HSGT.

In summary, a robust, measured assessment of the economic, environmental and social impacts of HSGT link is essential. Furthermore, if Scotland is to build and grow its 'knowledge economy', HSGT would appear to be a suitable method of meeting future economic demand, and stimulating growth. Lastly, the direct and indirect positive environmental impacts of HSGT are significant.

### ***What would be the costs of any new links and how would they be funded?***

By definition, a 'step-change' transport intervention such as HSGT will require significant start-up costs. This cost will depend on the type of system chosen: traditional HSR ('wheel on steel') such as Eurostar, or an innovative option such as Maglev.

Work is ongoing by a number of organisations to assess the cost of introducing further HSGT in the UK, and therefore published costs of potential schemes are preliminary at best. A report for Transport Scotland<sup>11</sup> in 2007 estimated that the capital cost of a traditional HSR line between Glasgow and Edinburgh would be in the region of £7bn. However, based on emerging costs – on a pro-rata basis – by Greengauge 21 for the HS2 line between London St Pancras and Birmingham, it could be significantly lower, around £4bn. Funding such a scheme would be challenging, but a PPP<sup>12</sup> model, or more likely, a model under the developing Scottish Futures Trust, is likely to be the most appropriate method.

For Maglev, the cost is more difficult to quantify at present. However, the aspiration of the scheme promoter – UK Ultraspeed – is that 100% of the start-up costs are sourced from the private sector, but with the Scottish Government making regular annual payments to the operator in return for this. It is anticipated that these will be in the region of £100m-£200m per annum. However, at the end of the concession period – around 30 years – the asset would revert to public ownership.

Notwithstanding the capital costs, it is vital that ongoing operational and maintenance costs are also taken into account. Again, this will be dependent on the technology chosen. For traditional HSR, based on estimates contained within the Transport Scotland report referred to above, annual support is likely to be in the region of £16-20m, although this could be lower if the capital cost of the scheme is lower than the £7bn anticipated. The promoters of Maglev highlight one of the benefits of their system is that operational and maintenance costs are one-third to one-half lower than those of traditional 'heavy rail'.<sup>13</sup>

In conclusion therefore, an HSGT link is likely to require significant capital costs, and depending on the option chosen, will need sizeable operational and maintenance costs. There are also a number of options available for funding, and SPT would recommend that consideration in any assessment is given to the initial and ongoing impact on the 'public purse' over the full life of the project.

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<sup>9</sup> Source: Eurostar

<sup>10</sup> Source: Eurostar

<sup>11</sup> Jacobs UK Ltd (2007) Strategic transport projects review. Edinburgh-Glasgow Rail improvements. Final report October 2007.

<sup>12</sup> Public Private Partnership

<sup>13</sup> Source: UK Ultraspeed ([www.500kmh.com](http://www.500kmh.com))

***What would be the likely timescale for delivering a new network?***

Again, timescales for delivery of a HSGT network are heavily dependent on the technology chosen. The planning and approvals process for such a large-scale scheme will require significant time and resources.

However, at a strategic level, it can be anticipated that design and build of a HSGT route within Scotland – either HSR or Maglev – could in theory be completed and operational within 3-5 years as a minimum, dependent on delays. However, the promoters of Maglev emphasise that from ‘signature of contract’ to operation for the Shanghai Maglev took 22 months.

It is important to be mindful of the fact that in order to fill potential future demand and stimulate the growth of the ‘knowledge economy’, the sooner work starts on such a scheme, the better, dependent on the outcomes of a robust assessment.

***What would be the most appropriate technology and type of train required for use in the UK?***

This is a matter of some debate in the UK transport industry. In developing HS1, linking the UK to Europe, the type of train chosen was a TGV<sup>14</sup> – Class 373 - to fit with European network demands. In developing proposals for HS2 between London and the north of the UK, it is likely that this again will be a strong contender.

There is opportunity however, in examining the case for a Scottish HSGT link, in the first instance between Glasgow and Edinburgh, to use Maglev. While this type of technology is only in operation commercially in Shanghai, it is the subject of feasibility studies across the world. Key benefits of Maglev are its ability to penetrate city cores, making use of air space above publicly owned assets for termini, and the low noise emissions it generates.

Choosing Maglev would naturally involve an element of risk, but there could be merit in opting for such an innovative solution, for example, in showcasing Scotland as a modern, progressive country. The economic benefits of this, and the environmental benefits of Maglev in general, mean that it must be considered in any robust assessment of introducing HSGT in Scotland.

***How could the existing rail links with Scotland be improved to ensure that all rail users are able to take advantage of improved high-speed connections?***

The benefits of HSGT are only truly realised when their hubs are located in city centre locations. This then would appear to suit the existing ‘classic’ rail network in place in Scotland, and opportunities for co-locating new HSGT termini with existing rail, bus and subway stations should be examined.

Notwithstanding the above, it is vital that as many people as possible are able to access and benefit from the introduction of an HSGT link. The demand profile for a Glasgow-Edinburgh link will be different to that of a Scotland-England-Europe link, but there are a number of improvements which could be made which would improve accessibility to any future HSGT hub.

A good example of such a project would be Glasgow CrossRail. This is the ‘missing link’ in Scotland’s rail network and would allow a host of new rail connections to take place across Strathclyde and Scotland. SPT has recently passed the case for Glasgow CrossRail to Transport Scotland for assessment as part of the Strategic Transport Projects Review.

However, the benefits to the existing rail network would not only be through new projects. The introduction of an HSGT link between Glasgow and Edinburgh for example, would free up

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<sup>14</sup> TGV – *Train a Grand Vitesse*, the French High Speed Rail service.

capacity on the existing rail network between Scotland's two main cities, making them particularly useful for shorter, intra-regional journeys.

### **Conclusion**

SPT is ambitious for the west of Scotland, and is keen to ensure that we play our part in supporting sustainable economic growth, reducing environmental impacts and improving social inclusion in the future. These ambitions include HSGT, both between Glasgow and Edinburgh, and Scotland, the UK and Europe,

However, SPT would like emphasise the need for a long-term, balanced, and robust approach to HSGT assessment. SPT will be happy to share the work currently being undertaken on our behalf by the team led by the University of Glasgow with the Committee on its completion, along with the findings in respect of urban penetration and termini in Glasgow as they become available in late 2008 / early 2009.

SPT would like to once again thank the Committee for the opportunity to contribute to this inquiry, and would be happy to clarify any issue raised in our response.