Written evidence submitted by the Transport Health and Science Group (JUJ0102)

THSG is an international scientific society interested in all aspects of the relationship between transport and health.

Our evidence to your inquiry into buses connecting communities and into a pipeline of rail projects included material relevant to this inquiry. We have asked whether you would prefer us to repeat that evidence or to reference it. You have asked us to reference it, so we have taken that course of action.

We are aware of, and agree with, the evidence given by the Faculty of Public Health of the Royal Colleges of Physicians of the United Kingdom.

a) What are the key features that make a transport system feel joined up to the user? How would 'integrated' transport look different to current services and networks?

A transport system would feel joined up if it was easy to access both on foot and by cycle and if the various components connected easily so it functioned as a network.

We have suggested a system in which people could access

- door to door transport if they were disabled, or had heavy luggage, or had other good reasons (such as safety) for not going to the bus stop
- a regular local bus service within 100 metres
- a fast frequent rapid transit system of trains, trams, bus-rapid-transit and high quality limited stop buses within a mile (and also by interchange from the local bus service)
- a cycle-carrying regional express system of trains and rail-link coaches within five miles (and also by interchange from the rapid transit system)
- an intercity rail network by interchange from the regional express system
- an international high speed rail network.

Services would be orbital as well as radial, and would operate 24/7. Demand responsive services would fill gaps where scheduled services were not viable (for example overnight services, services on very lightly used routes, or services in sparsely populated areas).

We have given detailed evidence on this proposal area and would ask you to consider the following evidence as relevant to this aspect of your inquiry: -

- most of our evidence to your inquiry into buses connecting communities

- Appendix 4 of our evidence to your inquiry into a pipeline of rail project developments

b) What stops effective integration happening now, and how can these barriers be overcome?

Integration with Walking

We should be encouraging people to walk to the station.

People are more likely to walk if there are safe pedestrian routes. This requires ensuring that the footway is kept clear (including preventing pavement parking), that there are safe crossings where roads need to be crossed, and that the fears of being attacked are addressed (including good lighting, and consultation with women and girls about perceived hazards.

People will walk further if the route is green, architecturally interesting or by water and we believe that steps need to be taken to green the city, including the use of green vegetated walls, green vegetated roofs and hedges in place of fences. This would also address urban heat effect and air pollution.

Integration with cycling

We believe that the train/cycle combination should be regarded as a distinct mode of transport capable of competing with the private car. Experience in California, British Columbia and the Netherlands have shown the considerable potential that such an approach has. If the bicycle was invented tomorrow there wouldn't be a passenger railway in the world which wasn't claiming it as a major solution to problems of accessing trains and ordering the construction of cycle vans. However, instead of this enthusiasm, most railways see cyclists as a problematical minor user category

The measures needed to promote the train/cycle combination include: -

- Safe cycle routes to stations. Women are three times as likely to cycle if there are segregated cycle lanes.
- Cycle vans on all trains, as has happened in Northern California. However, experience both in California and in British Columbia is that cycle carriage on trains is so popular that, even with a cycle van on each train, it can still be overwhelmed so that steps need to be taken to make cycle parking and hire available as alternatives. It is a matter of regret that so much old rolling stock which could have been converted into cycle vans has instead been scrapped.
- Secure cycle parking at all stations, as in the Netherlands.

- Cycle hire facilities so cyclists do not need to bring their cycle on to the train but can hire one at their destination station.
- Provision of cycle railheads. Often railways pass without stopping through rural areas where considerable cycle traffic could be tapped if a station were provided. Often old rail routes have been turned into cycle routes but the junction station with the remaining railway system was closed with the original rail closure and has not been reopened for the cycle route.
- Prioritisation of measures to address cycle theft at stations. We are deeply concerned at the decision of British Transport Police not to allow police officers to review CCTV coverage where a cycle has been left for more than two hours as it takes too much time. We invite you to address this issue either as part of this inquiry or as a separate issue. We understand the concern about police time but we do think there are alternatives to just ignoring the theft, such as allowing the victim to review the footage to identify the section officers should examine, allowing volunteers to do so, using artificial intelligence to review the footage, and increasing transport police capacity through actively recruiting transport enthusiasts as special constables.

Integration between train and bus

There is an unfortunate perception on the part of many bus operators that the train is a competitor, or that rail investment is a waste of money that could have been more productively spent on buses.

In fact, European studies have shown that cities with rail-based public transport systems (including light rail) have more bus usage than cities with bus-based systems. It seems that the train is more effective at competing with the car and that when people have been won over to the train, they start examining other forms of public transport and end up making more use of buses.

Ideally bus stations and rail stations in cities and towns would be located together, but this will often be impossible. Where they cannot be located together they should be readily linked with a frequent service to which passengers arriving at the rail station are readily directed.

There are many examples where this is not done. At Darlington there are buses to the town centre bus station from both entrances but no indication to an arriving passenger of which entrance will have the first bus. At Leeds the bus station is some distance from the rail station. The railway passes by the bus station at high level and it would be easy to construct a platform and escalator

for transfer but the trains pass non-stop. At Preston there is a good bus connection to the bus station but no guidance available as to which bus to catch or even which side of the road to catch it from. We could give many other similar examples.

Integration within networks

In our evidence to your inquiry into a pipeline of rail projects, we drew attention to the Swiss public transport timetable drawn up collaboratively by all the country's public transport operators so as to ensure easy connections. Something similar could be developed in the UK.

There is too much emphasis in the UK on individual routes and individual journeys, not on planning networks. Network benefits are generally disregarded when individual route developments are being considered, but in fact they are considerable. If there is no train to their destination, people may drive instead of taking the train to a railhead. People may drive rather than take the bus if there is no bus back. Many people may plan to travel by bus knowing that they can rely on a later bus if they miss the one they plan to use, but, if the last bus is withdrawn because it runs empty, they may lack the confidence to rely on the earlier bus.

c) What kinds of interventions and policy decisions are needed to provide joined-up transport, including in areas beyond transport such as planning?

We have suggested various interventions above.

Planning

Our 2022 policy on transport and spatial planning, accessible on our website www.transportandhealth.org.uk , contains detailed proposals for policies in the planning field.

Security

It is important to note that many people, especially women and girls, can find waiting at lonely bus stops or on isolated railway platforms deeply frightening and this detracts from the connectional capacity of the network. Security whilst waiting for connections is an important aspect of creating joined up journeys.

Innovation and the Machinery of Government

The machinery of government fails to take account of innovative proposals. This is highly relevant to the creation of joined up journeys. Quite apart from

major innovations, like mag lev, many simpler and cheaper innovative proposals which could enhance joined up journeys, like very light rail, people movers, demand responsive transport and cycle vans on trains, are not used as extensively as they could be. We discussed the problem of approaches to innovation in Appendix 6 of our evidence to your inquiry into a pipeline of rail projects.

d) How should transport integration and its benefits be measured and evaluated— the impact on economic growth, decarbonisation and the Government's other 'missions'?

e) How should the cost of interventions needed to deliver transport integration be assessed and appraised? Will proposed changes to methodology in the Treasury's 'Green Book', including the introduction of 'place-based business cases', change this?

We would draw attention to the following points: -

- Investment in high speed rail generates economic growth. In Appendix 7 of our evidence to your inquiry into a pipelines of rail projects we set out our proposals for a high speed rail network and how the costs can be reduced.
- In Appendix 3 of our evidence to your inquiry into a pipeline of rail projects we drew attention to flaws in the Treasury's analysis of transport schemes
- In our evidence to your inquiry into a pipeline of rail projects we drew attention to the fact that many road schemes are judged to be cost-beneficial because of a supposed benefit to congestion, but in fact the evidence shows that this benefit materialises only temporarily and in the medium term roadbuilding makes congestion worse. Most of the transport budget is committed to roads. Using it productively instead of wasting it on a vain attempt to achieve a benefit that does not materialise could contribute greatly to creating an integrated transport network.
- For most UK history we have understood that investment in transport improves the economy. Between the late 18th century and late 20th century we first built the turnpikes, then the canals, then the railways, then the tramways, then the bus network, then the network of major A roads, then the airports and then the motorway network. This was a total of 8 complete transport networks in two centuries. If we had continued with the same vision and determination we would now have

built two more whole transport networks in the time that we have been failing to build individual projects.
- Evidence from Canada and from China shows that failure to invest in public transport has significant costs to other public budgets which exceed the savings on transport spending.
- Railways increase land value.

f) Will integration in itself deliver other benefits such as wider transport options in more places, and behaviour changes such as mode shift? What other impacts could it have?

We propose to discuss congestion, modal shift, health, poverty, crashes, caring, volunteering and social networking.

Congestion

Since the work of Mogridge (Travel in Towns: Jam Yesterday, Jam Today and Jam Tomorrow, 1990) we have known that congestion is affected more by the quality of the rail network than of the road network. This has been confirmed by a number of subsequent studies. Research into congestion has shown only two strategies which can be shown to improve congestion more than marginally, one of which (rationing car ownership, effective in China) is wholly unthinkable in the UK. Excluding that as an option, all that is left is the combination of congestion charging and improved public transport, but without roadbuilding (which research suggests, though not conclusively, undermines the effect of the strategy). For further information please see Appendix 5 of our evidence to your inquiry into a pipeline of rail projects.

Modal shift

The findings of Mogridge and of the studies which have replicated Mogridge's work can only be explained by assuming that modal shift occurs as the quality of alternatives improves. Indeed, Mogridge's work shows that the speed of traffic is related to the speed of rail journeys, which can be explained by assuming that the trade off between deciding to travel by car or not to travel by car is set by the speed of the alternatives, as would be predicted from market theory.

Health

Those who commute by active travel have lower rates of heart disease, cancer, diabetes, and obesity than those who commute by car. Those who commute

by public transport have intermediate rates. Improving public transport saves lives.
Comprehensive public transport increases the accessibility of facilities important to health, including health facilities, community facilities, recreational facilities, parks and greenspace.

Comprehensive public transport increases the potential for social networking, and it must be borne in mind that the strength of social networks is one of the most powerful determinants of health.

Poverty

Forced car ownership occurs when lack of alternatives forces people to buy a car which they cannot really afford.

It causes substantial levels of hardship. Improved public transport is the simplest way to address this.

Crashes

Forced driving occurs when drivers who are only marginally fit to drive (or actually unfit) or who are only marginally sufficiently skilled at driving (or actually insufficiently skilled) continue to drive, perhaps against their wishes, because of the lack of alternatives.

It places drivers on the road who have a high risk of crashes, and it creates opposition to attempts to solve that problem by setting high standards. Improved public transport is the simplest way to address this.

Caring, volunteering, and social networking

Research has shown that improved public transport, especially public transport which is cheap as well as good, increases the human resources available for unpaid caring and for volunteering. It also increases the opportunities for social networking, as noted above in the section on health.

g) What is needed to ensure that integration is inclusive and meets the diverse needs of transport users? Will integration necessarily lead to better outcomes for accessibility?

Gender

We have already mentioned the importance to women of security, and of creating safe walking and cycling opportunities to stations. In single car households women are likely to have the least access to the car. Women are more likely to trip-chain, an issue which we will discuss in the next section.

Research on gender and transport has been reviewed by Sagaris, Baker and Woodcock in a chapter in Health on the Move 3: the Reviews volume 1 published by Elsevier in 2024.

Disability

Our evidence to your enquiry into buses connecting communities contained a section “How Do we Cater for Disabilities and Encumbrances”

Age

Young people, too young to drive, and old people who may be losing the ability to drive have especial needs for comprehensive public transport.

h) Will the meaning of integration vary across different kinds of areas and for different kinds of journeys? (such as rural and suburban areas, and inter-city journeys)

Trip Chaining

Much public transport is organised on the basis of providing for travel to and from work, or to and from urban centres for a night out or a shopping trip. Trip chaining occurs when people need to make a succession of different journeys. People (disproportionately women) who need to pick up children and do the shopping on the way to and from work are classic trip chainers. In order for public transport to cater for them it needs to provide a comprehensive network which is orbital as well as radial and which is frequent. Locating childcare facilities at rail hubs would also be useful.

Rural areas

In principle inner city areas, suburban areas, and rural areas which consist of settlements separated by countryside differ in their transport needs only in the distances between the points that need to be served. However, this distance increases the cost.

More sparsely populated rural areas in which there are few settlements and the population is settled in scattered homesteads pose a greater problem and the private car may well be an efficient solution. Only a small proportion of the UK population live in such areas. Park and ride facilities are needed where such areas abut more settled areas.

Inter City Journeys

Please see Appendix 7 of our evidence to your enquiry into a pipeline of rail projects.

International Journeys

We believe in an international high speed rail network. A network covering Africa, Asia, Europe, North America and Latin America could be created with links across the Straits of Gibraltar, the Bab al Mandab, the Straits of Hormuz and the Bering Straits and from Russia to Japan. It is feasible to extend it to Australia by linking a string of Indonesian islands and it might similarly be possible to link the Eastern Coast of the USA to the Northern and Eastern coasts of South America without the diversion through Central America by building a series of tunnels from Florida to Venezuela via Cuba, Haiti, the Dominican Republic, Puerto Rico, the Windward and Leeward Islands, Trinidad and Tobago but it is uncertain whether either of these would be cost-beneficial or would achieve carbon savings when construction is taken into account..

Sleeper services extend the distance over which trains are competitive with aviation since people can sleep during their journey instead of at their destination. At 200mph (readily achievable by current high-speed trains), a ten-hour sleeper train journey (two leisurely meals and eight hours sleep) is possible on journeys of 2,000 miles, sufficient to travel to anywhere in Europe. At 300 mph (potentially achievable by future development of conventional high-speed trains), this increases to 3,000 miles. At 450mph (potentially achievable by mag lev), this increases to 4,500 miles, sufficient to travel from the UK to the North of India.

i) What lessons can be drawn from attempts to integrate transport elsewhere in the UK and around the world? What examples should the Government seek to emulate?

Switzerland is an example of a country with good integrated public transport and its public transport timetable is an exemplar of good practice (although its intricacy probably draws on Swiss skills as a nation of watchmakers).

Barcelona is an example of a city which has sought to cater for trip-chaining.

New York is a city with cross-town as well as radial services.

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