CILT (UK) Response to the Whole Industry Strategic Plan Call for Evidence

February 2022

Introduction

The Chartered Institute of Logistics and Transport (CILT) is a professional institution embracing all transport modes whose members are engaged in the provision of transport services for both passengers and freight, the management of logistics and the supply chain, transport planning, government and administration. Our principal concern is that transport policies and procedures should be effective and efficient, based on objective analysis of the issues and practical experience, and that good practice should be widely disseminated and adopted. The Institute has a number of specialist forums, a nationwide structure of locally based groups and a Public Policies Committee which considers the broad canvass of transport policy. This response has been prepared by our Strategic Rail Policy Group with contributions from others.

Strategic Objectives for the Whole Rail Industry

Question 1

a) How would you apply these objectives to rail in your region or to your area of expertise within the transport sector? Do you have evidence you can share with us of how you have applied similar objectives in relation to rail, and do you consider the objectives to have missed any key areas?

CILT is a national organisation with members in all regions of GB and in all sectors of transport and logistics. CILT is therefore able to indicate those objectives for the whole rail industry which are compatible with the wider transport industry and can provide the best solutions for GB. Our response has been collated from across our institute, including input from, inter alia, our Strategic Rail Policy Group, Regional membership groups, Accessibility & Inclusion Forum and Rail Freight Group.

CILT's response to the Union Connectivity Review (attached) is an example of how its expertise is applied across all modes and to all regions. In this response, CILT identified corridors and modes where improvements could be justified and which would enhance union connectivity. Similarly, CILT is able to identify improvements and enhancements within the UK nations.

We agree that these are the five main objectives but would observe that the supplementary questions tend to highlight passenger markets. We note that there is already a drive for greater accessibility and inclusion within passenger markets and accommodating this is likely to have an effect on the majority of strategic objectives, particularly Meeting Customer Needs.

Current issues with supply chain resilience demonstrate it is important that freight and logistics are considered with the same prominence as the passenger market, e.g. in contributing to long-term economic growth. In the case of delivering environmental sustainability, trunk haul road freight

presents one of the greatest challenges to Net Zero facing the UK and modal switch of such freight to rail ought to be a particular priority for GBR.

b) How is it possible to make progress against a number of the objectives simultaneously? Do any of the objectives have larger barriers associated with them than others, or do any objectives pose possible barriers to others? Where would you make the trade-offs?

Whilst there is an obvious tension between reducing funding levels and achievement of many of the other objectives, we do believe that progress can be made in most areas. It is clearly essential to return funding levels to a level broadly similar to pre-Covid levels and focus spending more on investment in priority areas to achieve the objectives. In this regard, the funding plans contained in IRP – whilst falling short of the ideal - were welcome.

To this end, we consider that GBR should have a very sharp focus on efficiency and cost reduction, with action plans being developed and implemented by GBRTT in advance of legislative changes. GBRTT should make sure that it is aware of relevant initiatives which could reduce funding costs, such as the UK Government implementing the Luxembourg Rail Protocol to reduce the cost of funding for rolling stock. In the case of the Luxembourg Rail Protocol the barrier is very low,

The Luxembourg Rail Protocol is a global treaty that will create a worldwide framework to enable and support private sector investment in railway rolling stock. It establishes a new global system of rights and priorities for creditors securing finance on all types of railway rolling stock, from high speed trains and freight locomotives to freight wagons and trams. The registration system provided by the Luxembourg Rail Protocol will provide financiers with the ability to reduce margins on their financing rates, thereby creating cheaper finance for rail and easier market entry for new financiers, offering an alternative to the traditional ROSCOs. The UK Government has signed the Luxembourg Rail Protocol and committed to ratifying it. This ratification has cross-party support in parliament.

Consideration should be given to the use of light rail (including tram-train) for those parts of the network where expected capacity requirements are suited to the light rail mode. The development of the Restoring Your Railways initiative suggests that the shared operation of modes could work well for new/reopened lines. The potential for new technologies enabling lighter weight, low cost vehicles offers real potential to kick start new lines and tramways in both urban and rural areas. Both the environmental and connectivity benefits of a tramway serving rural communities could be significant.

In the short term, the effects of the reduction in usage caused by COVID-19 and the high level of financial support provided by the Government to the passenger sector will need to be managed and this is likely to be a political settlement. In the medium and longer term, we would propose that savings on the industry's cost structure through efficiency and cost savings should be ring-fenced to fund enhancements to the network and services, in pursuit of the four non-financial objectives set for GBR.

Based on levels achieved in the past with a vertically integrated railway under a common guiding mind, we believe there are substantial savings to be made in infrastructure maintenance, renewal and (especially) enhancement – without compromising the rightly higher safety standards that are now required. We also consider that significant operating cost savings could be made in the

provision of passenger services by devising timetables that reflect new patterns of demand. This is particularly the case with business travel and outer suburban services in the South East, where a much-reduced peak suggests that substantial rolling stock and staffing economies could be made.

The modern EMUs displaced by a reduced South-East peak could be used as part of a scheme to upgrade and decarbonise regional services in the Midlands and North in a cost-effective manner (all such units have dual AC/DC capability). This would require further electrification of parts of the network, but early gains and carbon savings could be achieved by fitting (some of) the surplus EMUs with batteries. Recent advances in battery technology make this a viable option, although electrification remains the optimum solution for dense commuter networks, at least. Surplus staff could be used in lieu of recruitment in other TOCs/FOCs or redeployed to meet accessibility and inclusion objectives on trains and at stations. In the case of drivers, they could be redeployed to FOCs to provide much-needed extra capacity – albeit with some training on different routes and traction.

c) What long-term trends in wider society, the economy, and the environment will affect these five objectives over the next 5, 10, and 30 years? Please give evidence to support your response.

The overriding factor is likely to be decarbonisation. Given the IPCC's 'Code Red' warning about the need to limit global warming to 1.5C by the mid-2030s, there is little choice but to act and act swiftly. Whilst technologies are maturing at different rates and there is an understandable wish to wait and see what delivers the best option, doing nothing is not an option and there are clear 'no regrets' investments that would deliver substantial benefits quickly.

Rail electrification is a mature and proven technology that – with an adequate supply of renewable and nuclear electricity (a key imperative under all UK decarbonisation scenarios) – would save substantial quantities of carbon. Even with the current mix of sources of electricity, rail generates far less carbon than road or air. Carbon can already be saved from modal shift, as is likely in moving trunk haul freight and logistics from road to rail. Electrification costs are coming down and the case for rail electrification, at least for freight, inter city and suburban passenger services, is very strong. There are particularly encouraging signs that the cost of electrifying lower speed lines – up to 75mph – can be reduced markedly, perhaps to as low as £500k per stk. This is highly relevant in the case of routes used primarily by freight and regional passenger services.

The second key change is revised patterns of work. Some types of business travel – such as for business development - will continue, but it now seems highly likely that many routine meetings will in future be conducted on line. The time efficiency and avoidance of travel costs are too great to be ignored. The effect is hard to judge but could well be a 50% reduction in business travel by rail. Similarly, hybrid working seems likely to become the norm for many. For the employee, avoidance of daily commuting gives a substantial improvement in quality of life and disposable income; for the employer, the scope to cut back on very expensive city centre office accommodation is highly attractive.

The precise impact will vary, and forecasts are 'always wrong' but is likely to be most pronounced with longer distance professional and managerial commuting. These roles generally lend themselves well to hybrid working, with only one or two days a week in the office needed for coordination and networking purposes. This implies a substantial revenue reduction from long distance commuting

but, if the same two or three days are used by the majority of long distance commuters, there could be uneven patters of demand on services during the week. Understanding, managing and meeting the demand will be a key activity in the medium term. Shorter distance travel within metro and inner suburban areas seems likely to hold up much better, since it is a key feature of urban life, for leisure and education as well as work.

Longer distance leisure travel also seems likely to hold up well and even increase, as people make more use of their time free from work. This would be reinforced by a gradual but growing concern about the carbon footprint of holiday flights to overseas destinations and the substitution by holidays in the UK.

Engineering possessions are highly disruptive and make leisure travel by rail at weekends unattractive. The reduction in weekday peak activity provides an opportunity to reconsider the use of single line closures including weekdays, instead of a series of weekends. Not only are these much more efficient in terms of construction activity, as they avoid multiple set up and reopening phases, but they also provide a better service for leisure passengers and for other weekend-dominated requirements such as sporting events and airport access. It will, however, be essential to retain weekday – and especially weeknight - paths for freight on key routes to ensure time-critical customer transits are maintained whilst engineering work takes place.

The requirements of an aging population will need to be properly managed, as will supporting passengers with disabilities. Rights granted under the Equality Act 2010 are expected to be reinforced, with lobbying from numerous pressure groups already taking place. This has the potential of requiring greater levels of funding being spent to meet these customer needs and to ensure journey connectivity and multi-modal expectations can be met.

The net effect of these changes is a dramatic change in travel demand patterns, most obviously a much reduced outer suburban and inter-city peak. This may well be beneficial, as the disproportionately high cost of resourcing peak workings can be reduced and it is the cost of the peak that sets the cost base for the whole service. A move towards a standard all-day service, with rolling stock and drivers used for 16 hours in every 24, would enable substantial costs to be taken out and improve the overall viability of the passenger rail system. It would also facilitate increased opportunities for freight services, particularly during the shoulder peak.

d) What are the key uncertainties you consider that the Strategic Plan must be resilient to in order to be effective over the next 5, 10 and 30 years?

The degree to which hybrid working will develop is uncertain, as are subsequent changes in technology and working practices. Similarly, prospects for decarbonisation in other modes is, as yet, unclear – particularly for heavy goods vehicles. More generally, there are the ever-present macro-economic uncertainties generated by the cyclic nature of the global economy and changing social attitudes. The latter lie behind the shortage of HGV drivers, for example, with young people not prepared to accept the working styles and patterns of their parents.

Competition to the railways is also uncertain. While rail currently has a strong environmental lead over road transport, there is no guarantee that it will continue, particularly in the longer term. Development in electric cars are likely to provide a more environmentally friendly motoring solution compared to today, while autonomous vehicles are expected to provide all occupants with the

ability to work during the car journey (a key benefit of current rail travel). Freight on rail, however, is expected to maintain the technological and environmental high ground for much longer. In addition, decarbonised and/or autonomous road congestion is still congestion, with the high economic costs it causes, and rail will retain its advantages in urban areas.

Other uncertainties relate to political responses to environmental pressures, at both the national and regional level. Irrespective of central government policies, devolved administrations and urban mayors are showing increasing willingness to act for their own communities, for example on air quality and road congestion. The degree to which Westminster will permit – and, more precisely, fund – devolved government remains to be seen, but there does appear to be a groundswell in favour of local decision making. The National Bus Strategy has placed greater control of bus services with the local transport authorities, allowing for better coordination of bus services and interchanges with other non-bus modes.

On balance, this is likely to favour rail, at least regional passenger rail and light rail services – freight and logistics are generally organised on a national or even international basis and local decision-making may not be well attuned to larger scale activities. This tension could also apply to inter-city passenger services and finding the optimum balance between local interests and national strategic considerations may not be straightforward.

e) Over the next 5, 10 and 30 years, which steps should the sector take to improve integration of rail with the wider transport system (including walking and cycling) in pursuit of these objectives?

In the short term, GBR should identify best practice integration which can then be replicated when enhancement projects are implemented. These could be small scale, such as locating bus stops and cycle parking at rail stations, information/retailing systems such as smartcards, or major projects such as new rail infrastructure providing rail links to airports and seaports. These examples can then be shown in the medium and longer term strategies.
Customers, be they passenger or freight, almost always adopt a multi modal approach – with the former, do I drive, or take the train or fly? If public transport is chosen, there will in the large majority of cases be a modal interchange at some stage in the overall journey. With freight and logistics, a high proportion of companies have multimodal supply chains, generally using intermodal equipment such as containers or swap bodies.

It is thus essential that GBR should adopt, encourage and advocate a multi modal approach to travel and transport. A key aspect of this is the creation of modal interchanges and GBR should both itself and through others pursue a strategy to support such facilities. In designing such interchanges, sufficient consideration should be given to the movement of persons with limited or restricted mobility as well incorporating advanced technology such as wayfinders and interactive assistance.

The use of tramways and tram-train, allowing journeys to continue from a suburban area directly into the town or city centre, linking major public amenities with limited need for interchange is likely to become more commonplace. A number of trials are beginning in the UK and these may provide "steel spines" to link into other transport modes, such as bus, cycle and walking routes, as well as providing level access interchanges with heavy rail. Light rail has the potential to provide a lower cost local rail system to link to major public infrastructure. A good example of this is the Queen

Elizabeth II hospital in Nottingham which has a tram stop directly outside one of the hospital's entrances.

Establishing interchanges is likely to be through working with local authorities on multimodal passenger interchanges and with commercial property developers, FOCs, customers and facility owners (such as ports) in freight and logistics. Funding of multimodal freight facilities will usually come from the private sector, although can be much encouraged by the availability of Freight Facilities Grants – as has been demonstrated recently in Scotland where an FFG scheme is still live.

A critical aspect of freight terminal development is land use planning policy and practice, which determines whether a facility can be built or not. Strategic Rail Freight Interchanges (SRFIs – rail-connected warehousing complexes) at key locations across the UK are an essential component of rail freight growth, as are simple modal transfer terminals on the edge of urban areas – from which final deliveries can be made by limited-range battery trucks. Both face planning challenges from local interests and it is important that GBR works closely with DfT and DLUHC on revised planning policy guidelines to facilitate the creation of these critical multimodal facilities.

Meeting customers' needs

Question 2

a) ***Passenger: how will rail passenger expectations, including accessibility requirements, evolve over the coming 5, 10 and 30 years, what will be the driving causes of these changing expectations, and how can they be most effectively met by the rail sector?***

There are many different market segments to consider, and many inter-city/regional/urban/rural circumstances, but some general trends can be discerned. As commuting becomes less important and leisure travel more so, rail passengers will expect more certainty, comfort and generally ease of use. While commuters prefer flexibility and therefore high frequency, leisure travellers prefer a reserved seat and a seamless journey. In all cases journey time, better than other land-based modes, will remain important to attract patronage. Station environments will always feature open platforms (except in some metro situations) but comfortable (and heated) waiting rooms and catering facilities, including toilets, become more important. The requirement for accessible and available toilets at most stations is expected to become the norm. Leisure travel tends to include more baggage, so stations and trains should enable easy handling, similarly for cycles. Some arrangements, such as no-step arrangements, are equally suitable for wheelchairs, buggies and rolling luggage and so can provide multiple benefits.

One driving cause behind changing expectations is likely to be pressure groups who are able to better connect through electronic devices, can mobilise significant numbers through petitions and on-line communications and who are more prepared to use legislation to support their position. More cases under the Equality Act 2010 are expected and GBR should be looking to pre-empt change in this area as it is easier to manage change when one is in control than having to enact legal judgements in relatively short timescales.

Among the market segments are younger travellers, who will value wifi connectivity highly and the general use of apps for all aspects of the journey, and are less likely to choose private car ownership for both sustainability and affordability reasons.

b) Passenger: in your experience, how can we most effectively monitor and assess customer satisfaction? What is a stretching yet realistic ambition for this objective and what measures can we most effectively use to consider success over the coming 5, 10 and 30 years? What evidence can you share to support your view?

Satisfaction is best measured by the willingness to repeat purchases. This is best assessed by the number of passenger journeys made by rail. To supplement this and to understand specific matters of interest to customers, regular customer satisfaction surveys as currently undertaken by Transport Focus should continue.

c) Freight: what evidence can you provide regarding the advantage(s) of transporting goods by rail and what evidence can you share for how that could develop in the next 5, 10 and 30 years? What do you consider to be the most effective role for rail freight in the existing supply chains served and those that it doesn't? How could this change over that period? In answering, please explain and take account of likely developments in technology and in the wider economy.

The advantages of rail in moving large quantities of heavy bulk materials have long been recognised and remain undiminished. The relentless focus on such commodities in the latter days of British Rail (as a monopoly supplier) produced startlingly high profit margins, but freight and logistics have changed substantially in the ensuing 30 years. Deindustrialisation of the UK has greatly reduced the quantity of bulk materials on offer, most notably with the demise of the coal industry and coal-fired electricity generation, but also with the steel industry – where five major integrated plants have reduced to two – and petrochemicals, where only three rail-served refineries remain. Diminishing demand for transport and heating fuels suggest that this market will continue to decline, possibly at an accelerating rate. A return to the BR model of rail freight is thus out of the question.

Construction materials remain a bulk commodity growth market that goes from strength to strength, as the industry majors pursue a policy of concentrating investment in a small number of 'super-quarries' and cement plants. Sustained growth over the last decade means that Construction now makes up 30% of all rail freight tonne kilometres (tkms). Market demand is concentrated in urban areas and exhaustion of local sources of sand and gravel mean that both volume and length of haul from remote quarries, the location of which is determined by geology, are growing.

Rail is also moving a wider range of products alongside the major flows of limestone and granite – high quality gritstone, sand and 'secondary' minerals such as steelworks slag and slate waste are all moving in greater quantities to urban areas, as are waste products such as soils and spoils from urban areas for disposal. Using intermodal equipment, there is also significant growth potential with lower volume products such as cement, powders, blocks and bricks which do not lend themselves so well to movement in the large or very large trains used for aggregates.

There is also growth potential with steel, principally in finished products from plants which receive their inbound feedstock by rail, but currently distribute the finished product by road. In pursuit of its decarbonisation strategy, Tata has recently invited rail suppliers to propose how these finished products can be switched to rail. In the longer term – the 10 to 30-year horizon – it is likely that, to reduce carbon emissions, the blast furnace method of producing steel, using iron ore and coking coal, will be progressively replaced by electric arc furnaces using scrap metal as the raw material.

Most scrap produced in the UK is currently exported, but these export flows (which are mostly roaded to ports) would be replaced by rail hauls from urban areas – notably London, the West Midlands and Manchester – to electric arc furnaces at locations such as Port Talbot, Scunthorpe and Teesside. It would be expected that the rail flows of iron ore and coal from Immingham to Scunthorpe would cease following the change in production, but overall rail tonne miles would probably show a net increase.

Other classic trainload commodities which have significant growth potential are automotive and forest products. In the former sector, established flows of cars for Jaguar Land Rover, BMW and Ford are shortly to be supplemented with two-way moves through the Channel Tunnel for Toyota, who have never previously used rail. There may be similar prospects with Nissan and there are large volumes of imported cars from Southampton and Portbury which would lend themselves to rail haulage. In forest products, a range of products including round timber from forest areas to processing plants plus timber and board products from such plants to distant markets offer growth potential for rail. There are also significant tonnages of imported pulp to paper mills and, to a lesser degree, finished product thence to market.

Reflecting changes in the UK economy, the biggest sector for rail freight is now not bulk materials but the intermodal movement of consumer goods, which make up 40% of all rail tkms. Currently, the biggest rail involvement in consumer goods is in the movement of containers from ports to inland distribution centres, largely from the major deep sea ports but with increasing movements from short sea ports on the Thames, Humber and Tees. Rail has a smaller but growing presence in the next leg of the supply chain, long distance domestic movements from national distribution centres (NDCs) to regional distribution centres (RDCs) and from remote production locations to distribution centres, but this represents a very substantial potential market for rail. The final leg of the supply chain, from RDCs to final destination is necessarily a road activity in most cases, although rail already features where this final leg involves long distances, notably in Scotland and this could be replicated in areas like Devon and Cornwall.

Coupled with the growth in the construction sector outlined above, consumer goods have driven non-coal rail freight to record levels - ORR statistics show that Q1 and Q2 2021/22 have been the highest quarters on record. The current data set began in 1982 so a 40-year record is clear and, given trends in rail freight through the 1960s and 1970s, it is likely that current levels of freight, excluding coal, have not been seen for at least 60 years. The demise of coal was, of course, a matter of Government energy policy and cannot be taken as a reflection of rail competitiveness.

There are three main drivers of growth:

1.Growing efficiency of rail haulage - much larger trains, conveying 2000+ tonnes of bulk materials or 50+ containers, reduce unit costs and thus allow keener prices to be quoted to customers. This is allowing rail to be competitive in markets from which it was previously excluded on price. As an example, until the last few years, rail was uncompetitive in moving import containers at less than c.150 miles from a port but, with greater efficiency, rail is now successfully competing for hauls of 100 miles or slightly less, which opens up a substantially larger market for rail.

2.Corporate decarbonisation objectives – most major companies have clear commitments to decarbonisation and many recognise that the transport element of their supply chains is, or soon will be, the ‘dirtiest’ aspect of their activities. Modal shift to rail is increasingly recognised as a way of

tackling this challenge, since even diesel-hauled trains reduce the carbon footprint of a movement by c.60% compared with an HGV and this rises to c.95% where electric locomotives powered by renewable or nuclear energy are used.

3.Rising road haulage costs – diesel fuel makes up around a third of a haulier's costs and fuel prices have risen significantly in the last year. Even more importantly, the shortage of HGV drivers – which has been building for years and finally bit when Eastern European drivers left after Brexit – has seen wages increase from c.£25k to c.£40k p.a., as well as causing some deliveries to be missed. Wages similarly account for around a third of a haulier's costs and, as a result, road haulage rates have risen significantly. In consequence, many companies' longer-term plans for modal shift to rail on environmental grounds have been turbo-charged by current operational necessity.

The c.50 trunk haul HGV drivers replaced by each train can be redeployed onto local/regional deliveries. A driver will typically do two or three such trips in a day so, even allowing for moving containers between a rail head and the warehouse, around 100 additional deliveries a day can be resourced by introducing each trunk train – a very significant multiplier. In response to the driver shortage there has been a significant increase in the number of intermodal trains – around 10 new round trip services (20 single journeys) were introduced in autumn 2021, equating to around 1,000 trunk HGV trips taken off road. Several of these were Anglo Scottish services and, in total, there are now 14 round trip services (28 single journeys) crossing the Border each day, thereby taking well over 1000 HGVs a day off the M6/M74.

Growth has, in fact, been constrained in the short term by the shortage of drivers - due to Covid and the operation of Rail Head Treatment Trains - and wagon capacity, pending delivery of additional wagons which are under construction. The prognosis for future growth is very good, as younger people are, not unreasonably, unwilling to take HGV driving jobs that involve 'tramping' – living, eating and sleeping in the cab of a truck for days on end. The road haulage industry is thus likely to be forced to progressively change the operating model that has served it well for many decades and recognise that most drivers want to return to base at the end of their shift. This limits daily range to about 150 miles and, whilst driver relays can be set up, this is much more expensive and operationally difficult than tramping.

In parallel, whilst battery cars and vans are now an everyday reality and medium weight/medium range HGVs are starting to be introduced, a battery (or hydrogen) powered 44 tonne glw long distance HGV is proving very elusive and is amongst the biggest decarbonisation challenges the economy faces. Limited small-scale trials are underway in Germany of an electric road system (ERS), i.e. motorway overhead electrification for HGVs but, although technically feasible (using trolley bus twin wire/twin pantograph system), ERS faces huge operational and safety challenges before it can be considered a robust real-world solution.

Not least amongst these is the need for many thousands of HGV drivers, of distinctly mixed ability, to steer a precise – almost inch perfect – course for hours on end to avoid de-wirements across very busy public roads. There is the added complication in the UK of double-deck trailers, which are increasingly popular and are built to the maximum possible height available under motorway bridges, leaving no room for catenary. Germany (and most of continental Europe) limits trailer height to 4 metres, so this issue only arises in the UK.

The absence of a solution to decarbonise trunk road haulage and the unwillingness of younger people to adopt the tramping lifestyle both point to a new model of logistics – trunking by (electric) rail with local and regional deliveries by battery (or hydrogen) truck. This raises the question of what proportion of current HGV tonne kilometres could transfer to rail and what the implications of this would be for the rail system. This is considered in our answer to (d) below.

Freight should be made as financially competitive as possible. Leasing charges for locomotives and wagons are a significant part of rail haulage costs and opportunities to adopt new financing techniques should be taken where available. Currently the UK is a signatory of the Luxembourg Rail Protocol but has not yet adopted it into UK legislation. Following its adoption, this international legislation would reduce the financing costs of railway rolling stock, supporting the introduction of greater numbers of more environmentally friendly rolling stock which is designed to cause less wear to railway tracks.

d) What is a stretching yet realistic ambition for this objective and what measures can we most effectively use to consider success over the coming 5, 10 and 30 years? What are the interventions over that period which will be the maximum value for money, and what evidence can you share to support your claim?

For passengers, any such target must be broken down by market segment. Passenger miles is also useful alongside passenger journeys to assist in understanding how to develop the market. The ambition must be for continuous improvement in satisfaction scores and comparisons with scores in other transport sectors and other consumer activity. The level of penetration within different demographics should also be considered, with a target to monitor whether the young adults using rail continue to use it at the same level as they reach the 30-50 age group. In order to preserve the wider environmental benefits of rail travel the ambition should be to retain the vast majority of such travellers.

Recent analysis of DfT road freight data suggests that just over half (52%) of all HGV tkms could be broadly suitable for modal transfer, with the remaining 48% being shorter distance hauls, often final deliveries, for which there is no practical alternative to a truck. Further analysis of the 52% suggests that over a third (38%) of all HGV tkms could be well suited to rail movement, recognising that there will be specific circumstances where, although physically practical, a switch to rail would be challenging – for example, in more rural areas remote from an intermodal terminal where there may not be sufficient volume for viable train operation at the frequency required to meet supply chain demands.

The switch of trunking from road to rail will not occur overnight, but it is likely that by the early/mid 2040s substantial volumes would be wishing to switch. This is likely to prompt and require much wider introduction of multi-customer trains, such as currently operated from DIRFT to Central Scotland by J G Russell and W H Malcolm, where an 'aggregator' such as JGR or WHM buys a train from a FOC and sells space on the train to the market. Very few customers other than Tesco have the volume to justify dedicated trains, particularly as deliveries often have to be made throughout the 24 hours and cannot be held to make up a daily train.

Clearly, additional locos, wagons and drivers will be required but procuring and training these extra resources should not be unduly problematic over a period of 20 years. Similarly, additional terminal capacity will be required, for consumer goods in intermodal units and bulk materials in conventional

wagons. A significant number of new terminals are in the pipeline but more will be required, particularly in the Regional Distribution Centre (RDC) clusters around the UK and in urban areas, hence the importance of new planning policy guidance to facilitate the creation of such facilities.

The impact on route capacity of such a significant modal switch is not likely to be as dramatic as might be expected. Analysis of HGV data suggests that on most main lines there would be one or two extra freight trains an hour in each direction across an 18-hour day – this assumes that major passenger peaks will continue to occur, which may be a pessimistic assumption going forward. Such an increase in freight activity, whilst not insignificant, should not be unachievable – particularly with lower levels of business travel and long-distance commuting.

Two routes would see a greater increase in the number of freight trains, reflecting the importance of these axes for trade across the UK. They are the WCML and Felixstowe to the Midlands and North (F2M&N), which are likely to see three or four additional trains an hour in each direction across the 18-hour day. Fortunately, HS2 will free up capacity on WCML south of Wigan and this should enable the extra freight paths to be provided. The solutions for providing extra capacity on F2M&N are well known and not unduly difficult from an engineering perspective. The biggest challenge is likely to be WCML North, although analysis suggests the solution may lie in a carefully flighted timetable, with dynamic loops at two or three locations between Preston and Carstairs where freight trains could be overtaken.

In terms of an objective, the above analysis would require a 5% compound annual growth rate (CAGR) in tonne-kms in rail freight over the next 30 years. Given that the last decade has produced a c.2% CAGR, on an organic basis without any specific policy measures, this does not seem unachievable – particularly as the beneficial effects of the HGV driver shortage have not yet fed through to the statistics. However, 5% equates to some quite large annual increases in absolute terms in the 2040s and urgent action is needed in response to the IPC 'Code Red' warning about limiting global warming to 1.5C by the mid-2030s. Accordingly, CILT suggests that there should be a commitment to delivering 5% CAGR and a 'stretch' target of 7%. This would apply for the first 10 years – effectively the 2020s – and, if 7% has been achieved in the first decade, it would possible to ease back to 5% for the remaining two decades

Delivering financial sustainability

Question 3

Where are the most significant opportunities and barriers to delivering financial sustainability in the rail sector over 5, 10, and 30 years and how do we achieve/overcome them? How can we most effectively monitor and assess this? What is a stretching yet realistic ambition for this objective and what measures can we most effectively use to consider success over the coming 5, 10 and 30 years? What are the interventions over that period which will be the maximum value for money?

As indicated in 1(c) above, we consider that there are significant efficiency reserves that could be exploited over the next 5, 10 and 30 years – many of them in the short and medium term. Unit costs of infrastructure rose considerably during the Railtrack and early Network Rail years and, whilst some progress is now starting to be made, there is much more to go at. We believe that there needs to be a 'root and branch' review of the cost of maintaining, renewing and enhancing infrastructure,

examining the cost of materials, labour, planning, access and overheads. There should be rigorous constructive challenge of current methods, practices and standards to establish why – allowing for higher safety standards – unit costs in constant prices are much higher than in the final days of British Rail. Indeed, given the substantial investment in new plant and equipment that has taken place over recent decades, one would expect to see a real-term reduction in unit costs.

Ensuring that financing costs are kept to a minimum should be a leading objective for GBR. Adoption of legislation, such as the Luxembourg Rail Protocol, by the UK Government in the first 5 years would provide a significant reduction in leasing costs over the remaining 30 years. The savings could then be passed on to passengers and freight users, making rail more financially competitive to both road and (for longer distance passenger journeys) aviation.

The reunification of track and train, at least as far as passenger services are concerned, means that the tortuous access planning and compensation regime that has applied since 1994 can be largely dismantled. The legitimate needs of FOCs (and their customers) have to be provided for, since these are fully commercial businesses operating on thin margins, and time-critical supply chains have to be maintained. Nevertheless, as NR's North West and Central Region have demonstrated on WCML, it is possible through intelligent and constructive engagement with TOCs and FOCs to take significant cost – and time – out of infrastructure renewals and maintenance. We believe much more progress can be made with this approach and by making full use of permitted methods of operating with degraded capability, to keep disruption to a minimum - especially for freight trains. Specifically, greater use could be made of single line working (ideally with bi-directional signalling), with Mobile Maintenance Trains providing a safe working environment whilst trains pass on an adjacent line.

We believe there is a particular issue with infrastructure enhancements, where the whole system of planning, design, contracting, risk management and delivery seems to mitigate against achieving maximum value. There are substantial sums at stake and we consider that GBR should employ a group of experienced engineers with the sole remit of enthusiastically challenging the current cost structure of major projects. This group should be independent of infrastructure line management and respond directly to the Chief Executive of GBR. There are many good engineers in Network Rail, but the structure within which they operate needs a fundamental overhaul and the 'Major Projects' culture which still persists needs to be banished. Electrification, in particular, seems ripe for a new, more rigorous, approach to deliver much lower costs – especially on lower speed suburban and freight routes.

Turning to passenger train operation, we believe GBR should take a clinical view of what capacity is required on each route and what level of frequency is necessary to encourage growth. We would observe that staff productivity in FOCs, in terms of tkms per staff member, has improved substantially (80-90%) since privatisation and that the main driver for this has been increased train size. Over the same period TOC staff productivity has barely changed – in spite of substantial growth in passenger numbers. For a volume-hungry industry like a railway this is counter-intuitive, as one might expect significant growth in productivity as more people were conveyed. The main reason would appear to be the introduction of additional small (2-5 carriage) trains rather than adding additional carriages to existing trains.

A balance needs to be struck between gaining greater productivity through providing longer but slightly fewer trains and TOCs operating more frequent, but shorter trains. Privatisation demonstrated that, up to a certain level, a more frequent service would stimulate a greater demand

than simply adding carriages. The ability to "miss" a train and catch the next without a significant effect on journey time is a clear benefit when comparing a car journey with a potential hour-long wait if a service is missed. There is, however, a point at which this effect diminishes and the difference between a train every 15 or 12 minutes, or between 12 and 10 minutes is barely perceptible. This could make all difference in being able to accommodate an extra freight train within the existing infrastructure and an expensive capacity enhancement scheme. It will be important to consider the cheapest way of obtaining growth, which may be different in an urban environment compared to a regional or inter-city one.

When drivers and guards/conductors were not well paid, there was an argument that the incremental cost of providing additional capacity in the form of more trains, rather than adding extra coaches to existing trains, was relatively small and more than offset by the benefits of a more frequent service. However, with drivers now being paid more – sometimes much more - than £50k a year and guards/conductors c.£40k a year, this argument is much less compelling. Engagement with the Unions, both on managing operator costs and the delivery of services should also be considered.

GBR needs to determine what level of frequency – and thus, in most cases, capacity ahead of current demand – is justified for each type of service. For example:

Main long distance inter urban routes – 2 trains an hour
Secondary inter urban routes – 1 train an hour
Metro services - 6 trains an hour
Inner suburban – 4 trains an hour
Outer suburban – 2 trains an hour

Clearly, where more than one service operates on a particular route section there could be a greater number of trains, although even here the scope for joining and dividing trains en route should be re-examined where route capacity is at a premium.

The overall approach should be to determine the appropriate timetable for each route, based on current demand and the minimum number of units/train crew required to operate it. In a post Covid era, a standard all-day timetable may well suffice on many routes, with good all-day utilisation of rolling stock and staff. In this situation, there would not be spare stock and staff standing idle outside the peaks that can be used at marginal cost - a clear management decision will be required about how much a more frequent service is worth to justify additional rolling stock and staff. We believe that further research is required to better understand the relationship between the frequency of services and areas such as reliability, value, comfort and the revenue/cost consequences.

In both infrastructure and train service provision, we believe there should be a series of ratios that would allow progress towards a more efficient railway to be measured and monitored. There will always be reasons why ratios for different routes and services will vary , but they provide a useful starting point for comparisons and, over time, a series of data for each route or service. For infrastructure, maintenance and renewal cost per kilometre of plain line and per turnout would be informative, as would the cost of electrification per single track kilometre (exclusive of structures, which will vary widely from case to case.

For train operation, cost per seat and train occupancy ratios would be informative, alongside existing measures of reliability and punctuality plus train availability, condition presented for service etc. The detail is less important than the existence of such ratios and their use as a management tool.

Contributing to long-term economic growth

Question 4

a) As Britain recovers from the effects of the COVID-19 pandemic, what evidence do you have for how rail can contribute to wider economic growth over the next 5, 10, and 30 years? What is a stretching yet realistic ambition for this objective and what measures can we most effectively use to consider success over the coming 5, 10 and 30 years? What type of interventions over that period will provide maximum value for money from rail's economic contribution, and what evidence can you share to support your views?

There is a wealth of evidence to indicate that efficient transport links are a key factor in an economy's productivity and efficiency. These range from micro level factors such as the impact of congestion in delays and lost time to macro level issues such as the perception of transport and/or logistics provision by inward investors. We suggest that GBR develops a suite of indicators of how rail impacts on economic growth, possibly through commissioning academic research on the subject. In terms of an overview of the relationship between travel and the economy, we recommend the book 'Why Travel?' edited by Matthew Niblett and Kris Beuret (2021, Bristol University Press).

b) In the context of enabling development and regeneration opportunities both in the immediate vicinity of stations and within the surrounding area, how can rail best facilitate improvements to places and local growth, through improved connectivity and unlocking commercial activity, housing, and employment over the next 5, 10 and 30 years?

In many ways, this is the local/regional equivalent of the national benefits outlined above and might usefully be addressed in the same way.

It will be important to ensure developments at stations are undertaken in conjunction with surrounding initiatives, particularly those of local authorities who are now having greater obligations on connectivity and integration of transport within their areas. This needs to include accessibility and coordinated streetscapes, based on principles of inclusive design.

An example we would give as to how the involvement of local/regional authorities could benefit long term growth is that of the Cross City line in the West Midlands. In 1973 it operated between Birmingham and Lichfield hourly, half-hourly to Four Oaks (PTE boundary)), using elderly diesels. South of New St there were three trains a day to Redditch. Five Ways, University and Longbridge stations did not exist.

The PTE developed plans for these two routes which involved linking them across New Street from 1978 with a four trains an hour, plus peak extras, service (hourly between Barnt Green and Redditch). New stations at Five Ways, University (for Birmingham University and Queen Elizabeth Hospital complex) and Longbridge (for the car factory) were constructed. The station at University was such a success, with all-day demand due to its catchment area, that it is currently being enlarged to cope with the severe overcrowding.

The line was electrified in the early 1990s and new trains introduced. In the mid-1990s an all-day 10 minute interval service was introduced and subsequently a passing loop constructed on the single-line Redditch branch allowing a half hourly service there.

All of these enhancements were promoted by the West Midlands PTE and the continued development illustrates their continuing success in helping to facilitate travel and the growth of the Birmingham economy. It seems unlikely that they would have occurred without the local focus on opportunities and needs.

c) What innovative and modernising ideas do you have which would benefit the railway while supporting the strategic objectives? Please give evidence and make reference to how they would maintain or enhance the railway's safety record.

In freight and logistics, electrification of the remaining 700-800 miles of the core freight network to ensure supply chains can operate in an efficient decarbonised manner. In urban logistics, a new small container product would allow goods to be moved by rail from a distribution centre to a simple modal transfer terminal at the edge of a city, for delivery into the High St on rigid battery trucks. This would provide a fully decarbonised supply chain, removing the particulates and visual intrusion of large diesel trucks in the urban environment. This could extend to van-body size containers for home delivery from the same terminals. In both cases, the attraction for the retailers is removing one stage from the supply chain - which could save significant cost.

<u>Levelling up and connectivity</u>

Question 5

a) What evidence can you provide for how the rail sector contributes to the four levelling up outcomes and to improving connectivity in across Great Britain, including through cross-border services? How does this change depending on the type of place where the sector operates (including in cities, towns and rural areas), and what are the most cost-effective ways at the sector's disposal to improve that further during the next 5, 10, and 30 years?

Please see CILTs comprehensive response to Sir Peter Hendy's Union Connectivity Review (attached)

b) How could the rail industry, over the next 5, 10, and 30 years, become more responsive to, and more accountable to, local communities and passengers? Please give evidence and examples in your response.

An extension of the very successful Community Rail Partnerships would be a good step forward. It will be important to set relevant objectives which in turn will set a level of accountability, both GBR and to the communities they serve. A key area will be setting the expectations for levels of funding, both from a national and local perspective. To the extent that national funding is provided, there will need to be a process established to ensure that value for money is obtained.

c) What is a stretching yet realistic ambition for this objective and what measures can we most effectively use to consider success over the coming 5, 10 and 30 years? What are the interventions over that period which will be the maximum value for money, and what evidence can you share to support your views?

Please see CILTs comprehensive response to Sir Peter Hendy's Union Connectivity Review (attached).

Delivering environmental sustainability

Question 6

a) What is a stretching yet realistic ambition for this objective and what measures can we most effectively use to consider success over the coming 5, 10 and 30 years? What are the interventions over that period which will be the maximum value for money, and what evidence can you share to support your views?

This objective should be applied on the basis of the relative carbon emissions (and other environmental impacts) from each mode, as evidenced in the Transport Decarbonisation Plan.

CILT published a set of papers for the COP26 conference which included two papers on rail, related to passenger and freight (attached). The papers noted the hierarchy of avoidance, shift and improvements and suggested that a rolling programme of line electrification and replacement of diesel traction, as set out in the Network Rail Traction Decarbonisation Network Strategy, includes targets to ensure the end of diesel-only traction by 2040. In the short term, success can be measured by the reduction in emissions from both passenger and freight.

We believe that the greatest benefit will come from electrification of the 700-800 miles of the core freight network that is currently unwired and those dense suburban networks that are still reliant on DMUs. This relates particularly to Birmingham and Leeds/Manchester/Liverpool and the Chiltern route – in several of these cases, such as the Chiltern main line north of Banbury and the Calder Valley, there is strong synergy with freight electrification.

With MML and Trans Pennine being electrified under IRP, the remaining inter city routes that are high priority for electrification are the NE-SW Cross Country route between Doncaster/Wakefield and Bristol, plus the deferred extensions to Great Western electrification to Oxford, Bristol and Swansea. All of these have strong synergy with freight, as does electrifying the Berks & Hants, primarily for aggregates traffic but enabling Plymouth/Penzance services to operate in electric mode for another 60+ miles before switching to diesel. The Oxford and Bedwyn services could switch to EMU operation, freeing up 800 IETs for more productive use elsewhere, notably on Cross Country.

By the time this initial package of electrification is on the way to being delivered, the true potential for self-powered (battery or hydrogen) trains should be much clearer. At that point, the remaining sections of route recommended for electrification under TDNS can be assessed in a more informed manner. In addition, production line techniques of electrification should be demonstrating that much lower costs can be achieved, especially on routes where high speed operation is not required.

Intuitively, we consider that lines such as Bristol-Penzance, Newport-Crewe and the North Wales Coast will prove to be sound cases for electrification, whereas other less well used routes may be better resourced with battery units. In general terms, routes with two or more trains an hour in each direction can be expected to be good candidates for electrification, whereas routes with one train or less per hour in each direction may be better served with battery units.

b) What use can the rail sector make of emerging or existing technologies to reduce its impact on the environment and enhance biodiversity over the next 5, 10, and 30 years, and, in a proportionate and cost-effective way, help national and regional authorities to meet their environmental objectives?

The best existing (and indeed mature) technology is electric traction which, especially when combined with green electricity generation, provides much the most sustainable form of mass transport. Shifting passengers and freight to rail from other modes will have a short term, but continuing, effect. Recent increases in the price of electricity for traction have had an adverse effect as the price for diesel has not risen as much. GBR should require operators to engage in long term contracts for green electricity to ensure that short term price fluctuations are smoothed out and net zero is achieved quickly. However, caution should be exercised. Where long term contracts already exist in UK rail, such arrangements are for a fixed period (just like domestic fixed-price contracts) and then that period expires at which point market prices have to be accepted. It should also be noted that entering long term deals when the price is high is not recommended. The main concern is that the UK needs to insulate itself against global energy prices by developing sufficient renewable (and nuclear) generating capacity to meet all needs, including but by no means restricted to, transport. It may well be better for GBR, with its large buying power, to contract with energy suppliers and off charge power to TOCs and FOCs – much as NR does now.

In terms of emerging technologies, hybrid traction is now established and enables reductions in emissions by avoiding the use of diesel engines where electrification is available. Battery technology is also developing fast and will have significant applications for 'last mile' situations or relatively lightly used lines where line electrification cannot be justified. This includes last 5/10-mile freight branches and terminals – the new generation of large electric freight locos will need battery capability for such operation off the main network.

Infrastructure requires significant amounts of carbon in the production of steel, concrete and other materials and there are emerging technologies, probably for the medium and longer term, which can reduce the carbon content (see, for example, Brimstone Energy). NR is already using recycled tyres etc to make structural components for footbridges for instance.

Railway lands (principally embankments and cuttings) provide excellent habitats for biodiversity because they are secure and linear. Tree management is required but can be mitigated by selective cutting and re-planting with appropriate species including wildflowers. Network Rail/GBR should be required or incentivised to replace felled trees with appropriate species, in the same way as local and highway authorities.

Nevertheless, consideration should be given to a more robust approach here. Recent events – the Salisbury collision and numerous incidents of falling trees blocking lines, becoming wedged under trains (risking derailment) and bringing down OLE, to say nothing of leaf fall – suggest strongly that GBR should seek/insist on clearance of all trees and bushes inside the fence where there is a risk of

trees falling onto the lines, with only grass and wild flowers being allowed to grow, controlled by highly efficient rail-mounted mechanical flails/strimmers. This is a critical transport network, not a conservation area, and there are numerous other places – parks, canal banks, closed rail routes etc – where nature can be allowed to have priority. Consideration would, however, need to be given to the noise reduction effects of trees alongside a railway line and alternative approaches to containing noise emissions.

Clearly, there would still be a risk of trees falling onto the railway from adjacent land, but a regime of charging landowners (in practice, their insurers) for the cost of disruption so caused would quickly lead to action being taken to reduce the likelihood of it happening. The same should apply to road hauliers whose staff drive high sided vehicles into bridges – the railway has taken a supine approach to these issues for far too long and borne costs which others have caused through their negligence.

c) How can rail best invest in climate resilience, supported by smarter forecasting, planning and technology, over the next 5, 10, and 30 years and what evidence do you have to support your view?

GBR should draw up a climate resilience strategy based on inputs from the Met Office, Environment agency and other providers, building on the work of the National Infrastructure Commission and the Climate Change Committee.

GBR will have the opportunity to invest in resilience measures (even such long-standing challenges such as wheel-slip protection) because it will be responsible for the long term benefits as well as the costs.

GBR should invest in high grade monitoring equipment at locations which are vulnerable, be it coastal or river flooding or cutting/embankment slips. GPS transmitters would activate warnings in both ROCs and signalling centres plus, potentially, broadcast an automatic warning to all trains in the vicinity. As Carmont tragically demonstrated, the use of modern technology to monitor infrastructure which carries significant risk and communicating the information quickly and accurately to those who need to know – signallers and drivers – is very limited.

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