

# WHOLE INDUSTRY STRATEGIC PLAN FOR RAIL

ACE Response



## About ACE

- We are the association for the UK's professional consultancies and engineering companies operating in the social and economic infrastructure sectors.
- The **Association for Consultancy and Engineering (ACE)** champions infrastructure and the built environment to government and other stakeholders, representing the views of around 400 members.
- Our members employ over 60,000 in UK and 250,000 worldwide, contributing more than £15 billion to the UK economy. However, the buildings they create actively contribute over £570 billion a year of GVA.
- Our vision is for a political, economic, and commercial environment that enables the consultancy and engineering businesses to thrive and make the world a better place.
- We promote the interests of companies delivering professional services in the natural and built environment. We do this by bringing members together to share knowledge, experience, and insight. This shapes our tangible business support, as well as our proactive engagement with policymakers across the UK.
- Our members provide solutions to some of our biggest challenges – How do we design a Net Zero future? How do we create opportunity for communities across the devolved nations and level-up regions? How can we kickstart growth and jobs on a path to economic recovery? How can we deliver more social value?
- Our **Transport and Mobility group** forms an important part of ACE's Voice of Consultancy workstream. Through this group, we engage with members, champions mobility and transport, and shapes ACE's interactions with policymakers, evidence-based thought-leadership and ensures our industry is at the forefront of political discussions on the future of transport. The group is chaired by **Andy Bell** of **Ramboll**.

## Background and purpose

In May 2021, the Government announced its plans for the biggest reform to the railway industry in three decades, bringing it back together, after years of fragmentation, under **Great British Railways (GBR)**, a new public body that will run and plan the rail network, own the infrastructure, procure passenger services, and set most fares and timetables.

The UK Government's ambitious plans to reform the rail sector were outlined in a white paper, the Williams-Shapps Plan for Rail, in May 2021. The Plan for Rail recognised that rail has a fundamental role to play in supporting the economic, environmental, and social goals for Britain, and recommended the establishment of a new organisation, Great British Railways (GBR), which will bring together the whole rail system to run the network in the public interest.

## Introduction

When the Secretary of State for Transport announced the creation of the **GBR Transition Team** in October 2021, he set out the core goals that will define it:

- Changing the culture of the railways, not simply creating a bigger version of Network Rail.
- Thinking like customers, both passengers and freight, and putting them first.
- Growing the network and getting more people travelling.
- Making the railways easier to use.
- Simplifying the sector to do things quicker, driving down costs and being accountable.
- Having a can-do, not a can't do culture.
- Harnessing the best of the private sector.
- Playing a critical role in the national shift to Net Zero.

## Call for evidence

As the UK Government works to achieve long-term goals in reducing net greenhouse gas emissions to zero, levelling up, and growing the economy, rail will have an important role to play. There is now a call for evidence to, “provide the opportunity for full and meaningful participation in the Strategic Plan’s development, demonstrating our commitment to strengthening collaboration, as promised in the Plan for Rail, and reflecting the outward looking culture GBR will have.”

This call for evidence is a keyway in which the government are engaging with a wide range of stakeholders to ensure the Strategic Plan will be based on robust, evidence-based foundations.

The call for evidence is seeking to consider the perspectives of stakeholders both inside and outside the rail sector, and how rail can support their ambitions and priorities.

## Consultation response

Our submission is a summary of responses received from ACE members, following a call for input. We note that some members may have responded to the consultation directly.

### 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?**

In response to our call for input, members told us that a key objective aspect surrounds the area of an integrated Digital Rail programme. The application of digital signalling technology could realise the ‘hidden capacity’ in the existing rail network. This could ultimately address and/or significantly contribute to progressing and realising these Strategic Plan objectives over the next few decades.

As part of the digital enhancement in the rail industry members feel that this needs to be informed using real data about utilisation of the network. This will also inform the design of the network and increasingly help to manage the performance optimisation through the digital vehicle control and management systems.

ACE members feel a discussion around what the future purpose of the rail network as working practices, travel patterns and the tool used for travel, and freight / light logistics must become a greater part of the rail traffic mix and that needs to inform a comprehensive vision for a planned national network.

A greater need for an overall sustainable transport strategy, with proper planning for end-to-end journey provision and the utilisation of the station estate to facilitate this: including light logistics distribution, vehicle charging facilities is considered by many members as a vital requirement to the modernisation of the UK rail industry.

Other objectives that ACE members consider important is the greater demand for regional enhancement, transport intermodal integration: medium – objectives include long term business travel v leisure travel adjustment due to shift to home working, off peak commute and reduced office space demand. Travel adjustments due to new home working patterns during and after COVID 19 must be judged and factored into the ongoing UK rail programme.

Members feel that objectives can also be targeted at the technologies, processes, design, engineering which can be applied to the whole of the existing rail infrastructure network and rolling stock.

**Question 1 (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?**

In response to our call for input, members told us that a long term visible sustained investment pipeline to asset/system investment such as electrification, which could impact on supply chain resource capability and staff training/retention and overall investment unit cost must be considered here as possible barriers.

Members have stated that the retention of the potential for incentivisation for route, train and infrastructure enhancement often driven by franchise arrangements and external investment could be seen as a potential problem.

Will GBR have the ability to convert technology and operating innovations into delivery e.g., Digital railway, development of hybrid train solutions, able to meet carbon neutrality targets? The carbon neutrality commitment/targets as set by the current Government will require for example sufficient funding to deliver on mainline and principal route electrification programmes and provide excellent coordination on hydrogen supply/production at national level.

Members told us that within a wider context this whole industry strategic plan demands that government, GBR, freight operators and local authorities will need to pull together to drive forward the deployment of digital signalling to the whole rail network as the benefits will be universal.

As one member stated: “This is one key example where levelling up, financial and environmental sustainability, connectivity, customer needs and economic growth could all be supported simultaneously with improvements to the overall rail network. Digital Rail (systems, technology, processes) can be applied if beneficial, to the whole of the existing rail network, so that investment would ultimately benefit all.”

Finally, another aspect that members have expressed some concern about is the level of skill retention/development of the rail industry for both the new GBR ownership and supply chain/manufacturing base. Degree apprenticeships need to be progressing at a correct pace, also there needs to be good integration between educational providers and rail industry training capability providers to ensure the best workforce is available to cope with all the operational changes over the next 10 to 20 years. As demand for skilled rail resources increases, members feel that railway engineering should be taught holistically and as

an integrated whole, calibrated accordingly to disciplines. This should be underpinned with regulated industry awareness and rail operational requirements appreciation (Users and Maintainers).

**Question 1 (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.**

From ACE's recent report [Are we ready? Delivering Net Zero in the built environment](#) (December 2020), the following areas were identified by the **Committee on Climate Change (CCC)** pathways as being of importance in the built environment and in timeframe stated in the above question:

- Major rolling electrification programme in 2020s.
- At least 54% of rail track electrified by 2040 with key freight corridors electrified.
- Rail to support freight and mobility needs of other decarbonising sectors e.g. industrial clusters with Carbon Capture and Storage, reduced internal UK flights, and production and storage of hydrogen at scale. Emissions from stations must be zero by 2050.
- Traction emissions on the rail network must be virtually zero.

Regarding rail, ACE surveyed 135 sector experts across ACE and sister organisation the **Environmental Industries Commission (EIC)** member companies for the Are We Ready? report. These individuals are experts in each sector and work with private and public sector clients of all sizes on projects. ACE asked them to rate the broad readiness of each sector to adopt the CCC pathway against the criteria outlined beforehand.

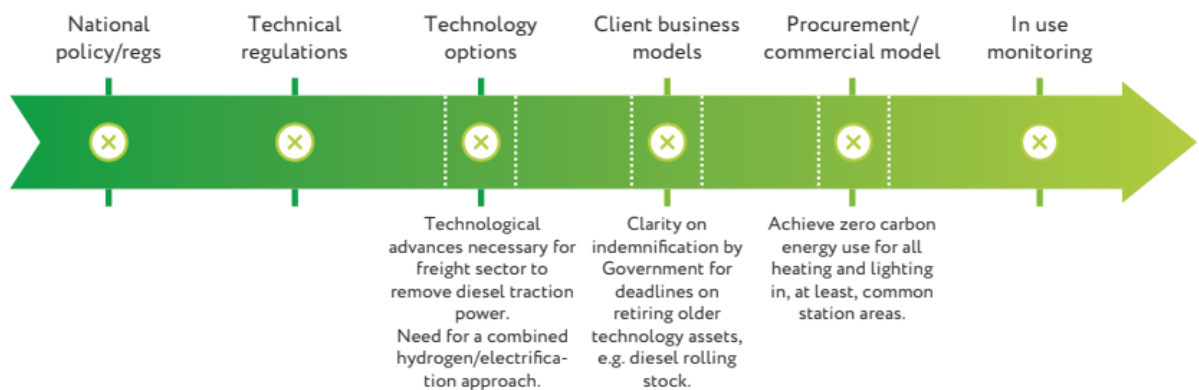
	Technical feasibility	Capacity to deliver	Regulatory ease	Societal acceptability	Acceptability to private sector	Acceptability to public sector	Client-relevant technology	Investor appetite
<b>Roads</b>	5	5	5	6	5	6	5	5
<b>Buildings</b>	7	6	6	7	6	7	6	6
<b>Water</b>	4	4	3	7	6	5	4	5
<b>Rail</b>	8	8	7	8	8	8	8	8
<b>Ports</b>	2	3	2	9	3	7	3	3
<b>Airports</b>	3	4	5	4	5	5	6	5

In terms of the rail industry and its long-term viability, the concern of technology and the capacity to deliver is not seen by ACE members as a barrier to the broader objectives as outlined in the Whole Industry Strategic Plan.

Also, from the Are We Ready report, in terms of the rail industry and its technical readiness, the technical recommendations as drawn from ACE/EIC member survey of sector experts shows below the technology options and client business model's considerations to be thought through to meet environmental stability.



## Rail



### Question 1 (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?

In response to our call for input, members told us that they are still unclear as to the future of the UK rail industry regarding the elements of the impact of Brexit and whether the pandemic could limit essential funding and investment in this sector? For example, will the levels of research funding be potentially reduced through reduction in EU research programme access? The full understanding of Brexit with regards to technology and interoperability development are yet to be fully known.

ACE members also expressed a concern regarding carbon neutrality and rail electrification: “UK (and European) centralisation arrangements for carbon neutral power generation. For example, Transport for London is the biggest electricity consumer in the capital. Rail electrification is part of the national energy picture which requires grid resilience - loss of grid inertia over recent years with changes in generation methodology. If more reliance is placed on the electrification of primary rail routes, this must be considered as part of a national initiative. There is concern that carbon neutrality of road haulage could be an issue and investigations/feasibility into electrification system for HGVs are being made.”

Any major rail build programme appears to still experience significant integration issues with regards to final product, for example Crossrail’s extended delays. At design and implementation levels, the process and needs of system integration are not fully appreciated nor necessarily taught, particularly to the more non-system-based asset areas such as civils.

**Question 1 (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 response to our call for input, members said that a key factor to improving the rail sector to improve integration with the wider transport system is the further development of digital technology. Digital rail (systems, technology, processes) can be applied to the whole of the existing rail network so that investment would ultimately benefit all and thus give better transport integration.

As can be seen in terms of meeting customers' needs, digital signalling could provide a significant opportunity as it can be applied to the entire network and this network can then be controlled from a series of **rail operating centres**. One member states that: "These Centres could all talk to each other so that the whole network and associated timetables can be taken into account into the overall picture. Whilst HS2 and other rail schemes are key to meeting customer needs and financial sustainability, they are more beneficial to the critical parts of the network. Digital technology ultimately can significantly contribute to achieving network wide objectives. The challenge is that there has to be a unified and concerted approach industry wide to address the challenges of deploying the solution as the needs and risks facing different parts of the industry will be different at one time and the journey to get to the solution will take several years."

More transitional training between industry sectors resources such as, highways engineers transitioning into railways will benefit the industry as a whole and help to contribute to greater integrated transport services.

Focus on the role of the design integrator and a 'one team approach' was a feature of ACE's [Project Speed and the Rail Sector Briefing](#) (February 2021). In this briefing, ACE states that the rail engineering projects tend to involve many different parties including Network Rail (soon to be replaced with GBR), TOCs, consultants, and contractors. Once the value outputs have been defined, it is important to treat the project as a unified whole with a single team spearheading delivery.

In the past such a 'one team' approach has often been frustrated by a rigid application of GRIP, leading to unnecessary hiatuses and project segmentation alongside frequent changes of personnel between GRIP stages which leads to inefficiency and delivery risks.

A better approach is to maintain a unified team throughout the project under the oversight of a design integrator. This integrator is more than a project manager and must be able to bring together the disparate strands of the project, challenge detailed focused designers, and deliver to agreed outcomes, rather than solving detailed technical challenges. This ensures the overall design remains fully focused on the outcomes the client has asked for, allows more flexibility to deliver productively and add value, while encouraging the introduction of innovative technology.

The design integrator facilitates top-down, value-added design, where the overall route is optimised against programme objectives. In turn, this supports individual delivery packages by providing contractors with a clearer reference design and suite of requirements with limited scope for change. This approach avoids over-specification and over-design.

The design integrator will also ensure that the full potential for digital design techniques are explored. For example, design material that can be accessed digitally by different partners in a collaborative way and through common data environments.

Digital design also enables 'design rehearsals' to be carried out to prepare for construction, which in turn should ensure smoother implementation and less disruption to the day-to-day running of the network.

As has been stated in Q1(a), the use of an integrated digital rail programme, with the application of digital signalling technology could be key objective to delivering rail integration.

## Meetings 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?**

In response to our call for input, members told us that the simplification of the fare structure and the digitalisation of the ticketing system integrated across all public transport modes is vital to achieving this key objective of the new rail strategic plan.

Members also state that with higher quality and availability of Wi-Fi access across the rail network, this will help to deliver greater customer satisfaction. Some members even feel that this supersedes journey time as a top customer need/requirement.

A more different approach to facilities such as fully realising the potential of the station estate should be considered. This new use of the station estate could deliver services such as: childcare spaces, workspaces, grocery development, and other facilities such as product collection or distribution.

**Question 2 (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.**

In response to our call for input, members told us that a key issue is sustainability. Transition from primarily 'go anywhere' diesel to 'go anywhere' rail freight carbon neutral targets must be considered in terms of the issue of power. Power required is not insignificant, electrification will not solve the problem everywhere.

Members believe that this must be about sustainable freight logistics in the first place and the shifting of long-distance freight from road to rail. This could help to develop longer-term economic growth by boosting the economy through cheaper reliable national logistics. Also, this has the potential to aid the Levelling Up initiative.

**Question 2 (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?**

In response to our call for input, members told us as mentioned above in Q2(a), taking a bolder approach to the use and functionality of the station estate could enhance the opportunities for local communities. Seeing improvements in the station estate to meet different 21<sup>st</sup> century-based customers' needs (for example childcare provision) could ensure that rail use increase. Different work/home life commitments could be partially met by taking a bolder attitude to station estate use.



## Delivering financial sustainability

**Question 3 (a) 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?**

In response to our call for input, members told us that the use of digital signalling was an opportunity that could be applied across the entire network. This network could then be controlled from a series of Rail Operating Centres which could all communicate to each other so that whole network and associated timetables can be considered. Digital signalling could ultimately and significantly contribute to achieving the network wide objectives. The challenge is that there must be a unified and concerted industry-wide approach to addressing the digital signalling barriers.

Financial sustainability needs to be recognised around the actual contribution the railway makes to the economy, to the wider community in terms of facilitating economic activity, as well as the move towards targeted predictive maintenance regimes based on asset monitoring and modelling.

Other members think that there also needs to be some thought on how the railway estate is most effectively managed as a “corridor for power and communication” and how this is something that private investment can easily access and exploit to fulfil its untapped potential.

Another significant barrier to financial sustainability is the method Network Rail uses to set budgets for renewals and repair projects which is separate from setting their associated project requirements. Members believe that planning interventions are often based on a short five year timeframe, imposed by the control periods rather than considering longer timeframes and even minimum whole-life cost.

The budget for a renewal or repair intervention on the network is set in part of Network Rail, while the project output requirements are set by another (the asset managers). On the majority of Control Period 6 projects, this has led to the forecast cost of these interventions being greater than the budget allocated. Consequently, projects are either postponed or deferred until the next period. In many instances this has led to an intervention that is reduced to, “patch work or make-do interventions, carried out which simply extend the asset life for another two to three years in order to get the asset into the next control period.”

This approach to renewals and repairs interventions has three potential negative impacts:

- Delays in improvements and consequently a detrimental passenger experience.
- Increased cost of delivery due to increased pre-construction costs.
- Inefficient interventions which are within budget but are not financially sustainable, and are not minimum longer term / whole-life cost.

The opportunity for GBR would be to develop an intervention planning function to help responsibly allocate budgets based on supply chain cost forecasts that lead to the most efficient interventions and minimal whole life cost. A “Project 13” approach might well be the best way to do this.

Focus on financial sustainability and other factors were highlighted in ACE’s [Project Speed and the Rail Sector Briefing](#) (February 2021). In this briefing, ACE states that the focusing of design at the start of projects is a key element to ensuring financial sustainability and therefore, the meeting of strategic objectives with the needs of customers.

“Rail projects are often large and complex, but the risk of cost overruns can be exacerbated by too much unfocused preliminary work. When this is done before the core outcomes of the project are agreed by all parties then the risk is poor scoping and design creep which will only add to cost later on. For example, surveys at GRIP Stage 2 mean surveying options that do not progress.

The solution is not to cut out good optioneering and scoping work but to make sure this is based on a clear understanding of what the project is trying to achieve. For example, on one rail project where the aim was to reduce passenger journey time, an assumption was made that this could only be achieved through increasing line speed. This would inevitably involve high-cost engineering and other ways of reducing journey time were not explored. The solution is greater use of value-based decision making where a common, transparent understanding of how value is defined against different metrics is achieved at the outset. The Construction Innovation Hub’s Value Toolkit provides a good framework of how this can be practically incorporated into business case development.

This process must happen collaboratively, and lead to an agreed output-based scope. Once this has been done, digital design tools can be used to model and scope potential options at a much faster rate, effectively giving a digital model of the business case which can be interrogated, rather than a static paper based one.”

### 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?**

In response to our call for input, members told us as previously stated in Q2(c) that there must be a viable use of sustainable freight logistics.

Another aspect that members stated links in with question 2 and the area of meeting customers’ needs, and the issue as to who does the station and property belong to? Currently this is owned by Network Rail, but operators also have an ownership responsibility for non-major stations. Many stations only require rail functionality, but often have associated listed or significant infrastructure of railway heritage interest. Station structures must be maintained but are listed or significant heritage listing so cannot be demolished or altered to reduce the overall operating cost.

Local communities may often have a stake in the station fabric, so perhaps greater integration with the community and thus its use of station infrastructure through Local Authority association and local communities is needed. Again, if there is to be this new and forward-thinking approach to station estate use greater communication, organisation and resource allocation is required in order to gain longer-term economic growth both for local communities and the UK economy as a whole.

**Question 4 (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?**

Please refer to Q2(a) and Q4(a) to the potential new uses of the station estate in terms of unlocking commercial use, connectivity, and employment opportunities.

**Question 4 (c) What innovative and modernising ideas do you have which would benefit the railway while supporting the strategic objectives? Please give evidence and refer to how they would maintain or enhance the railway’s safety record.**

Please refer to Q2(a) and Q4(a) to the potential new uses of the station estate in terms of unlocking commercial use, connectivity and employment opportunities.

### Levelling up and connectivity

**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?**

In the report, [Levelling Up – Five Principles for Success](#) (November 2021), ACE carried out its own research into the patterns of need and opportunity in the four groups of areas identified by the **Institute for Fiscal Studies** (IFS).

An analysis of the IFS study referred to in the report suggests that the localities identified as ‘left-behind’ fall into four separate types: urban; coastal; post-industrial and remote rural. For the purposes of ACE’s research, five different example places were selected for each of the four categories. Where possible each of the places looked at was specifically identified as ‘left behind’ in the IFS report.

The types of places included:	
<b>Remote rural</b>	Fenland, Northumberland, East Lindsey, Craven, North Norfolk
<b>Post-industrial</b>	Bradford, Wakefield, Barnsley, Wigan, Stoke-on-Trent
<b>Urban centre</b>	Liverpool; Birmingham; Manchester; Newcastle upon Tyne; Leicester
<b>Coastal</b>	Hartlepool; Blackpool; Torbay; Great Yarmouth; Gosport

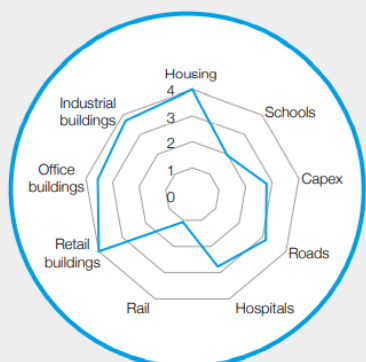


Figure six: Coastal

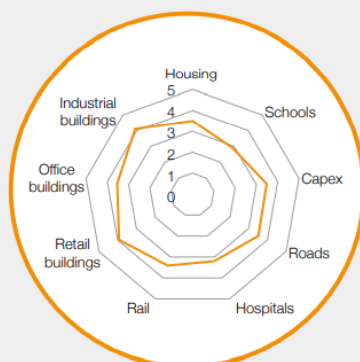


Figure seven: Post-Industrial



Figure eight: Rural

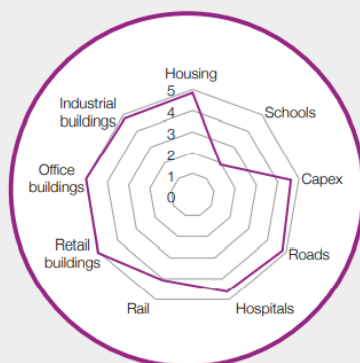


Figure nine: Urban

Using these four areas, a series of data sets on the provision and condition of social and economic infrastructure across local authorities in different parts of the country were constructed.

The data analysed contained a basket of measures covering several different types of both public and private built environment (housing, roads, commercial buildings, schools). Where possible the data used reflected the accessibility of the built environment as well as its volume. A rail metric was included as part of the analysis:

**Average number of selected rail stations within 30 minutes by public transport.**

A diagrammatic interpretation of these local authority results can be seen to the left.

Outside of the urban areas studied and to some extent post-industrial areas, rail

connectivity is very dependent on roads and that the remote rural and coastal group of locations are very badly served here.

Thus, regarding the rail sector and to improving its connectivity with other public transport services, a focus in ensuring that access to available to all members of local communities to railway stations could be seen as a consideration also. Demand use of the rail sector may be limited by the public in remote rural and coastal areas.

Providing good local public transport links to local railway stations could be a powerful gateway for members of the local communities to help gain improved access to all four of the levelling up objectives (empowering local leaders and communities; boosting living standards and connectivity; spreading opportunities/improving public services and restoring local pride).

**Question 5 (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?**

For ACE's report, [Levelling Up – Five Principles for Success](#) (November 2021), a member taskforce was used to identify five principles for delivering successful place-based regeneration and levelling up. These five principles can be seen as a context to aid/challenge robust approaches to the rail sector and levelling up:

### 1. Build a solid evidence base

Levelling up needs to be based on a robust analysis of local context. This analysis should include an area's existing buildings and infrastructure, its geography the planned infrastructure investment pipeline for the area, local skill sets, demographic data, and the results of deep engagement with stakeholders and the local community about their needs.

### 2. Work out how you'll become famous

A place needs a strong and achievable proposition to put to its residents, commuters, visitors, and investors.

### 3. Build on what you've got

A place's proposition doesn't need to be completely original and not every place can be world class in everything. What is important is a proposition's fit to the area's particular conditions opportunities and personality. Leverage off these advantages and avoid chasing funding pots or trends for their own sake.

### 4. Organise delivery around people's needs

Levelling up demands joined-up solutions to broad strategic challenges. Public and private sector alike need to organise around people and their needs and not their own technical disciplines or internal structures. Delivery plans should be based on bundles of interventions that join the dots between transport, energy, environment, education, employment, and everything else important to a place.

### 5. Ask the hard questions about your capacity and capability

Assess if local public sector institutions and their private sector partners have the capacity and skills to develop and execute your strategy – you may need to amend plans or find new sources of support.

It is particularly important, on the levelling up agenda, that the plans within the WISP are aligned to, or at least influence, the Government's Levelling Up White Paper.

## 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?

In response to our call for input, members told us without question the single biggest pressing issue is the need to have a rolling programme and a firm funded pipeline of work in a rolling programme of digitalisation and electrification to meet the environmental and sustainability targets set.

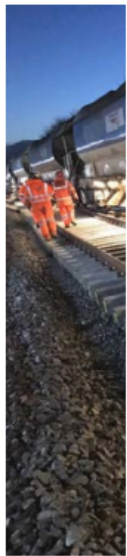
Members feel that the railway can be a corridor to help enable the Net Zero objectives to be achieved and contribute to a better quality of life for the community by facilitating sustainable energy sources from solar and wind, with data and digital 'booster nodes' and to facilitate initiatives such as area heating programmes.

If long distance freight is placed onto the rail network, then this could bring an early return on carbon reduction. As one member puts it: "Even with mid-20th century traction technology, it is 73% more carbon efficient per ton kilometre than the most modern road vehicles."

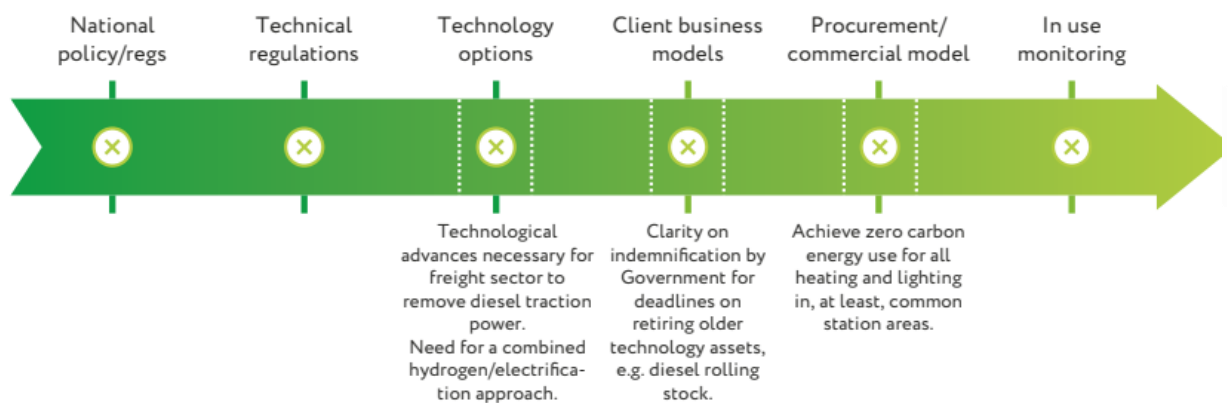
Again, as mentioned in Q2(C), members will want to ensure the Government plans on introducing a rail freight growth target is sustainable.

**Question 6 (b) 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?**

Members quoted ACE’s recent report [Are we ready? Delivering Net Zero in the built environment](#) (December 2020), on the need to address technological advances in freight, for a combined hydrogen/electrification approach, a strategy to retire old diesel rolling stock, and Net Zero carbon issues in station areas, must be addressed in the rail sector to facilitate maximum value for money.



**Rail**



In ACE’s [Project Speed & the Rail Sector briefing](#) (February 2021), as already mentioned in Q1(e), the need for a ‘one team approach’ and a better approach to the role of the design integrator must be addressed, thus assisting having a maximum value for money viewpoint.

Contained in the Are We Ready report is a case study from **Amey** that highlights where digitisation can enable the adoption of a fully digitised asset model that given the correct level of investment can reap significant dividends in better understanding our rail assets, reducing risk and enabling more efficient delivery of new projects as well as better long-term asset management:

“Leading infrastructure asset management Amey is an external supplier of civil examinations to Network Rail, inspecting and reports on the condition of the more than 100,000 assets that make up the vast majority of the UK’s rail network. The company has developed a solution to record asset data in real time, using 300 ‘ruggedised’ tablets linked to Amey developed bespoke android apps.

This technology has the potential to virtually eliminate manual processes for typing up handwritten notes and data entry, making the whole examination process vastly more efficient and effective. The company’s database of asset information is continually updated in real-time from sites where the examinations are taking place. The approach taken by Amey for asset examinations could be adopted for assurance processes for all new rail projects, with similar scope for significant efficiency gains.”

**Question 6 (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?**

Many of our members have submitted evidence to this inquiry directly. ACE members are providing innovative solutions. ACE could bring these member companies together for the purposes of a roundtable to discuss these issues.

## Conclusion and next steps

ACE is willing and able as an organisation to follow up on any of the above answers given in this response to the areas of interest as stated in the Whole Industry Strategic Plan consultation document.

ACE can help to facilitate consultations between Great British Railways and its members from the UK's professional consultancies and engineering companies to provide opportunities for engagement on the Whole Industry Strategic Plan.

## Contact

To discuss anything in our response, please contact **Guto Davies** (Head of Policy, ACE) at: [gdavies@acenet.co.uk](mailto:gdavies@acenet.co.uk)

