ICE submission to the Built Environment Committee's inquiry on public transport in towns and cities

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Introduction

Established in 1818 and with over 96,000 members worldwide, the Institution of Civil Engineers exists to deliver insights on infrastructure for societal benefit, using the professional engineering knowledge of our global membership.

This response focuses on questions 2, 3, 5, 6, 7 and 8 of the call for evidence.

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2. How might public transport travel patterns shift in the next 10 years? What impact could digitalisation and the COVID-19 pandemic have on travel patterns in the long term?

It remains unclear how the Covid-19 pandemic will affect public transport demand and travel patterns in the next decade. However, ICE's work on Covid-19 and the new normal identified that future infrastructure planning should still be driven by existing long-term challenges, including population growth, rebalancing the economy, meeting carbon emission reduction targets and achieving the UN Sustainable Development Goals (SDGs).[1]

In the UK, transport is the largest source of greenhouse gas emissions (27% of the UK's total in 2019), deriving primarily from petrol and diesel use in road transport.[21] Passengers and freight need to shift to lower-carbon transport modes at an acceptable cost to the taxpayer, meaning our public transport networks will need to provide more journeys and carry more passengers in the future. Those choosing not to or unable to cycle or walk are more likely to revert to the private car if public transport cannot deliver an accessible, affordable alternative.

However, there is a risk that any ongoing reduction in passengers post-Covid-19 initiates a spiral of decline whereby lower revenues force operators to cut services or increase fares and public transport becomes both less attractive and less affordable. Such a deterioration in the quality of transport networks would undo years of progress in improving passenger numbers, reliability and journey satisfaction and must be avoided if there is any likelihood of achieving net-zero emissions by 2050, and the SDGs by 2030.

That said, there will likely be changes to travel patterns which operators will need to adapt to. Even before Covid-19, the regular five-day commute was in slow decline due to increases in flexible working, which has been further enabled by the

[1] ICE (2020) Covid-19 and the New Normal for Infrastructure Systems – Next Steps

accelerated widespread adoption of digital collaboration tools.[2] Flexible working trends likely to have occurred over the next decade instead happened in a single year.[3]

There could therefore be a lasting change in the type, destination and timing of trips people take. There may be fewer commutes into cities and changes to where people live, resulting in increased population levels in smaller towns and rural areas, which are not as well served by public transport as larger towns and cities.

Such dramatic change would present a major challenge for public transport networks, which have built large parts of their infrastructure, services and revenue models around carrying commuters during peak hours.

In response, public transport operators would need to adjust service scheduling, pricing and ticketing options, and appeal to wider markets. For instance, while rail commuters may not return at pre-pandemic levels, there could be opportunities for growth among leisure travelers.

In the National Infrastructure Commission's (NIC) longer-term scenario analysis work on infrastructure and behavioural change, four out of five scenarios would see a reduction in annual trips on public transport by 2055.[4] The analysis illustrates that even limited changes in public behaviour can affect overall demand or distributional patterns.

That said, ICE concurs with the NIC's view that it is too early to assume that behavioural change will lead to completely different patterns of infrastructure use long term.[5] Given these demand uncertainties, intelligent use of scenario planning will be vital, with operators taking a more adaptive approach and making best use of data gathering and analysis on which to base their decisions.

3. What can be done to improve connectivity across public transport modes? How could better integration be delivered in urban areas outside London?

Modal shift to public transport and active travel will play a critical role in meeting several UK government priorities, notably decarbonisation, reducing road congestion and improving air quality and health. The goal should therefore be to make it easier and more desirable for passengers to complete journeys through a combination of active travel and public transport options.

In regards to rail, the creation of Great British Railways and a new Whole Industry Strategic Plan presents an opportunity to take a more holistic view of the integration of rail with other transport modes, the wider societal benefits being sought and the type of improvements likely to incentivise people to take up public transport.

Intelligent use of scenario planning as well as constant data monitoring and new baseline assumptions about how people will use and move through transport systems will be essential. Government and industry will need to make best use of data to provide passengers with information on their travel options across various modes and routes and providing enabling infrastructure such as sufficient secure bike storage across all interchanges.

The Netherlands has been particularly successful at integrating rail and cycling infrastructure. For example, a 20-year cycle investment plan between ProRail and local/national governments to maximise convenient and high-quality cycling

[2] Felstead, A and Reuschke, D, Wales Institute of Social and Economic Research (2020) Homeworking in the UK: Before and During the 2020 Lockdown
[3] ICE (2021) ICE Discussion Paper: Public Transport Funding Post-Covid
[4] National Infrastructure Commission (2021) Behaviour Change and Infrastructure Beyond Covid-19
[5] Ibid

infrastructure at stations has doubled the proportion of rail users arriving or departing by bike (now 40% and 15% respectively).[6] The world's largest bicycle garage is located at Utrecht railway station, with almost 13,000 parking spaces.

5. Are local authorities well equipped with appropriate funding and powers to deliver high-quality public transport services? Would further devolution of transport policy contribute to better outcomes?

The value of place-based decision-making has been demonstrated through the devolution success of combined authorities and Metro Mayors. However, local action is often inhibited because subnational authorities lack the tools to deliver or by the absence of a joined-up approach from central government in relation to timescales, funding and approval mechanisms.

In 2018 the NIC recommended additional powers for Metro Mayors to deliver "ambitious, integrated strategies for transport, employment and housing".[7] In the subsequent National Infrastructure Strategy, the government did not fully endorse the NIC's recommendations in areas of funding and empowering local and regional leaders to make decisions on transport, meaning policy gaps have remained.

However, the recent Levelling Up White Paper puts a renewed focus on devolution in England, pledging that by 2030 every part of England that wants one will have a devolution deal with powers at or approaching the highest level of devolution. It also sets out that, by 2030, local public transport connectivity across the country will be significantly closer to the standards of London.

Further devolution of powers is welcome, but it needs to be accompanied by strategic decision-making on planned investment into levelling-up, such as the use of local needs assessments. This ensures investment can be designed to allow the most in-need communities access to services and economic opportunities.

Without this strategic approach or knowing how levelling-up can be effectively measured and its outcomes addressed through infrastructure interventions, the investment directed towards it could be wasted, as could the opportunity to support delivery of other, complementary objectives such as net-zero.

ICE has previously recommended that capability in strategic infrastructure planning and prioritisation should continue to be built at the subnational level by evolving subnational transport bodies to become subnational infrastructure bodies, tasked with strategically identifying and articulating long-term network requirements and creating regional infrastructure strategies, backed up by spatial strategies.[8]

Subnational transport bodies are focused on place-based outcomes rather than siloed infrastructure funding streams. Improving this core pillar of the infrastructure planning and prioritisation architecture would facilitate a more integrated and place-based approach to infrastructure provision at the regional and local level.

Given the urgency of the coming decade's major challenges, particularly the net-zero target, there will be little time to waste. Strengthening the ability for the infrastructure planning and prioritisation system to get it 'right first time' is imperative. Some forms of national infrastructure will always require centralised decision-making, but a stronger role for subnational actors and decision-making is essential.

[6] Piersma, F. and Ritzema, W. (2021) Fietsparkeren Bij Stations
[7] National Infrastructure Commission (2018) National Infrastructure Assessment
[8] ICE (2020) Levelling up and the role of infrastructure

6. Could better policy coordination across government departments, and between central and local government, improve public transport outcomes? If so, how can this be achieved?

See response to question 5.

7. What are the barriers to improving urban public transport, in terms of delivering the necessary infrastructure, increasing connectivity and improving the consumer experience?

Getting infrastructure delivery right

Delivering infrastructure projects often costs more or takes longer than initial estimates outline. In 2019 ICE published a paper setting out recommendations to help stakeholders limit overruns, while also arguing for a shift in thinking around which outcomes are most desirable and what constitutes success.[9]

Polling conducted for ICE at the time showed that the public would support attaching more weight to the whole-life benefits of projects and programmes – be they economic, social or environmental – rather than focusing on achieving lowest capital cost in delivery.

The full recommendations are outlined below:

- Infrastructure owners should complete scope, design and exploration before commencement of work is allowed, to avoid scope creep or retroactive changes, taking steps to include contractors in design at an early stage.
- The Government and infrastructure owners must move away from capital cost as the most important metric when assessing project benefits, recognising the importance of whole-life economic, social and environmental value.
- Principles set out in the Outsourcing Playbook should be mandatory for Government infrastructure owners, this includes infrastructure owners undertaking should-cost modelling to help inform their expectations and knowledge of appropriate tender prices during the procurement process.
- It should be mandatory for all public infrastructure owners undertaking procurement to award contracts based on a cost estimate range, using a should-cost estimate as a reference point, with an amount of contingency allocated appropriate to the level of project maturity.

The publication of the Construction Playbook in December 2020 reflects a number of these recommendations and should help by converting existing small pockets of good practice into an industry-wide change programme.

Funding for public transport

Affordable and accessible public transport is vital to addressing the UK's long-term challenges. However, the need for industry-wide fiscal support to protect service provision following the onset of the Covid-19 pandemic has demonstrated the need for a new approach to sustainable long-term public transport funding.

[9] ICE (2019) Reducing the Gap Between Cost Estimates and Outturns for Major Infrastructure Projects and Programmes

In 2021 ICE published a paper identifying certain principles that an effective transport funding mechanism should be built on:[10]

1. The funding model requires a reasonable amount of stability and resilience. Indeed, this is one reason why the pandemic has impacted hard on UK public transport in particular, as the heavy reliance on farebox revenue left operators vulnerable.
2. The funding model must be flexible enough to scale with demand for public transport in times when there is significant growth in demand. This includes close alignment between timetables and accessibility of different modes in order to 'right-size' the system.
3. The funding model requires a diverse array of revenue sources. While the exact mix of funding will depend on local requirements, there is a need for a mix of general taxpayer revenues, farebox and some specific tax revenues. This can include road user or congestion charging, workplace or retail parking levies or looking to adopt funding models that incorporate property portfolios.
4. The funding model must be accepted by the public. There is a need for public transport to be safe, affordable, accessible and reliable, without government support for it vastly increasing the size of public sector net debt. It is important that the public do clearly recognise the value of public transport and its importance to meeting national goals, but the extent to which they are willing to pay for it needs to be a key consideration.

The right policy framework

ICE concurs with the Transport Committee's recent recommendation that the Government needs to provide more detail about how transport investment will contribute to levelling up, including setting-out detailed outcomes and measures of success for levelling up against which transport projects can be assessed.[11]

The recent Levelling Up White Paper goes some way to providing this framework. However, achieving the paper's overarching ambitions will require real substantial change, through greater consultation with those on the ground, on what the long-term challenges are so that the infrastructure sector can deliver solutions.

In terms of connectivity, there have been decades of underinvestment in public transport in parts of the UK, contributing to lower levels of productivity in those regions.[12] Experts interviewed by ICE have highlighted long-term issues such as the poor state of East-West connectivity and inter-city rail in the North and Midlands, which is often unreliable, with little resilience left on the network.

The recently published Integrated Rail Plan for the North and Midlands (IRP) and major projects such as High Speed 2 are intended to address this, while the Union Connectivity Review (UCR) puts forward proposals for a more connected UK-wide transport network. However, the Government has not yet responded to the UCR and there is already a possible disconnect between its vision of holistic transport corridors and the re-prioritisation of certain schemes in the IRP.

The IRP scales back many of the Northern Powerhouse Rail (NPR) proposals in favour of quick wins and upgrading current lines which falls far short of the transformational change in connectivity required.[13] Disregarding key parts of the NPR and HS2 proposals, such as the HS2 Eastern Leg and the new line from Manchester to Leeds via Bradford, will inevitably impact connectivity and could slow down the speed at which communities in the North and Midlands can be levelled up.

[10] ICE (2021) ICE Discussion Paper: Public Transport Funding Post-Covid
[11] House of Commons Transport Committee (2021) Major Transport Infrastructure Projects
[12] IPPR North (2021) Broken Transport Promises Come as New Evidence Shows Widening Transport Spending Gap
[13] ICE (2022) ICE submission to the Transport Committee's inquiry on the Integrated Rail Plan

8. Are there other important changes, not covered elsewhere in these questions, which would improve matters?

Climate adaptation and resilience

Weather related damage already has a major impact on the UK's public transport network in the form of delays and the cost of compensation and repairs.[14] The UK Climate Change Risk Assessment shows that, in England alone, 1,691km of rail and 450 rail stations are exposed to a significant risk of surface water flooding, while 444km of rail and 44 stations are exposed to a significant risk of river flooding.[15]

As the UK's climate changes, and extreme weather events become more common, infrastructure will undergo pressures that, for the most part, it was not designed to withstand. The case for maintenance and adaptation on these grounds alone is clear, but this will require planning and investment.

However, the CCC has highlighted a climate adaptation and resilience deficit.[16] At present maintenance of infrastructure assets is typically underfunded.[17] This is due in part to a focus on new larger capital investment programmes, but also a reduction in real terms of revenue maintenance budgets.

Ensuring the resilience of the public transport network will require optimal use of data and information to better understand the performance of systems and assets and predicting how they will react to climate change. Infrastructure is a system of systems so there will also need to be greater understanding of the interconnected micro and macro risks to the wider infrastructure network, cross-sectoral collaboration and joint planning across all governance levels.

[14] Network Rail (2021) Third Adaptation Report
[15] Sustainability West Midlands (2021) Third UK Climate Change Risk Assessment – Summary for England
[16] Climate Change Committee (2021) Independent Assessment of UK Climate Risk
[17] ICE and IFoA (2021) Joint Submission to the National Resilience Strategy: Call for Evidence