



TRANSPORT POLICY EVIDENCE NOTES

These notes form a supporting paper to CPRE's organisational policy on transport, finalised in March 2024.

CPRE's transport policy is dominated by the urgent need to address the climate emergency. Sustainable transport and reducing the need to travel by private car have a big role to play in achieving this end, along with far better interlocked spatial planning and transport planning. The priority is to drastically and urgently reduce harmful greenhouse gas emissions (GHGs) of which carbon dioxide is the main component. To achieve this, there needs to be a comprehensive, over-arching, UK transport policy across all modes that achieves or exceeds the UK's climate change commitments.

1 INTEGRATION OF TRANSPORT AND LANDUSE PLANNING

It is essential that land use and transport planning are integrated. Poorly located sprawling development leads to continuing car dependency, with all its adverse impacts, and loss of valuable countryside.

Planning for new development should provide good access by non-car modes. This needs to be considered from the start, before sites are allocated, and ideally centred on the ability to achieve effective and attractive public transport - trains, light rail, high quality sustainably fuelled buses – and a network of attractive safe routes for walking and cycling. This means that renewing cities is preferable to out-of-town development.

In rural areas development should be focused on local service centres which act as hubs for transport provision¹. Low traffic and 15-minute neighbourhoods that improve the quality of life within urban areas and, if feasible, in rural areas are welcome. People should be encouraged to 'live locally' by good planning – 'Place Making' - rather than feeling they are being constrained to do so.

The National Planning Policy Framework (NPPF) of December 2023 contains some fine words on sustainable transport, notably in paragraphs 108 and 109², but there is no compulsion on planning and local highway authorities to follow its guidance – or retribution if they do not – and no strong connection is made between transport and climate change. Consequently, the NPPF has been ineffective in terms of ensuring that new developments, such as housing estates, business and retail parks go to locations where sustainable transport is a genuine choice. At the moment, a very high proportion is going into rural locations with few facilities and poor or no public transport, and often directed towards major road junctions, creating calls for new or wider roads³. Such developments generate large numbers of vehicle movements, cause serious congestion and many would be better located in a town centre, where they would be accessible by public transport, cycling and walking. This pattern of development is leading to a semi-industrial/urban landscape in the countryside and the erosion of Green Belt or other separation policies that were originally designated to prevent sprawl. A ground breaking example of how planning could be different in the future has been prepared by Sustrans in 'Stepping off the road to nowhere'⁴.

¹ Garden City Standards – 13 Sustainable Transport TCPA 2020; Garden Village Visions and Reality Transport for New Homes, 2020

² <https://www.gov.uk/guidance/national-planning-policy-framework/9-promoting-sustainable-transport>

³ Building Car Dependency 2022 Transport for New Homes

⁴ 'Stepping off the road to nowhere' Sustrans March 2024 <https://www.createstreets.com/wp-content/uploads/2024/03/Road-to-Nowhere-010324.pdf>

Local Transport Plans and Smart Choices

Local Transport Plans (LTPs) are existing statutory planning documents that local transport authorities are required to produce. They set out strategies for improving transport networks, plan how key objectives will be achieved and propose projects for investment. However LTPs sit outside local plans, and are often retrofitted to them, causing broken investment flow and unsustainable development⁵. The NPPF gives little weight to the LTP in the local plan examination, which further undermines the importance of a robust transport strategy. The need to integrate landuse and transport planning is therefore imperative.

LTPs often contain effective sustainable transport measures but, regrettably, since local authority resources were substantially reduced and self-auditing of the performance of the plans was permitted, they gradually became an ineffective tool. New LTP guidance expected in 2024 will require LTPs to have quantifiable carbon reduction targets which should increase their importance. When influencing the content of LTPs 'Transport in rural areas: local authority toolkit' 2022⁶ is an essential companion for identifying measures to enable rural and remote communities to travel sustainably.

The need is for Local Authorities (LAs) to confidently 'buy in' to the concept of introducing a full package of sustainable transport options – sometimes referred to as 'Smarter Choices' or 'Soft Measures'. Most LAs have voiced support for them in the past, but they have drawn back from a wholehearted commitment, despite evidence of the benefits if they are used intensively.

In 2004, Transport for Quality of Life, University College London, Eco-Logica and Robert Gordon University conducted a joint research project on behalf of the Department for Transport (DfT). The outcome was the report 'Smarter Choices: Changing the Way We Travel'⁷. It concluded that if a range of soft measures were introduced over a period of 10 years the outcome would be a substantial reduction in congestion leading to

- A reduction in peak period urban traffic of about 21% (off peak 13%)
- A reduction of peak period non-urban traffic of about 14% (off peak 7%) and
- A national reduction in all traffic of about 11%

The interventions included appropriate traffic management to improve public transport service levels, parking control, traffic calming, speed regulation and stronger legal enforcement of speed limits. This on top of workplace and school travel plans, personalised travel planning, travel awareness campaigns, car clubs and car sharing schemes and teleworking and teleconferencing. The report also highlighted the fact the measures offered good value for money and few disadvantages and that, even if there was a lower intensity of measures applied, there would still be notable benefits. It was essential, however, to 'lock in' the transport interventions by, for instance, re-allocating road space and by complementary policies including pricing measures and traffic control and management.

The report findings caused much interest at the time in transport policy circles but they did not receive the political support needed to take them forward in a concerted manner. At the time the effects of climate change were not so obvious and worldwide governmental commitments to address it had not been coalesced. There is now a much greater understanding of the need for urgent actions at national and local government levels and for behavioural change – and legislation has been enacted to bring these about. Consequently, environmental campaigners now have much evidence to quote when seeking change in transport policies.

⁵ <https://www.local.gov.uk/pas/plan-making/strategic-plans/joined-thinking-uncertain-times-links-between-strategic-planning>

⁶ <https://www.gov.uk/government/publications/transport-in-rural-areas-local-authority-toolkit/transport-in-rural-areas-local-authority-toolkit>

⁷ <https://www.transportforqualityoflife.com/reports/making-smarter-choices-work/>

2 THE UK'S APPROACH TO CLIMATE CHANGE

The climate emergency caused by the growth in GHGs and the associated ecological crisis are the greatest threats to the environment and to human, animal, and plant life. The year 2022 was the UK's warmest on record⁸ and the year 2023, which was the UK's second warmest, was actually the hottest for the world as a whole⁹. Now, most experts agree there is little or no chance of keeping global temperature warming to less than 1.5°C – the target set by the 2015 Paris Agreement – unless urgent action is taken¹⁰. The 2022 Global Carbon Budget Report found that carbon emissions had increased by 1%, reaching a new record high, as global travel continued to recover from the Covid pandemic¹¹; and the World Economic Forum has predicted that 2023 will go down as peak global emissions year with 59 gigatonnes of GHGs being emitted¹². We should combat this situation with determined actions.

The UK adopted the Climate Change Act in 2008¹³, establishing a framework for reducing emissions of carbon dioxide and other GHGs. The aim since the Act was amended in 2019 is to reach net zero by 2050. By signing the Paris Climate Change Agreement, the UK committed to reducing GHG emissions by 68% by 2030 (compared to 1990)¹⁴. This is a more challenging target than the legally binding 5-yearly statutory carbon budgets.

With respect to transport in the UK, if international aviation and shipping are fully taken into account, the sector is responsible for nearly a third of all GHGs¹⁵. Whilst there has been success in decarbonising energy, transport, unsurprisingly, remains the stand-out failure due to contradictory policies/actions. Statistics for 2020, 2021 and 2022 were atypical because of the effects of Covid, but, in 2019 – the last full year unaffected pre Covid – GHG emissions from road transport made up 22% of total GHG emissions in the UK¹⁶. Between 1990 and 2019 emissions from rail, buses and domestic shipping decreased but van emissions increased by 59% and international aviation emissions doubled. Also, in 2018, transport accounted for 50% of UK domestic nitrous oxide (NOx) emissions¹⁷. To tackle these transport emissions the government published its 'Transport Decarbonisation Plan' in 2021, followed by its 'Net Zero Strategy: Build Back Greener'¹⁸. Both contained a number of key commitments on transport but neither tackled the road building programme, international aviation, or logistics sheds. The government's subsequent 2023 Carbon Budget Delivery Plan¹⁹ revealed the substantial risks associated with the preceding plans.

The UK's Climate Change Committee, an independent statutory body established under the 2008 Climate Change Act, has been producing a series of salutary reports on decarbonisation for parliament. In its 2023 progress report²⁰, the key messages and recommendations of the Climate Change Committee included:

⁸ Climate change drives first UK year over 10 degrees C <https://www.metoffice.gov.uk/about-us/press-office/news/weather-and-climate/2023/climate-change-drives-uks-first-year-over-10c>.

⁹ <https://www.bbc.co.uk/news/science-environment-67861954>

¹⁰ AR6 Synthesis Report: Climate Change 2023, Intergovernmental Panel on Climate Change, <https://www.ipcc.ch/report/sixth-assessment-report-cycle/>

¹¹ <https://www.carbonbrief.org/analysis-global-co2-emissions-from-fossil-fuels-hit-record-high-in-2022/>

¹² <https://www.weforum.org/agenda/2023/12/peak-greenhouse-gas-emissions/>

¹³ Climate Change Act 2008 <https://www.legislation.gov.uk/ukpga/2008/27/contents>

¹⁴ UK ratifies the Paris Agreement <https://www.gov.uk/government/news/uk-ratifies-the-paris-agreement>

¹⁵ 2021 UK final GHG emissions final figures – data tables Table 1.3 2019 is calendar year Jan-Dec <https://www.data.gov.uk/dataset/9568363e-57e5-4c33-9e00-31dc528fcc5a/final-uk-greenhouse-gas-emissions-national-statistics>

¹⁶ 2021 UK final GHG emissions final figures – data tables Table 1.3 2019 is calendar year Jan-Dec <https://www.data.gov.uk/dataset/9568363e-57e5-4c33-9e00-31dc528fcc5a/final-uk-greenhouse-gas-emissions-national-statistics>

¹⁷ Transport Statistics Great Britain 2020 DfT

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/945829/tsgb-2020.pdf

¹⁸ Net Zero Strategy Build Back Greener, 2021, <https://www.gov.uk/government/publications/net-zero-strategy>

¹⁹ <https://www.gov.uk/government/publications/carbon-budget-delivery-plan>

²⁰ 2022 Progress Report to Parliament, Climate Change Committee <https://www.theccc.org.uk/publication/2022-progress-report-to-parliament/>

- A lack of urgency over delivery of and a diminution of ambition to achieve Net Zero.
- An over-reliance on specific technological solutions, despite the Covid pandemic having shown that substantial changes to behaviours are possible.
- The need for an overarching requirement that all planning decisions must be taken giving full regard to the imperative of Net Zero.
- All scheme appraisals (including roadbuilding) to explicitly consider decarbonisation scenarios and assess the emissions impacts that they will generate.
- A more strategic review of the roads' programme to assess consistency with environmental goals
- No net airport expansion across the UK.

Commenting on the government's Net Zero ambition and its pathway to reduce aviation emissions by 14% by 2035 and 60% by 2050, relative to 2019, the Committee acknowledged aviation is a particularly hard sector to decarbonise as it is likely to be largely dependent on kerosene for some decades. It concluded it is unlikely aviation will be able to reduce gross emissions to zero by 2050, even with a strong policy and the pathway contains little action to limit planned growth. But, despite the Committee's expressed concerns and its urgings, the government not only continues to promote and support the aviation sector^{21,22}, but is also pressing ahead with its Road Investment Strategies (RISs), pumping billions of pounds into building major new roads and expanding existing ones. This despite irrefutable evidence that people are driving billions of miles less than before - DfT statistics show that cars travelled 244 billion miles in 2022, 19 billion fewer than in 2019 (pre pandemic)²³. This laissez-faire attitude to decarbonisation is reflected in local government. Despite declarations of a climate emergency by 90% of principal authorities, 37% that have so declared support plans for road building and/or airport expansion that would increase carbon emissions²⁴.

The impression that emerges is that national and local government understand the issues. They can see for themselves the changing weather patterns, effects on agriculture and rising sea levels as well as the rise in respiratory diseases caused by particulates emanating from transport, but they have been reluctant to bite the bullet and bring themselves to take the necessary actions. We also need joined up government with departments that work together if we are to make the necessary progress with climate change aspirations in relation to transport. Currently, government responsibilities for climate and carbon budgets, air quality, surface transport and planning are allocated to different departments, all working in silos. However, more voices are now calling for changes to the way we plan, act, move and live and CPRE nationally is doing what it can when it can, responding to parliamentary calls for evidence, lobbying ministers and civil servants across government, producing reports and working with partners like the Transport Action Network (TAN)²⁵ and the Campaign for Better Transport²⁶ as appropriate.

²¹ Jet Zero Strategy 2022 Forword

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1095952/jet-zero-strategy.pdf

²² CAA Environmental Sustainability Panel Interim Work Programme: October 2022 – March 2023 <https://www.caa.co.uk/media/lzxlamnt/caa-environmental-sustainability-panel-interim-work-programme-oct-2022-march-2023.pdf>

²³ <https://roadtraffic.dft.gov.uk/summary>

²⁴ Council policies inconsistent with climate goals - BBC survey 2021, <https://www.bbc.co.uk/news/science-environment-58102578>

²⁵ <https://transportactionnetwork.org.uk/>

²⁶ <https://bettertransport.org.uk/>

3 EVIDENCE SUPPORTING CPRE'S POLICY STANCE

This section expands on the reasoning behind CPRE's policies and provides additional evidence to support them.

Policy 1 Digital Communications

Digital connectivity enables on-line transactions, video conferencing, home working, networking and much more – including the use of data to run public transport services efficiently e.g. by facilitating cross-mode ticketing systems, ie. 'Mobility as a Service' (MAAS)²⁷. Good digital connectivity should be universally available. Currently, it is not. There remain parts of the UK unconnected to broadband and/or mobile telecommunications signals and too many rural areas with poor connections. Connections should be based on satellite technology and undergrounding of cables to avoid the clutter of telecommunication masts.

Since the Covid pandemic, digital technology has enabled a revolution to take place in how businesses, organisations and charities are run. Between October and December 2019 and January and March 2022 home working in the UK more than doubled, increasing by 108.8% (up 5.2 million) from 14.5% (4.7 million) to 30.6% (9.9 million)²⁸. One in seven employees are working from home permanently and 24% of workers have a 'hybrid' week, combining office and home work²⁹. This revolution should now be reflected in land use and transport planning. There is clearly a reduced need for office sites. Many sites so designated could be reclassified for other uses.

However a reduction in travel-to-work trips has been replaced by a growth in home deliveries. Better logistics planning could counter-act this using small local hubs and shared services, rather than huge distribution centres.

Policy 2 Walking, Wheeling and Cycling

Walking, wheeling, and cycling are classed as active travel modes as they are powered by an individual's own energy and are carbon neutral. Increasing travel by active modes does not rely on any technological breakthrough, delivers a host of co-benefits and is fundamental to any good local transport plan.

CPRE supports Active Travel England (ATE) in its single key objective: ensuring that 50% of trips in towns and cities are walked, wheeled or cycled by 2030. Its status as a statutory consultee in the planning system, reviewing active travel provision in major planning applications, is particularly welcome. People will feel safer and more confident walking and cycling for short journeys with better quality infrastructure, and dedicated routes and networks³⁰. However, ATE should not overlook opportunities in rural areas, as does Gear Change³¹ the government's strategy for walking and cycling. Although Gear Change recognises that no one size fits all in terms of provision, its main focus is on '*medium-sized towns, larger towns and cities*'.

²⁷ Mobility as a Service Acceptability Research 2020

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/925323/Mobility-as-a-Service-Acceptability-Report.pdf

²⁸ Homeworking in the UK regional patterns 2019-2022

<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/homeworkingintheukregionalpatterns/2019to2022>

²⁹ Is hybrid working here to stay?

<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/ishybridworkingheretostay/2022-05-23>

³⁰ Cycling Action Plan Mayor of London 2018 <https://content.tfl.gov.uk/cycling-action-plan.pdf>

³¹ Gear Change A bold vision for walking and cycling, DfT 2021, page 33

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/904146/gear-change-a-bold-vision-for-cycling-and-walking.pdf

Country lanes are an integral part of the rural environment but the volume and speed of traffic, and the presence of heavy lorries can make them uninviting and intimidating. Quiet Lanes³², are a way of providing a chance for people to walk, cycle and horse ride in a safer environment; of connecting communities; of widening transport choice; and of protecting the character and tranquillity of country lanes.

More active travel should be encouraged and enabled, not just because it improves people's health, but because it reduces air pollution and helps to reduce the population's carbon footprint³³. According to the Energy Saving Trust, each mile walked rather than driven (using an internal combustion engine) saves 279g of carbon dioxide (CO_{2e} where e = equivalent by weight of CO₂ global warming potential as the same weight of other GHG in combination)³⁴. Electrically assisted bicycles (e-bikes) offer a transformative change in how we travel. It has been estimated that they have the capability to cut car carbon dioxide emissions in England by up to 50% (about 30 million tonnes per year), as well as pollution and congestion, and reduce reliance on cars³⁵. The greatest opportunities could be in rural and sub-urban settings: city dwellers already have many low-carbon travel options, so the greatest impact would be on encouraging use outside urban centres.

There is scope for e-bikes to help people who are most affected by rising transport costs³⁶. In Europe e-bikes sales are twenty times greater than in the UK due to financial incentives³⁷. An e-bike grant scheme would be more than twice as effective, per pound spent, as the current grants offered to buyers of some electric cars: for example, over five years the cost per kg of CO_{2e} saved by an e-bike grant scheme would be 42 pence, compared to 88 pence per kg of CO_{2e} saved by an electric car grant used to buy a Tesla Model S³⁸. It will however be essential to enforce slower speeds on rural roads if walking and cycling are to fulfil their full potential as alternative modes to the private car.

E-cargo bikes offer sustainable delivery services, as an alternative to vans and cars, in both urban and rural areas. For example, Cargodale offers zero emission delivery in Calderdale³⁹. E-cargo bikes are also being used by families for shopping and transporting children to school.

Policy 3 Public and Shared Transport

Inadequate funding, de-regulation and privatisation have long undermined the essential role of both bus and rail. Public transport suffered badly with the 2008/09 recession and the Covid pandemic. Small bus companies became unviable, particularly demand responsive ones that are key in rural areas, and rail and especially bus passenger numbers remain well down on pre-Covid levels

(a) Buses, coach and shared taxis

Bus services (compared to rail services) have long been in decline with cuts in services, services not designed around passenger needs, wasteful competitive bidding processes and insufficiently joined-up

³² Guide to Quiet Lanes, CPRE, 2003, https://www.cpre.org.uk/wp-content/uploads/2019/11/quiet_lanes_1.pdf

³³ <https://www.hps.scot.nhs.uk/publications/hps-weekly-report/volume-56/issue-23/who-publishes-report-on-health-and-environmental-benefits-of-active-travel/>

³⁴ <https://energysavingtrust.org.uk/advice/active-travel/>

³⁵ e-bike carbon savings – how much and where? Ian Philips, Jillian Anable and Tim Chatterton CREDS 2020

<https://www.creds.ac.uk/publications/e-bike-carbon-savings-how-much-and-where/>

³⁶ e-bike carbon savings – how much and where? Ian Philips, Jillian Anable and Tim Chatterton CREDS 2020

<https://www.creds.ac.uk/publications/e-bike-carbon-savings-how-much-and-where/>

³⁷ Case for UK Incentives for E-bikes, Transport for quality of Life, 2018

³⁸ Case for a UK incentive for E-bikes, Transport for Quality of Life Newson c & Sloman L, 2019

https://www.transportforqualityoflife.com/u/files/The_Case_for_a_UK_Incentive_for_E-bikes.pdf

³⁹ <https://www.cargodale.co.uk/>

transport and spatial planning⁴⁰. The government's preferred method of allocating funding is through a competitive bidding process. This is costly for local authorities as it uses enormous amounts of staff and consultants' time, often with little success⁴¹.

Many rural areas and small towns are public transport deserts, places with poor public transport services⁴². At least 15 million people live in them, but they rarely benefit from national policy initiatives. Lack of public transport leads to social exclusion and reliance on private vehicles to travel longer distances to shops, employment, and services. The problem is compounded by the rising cost of bus fares compared to the cost of private car use. Campaign for Better Transport has created a simple methodology to identify transport deserts for small towns (between 5,000 and 12,000 population) and large towns (between 12,000 and 30,000 population)⁴³. Scoring depends on the frequency of bus/coach/rail service and availability of community transport or taxi/ride sharing. Applying this methodology provides the evidence communities need to argue for improved services.

CPRE's 'Every Village Every Hour'⁴⁴ proposes a comprehensive bus network for England with services to every village every hour and identifies the scale of investment needed to make this vision a reality. Other visionary nations have taken a different approach to the provision of rural bus services and invested in integrated public transport networks delivering minimum service frequency standards to rural communities. In Germany and Switzerland an ambitious and coordinated approach to bus services has enabled major cities to be well connected to their satellite communities in the countryside, whole districts to conveniently access their regional hubs, and almost all villages to be strongly connected into the regional and national public transport system network. The high frequency, regularity and convenience of bus services for rural communities in Bern Canton, Zurich Canton and North Hesse would be transformational for towns and villages across England.

For example, across the Zurich region, the transport authority delivers three different levels of service frequency to communities of differing sizes. The region guarantees villages of 300 people or more at least an hourly bus service linking them to regional facilities for employment, education, training, shopping and leisure. On routes where multiple communities create stronger demand, the buses run at least every half hour, and four times an hour for towns. These bus services run 7 days a week from 6am to midnight and repeat at regular intervals, with good connections into train timetables. There is a single national public transport timetable, aligning all trains and buses on a 'pulse' model of regularly repeated services

However, there are many ways of delivering shared transport to rural areas. The right solution for each place should be found. The big city combined authorities, such as Greater Manchester⁴⁵ and South Yorkshire, are favouring bus franchising but in rural areas coordination and cooperation is achieved through enhanced partnerships with the operators. Transport for Cornwall⁴⁶ provides a good example of the latter. The conventional 'Mobility as a Service' or MaaS model attempts to integrate transport provision using

⁴⁰ Public transport in towns and cities, House of Lords Built Environment Committee, Nov 2022

<https://publications.parliament.uk/pa/ld5803/ldselect/ldbuiltenv/89/89.pdf>

⁴¹ https://www.localis.org.uk/wp-content/uploads/2014/07/loc_competitivebidding.pdf ; <https://www.nationalworld.com/news/politics/town-against-town-how-cash-strapped-councils-have-had-to-spend-millions-to-bid-for-levelling-up-funding-3975862>

⁴² Transport Deserts Report, CPRE, 2020, <https://www.cpre.org.uk/resources/transport-deserts-report/>

⁴³ Transport deserts - The absence of transport choice in England's small towns, Campaign for Better Transport, Feb 2020 <https://bettertransport.org.uk/media/nearly-one-million-people-stranded-transport-deserts/>

⁴⁴ 'Every Village Every Hour A comprehensive bus network for rural England' CPRE 2021 <https://www.cpre.org.uk/resources/every-village-every-hour-2021-buses-report-full-report/>

⁴⁵ <https://tfgm.com/strategy/greater-manchester-bus-strategy>

⁴⁶ <https://www.transportforcornwall.co.uk/>

transport providers to fill the gaps in demand. The alternative is for people who have compatible but unmet transport needs to form a group and meet their shared demands e.g. employees in one area sharing a taxi, minibus, or bus to get to work. There are also examples of hospitals using shared taxis to bring patients in for appointments, of education departments using them for schoolchildren and of students pooling to travel together; and there are ride sharing apps available.

(b) Trams and Tram Trains

We support light rail and the use of trams on heavy rail lines. The dual use of existing rail tracks has proved to be very successful in the Karlsruhe area of Germany and is a method of getting trams to rural areas and transporting rural dwellers directly into town and city centres. Unfortunately, in the UK, trams have a difficult history of fragmented networks, poor routing and budget over-runs. That said, where trams have been introduced in England, they have been hugely popular, have removed thousands of car trips from the roads and they do not produce emissions at point of use.

(c) Rail

Rail provides a sustainable alternative to damaging road and air travel, as it has a much smaller carbon footprint for both passengers and freight. Best use should be made of existing lines with major upgrades where necessary and new rolling stock, 20-30 minute frequencies between trains, lower fares, no overcrowding and good conditions for on-the-move working. In the north, instead of north-south connectivity, the focus should be east-west connectivity across the Pennines.

High speed rail can have a role to play; it should reduce inter-city trips taken by less sustainable modes; the prize being attracting passengers away from flying. The benefits, however, almost stop there whilst the majority of its impacts are imposed on the countryside. Investigations by the Wildlife Trusts confirmed the combined devastating impacts of Phases 1 and 2a of HS2 on the countryside and wildlife⁴⁷. *'This vast infrastructure project is taking a wrecking-ball to wildlife and communities are in despair at losing the wild places — the woods, meadows and wetlands that they love — they will never get these back.'* The high speed of the trains would increase noise and destroy tranquility over a wide area. Landscape and heritage impacts from the overhead gantries and protective fencing would create a sterile uniform corridor. Connections with rural areas would be non-existent as there would be no stops and therefore a failure to integrate with essential rural services. At best HS2 would be carbon neutral.

The current HS2, Phase 1, which is under construction, is a poorly conceived and damaging project that will fail to meet its objectives. The justification for HS2 was characterised by overblown rhetoric about economic growth, jobs, reducing the north-south divide and making the nation more prosperous. The original work on the costs and benefits is of little relevance today. Modest time savings for high-income passengers were said to translate into huge economic gains, largely based on an assumption that time spent on trains is non-productive and that people do not work whilst travelling on them. The forecasts of future demand levels for business travel took no account of the rapid spread of digital connectivity, accelerated by the Covid pandemic, for avoiding travel. The assumption that travel by car and plane would increase by 43% and by 178% respectively by 2033, used as part of the justification for the project, is no longer valid.

HS2 Phases 2a and 2b have now been abandoned due to the escalating costs of the whole project. These increased from £32.7 billion when it was being considered in 2012 to circa £100 billion for a significantly

⁴⁷ HS2 Double jeopardy Wildlife Trusts Feb 2023 <https://www.wildlifetrusts.org/news/new-report-hs2-got-it-wrong>

reduced project⁴⁸. This is put in perspective by the £1.8 bn annual cost of providing free bus travel for everyone throughout England outside of London⁴⁹.

CPRE believes that in a digital world the value of savings in productive time to be gained by faster trains needs reappraisal and a downward revision. The incremental harms inevitable when designing for higher speeds cannot be justified by the small incremental reductions in travel time. The UK is not big enough for that. The apparently modest uplift in design speed from the 299 km/h (186mph) of HS1 to the very high speed - 360 km/h (225mph) - of HS2 brings with it substantial additional harm in land-take, excessive noise, energy consumption (however generated) and visual intrusion and has proved unacceptably costly. HS1, with its slower design speeds and infrequent timetabling, is a poor exemplar for what was proposed for HS2.

Policy 4 Sustainably fuelled vehicles

Alternative fuels are those fuels or power sources which serve, at least partly, as a substitute for fossil oil sources in the transport sector. According to the European Commission's 2050 Long-term Climate Strategy and the Intergovernmental Panel on Climate Change, there is no single fuel solution for the future of low-emission mobility - all main alternative fuel options (electricity, hydrogen, and biofuels) are likely to be required, but to a different extent in each of the transport modes⁵⁰.

- Electricity can be produced from fossil carbon, nuclear and renewables (wind turbines, hydropower plants, biofuels and solar power).
- Hydrogen (H₂) is a promising alternative fuel option for transport, where electrification is more difficult e.g. local buses, commercial fleets (e.g. taxis) or specific parts of the rail network, where electrification is not feasible. It is produced by electrolysis (green hydrogen) or from fossil gas with carbon capture storage (CCS) for its emissions (blue hydrogen). However, CCS is still at an experimental stage and requires evidence that it can be delivered at scale sustainably. The government has committed to increase hydrogen production capacity by 2030, from 5 GW to 10 GW, of which at least half will be from electrolysis (i.e. green hydrogen)⁵¹.
- Renewable biofuels manufactured from vegetable oils or animal fats can contribute to a substantial reduction in overall carbon emissions, if they are produced sustainably and do not cause indirect land use change. They could provide clean power to all modes of transport. However, supply constraints and sustainability considerations may limit their use. A comprehensive land use strategy is required, setting out how land for UK biomass and forestry would be freed up (e.g. through reduced livestock farming as a result of diet changes).
- Alternative fossil fuels, such as liquefied natural gas and compressed natural gas, offer lower pollutant and carbon emissions for a transitional phase to zero carbon.

At present the main source of fuel for zero emission vehicles is electricity. The government promotes EVs as the panacea for climate change, but they are not. EVs are demanding of resources, including some rare minerals, for production and the electricity their batteries require to function is not all generated

⁴⁸ The Hybrid Bill was deposited in Nov 2013 and received Royal Assent in Feb 2017. HS2 has since lost the Heathrow connection, a link to HS1, the East Leg from south of Nottingham to Leeds and a link to the WCML south of Preston.

⁴⁹ Transforming public transport Regulation, spending and free buses for the under 30s, Transport for Quality of Life for FoE, 2019 <https://policy.friendsoftheearth.uk/insight/transforming-public-transport>

⁵⁰ Alternative fuels, European Alternative Fuels Observatory <https://alternative-fuels-observatory.ec.europa.eu/general-information/alternative-fuels> ; AR6 Synthesis Report: Climate Change 2023, Intergovernmental Panel on Climate Change, page 30 summary for policy makers, <https://www.ipcc.ch/report/sixth-assessment-report-cycle/>

⁵¹ 2022 Progress Report to Parliament, Climate Change Committee <https://www.theccc.org.uk/publication/2022-progress-report-to-parliament/>

sustainably. Nevertheless, they have no tailpipe emissions, consequently making a significant contribution to improving air quality and to reducing noise levels. However particulate matter (PM) from tyres remains an issue. Non-exhaust emissions already account for over 90% of PM₁₀ and 85% of PM_{2.5} emissions from traffic⁵². Electric vehicles (EVs) are 24% heavier than equivalent internal combustion engine (ICE) vehicles. As a result, total PM₁₀ emissions from EVs were found to be equal to those of modern ICE vehicles. PM_{2.5} emissions were only 1-3% lower for EVs compared to modern ICEVs. Others have found the potential of battery EVs to reduce emissions has been underestimated⁵³.

EVs are preferable to traditional internal combustion engine (ICE) alternatives. However, they do not address all the other issues of ICE vehicles - congestion, visual intrusion, severance, road crashes and car dependency that undermines sustainable modes.

The transition to EVs will not be rapid enough to meet climate targets and a reduction in vehicle miles travelled will be needed⁵⁴. The take-up of EVs has been hampered by high vehicle costs (exacerbated in 2023 by rising inflation) and a lack of reliable and fast-charging vehicle charging points. Also, many prospective EV buyers are holding back as the technology (especially range) is improving rapidly. Incentives would help speed up the roll-out of EV charging points in public places and in domestic situations. From an environmental viewpoint, car sharing in an EV is preferable to car sharing in an ICE vehicle and therefore deserves a higher rating.

Policy 5 ICE (Internal Combustion Engine) vehicles

Rising levels of affluence have been closely linked to increasing demand for personal travel and consumer goods and increasing pollution⁵⁵. Public transport fares have generally risen faster than the cost of motoring over the past twenty years. In 2023 bus and coach fares had increased over the last decade by 89.64% whilst the cost of motoring had increased by only 39.15%⁵⁶. Given that and the convenience of the car, it is no wonder that so many people choose to use their cars in preference to public transport, even where such alternatives exist. A relative reduction in public transport fares will be needed to tackle over-dependence on the private car.

Compared to an EV or hybrid EV, an ICE vehicle is typically less expensive to purchase but, once the fuel costs, regular maintenance, and repairs are factored in, they tend to be more costly in the long run⁵⁷. They pollute the environment with nitrous oxides and particulate matter (see below), oil and fuel spills, and noise. The manufacture of both EVs and ICE vehicles takes a huge toll on the planet, contributing to energy consumption and material waste: ICE's reliance on oil-based fuel sources requires drilling that disrupts wildlife, damages wildlands, and pollutes oceans; EVs reliance on precious metals requires mining that harms the environment.

Advances in fuel economy and the use of catalytic converters have reduced emissions. The gains have, however, been largely negated by the fashion for larger and heavier passenger cars. The worst ICE cars for climate change are sport utility vehicles, or SUVs. They are the second-biggest cause of the rise in global

⁵² Non-exhaust PM emissions from electric vehicles Timmers V et al Atmospheric Environment 134 March 2016 https://www.researchgate.net/publication/297889793_Non-exhaust_PM_emissions_from_electric_vehicles/link/60bf54b7299bf10dffa70923/download

⁵³ The Underestimated Potential of Battery EVs to reduce emissions, Auke Hoekstra, Joule3, 1404–1414, June 19, 2019, [https://www.cell.com/joule/pdf/S2542-4351\(19\)30271-5.pdf](https://www.cell.com/joule/pdf/S2542-4351(19)30271-5.pdf)

⁵⁴ 2022 Progress Report to Parliament, Climate Change Committee <https://www.theccc.org.uk/publication/2022-progress-report-to-parliament/>

⁵⁵ Science warning on affluence, Wiedmann T et al 2020 Nature <https://www.nature.com/articles/s41467-020-16941-y>

⁵⁶ Transport Price Index <https://www.racfoundation.org/data/cost-of-transport-index>

⁵⁷ <https://uk.mer.eco/news/ev-vs-ice-are-electric-cars-worth-it/>

carbon dioxide emissions during the past decade⁵⁸. Only the power sector is a bigger contributor. During that time SUVs have doubled in number⁵⁹ with now over 200 million in use around the world, up from about 35 million in 2010, accounting for 60% of the increase in the global car fleet since 2010. SUVs have a massive carbon footprint. Typical emissions for a large SUV are 2,550kg CO_{2e}/year while those for a small car are about 1,470kg CO_{2e}/year. In the UK nearly 1 million SUVs were registered in 2019. About 40% of annual car sales in the UK today are SUVs, compared with less than 20% a decade ago.

Policy 6 Water transport

Leisure boating does impact the environment but the GHGs associated with, say, a day's narrow boating are less than the same time spent visiting destinations by ICE car⁶⁰. Water pollution from anti-foulings, leaks and spillages need not happen with good maintenance, adequate disposal facilities and responsible boat users.

The impact of higher-powered pleasure craft is more substantial⁶¹. CPRE would not support marinas and other developments where they would attract such vessels into sensitive environments. Concerns include loss of waterside flora and habitats caused by vessel wash and damage to aquatic plants and habitat caused by propeller scour and anchoring.

River and sea-going passenger ferries are to be encouraged where they provide more sustainable travel alternatives to air travel for example. The direct per-passenger GHG emissions associated with taking a car on a ferry are currently similar to those travelling the same distance by air⁶². For a typical journey in which only part is on a ferry and the rest by car, air travel is significantly worse. Use of existing fixed crossings such as the Channel Tunnel contribute even lower GHG emissions but the whole life impact of any proposed new fixed crossing, would have to be considered against potential gains. The construction stage emissions for the proposed Lower Thames Crossing have been estimated as 1.762Mt CO_{2e} for example⁶³.

Both modes (air and water) will see improvements in propulsion systems and fuels in future. But these are unlikely to tip the balance in favour of air since the substantial non-CO₂ radiative forcings of aircraft will remain. A ferry voyage that substitutes for an ICE car journey several times longer would currently have a positive impact on GHG emissions. This advantage may erode as EVs become more common.

The deleterious impacts of cruise ships on the marine and land environment are well documented⁶⁴. International cruising has a higher environmental impact than just about any other holiday activity. Many of the harms are inherent and cannot be mitigated by e.g. cleaner fuels. It is easy to understand the harm when it's appreciated that a modern cruise ship is a floating town powered by the dirtiest fossil fuel available (after coal). The per-passenger GHG emissions of cruise vessels is at least twice as much as air travel over the same distance, even after adding the impact of on-land hotel accommodation⁶⁵.

⁵⁸ <https://www.theguardian.com/us-news/2020/sep/01/suv-conquered-america-climate-change-emissions>

⁵⁹ <https://www.iea.org/commentaries/growing-preference-for-suvs-challenges-emissions-reductions-in-passenger-car-market>

⁶⁰ CPRE calculation from UK Government GHG Conversion Factors for Company Reporting, BEIS/DEFRA 2022

⁶¹ <https://eponline.com/Articles/2017/03/27/The-Environmental-Impacts-of-Boating.aspx> and

<https://www.sciencedirect.com/science/article/pii/S0964569121001770>

⁶² UK Government GHG Conversion Factors for Company Reporting, BEIS/DEFRA 2022

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1083855/ghg-conversion-factors-2022-full-set.xls

⁶³ <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010032/TR010032-001587-6.1 Environmental Statement Chapter 15 - Climate.pdf>

⁶⁴ See for example http://www.exeter.ac.uk/news/homepage/title_879425_en.html

⁶⁵ What if I told you cruising was worse for the climate than flying? <https://theicct.org/marine-cruising-flying-may22/>

The push for facilities to allow cruise ships to moor closer to their destinations has exacerbated the already considerable water and air-quality impact. New cruise terminals will also attract more road traffic. If the cruise industry is to continue it should at least speed up the transition to cleaner propulsion systems and stop dumping damaging waste into the sea.

Policy 7 Aviation

Aviation is pollution-intensive, primarily from both CO₂-related and non-CO₂ related emissions. The Climate Change Committee anticipates aviation emissions to decrease to 23MtCO₂e by 2050 but this represents an increase from 8% to 25% of residual UK CO₂ emissions overall. Aviation's dependence on fossil fuel has yet to show a prospect of meaningful change. The February 2023 report from the Royal Society⁶⁶ warns there are no green alternatives to the use of traditional jet fuel that would support flying on a scale equivalent to present day use. Despite this, DfT's 'Jet Zero Strategy'⁶⁷ continues to promote aviation expansion with a guilt free flying message and explicitly rejects the Climate Change Committee's overall aviation framework. However, further to the 2015 Paris Agreement and Brexit, the terms of bilateral air services agreements, including fuel tax, are matters between the DfT and the European Commission. Implementation is down to political will but the UK is expected to closely follow developments in the EU.

The UK government has been reluctant to take unilateral action to mitigate or reduce emissions from aviation⁶⁸ for fear of negatively impacting the UK's competitiveness and losing votes from holidaymakers. This needs to be opposed constructively, with the consolidation of APD (Air Passenger Duty), additional levies on frequent flyers and the inclusion of private business and leisure aviation within the government's 'Greenhouse Gases: Journey emission comparisons'⁶⁹. While APD suits domestic and international scheduled services, it does not readily cope with frequent flyers, freight or private sector air travel. The few passengers of private jets cause disproportionate emissions; a new aviation fuel tax regime is essential. For example, each private jet movement from Farnborough Airport serves on average 2.5 passengers⁷⁰, giving an estimated emissions as 5tCO₂e per capita per flight. (For a comparison of emissions from alternative means of transport see <https://travelandclimate.org/train-car-or-plane>)

There are other aviation issues that concern CPRE, such as the climate change implications of contrails, dumping of fuel in holding movements, the impact of noise on tranquillity, and the associated road traffic. Airport expansion generates demand for new roads, sprawling development on greenfield sites, air noise and light pollution, and is unsustainable, as under the proposed Heathrow expansion⁷¹.

Policy 8 Reducing Travel Demand

Transport is a derived demand. People travel and goods are transported as part of participating in society. Demand for travel, after growing for decades, had – interestingly – begun to level out prior to the Covid epidemic⁷². Since Covid, however, travel patterns have not stabilised, making predicting future demand

⁶⁶ Net zero aviation fuels: resource requirements and environmental impacts, Royal Society, Feb 2023 <https://royalsociety.org/news/2023/02/net-zero-aviation-fuels-report/>

⁶⁷ <https://www.gov.uk/government/publications/jet-zero-strategy-delivering-net-zero-aviation-by-2050> ; CAA Environmental Sustainability Panel Interim Work Programme: October 2022 – March 2023 <https://www.caa.co.uk/media/lzxlamnt/caa-environmental-sustainability-panel-interim-work-programme-oct-2022-march-2023.pdf>

⁶⁸ <https://www.gov.uk/government/publications/jet-zero-strategy-delivering-net-zero-aviation-by-2050>

⁶⁹ <https://maps.dft.gov.uk/journey-emission-comparisons-interactive-dashboard/index.html>

⁷⁰ CEO Farnborough Airport, pers. comm. at Farnborough Airport Consultative Committee meeting 9th Feb 2023

⁷¹ Airport expansion has significant environmental risks, commission finds, IEMA, 2014, <https://www.iema.net/articles/airport-expansion-has-significant-environmental-risks-commission-finds> Pros and cons of Heathrow expansion 2017 <https://www.economicshelp.org/blog/6083/economics/pros-and-cons-of-heathrow-expansion/>

⁷² chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/http://www.demand.ac.uk/wp-content/uploads/2018/04/FutureTravel_report_final.pdf

difficult. That said, the negative impacts of travel – congestion, poor air quality, and rising climate change emissions amongst them – need to be tackled but finding ways to do this is not straightforward.

Road pricing would be the most sensible replacement for fuel and excise duty but it has little support from the public as there are currently no acceptable alternatives for most journeys. Application of a national road pricing system would be complicated by local charging in congestion zones, clean air zones and other local schemes. The Campaign for Better Transport's 'Pay-as-you-drive-report'⁷³ outlines three potential options for its application:

- Option 1 A simple per-mile (pm) charge for sustainably fuelled vehicles only. For ICE vehicles, fuel duty and VED could stay as they are;
- Option 2 A simple pm charge for all vehicles (higher for the most polluting) replacing fuel duty and VED.
- Option 3 A smart scheme, which varies the charge according to when and where the journey takes place, so that journeys for which there is no public transport alternative can be charged less.

In terms of rural areas, where there is a high reliance on the private car, poor public transport and drivers make longer journeys than those in urban areas, a smart scheme Option 3 would be the fairest.

Car Clubs and Car Sharing

Car clubs have been proven to reduce overall car use and are therefore supported by CPRE. Fewer people purchase a car if a car club is available, they are more likely to walk or cycle short distances and, because the vehicles have to be pre-booked, members make best use of them when they have them. It is also good to note that most car clubs are moving over to electric fleets. However, it is often not viable for car clubs to operate in rural areas. Most rural dwellers do not have options other than privately owned cars to get around and may have to buy a car when they cannot really afford it.

Car sharing is preferable to not car sharing because it means there are fewer vehicles on the roads than would otherwise be the case. Incentives for people to share cars such as workplace schemes or dedicated car-share lanes are to be welcomed. Transport authorities could consider properly made 'Park & Share' facilities for motorists currently parking on verges near motorway junctions to meet up for a shared trip into cities (e.g. Bristol). Overall, there has to be better (and better-targeted) public transport, improved integration between modes and more schemes such as 'wheels to work' or training made available where personal car use and car sharing is not an option⁷⁴.

Policy 9 Parking and Parking Standards

Land is a finite resource and should not be wasted on profligate car parking. Maximum parking standards can be set if development is in the right place and supported by accessible public transport and walking and cycling facilities. Car free development should be the starting point for all urban development with spaces for blue badge and car share only. Surface and multistorey car parks in urban areas and big box retail parks should be deployed for housing or mixed use development. Most house building is based on 2 cars per household despite, London showing that car free development in urban areas does work. In the words of CPRE London 'to save the countryside we must save the city'.

⁷³ Pay-as-you-drive: The British public's views on vehicle taxation reform, Campaign for Better Transport, September 2022

<https://www.smarttransport.org.uk/whitepapers/latest-whitepapers/campaign-for-better-transport-pay-as-you-drive>

⁷⁴ <https://www.wheelstowork.org/> and <https://www.wheels2workuk.org/> and <https://travelwest.info/wheels-to-work-west/> and <https://www.wheels2worksouthwest.org/> and <https://www.northincs.gov.uk/jobs-business-and-regeneration/wheels-2-work-north-lincolnshire/> and many more

A Workplace Parking Levy (WPL) can reduce car use and provide revenue for local investment in sustainable alternatives⁷⁵. However, only Nottingham has chosen to introduce one to help fund its tram system but revenue from the WPL has been affected by the Covid pandemic. A proposal for a WPL in Leicester in 2022 was abandoned after it failed to convince the public of its benefits⁷⁶.

Park and Ride (P & R) schemes undermine existing public transport use, encourage journeys by car, and require a large greenfield land-take⁷⁷. Also, the more mature P & R systems that have been studied by Prof. Graham Parkhurst of the University of the West of England, e.g. around Cambridge and Oxford, have been shown to prompt unexpected traffic movements. For instance, local residents who live closer to the cities than the P & R sites are known to drive out to them to park and commuters arriving at sites that have already filled up circumnavigate the cities from P & R to P & R until they find a parking spot.

There is a shortfall of lorry parking facilities, with 21,234 vehicles observed at on-site and off-site parking facilities within five kilometres of the strategic road network in England against an on-site capacity of 16,761, translating into a recorded excess of 4,473 vehicles against capacity⁷⁸. A network of low-cost (to the user) small-scale lorry parks of 200-500 spaces adjacent to the M20/A20 and M2/A2 was mooted as needed in Kent for overnight parking. This network would provide an alternative for vehicles currently stopping in laybys and inappropriate sites such as country lanes and residential streets and would include excess capacity to accommodate vehicles that would otherwise queue on the M20 in what was 'Operation Stack'.

'Operation Brock' has replaced 'Stack' as the primary means of organising HGV queues when the Kent ports are congested with provision for domestic coast-bound traffic to continue to use the M20. This has reduced traffic congestion on other roads but lorry parks would be far better by providing proper facilities for drivers and reducing engine idling. Other areas for example along the A14 have similar needs. NPPF 113 requires planning authorities to plan for lorry parking, but many have no policy - even, for example, Folkestone & Hythe - home of the Channel Tunnel. Lorry parks are never popular with nearby residents so need to be justified and planned properly. Lorry park size should be based on a recent parking survey.

Policy 10 Safety

Rural single carriageway roads with no specific limit imposed on them currently have the national speed limit of 60 mph. DfT figures show that 514 people were killed in crashes on non-built up roads with a 60 mph speed limit in Britain in 2021, making them the most dangerous category of highway⁷⁹. Lower traffic speeds not only save lives and emissions but also create an environment in which walkers, wheelers and cyclists feel safe. Driven in a steady fashion at moderate speeds, combustion engines function at their most efficient and electric vehicles use less energy. The habit of walking and/or cycling embedded in children has a lasting impact on travel choices.

⁷⁵ A decade of inspiring growth in our city Nottingham's Workplace Parking Levy 10 Year Impact Report 2012-2022
<https://www.transportnottingham.com/wp-content/uploads/2022/10/WPL-10-Year-Impact-Report-Digital-Nov-22.pdf>

⁷⁶ <https://www.leicestermercury.co.uk/news/leicester-news/leicester-workplace-parking-levy-charge-7794626>

⁷⁷ Park & Ride Could it lead to an increase in car traffic? Parkhouse G. Transport Policy Vol 2 Issue 1 pp 15-23, 1995
<https://www.sciencedirect.com/science/article/abs/pii/0967070X9593242Q>

⁷⁸ National Survey of Lorry Parking, Aecom for DfT, 2022
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1108154/national-survey-of-lorry-parking-2022-part-one.pdf

⁷⁹ **Built-up roads** are those with speed limits of 40 mph or less (ignoring temporary limits). **Non-built-up roads** are those with speed limits over 40 mph. Motorway collisions are shown separately and are excluded from the totals for non-built-up roads. Reported road casualties by severity, road type and class, Great Britain, ten years up to 2021, RAS0301 - Speed limit, non-built-up and built up roads
<https://www.gov.uk/government/statistical-data-sets/reported-road-accidents-vehicles-and-casualties-tables-for-great-britain#road-type-ras03>
<https://www.fleetpoint.org/road-safety/speed-limits/rac-reports-rising-number-of-people-breaking-speed-limits/>

A holistic approach combining education, enforcement, and engineering, joined up with tackling other transport issues, is required. Reducing road danger, for example through better speed management, can produce other benefits, e.g. less noise, lower carbon emissions and more attractive streets and lanes.

While engineering has an important part to play, there is a danger of ‘over engineering’ in some rural areas, associated for example with sign clutter and over-use of pinch-points and speed humps. Measures adopted should therefore be sensitive to the environment and character of the area (see Policy 14 Clutter).

Policy 11 Freight and Logistics

Most of the freight moved around the UK is carried on trucks – around 80% of the 200 billion tonne kilometres in 2022. This produced 20% of all the UK’s domestic transport GHG emissions in 2021⁸⁰. Heavy Goods Vehicles (HGVs) are much more difficult to decarbonise than cars and vans. The sale of all non-zero emissions HGVs under 26t is planned to end by 2035 and of HGVs over 26t by 2040. Rail freight trains currently emit around a quarter of the CO₂ emissions of HGVs per tonne mile travelled⁸¹.

The Chartered Institute of Logistics and Transport has put forward a number of suggestions which might be pursued to improve distribution in rural areas⁸². These include shared use of passenger vehicles (rail and road) for freight; small-scale rural distribution hubs, with cooperation of farmers to provide the land, buildings or even the vehicles, and cooperation between freight companies and between supermarkets to make better use of resources. If successful, the need for larger road vehicles to access rural lanes should be reduced and there could be an opportunity for reviving flagging businesses such as pubs and village shops by associating them with these hubs.

Cargo vessels are by far the most efficient mode measured by energy used per tonne-kilometre⁸³ but nearly all burn fossil fuels, often of the lowest grade. Worldwide, shipping is estimated to contribute some 3% of human-made emissions of carbon dioxide⁸⁴. It is only relatively recently (2011) that limits on energy efficiency (hence carbon footprint) of ocean vessels have been prescribed by the International Maritime Organisation⁸⁵. This amendment to MARPOL (International Convention for the Prevention of Pollution from Ships) Annex VI was put into force in the UK only in 2019⁸⁶. Researchers have shown that current progress towards net zero in UK shipping is too slow to meet declared targets⁸⁷. Nevertheless GHG emissions per tonne-kilometre should remain substantially less than for road vehicles - currently of the order of 75% less according to the Tyndall Centre for Climate Change Research⁸⁸.

⁸⁰ <https://www.gov.uk/government/calls-for-evidence/infrastructure-for-zero-emission-heavy-goods-vehicles-and-coaches/infrastructure-for-zero-emission-heavy-goods-vehicles-and-coaches>

⁸¹ Decarbonising Transport DfT 2021

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1009448/decarbonising-transport-a-better-greener-britain.pdf

⁸² The challenge of future carbon and emissions reduction for rural communities, CILT, 2021

⁸³ <https://ibir.deutschebahn.com/ib2018/en/group-management-report/environmental/progress-in-climate-protection/energy-efficiency-increased/>

⁸⁴ What is the impact of shipping on climate? <https://www.transportenvironment.org/challenges/ships/greenhouse-gases/>

⁸⁵ Amendments to the Annex of the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, Adopted 2011

[https://www.wcdn.imo.org/localresources/en/KnowledgeCentre/IndexofIMOResolutions/MEPCDocuments/MEPC.203\(62\).pdf](https://www.wcdn.imo.org/localresources/en/KnowledgeCentre/IndexofIMOResolutions/MEPCDocuments/MEPC.203(62).pdf)

⁸⁶ <https://www.legislation.gov.uk/uksi/2019/940/regulation/2/made>

⁸⁷ <https://tyndall.ac.uk/news/policy-brief-decarbonising-shipping/>

⁸⁸ Quoted by the Commercial Boat Operators Association <http://www.cboa.org.uk/downloads/100918-rwm-2018-a5-flyer.pdf>

Meanwhile, air freight has far higher negative environmental impacts, including GHG emissions, than other modes of transport. It often uses older, more polluting and noisier planes and much is transported at night. Air freight produces immensely more CO₂ equivalent emissions per tonne-kilometre than transport by sea and, up to the recession, air cargo was rising faster than passenger traffic at some airports. (East Midlands Airport, which has no night-time flying restrictions, is a key UK cargo airport with ambitious plans to keep expanding). Much of the recent development at airport sites is cargo-related⁸⁹.

Policy 12 Transport Infrastructure

Best use should be made of existing road space with maintenance and traffic management being the first priority. Road users' priorities are improved quality of road surfaces, safer design, up-keep of the network and better road works management⁹⁰. The National Infrastructure Commission also recommends a move away from road building 'mega projects' towards asset maintenance and renewal⁹¹. These should be the DfT's priorities, as they are crucial to climate resilience – for example, very hot weather causes road surfaces to melt and road maintenance costs will increase. Funding new road infrastructure, which largely benefits drivers, takes scarce resources away from investment in sustainable transport.

New road infrastructure brings the following potential negatives⁹²:

- The generation of traffic and continued creation of car dependent neighbourhoods leading to inactive lifestyles;
- Poorer air quality leading to health impacts;
- Increased carbon emissions;
- Unsubstantiated claims for economic benefits leading to poor planning decisions. The *roads* → *car-based development* → *traffic growth* → *roads* model of economic development has not solved economic problems;
- Damage to the landscape, not only where new construction takes place but where aggregates and minerals are mined to provide the raw materials or where spoil is dumped;
- Loss of land for food production and recreation;
- Loss of tranquillity and increased noise and vibration;
- Light and water pollution;
- Road casualties and fear of speeding traffic;
- Community severance;
- Impacts on flood plains and water tables;
- Damage to wildlife and natural habitats/woodlands;
- Encouraging development to sprawl along road corridors. The ribbon-development of homes and businesses along supposedly 'strategic' corridors is self-strangling: any respite from congestion provided by a new or widened road is temporary;
- Loss of character, distinctiveness and local identity and impacts on heritage;
- Signage clutter and litter.

If the government is determined to pursue road building through its Road Investment Strategies, then they should be subject to a strategic environmental appraisal, every scheme in them should have a health

⁸⁹ <https://www.bbc.co.uk/news/uk-england-leicestershire-63234530>

⁹⁰ Putting Transport Users at the Heart of RIS3 Transport Focus 2022 <https://d3cez36w5wymxi.cloudfront.net/wp-content/uploads/2022/10/10164826/Putting-road-users-at-the-heart-of-RIS3.pdf>

⁹¹ National Infrastructure Assessment 2018 https://nic.org.uk/app/uploads/CCS001_CCS0618917350-001_NIC-NIA_Accessible-1.pdf

⁹² End of the Road? *The Impact of Road Projects in England* Report for CPRE, 2017, Sloman et al <https://www.cpre.org.uk/resources/the-impact-of-road-projects-in-england/>

assessment and the whole programme should be regularly monitored due to the amount of public money involved. However, ideally, the DfT should adopt the same approach as the Welsh government and abandon most of its roads programme⁹³. The decision by the Welsh government in February 2023 followed the production of a report, 'The Future of Road Investment in Wales'. The panel's scheme reviews also led them to make recommendations about strategic investment, carbon and well-being, policy themes and technical, appraisal and delivery themes. In all they made 51 recommendations. CPRE strongly recommend the approach taken by the Welsh government.

Any new transport infrastructure, including rail, can have some or all of the impacts bullet-listed above. As a rule, CPRE is supportive of heavy and light rail. We would particularly like to see trams on heavy rail lines where appropriate. However, when it comes to proposals for new rail infrastructure, CPRE cannot automatically support it until it has weighed up all the pros and cons. For instance, there has been a particular issue with rail freight interchanges over the last two decades. A significant number of poorly designed, land hungry, rail freight depots have been brought forward which have been little more than a front for opening up new sites for road-to-road haulage transfer in the form of massive logistics sheds – often in unsuitable locations from a road and/or rail perspective, with a high concentration in the Midlands. CPRE very much supports freight being carried by rail but, as with all development, we will consider whether the right proposal is coming forward in the right location.

Policy 13 Air, Noise, and Light Pollution

(a) Air pollution

Air pollution is the top environmental risk to human health in the UK and needs to be addressed urgently⁹⁴. Epidemiological studies have shown that long-term exposure to air pollution (over years or lifetimes) reduces life expectancy, mainly due to cardiovascular and respiratory diseases and lung cancer. Short-term exposure (over hours or days) to elevated levels of air pollution can also cause a range of health effects, including effects on lung function, exacerbation of asthma, increases in respiratory and cardiovascular hospital admissions and mortality. The youngest, older people and those with existing health conditions are most likely to be affected by exposure to air pollution. The exacerbation of respiratory conditions has been brought into sharp focus by the COVID-19 pandemic.

The 2020 landmark verdict⁹⁵ that air pollution made a material contribution to Ella Adoo-Kissi-Debrah's death emphasises the urgency with which air pollution needs attention and how the response of the government and statutory agencies is failing to meet that urgency. After years of warnings from the European Commission, the Court of Justice of the European Union (CJEU) ruled in March 2021 that the UK had 'systematically and persistently' exceeded legal limits for dangerous nitrogen dioxide (NO₂) since 2010 and failed against its legal duties to put plans in place to tackle the problem in the shortest possible time⁹⁶.

Regardless of targets, there is no clear evidence of a safe level of exposure below which there is no risk of adverse health effects. In recognition of this the World Health Organisation (WHO) guidelines for PM and NO₂ were updated in 2021 to even lower concentrations (quoted below)⁹⁷. In that context, the ambition

⁹³ The future of road investment in Wales, Advice from the Independent Panel appointed by the Welsh Government, Feb 2023 <https://www.gov.wales/sites/default/files/publications/2023-02/the-future-road-investment-wales.pdf>

⁹⁴ Public Health England (2018). Health Matters: Air Pollution.

⁹⁵ <https://www.government.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution>

⁹⁶ <https://www.clientearth.org/latest/press-office/press/excessive-air-pollution-contributed-to-ella-s-death-clientearth-comment/>

⁹⁷ <https://www.clientearth.org/latest/press-office/press/top-court-confirms-uk-has-broken-air-pollution-law/>

⁹⁷ WHO Air Quality Guidelines https://www.c40knowledgehub.org/s/article/WHO-Air-Quality-Guidelines?language=en_US

should always be to reduce air pollution to as low as possible, as further reduction of PM and NO₂ concentrations below air quality targets and Limit Values are likely to bring additional health benefits. All air quality strategy (AQS) objectives should be met as soon as possible⁹⁸. Without action, it has been estimated that the health and social care costs of air pollution in England could reach £5.3 billion by 2035, primarily due to fine particulates (PM_{2.5})⁹⁹. The nature of the radical measures required to address this has been signalled by the Chief Medical Officer who proposed road user charging¹⁰⁰. More recently in his 2022 report he supported low emission zones and behavioural change¹⁰¹.

We welcome that 2023 DEFRA's Environmental Improvement Plan¹⁰² includes aspirations to 'improve the environmental quality of the air'. However responsibility for local air quality falls to local authorities (LAs). It is now considered adequate for LAs to simply acknowledge that they have an air quality problem and state they are working towards improvements. That is not good enough. CPRE want to see much improved air quality monitoring, health assessments for all proposed road schemes and a requirement that DEFRA, working together with LAs, addresses the problems. Both DEFRA and LAs have insufficient funds to undertake their air quality work; this should be rectified by receipt of a bigger proportion of the government's budget.

Due to prevailing winds and/or land formations, and/or proximity to airports, there are many areas of countryside that suffer from poor air quality – and many villages that have a combination of slow-moving traffic and narrow streets. Not all places impacted are officially recognised as AQMAs – air quality management areas – due to insufficient coverage by air quality testing monitors and some being incorrectly positioned.

(b) Noise Pollution

Noise from motorised traffic impacts on the quality of life in towns and villages, deters walking and cycling, and erodes the tranquillity and rural feel of the countryside. Where traffic speeds are lower than 30mph, traffic noise is mainly attributable to engine, transmission and exhaust noise, especially from lorries. This can be addressed by good maintenance of the road surface, slower speeds, appropriate routing for lorries and driver education. Where speeds are higher, the major component of traffic noise comes from the tyre/road interface and the application of low noise road surfaces is most appropriate. It is estimated that the annual social cost of urban road noise (due to sleep disturbance, annoyance, heart attacks, strokes and dementia) in England is £7 billion to £10 billion. This places it at a similar magnitude of cost to road crashes (£9 billion)¹⁰³.

Aviation noise is a problem for many people in overflow rural areas. With an Independent Commission for Civil Aviation Noise (ICANN) having been disbanded, the problem of noise from low-flying aircraft over established areas of tranquillity and more concentrated flight paths than hitherto are a major cause of

⁹⁸ ClientEarth v SoSEFRA, SoSFT & WM 25th Jan 2018 Case No: CO 4922/2017, para 74 <https://www.judiciary.uk/wp-content/uploads/2018/02/clientearth-no3-final-judgmentdocx.pdf>

⁹⁹ New Tool Calculates NHS and social care costs of pollution <https://www.gov.uk/government/news/new-tool-calculates-nhs-and-social-care-costs-of-air-pollution>

¹⁰⁰ Health Impacts of All Pollution - what do we know? Annual Report of the Chief Medical Officer 2017, March 2018, recommendation 9 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/690846/CMO_Annual_Report_2017_Health_Impacts_of_All_Pollution_what_do_we_know.pdf

¹⁰¹ Air pollution, Chief Medical Officer's Annual Report, 2022 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1121599/executive-summary-and-recommendations-air-pollution.pdf

¹⁰² Environmental Improvement Plan 2023, DEFRA <https://www.gov.uk/government/news/ambitious-roadmap-for-a-cleaner-greener-country>

¹⁰³ <https://www.gov.uk/guidance/noise-pollution-economic-analysis> These costs underestimate the burden as the effects on productivity and the natural environment are not valued.

concern to CPRE and NGOs such as the Green Alliance and the Aviation Environment Federation (AEF)¹⁰⁴. The government's 'Overarching aviation noise policy' is that the impact of aviation noise should be mitigated as much as is practicable and realistic to do so, limiting, and where possible reducing, the total adverse impacts on health and quality of life¹⁰⁵.

Tranquillity is a much more complex element of landscape character than noise¹⁰⁶. Areas of tranquillity which have remained relatively undisturbed are prized for their recreational and amenity value. CPRE's tranquillity methodology is a potentially powerful tool to protect such areas through spatial land use and landscape planning. However, the impact of road traffic noise is not fully expressed by tranquillity mapping, which gives a quantitative assessment but does not give the human perspective. A qualitative study of individual experiences¹⁰⁷ showed that road traffic noise created significant disturbance at some distance in the open countryside to the extent that some felt it was no longer worth visiting.

(c) Light Pollution

Darkness at night is one of the key characteristics of rural areas and represents a major difference between what is rural and what is urban. Light pollution can have a profound impact on wildlife, by interrupting natural rhythms including migration, reproduction and feeding patterns. It can also cause distress to humans, including disrupted sleep. Exposure to light at night can disrupt the body's production of melatonin, a brain hormone best known for its daily role in resetting the body's biological clock.

CPRE has long been a leading voice in the campaign against light pollution¹⁰⁸. Our interactive map shows how much light is spilling up into the night sky across Britain, with detailed maps of England's counties, districts, National Parks, National Landscapes (previously Areas of Outstanding Natural Beauty) and National Character Areas. Even in the depths of the countryside, genuine dark starry nights are hard to find due to light spillage from roads and logistic centres.

Policy 14 Clutter

Transport infrastructure plays a vital role in enabling people to travel, but the standardisation and multiplicity of signage is visually invasive and erodes the distinctive character of our countryside. Road signs are designed to be easily seen by road users, with a common approach being to use large boards and bright colours, creating an impact often beyond the highway boundary.

The design of transport infrastructure should enhance, rather than detract from the special qualities of countryside. Many road signs do perform a useful purpose, and need to be retained but clutter audits show that many signs are unnecessary and by removing them, road users are more likely to notice the important signs that remain. Traffic calming research shows that creating attractive streetscapes and landscapes, e.g. road/lane restrictions, removal of white lines, village gateways and vegetation, can be more effective in changing driver behaviour than further clutter¹⁰⁹.

¹⁰⁴ <https://www.aef.org.uk/what-we-do/noise/>

¹⁰⁵ <https://www.gov.uk/government/publications/aviation-noise-policy-statement/overarching-aviation-noise-policy>

¹⁰⁶ CPRE Tranquillity Maps <https://www.cpre.org.uk/resources/mapping-tranquility/>

¹⁰⁷ Traffic Noise in Rural Areas – personal experiences of people affected, Transport for Quality of Life, 2008

<https://www.transportforqualityoflife.com/u/files/Traffic%20Noise%20in%20Rural%20Areas%20Sep2008.pdf>

¹⁰⁸ <https://www.nightblight.cpre.org.uk/>

¹⁰⁹ Psychological traffic calming, Kennedy et al, 2005, prepared for Traffic Management Division DfT

<https://trl.co.uk/uploads/trl/documents/TRL641.pdf>

Litter is also a source of detrimental clutter as verges are used as bins by passing motorists who are rarely caught in the act of disposal. Unfortunately cleaning up adjacent to fast moving traffic often requires partial road closure. CPRE has a helpful page on how to pursue those responsible for keeping highway verges clear of rubbish¹¹⁰. For long term lasting effects education in schools is required.

Policy 15 Transport Appraisal

Transport appraisal is about finding the right solution to a transport problem. The government's webTAG (web-based transport appraisal guidance) aims to define the problem that needs to be solved, list all reasonable solutions, and then robustly assess all, to select the best from the list. This approach is rarely applied - a road solution is usually the option chosen at the start. This is unsurprising when the principal or only statutory consultees on transport are those charged with keeping road traffic flowing and maintaining highway infrastructure. Even if webTAG is applied properly, it has several limitations, from technical issues through to questions about the role these processes play in the decision-making process¹¹¹. Forecasts and modelling used in transport appraisal favour certain criteria, particularly travel time savings, while undervaluing or missing others. This leads to poor Benefit to Cost Ratio (BCR) scores for interventions which promote travel by more sustainable modes. Such official methodologies are used to justify transport spending and undervalue local improvements over major projects. In addition, because these models project past trends into the future, interventions which focus on changing behaviour can also score badly. The methodology is complex and not well understood by decision makers in local and central government. While transport appraisal entails balancing a series of economic, social, and environmental benefits, the economic case, especially the BCR, tends to dominate thinking on transport projects. Yet few users notice small time savings which, in any event, evaporate over time.

A prominent critic of the appraisal process has been Professor Phil Goodwin, emeritus professor of transport policy at University College London and at the University of the West of England. Writing in 'Local Transport Today' in 2022 he said *"There are many weak, incorrect or outdated assumptions in appraisals that were carried out of current programmed road schemes"*. He called for a pause in the government's road building programme and a proper reassessment of the schemes, testing what contribution they made to carbon targets and their robustness in relation to future climate conditions.

A transformational revision is required. Appraisal should reflect and deliver current national strategies within up-to-date policies and using up-to-date data, particularly those for climate change. It should also include land use and health impacts. There should be much better valuation of qualitative impacts. The selected project should be tested against need and objectives at every step of its development and compared with other interventions. The BCR should consider the impacts of potential investments on all transport policy objectives. Indirect valuation techniques have progressively broadened the scope of cost-benefit analysis to capture more impacts that are harder to express in monetary values. However, changing policy objectives – in particular, increased interest in equity, access and climate change issues – require further enhancements to cost benefit analysis and the use of complementary appraisal methods, as recommended by the International Transport Forum¹¹². Evaluation of project outcomes should be rigorous in order for early and long-term lessons to be learnt. Until such a review is undertaken, solutions that achieve the correct outcomes for communities and the environment will not win out in the bidding process.

¹¹⁰ <https://www.cpre.org.uk/what-we-care-about/litter-and-recycling/cleaner-countryside/litter-and-the-law/litter-on-land/roads-clearing-of-litter-and-refuse/>

¹¹¹ Transport Appraisal and Evaluation, House of Commons Library Research Briefing, 2022 <https://researchbriefings.files.parliament.uk/documents/CBP-9495/CBP-9495.pdf>

¹¹² ITF (2022), Broadening Transport Appraisal: Summary and Conclusions, ITF Roundtable Reports, No. 188, OECD Publishing, Paris <https://www.itf-oecd.org/sites/default/files/docs/broadening-appraisal-policy-brief.pdf>

4 WHAT NEEDS TO HAPPEN FROM A RURAL PERSPECTIVE

Rural areas should not be thought of as dormitories and the countryside should not be seen as easy prey for new roads and distribution centres. Rural and semi-rural areas – which are struggling from the effects of climate change just as urban areas are – have their own economy, purpose and ethos which should be respected and enhanced. Rural areas provide the workforce, products and services on which cities, towns, villages, and the visitor economy depend: water, timber, food, open space to play, exercise and seek solace, fresh air, inspiring landscapes, dark skies, carbon sumps, rich wildlife and habitats ranging from ponds to woodlands that work for flood prevention. In addition, there needs to be greater awareness of the fact that rural residents pay more to receive fewer services¹¹³, including public transport. This should change.

All the factors mentioned above need to be fully recognised by government through rural proofing. This is a commitment by government to review and examine all its domestic policies to ensure they do not disadvantage rural areas. Yet rural proofing, the responsibility of DEFRA¹¹⁴, has yet to become enshrined in central and local government thinking and ways of working. It is especially noticeably absent in the way that the DfT conducts its business. In order to be effective rural proofing needs a ‘champion’ in each Government Department and effective monitoring.

We also need a return to more sustainable communities which offer the basics people need for everyday living. Large parts of the population, especially those living in rural areas, now travel further to access alternative basic services to those that have closed nearer to them. Difficulties with accessibility have recently been compounded by rapid increases in the cost of living, the legacy of the Covid pandemic and deep cuts to local bus services. These issues have left many rural residents at risk of transport related social exclusion ie unable to participate or to access key services, effects that fall particularly on residents with disabilities, those on low incomes and in insecure work, and carers. The result is more or longer trips than was the case when thriving local communities existed, and social isolation for those with limited accessibility or mobility. The Government should recognise a universal basic right to public transport – it is an essential utility – and accept it will always require subsidising in rural areas.

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¹¹⁴ Rural Proofing DEFRA 2022 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1121357/rural-proofing-guidance.pdf