



Transport & health policy position

Draft for TfN Board

Context

Among the many legacies of the COVID-19 pandemic has been an unprecedented level of political, media, and public attention to health and wellbeing. For many, conversations about healthcare, the spread of illness, mental health, and wellbeing became part of daily life in a way that they would not have been beforehand. As legal public health restrictions linked to COVID-19 eased, this attention has increasingly turned to access to healthcare, and the impacts of the challenges facing the NHS. These features of public, media, and political attention have added to long-running attention to the extent of health inequalities across the UK, including how issues such as air and noise pollution, physical inactivity, and road traffic incidents disproportionately impact deprived areas and communities.

In 2022/23, Transport for the North (TfN) undertook research with Cambridge Econometrics and Cavill Associates on the impacts of the transport system on health and wellbeing. This research brought together evidence on the range of impacts of the transport system on health and wellbeing, quantified the scale of these impacts, and facilitated analysis of variations in these impacts across the diverse place and population contexts of the North. This research built on the commitment in TfN's 2019 Strategic Transport Plan (STP) to improving *"inclusion, health, and access to opportunities for all"*. Drawing on this research and STP commitment, this policy position sets out the health challenge that exists around the transport system in the North, the links between this challenge and other key policy areas, and defines TfN's role in addressing these issues.

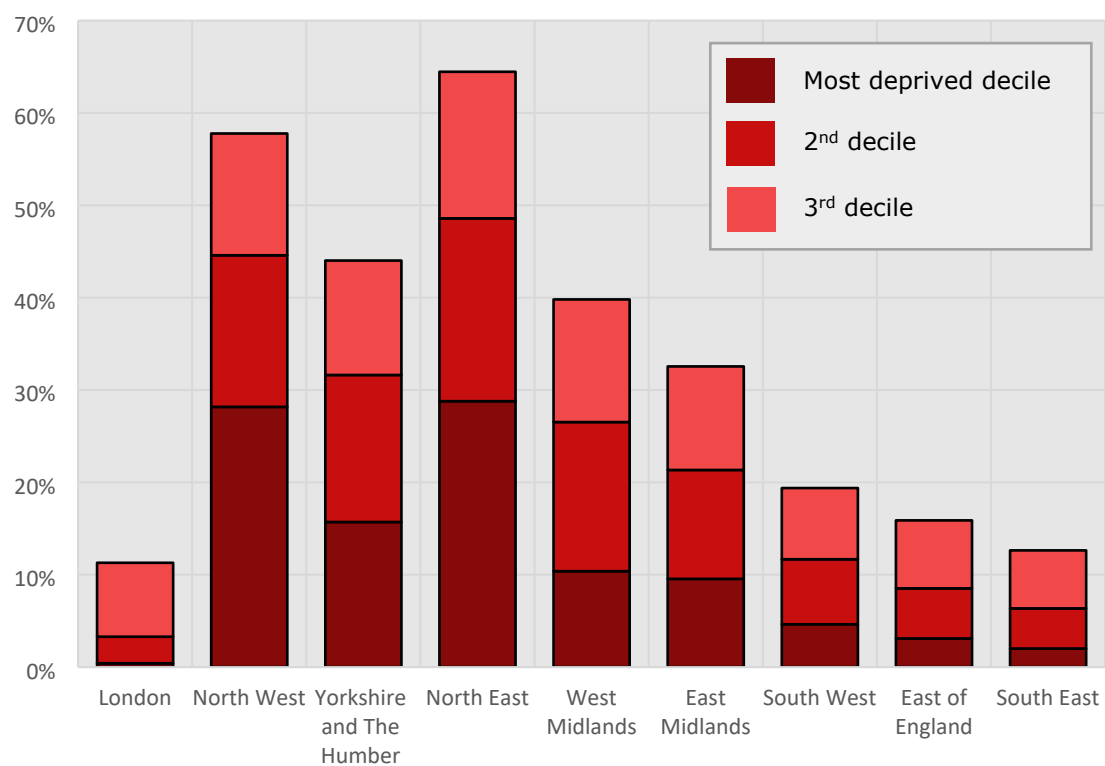
Consistent with wider patterns of regional inequality in England, the three regions of the North face a relatively greater health deprivation. The 2019 English Indices of Deprivation found that 23.9% of areas in the North fall in the most deprived decile for health, and 54.1% in the most deprived three deciles. This compares with 4.4% and 20.2% of the rest of England.¹ Contributing to this, life expectancy at birth and healthy life expectancy at birth is lower in the North than the averages for England as a whole, and the prevalence of obesity among children, levels of smoking among adults, and levels of hospital admissions related to alcohol are all higher in the three regions of the North than the average for England as a whole. Levels of poor self-reported wellbeing and levels of death due to suicide in the North are marginally higher than the average for England as a whole.²

The causes of health and wellbeing inequalities in England are multiple and complex, and are driven in part by wider patterns of regional socioeconomic inequality. However, both TfN's research and the wider body evidence on the determinants of health and wellbeing in England demonstrate that the transport system has a significant role. Broadly, this role reflects: (1) The capacity of the transport system to provide access to healthcare, opportunities, key services, and community life, and through this its role as a determinant of poverty, social connectedness, and access to resources supportive of health, and (2) The wider impacts associated with transport systems, including through pollution, physical activity, and quality of place. These impacts often occur as the negative externalities of transport use by others, rather than being linked to personal use.

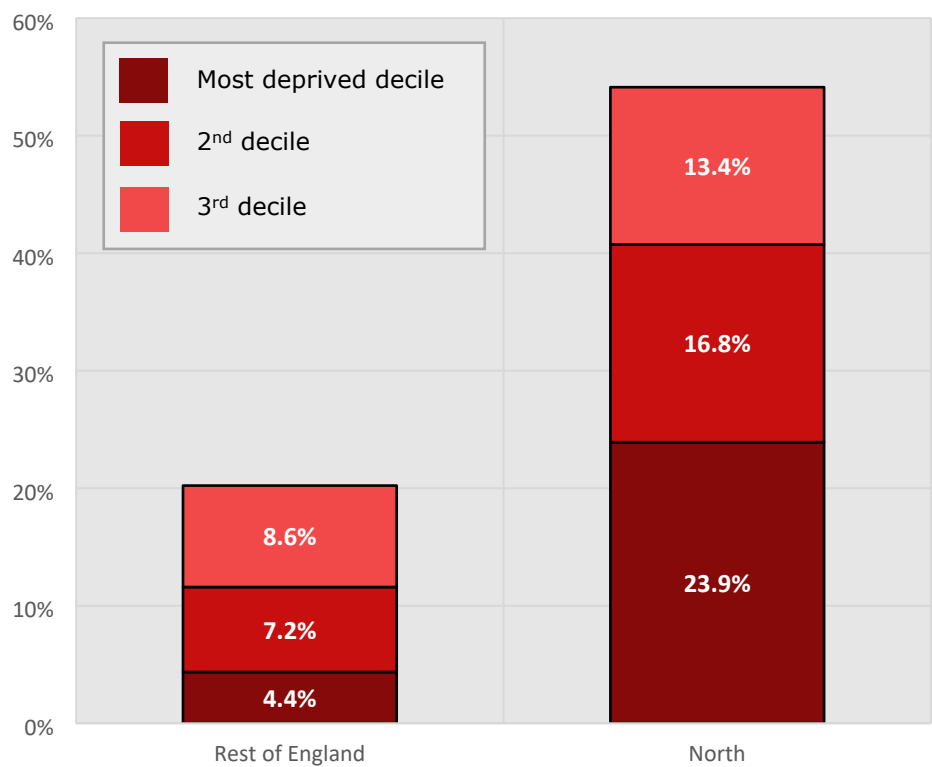
¹ TfN analysis of the 2019 English Indices of Deprivation. DLHC, 2019, [Available here](#)

² TfN analysis of OHID public health profiles. OHID, 2022, [Available here](#)

Population by health deprivation decile by region of England³



Population by health deprivation decile by area of England⁴



³ DLHC, 2019, [Available here](#)
⁴ DLHC, 2019, [Available here](#)

The key impacts of transport on health in the North

There are a large number of ways in which the transport system impacts the health and wellbeing of people in the North. However, not all of these impacts are rigorously quantifiable across this broad geography. Through research with Cambridge Econometrics and Cavill Associates, and recognising TfN's role as a sub-national transport body, this policy focuses on the following links between transport and health and wellbeing:

Incidents and safety: Between 2016 and 2020, the last five years for which data are available, 30,367 people were killed or seriously injured in road traffic incidents in the North of England. Of these, 37.6% were drivers or passengers in cars, 24.3% were pedestrians, and 19.2% motorcycle riders or passengers. Over this same period, 143,451 slight injuries were recorded. Together, this represents a significant burden of mortality and morbidity, and is among the key causes of trauma-related hospital admissions.⁵

Access to healthcare: Statistics published by the Department for Transport (DfT) indicate that approximately 390,000 people in the North cannot access a GP surgery within 30 minutes by public transport, and approximately 510,000 cannot access a hospital within an hour by public transport.⁶ This has the potential to place significant barriers to accessing healthcare among those solely or primarily dependent on public transport, both in the absolute sense and through the knock-on time and cost impacts of these journeys. Owing to wider inequalities in the transport system, this is particularly likely to impact those on lower incomes, those with disabilities, and those living outside of major cities.

Air pollution: Transport – particularly road transport – is a significant contributor to air pollution, particularly nitrogen dioxide and fine particulate matter (PM10 and PM2.5). These pollutants are significant contributors to asthma, diabetes, lung cancer, and dementia, with nitrogen dioxide and PM2.5 pollution estimated to cause 1.14 million and 1.33 million additional cases of disease across England between 2017 and 2035.⁷ Modelling undertaken for TfN indicates that, within the North, approximately 5.88 million people live in areas where nitrogen dioxide pollution poses an increased risk of early death.⁸ Reflecting this, the vast majority of Air Quality Management Areas in the North (135 out of a total of 139) are in place because of nitrogen dioxide emissions from road transport.⁹

Noise pollution: Noise pollution has a range of physiological and psychological impacts, and chronic exposure to noise pollution increases the risk of heart disease, high blood pressure, and depression. These effects occur at a relatively low level of noise, with chronic exposure to traffic noise of only 55 decibels robustly linked with increased levels of coronary heart disease and hypertension. Modelling undertaken for TfN indicates that approximately 2.5 million people in the North are impacted by harmful levels of road traffic noise, the vast majority of whom are in large urban centres. Noise associated with rail is also likely to contribute to poor health, however the impacts are significantly smaller in scale and more diffuse across the North.¹⁰

⁵ DfT, 2022, [Available here](#)

⁶ TfN analysis of DfT Journey Time Statistics data. DfT, 2022, [Available here](#)

⁷ PHE, 2018, [Available here](#)

⁸ Transport for the North, 2022

⁹ DEFRA, 2022, [Available here](#)

¹⁰ Transport for the North, 2022

Physical inactivity: Physical inactivity is a major public health challenge, contributing to heart disease, diabetes, and cancer. The combination of poor-quality active travel infrastructure, car-focused urban design, and high levels of car dependency is a significant limiting factor in levels of physical inactivity. Evidence from the Active Lives Survey indicates that the majority of adults in the North do not undertake more than one significant active travel trip per month, and that a significant minority had not undertaken a significant active travel trip in the last year.¹¹ Incorporating physical activity into everyday life – particularly through walking, cycling, and wheeling for transport – is an effective and well-evidenced public health intervention.

Alongside these five key effects, TfN's research and the wider literature also identifies a number of other impact pathways.¹² This includes:

- The quality of the environment; particularly the impacts of road infrastructure on urban environments.
- The level of access to green space, recreation, and leisure; particularly the impacts of this on levels of physical inactivity, and levels of wellbeing associated with exposure to nature, recreation, and leisure.
- The level of access high-quality employment; particularly the link between transport accessibility and the level of secure and well-paying work among the population.
- The experience of users in the transport system; particularly the level of stress associated with using public and private transport, and the positive wellbeing impacts that can be associated with active travel.
- Community severance; particularly the impacts of road infrastructure and levels of road traffic on social interaction and connections.

In general, these impacts either have a high degree of evidence at the local level, but are not possible to aggregate to the pan-northern geography (as in the case of community severance and the quality of the environment), or have a high degree of evidence for one part of the relationship, but not the relationship as a whole (as in the case of access to high quality employment). Consequently, it is not possible for TfN to monitor changes in these factors over time.

¹¹ TfN analysis of Active Lives data tables. Sport England, 2022, [Available here](#)

¹² Transport for the North, 2022

Challenges

TfN's policy position on transport and health reflects the following challenges:

A complex and multi-dimensional relationship: The previous section describes the complex and multi-dimensional relationship between transport and health. Of the elements of this relationship, five are measurable at the pan-northern geography, and a further five cannot be reliably measured at this scale with the evidence currently available. Further, even where the extent of the health impact can be quantified across the North, this is typically in isolation rather than combination. For example, while it is possible to estimate the scale of impacts from air pollution and noise pollution in isolation, there is less certainty on the combined effects of these forms of pollution.

Impacts on users and non-users: The level of individual exposure to negative health impacts from the transport system has an indirect relationship with the level of use. For example, harmful levels of noise pollution can impact communities living close to major road or airport infrastructure, regardless of their level of use of that infrastructure. Added to this, impacts often occur across modes; for example, the impact of road traffic incidents on people walking and travelling by bike, or the impacts of severance on social connections. These 'negative externalities' are not reflected in the costs of transport use and, owing to inequalities in levels of transport use based on gender, age, ethnicity disability, and income, contribute to wider patterns of social inequality.

Links to multiple policy areas and stakeholders: The impacts of transport on health and wellbeing crosses multiple policy areas and stakeholders. This creates complexities in a context in which budgets and policy are fragmented, particularly where measures to address negative health externalities from transport conflict with traditional transport indicators. For example, measures to address severance and physical inactivity linked to road infrastructure may reduce journey time savings for vehicle users. Further complexity is evident in attributing changes in health to changes in transport policy, and through this assessing the value obtained. For example, attributing changes in levels of physical inactivity as a result of transport policy changes, given the large number of other determinants of physical inactivity that fall outside of transport policy.

A complex relationship with transport decarbonisation: Decarbonisation is increasingly becoming the defining issue in transport policy at all levels. The failure to deliver on net zero will have significant negative impacts on health through extreme weather, damage to the supply of key resources, and natural disasters. However, different approaches to decarbonisation are also likely to have vastly different impacts on health. For example, an approach to decarbonisation that solely prioritises the uptake of electric vehicles is likely to lead to increased levels of physical inactivity and severance. By contrast, a model of decarbonisation that prioritises modal shift to active travel and public transport alongside the uptake of electric vehicles is likely to deliver increased physical activity, lower noise pollution, and lower levels of road traffic incidents.

The need for modal shift: The high levels of car use and car-dominated urban environments widely evident in the North are a key factor in road traffic incidents, air and noise pollution, and physical inactivity, and contributes to severance, poor user experience, and poor-quality environments. Making significant progress in reducing the

negative impacts of the transport system on health requires significant modal shift away from private car use, towards public transport and active travel. However, despite this weight of evidence, the National Travel Survey indicates that there has been no significant progress in achieving modal shift in the North over the last decade.¹³

The role of TfN

As a sub-national transport body, TfN's role is to set a vision for the transport system, and to provide statutory advice on planning and priorities for large scale transport investment. Recognising the scale and significance of the transport system for the health and wellbeing of people in the North, TfN's 2019 Strategic Transport Plan committed to "improving inclusivity, health, and access to opportunities for all", and to "further explore how investment can have a positive impact on people's health". It also called on TfN's partners to "work together to deliver a transport system that promotes social inclusion and improves the health outcomes and quality of life for communities across the North". The STP links this specifically to reducing levels of air pollution, enabling modal shift towards public transport and active travel, and improving access to natural environments.

The STP states that "Air pollution is the UK's largest environmental risk to health, with 5% of deaths in England being attributable to exposure to air pollution. Road transport is a significant cause of air pollution through carcinogenic emissions, high levels of nitrogen dioxide (NO₂) and particulate matter (PM). Children and older people are more susceptible to the effects of air pollution and both long and short-term exposure to air pollution is known to adversely affect health. It is estimated that if no action is taken, the effects of air pollution could cost the NHS and social care system up to £18.6 billion by 2035"

On physical activity, the STP sets out that "The National Institute for Health and Care Excellence (NICE) recommends that active travel and use of public transport should be encouraged. They recommend doing this by making sure there are high quality walking and cycling routes that are convenient, safe, appealing and well maintained." This includes addressing the severance impacts and barriers to active travel posed by other forms of transport infrastructure – particularly road infrastructure.

Population health and health inequalities have intrinsic importance, but alongside this the STP details the role of health in the significant disparity in productivity between the North and London and the South East. The STP set out that "Ill health can reduce productivity through increased absence from work or education, while affecting the ability to perform tasks efficiently and effectively whilst unwell (presenteeism). Around 131 million working days are lost due to sickness absence every year and employers spend £9 billion each year on sick pay and associated costs. Improving health and wellbeing can improve employment rates, raise educational attainment, and increase productivity. Conversely, unemployment is associated with poor mental and physical health."

Links to other TfN workstreams

Decarbonisation Strategy: TfN's Decarbonisation Strategy sets out a trajectory to achieve close to zero carbon emissions from surface transport in the North by 2045, and

¹³ TfN analysis of the 2009 and 2019 National Travel Survey. DfT, 2022, [available here](#).

the policy agenda required to achieve this. Significant and rapid modal shift away from private car use towards public transport and active travel has a key role in this transition. Given the impacts of air and noise pollution, traffic incidents, and severance associated with high levels of car use, this element of the transition is likely to significantly reduce the negative impacts of the transport system on health. Linked to this, TfN's Clean Mobility Visions project is developing a set of evidence-based policies for Local Authorities to reduce carbon emissions by reducing levels of private car use.

EV charging framework: Petrol and diesel vehicles are a major source of air pollution, and the transition to electric vehicles is a key component of reducing these impacts. TfN's Electric Vehicle Charging Infrastructure Framework provides robust evidence on charging demand, and a comprehensive and consistent regional route map towards an effective network. Through this, the EVCI framework reduces investment uncertainty in EV infrastructure, enabling a more rapid and equitable transition to electric vehicles than would otherwise be the case. This, along with modal shift towards public transport and active travel, will deliver a significant portion of the North's carbon reduction trajectory and the required reductions in air pollution - particularly nitrogen dioxide.

Socially Inclusive Transport Strategy: TfN's draft Socially Inclusive Transport Strategy sets out how TfN, Local Authorities, central government, and other stakeholders can act to reduce transport-related social exclusion (TRSE). This includes TRSE linked to health, in which poor access to healthcare services reinforces poor health outcomes, poverty and deprivation. TfN's report on TRSE sets out that 3.05 million people in the North live in areas where there is both high levels of health deprivation and poor access to healthcare services with the transport options available. It also demonstrates that there is a significant gap between the North and the rest of England, with 19.7% of the population at high risk of TRSE specific to health, compared with 16.4% of the rest of England.

Active travel policy position: Walking, cycling, and wheeling for everyday journeys provides significant health benefits. For the user, these benefits principally occur through the physical activity entailed in active travel, but also through the wellbeing impacts of travelling actively – particularly in natural environments. More broadly, increases in active travel lead to reduced levels of air and pollution compared with other modes, and lower levels of severance compared with other modes. TfN's Active Travel Policy Position defines these and other benefits associated with active travel, sets out TfN's ambition to "make cycling and walking a natural choice for shorter journeys", and defines TfN's role in achieving this ambition – alongside Local Authorities, DfT, and Active Travel England.

Spatial planning: The manner in which spaces are designed – particularly the extent to which spaces enable active travel and access to public transport or prioritise car access – shares a number of links to health. TfN's framework outlining the role of Spatial Planning sets out actions for TfN to support those involved in the planning process in rebalancing away from car-dominated environments to promote healthier and more liveable places for all. This complements and builds on the set of actions in TfN's Decarbonisation Strategy and Active Travel Policy Position.

Future travel scenarios: TfN has adopted a scenario planning approach to help futureproof decision-making and establish a detailed and holistic representation of TfN's vision. TfN's Future Travel Scenarios represent strategic factors that are external to TfN's direct control and are used as 'reference case' scenarios to test different TfN strategies

and policies in terms of their performance against objectives. Attitudes to health are included as one of the drivers of change in these scenarios, and are linked directly to the level of uptake of active travel, and the nature of the wider public health policy agenda.

Major roads report: TfN's Major Roads Report sets out TfN's vision for the major roads network as part of a multi-modal transport system. This includes first considering alternatives to road expansion to address the challenges faced in different local contexts, actions to identify and reduce the negative externalities associated with road transport, and a focus on integration with local transport networks. As well as reducing negative externalities through air pollution, severance, and noise, TfN's strategy for the major roads network seeks to maximise economic opportunities and access to key services – both of which share direct links to population health.

TfN's role in transport and health

Vision zero for the major and strategic roads network: TfN will adopt a vision for zero deaths and serious injuries on the major and strategic roads network, and will consider this vision in developing future policy related to this network. This reflects the significant burden of mortality, morbidity, and trauma associated with road traffic incidents, and the extent to which these incidents exacerbate health inequalities linked to age, ethnicity, and income. Linked to this, TfN will work with National Highways and Local Transport Authorities to identify and address common incident sites on the Major Roads Network, including through the support TfN delivers to business case development.

Enhance links with OHID and local Directors of Public Health: TfN will enhance its links with the Office for Health Improvement and Disparities (OHID) and with local Directors of Public Health in the North. This will develop new arrangements for evidence sharing on the impacts of transport on health, and identify evidence gaps of mutual interest. OHID officials contributed extensively to the development of TfN's research on transport, health, and wellbeing, and TfN will build on this.

Enhance evidence on access to healthcare and links to health inequality: TfN's research on transport, health and wellbeing and transport-related social exclusion demonstrate significant inequalities in the level of access to health services across the diverse place and population contexts of the North. However, owing to limitations in the evidence available, it is not currently possible to quantify the link between changes in access and changes in health outcomes. Subject to available resources, TfN will undertake research to address this significant evidence gap.

Develop a severance tool: TfN's research on transport, health and wellbeing developed a methodology to estimate severance effects caused by major road and rail infrastructure. This facilitated estimates of severance effects in two local area examples. However, the level of data required, and the methodological complexity of this approach, means that it is not easily transferable to other contexts. Subject to available resources, TfN will work to overcome these methodological challenges, and provide a transferable tool for Local Authorities to estimate the severance impacts of road and rail infrastructure.

Develop a broader impacts costing tool and estimate for the North: The negative health externalities and wider impacts of transport choices are particularly challenging to

address because they fall outside of the costs faced by users. Reflecting this, TfN will collate existing evidence and, if required, conduct additional research, to establish the whole systems impacts of different transport modes in the North and carry out a comparative analysis against existing pricing models. This is with the intention of supporting policy-makers in decisions on road user charging, parking policy, public transport fares, and investment in active travel.

Support partners in identifying areas with poor access to health services: TfN's TRSE data tool allows Local Authorities and other transport stakeholders to access LSOA-level data on access to jobs, education, and key services – including healthcare. TfN will promote this tool and provide support to partners in using it to identify areas in where there is both poor access to healthcare and high levels of need, as part of wider efforts to reduce transport-related social exclusion and improve the transport network.

Measure progress towards health outcomes: TfN's Monitoring and Evaluation Framework includes several health-related metrics and provides a transparent means of monitoring progress towards the ambitions set out in Strategic Transport Plan. This includes areas such as active travel, road traffic incidents, and air and noise pollution. Consideration of these metrics will be included in an annual Action Plan to review progress towards STP objectives. The focus within this framework is on those metrics that can be reliably measured at a pan-northern level. TfN will publish updates on these indicators and, where required, develop further policy actions to address any emerging gaps.