

Decarbonising transport

Climate smart
parking policies





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Decarbonising transport

This briefing forms part of the 'Decarbonising transport' series, a toolkit of seven evidence-based policy briefings prepared for the Local Government Association by the DecarboN8 Research Network and the Centre for Research into Energy Demand Solutions.

The briefings are designed to help councils in the task of setting goals for reducing carbon emissions from transport and then in understanding a range of key options available to them to make the rapid progress that is required. Decarbonising transport will require an ambitious package of measures and so, whilst the briefings are designed to provide clear options for specific policy areas, councils will need to design the right mix for their own context.

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The Decarbonising transport series

- Getting carbon ambition right
- The role of buses
- Accelerating the uptake of electric vehicles
- Climate smart parking policies
- The role of land use, localisation and accessibility
- Travelling less and the role of online opportunities
- Growing cycle use

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Introduction

There have always been compelling arguments to improve the way we manage parking as part of a balanced transport strategy, but the management of parking must change because of the climate emergency.

The Department for Transport estimates that, if left unchecked, the number of cars owned in the UK might grow by 10 to 13 million over the next three decades. That would be 40 to 50 per cent more cars on our streets which, if parked nose to tail, would run five to six times the length of the UK.¹

What would our communities look like if this future came to pass? There are already many areas where there are too many cars for the space available.

For example, almost one half of all housing in the UK comprises flats and terraced houses and, of these, 33 per cent and 23 per cent respectively have no or inadequate on-street parking.²

Substituting internal combustion engine cars for electric vehicles (EVs) is necessary to get to a zero-emission goal in the long-run. However, there are more CO₂ emissions required to build electric cars, including the batteries, than current combustion engine cars.

A recent study showed that, from a total emissions perspective, EVs will provide few benefits before 2030. Sticking within the overall carbon budget will require a balance of demand reduction and mode shift policies as well as electrification.³

Accommodating this anticipated growth in vehicles is not possible in some places. In many, it is not desirable from a local environmental perspective. Nor is it consistent with the global climate commitments which our national governments and many local authorities have declared support for.

Parking management is a crucial part of local authorities' policy toolbox. It can make walking, cycling and public transport more attractive, and it can deliver a shift away from individual car ownership.

Instead of individual car ownership, climate smart parking management can promote car sharing and ride sharing, so everyone can still access cars when they need to. This will require thinking differently about how space is allocated in our towns and cities.⁴

This briefing considers the different elements that typically comprise a good integrated parking strategy. It explains how these policies can be used to accelerate decarbonisation, in line with wider transport, climate and social policy.

RELEVANT POLICY STRANDS

The **National Planning Policy Framework (NPPF)** (2019)⁵ sets out the Government's planning policies for England and how they should be applied by local planning authorities. NPPF Chapter 9 'Promoting Sustainable Transport' sets out how parking standards for new development should be used as part of the overall approach to planning for sustainable transport.

The powers for local transport authorities in England outside London to propose **Workplace Parking Levy schemes** are provided for in the **Transport Act 2000**.

Part 3 of the Government's policy paper **The Road to Zero** (2018)⁶ sets out the suite of grant schemes available to develop charging infrastructure for EVs when parked on and off street.

The general legislation governing local authorities' powers with respect to parking on and off the highway is the **Road Traffic Regulation Act 1984**.

Key facts^{7,8,9,10,11}



Parking policies

Parking policy covers a wide range of different interventions including the management of on-street parking and the kerbside more generally, and of off-street parking, both public and private.

All car journeys start and end with parking. Different considerations are important for residential, workplace and other non-residential uses. This briefing covers all of these.

As people take decisions about whether to own a car and what type of car to purchase based on all the activities they do, having a comprehensive and coherent approach to parking management is essential.

Intervening to reduce parking availability and to raise parking costs, where there are good alternatives to the car, can reduce car ownership.^{12, 13}

Once people have invested in owning a car, they are inclined to use it, even for short trips. This is because they largely ignore the purchase, insurance, maintenance, and fuel costs in decisions about how to make each trip.^{14, 15}

However, when car owners make decisions about how to travel, they do factor in the abundance, convenience, and price of parking.

Parking is, therefore, a key policy lever which local councils can use to promote mode shift to walking, cycling and public transport.¹⁶

Local councils manage parking as...

...the **local highway and local traffic authority**, with responsibilities for the good management of streets.

...**owner/operator** of public car parks.

...the **local planning authority**, with responsibility for setting and enforcing parking standards for new developments.

...a **local transport authority**, with powers to develop schemes for introducing local workplace parking levies.

Because parking policy is a demand management tool, it is more 'stick' than 'carrot' and can be politically contested and unpopular to use. Some even argue for the removal of parking fees to stimulate local economies.

There is, however, no such thing as 'free parking'. The cost of parking is bundled into home ownership through bigger plots and higher prices, office rental costs, supermarket food prices, and the public health costs of car-based living.

These costs are faced by non-car owners, even though they do not drive. Where parking is under-priced, or the supply is badly managed, areas risk becoming over-parked.¹⁷ This causes safety and accessibility issues, as well as congestion, air quality, and environmental problems.

This briefing focuses on five action areas where local councils can make a difference through parking management. However, parking is interconnected with most aspects of transport policy and these interventions should not be seen in isolation.

These actions are best implemented as part of a suite of measures to make space for active travel¹⁸, increase bus ridership¹⁹, promote online working²⁰, deliver walkable communities through better planning²¹, and manage the transition to EVs²².

Pavement parking causes major accessibility problems



Image credit: Pedestrian Safety²³

Action area 1: Get parking right for new developments

There is a need to rethink the relationship between housing locations and levels of residential parking. Otherwise, in striving to deliver on ambitious housing targets, national and local governments will also increase car ownership and use.

The 2001 revision of Planning Policy Guidance note 13, Transport (PPG13) introduced England to the concept of the maximum parking standard for new developments.

The 2019 National Planning Policy Framework (NPPF) emphasises that maximum standards should only be set where:

‘there is a clear and compelling justification that they are necessary for managing the local road network, or for optimising the density of development in city and town centres and other locations that are well served by public transport’

Locating housing in areas well served by public transport allows the reduction of parking in ways which support building at higher density. This in turn reinforces the viability of public transport.

In their evaluation of the London parking reform from minimum to maximum standards in the early 2000s, Li and Guo found a 49 per cent reduction in new residential parking supply.²⁴

A study of residential parking by Kent County Council found that parking allocation led to excessive waste of valuable land.²⁵ Several studies have demonstrated that forcing all homes to have parking is regressive, given the need for non-car owning households to pay for the land area required even though they do not need it.²⁶

Key policy actions for new developments

First, it is essential to locate housing in the right places.²⁷ New developments in more accessible and central locations generate less car travel, whilst increased residential densities are associated with lower transport CO2 emissions.²⁸ Parking for accessible developments can, and should, be limited.

Second, local councils can work with developers to ensure that compelling alternative modes of transport are built in to developments from day one.

These can include walking and cycling routes, public transport, and shared mobility solutions such as car clubs²⁹. These can be linked together through Mobility as a Service-led integrated pricing.³⁰

CASE STUDY: FUTURE MOBILITY ZONE WINNERS NOTTINGHAM AND DERBY

Blueprint, the developer of Trent Basin, is building 500 new sustainable low-energy homes in the Waterside regeneration area of the city.

In Derby, the neighbourhood concept will be delivered in an existing residential area to prove the concept is also applicable in established communities.

Both will concentrate on reducing car dependency for residents through the provision of a wide range of mobility solutions, including secure cycle parking and community track pump, e-bike hire from docking stations, e-bike charging facilities, electric car club hire, electric vehicle charging and e-cargo bike hire.

To enhance the public transport offer, smart bus stops with digital information displays and WiFi hotspots will be provided alongside real time public transport displays.

Bus stops will be co-located with wider community facilities and services such as 'click and collect' lockers, delivery hubs for local food schemes, and hubs for volunteer driver services linked to car club and mobility credit packages for elderly and vulnerable residents.³¹

Pavement parking is recognised as having disruptive and detrimental effects, particularly those with limited mobility. Following from the 2019 Transport Committee report, the Government is currently considering a nationwide ban on pavement parking.³²

Local councils can begin to address pavement parking by working to identify the places in which it is occurring and engaging with residents to develop locally-acceptable solutions to reduce the practice.

Councils can help future-proof new developments, by requiring the inclusion of adequate EV charging provision for new developments, and sufficient local network and substation capacity on the grid.³³

The design of parking provision also makes a difference. In residential locations, distance from parking can have a strong impact on the decision to use the car to travel, especially for short distances. When parking is closer to walk to than public transport then the car usually wins.³⁴

In developments where the provision of spaces is unbundled from the cost of the housing (ie spaces can be bought or leased) then take up of parking is lower. Some 'car free' or 'car lite' developments provide parking, but on this basis, and at the periphery of the development.³⁵

Action area 2: Work with employers to reduce commuter parking

There can be mutual gains from councils and larger employers working together to reduce the amount of parking offered on site. This is an effective way of reducing single occupancy car commuting³⁶, and there are several types of intervention to choose from.

For example, for both new developments or changes of use, planning applications can be used to influence parking policy by amending parking provision and obtaining obligations through **Section 106 agreements**, funding car club vehicles for example.

These obligations can include a requirement to improve active travel and public transport connections, and to provide other mitigation measures to reduce traffic impacts.

Workplace travel plans, which are focused on reducing car commuting can also be very effective. For example, ARUP West Midlands partnered with Liftshare to create a bespoke car sharing platform. Forty-eight per cent of staff signed up to the programme, saving 764 thousand car miles and 151 tonnes of CO2 annually.³⁷

Parking cash-out schemes can also be used which, rather than giving employees a car parking permit for the whole year, reward people for every day the permit is not used or for rescinding the permit.

Vodafone in Newbury, Berkshire introduced a parking cash-out scheme to employees due to an insufficient number of parking spaces, leading to a third of their staff (1500 employees) forgoing their parking spaces in return for the monthly cash-out.³⁸

Powers for local councils to introduce a **workplace parking levy** (WPL) were brought in by the Transport Act 2000. Workplace parking levies can be introduced for any business with more than 11 employees.

Councils can evaluate the value of a workplace's parking according to the number of parking spaces. The employer must then choose to pay the levy or pass the cost on to employees.³⁹

The first scheme implemented was in Nottingham in 2012. Impact assessments suggest a small mode shift away from car use.⁴⁰ Equally important is that the scheme yields around **£10 million a year**.

This scheme therefore has been integral to funding the extension of the Nottingham Tram network and delivering wider sustainability benefits.

At the end of 2019, Leicester, Reading, Edinburgh, Glasgow, Cambridge, Bristol and Hounslow and Camden in London all had a WPL under consideration.⁴¹

Action area 3: Park and Ride

Park and Ride can reduce the number of commuters or shoppers who drive all the way into a city centre. This has been successfully implemented around smaller cities such as York, Nottingham, and Oxford.

Park and Ride bus services may be particularly well suited for electrification as the services are typically on relatively short routes and can build in top-up charging at the end sites.

York will have 33 all-electric Park and Ride buses in service by the end of Summer 2020. Meanwhile in Leeds, two recently opened sites have taken 9,000 car journeys off city centre roads and shifted them to ultra-low emission buses.⁴²

However, to date, Park and Ride's ability to reduce traffic overall has been limited. The reasons for this are two-fold.

First, Park and Ride attracts some users who would previously have used a train, bus or bike for their whole journey.

Second, unless the addition of Park and Ride spaces is accompanied by other measures in the town or city centre, such as a reduction in parking capacity, increased parking prices, and reallocation of road space from cars to buses, cyclists and pedestrians, then this adds additional options but does little to impact on the demand for car use.⁴³

It is only in places where Park and Ride is part of a wider strategy of reducing car access to town and city centres that the benefits can really be delivered.

Action area 4: Manage on-street parking better

Active management of on-street parking is essential in busy areas but is contentious, with local businesses often adamant that the provision of convenient and, where possible, free parking is essential to their bottom line.

There are many reasons why local councils will need to take an even more proactive stance on managing access to the kerb.

These include a 6 per cent per annum growth in online retail and associated deliveries, rapid rises in the use of taxi services such as Uber and Lyft in some areas, and the aging population and the additional demand for Blue Badge parking this will likely bring.⁴⁴

Here, we limit the actions recommended to those which will have most impact on decarbonising transport.

First, **on-street parking should be priced higher than off-street parking**. Low on-street parking fees encourages traffic to cruise, looking for spaces and creates additional emissions.⁴⁵

Low parking fees also reduce the turnover of spaces and should not be assumed to be beneficial for businesses. In a study of three different UK town centres, no systematic relationship was found between levels and convenience of parking provision and economic performance.⁴⁶

Councils can also hand over some parking spaces to **Parklets**. This is particularly important to provide more space for businesses during the COVID-19 social distancing restrictions. Eight bikes can typically be parked in one car parking bay.

It is important to assess the adequacy of bike parking and consider handing over space for cycle parking. Forsyth and Krizek⁴⁷ found that cycling infrastructure and furniture – particularly **secure bicycle storage and lighting** – was a key factor in getting people to take up cycling beyond recreational use.

Finally, local councils can also join the park4SUMP.eu network. The cities who make up the network use parking management for greater sustainability.

Park4SUMP measures include investing at least 10 per cent of parking revenue into active and sustainable transport, freeing up at least 10 per cent of parking to be used as public space, and using participatory planning processes to design solutions acceptable to the community.⁴⁸

Removing parking for economic gain (**Hackney Parklet**)

Image credit: CycleHoop⁴⁹



Parklet in Norwich accommodates eight bike share bikes

Image Credit: Peter Silburn, Horsham District Cycling Forum



Action area 5: EV uptake and anticipating the future

There are two key aspects to consider in parking policy for EVs, above and beyond ensuring adequate future proofing of the residential housing stock set out in Action area 1.

The first relates to the provision of on-street and off-street EV charge points, which may be for public use, or bespoke networks for taxis and other intensive users.

Here, the provision of charge points can help adoption by reducing ‘range anxiety’ which is a factor in vehicle purchase. The issue of charge point provision is covered in more detail in the companion briefing on accelerating the uptake of EVs.⁵⁰

The second, however, relates to whether EVs should be given preferential parking rates or cheap or free electricity to encourage uptake. There are two reasons why this is undesirable from a wider transport policy perspective:

There is currently little to be gained from a whole life emissions perspective, at least until around 2030, at which point there will be too many EVs for parking privileges to matter to uptake.

In Norway, Europe’s leading electric vehicle nation, cheaper parking was only ranked eighth in the most important incentives or reasons for buying an EV.⁵¹ There is no case for incentivising EV uptake through parking incentives.

Conclusion

An effective and integrated climate smart parking management strategy is essential for every local authority. It should cover residential, workplace and other non-residential uses.

The needs of each and the strategies required differ but should be joined up and fully linked to wider councils plans to accelerate a mode shift away from the car.

Parking is one of the few 'sticks' which can complement the 'carrots' of better active travel and public transport options. Without changes in how parking is managed, progress on mode shift will likely be limited to well below the levels of ambition regarding the climate emergency which both national and local governments have declared.

Whilst parking management can be politically challenging to implement, there is a growing evidence base on the benefits of a range of interventions.

New innovations in how to manage parking and access, including participatory planning, shared mobility, and mobility as a service, can help to change the nature of the parking debate, and offer greater scope to deliver climate smart parking management.

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The role of buses





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Introduction

Buses are a critical part of transport decarbonisation strategies for councils across England. In 2018, buses carried 5 per cent of all trips; analysis of ambitious but balanced pathways to a zero-carbon transport system suggests this needs to increase to around 10 per cent of all trips by 2050.¹ To achieve this uptake, progress must be part of early local decarbonisation strategies.

Dependent on loading, buses are the most space-efficient road passenger vehicle. They are already a low carbon mode of transport and by transitioning the fleet to low and ultra-low emission vehicles, buses quickly become even more carbon efficient.

The case for buses goes well beyond carbon impacts to congestion benefits, managing limited space, and providing an essential socio-economic service. In 2018, 24 per cent of households did not have access to a car or van, and a further 41 per cent of households had access to only one car or van.

Some places in England, such as Oxford, Brighton and York are illustrative of what 'turn up and go' bus networks are capable of delivering as part of an overall transport system carefully managed by the local authority.

However, the bus network has overall been in a period of slow but steady decline.

This situation was unsustainable both financially and in terms of helping deliver the UK's zero-carbon ambitions. In February 2020, the Government announced its intention to produce a National Bus Strategy for England and launched an immediate package of measures to try to revive bus use.

Unfortunately, this announcement coincided with the arrival of the coronavirus emergency. This is a perilously difficult time for the bus industry and bus policy. Keeping the industry running, serving communities and key workers is the immediate priority.

A once-in-a-generation scale additional subsidy is needed to make this possible. This investment must be used to strengthen and rebuild the partnerships of those providing, supporting, and using bus services.

This will, in turn, strengthen local transport decarbonisation strategies. The carbon imperative will not go away; if the revival of bus use cannot be brought about then it will be harder to shift more trips away from the car. Whilst the significance of the bus varies across different areas, there are also opportunities to do more in every area.

RELEVANT POLICY STRANDS

‘A better deal for buses’ (February 2020) is the Government’s most recent policy statement on buses. The document promised: a National Bus Strategy, a review of the bus service operators grant, £30 million for supported bus services, a -year pilot of a lower fare network in Cornwall, challenge funds for Britain’s first all-electric bus town, and for new demand responsive services in rural areas.

Emergency funding for the bus network is being delivered through the **COVID-19 Bus Service Support Grant** (CBSSG), of which an element goes to councils to maintain tendered services.

The **Bus Services Act 2017** is the most recent bus legislation and, among other things, provides the legal framework governing bus quality partnerships and the process for the re-regulation of bus services in England outside London (‘bus franchising’). The **Transport Acts 1985 and 2000** remain the basic legislation governing the regulation of the bus industry.

The **Future of Transport Regulatory Review** is under way (consultation closed July 2020) and will consider among other things the regulatory framework for buses, taxis and private hire, and for flexible (‘demand responsive’) bus services.

Key facts

Carbon efficiency

The bus is among the most carbon efficient modes of passenger transport, even at the pre-coronavirus (2018/19) average passenger loading of 12.2 people on the bus at any given time over the course of the operating day. Battery electric buses have a similar advantage over electric cars in terms of lower emissions per passenger-kilometre.

However, the main opportunity for the bus to reach its potential in terms of reducing emissions per passenger-km is to increase the average passenger loading on buses. Even modest increases in passenger load would yield significant improvements in carbon performance.



Carbon emissions by vehicle type and occupancy (g CO₂ equivalent)²

	Vehicle emissions per km	Per head at (existing average vehicle occupancy)	Per head at (achievable increased average vehicle occupancy)
Medium-sized petrol car 2020 (whole life emissions/km)	253	158 (1.6)	127 (2)
2019 fleet average petrol car (fuel consumption only)	174	109 (1.6)	87 (2)
2019 fleet average diesel car (fuel consumption only)	168	105 (1.6)	84 (2)
2019 fleet average diesel bus (fuel consumption only)	1,282	105 (12.2)	53 (24)
Medium-sized electric car in 2020 eg Nissan Leaf (whole life emissions/km, EU average CO ₂ /kWh electricity)	91	57 (1.6)	46 (2)
Dennis Enviro200 battery electric bus, currently in service in London, capacity 65 passengers (power consumption only)	438	36 (12.2)	18 (24)

Demand for bus travel

In 2019, 4.3 billion bus passenger journeys were made, accounting for 6 per cent of all journeys over one mile and over 8 per cent of journeys between 2 and 10 miles in length.³ Over twice as many trips are made by bus than are made by rail.

Just over half of all bus journeys in England were in London (2.2 billion). Outside London, 0.9 billion journeys were in metropolitan areas and 1.2 billion were in non-metropolitan areas, the latter figure illustrative of the fact that buses are not just an urban solution.

People in rural areas and villages use the bus to travel significantly further distances than those in urban and metropolitan areas. In fact, 25 per cent of all school trips in rural villages are made by local bus – a higher proportion than those in non-rural areas.⁴

Differences in bus use between places

There is large variation in bus use across England. The average number of bus journeys per person per year in England outside London is 45, but this varies from

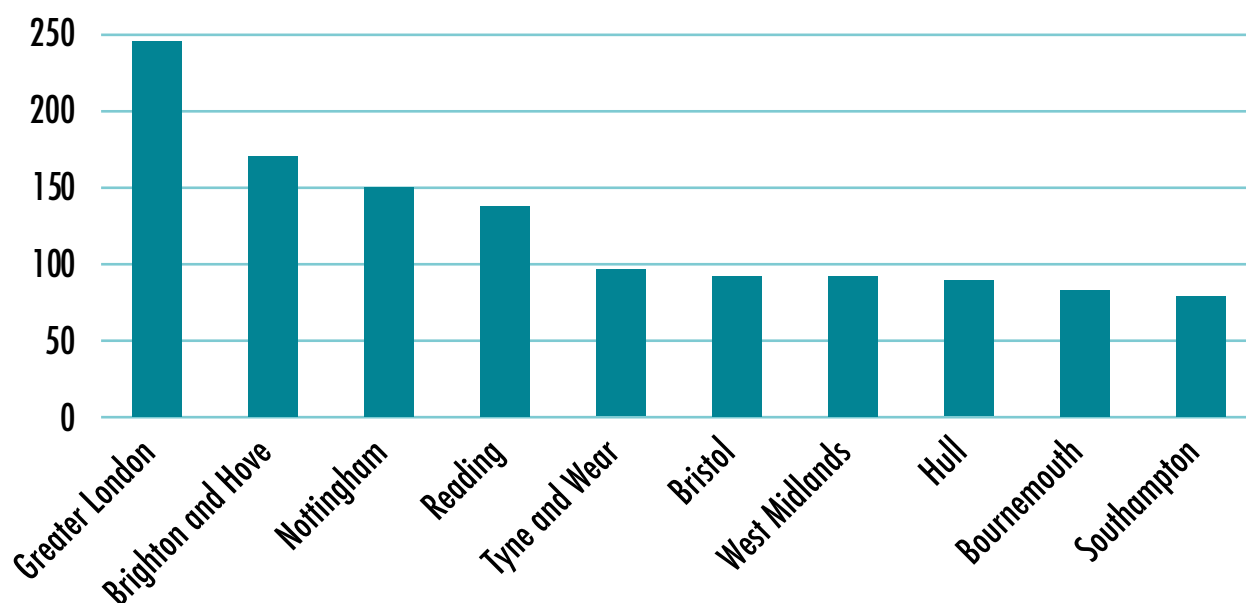
172 in Brighton to just 9 in Rutland. Bus use in England outside London has fallen by 12 per cent since 2008/09 and has been falling in London since 2013/14. However, 18 out of the 88 local transport authorities in England saw growth in bus use in the past decade.

Densely populated towns and cities, and places with lower levels of household car ownership tend to have the highest levels of bus use. Traditionally, this would have been associated with places that are less well off. In recent years, however, bus use has tended to grow strongest in towns and cities that are economically more prosperous or have a large student population.

Places with relatively high levels of car ownership and high levels of bus use include Poole-Bournemouth, West of England, Oxfordshire, and Surrey. Places with relatively low levels of bus use compared to their level of household car ownership include Lincolnshire, Staffordshire, and East Sussex.

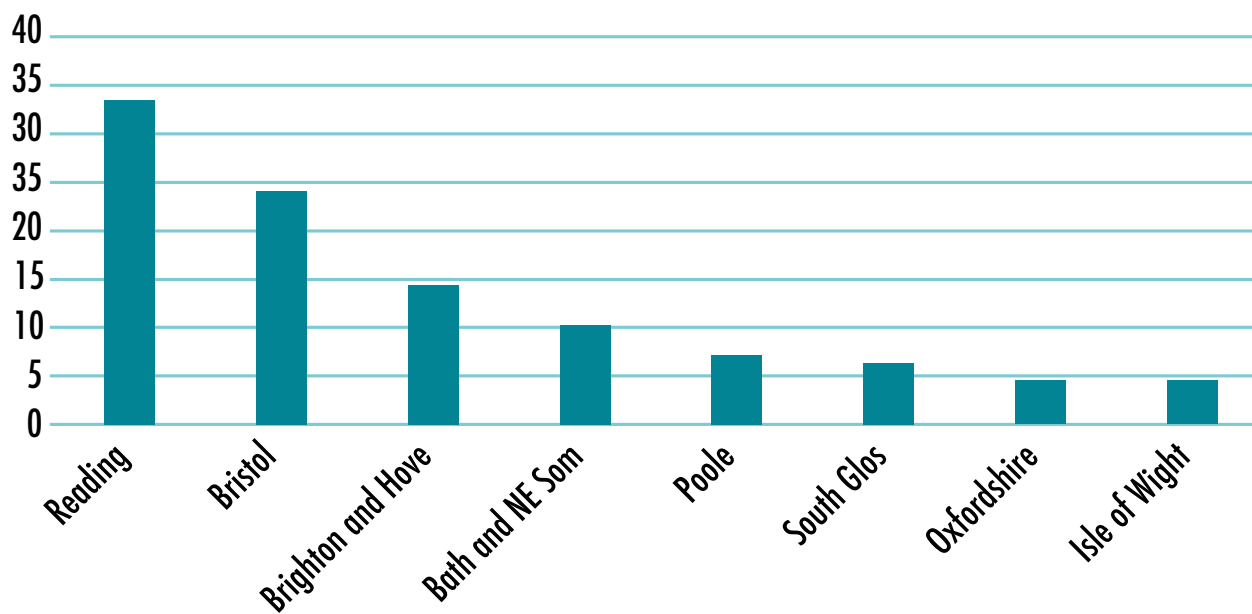
The key message is that what councils and bus operators do together does make a difference, as is being seen in Cornwall, for example. Commitment to delivery of a good bus product can succeed in growing bus use anywhere in England.

LTAs with the highest bus use, 2018
(average number of bus trips made per year per head)



LTAs with the highest growth in bus use 2010-18

(increase in bus trips made per year per head)



Policy recommendations

To increase bus use, there needs to be continued appeal to the current user base, alongside strategies to attract new users, particularly car drivers who could switch to the bus. The key variables which will define that choice are (compared to driving):

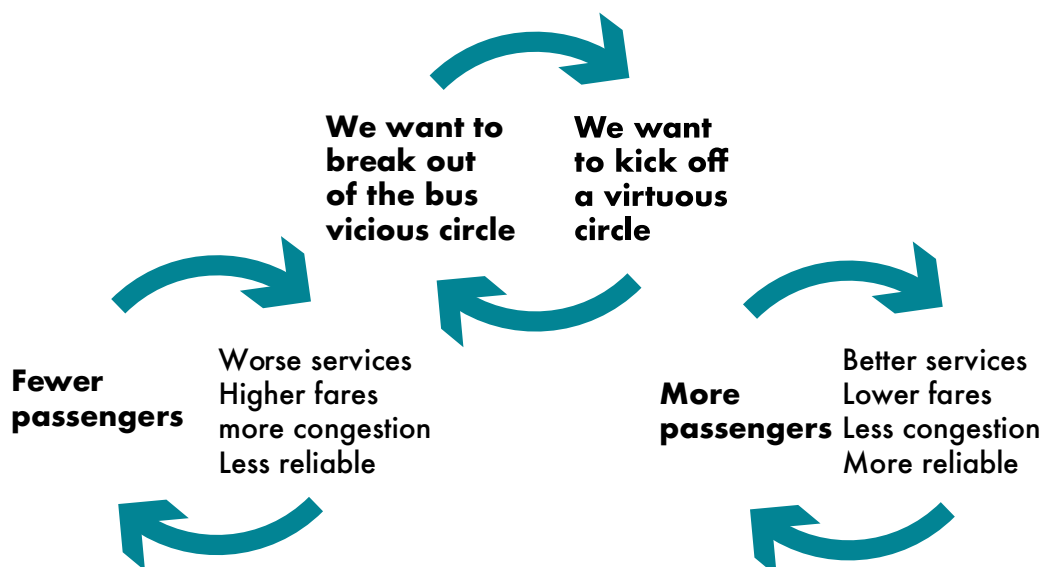
1. journey time and reliability
2. relative cost
3. quality of the door to door experience.

Outside of London all services are provided in a deregulated market by private operators. Decisions on fares, routes and frequencies are out of the hands of local government, with the exception of the small proportion of tendered, socially necessary services. However, it is the relative cost and the comparative journey time experience that matters. The joint goal of councils and bus operators needs to be to create a virtuous circle of rising patronage and service levels with lower fares which then supports further investment.

Partnership working for growing bus use is best done through a bus strategy and delivered through a bus quality partnership. The Bus Services Act 2017⁵ provides for local transport authorities to develop enhanced partnerships with bus operators, with agreements covering a wider range of matters including fares.

The Act also gives elected Mayors of Combined Authorities the power to re-regulate the bus system in their areas, subject to a specified process. Other local transport authorities can also institute a process to re-regulate if partnership approaches have failed. However, where there is no elected Mayor then re-regulation is subject to the Secretary of State's agreement.

The realities of coronavirus for the industry are that partnership working will now become even more important. There are arguments for different regulatory models to now be tried in different areas.⁶ There is no "one-size fits all" solution.



This note is about what the evidence shows on what works and does not make prescriptive statements about the best model under which it should be delivered.

Area for action 1: Service reliability

In 2018, in England outside London, 83.1 per cent of lower frequency bus services ran punctually (within 5 minutes of schedule).⁷ Punctuality and frequency of service are key factors that instil confidence in users regarding reliable transport.

On time performance, comprehensive route networks and frequent coordinated services are two key recommendations put forth by Transport for Quality of Life in respect to building strong bus services and patronage.⁸

Transport Focus's 2019 Bus Passenger Survey shows that punctuality and reliability tend to be more highly valued by fare-paying passengers, younger people, and people using the bus for commuting to work: precisely the kind of new users that need to be attracted to bus travel.⁹

Factors affecting bus reliability and punctuality that are within the bus operator's control include having enough vehicles and drivers to operate the advertised service, setting off on time, and making sure passengers can board as quickly as possible whilst safeguarding passenger safety and comfort.

Factors outside the bus operator's control include predictable traffic congestion (due to sheer weight of traffic and planned roadworks) and unpredictable traffic congestion (for example due to road traffic accidents and adverse weather).

Transport Focus's bus passenger survey shows that the three most common causes of bus delays are: traffic congestion, slow passenger boarding, and roadworks.¹⁰

The widespread roll out of contactless card payment and bus passes on smartcard has the potential to speed up boarding times.

Local highway authorities can take steps to reduce the impact of traffic congestion on bus reliability by measures including bus priority measures (bus lanes, priority measures at traffic signalled junctions, and so on) and by improving information to bus operators about planned roadworks or road closures, major events and the real-time management of incidents, so that they can respond in good time, e.g. by putting route diversions into place.

Ideally, buses perform best when they are insulated from general traffic congestion altogether. This can be done through traffic regulation orders to designate bus-only streets, bus gates to exclude through traffic in town centres, or by providing exclusive busways or guided busways. Busway schemes have been successful in Cambridgeshire¹¹, Luton¹², Gateshead and on the Leigh-Manchester corridor.¹³

During the low-traffic period of the coronavirus lockdown, bus companies have been able to run their services with a 12.5 per cent lower operating cost than usual due to the smoother running along the routes.¹⁴ If maintained, this would allow companies to revise timetables with new, faster journey times, and either lower the costs of running the service to passengers or permit a more frequent service to be operated with the same number of buses.

Area for action 2: Relative cost of public transport

Public transport use is very sensitive to the price of fares, and to the relative cost of driving versus using the bus.¹⁵ The RAC Foundation's cost of travel index shows that bus and coach fares have risen by an average of 55 per cent since 2010. In the same period, the total cost of motoring rose by less than 20 per cent – less than the overall average cost of living, which has risen by 30 per cent.¹⁶

Reducing bus fares is possible and financially sustainable if patronage growth and an increase in average loading per bus can be achieved. Agreements over fares can form part of enhanced bus partnerships under the provisions of the Bus Services Act 2017.¹⁷

To kickstart the virtuous circle of patronage growth that makes lower bus fares viable, the relative cost of car use also needs to be considered. At present, outside the central London congestion charge zone, car users do not pay directly for the costs the traffic congestion they cause impose on other road users, including bus users.

Meanwhile, as car users switch from petrol/diesel to battery electric power, fewer will be paying any motoring taxes on a per mile basis, because they will not be paying fuel duty. This offers scope to councils to explore strategies for charging for parking and congestion.

- Cornwall Council is trialling a four-year pilot scheme for reducing bus fares as part of a wider package of improvements in its One Public Transport System for Cornwall project.¹⁸
- Brighton & Hove: the bus company reduced the price of short hop single fares from £2.20 to £1.90 in January 2020. The bus company acknowledges that one of the barriers to using public transport is a lack of knowledge regarding fares and is considering a radically simpler £1 flat fare.¹⁹
- Transport for London's £1.50 hopper fare permits one hour's worth of bus travel on any number of buses, allowing people to make a journey that requires a change of route to complete without being financially penalised.
- A study of bus fare integration in Haifa, Israel, found a 30 per cent increase in number of bus trips being made and evidence of modal shift from the car to the bus.²⁰

Area for action 3: Passenger experience

Recent research shows that the decline in bus use is due to a fall in the proportion of the population who are using the bus; not existing bus users making fewer trips.²¹ This highlights the importance of making changes to attract people who do not use the bus, or have stopped doing so.

Improving the passenger experience through soft factors such as cleanliness inside the bus, mobile charging points, and bus stop infrastructure are all ways of attracting potential users and retaining existing passengers. When implemented as a package of improved bus services (including affordability, reliability), soft variables such as comfort, security and cleanliness can help improve patronage by 5 to 10 per cent.²²

Adopting a 'whole journey approach', in which operators and authorities work together to ensure that every stage of the passenger's journey by bus, including reliable information and good quality bus stop provision, as well as welcoming and comfortable vehicles, can have a tangible impact on transport decision-making and whether to travel by bus.²³

Personalised travel planning and travel awareness schemes demonstrate a commitment to passengers and their travel experience²⁴ and is an opportunity for councils and service providers to work together.

As part of their Greater Bristol Bus Network, Bristol City Council worked with local bus operators to enhance the passenger experience by improving 1,000 bus stops, procuring 120 new buses and undertaking public realm improvements such as tree plantings along bus shelters.²⁵

When public transport was coordinated by the West Midlands Passengers Transport Executive (Centro), it was recognised for providing passengers with high quality information that was well-integrated across providers and modes.²⁶

Plymotion is a scheme run by Plymouth City Council to promote active travel and public transport through direct citizen engagement. By working directly with workplaces and job seekers, Plymouth has seen a 22 per cent increase in bus use among these target groups.²⁷

Conclusion

Thinking short, Medium, and long term

The coronavirus lockdown and the need for social distancing on buses destroyed the commercial funding model for bus services. At present, bus services are completely dependent on emergency government funding support, much of which is paid through councils.

It is likely to be some time before a commercial model for operating bus services can return. However, the emergency has also shown that essential workers need the bus to get to work and places cannot function without a bus service. Getting by without a bus service is simply not an option.

This briefing note shows that the bus needs to play a bigger role in the future if we are to make rapid progress on decarbonisation. This will require a concerted effort to rebuild confidence in bus services in the medium term and to address the shortcomings of service provision.

Whilst different forms of public-private management of the bus system could emerge after coronavirus, the critical issue is whether the right conditions will be created for the bus.

This means addressing every aspect of the journey from access to bus stops to the quality of the vehicles. It means providing road space for bus priority to deliver faster journey times. It means ensuring that pricing for cars and buses makes bus use the more attractive option.

However, this is managed, it requires more support for the bus than has been delivered in the past two decades.

There are some great examples of routes, companies, and areas where bus growth has been delivered in difficult conditions. There are opportunities for everywhere to do better on the bus, and there are good short and long-term reasons to do so.

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REF 5.95

Decarbonising transport

Growing cycle use





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Decarbonising transport

This briefing forms part of the 'Decarbonising transport' series, a toolkit of seven evidence-based policy briefings prepared for the Local Government Association by the DecarboN8 Research Network and the Centre for Research into Energy Demand Solutions.

The briefings are designed to help councils in the task of setting goals for reducing carbon emissions from transport and then in understanding a range of key options available to them to make the rapid progress that is required. Decarbonising transport will require an ambitious package of measures and so, whilst the briefings are designed to provide clear options for specific policy areas, councils will need to design the right mix for their own context.

You can find the other briefings online at:
www.local.gov.uk/decarbonising-transport
or by emailing info@local.gov.uk

The Decarbonising transport series

- Getting carbon ambition right
- The role of buses
- Accelerating the uptake of electric vehicles
- Climate smart parking policies
- The role of land use, localisation and accessibility
- Travelling less and the role of online opportunities
- Growing cycle use

This briefing should be referenced as:

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Introduction

Cycling needs to play a much bigger part in everyday travel if rapid progress to a zero-carbon transport system is to be achieved. Analysis suggests that cycling will need to increase from the current 2 per cent of all UK trips to between 6 per cent and 8 per cent.¹

This is challenging but not impossible. Consistent investment and prioritisation have delivered a cycling mode share of over 25 per cent of all trips in some European cities. In England, some councils have already developed a strong local cycling culture, but progress is uneven.

Promoting cycling is directly aligned with UK Government policy. The Ministerial Foreword in the Government's March 2020 policy paper, 'Decarbonising transport: setting the challenge' states: 'Public transport and active travel will be the natural first choice for our daily activities'

Estimates are that levels of cycling have surged during the COVID-19 period, bringing an increase in demands for more road space for safe cycling.²

All councils in the UK, from urban to rural, will need to get more people cycling in order for the country as a whole to get on the road to Net Zero. Increased cycling will also help to deliver on public health and local economic and quality of life objectives. This briefing outlines the most cost-effective interventions councils can make to build an inclusive local cycling culture; to develop safe, healthy facilities for cycling; and to deliver a climate smart recovery from COVID-19.

RELEVANT POLICY STRANDS

Cycling and walking plan for England (2020) sets out a plan for making England a 'great walking and cycling nation'. Sets out 22 principles for cycle infrastructure design which will be promoted and enforced by a new funding body and inspectorate, Active Travel England.

Cycling and Walking Investment Strategy (2017) is a requirement from the Infrastructure Act and a statutory duty for the Department for Transport to

1. develop specific objective over the period of its implementation
2. provide long-term financial support and allocate resources with ample guidance on how to access them over the period of implementation.

Local Cycling and Walking Infrastructure Plans (2017) sets out strategic approaches for local bodies to identify cycling and walking improvements required at a local level over a long-term (ideally 10-year) period.

Infrastructure Act (2015) targets transport among other provisions such as energy, housing, and other nationally significant infrastructure projects.

Active Travel Act (2013) sets out guidance for local bodies to map out active travel networks, plans for their development, and progress reporting. Plans must include information on the quality of provision and promote awareness among citizens to accelerate the uptake of active travel.

Cycling in the UK

Over the past 20 years, many cities across the world have delivered large increases in cycling uptake from a low base. Cities including London, Ghent (Belgium), Paris (France), Budapest (Hungary) and Seville (Spain), have increased cycle use by an average of 12 per cent.³

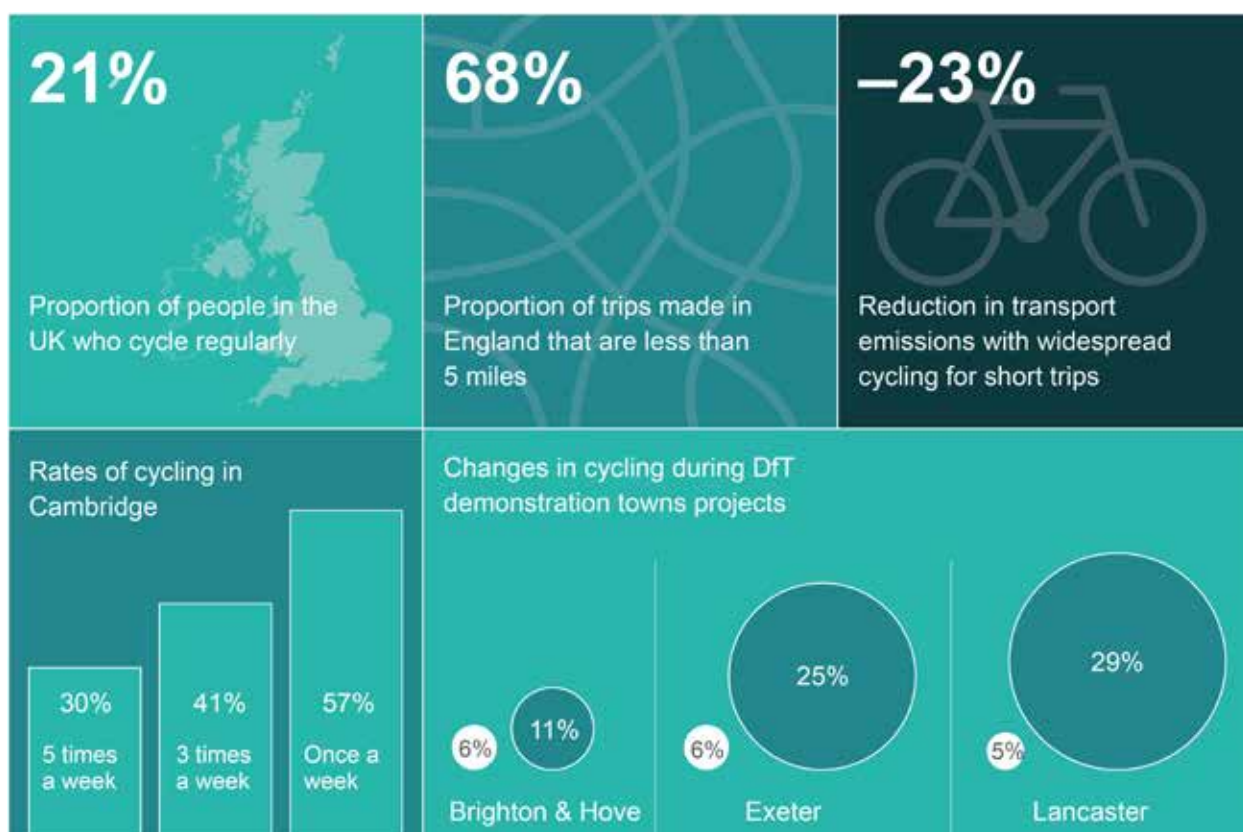
Cities that have increased cycling have done this through major programmes; building new facilities for cyclists that make it feel safe to cycle, easy and secure to park bikes, and where it seems as normal to ride a bike as it does to drive a car.⁴

To develop the cycling culture in the UK, widely perceived barriers to cycling must be addressed.

Non-cyclists worry most about road safety (43 per cent), personal security (10 per cent) and the risk of bike theft (5 per cent).⁵

Measures which address these concerns and can make cycling more attractive to potential cyclists include:

- protected, physically separated cycleways
- traffic-calming measures to limit or restrict motor traffic
- involvement of police, parking enforcement and community wardens
- provision of secure cycle parking both on street, in 'cycle hubs' and with local employers.



Source: 7, 8, 9

Some argue that the UK's weather and hills mean there are places here that will never have much cycling. However, Denmark and Norway have colder temperatures and a similar number of wet and windy days to the UK but have very high cycle mode shares, and electrically assisted bikes (e-bikes) make cycling in windy weather or on hilly terrain much easier.

Every council has the potential to increase cycling: research shows that even though some places might have more favourable natural conditions for cycling, improving cycling infrastructure grows cycle use right across the UK.⁶

What works?

Below we set out the key actions that have been shown to increase cycle use. Success will depend on other local measures such as the approach to speed enforcement and the management of heavy vehicle access. These measures will be most effective if implemented as part of a comprehensive cycling strategy which is clearly integrated with the wider transport, climate, and housing strategies of the council.

For example, Manchester City Council has drawn on evidence-based carbon budgets developed by Tyndall Centre for Climate Change Research¹⁰, leading to the proposal of a vision for the UK's largest (1,800 miles) of protected cycling and walking spaces across the city.¹¹

Action 1: Provide safe and secure road space for cyclists

Safety is the biggest concern among those who would like to cycle more often. Road safety and security must be addressed to deliver a significant shift in active modal share to cycling.¹²

The introduction of high-quality segregated bike infrastructure encourages cycling. The development of a network, rather than ad-hoc pieces of infrastructure, is also important for growing cycling levels. The denser the network the more attractive it will be. Segregated infrastructure is perceived to be safer than painted lanes.

CAR-FREE ZONES

In a pilot project undertaken in urban areas across Europe, the implementation of private car restrictions in the Ruhr area of Germany was observed to shift 50,000 car journeys per day to cycling. A similar observation was made with the establishment of car-free zones in Paris (France) and Copenhagen, where the car-traffic fell by 30 per cent and 45 per cent respectively.¹³

However, it is unlikely that everywhere can be covered by a segregated cycle lane and other accompanying road safety measures are necessary, such as speed management and heavy goods vehicle routing, to make the whole cycling experience safe.

Action 2: Make key activities easy to reach

Direct connections make cycling more appealing, so network planning needs to pay attention to providing easy access to key destinations (education, employment, healthcare, leisure). Cities which have achieved high bike mode shares have good permeability, meaning cyclists benefit from measures such as routes blocked off to car traffic and use of one-way streets with a contra-flow bike lane.

Several studies have demonstrated how efficient road and build space utilisation have turned cities with little history of cycling into strong cycling cities (for example, Bogotá, Seville, and Copenhagen).

The key drivers include: the directness and connectivity of these high-quality cycling routes, destination proximity; and the uniformity of the implementation.¹⁴

THE ROLE OF E-BIKES

E-bikes make cycling accessible to more people and help to overcome the challenge of hills.

They can extend a commuter's average reach by an additional 15-20 miles, particularly in medium and larger cities.¹⁵

If used to replace car travel in rural and suburban settings, e-bikes could cut car emissions in England by up to 50 per cent. E-bikes also have potential to help those most affected by rising transport costs.¹⁶

Finally, E-bikes can also serve as urban cargo-bikes, replacing the increasing numbers of LGVs in urban areas.¹⁷

Planning for secure bike parking at key public transport access points is also important to ensure intermodal bike-bus or bike-rail journeys can extend the reach of cycling. A pilot study undertaken in London (UK), Ghent (Belgium) and Budapest (Hungary), observed that implementing traffic-calming measures boosted cycling by 1.5 per cent for every 4.5 per cent reduction in car-traffic.¹⁴

Working in collaboration with the local public transport (PT) authorities to boost intermodal mobility through the installation of secure bike-parking and bike sharing facilities, there was an observed boost to both cycling and the use of public transport within a 3 kilometre radius of every PT node.

Whilst ease of access matters, cyclists are also attracted by green routes, and will take advantage of natural water features or parks if the routes are safe.

Action 3: Make cycling part of the local culture

Providing the right sort of network and facilities matters, but the effects can be

amplified by promotion and integration with activities in schools, workplaces, and town centres (such as Bike Week and Sky Ride).

A number of cities worldwide have introduced car-free Sundays, where roads are closed to cars and given over to cyclists and pedestrians (often with space for traders and cultural activities) with the intention of changing the way people think about space and how it is shared. There are a range of positive economic and health benefits reported.¹⁸

The combination of improvements and communications delivered through the English Cycling Demonstration Towns showed an average increase in cycling, among a sample population that has never or only occasionally cycled before, by an average of 5.2 per cent. These towns also reported an average of 14 per cent increase in children cycling to school. This resulted from peer-influence and a sense of safety among parents, resulting from the availability of high-quality segregated bike lanes.⁹

FINANCING THE TRANSITION

As part of its COVID-19 response the Department for Transport has announced a £225 million Emergency Active Travel fund to support councils in reallocating road space to cycling and walking.

Recent developments in sustainable transport funding include awards from the Transforming Cities Fund to boost active and public transport infrastructure. Leeds City Council has been awarded £319 million, while other city councils including Sheffield, Tyne and Wear, Plymouth, Southampton, Nottingham, Derby, Preston, Bournemouth, and Leicester have also received funds.

Other sources of funding that are ring-fenced for active travel, particularly cycling infrastructure, include Access fund, Bikeability, Cycling Ambition Cities, Cycle safety fund and Cycle rail.¹⁹

Detailed costings suggest that much greater funding will be required to deliver the UK's cycling ambition. It is hoped that the Emergency Active Travel fund represents a first step in this direction.

Wider Benefits

In addition to decarbonising transport, there are many other valuable benefits which investing in cycling delivers for towns, cities, and rural areas.

Prosperity

There are economic benefits from making places more cycle friendly. A pilot study in Toronto reallocated high street on-street parking to either bike lanes or bike parking and found that, over a period of one year, this increased consumer footfall per unit area of the parking area. Businesses (particularly small and medium) and retailers saw an increase in consumer influx (+20 per cent), spending (+16 per cent), and frequency of visits (+13 per cent).²⁰

Health

There are strong health related benefits from increasing cycling. Premature mortality rates from physical inactivity in the UK accounted for 43 per 100,000 individuals, while in the Netherlands, it was about 29 per 100,000.²¹ It has been estimated that if cycling rates were elevated to 'London' levels in all cities across the UK, this would provide £377 million in savings per annum for the NHS.²²

Safety

Some people worry about the safety record of cycling in the UK. The rate of serious accidents involving cyclists is five times greater in the UK than in Copenhagen.²³ Cycling is not inherently unsafe. The level of danger is significantly dictated by policy action or inaction. By providing better infrastructure which gets people cycling, councils can create a virtuous circle. As cycling levels increase, so the risk of cycling accidents falls because it becomes more normal to see and to be a cyclist.²⁴ The

solutions are known if the commitment is there.

THE ROLE OF E-SCOOTERS

The Department for Transport has accelerated trials for the introduction of regulations to legalise the use of e-scooters on the road and in cycle lanes.²⁵

E-scooters and other electrically assisted micromobility vehicles (including trikes and adapted bikes for disabled and older people) can provide a viable alternative to driving for first and last mile journeys that may be too long or too difficult for people to walk or cycle. The trials will only permit those with a driving licence to use the e-scooters.

In other countries e-scooters have been shown to reduce car trips although they also reduce walking and public transport.²⁶ A critical issue for the forthcoming trials is whether e-scooters help join up the last-mile between public transport and destinations in ways which effect a carbon beneficial mode shift.

The management of scooter maintenance and relocation also affects the emission benefits. There are potential safety impacts of e-scooters for riders and pedestrians although the evidence in different contexts with different rules (eg not pavements and with speed limits as proposed in the UK) is not yet conclusive.

Conclusion

Tripling or quadrupling cycling requires a step-change in how councils think about and deliver cycling improvements. What needs to be done is clear. There are examples across the world where places with low levels of cycling have been transformed. It requires commitment and an integrated approach to promote and mainstream cycling across all planning and policy.

As well as being good for health and beneficial to the economy, cycling has been one of the safe and acceptable options for travel during the extended period of social distancing we are undertaking to control the spread of COVID-19. According to a COVID-19 briefing by Sport England, cycling levels doubled between January 2020 and May 2020.²⁷

Cycling cities such as Berlin, Milan, Vancouver, Denver, Brighton, and Glasgow spotted this early and made moves to quickly reallocate road space to cycling. This is an affordable option to protect citizens and the economy, whilst mainstreaming cycling as a mode of transport for a climate smart recovery.

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