we are cycling UK

Getting there with cycling

...safer streets, clean air, health, equality, active lifestyles, climate change

The case for building cycling infrastructure – an evidence review

cyclinguk.org

Introduction

Many aspects of the way we live our lives are on the cusp of a huge transition – none more so than our transport systems and how we travel around. This is spurred on by the climate crisis and the need to decarbonise transport.

However, the four nations of the UK are also gripped by other pressing social and environmental challenges, including the rising cost of living, air pollution, inactivity-related ill-health and congested roads.

If we are to solve the problems facing our nations, cities, towns, villages and neighbourhoods, governments need to grasp these challenges and find solutions which cut across and have multiple benefits.

Cycling can be a solution to many of these challenges – the miracle pill, as Peter Walker[6] describes it. A pedal cycle is much more than a form of transport – depending on the rider, a bike can also be a tool for improving health and fitness, a way of reducing carbon footprints, a mobility aid, a way of saving money, a cargo carrier, a route to freedom and independence, and so much more.

Cycling provides benefits to wider society as well as to the individual.

This report outlines many of the benefits that come to society when governments invest to enable people to cycle and to make cycling the easy choice rather than taking the car.

We need to solve current problems and create better places to live, work and relax, and we can get there with cycling.

£6.1bn - spent by NHS every year on obesity-related ill-health[1]

36,000 deaths every year linked to air pollution in the UK[2]

c30% of UK CO_2 emissions are accounted for by road transport[3]

£6.9bn cost to drivers of congestion on UK roads every year[4]

10mph average speed by car in London and Edinburgh[5]

People want to cycle

Cycling rates in all the nations of the UK are low. However, surveys consistently say that people want to cycle, to travel by bike and enjoy cycling.

Furthermore, to help them to cycle, the majority of people want more measures which would enable them to cycle.

In July 2020, a YouGov[7] survey carried out for #BikeisBest revealed that:

- 77% support measures in their local area to encourage cycling and walking.
- 80% who expressed a preference want the UK's streets redesigned to protect pedestrians and cyclists from motorists.
- 51% agree they would cycle more if these changes were made.

In Scotland the majority of respondents (62%) agreed that their local roads are too busy to be safe for cycling[8] – the biggest reason given for not cycling.

Safe cycling infrastructure

People want to cycle, and they want to cycle safely. Unfortunately, in many locations in the UK governments and councils are not yet putting in place sufficient, high-quality cycle lanes and other infrastructure to encourage and enable people to go by bike instead of using the car.

Cycling infrastructure is anything physically built into the urban or rural environment which helps people to cycle safely[9]. It includes cycle lanes but also:

- Routes on quiet roads
- Roads closed to motor vehicles
- Reconfigured roads and junctions to slow and calm traffic naturally
- Paths shared with pedestrians, in some circumstances
- Off road cycle paths

Supported by

- 20mph speed limits for most streets in built-up areas

There's a huge variety of styles and forms of cycling infrastructure. The best cycling infrastructure provides physical separation from motor traffic but also pedestrians and people wheeling[10].

This report highlights evidence to show why councils should be investing in and creating high quality cycling infrastructure.

It's an unashamed sales pitch to national and local government, giving 13 reasons why they must get there with cycling.

Why get there with cycling infrastructure?

There are many positive reasons to build cycling infrastructure, covering people's attitudes, the evidenced benefits and the proven value. The experts agree[11] that cycle lanes and other infrastructure is needed and essential in our cities, towns and neighbourhoods.

Quality cycling Infrastructure saves lives

The primary reason for cycle lanes and other infrastructure is to increase safety for people riding bikes.

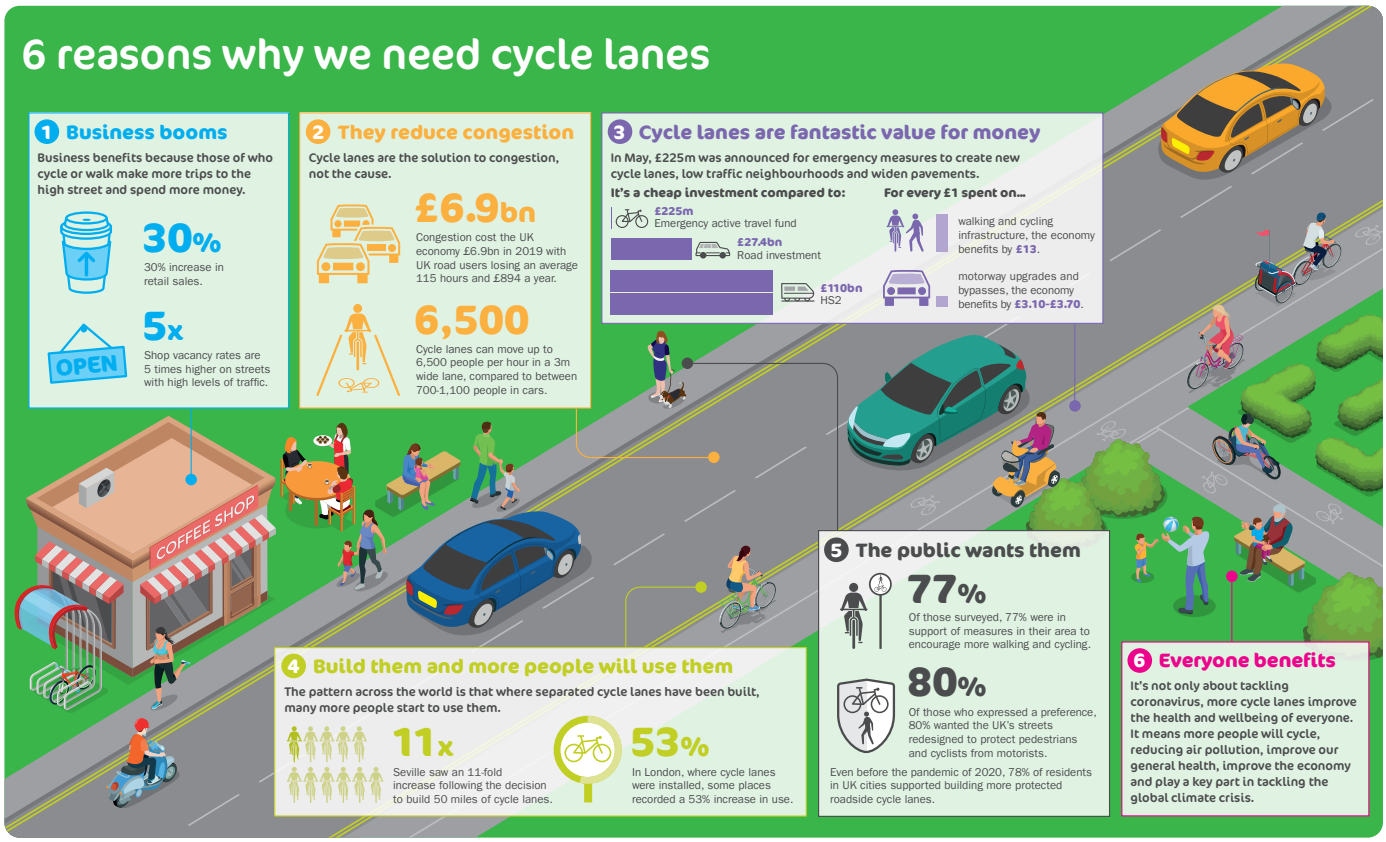
The gold standard is protected cycling infrastructure which physically separates riders from drivers rather than them sharing the same road space. Evidence shows that when compared to no infrastructure, protected cycle infrastructure reduced odds of injury by 40-65%[12].

The same study suggested that advisory lanes (dashed white lines denoting the cycle lane) may do more harm than good and backs up why investing in high quality protected cycle lanes is so important.

Infrastructure and action to reduce speed limits, such as with 20mph designations in built-up areas is also lifesaving. The chance of a pedestrian being killed in a collision at 20mph is only 2.5% – at 30mph the likelihood that they will be killed increases to 20%[13] – although later work suggests these risks may be overestimated[14]. For children the differences between survivability in 20mph or 30mph collisions is much greater[15].

Enabling more people to cycle by building quality safe cycling infrastructure creates a 'safety in numbers' effect. Evidence shows that a doubling of the number of cyclists in the morning commute reduces cycling injury odds by 13%[15].

Protected cycle infrastructure reduced odds of injury by **40-65%**[12]



77% support measures in their local area to encourage cycling and walking.

Cycling infrastructure is wanted by people

People want more cycling infrastructure in their neighbourhoods and they are willing to sacrifice space on the road for motor vehicles. 78% of residents in UK cities support building more protected roadside cycle lanes, even when this could mean less space for other road traffic[17].

78% of residents in UK cities support building more protected roadside cycle lanes

It's not all about cycle lanes – closing some roads to prevent 'rat runs' and create Low Traffic Neighbourhoods (LTNs) are popular[18], as is reducing speed limits to 20mph in built-up areas[19].

Another YouGov survey[20] of more than 2,000 people of all backgrounds from across the UK showed that 61% agreed that 'We should make it easier for people to cycle by building more separated cycle lanes'– only 19% disagreed.

To make this happen, 57% of people support of increased government funding for cycling and walking[21]. In Scotland, 47% supported boosting the active travel budget to 10% of the transport budget, only 20% opposed. In Wales, nearly two-thirds (63%) of those aged 16 to 24 support the same investment level while just 8% oppose it. In Northern Ireland, 84% want government to spend significantly more on cycling[22].

Furthermore, a survey in April 2020[23] found that 36% of people said they would rethink their travel habits in the future to use cars and motor vehicles less.

However, this was conditional on:

- Traffic free cycle tracks and paths to high streets and town centres (63%)
- More designated cycle lanes on roads (53%)
- Traffic restrictions in residential streets (30%)

Quality cycling infrastructure attracts people on bikes

When roads were quieter during the Covid lockdown in 2020, cycling rates increased as people across the UK got out on bikes for daily exercise and commuting[24]. It showed that people mean what they say when they explain that quieter streets would motivate them to cycle.

People do get there with cycle lanes. New cycling and walking infrastructure is used by people when it is built[25]. Cyclists prefer, value and use 'off-street bike paths, enhanced neighbourhood bikeways with traffic calming features (aka "bicycle boulevards"), and bridge facilities'[26].

In London, increases of up to 53% were recorded in 2018/19 where new cycle lanes had been installed compared to a smaller 5% increase citywide[27]. Data from Blackfriars bridge in London shows a huge increase in cycle use since the creation of a protected cycleway in 2016. In 2000, the average daily flow was 50,000 cars and 1,125 bikes. 20 years later it was 8,900 bikes, and 8,800 cars and taxis[28].

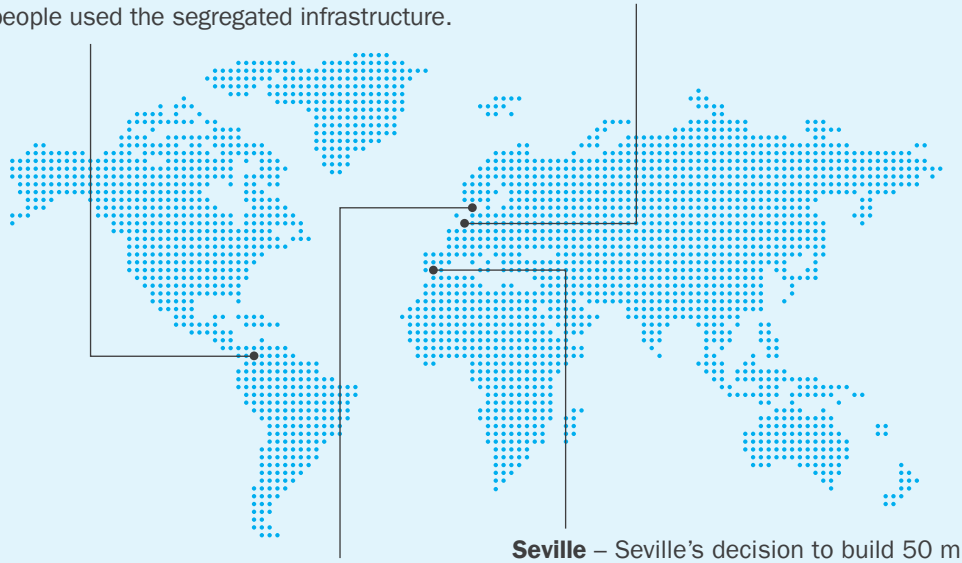
So, people will use them if cycle lanes are built well, as we saw when over a million cycling trips were recorded along the Embankment in London[29] within four months of opening in 2018.

In Glasgow, the Anderston – Argyll St. footbridge has seen a steady increase in use since its construction[30] with a similar picture for the South-West City Way[31].

This pattern is repeated across the world where separated cycle lanes have been built.

Bogota – Cycling in the city has steadily increased from around 0.5% of daily trips in 1996, before the construction of the first bicycle lanes, to 6% in 2014[34]. Furthermore, the safety of cyclists improved in the city as cycling levels increased and people used the segregated infrastructure.

The Netherlands – the case of the Netherlands building cycling infrastructure since the 1980s is well documented and now boasts 22,000 miles of cycle infrastructure and a quarter of journeys being taken by bike[32].



Copenhagen – Currently classed as the number 1 city in the world for cycling, Copenhagen boasts 62% of its residents commuting to work or school by bike every day. More recent expansion of cycle highways extending more than 20 kilometres out from the city centre has increased bicycle traffic up to 68%, with 14% of new bicycle commuters switching over from the car – based on 2018 evaluations[33].

Seville – Seville's decision to build 50 miles of cycle lanes in just a few years led to massive behaviour change, and an 11-fold increase in rider numbers[35]. From a very low (1%) level of cycling in 1990, the share increased to 5% in 2012 following the building of new segregated cycling infrastructure which began in 2006[36]. A more recent report states that 6% of all trips are now made by bike and 9% of non-commuter journeys[37]. Seville's infrastructure has also improved safety for cycle users[38].

Cycling infrastructure is good value for money

Investment in cycling is excellent value for money and better than many other transport investments. Government estimates that for every £1 spent on cycling and walking schemes in the UK, £5.62 worth of benefits are achieved on average[39]. The average is £6.28 per £1 spent for schemes from around the world[40]. Other studies estimate even higher Benefit-to-Cost Ratios (BCR) for example 13:1 (i.e. £13 of benefit for every £1 spent) for schemes from around the world[41].

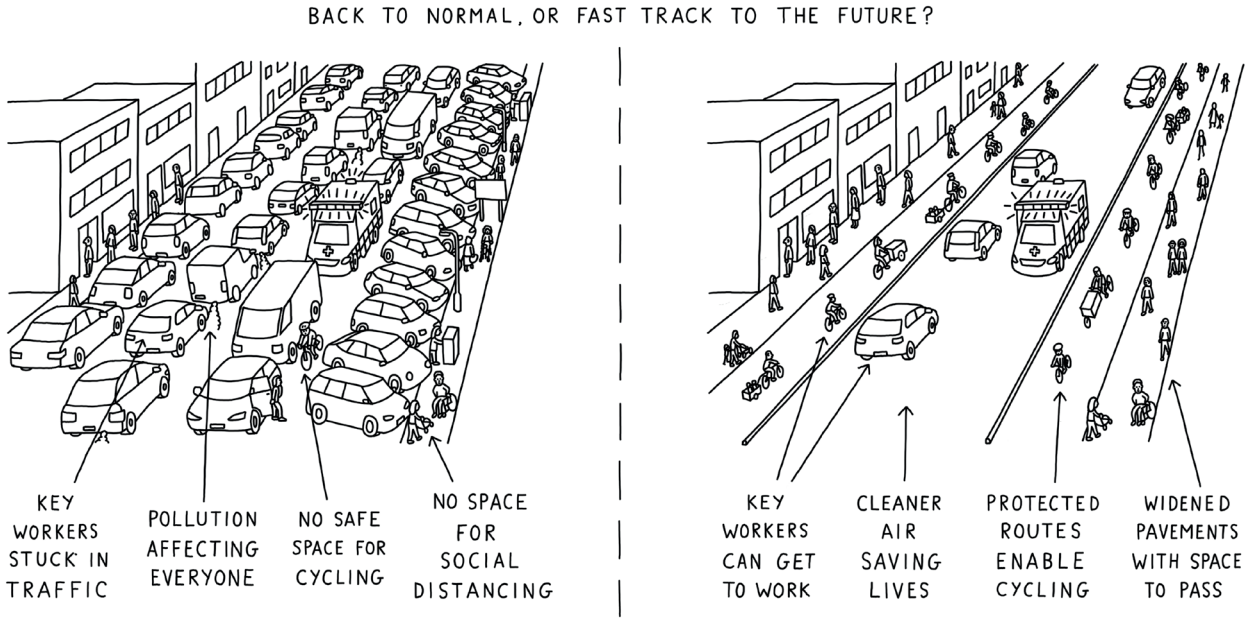
Officially those BCR ratios are 'very high' – a 'high' value-for-money project has a BCR of at least 2.1. Motorway upgrades and bypasses are estimated to typically have BCRs of 3.1:1 and 3.7:1 respectively. Plus, because cycle lanes can be built relatively quickly, government can realise the return on that investment more swiftly.

STUC research also showed that, in Scotland, investment in cycling as part of a green recovery would be good value for money[42] compared to other transport investments in order to realise a green recovery from the Covid pandemic.

£1 spent on cycling and walking schemes provides £5.62 worth of benefits on average

Other studies estimate even higher – benefits can be as much as £13

Evidence from Wales found that reducing speeds from 30mph to 20mph in built-up areas would save lives and likely encourage people to cycle thus leading to significant health and costs savings[43]. Furthermore, the costs of implementing 20mph limits are relatively low and the study concluded that this cost would be far outweighed by the value of the overall benefits.



Cycling infrastructure supports local economies

People using bikes for transport are better for the local economy[44] and cycling creates more jobs[45]. Town centres and high streets are suffering for economic downturn and need to be reinvigorated. Councillors need to learn from past failures and approve city and town centre developments designed for people rather than for cars.

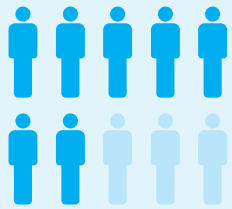
People spend more time and enjoy themselves in car-free spaces. Those walking and cycling visit local shops, restaurants, cafés or other local businesses more than users of other transport modes[46].

High density, cycle-friendly urban design promotes economic growth and reduces infrastructure maintenance costs. Cycle parking allows five times more retail spend than the same space for car parking[47]. Cycle parking is a better use of public space than car parking. Not only is it more space efficient but it generates 80% more income per day to shopping areas than car parking spaces[48].

Cycle friendly neighbourhoods can have greater retail spend and are often popular with business owners. Following pedestrianisation of Union Street in Dundee, 84% of traders said that the changes have been positive for the street, with 62% saying it has been good for their business[49]. Retailers typically overestimate how many of their customers travel by car by a factor of 100%[50].

Improving town centres and high streets for pedestrians and cyclists can increase retail sales by up to 30%[51]. Shop vacancy rates are five times higher on streets with high levels of traffic but conversely in pedestrianised areas retail turnover generally outperforms non-pedestrianised areas[52].

Cycle parking delivers **5 times** the retail spend per square metre than the same area of car parking



On London's Blackfriars Bridge in London, the cycle lanes take up 20% of the road space but accommodate 70% of the people crossing the bridge at peak times

Cycling infrastructure reduces road congestion

In 2019, congestion cost the UK economy £6.9 billion[53], with UK road users on average losing 115 hours and £894 a year to congestion. Despite many of our roads being horrendously congested, car ownership continues to rise annually along with miles travelled by car[54].

Despite this steady growth in cars, some people still believe that cycle lanes cause congestion . However, in reality the opposite is true. Cycling infrastructure can cut congestion and speed up journey times by car[56] as well as by bike. On London's Blackfriars Bridge in London[57], the cycle lanes take up 20% of the road space but accommodate 70% of the people crossing the bridge at peak times. Two weeks after opening, the cycle superhighway corridors in London were moving 5% more people per hour than they could without cycle lanes.

Cycling infrastructure is excellent for people's health

The World Health Organisation recognises that cycling can save lives by improving air quality and increasing physical health[58]. This may be obvious, but it is cycling infrastructure which will enable more people to cycle and result in the significant health improvement outcomes.

A recent review by Public Health Scotland into the benefit of road space reallocation backs up this conclusion[59]. It found that reallocating road space away from cars has multiple health and health inequality benefits, but it is the replacement use of that space which can further boost the health benefits, for example through building active travel infrastructure.

It may feel counterintuitive but commuting by bike exposes commuters to less pollution than those travelling by car[60]. The study found that cyclists could travel faster than cars along cycle lanes and were exposed to less pollution. Even in cities and towns with poor air quality it is still better for health to cycle in the pollution than not to cycle[61]. In fact, a study showed that stopping cycling when pollution is bad has no impact on a person's health[62].

The health benefits of cycling are undeniable and recently re-iterated by Sir Chris Whitty, the Chief Medical Officer for England[63]. Studies consistently show that cycling as physical exercise is good for health and there is a huge bank of research which shows this:

- Cycling to work is linked with a 45% lower risk of developing cancer, and a 46% lower risk of cardiovascular disease (CVD), compared to commuting by car or public transport[64].
- Commuter and recreational cycling is consistently associated with lower risk of type 2 diabetes in Danish adults[65], and late-in-life initiation of or continued engagement in cycling also lowers risk.
- Cycle commuting improves fitness in men and women and is inversely associated with body mass index, obesity, blood pressure, and other health indicators[66].

- People who are physically active take 27% fewer sick days than their colleagues[67]. In the Netherlands, employees regularly cycling to work are less frequently ill, and less likely to be absent than colleagues who do not cycle to work[68].
- People who take up cycling as a new activity gain the greatest benefits at the outset, but fitness continues to improve as they increase cycle use. The research[69] also found that body fat reduces, particularly among those who were overweight or obese at the outset.
- There are significant associations between overall psychological wellbeing and active travel compared to car travel[70]. Furthermore, the health benefit of a shift from car to active transport is by far the biggest positive and that: "the benefits of bicycling completely overwhelm any concern over pollution exposure of bicyclists."[71]

Healthier people are happier, more productive and rely less on expensive healthcare services. Money spent on cycling infrastructure can be overwhelmingly positive for people's health and local NHS services.

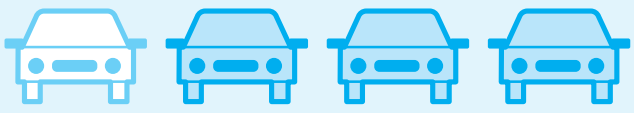
Cycling infrastructure reduces inequalities

Cycles are a tool for social inclusion[72] – this is true across the world where the poorest often have no access to a car. Even in the UK, nearly a quarter of households[73] don't own a car and more than half of households on a low income or in social rented accommodation do not have access to a car. Those living in low-income communities are also more likely to suffer the adverse effects of traffic, like air pollution and road traffic collisions[74].

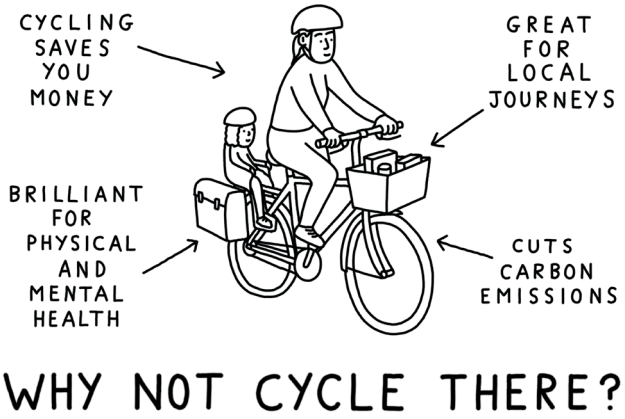
Furthermore, 6.7% of UK households experience "forced car ownership"[75], a scenario where a household has access to a car, but this generates economic stress on the household. This is equally true for urban and rural areas. One million people in Scotland are at high risk of transport poverty[75].

Providing safe cycle infrastructure can facilitate more affordable transport alternatives to costly car ownership or public transport. Done at scale, it can also improve population health and reduce health inequalities[77].

High quality cycling infrastructure is also needed to reduce gender inequalities[78] as women are less likely to have use of a car and take more multi-destination journeys where public transport is less practical[79]. Women already walk more than men so cycling can cut their journey times and be more practical for their journeys, however women need to have quality cycling infrastructure to be safe. A YouGov survey of women in Scotland[80] who don't cycle or cycle less than once a month found that the most common thing (31%) that would motivate them to cycle more was 'If there was better infrastructure for bicycles (e.g. segregated cycle lanes, cycle paths etc.)'



Nearly a quarter of households don't own a car and more than half of households on a low income or in social rented accommodation do not have access to a car



Cycling infrastructure helps older people

Cycling can extend life expectancy[81] but perhaps more importantly, cycling can enhance quality of life for older people[82] by improving health and wellbeing.

As a low impact activity cycling is recommended for older people as it has positive effects on health, as well as on social inclusion. E-bikes are proving beneficial for older people helping them to cycle further and to experience the freedom of cycling. In general, people who use e-bikes cycle further – more than doubling their use of bikes for transport[83].

Investment in cycling and cycling infrastructure can giver older people a new lease of life, reduce isolation, help maintain physical activity and reduce pressure on health services.

Cycling infrastructure is essential for children

In recent decades, children's physical activity levels have gone down whilst childhood obesity rates have gone up. Enabling children to be active on bikes on safe welcoming local streets and in public spaces should be part of a happy childhood.

People agree that cycling infrastructure separated from traffic is needed to enable children to cycle – and give parents confidence to let their children out on bikes[84].

One of Sustrans' benchmarks for a cycle route is whether a 12-year-old child can cycle safety[85]. Unfortunately, in 2018 42% of the National Cycle Network was found to be unsafe[86] and requiring mitigation work. High quality cycle infrastructure enables children to cycle and many groups are calling for this across the UK[87].

Cycling infrastructure improves air quality

Cycling is truly a zero-emission form of transport. In contrast, road transport is responsible for about a third of nitrogen oxides emissions[88], and c15% of particulate matter[89] – both known health hazards. If more people chose cycling instead of a car journey, our towns and cities would be cleaner for people to enjoy[90].

A study of five cities[91] showed that a shift from private motor car use to cycling produced significant reductions in the emissions of air pollutants, improved air quality and health outcomes. The Royal College of Physicians, together with the Royal College of Paediatrics and Child Health, recommended that people use active forms of transport to reduce the threat of air pollution[92].

Cycling infrastructure is positive for the climate

Achieving net zero emissions targets is unlikely without a significant move away from the use of motor vehicles[93]. Shifting from car to bike use 'drastically lowers' CO_2 emissions – a switch of one journey per day reduces a person's carbon footprint by approximately 0.5 tonnes over a year[94].

Reducing carbon emissions – how does enabling cycling compare?

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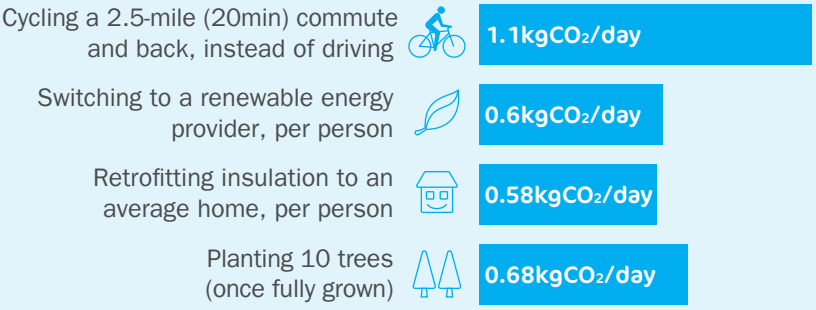


Cycling and active travel infrastructure are an essential part of the mix of solutions to decarbonising transport and ensuring carbon reduction targets are met. Active transport 'highways' can speed up active travel journeys and make cycling more convenient than driving[96].

20mph zones not only reduce traffic speed and reduce danger to vulnerable road users, but also cut vehicle CO_2 emissions by 35% compared to 30mph speed limits and cut NOx emissions by 39%[97]. By contrast there's only a small (8%) reduction in journey times when speed limits are reduced to 20mph

Cycling infrastructure wins votes

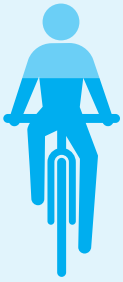
Building cycling and walking infrastructure is popular with voters. Voters in Milan, London, Paris, Barcelona and Oslo all returned to office mayors who had created significant amounts of safe space for cycling and people in their cities[98].

Seemingly controversial projects like the introduction of Low Traffic Neighbourhoods in London are also more popular than the headlines would lead readers to believe. Votes for parties that support LTNs increased in areas where they had been introduced, while parties that opposed their introduction lost votes[99].

In Scotland, Edinburgh's 20mph speed limit change was a popular move[100].

A small number of loud angry voices can skew public perception of cycling and cycling infrastructure. For example, 77% of people agree that 'Britain would be better if more people cycled', with only 23% disagreeing[101]. However, when asked what they thought the opinion of their friends or the general public would be, many respondents drastically overestimated the negativity towards cycling, believing that only 64% of the public agreeing and 36% disagreeing that it would make Britain better.

In Scotland, 71% agree that 'Scotland would be a better place if more people cycled' and this belief is growing in the population year on year[102].



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Conclusion

The case for building cycle lanes and cycling infrastructure is compelling. People want it created, they want to use it and evidence from the UK and around the world shows that when it is built people will use it.

Strong vocal opposition by a minority to cycling and cycle lanes in the media and at a local level should not be used as justification to not build the cycling infrastructure that the majority want, and the majority will benefit from.

The many highly positive benefits of creating cycling infrastructure and enabling more people to cycle are clear and well-documented – it's a 'no-brainer'. Now is the time for national and local governments across the UK to step up, be bold and urgently create the sustainable transport infrastructure needed now.

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