

The value of bikes & bike lanes over cars & roads

自行车与自行车道相较于汽车与道路的价值

Objective statistics over subjective opinions

客观统计胜于主观意见。

Showing the value of active travel using data.

利用数据展示积极出行的价值。

Statistics refer to the UK unless mentioned otherwise.

除非另有说明，统计数据均指英国。

Money & the economy

金钱与经济

Public sector spending on roads in the United Kingdom has been over 12 billion British pounds each year since 2021.

自 2021 年以来，英国公共部门每年在道路上的支出超过 120 亿英镑。

sources: Statista and Office for National Statistics

数据源：Statista 和国家统计局

In 2019 it was estimated that “It costs around £50 million per kilometre to build the average road.”

2019 年估计，建造一公里普通道路的成本约为 5000 万英镑。

source: <https://www.sustrans.org.uk/our-blog/news/common-myths-about-investment-in-walking-and-cycling-busted-by-research-report/>

Some costs today are even higher.

如今，一些成本甚至更高。

<https://www.sabre-roads.org.uk/forum/viewtopic.php?t=43131>

For an elevated road the cost is generally many times higher.

高架道路的成本通常高出数倍。

<https://www.bbc.co.uk/news/magazine-13924687>

In 2017 the average cost of a two-way physically segregated cycle-superhighway ranged from £1.45 million per kilometre to around £740,000 per kilometre.

2017 年，双向实体隔离的自行车高速道每公里的平均成本介于 145 万英镑至 74 万英镑之间。

<https://assets.publishing.service.gov.uk/media/5ba4c09ded915d2e2ea46815/typical-costings-for-ambitious-cycling-schemes.pdf>

The cost of upkeep for bike lanes is far lower than for roads.

自行车道的维护成本远低于道路。

<https://www.bwbconsulting.com/insights/the-truth-about-cycle-lanes-investment-impact-and-public-perception/>

This is because the vehicles using them are far lighter.

这是因为使用自行车道的车辆重量轻得多。

https://www.reddit.com/r/AskEngineers/comments/1auz38x/what_makes_walking_multiuse_paths_bike_paths_less/?rdt=60455

Driving cars costs society money, while cycling costs society far less and even saves society money when

health is an included factor.

驾驶汽车对社会造成成本，而骑自行车的社会成本则低得多，若考虑健康因素，甚至能为社会节省开支。

Examples shown below:

以下是一些例子：

The Department for Transport (DfT) has found that for every £1 invested in cycling and walking, the economy benefits by up to £6. This is due to multiple factors, including reduced congestion, improved public health, and increased spending on local businesses.

英国交通部发现，每投资 1 英镑于步行和骑行，经济可获得高达 6 英镑的收益。这是由于多种因素，包括减少拥堵、改善公共健康以及增加对本地企业的消费。

<https://www.gov.uk/government/publications/economic-case-for-active-travel-the-health-benefits>

Spending on walking, wheeling and cycling infrastructure can have a maximum return of up to £19 per £1 spent. The health benefits associated with increased physical activity are a large contributor to these returns. Investments in the strategic road network have an average return of £2.50.

在步行、轮行和骑行基础设施上的支出，每 1 英镑的最高回报可达 19 英镑。增加身体活动带来的健康益处是这些回报的重要因素。相比之下，对战略道路网的投资平均回报为 2.5 英镑。

<https://publications.parliament.uk/pa/cm5803/cmselect/cmtrans/1921/report.html>

The best-case return can be up to £5.

最佳情况下的回报可达 5 英镑。

<https://www.sustrans.org.uk/media/5224/commonmisconceptions-of-active-travel-investment.pdf>

Some road building projects offer no return on investment at all.

一些道路建设项目完全没有投资回报。

https://ippr.org.files.svdcn.com/production/Downloads/Stride_and_ride_Feb24_202402-05-162030_godi.pdf

Cycle infrastructure has a strong return on investment, with an average of £5.62 for every £1 spent. This means that a £2 billion investment would deliver £11 billion in public benefit on average, although this could be as high as £38 billion.

自行车基础设施的投资回报率很高，平均每投入 1 英镑可产生 5.62 英镑的回报。这意味着 20 亿英镑的投资平均可带来 110 亿英镑的公共利益，最高可达 380 亿英镑

https://assets.publishing.service.gov.uk/media/5a7dd183ed915d2acb6ee528/claiming_the_health_dividend.pdf

According to a European study looking at a range of societal impacts, such as land use and cost pollution, as well as individual impacts, such as health benefits and travel time, driving a car was found to have a cost to society of €0.11 per kilometre (or 9 pence per mile). By contrast, cycling generated a €0.18 net benefit to society for every kilometre cycled (or 15 pence per mile), primarily due to the health benefits of physical

activity and walking was found to generate the greatest net benefit to society.

根据一项欧洲研究，考虑到土地使用、污染成本等社会影响，以及健康益处、旅行时间等个人影响，驾驶汽车每公里对社会的成本为 0.11 欧元（或每英里 9 便士）。相比之下，骑自行车每公里为社会带来 0.18 欧元的净收益（或每英里 15 便士），主要是由于身体活动带来的健康益处，而步行被发现对社会产生最大的净收益。

<https://doi.org/10.1016/j.ecolecon.2018.12.016>

Another earlier study by two of the same authors (Stefan Gössling and Andy Choi) calculated that one kilometre by car costs €0.15 (13 pence), whereas society earns €0.16 (14 pence) on every kilometre cycled.

同样由 Stefan Gössling 和 Andy Choi 进行的另一项早期研究计算出，驾驶汽车每公里的成本为 0.15 欧元（13 便士），而每骑行一公里，社会可获得 0.16 欧元（14 便士）的收益。

<https://doi.org/10.1016/j.ecolecon.2015.03.006>

Building more roads and car lanes to improve traffic flow only works temporarily, in the long term it usually increases car traffic.

建造更多道路和车道以改善交通流量仅在短期内有效，长期来看通常会增加汽车交通。

<https://doi.org/10.7922/G22805Z9>

Likewise building more high-quality bike lanes increases the number of cyclists

同样，建造更多高质量的自行车道会增加骑自行车的人数。

<https://www.sustrans.org.uk/our-blog/research/common-misconceptions-about-active-travel-investment/>

A three-metre wide lane can move 700 to 1,100 people per hour in cars, but if used by people cycling or walking, that increases to 2,000 to 6,500.

一条三米宽的车道每小时可容纳 700 至 1100 名汽车乘客，但如果用于骑自行车或步行，每小时可容纳 2000 至 6500 人。

<https://www.sustrans.org.uk/our-blog/research/common-misconceptions-about-active-travel-investment/>

Over time, giving more road space to bicycles and pedestrians does not make car traffic worse. In fact it often improves it.

随着时间过去，给脚踏车和行人更多道路空间并不会让汽车交通变得更糟。事实上，这常常会改善交通情况。

<https://www.sustrans.org.uk/our-blog/research/common-misconceptions-about-active-travel-investment/>

Shopkeepers are often concerned about loss of business if bike lanes are built by their shops, but most research shows that business generally increases substantially.

店主常常担心，如果店旁边建脚踏车道，会影响生意，但大多数研究显示，生意通常会大幅增加。

<https://www.cyclinguk.org/article/six-reasons-build-cycle-lanes>

Sutton Coldfield, a large town north of Birmingham, has a population of nearly 100,000 and yet has no segregated cycle lanes. The local government installed one at a cost of £75,000, but following an outcry by local 'motorists' and Conservatives it was removed before it even had the chance to open. The removal meant even more expense. Many locals, likely some of the same people who complained, then said what a waste of money it was to build a bike lane and then never use it!

Sutton Coldfield 是伯明翰北边的一个大镇，人口接近十万人，却完全没有专用脚踏车道。当地政府花费七万五千英镑建了一条脚踏车道，但因为当地一些「汽车驾驶人」和保守党人的反对声浪，这条脚踏车道在启用前就被拆除了。拆除反而造成更多花费。许多当地人，可能就是之前抱怨的人，后来又说：「建一条用不到的脚踏车道真是浪费钱！」

<https://suttoncoldfieldtowncouncil.gov.uk/wp-content/uploads/2020/10/email-response.pdf>

Health

健康

By reducing car traffic, the health and longevity of the people who live and work in the area increases owing to increased active travel¹ and reduced pollution²

减少汽车交通可以让当地居民和工作者更健康、活得更久，因为他们会有更多「主动交通」¹，空气污染也会减少²。

¹https://drive.google.com/file/d/1BqGRWsN17qZNbvugrMARqI1QYu3_M7Rd/view?pli=1

²<https://www.walthamforest.gov.uk/sites/default/files/2021-10/Waltham%20Forest%20Kings%20Report.pdf>

Pollution claims far more lives each year than traffic accidents.

空气污染每年造成的死亡远超过车祸死亡人数。

https://assets.publishing.service.gov.uk/media/6570a68b7469300012488948/HECC-report-2023-chapter-4-outdoor-air-quality.pdf?utm_source=chatgpt.com

Just in Birmingham it claims up to 900 each year.

光是伯明翰，每年就有多达 900 人死于空气污染。

https://www.birmingham.gov.uk/info/20076/pollution/1278/air_pollution_affecting_me_and_my_family

Every minute, an idling car produces enough exhaust to fill up to 150 balloons with harmful chemicals, including cyanide, nitrogen oxides (NOx) and tiny particulates called PM2.5. An idling engine produces 20 times more pollution than a car travelling at 32mph.

一辆静止但开着引擎的汽车，每分钟会产生足以填满 150 个

气球的废气，里面有氟化物、氮氧化物（**NOx**）和极小的**PM2.5** 颗粒。一部怠速中的汽车所产生的污染，是以每小时**32 英里**行驶的汽车**的 20 倍**。

<https://www.solihull.gov.uk/health-and-wellbeing/vehicle-idling#:~:text=Idling%20facts,a%20car%20travelling%20at%2032mph>.

The total NHS and social care cost due to PM2.5 and NO2 combined in 2017 was estimated to be between £42.88 million and £157 million.

2017 年，PM2.5 与二氧化氮（NO₂）造成的英国国民保健署（NHS）和社会照护成本估计在 4288 万到 1 亿 5700 万英镑之间。

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/708855/Estimation of costs to the NHS and social care due to the health impacts of air pollution - summary report.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/708855/Estimation_of_costs_to_the_NHS_and_social_care_due_to_the_health_impacts_of_air_pollution_-_summary_report.pdf)

A team from the Netherlands' Utrecht University surveyed 50,000 Dutch people, examining their mobility patterns. They found that one hour of cycling adds one hour to your life on average.

荷兰乌特勒支大学的研究团队调查了五万名荷兰人，分析他们的出行方式。结果发现，平均每骑脚踏车一小时，寿命就会增加一小时。

<https://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2015.302724>

According to research, on average every year, walking and cycling in Birmingham, UK results in about:

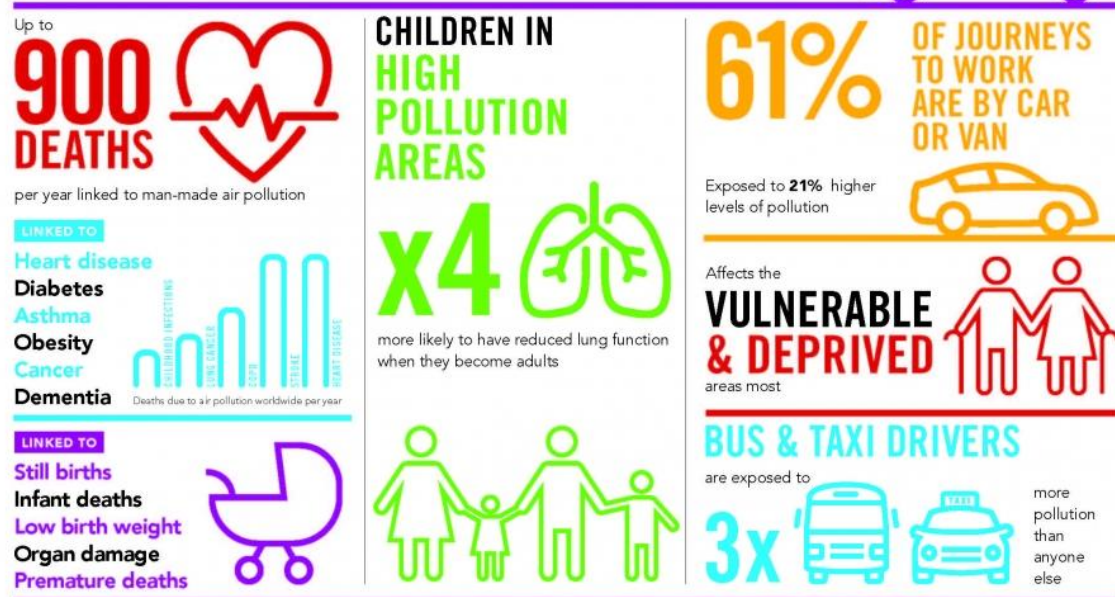
根据研究，在英国伯明翰，每年步行和骑脚踏车平均会带来以下成果：

- **1,438 serious long-term health conditions prevented:**
 - 预防了 **1438** 个严重的长期健康问题:
- **£454.5 million in economic benefit for individuals and the region:**
 - 为个人和地区带来了 **4 亿 5450 万英镑** 的经济效益:
- **37,000 tonnes of greenhouse gas emissions saved:**
 - 减少了 **37,000** 公吨的温室气体排放:
- **Up to 220,000 cars taken off the road every day.**
 - 每天减少最多 **220,000** 辆汽车上路。

<https://www.sustrans.org.uk/the-walking-and-cycling-index/birmingham-walking-and-cycling-index/>

Birmingham, UK 英国伯明翰

EFFECTS OF AIR POLLUTION



#BrumBreathes



Numbers have been rounded. Evidence provided by Public Health Birmingham, May 2017: birminghampublichealth.co.uk

Lots more information here:

更多资料请见:

<https://www.sustrans.org.uk/media/10493/west-midlands-walking-and-cycling-index2021.pdf>

<https://www.sustrans.org.uk/media/13263/birmingham-walking-and-cycling-index2023.pdf>

Author's conclusion: The evidence clearly shows that well designed projects in the right places that allow for more cycling and active travel can benefit physical, mental, environmental and financial wellbeing.

Stopping such projects claiming that they are a waste of tax payers' money and so on, is untrue and highly unhelpful. Our obsession with cars is fuelling the problem.

作者结论：证据清楚地显示，在适当地点设计良好的脚踏车与主动交通设施，可以带来身体、心理、环境和财务上的好处。说这些计划是在浪费纳税人的钱是不正确也非常有害的。我们对汽车的执着正加剧这些问题。

Do you agree?

你同意吗？

Look at the quotes and pictures below.

看看下面的引言和图片。

What are they trying to say and how do you feel?

它们想表达什么？你有什么感觉？

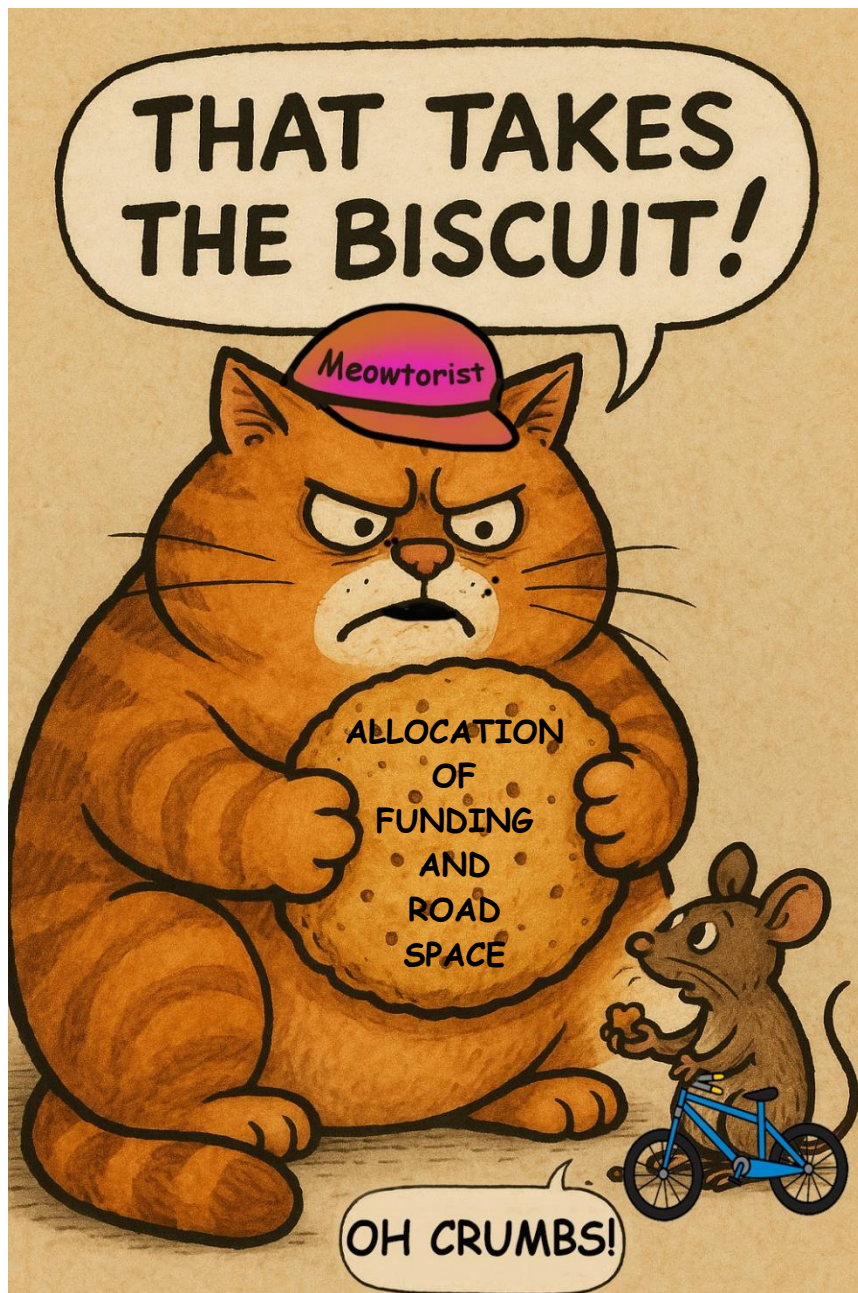
“Either you're part of the problem or you're part of the solution.”

「你不是问题的一部分，就是解决方案的一部分。」

（一句出自 Harry Emerson Fosdick 的名言）



Original quote attributed to Peter Drew



Picture made using chat GPT & then added to by author

Quiz!

测验!

True or false style quiz based on the information above
根据以上信息的「是非题小测验」

<https://create.kahoot.it/details/1cd50c5e-f145-48f1-a1c3-854c31d0cd55>

<https://quizlet.com/gb/1035555628/the-value-of-bikes-bike-lanes-over-cars-roads-true-or-false-quiz-flash-cards/?i=5v19u&x=1jqt>