

Cyclist.ie Position Paper: The Benefits of Cycling



Cycling brings proven multiple benefits to society^{1,2}. Both the EU and the USA are actively developing cycling³. Here are 7 reasons why a thoughtful government, seeking a sustainable future, and trying to keep its citizens healthy, should invest in creating a strong cycling culture.

1. Low Energy Transport

- **Energy and fuel** : a cyclist consumes 32-65 times less energy than a person in a car (depending on assumptions)⁴. Whereas motor-powered-vehicles (MPVs) directly consume fossil fuels in the form of petrol or diesel, cyclists exploit the human body's efficient use of food energy and hence consume no fossil fuels directly.
- **Bicycle construction** uses tiny amounts of materials, water and energy compared to MPVs.
- **Running costs** are trivial compared to MPVs.
- **Road maintenance** : energy consumption associated with road maintenance is negligible compared to that caused by MPVs.

2. Health⁵

- **Exercise and health** : cycling is an ideal aerobic exercise which actively combats obesity, diabetes, heart-attacks, strokes and absenteeism from work. Health may also gain from less motorised traffic noise⁶. Cycling may combat depression from the exhilaration of cycling, through boosted sympathetic nervous activity and the release of endorphins into the brain⁷. Cycling also helps older people to remain active.
- **Life expectancy** : if drivers switch to cycling, even for short trips only, there is a huge potential gain in life expectancy (life years gained through better health) compared to those lost through accidents and perhaps some increased exposure to urban pollutants. A study has revealed that cyclists who take three 6km trips per week have a health profile 10 years younger than equivalent sedentary individuals⁸.
- **Benefit-to-Risk Ratio** : the benefit-to-risk ratio for adopting a cycling lifestyle is high but it is difficult to calculate scientifically. Depending on details of what is measured and the degree of driving substitution but assumed, the ratio has been estimated by various researchers to lie between a minimum of 9:1 and a maximum of 77:1⁹.

3. Cycling enhances personal mobility and reduces traffic congestion

- **Enhancing mobility** : too many cars are bad for cities because of their negative environmental, social and public space impact¹⁰. Car dependency also encourages urban sprawl and congestion. Cycling is a flexible, clean, affordable, point-to-point transport mode and it is quicker to travel by bicycle in urban areas over distances up to 5-6km¹¹. Generally, half of all urban car trips are less than 5 km¹². The duration of cycled commuter trips are more predictable and hence cyclists are more punctual.
- **Reducing car dependency** : Ireland is the EU's 3rd most car-dependent country¹³. Only 2.4% of children aged 13-18 cycle to school and only 1.9% of commuters cycled to work in 2006¹⁴. By contrast, in Amsterdam, 55% of commuter trips less than 7.5 km in distance are by bicycle¹⁵.
- **Reducing traffic congestion** : theoretically, between 6 and 12 bicycles can be accommodated in the road space occupied by a single car, and even more when parking is

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considered. However,” *Cars travelling ‘safely’ at 110 km/h (allowing a 3-s gap between cars) require more than a hundred times more space than bicycles travelling at 15–20 km/h*¹⁶.

- **Increasing multi-modal transport** : cycling increases public transport range and usage as people use bicycles to access public transport without having to worry about parking or congestion at their destination. Multi-modal transport requires the active support of public transport companies and government.

4. Economic Benefits

- **Benefit-to-cost ratio for investment in cycling** : the National Cycling Policy Framework (2009) estimated that for every €100 million invested in cycling in Ireland, a return of €400million could be obtained¹⁷. EU research also showed that the economic benefit exceeded cycling infrastructure cost by 4-5: 1¹⁸. These benefit-to-cost ratios depend on what measures are studied, the time-span envisaged, how the calculations are done and the level of existing cycling. For example, in cycling-friendly Amsterdam, the ratio was lower at 1.5: 1, and yet even there it was positive. This suggests that the benefits to Ireland would be in the top of the range. In Scotland, a country of comparable size to Ireland, it was estimated that if 40% of car trips were shifted to bicycles, they would benefit by £4billion/year. It has been estimated that cycling contributes €3.3billion annually to the UK economy, which would equate to €260 million approximately in Ireland¹⁹.
- **Reduction in health expenditure** : Estimates of the cost of obesity to the Irish taxpayer range from €1.13 to €1.8 billion/ year²⁰. Modest reductions in obesity and related diseases would pay significant financial returns but more importantly would prevent avoidable suffering.
- **Tourist spending** : cycle tourism alone has huge potential to increase visitor spending in rural areas at low environmental cost as shown by the success of the 42km Great Western Greenway in Mayo. Costing €5.6 million²¹, it produced over €7million in benefits to Mayo in its first year of operation²² and €14 million in 2012²³. The network of prime cycle routes being developed in Europe, *EuroVelo*, is estimated to have an economic impact of €5 billion annually²⁴. Currently 3% of EU holidays are by bicycle. European cycle tourism is estimated to have a value of €44 billion annually²⁵.
- **Traffic Congestion** : cycling reduces traffic congestion which is estimated by the EU to cost 1.5% of GDP, a figure exceeding €2billion/yr in Ireland²⁶.
- **Creating a culture attractive to entrepreneurs** : research suggests that cycling is a feature of localities which are attractive to creative people²⁷. A strong cycling culture also bolsters city centre economies whereas a driving culture engenders soul-less out-of-town shopping malls.
- **Reducing expenditure on roads** : compared to the enormous cost of repairing road damage caused by MPVs, bicycles cause negligible damage. Hence Local Authorities benefit when cycling rates increase. Bicycle parking costs are 5% of car parking.
- **Reducing personal costs** : the Automobile Association estimates the annual running costs of a modest family car in the 1251-1500cc range in 2011 were €11,817, including depreciation²⁸. Cycling costs are trivial by comparison. Increased bicycle use can therefore release funds for other, more productive uses. Many of our citizens who are long-term unemployed can no longer afford to own or run a car so their mobility capacity to seek work

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is constrained by reliance on public transport. Use of a bicycle can give them freedom to search for work and then commute to work. The transporting capacity of bicycles is underestimated by non-cyclists. Rear bicycle pannier racks are routinely rated to carry up to 25kg. Cargo-bicycles can be employed to carry even more goods.

Environmental benefits

Transport systems cannot be made environmentally sustainable without a large increase in cycling.

- **Pollution** : MPV pollutants contaminate the air, waterways and roadside habitats while relentless road traffic noise attacks quality of life, especially sleep²⁹. Annually, the Environmental Protection Agency warns us that our transport emissions are unsustainable and that we risk being fined by the EU. By contrast, pollution through cycling is negligible as no fossil fuel is directly consumed. This benefits health while helping Irish cities to comply with EU air quality regulations.
- **Reducing greenhouse gases** : cyclists produce the smallest direct quantity of CO₂ per passenger-kilometre and thus have minimal impact on climate change³⁰. At normal occupancy, an electric train produces three times the level of CO₂/passenger-km. Only at full occupancy can an electric train compete with the bicycle. At normal occupancy, travelling by car produces 24 times more CO₂. If all EU countries cycled at the levels attained in Denmark for example, 25% of the EU target for Greenhouse Gas emissions reduction by 2050 could be achieved³¹.
- **Quality of life**³²: : the negative impact of traffic on quality of life is not fully appreciated. Most European citizens find the consequences of traffic unbearable (22%) or hardly bearable (54%)³³. Increased cycling contributes to a better quality of life where a critical mass of cycling is attained. 30km/h speed limits also contribute to making the environment more human-friendly. Cycling towns are cleaner, healthier, quieter, safer and more livable. Cycling *in* the environment, as opposed to driving *through* it, improves feelings of well-being, has a beneficial effect on the local environment and strengthens a sense of community.
- **Saving lives** : in 2009, 238 people were killed and 9742 were seriously injured on Irish roads³⁴. The suffering of bereaved families is the human price of over-dependence on MPVs. The financial cost to the taxpayer was €974 million. Through reducing MPV traffic and by creating a calmer road environment, a cycling revolution would yield the ultimate benefit, the saving of lives.

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