



CYCLING AND TRANSPORT

This briefing provides an overview of the role of the bicycle as a mode of transport, in particular looking at the:

- Overall context of transport issues in urban areas;
- Economic, ecological, social and urban benefits of cycling;
- Role of cycling as a potential solution to urban transportation issues;
- Potential for links between cycling and public transport; and
- Role of cycling across Europe.

Bicycling is an important part of the solution to many urban transportation issues. The growing increase in motor vehicle use is burdening cities with increasing problems and costs related to congestion, accidents, loss of amenity and space, noise, poor quality of life, poor accessibility, pollution, poor urban air quality and energy consumption, having adverse effects on both the natural and built environment (McClintock, 1992; Alayo *et al.*, 1998). [Motor vehicle] “traffic, instead of serving cities, is consuming them” (UITP 1996). It is increasingly recognised that as we suffer the increasing costs accompanying ever-rising motor vehicle traffic growth, it is no longer viable to solve these problems simply by increasing car transport supply and providing for transport needs in a demand-led, ‘predict and provide’ fashion (Richardson *et al.* 1993). Instead, we must consider how to prevent the underlying increase in car traffic demand, for example altering our lifestyles and patterns of consumption. Embedded in this is the need to shift the balance between travel by car and travel by alternative environmentally-friendly modes in urban areas (UITP, 1996). Bicycle transport must be an integral part of the transportation solution for the cities of the future.

‘Green’ transport is often an important consideration in the amelioration of urban transport problems, however as Whitelegg (1993) highlights: “vehicles with zero emissions, zero fuel consumption and virtually zero impact on pedestrians, cyclists and urban population densities might be ‘green’ but then we might as well have rediscovered the bicycle or feet”.

The context:

- People are often unwilling to cycle due to air pollution and safety concerns. As a result, they use cars instead. This in turn contributes further to pollution and safety problems and further discourages cycling, creating a negative spiral effect.
- There is a need to focus on efforts to curb car use. Several countries are recognising the potential of cycling to grow as a mode of transport and act as an alternative to car use, hence achieving more sustainable urban futures (Richardson *et al.*, 1993), e.g. the Dutch ‘Master Plan Bicycle’ and UK National Cycling Strategy.



- The development of national cycling policies in recent years indicates the increasing prominence of planning for cycling on political agendas and the recognition of the need for control in the growth of car use.
- Increases in motor vehicle traffic and private motoring have resulted in the steady decline of travel by public transport, bicycle, motorcycle and walking (CTC, 1993).
- The car currently represents about 75% of all kilometres travelled in EU conurbations (EC, 2003).
- Growth rates of over 600% in distances travelled by car per year are estimated in eastern Europe by the year 2010 (Rotherngatter, 1991 in Whitelegg, 1993).
- Not only have travel modes altered considerably, but so too have journey patterns and in particular the length of journeys. Increasing spatial distribution between home and work has promoted a car-reliant society (I-ce, 2000).
- Cycling is widely accessible since most people can cycle and many own cycles. Bicycles consistently outsell cars (CTC, 1993). There are approximately 200 million bicycles in use in the EU, compared to 160 million registered cars (ECF, 2001). 5% of trips, are made by bicycle – 5 times the amount of trips made by rail (ECF, 2001).
- Overall, modal share of cycling in Europe currently stands at 5-10% of all trips (European Local Transport Information Service, 2003). However, substantially higher shares are in evidence in the Netherlands (26%) and Denmark (18%). The modal share of cycling is also higher in urban areas and where short trips are likely.
- Bicycling is the most energy-efficient and cost-effective mode of transport. Investments in bicycling infrastructure provide positive returns when compared to the costs of other transport facilities.
- In the U.K., it has been identified that cycling research findings need to be disseminated more widely and effectively and that particularly, more research is needed into:
 - Understanding the cultural dynamics that affect people's willingness to cycle;
 - Exploring the links between utility and leisure cycling;
 - Identifying how more people, both children and adults,
 - The health benefits of cycling. (DfT, 2002).

Benefits of cycling:

- Cycling has numerous benefits at both individual and community-wide, public policy level (Bicycle Association 1995):



Economic benefits:

- Reduced number of working hours lost due to congestion. The bicycle can often produce faster mean journey times than alternatives for trips up to 4-5 kilometres long (Bracher, 1988 cited in Whitelegg, 1993) / (Hudson, 1978 cited in Banister, 1990 – in CTC, 1993). In addition there is an economic benefit when time savings increase productive time;
- Reduced health costs due to increasing exercise;
- The bicycle is relatively cheap to buy and maintain;
- Cycling and bicycle facilities are highly cost-effective relative to other modes;
- Reduced allocation of household budgets towards transport costs.

Ecological benefits:

- Reduced noise pollution;
- Reduced dependence on non-renewable resources;
- Energy-efficient;
- Reduce noise pollution;
- Reduced deterioration to historical monuments;
- Reduced air pollution.

Social benefits:

- Offers ease, flexibility, convenience and reliability;
- Increased mobility and independence – bicycle transport provides point-to-point travel without the limitations imposed by fixed route transit service. This freedom of mobility is a key to the bicycle's attractiveness as a transport solution;
- Increased democratic mobility and social inclusion;
- Improved urban quality of life;
- Improved health, fitness and longevity;
- Improved community safety and a reduction in road deaths;
- Increased autonomy and accessibility of facilities for young and old people.
- *Urban benefits:*
- Improved attractiveness of urban centres – improved urban quality of life;
- Improved traffic fluidity;
- Reduction in space taken up by cars;
- Decreased deterioration to the urban environment caused by motorised transport. (European Commission, 1999);
- Bicycling infrastructure can be developed through re-use of abandoned rail corridors and re-allocation of existing roadway space;
- Bicycle facilities can extend the service area of public transport systems beyond the conventional walking distance to transit stops and stations.

The potential:

- Huge numbers of people carry out journeys which are extremely short and which might easily be undertaken by bicycle. 30% of motorised trips in the EU are shorter than two kilometres. 50% are less than 5 km (ECF, 2001).



- Mathew (1991, quoting Herz, 1985 in CTC, 1991) notes that German studies have estimated that cycling could achieve 50% of school journeys, 25% of shopping journeys and 15% of all trips to work (CTC, 1991). The ECF suggests that it is possible to achieve 40% (or more) bicycle journeys in specific areas (ECF, 1993).
- Cycling has huge scope for being used for various purposes: from functional trips to cycling for exercise reasons and for pleasure.

Cycling and public transport:

- It is important to view cycling and public transport not as potential adversaries but instead as complementary 'environmentally friendly' transport modes (Holladay, 2002). Cyclists represent a potentially significant new group of transit customers, with the potential to increase transit ridership through provision of improved access and bicycle parking at transit stations and on transit vehicles.
- Intermodality can offer useful combined packages which offer a viable alternative to car use, providing convenience and door-to-door travel (Holladay, 2002). On long journeys particularly, a combination of cycling and public transport is a viable alternative. In the Netherlands for example, almost 30% of rail passengers cycle to a train station and 12% continue their journey by bicycle upon alighting from the train. (I-cc, 2000). Providing bicycle racks on buses has been successful in the U.S., with many transit agencies reporting positive returns on investment and increased ridership.

Across Europe:

- There is huge variation in cycle use between countries (McClintock, 1992). The average EU citizen rides the bicycle for 275 km per year. In Denmark and the Netherlands, this figure reaches 1000 km. However, in Greece, the UK, Luxembourg, Portugal and Spain, the bicycle is used for less than 100 km per year (ECF, 2000).
- Bicycle use has risen in the last 10-20 years in places like Denmark, Germany, Italy and the Netherlands (Bracher, 1989). As a mode of transport, cycling is more popular in Northern Europe, but is receiving increasing interest in east, central and southern Europe.
- Several European cities have implemented successful policies designed to encourage cycling within the city and achieve a modal shift e.g. the city of Graz, Austria has implemented measures increasing cycle journeys from 9% to 28% and decreasing car journeys from 44% to 30% (CTC, 1991).
- In the Dutch town of Houten, cycling accounts for over 60% of all journeys. As a result, car traffic levels in the town are 25% below the national average (CTC, 1991) and Houten has a remarkable traffic safety record with no traffic fatalities over the past decade.



- In cities like Paris and Barcelona however, bicycle use has fallen to less than 1% of all journeys (I-ce, 2000).

There is major potential for cycling in the current urban social, economic and policy framework (CTC, 1991). There is particular potential for an increase in cycling as an alternative for short and, the most environmentally damaging, car journeys (CTC, 1991). European experience indicate that policies have already led to an increase in cycle use and hence could be developed elsewhere with similar success (CTC, 1991). A reduction in car use is both feasible as well as desirable (EC, 1999).

“Initiatives aimed at increasing levels of cycling can be seen to be at the heart of ‘joined-up’ policy making. Cycling is as much about public health, the environment, land use and freedom as it is about transport. Many areas of public policy are now converging to make cycling a more convenient, realistic and safe option for regular travel. These include transport policies to cut congestion and public health policies to promote well being through regular exercise” (National Cycling Strategy, 2003). Cycling should be encouraged not just to avoid road congestion and reduce air pollution, but also to re-establish higher levels of physical activity and opportunities for social interaction (Haines et al., 2000).

Other Relevant Briefings:

Please refer to all other briefings in this series for further information.

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