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PLanning and Urban Mobility in Europe

**Synthesis Report:
Walking and cycling as solutions**

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1 OVERVIEW OF KEY FINDINGS FOR POLITICIANS

Cycling represents a quick, efficient, healthy and sustainable mode of transport that can improve accessibility, especially in urban areas. Walking is also a mode that can significantly contribute to improving the quality of life and promoting sustainable development. Both modes are non-polluting, space-efficient and can help to counter congestion and increase air quality. In addition walking, and to a very slightly less extent cycling, are available to almost everyone and therefore can help to promote social inclusion as well.

Most trips are short, especially in urban areas, for example some 69% of all trips in the UK are less than 8kms, and 43% of all trips are under 3.2kms. The figures also confirm that some 24% of car trips are under 3.2kms (DTLR 2001), showing a clear potential to replace a proportion of these with walking and cycling. The city context in Europe is very important with some 80.1% of the EU15 countries populations living in urban areas (DG TREN 2002). This proportion has been increasing, and while providing safe and accessible mobility for the 303 million people that this represents is a challenge, it is also a real opportunity to redefine transport options in a positive way that will also ensure lasting quality of life.

City administrations across Europe are not only increasingly understanding the positive role that both modes can offer in providing alternatives to motorised trips, but are putting in place policies, programmes and funding to increase their use. There still exists disincentives to walking and cycling, including the perceived danger, adequate pavement and road space and cultural perceptions, but people, especially children, would like to walk and cycle more if the conditions for doing so were improved.

In order to support current levels, let alone increase the amount of walking and cycling in cities, it will be necessary for city administrations to invest in these modes. This investment can be very cost-effective when compared to the costs of investment in public transport. In seeking to make cities sustainable and increase quality of life, it will be necessary to support all alternatives to motorised vehicle use. In this respect it is important to recognise that both walking and cycling are an ally and a useful adjunct to public transport rather than the competitor that they are sometimes perceived as. Indeed, walking and cycling can help to make a public transport system much more effective and efficient. Many walking and cycling trips are short, and if use of these modes is increased, it can help to relieve pressure on public transport systems. In addition, walking and cycling trips can help to provide accessibility on non-radial routes where public transport systems are often poorly provided. Lastly, providing good intermodality with easy access for pedestrians and parking for cyclists, especially in suburban areas, can help to provide a more efficient use of the public transport system.

Walking and cycling are ready-made solutions to many urban problems, and can make a significant impact on the many problems that exist. However, in order for them both to fulfil their potential, there have to be a number of conditions in place. These include having a coordinated set of policies and targets from the national, through to the city and local level that support their use. These will include transport, environmental, land-use and other policies. In addition there need to be the right structures and trained staff in place to ensure that the planning and support can take place. Funding also has to be made available on an ongoing basis for any sustained progress to be achieved. Lastly, in order to ensure that levels of walking and cycling can increase; a wide range of complimentary measures on the physical side as well as attitudinal and promotional measures will be required. This wide range of measures can be more successful than one large landmark project.

2 WHAT THE THEORY TELLS US

The theories, and the importance given to walking and cycling, have changed over time. From the 1930s to 1950s cycling was a significant mode of transport in most city areas, and provision was made for it. The increased wealth of the late 1950s and onwards led to a switch to ownership and usage of the private car. In many, but not all European countries, cycle usage dipped sharply. It was only with the petrol crisis of the late 1970s that the potential for the bicycle again was recognised. Slowly cities and national administrations began to make some provision, in many cases reacting to pressure from user-groups and the findings of research studies.

There were those who thought that cycling could not succeed in certain conditions. While the levels of walking and cycle usage are affected by landscape (hilliness), climate, culture and social acceptability, these factors are less important than might be thought. Denmark and Switzerland have cold winters and more hilly profiles than the UK, but their levels of cycle usage are a lot higher (18%, 15% and 2%). By the end of the 1980s, the German model towns project to promote cycling was well underway, the Dutch were launching their 'Masterplan Fiets' national cycle promotion policy, Denmark was putting in place ten national cycle routes, and even London had had a Cycling Project Team working for five years at the regional London Government level (GLC).

None of these countries or official bodies was fired by environmental zeal, but saw that walking and cycling had huge potential roles to play as alternatives to the car in achieving more sustainable cities urban futures, with special regard to the problems associated with the impact of the car in our cities (Alayo et al. 1998). In urban areas, it became clear that there was a need to create a balance between providing for personal mobility whilst also providing an efficient transport system for the movement of people and goods that is environmentally sustainable (Alayo et al. 1998). It should be remembered that transport as a sector accounts for some 24% of all energy use in the EU15 countries. It is also the largest single component and the only sector that is still rising. Much good work has been done to stabilise and reduce energy use by other sectors, such as industry, but this cannot be said for transport where energy use is still rising.

New policies have been developed that place walking and cycling as part of wider land-use and sustainable policies recognising that the two are very much linked. There has also been a greater recognition that travel patterns and hence mobility are predominantly dictated by the distribution of land uses and the response of the transport system to these (Alayo et al. 1998). Equally, an efficient and sustainable transport system must consider the need to improve accessibility rather than just mobility. So, transport and land use policies must be developed together to ensure that they encourage alternative and more sustainable transport modes, such as walking and cycling, and also encourage shorter trips which might reduce the need for such high levels of car use (Richardson et al. 1993). There is a need particularly to devote attention to "bring(ing) life back into the town centres" which tend to be more accessible by alternative transport modes, and rather than facilitating the trend towards out of town developments, which tend to promote car use (Alayo et al. 1998).

Transport is important for both the economic and social development of cities (Alayo et al. 1998). A key objective has to be to provide a transport system that operates efficiently yet also provides real choices for access to key locations for the whole community, including

those who can't drive (Alayo et al. 1998) or don't have access to a car. In spite of increased car ownership, there are still many households in inner city areas who don't, or choose not to, have access to a car. Personal mobility, choice of travel and "the need for access is the essence of travel, and accessibility to goods, services and people is key to the quality of life" (Alayo et al. 1998). However, the commercial community often under-values the role played by people on foot or cycle in shopping, thus hindering progress.

To sum up, theory tells us that, given the right conditions, people will switch to making short journeys by walking or cycling if the conditions are right. This switch can be very valuable to improving the quality of life and sustainability, especially in urban areas where a large number of the journeys are particularly short. However, resources have to be invested both in physical and promotional terms before any results can be seen. Success will be greater where walking and cycling fit into a raft of coordinated policies that compliment each other.

3 WHAT MODEL RESULTS TELL US

None as yet.

4 WHAT EMPIRICAL EVIDENCE AND CASE STUDIES TELL US

Walking and cycling are modes that have suffered as a result of their own modesty, and have often been overlooked in policy terms, or especially in the case of cycling, been seen as a dangerous nuisance. Now governments at a national, regional and city level are making provision for cycling. Better understanding and appreciation of the important factors that affect walking and cycling use can be used to bring about greater use of these modes.

- **Population density and land-use**

These are increasingly going to be important issues. Holland has a population density of around 400 people per Sq. Km, the highest in Europe; more than three times that of the EU15 average population density. This higher density helps make short journeys more common, favouring the choice of walking and cycling as modes of transport. We cannot easily change our population density, but land-use policies which site work, leisure and shopping facilities close to living areas will help. The reverse will lead to greater car use, for example the Royal Bank of Scotland site at Gyle outside Edinburgh certainly makes the possibility of increasing cycle trips very difficult. In Germany, when the Borussia Dortmund football ground planned additional seating, increased car parking provision was proposed. This was rejected and a 0.20€ surcharge on ground ticket prices pays for improved public transport access, helping to sway people's modal choice. In addition, cycle parking and public transport access is very close to the football ground, while car parking is limited and further away. Locating workplaces close to living areas will also reduce the need for investment in showers and lockers at workplaces. If your cycle trip is only 2-3 kms away, you can get there quickly without going at a racing pace. Policies here are being put into place that will improve the situation over time, but more needs to be done to match transport and land-use policies. If we do not, we will effectively be planning cycling out of the system.

- **City-wide cycle networks**

Cities have a vital role to play in the effective promotion of walking and cycling, and there are now many successful examples. Following the 1995 public transport strikes in Paris, the then Mayor, M Tiberi, decreed that 50kms of cycle route was installed in 1996. This was so popular and gave him so much publicity, that he authorised another 50kms to be built in 1997. These routes are all taken from road space, not pedestrian space. Cycle use in Paris has increased from a recorded 1% to 5%. It does not have to be done that quickly to work well, München doubled cycle use from 6% in 1976 to 13% currently through building up a good network of cycle routes. In Troisdorf, cycling has risen by nearly a third to form 21% of all trips. Even better was that the rise came at the expense of car trips, not from public transport and walking which is more commonly the case. London is planning to treble cycle use by 2010, partly by 900km network of routes to be completed by 2009. The greater coverage of the network and the more fine the grid, the more used and useful it will be, particularly where there are also policies controlling parking and access control for motor vehicles. The focus of the plans in London are on; infrastructure, marketing and promotion, links with public transport, and shared benefits from other traffic schemes. Cycling is not just for the north of Europe; In Barcelona, the city council are promoting cycling and walking on the basis that they give; free movement, save time and money, are faster than cars, puts people in good shape, give space and safety for all, and that they are fun activities. Note that most cities now recognise that shared use cycle and pedestrian paths should be the last option, and are not popular with either walkers or cyclists.

- **Fiscal Policies**

The Norwegian cities of Oslo and Trondheim raise money by road-toll charges, and more than €17 million has gone into bike facilities in the latter city alone. These policies can make an appreciable difference in giving both priority and visibility to cycling projects. In Holland, if an employer gives their employees a bicycle, they pay less company tax, and the employee pays no personal tax on this 'gift'. In addition, the costs of clothing, locks and maintenance will qualify for tax relief. The employer has to 'reasonably' ensure that the bicycle is used for commuting, although the use of public transport or park-and-ride for part of the trip is allowed. Improvements made in the UK 1999 budget now allow both employers and employees to claim higher allowances and also provide bikes, changing rooms and showers on a tax free basis. Sadly, there has not been enough publicity for this scheme, and more should be done to both inform and influence work travel patterns.

- **Public transport**

Bicycles and public transport are complimentary, not competitive. There must be the maximum connection between the two if bikes are to really prosper. A German study has found that the catchment area of a rail station reached by foot is increased 16 times if you take into account the wider area that people can cycle from. Which rail operator would not like a 1500% rise in potential market for their services for the price of providing good quality cycle access, cycle parking at stations and a programme of encouragement? This one factor could well help to justify the economic costs of new rail provision. In Holland, some 45% of all rail passengers arrive at the station by bicycle. In the French Région Nord-Pas de Calais, the train timetable sets out the trains where cycle access is not allowed, rather than those where it is possible. This is a positive step indicating that the normal situation is one where access is possible.

In Bern and Paris, the bus lanes have been widened so that cyclists can be safely overtaken by buses rather than hold them up - it works well. In Denmark taxis, another form of public transport, are obliged by law to carry two bicycles. This statute has been in place for many years, and works well all over the country. There is a small extra fee for the bicycle, and the driver stores a collapsible rack in the car boot to carry the bicycle/s. This allows cyclists who have enjoyed one too many beers, or those with too much shopping to get home safely.

- **Targets, budgets and organisation**

The use of targets in providing a statement of intent and a framework is undeniably useful, and will allow progress to be monitored, measured and policies to be changed if necessary. Targets for increasing cycle use exist in Holland, Denmark, Finland and the USA. Denmark's national target is to increase the bicycle's share of trips in urban areas by 4% by 2005, and is backed up by a traffic fund of some £15 million a year. Finland has a target to double cycle use and halve accidents from 1993 to the year 2000. If they achieve this, they calculate that they will on average have socio-economic savings of £105 million a year at 1993 prices. Even the car-friendly USA also has a target to double cycle and walking use, and reduce crashes by 10%. The new TEA-21 legislation in the USA could provide some \$300m (£187.5m) for cycling infrastructure each year for the next six years. Budgets to match the policies are equally important.

- **Promotion and attitudinal change**

It has become clear that simply building cycle facilities and expecting that there will be a wholesale change of mode away from cars is naïve. Both city and national administrations now recognise that more is required, especially by way of promotion and changing attitudes.

The city of München for example is now concentrating on promotion and communication as a way to increase use. They plan to spend some €m a year on promotion in the coming years. This pattern of increase has been repeated elsewhere. The UK Government is currently considering spending money on promotion at a level that has not been done before. These moves back up the work of studies such as WALCYNG and ADONIS that recommended that awareness campaigns have an important role to play in promoting cycling and walking. It also has to be mentioned that the many city networks such as POLIS and ACCESS, in addition to the many international studies in the area of urban transport, land-use and quality of life have all helped to raise the status of this work. In particular, it has helped politicians to see other examples where change has had a positive effect and also to link officials and experts who can help to disseminate findings to a wider audience. All of this has been of great use in ensuring a wider and faster take up of new ideas.

- **Climate and terrain**

The climate in Finland is not known for being mild, yet in Oulu a city of over 100,000, cycling constitutes 35% of all trips. It is just over 100 miles south of the Arctic Circle. In Padua and Ferrara in the Po valley of Italy cycle usage is also at this level, but it is distinctly hot there for many months of the year, and cold and damp in the winter. Basel in Switzerland is not flat, but has 17% cycle use and only 27% car use. Climate and terrain obviously are a factor in deciding the level of cycle use; however research has shown that their importance can often be greatly over-stressed.

- **Health**

Cardiac Heart disease is already the world's third largest killer, and WHO experts say it will shortly be the first. This increase in the number of cases will be very costly both to national health programmes and to individuals. Yet as little as 30 minutes moderate exercise five times a week can cut the risk dramatically. This is easily possible for most people of all ages, and can be fitted into the daily schedule as part of work or leisure activities. It also avoids the necessity and cost of going to a gym to keep fit. In England in 1998, over 20% of adult men and over 15% of adult women are classed as obese; the American Academy of Paediatrics found that 34% of US adults are overweight. These figures are increasing. The prevalence of children who are obese has been found to be indirectly proportional to the level of cycling in five European countries (DfT 1996). In addition, children want to cycle, 47.5 % of 10-11 year old children in York (UK) want to cycle to school, but only 3.4% actually do. It is important to establish good patterns of regular exercise as early as possible in life and projects to increase walking and cycling to school have been shown to be popular and effective.

- **Safety and speed**

Many say that it simply not safe enough to cycle, and this is the biggest single deterrent when people are questioned. However, it is a real fear that nonetheless puts people off, but it need not be like this. Denmark and the city of Vienna have shown that increased cycle use will not increase danger – in fact the reverse is true. In Vienna, cycle use rose from 1% of all trips in 1983 to nearly 6% in 1991, while accidents fell consistently from 1980 to 1991. The risk measured as a proportion of usage has now fallen to a quarter of its previous level. The increased levels of usage in Denmark, Holland and other European countries also show this trend. The greater the level of cycle use, the lower the number of cyclists per million killed per year. This issue is also very bound up with that of speed, and significant reductions in both the number and severity of accidents can also be achieved by area-wide traffic-calming. This will also encourage cyclists and pedestrians and improve the 'quality of life'. 77% of the

roads in Graz in Austria have a speed limit of 30km per hour, and as a result serious injuries were reduced by 24%. Bonn also has the same policy.

- **Social inclusion**

The bicycle is a mode of transport that is within the economic reach of many, and can be ridden by a large majority of people. It is simple to service and does not take up a lot of space. It also gives people independence and mobility at low cost, and is especially useful for women in this context. Within a suitably safe road system it can also allow young people to explore their area on their own, maybe for the first time.

- **Economic development**

The bicycle can play an important economic role. In cities, small businesses are making increasing use of bicycles for deliveries of goods and services. In country areas, bicycle-based tourism brings valuable economic benefits, and allows rural communities to flourish in a sustainable way. In developing countries, it also can allow farmers in rural areas to get their goods to market, so opening up new economic possibilities for them.

5 TECHNICAL SUMMARY AND IMPLICATIONS

Cycling is an international issue

Cycling is important both at the street corner level, but also at an international level. In the foreword of the UK Government's Transport White Paper, it says that the 'main aim of the white paper is to increase personal choice by improving the alternatives and to secure mobility that is sustainable in the long term.' At the European level, ex-Transport Commissioner of the European Commission, Neil Kinnock said 'when as a community, we need to retain the economic and social benefits that transport brings and, at the same time, to combat the highway-clogging congestion, the choking pollution and the death and injuries on our roads which our current transport system creates, cycling clearly has a role to play'. At the global level, Klaus Töpfer, Executive Director, United Nations Centre for Human Settlements (UNHCS) Habitat has said, 'Transport has previously received little attention at the global level, despite the obvious problems associated with it. Integrated, holistic transport and land-use planning policies are essential to reduce the ill effects of current transport systems'. Clearly we need a similar attitudinal change at an individual level and by organisations and all levels of government.

Why support walking & cycling?

Investing in walking and cycling brings benefits across several policy areas, and therefore represents very good value for money. To show this advantage better, Government should recognise that spending by one department may give savings in another and allow for this. Increased levels of walking and cycling can:

- Improve personal health
- Reduce the amount of road maintenance required
- Cut traffic congestion, so improving times for essential vehicle trips and public transport
- Increase air quality. Fewer car trips will mean cleaner air for all. EU air quality directives are also moving policy in this direction.
- Bring about energy savings. Transport accounts for 5% of GDP and 28% of all energy consumption across all European countries, and this percentage is increasing.
- Improve quality of life, cohesion, and helps preserve historic monuments & monuments.
- Provide a cheaper and more efficient investment than public transport, especially over short distances, and lateral trips in urban areas.
- Aid mobility and accessibility
- Provide economic benefits at both an urban and rural level
- Help to achieve Carbon Dioxide (Kyoto) targets
- Bring benefits not only for the users, but also to the wider community (Walking and cycling are the only modes that do this).

The demand for the car needs no encouragement. There is a need to be radical - doing nothing or carrying on as normal is not an option. If there is to be some moderation, let alone effective management of the increase in car ownership and usage, car use has to be controlled, and all other modes of transport actively encouraged, especially the most efficient and sustainable ones. Simply building cycle facilities only, hoping they will be well used and

solve all the problems is naïve. That is good, but we must do more. There has to be a considered package of policies that both ‘push and pull’ in order to be fully effective. This conclusion has six items which need to be in place for success. Cycling needs:

- The right policies, and to ensure that they are harmonised so that bicycles can provide a viable, efficient, attractive, affordable and effective alternative to the car. This will require that safety, health, fiscal policies and others are coordinated and dovetailed.
- The right structures within government and other responsible bodies in order to deliver the policies. There is no point if different departments are not working in the same direction.
- Suitable funding on a sustained basis. For cycling to succeed, it cannot be funded as something fashionable for only a few years. A regular income base is important in order to allow planning and implementation to go ahead at a good pace.
- The development of expertise and training at all levels of government and elsewhere.
- The identification and support of new cyclists. Supporting existing cyclists is good, but not enough. Much more needs to be done to change attitudes, as in Aarhus, and also to break down barriers and fears, and develop a new market for cycling.
- Political support. People do want change as long as there are suitable safe and viable alternatives provided. This has been seen in the massive feedback in response to the UK Government’s transport white paper. The fact that so many of those consulted wanted more and better cycle facilities shows politicians that they are on the right track in supporting policies, programmes and spending in this area.

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