TIM PHAROAH

LPAC

PLANNING FOR GREATER LONDON

PUTTING LONDON BACK ON ITS FEET

The why, how and who of developing a strategy for walking in London

MAIN REPORT

SEPTEMBER 1996

The London Planning Advisory Committee (LPAC) is the Boroughs' statutory planning committee for London. It was set up in 1986 by the Act which abolished the GLC. Its main role is to give Londoners, through their Borough representatives, a say in the overall planning of London. It does this by:

- advising government and Boroughs on strategic planning matters and major development proposals
- representing London in the regional planning of the South East
- advising government on parking policy.

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LPAC

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The why, how and who of developing a strategy for walking in London

MAIN REPORT

SEPTEMBER 1996

A study by the Metropolitan Transport Research Unit (MTRU) for LPAC, with financial co-sponsorship from London Transport and the Transport 2000 Trust.

This report is published for information and discussion. Its views and recommendations are the consultants' and their publication does not necessarily indicate that they are accepted by the co-sponsors.

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Without considering how it makes the use of other modes of transport possible, for example by walking to the bus stop or to the station, walking accounts for a third of all journeys in London. If future transport policy is to be truly sustainable this share must be protected and enhanced. If short walk trips are switched to longer car trips for shopping, leisure and even for work, this will fuel traffic growth, and cause more congestion, pollution and danger.

What is Walking?

The many different functions of walking are poorly understood, and four key classifications have been evolved for this study:

Access Mode: this is where walking is used as the main mode between two places, for example home and workplace, shop or school

Access Sub-Mode: walking is often a necessary adjunct to another mode, for example getting to and from bus stops, stations or car parks.

Circulation/Exchange: including window shopping, meeting people in the street, interfaces between shops and cafes and the street

Recreation: including long distance walking and local activities such as play streets.

Walking in London

Walking rises from 20.8% of all trips in Outer London to 28.6% in Inner London, according to the 1991 London Area Transportation Survey (LATS). However, no short walk trips were recorded (unlike 1981).

Although the National Travel Survey (NTS) sample in London is smaller, the cut off is shorter (50 metres). This gives an overall figure of 34% of all trips on foot, significantly higher than LATS. It also shows that over the last decade walking has declined in Outer London, but risen in Inner London.

Walking is Undervalued

Walking is so much part of life that its provision crosses many boundaries, perhaps more so than any other form of transport. Much of the quality of a walk journey is determined by detailed urban design, involving many disciplines. The question of whether there is anywhere to go within walking distance is within the sphere of influence of land use planners, developers, health providers, educational

establishments and private businesses. There is little co-ordination.

In addition, while major infrastructure projects attract attention from planners and decision makers, schemes to assist walking tend to be cheap and do not have the status of new road or rail schemes. Instead of making improvements to walking more attractive, the low cost seems to cause them to slip off the main agenda. This requires a fundamental change of attitude from practitioners.

This is mirrored by the public's view of walking, which sometimes appears to be that it is so basic to everyday activity that it is hardly considered as "transport". Swiss and Dutch examples identified for this study suggest a third of walk trips may be missed in conventional surveys. MTRU research has shown that people find it difficult to consider walking in the same way they do using the car or bus.

Even the current data shows the huge share of trip making on foot, and the essential contribution which walking makes to the use of public transport. One simple step would be to make this more widely known.

A Vision for Walking in London

In order to develop a coherent strategy there should be a clear vision of the part that walking can play in London in the future. This will require an urban structure conducive to walking, involving amongst other things the provision of local facilities, the encouragement of relatively dense, mixed use development. Where distances are beyond those which can easily be walked, the bicycle and public transport will provide the main means of transport, car trips being used only for trips where the value of a journey to the user is high and community cost is low. In terms of journey quality, more active streets, pedestrian-friendly street patterns and networks of routes will contribute to an improved pedestrian environment overall. Londoners will then have a greater opportunity to walk (with desired destinations being within a walkable distance) coupled with an incentive to walk (due to the improved quality of the pedestrian environment). Walking supports London's traditional urban form, it is open to most people without regard to price, and it minimises social and environmental costs.

DEVELOPING A STRATEGY FOR WALKING

Many of the examples of pedestrian schemes both in the UK and abroad are reactive: for example responding to a safety problem. Even town centre pedestrianisations are often not part of an overall strategy but usually one off "islands" surrounded by traffic. Cars are usually the favoured mode to get to these improved but isolated walking places. Outside their boundaries street conditions will deteriorate as traffic rises, and people become even more inclined to drive to such centres, and, for example, drive somewhere to go for a walk.

This argues for a more complete revision of walking policy, involving the development of a strategy for walking in the capital, beginning by setting out the future intended role of walking in London as outlined above. Achieving this

scenario will require a co-ordinated approach, in particular involving the linking of relevant land use and transport planning policies. The strategy should set out the mechanisms necessary for implementing the actions and policies required, as well as identifying and mobilising the appropriate agencies who need to be involved to bring ideas into fruition. Finally, an evaluation and monitoring process should be set up as an integral part of the strategy.

Walking and Land Use

While walking's place in a transport strategy is critical, and improvement to walking conditions must play a major part, land use planning is just as important. Put simply, if there is nowhere within walking distance for people to go, the best conditions in the world will not help to get them on their feet.

From now on the walking catchment distance should be a central measure of all developments. The framework must be to encourage a mix of local activities at a density which can support them and which is well suited to walking. Of course there are a number of activities or industries which are by their nature large in scale, such as a chemical factory, the Tower of London or Euro '96. Apart from these, most decisions on the balance of local shops, housing, schools and leisure facilities will fall within the influence of land use and other public policies.

Each significant new development or redevelopment should have a full audit of its travel impact, and the planned catchment will be critical. For example, local plans could set targets for the proportion of journeys which should fall within the walking catchment, as well as defining how people will travel (and how they will get their shopping home) by other non-car modes.

Total Journey Quality: the View from the Kerb

To those on foot the small impediments mean a lot. If people are unable to push a buggy easily across roads, or if street furniture, bins and other clutter create congestion, this will deter walking. Poor footways have an economic cost: in a shopping centre a spacious and welcoming walking environment, with a sense of activity and fun, is one which is economically successful.

It is important to understand the nature of each journey: only part of this is pure movement. If the car is acting as a mobile shopping locker or baby changing room these needs have to be addressed. Journey "chains" are important for non-work journeys generally, they too need to be fed into the equation.

It must be appreciated that interrupting the path of a walk journey and delaying it is far more serious than interrupting a fast, motorised vehicle. Thus walking places should achieve the "Five Cs", and be ***Connected, Continuous, Convivial, Comfortable and Convenient.*** Crossings will have to be redesigned, for example to avoid sharp changes in level, to reduce crossing widths and put in many places (such as junctions) where they have conventionally been prohibited.

TARGETS AND STANDARDS

Is the Network Approach enough?

While Red Routes, bus priority and cycle routes are all network approaches, is this entirely appropriate for walking? The study is moving towards a multi-layered approach, with several key elements:

1 standards for design and quality audits applied to all streets, although different standards would be evolved for different areas, for example pavement widths in major shopping centres, secondary centres and residential areas;

2 identification of key walking routes between places and longer recreational routes (the network approach), improving them and ensuring continuity;

3 identification of locations on those routes where facilities need improvement to ensure network continuity

4 identifying key destinations and auditing access quality by foot, this could extend outwards in a 4-500 metre radius, and include stations, main bus stops and interchanges as well as specific facilities like leisure centres or large workplaces;

5 as well as pedestrianising town centres, identifying local areas where pedestrians should be given high priority, in particular making it possible to cross the street at will, and for children to play in the street.

Setting Targets

Now that scheme appraisal is objectives led, the use of targets is one of the most appropriate ways of guiding strategy and its implementation. These could be organisational, such as producing a plan or designating a pedestrian officer, or related to modal share by journey purpose, or even levels of expenditure, for example spending at least a certain proportion on walking. The targets drawn up in Section 4 of this report are closely linked to the walking inventory and audit, tools (detailed on pages 50-52). Targets will need further refinement and consultation, but an examples from the 25 draft targets are:

T1 London's local and central government and their agents will seek to increase kilometres walked per person by 5% every 5 years for the next ten years.

T6 Standards will be set for footway widths according to the type of street (main shopping/local shopping/residential), and existing widths will be surveyed and assessed against the desired standards by December 1997 and a full report published by March 1998.

T7 Where footway standards are not being met pavements will be widened so that at least 90% of shopping streets meet the standards within six years of the report's publication, and at least half meet them within three years.

IMPLEMENTATION

Changing Attitudes

This is not just a question of people remembering how much they depend on walking, it is also a question of professionals looking afresh at the way walking is included in transport planning and engineering. The publishing of new guidelines and good practise, and the setting up of demonstration projects in different areas will be important.

Such a selection should include at least one major London square, at least one major obstacle course on a main road (for example Vauxhall Cross), a residential area and a town centre from both Inner and Outer London.

Practitioners' Attitudes

A cross-departmental approach will be essential for the development of walking policy. However, a clear line of responsibility for walking issues, leading to a senior officer with walking as a major part of their responsibilities, will be needed.

A key challenge is how to generate the understanding and skills which will be needed throughout the transport planning profession if walking is to be understood and taken seriously. This will be very different from the experience gained in implementing many of the safety schemes which have been put in place in previous years. The use of subways, footbridges, guard rails, walking pens and lengthy multi-stage crossings has sacrificed quality in the name of safety. A change in culture is required, and transport professionals will need to take on board some of the work undertaken in urban design as well as embracing the need for continuity, quality provision and the "view from the kerb".

Schemes and Opportunities

Already it is clear that walking policy requires a wider ranging approach than other modes of transport. Looking at walking catchments for new developments, and trying to encourage local facilities (sometimes by refusing large scale facilities) are land use examples; lighting, paving and planting are design examples; pavement widenings and the introduction of a series of zebra crossings in a local centre would be engineering examples.

One issue related to design quality is the way that footways are constantly being replaced and repaired, and this is an important element of Borough expenditure. By enhancing this, for example by spending a little more on design, walking quality can be improved, rather than simply reproducing the status quo.

Powers and resources

Any strategy will depend on human and financial resources if it is to achieve its objectives. But compared to other transport schemes expenditure is low, and a

clear financial priority given by all agencies involved is hardly likely to undermine other spending.

The second question is how much power the Boroughs would have to implement the strategy. This extends from the ability to progress traffic orders to the ability to influence land use planning decisions. The latter needs to address the problem of developers playing off one borough against another (as happens on parking policy) and needs firm guidance from central government as well as a clear policy on refusals on appeal. In this case the legal powers seem to be there in principle, but have been undermined in practice.

Multi-Agency Action

The question of powers raises the issue of how many agencies need to be involved. As well as the Boroughs and LPAC itself, there are the Traffic Director, the Parking Director, TCSU, LT, LT Buses, LUL, DoT, DoE, GoL, the Highwats Agency, Railtrack and the Police. In addition there are a wide range of non-government organisations including transport pressure groups and bodies such as London First. From data collection to implementation there are a range of issues raised which must be settled if progress is to be made.

AWARENESS, DATA AND MONITORING

Traditional Data Collection

1 **Travel Diaries better tuned in to walk mode with no cut offs.** As well as improved travel diaries, it is also proposed that they are undertaken in a rolling programme rather than in a "big bang" every ten years.

2 **Classified pedestrian counts.** Buggies, wheelchairs, and all pedestrian vehicles (especially push baskets and shopping aids) need to be counted. In many centres these will be critical to identifying problems and designing facilities.

New Data Requirements

1 **Engineering standards for footways.** Definition of minimum widths for a range of locations (see example targets above) would lead to a survey which identified where pavement widening was required.

2 **Qualitative "View from the Kerb" surveys.** One German city tried the expedient of sending a blindfolded transport planner in a wheelchair round its centre to identify poor provision. A scale to measure unevenness of footways would be easy to design.

3 **Pedestrian intensity measures.** Flow counts will always underestimate the amount of space required by pedestrians. Time lapse photography or video can measure how many people, both on foot or in vehicles, are using the combined footway/road space at any one moment. This gives a completely different view,

and one which reveals a higher space requirement for walking.

Understanding Walking

In these circumstances, a major awareness and data initiative on walking across London offers a positive way forward. This is not merely to provide a new baseline from which progress could be measured, but to excite and involve public and practitioners alike.

CONCLUSION

The importance of walking in London should not be underestimated. It has a central role in transport policy despite the low level of support walking has historically received in terms of research, policy development, scheme implementation and funding relative to other modes of transport. Developing a strategy to encourage walking could confer significant benefits upon the capital.

Such a strategy should essentially revolve around relevant agencies being stimulated and encouraged to take a more proactive approach to walking in the future, covering issues ranging from data collection and awareness of walking to land use and transport planning, programmes for implementation, funding and monitoring. A coherent strategic approach which faces up to the issues and actions outlined in this report will help redress the balance in favour of walking in London. This in turn will bring significant benefits to the capital. Walking is the most sustainable form of transport, it has a powerful and positive effect on the environment, on the health of Londoners, and on London's local economies.

1 INTRODUCTION

1.1 Walking is so integral to the way we carry out our daily lives that it has almost come to be taken for granted. Even without including how it makes the use of other modes of transport possible, for example by walking to the bus stop or to the station, it accounts for a third of all journeys in London.

1.2 Although still the "base mode" for travel and access, walking has been seriously affected by the rise of motorised traffic. For example, collisions between pedestrians are rarely dangerous, but walking has nevertheless been labelled as "dangerous" because of people's vulnerability in accidents with vehicles. This Orwellian use of language reflects an attitude which has grown up among practitioners without ever being properly scrutinised by the decision makers: as a mode of transport walking is cheap, unexciting and on the way out. Even for urban road schemes, it was (and often still is) simply not counted.

1.3 Contrasting with this downgrading of "walking as transport" came the at least well meaning approach of pedestrianising shopping centres and housing areas. However, this was seen as difficult or impossible within the existing street pattern. High Streets were often main roads too. Thus new centres were designed as pedestrianised "islands", surrounded by heavily trafficked routes or ring roads. New housing could have traffic free open space, but this was often accompanied by high rise development and a lack of natural walking activity at ground level. "Comprehensive redevelopment" was born.

1.4 In existing areas, motorised traffic took priority, while street life and frontage development did not seem to matter. Early expressions of this attitude can be found in designations for long distance traffic such as the South Circular Road and the Earls Court one way system. The conflicts between traffic and people which these enshrined then provided the motivation to seek traffic reduction by building new parallel roads. In London's recent history this strategy has been abandoned twice: once with the Ringways in the mid 1970s, and again with the Assessment Studies in the early 1990s.

1.5 This car based approach to transport and development quickly ran into problems. First, London could not be rebuilt around the motor vehicle. It would be too damaging, too expensive and there was not enough space. Secondly, the purpose-built shopping centres and housing estates, despite the understandable desire to create safe and pleasant surroundings, forgot to allow for so many aspects of normal life that they could not function properly as human spaces. For example, many places had no life after the shops shut. Many housing estates had no natural focus and no corridors of activity.

1.6 In addition, the compromise of building a shopping mall at right angles to the existing High Street, just made the traditional centre decline faster. Elsewhere in the existing built environment, space for a new road to take away the traffic meant knocking down existing buildings or taking open space, and in their place creating a new barrier which isolated the centre from its surrounding

neighbourhoods. This was a particular blow for those on foot or cycle.

1.7 This study is only possible because there is now some recognition that a new deal is required for walking, and that any strategy for transport in London cannot be based on prioritising the car. The national policy framework has recently undergone major change, partly as a result of the international need to pursue sustainable policies, and partly because the provision of additional road space is no longer seen as a stable long term solution in technical terms.

1.8 Thus there are now new but very clear commitments to reduce dependence on motorised travel (such as PPG13, Departments of Environment and Transport 1994), and the appearance of objectives such as:

"the active promotion of walking, cycling and public transport as alternatives to car use" and

"the use of land use planning to reduce the overall need to travel".

(Strategic Guidance for London Planning Authorities RPG3, Government Office for London, 1996)

1.9 The study therefore starts with the premise that walking is basic to most human activity, that it deserves a high priority in urban planning, that there is no coherent strategy to promote it, and that its role and how we provide for it needs a thorough review. The purpose is not to provide a fully worked out and comprehensive alternative to current policy, but to lay the foundations for the development of that new policy.

1.10 In order to do this the project has two main elements. The first is a review of work being undertaken in the UK, Europe and elsewhere on pedestrian policy and its implementation. The accompanying Technical Report gives a full account of this exercise. More specifically for London, this included information gathering from the London Boroughs, LPAC and the Government Office for London (GoL), all of whom have taken a helpful and positive role in the project.

1.11 The second is the setting out of a framework for progress which includes an explanation and exploration of the importance of walking, a new understanding of, and vision for, the role of walking, and proposals for a strategy for walking, how it can be implemented, and how we can measure whether it is successful.

1.12 As part of the study two brainstorming sessions and a seminar for local authorities were held. By involving transport planners, engineers, academics, pedestrian organisations and urban design experts, this enabled the project to draw on a wide range of expertise and experience, and to test out ideas in an intensive and uninhibited way. Such a creative process was necessary in order to build on and extend the low level of work carried out in relation to walking thus far, and to develop innovative ideas for promoting walking in London. Including London local authorities in the process allowed a degree of Borough "ownership"

of the work to be developed. This was seen as an essential theme to explore in order to ensure that the framework for a pedestrian strategy which was being developed remained practical and capable of being accepted and implemented. Thanks are due to all participants in the consultation process and to members of the Project Steering Group.

1.13 The report begins by asking a few simple questions about the nature and extent of walking and why it should be such an important component of transport policies for London (Chapter 2). Subsequent chapters set out the need, role and overall aims of a future strategy for walking in London (Chapter 3) as well as proposing some draft elements which such a strategy may include (Chapter 4). Implementation issues are then discussed (Chapter 5) followed by setting out a process for monitoring (Chapter 6), before key conclusions and recommendations are made (Chapter 7).

1.14 The accompanying Supplementary Technical Report takes into account the background work carried out to develop the main report. Issues addressed include a review of current practice for pedestrians both in the UK and abroad, and noting the present situation in London by analysing the Unitary Development Plans and Transport Policies and Programmes produced by the Boroughs. Relevant policy documents which have been produced over recent years are also reviewed. This work is followed by an annotated list of additional references not directly referred to in the text and a checklist of further issues raised during the study which could form a basis for future work to address in detail.

2 WALKING IS STRATEGIC

The importance of walking as a mode of travel

2.1 One of the biggest hurdles to developing a policy for walking in London is that it is so basic to all planning and transport activities, and so undemanding in terms of government finance, that it somehow slips through the net in strategy formulation. This also has its roots in two mistaken assumptions about transport planning, first that "strategic" is the same as "long distance", and second that the prime objective is more, faster movement (mobility), rather than getting to places (access) in a cheap and environmentally friendly manner.

2.2 Although both these misconceptions are still firmly entrenched, the current thrust of national policy is to reduce the need to travel: this means replacing longer trips with short ones and moving from motorised trips to non-motorised (PPG13, Departments of Environment & Transport, 1994). This is more or less the opposite of what has been happening for the previous few decades: for example when longer car trips have replaced shorter walk (or bus or cycle) journeys (see National Travel Survey 1991/93, Table 2.3). In short, we have increased the level of motorised mobility, without increasing accessibility.

2.3 The gains from increased personal motorisation can be assessed in relation to an increase in choice, flexibility and security for some sections of the population. But these benefits have been at the cost of less choice, flexibility and security for others, and in addition they have brought environmental and other disbenefits to the community at large.

2.4 Transfers from short walk trips to longer car trips for shopping, leisure and in the long term even for work, have already had a major impact on overall transport conditions. If this is not recognised, the pool of walk journeys will decline, fuelling traffic growth, and this will bring the familiar cycle of increasing congestion, pollution and danger. This is the motive behind the Government's new but very clear commitment to reduce the need to travel. Of course some places are naturally few and far between. But many, like shops and leisure activities could be closer to where people live, and this means more and smaller.

2.5 The difficulties of implementing such new national policies represents a significant hazard for developing a sustainable transport policy for London. However, as well preventing further deterioration, there is also a very positive side to including walking in the strategy. This is simply the huge number of car trips which are extremely short and easily walkable for most people. Further details are given later in this report, but in the morning peak 15% of car trips by Londoners are less than a kilometre. In the same period 18% of car trips are people taking children to school, of which 49% are less than a kilometre. Over the whole day 38% of car trips are less than 2.5 kilometres.

2.6 These short car trips are, of course, far less significant in terms of traffic (measured as vehicle kilometres). However, they are particularly important in

terms of pollution since catalytic converters will not warm up enough to work properly over these distances. Short distance car trips generally, and short school trips in particular, represent a clear target for modal change.

2.7 On this analysis, planning for pedestrians should be the one of the most important aspects of transport and urban planning. The reverse has been true, however, and not only in London. The current situation in terms of planning for walking in London is shown in detail in Section 4 of the Supplementary Report. Here, an analysis of London Borough's Unitary Development Plans (UDPs) and Transport Policy and Programmes (TPPs) shows that walking is mainly seen from a safety/security or recreational walking perspective and rarely proactively encouraged as a mode of transport in its own right.

2.8 Finally there is the argument that walking is essentially a local activity, and as such is a matter of local responsibility and planning. In view of what has been said above, the strategic dimensions to walking and pedestrian activity can be summarised as follows:

1 Every journey made on foot is potentially a (probably longer) journey that could transfer to a motorised mode. An increase in the relative attractiveness of motorised modes may result in a switch from walking, and thereby increase the negative externalities of travel.

2 Maintaining and improving the attractiveness of public transport depends on good access by foot to and from stations and stops. Walking is therefore an essential part of any public transport strategy.

3 Walking is extremely sensitive to distance, and as such is dependent on the design and location of activities, and these in turn are dependent on the development market and the planning framework, both of which have a clear strategic dimension.

4 While the implementation of pedestrian policies and schemes may be essentially a local matter, such action is determined at least in part by non-local considerations, such as traffic regulations and other legal provisions, design guidance, skills and training.

5 Pedestrian activity can be an important component of other urban objectives, for example the vitality and viability of town centres, health promotion and recreation strategies.

6 Walking has been so systematically ignored by transport and urban planners that a wider and more comprehensive approach is needed to raise the level of understanding and awareness of the issues, and to bring about significant improvement.

2.9 Before discussing other aspects of the contribution that walking could make to London's transport strategy, a restructuring of our view of walking is necessary

to better understand how policy can be developed. "Getting from A to B" is a totally inadequate way of describing the pleasure and status that people receive from owning cars, or indeed the extent of "forced" car ownership and use. It is an equally inadequate description of walking. The next task therefore is to ask ourselves what we really mean by the term "walking".

What is Walking?

2.10 From the variety of approaches and studies identified in the information gathering exercise, and the work for this study, it is clear that there are several different roles fulfilled by the walking mode. One or more are the subject of various studies or policies, but it is rare to find a comprehensive picture of walking which brings them all together. The different roles can be clearly separated, and differ somewhat from the roles fulfilled by other modes of transport.

2.11 This study therefore divides the walking mode into four different categories in order to understand the full range of pedestrian movement, and how to measure it and cater for it in the overall strategy. The four categories are as follows:

Access Mode: where walking is used as the sole mode between two places, for example home and workplace, shop or school;

Access Sub-Mode: walking is a necessary adjunct to the use of other modes, for example getting to and from bus stops, stations or car parks;

Circulation/Exchange Mode: includes window shopping, meeting people in the street, children's play, interfaces between shops and cafes and the street, and a wide range of public space activities which cannot be described as traffic or travel;

Recreation/Leisure Mode: includes long distance walking, and more local activity such as "going for a walk", sometimes without a particular destination.

2.12 This division will be useful in defining data collection as well as in designing improvements for the different types of walking activity. The availability of data is discussed in more detail below, but for the first two walking categories some is available, while for the second two there is very little.

2.13 Circulation/Exchange is now beginning to be recognised in theory, but is not identifiable from simple flow counts. Leisure walking is also not generally quantified in London, but its importance is recognised in the various planning initiatives to develop Thames-side and other long distance walks. Specific data suggestions are made later in this report.

2.14 As well as producing a separate review of the information gathered, key examples are included in this main study report to illuminate specific points as they arise. From the point of view of both data collection and policy implementation, Copenhagen provides a well documented study example for the circulation mode of walking.

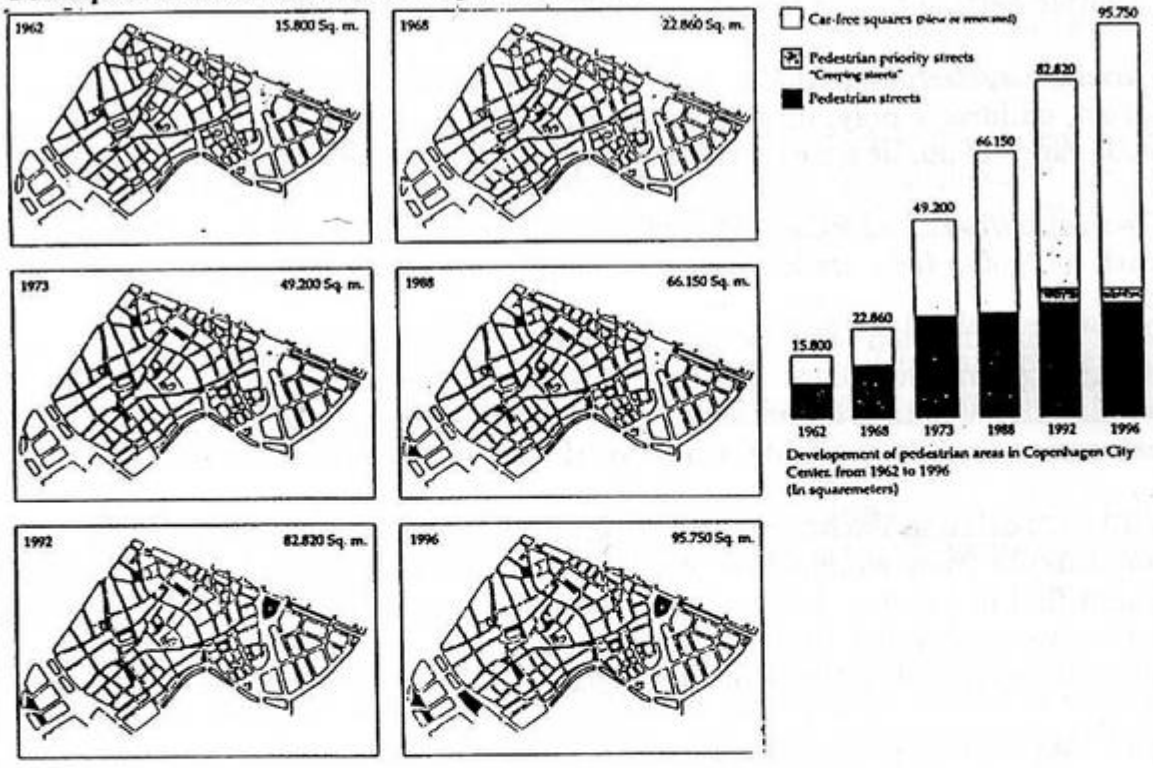
Study Example: Copenhagen

Active use of public space in central Copenhagen increased by more than three times between 1973 and 1995, reflecting a double policy of reducing traffic and parking, and converting space for use by people. Most of the increases in public space have been in the form of squares formerly taken up with parking. The increase in the number of people using public space in the centre corresponds closely to the increase in square metres made available for the purpose. Thus the number of people per 100 square metres of pedestrian space has remained stable at about 8.3, but the increase in such space (from 20,500 to 71,000 sq. m. between 1968 and 1995) has led to a 337% increase in people. This increase is related to cultural as well as demographic changes in the city.

Source: Jan Gehl, 1996.

Part 1. THE SPACES -34 years of gradual improvements to the city center.

Developement of car free streets & squares 1962-1996



The Copenhagen City center in 1996

The nature and extent of walking in London

2.15 Data on walking in London is woefully inadequate, even for the purpose of establishing the extent and character of present walking activity, let alone the monitoring of policies to encourage it. Nevertheless, it is clear that walking is the largest single category of movement in Inner London, and also for the whole of London when all the categories of activity on foot are taken into account. It is estimated that of all journey stages, walking fulfils at least half of the total. The extent of walking in London is explored next in this report, drawing on two main sources of data: the London Area Transportation Survey (LATS) which was carried out in 1991/92, and the London sub-sample from the National Travel Survey (NTS) which is undertaken continuously and which has data available for 1991/93.

2.16 According to LATS, walking in London is a very significant mode of transport. It rises from 20.8% of all trips in Outer London to 28.6% in Inner London. Walking is more important for certain purposes, for example shopping, where it holds a share of 27.9% in Outer London, rising to 40.9% in Inner London (source: LATS Household Survey). However, even this substantial figure underestimates the true extent of walking in London.

2.17 First, a cut off point of 200 yards below which trips were not recorded was used in the 1991 survey (this had not been used previously). This means that walking will be generally under-represented and that comparisons with previous years are difficult. Even without this problem which is specific to LATS, it is also the case that traditional surveys tend to under-report walking. Similar problems have been reported from the Netherlands and Switzerland.

2.18 In addition, the figures given in LATS are for walking's share as the main mode, by distance, and thus refer only to "access mode" from the four categories of walking set out above. For example, LATS may have picked up some recreational walking, but this is difficult to find. The combined Hotel/Holiday classification is less than 0.5% of all trips by London residents and no trips at all for this purpose were recorded in Outer London. Data on walking which supports another main mode (such as bus or train) can be extracted, but again this will be unbalanced due to the 200 yard cut off.

2.19 Overall the conclusion must be that LATS data strongly support the profound importance of one aspect of the walk mode (access), but do not cover the others. In addition it is likely to underestimate walking overall. Although the National Travel Survey sample in London is smaller, the cut off beyond which trips are not counted is shorter (50 metres). This sample gives an overall figure of 34% of all trips in London using walking as the main mode: significantly higher than LATS.

2.20 The NTS can also be used for comparisons over time, and suggests that walking is losing modal share in London, but much more slowly than in other towns and cities. Between the 1975/76 NTS analysis and the most recent (1992/94), walking fell from 36% to 34% of all trips in Greater London. This was

associated with a slower rate of increase of car use, and a slower decrease of public transport use, than elsewhere. This must be due in part to slower growth in car ownership and use in Inner London.

2.21 Again compared to other UK urban areas, NTS shows that walking in London actually had a slightly lower share of all trips than elsewhere (by about 1%) at the start of this period (1975/76), but is now clearly ahead (by 3-6%). It appears that outside London, even in the major cities, car use has grown rapidly mainly at the expense of walking and bus use.

2.22 The NTS also provides information on trends and differences within the capital. As might be expected, residents in Outer London undertake about twice the number of car journeys as residents in Inner London, while the latter undertake 73% more walk trips. Overall, in Inner London, 45% of all journeys are made entirely on foot, compared to 30% by private motorised means. In Outer London, the figures are 25% and 58% respectively (Source: NTS 1991-3). These figures relate only to the first category of walking (access) identified above.

2.23 Walking by residents of Inner London appears to have increased by about 15% between 1985/6 and 1991/3, raising its mode share by 5 percentage points. Car's share fell slightly, but the main loser was public transport. By contrast, in Outer London over the same period, walk trips have declined by 18%, reducing the mode share by 5 percentage points. Most of the gain in modal share was by private car (special tabulations NTS 1991-3, see Pharoah and Apel 1995).

2.24 For the journey to work, which accounts for around one quarter of all journeys, the walking share has declined slowly in Inner London between 1971 and 1991 from 19% to 13%. In Outer London the decline has been sharper from 15% to 9%. In both areas the continued decline of public transport trips also means that less walking in the "access sub-mode" category can be assumed.

2.25 LATS provides some comparisons over time but only for mechanised modes (Source: LATS Time Series Database 1971-91, in Beardwood et al, 1995). For example, growth in cars per person in Inner and Outer areas was about the same between 1971 and 1981, but from 1981 to 1991 growth in Outer areas was 15.5% compared to 10.5% in Inner areas.

2.26 These figures illustrate several aspects of walking in London and recent trends. However, it is difficult to draw absolute conclusions from what is available. For example, the high residential density of Inner London, the difficulty of parking or driving a car, and the relative stability of its urban form appear to have slowed down the trend towards non-sustainable modes of travel. However, it is also possible that these factors coupled with the increase in traffic congestion have deterred people from using the bus.

2.27 On the other hand, Outer London continues to show signs of strong growth in car ownership and use, and a decline in walk access mode. This has implications for policy there, but also for the region as a whole.

2.28 For example, the parking and congestion constraints operating in Inner London may lead to a longer term decline there if car based development is allowed to expand in Outer London and neighbouring Counties. If this is to be avoided there must also be a positive approach to the quality of non-car modes of travel, and to offering environmental benefits for doing without so much car travel.

2.29 Thus the policies on transport and urban form which are pursued in Outer London, and which themselves are related to centres in the rest of the South East, will be critical to the achievement of sustainable development. While the emphasis in Inner London will be on improving the quality of the walk experience, greater emphasis will be needed in Outer London on the creation of strong neighbourhoods linking to strong centres. The challenge will then be to make those links as attractive as possible by non-car modes and maximise walking within that mix.

2.30 This provides an opportunity to maintain and enhance walking, and also requires action to restore the position in Outer London, where the opportunities for new car based development are higher. Overall the structure of London, with mixed uses and multiple centres provides the potential for more walking, but at the same time is particularly vulnerable to the adverse effects of motor traffic.

2.31 This review of data from LATS and NTS poses serious questions but provides at least one clear conclusion. It is that walking as a mode of travel in London is a very significant component of the transport mix. When other walking activity is added, such as access to other modes, street activities both in residential and shopping centres, and recreational walking, the prime importance of walking in transport policy is confirmed.

2.32 London lacks an all-encompassing database for walking. However, it is interesting that data collection relating to walking at present mirrors the balance of planning policies in London in focusing upon accidents and safety. For instance, the London Accident Analysis Unit at the London Research Centre collects and analyses an extensive set of data relating to walking accidents in the capital. It is important to develop a more comprehensive database on walking in London as a basis for developing and justifying relevant transport and land use policies. In addition, a major initiative on data should coincide with an awareness campaign on walking, not only aimed at the public but at professionals across a wide range of disciplines.

Why walking is undervalued

2.33 Walking is such an everyday part of life it can be taken for granted to the point where no effort is made to protect the conditions in which it takes place, or to set about their positive improvement. Except for those whose mobility is seriously impaired, we are on foot for many of our everyday activities, even the routines of washing, cooking, and going to bed depend on movement on foot within the home. Getting to other locations also depends on walking, even if it is only to get to the car, or between one shop and the next. The average visitor to a

hypermarket may walk a quarter of a mile within the shop. The city itself has been developed with walking facilities as a basic design requirement. Virtually every road and street in London has a footway along both sides of the carriageway, even though the quality sometimes falls well short of what is desirable.

2.34 Perhaps it is this omnipresent "ordinariness" of activity on foot which has led to the situation in which many agencies can and do influence its quality, but without any clear focus of responsibility or duty for its improvement. Even within authorities different departments and disciplines are involved. Walking quite literally crosses many boundaries within transport, planning and urban design.

2.35 For example, the same infrastructure used for walking from A to B also provides for other users of public space. Responsibilities for its provision and maintenance need to reflect more than traffic interests, but this is not commonly the case. Many public footways in the heart of London are the most degraded, neglected and poorly designed parts of London's fabric.

2.36 In addition to the quality of the walk experience, there is the all important question of whether there is anywhere to go within walking distance. Whilst in theory this falls within the influence of local planners, education, health and other public bodies as well as private companies, little evidence has been found of any consideration of this critical land use dimension.

2.37 It would seem that this all-embracing aspect of walking, which makes it difficult to place in decision making terms, is at least one of the key problems in developing or implementing a strategy for walking in London.

2.38 A further problem is that while major infrastructure projects attract a lot of attention from planners and decision makers, they may benefit a surprisingly narrow group of travellers. For example, long distance commuters into Central London are an important element of travel in London, but represent only a part of the travel picture. Schemes to assist walking tend to be cheap and do not have the glamour and status of cars or trains. Instead of this cheapness making improvements to walking more attractive, it seems to cause them to slip off the main agenda. This requires a fundamental change of attitude from practitioners.

2.39 This is mirrored by the public's view of walking, which sometimes appears to be that it is so basic to everyday activity that it is hardly considered as "transport". This is reflected in the under-reporting of walking in transport surveys, in addition to any deliberate cut-off for journey length, such as that found in LATS. Evidence on this came from group discussions which were part of an MTRU study for LT Buses (MTRU 1996). Participants found it difficult to consider walking in the same way they did using the car or bus. Swiss and Dutch examples of work identified for this study suggest a third of walk trips may be missed when carrying out surveys.

2.40 Thus one area of work which needs to underpin a developing strategy is raising awareness of the importance of walking, and remembering not to take it

for granted. One simple step would be to make the importance of walking, even in present conditions, more widely known. The encouragement of walking will also be greatly assisted by such a change of attitude.

2.41 Walking, then, is a very necessary but very commonplace aspect of life in London, and this can lead to it being undervalued or even ignored in the planning of land use and transport facilities. However, there is little room for complacency just because it is still so widespread. The expansion of motorised travel, particularly in Outer London, continues to diminish the pleasure, safety and feasibility of walking.

Transport and walking: a vision for London

2.42 Before discussing the role of walking, it is important to set down a few key transport requirements within which walking must fit.

- for personal travel, a high degree of access to other people and to facilities;
- an efficient system of goods distribution;
- minimisation of costs, in the widest sense of that term.

Access is not the same as mobility, even though some degree of mobility is usually required in order to achieve it. Short journeys are as valuable to the travellers themselves as long ones provided that they fulfil the same purpose - in fact they are to be preferred if they save the travellers time and money. From everyone else's point of view they are also far preferable, since they reduce all the social costs of transport: accidents, consumption of finite resources, pollution, noise, the need to invest in damaging infrastructure. Best of all, in order to minimise these costs, are journeys made on foot, and the shorter the journey the more likely it is to be walked. For journeys too long to be made on foot, costs are minimised if they are made by bicycle or by walk/public transport.

Urban form

2.43 The achievement of these aims is not only a matter of transport planning - a suitable urban form is at least as important. Three important requirements can be identified: a fairly compact urban structure with high densities; as many facilities as possible to be provided within each neighbourhood; and those that cannot be provided within each neighbourhood to be grouped in locations with good public transport access.

2.44 How does London measure up? Densities have never been as high as in continental cities - they are much lower than in central Paris. However, in compensation London has more open space, both public open space and private open space in the form of small gardens, within the city. What is worrying, however, is the way that densities have been declining over the years as people

have moved out. This makes it harder to support local facilities and public transport. It has given rise to longer journeys as well as to the destruction of much precious countryside. One aim of policy should be to reverse this trend.

2.45 London as a 'collection of villages' has always provided a wide range of the facilities needed for everyday life within each neighbourhood. But this traditional and very convenient structure is under threat from the tendency of facilities of various kinds - shops, hospitals, doctors' practices, schools, post offices, recreational centres - to become larger and fewer. Another aim should be to check and reverse this trend.

2.46 London has a strong centre well served by public transport, but there are some disadvantages with the present form and role of the centre. The concentration of jobs there gives rise to very long journeys to work, highly wasteful in terms of time, resources, and pollution. It is unfortunate too that low residential densities in parts of the centre make many areas rather lifeless outside normal working hours, and architecturally many buildings which once made fine houses make rather poor offices. So a long-term aim of reducing commuting to central London and to increasing the number of people living there, (partly by restoring houses converted into offices to their original use) would allow more activities to be reached on foot. For further discussion of these issues see, for example, Sherlock, 1991.

Planning for transport

2.47 Given a suitable urban form, transport planning should be concerned with the infrastructure and services provided and also with the rules for their use. The most important rules are those concerning the use of cars. Historically, the principle of indiscriminate use has applied: any vehicle might use any road at any time, provided only that both the vehicle and driver were licensed and roadworthy. Of course, drivers also had to comply with the ordinary rules of the road: driving on the left, observing the speed limit, stopping at traffic lights when they were red, giving way to pedestrians at zebra crossings etc.

2.48 Such rules might have been adequate when car ownership was very low, but it has been clear for many years that they are not adequate now. Everyone has suffered from the attempt to squeeze more and more vehicle capacity from the existing roads, especially through the loss of amenity and convenience for those on foot.

2.49 The alternative to indiscriminate use is selective use: some car journeys must be restrained if urban transport is to work properly. There is still some reluctance to accept this because the word 'restraint' sounds negative, a restriction on people's freedom. This feeling is misplaced. Well formed rules are not a denial of freedom but the condition of it. The ordinary rules of the road should remind us of that - there would be chaos without them.

2.50 Other related misconceptions also stand in the way of progress. One

concerns choice: the idea that demand management would be wrong because it would limit people's choices. Some forms of traffic restraint (not all) would limit the number of options between which people would have to choose but the quality of the individual options would be greatly improved. Nor is this an "anti-car" philosophy. There will always be occasions, even when the alternatives to cars have been greatly improved, when to use a car would be especially convenient and would not impose undue costs on others. To ensure that cars can be used in reasonable conditions on those occasions, requires a reduction in their use at other times. Finally, it is a mistake to think that transport efficiency and the urban environment are always in conflict. The excessive and indiscriminate use of motor vehicles threatens both alike.

2.51 The car journeys which are the best candidates for restraint are those which are of least value to the car drivers and passengers themselves and those which impose most cost and nuisance on other people. The car journeys of least value to the car travellers themselves are those for which good alternatives either already exist or could be brought into existence through restraint. In this connection, it is important to recognise that not all the car travel that now takes place is desired by the people who make it. Some represents forced consumption, which people make with reluctance simply because the alternatives are now inadequate.

2.52 There are many short journeys now made by car for which walking or cycling or buses could be good and even preferable alternatives. If one characteristic of a well designed city is that everyone should have a wide range of destinations within walking distance, one characteristic of a well managed one should be that no one should be deterred from walking by poor conditions.

2.53 Car journeys to town centres usually cause more cost per mile to other people than other car journeys, both in the centre itself and on the approach roads, because of the density of activity there, not least pedestrian activity. They are also the car journeys for which it is easiest to provide a good public transport alternative, since public transport tends to be focussed on town and city centres. Restraining traffic to such centres would also create the opportunity to provide for people who would like to live in an urban environment as far as possible free from motor vehicles. There must be a great many of them and it is in everyone else's interest to cater for such preferences, but at present nothing is done for them. New rules for the use of cars, so far from restricting choice, would in this instance create a valuable new option which could not otherwise exist.

2.54 So the role of a car in a well managed urban area would be first to serve the needs of people who by reason of some disability or some special circumstances would find difficulty with the alternatives, and beyond that to cater for journeys which would be too long to make on foot or bicycle and are not well served by public transport. Examples would be orbital journeys cutting across the radial public transport routes, perhaps from one residential district to another, and journeys made in the late evening.

2.55 Such journeys should not cause much congestion, but there is still a need to ensure that the danger and environmental nuisance are minimised. Even in these cases there are under-developed opportunities for public transport. The success and expansion of the night bus service in London is good example. In the long term, another part of the solution lies in vehicle design but far beyond the changes envisaged at present, which requires action at the national or international level. In the short term the main means to achieving these objectives will have to be traffic calming: the use of road engineering techniques to influence drivers' behaviour, especially their speed.

The vision

2.56 The vision for a transport policy for London which fully respected the fundamental role of walking should therefore include:

1 A city structure in which the need for long journeys is confined to accessing specialised activities requiring the support of large catchments such as London or the South East region. These journeys would be provided (as at present) mainly by public transport, which in turn is accessed by foot.

2 Local land use planning would enable less specialised activities to be reached on foot for a large proportion of the resident population, with easy access by cycle or public transport for the remainder. This will require the protection and enhancement of local centres and sub-centres.

3 The current street pattern, with a continuous network for vehicles, and a constantly interrupted network for walking, will change to one where people on foot have a largely continuous network. For example, footways will continue more at one level across junctions, crossing distances will be reduced on main roads and priorities changed in residential areas.

4 The role of the car will be better understood and catered for: mainly when the value of a journey to the user is high, and community cost is low. It is likely that there would be less car traffic overall.

5 The bicycle and public transport would provide the main means of travel when distances were beyond those which could easily be walked.

6 In such circumstances the quality of travel by each street user mode, walk, cycle, bus and car, would be improved, and the environment of those not travelling would be less polluted.

2.57 London could be a fine exemplar of this vision: a large centre with cultural activities, specialist employment, more housing, lived in by people who want and are easily able to live without cars; other town centres where, even if they were not completely traffic free, pedestrians would predominate; much reduced traffic on the radial roads with reliable buses running freely, more time and space for pedestrians, the elimination of bursts of high traffic speeds; traffic-calmed

neighbourhoods which people would enjoy, where they would feel safe, where they could find most of what they want for everyday living. But to realise this vision requires a reversal of most elements of the policy and practice that has applied in recent years.

3 DEVELOPING A STRATEGY FOR WALKING

The need for a strategy for walking in London

3.1 A strategy for walking and pedestrian activity is necessary for the achievement of various London-wide objectives, and to ensure that London plays its part in the achievement of certain national aims. Attention paid to pedestrian needs in London has tended to focus at two levels. Pedestrianisation schemes and measures to make the pedestrian environment safer and more pleasant at a 'micro' level have dominated literature and practice in Britain over recent years. At a broader scale, attention has fallen upon the development of pedestrian networks - often mainly for recreation purposes - on a metropolitan-wide basis (e.g. the work of the London Walking Forum). In between these two levels, there are several disparate strands of policy such as walk-to-school initiatives. There appears to be a "gap" in terms of policy provision for pedestrians in the lack of a coherent, strategic approach tying together the above themes in a holistic manner with the overall synergistic aim of encouraging walking as a mode of transport. This situation persists despite the development of more pedestrian-friendly policy emanating from central government in policy documents such as PPG13.

3.2 A particular requirement in London (and other large cities) is the need to ensure travel patterns which best support the objectives in relation to the distribution of activities. For example, there is little point in planning for a hierarchy of centres if there is no transport strategy to support it.

3.3 While there are many opportunities for improving walking as a mode of travel in London, there are also many valuable assets and good features which put London ahead of many other places both in Britain and in other countries. The very high proportion of journeys to London's traditional centres that are made on foot is a notable example; another is the high proportion of journeys made by public transport, with walking as the main access mode to bus stops and stations. In addition, London offers an enormous variety of outdoor enjoyment, from the teeming crowds of Leicester Square and Covent Garden, to the more peaceful pursuits in the many parks and open spaces, and varied recreational long distance walks. London also offers people on foot at least some reasonable provisions: for example crossing facilities are provided at many busy junctions in the central area, and over the past ten years dropped kerbs have been provided extensively.

3.4 The advantages of walking include:

Almost universally accessible
Non-polluting
Healthy
Cheap
Versatile
Largely accident-free in vehicle-free environments
Enjoyable

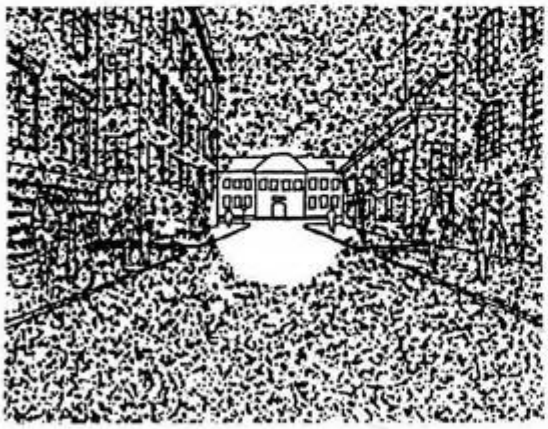
(Cleary and Hillman, 1992, offer each of these with the exception of "enjoyment", and argue that these attributes apply also to cycling.)

3.5 The disadvantages of walking as a mode of travel relate either to the circumstances of the journey (too long, too dangerous, too uncomfortable, need to carry heavy or bulky items), or to the limitations of the individual concerned such as infirmity or disability. Not all of these disadvantages can be overcome through planning or infrastructure measures, although some of them, such as attractiveness, can. This is illustrated in the following study examples.

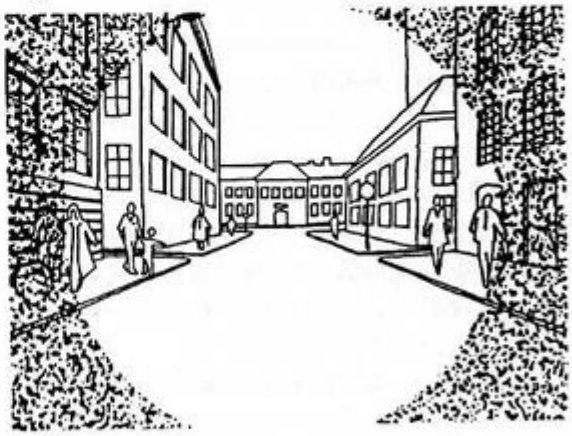
It's Good to Walk ....
Walking is the best way to appreciate one's surroundings

Field of vision (cognitive) at different speeds

30 mph



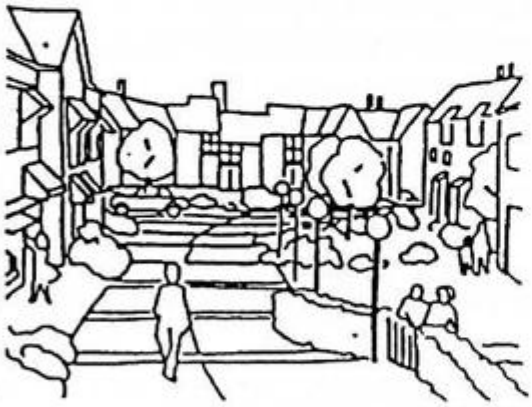
20 mph



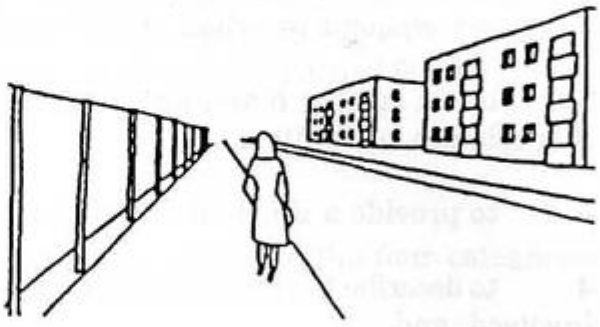
4 mph (on foot)

.... if the walking is good

Attractive



Unattractive



3.6 The results of improved walking conditions may be summarised as follows:

Increased walking trips and consequent reduction of vehicle trips,
Benefits of greater safety, comfort and enjoyment for existing pedestrians, as well as attracted to walking in the future,
Enlargement of effective bus and rail catchments,
Encouragement of public transport use and wider catchments,
Encouragement of use of local facilities, strengthening local economies, and reducing travel and motorised trips,
Better health,
Stronger local communities,
Greater security in the public realm, and hence greater freedom, especially for women, the young and the old,
More vitality in public spaces,
More personal enjoyment of travel,
Greater independence for those without exclusive access to other transport (especially children),
More independence for those whose mobility is impaired.

3.7 Walking is a major activity, not only as a means of transport but as the mode which enables the use of all other modes of travel. Walking is involved in virtually all trips. In addition, whenever people are outside the home or other building they are participants in one or other type of "pedestrian activity". This is not solely concerned with moving from one place to another, but also stopping, standing, looking, waiting, sitting, talking, playing, reading, and so on. Walking is also a form of exercise and recreation. Walking allows greater enjoyment of one's surroundings than is possible when using of motorised transport: the appreciation of detail, of smell, texture, sound. It is more conducive to conversation than travel by other means. Walking is also an important system for goods distribution and collection: local journeys in London reveal a majority of pedestrians either carrying bags or using wheeled shopping baskets.

The role of a pedestrian strategy for London

3.8 The purpose of the pedestrian strategy can be summarised as follows:

1 to achieve the desired or intended role of walking in the total transport mix, and as an element in urban vitality, and as a health and recreational asset,

2 to set out the planning and transport policies and actions needed so that this role can be fulfilled,

3 to provide a timescale for action,

4 to describe the mechanisms for implementing the strategy and the agencies involved, and

5 to define the evaluation and monitoring processes required.

3.9 The first purpose will require an examination of present levels of walking, the reasons for any decline, and identification of the potential for maintaining or increasing walking activity. Of particular importance will be the role of walking vis a vis the other "green" modes, cycling and public transport. This task will involve further close examination of travel data in London, and some enhancement of that on walking. The role of walking as an element of urban vitality, urban regeneration and health promotion is less easy to quantify, but is no less important.

3.10 The second part of the strategy requires the bringing together of pedestrian planning techniques already used, or which could be adopted, drawing on experience and theory from a range of sources, such as included in the companion Technical Report. In addition, pedestrian planning needs to become an integral and essential part of the planning and implementation process in London. Given that this is a new requirement, the first strategy document is likely to give strong emphasis to issues of organisation, representation, planning, funding and implementation processes.

3.11 The second and third parts of the strategy will require the setting of specific operational objectives and targets. To be of any real value, these must be described in such a way that their achievement over time can be measured. This is likely to involve the use of targets with clear time-scales. Such targets will need to be co-ordinated with targets for other modes of transport.

3.12 The implementation of London's first pedestrian strategy must recognise the over-arching requirements of usefulness, practicability, and appropriateness for each of the London Boroughs, and its practical value to other agencies, notably London Transport (LT), and bus and rail operators.

3.13 Successful monitoring of progress will almost certainly require the introduction of new surveys, and improvement of existing surveys.

3.14 This study does not present a complete strategy, nor should it. There will be much to be done in relation to involving the many agencies concerned with transport in London, particularly the Boroughs, and the people who represent local communities and constituencies of interest within the capital. However it is the intention to give a strong indication of what such a strategy should contain, and in Chapter 4 below sets out detailed targets and constraints as a first draft. The rest of this Chapter discusses the key elements which are needed for the evolution of a detailed action plan.

Overall aims of a pedestrian strategy

3.15 The intended role of walking in London, related to the four categories of activity defined earlier, is to:

1 enable people to reach activities locally, without the need to use a vehicle;

2 enable people to reach a public transport service, or private vehicle, which in turn will give access to a broader and more specialised range of activities, especially in Central London and the many suburban centres;

3 provide recreation, helping people to keep healthy and fit;

4 provide enjoyment, play and conviviality in streets and other public spaces, both as part of the walking activity (1-3), as a contributor to economic activity, and as a valuable pastime in itself.

Policy direction within the strategy

3.16 Flowing from these general aims will be a series of more specific targets and actions, and examples of what will need to be included are given in detail in Chapter 4 of this report. Before doing so, examples are given here of how the current data can be used to identify beneficial or damaging trends, and set out desirable changes in the transport and planning mix. These help to guide the evolution of detailed targets which are needed and which cover organisational needs as well as more familiar transport targets for example for modal split.

3.17 The strategy should include measures to increase all four categories of activity on foot, although this will vary in different parts of London. While data are not available on categories 3 and 4, recent trends in 1 and 2 are shown in Table 1.

Table 1

Trends in walking by London residents

Trips per person per year

	Inner London			Outer London		
	1985/86	1991/93	Change	1985/86	1991/93	Change
Access	401	461	+ 15%	327	268	- 18%
Sub-mode*	239	214	- 10.5%	133	142	+ 7%
Circulation	No data currently available					
Recreation						

Source: NTS 1985/6 and 1991/3 special tabulations
* Assumes one walk sub-mode trip for each public transport trip.

3.18 Given this data, it is possible to identify where the overall aims are not being met, and where action is most urgently needed. Examples of how this would influence the content of the strategy are:

1 The decline of the access mode in Outer London should be arrested, and a target set for a future increase. This should be achieved without any loss of public transport use (and hence sub-mode walk trips).

2 In Inner London, the favourable overall increase trend should be maintained, and a target should be set to reverse the decline of the sub-mode connected with public transport decline. This should be achieved through mode-switch away from the car.

3 Base data for recreation or circulation walking should be established, and targets should be set for increases in such activity, regardless of the trends in access and sub-mode activity. These increases are partly to serve non-transport objectives (security, health, vital and viable centres). It is believed that such activity has increased in parts of Central London, with noticeable increases in outdoor entertainment and refreshment. The targets should also relate to increases in street activity elsewhere, including perhaps "home zones" (with space for play and enjoyment and sub-10mph traffic speeds), as well as 20mph zones.

4 In seeking such increases in walking activity, it is important that this is not achieved at the expense of cycling and public transport use. Current initiatives to increase cycling in London may well reduce the amount of walking and bus use in particular (Kingston-upon-Thames, 1994). There may be no serious environmental problem with such a shift, but equally there is unlikely to be much benefit. Real benefit will only arise if there is a shift from the more space-consuming and polluting modes towards the more environment-friendly modes.

5 The strategy should emphasise the walk/public transport combination as well as addressing the relationship between walk, cycle and bus use. This illustrates the need to relate walking to other transport policies: for example improving foot access to stops and stations will be negated if bus and train services decline in frequency and quality or fares go up. In addition, measures to increase the attractiveness of walking, cycling and public transport ("pull" measures) will be unlikely by themselves to achieve much shift away from the car, and "push" measures to directly restrain car use will be required. Parking control will be one of the most effective tools available.

Elements of the strategy

3.19 The strategy to increase and improve walking and related activity is discussed below under four headings:

1 ***The land use dimension***
2 ***Total journey quality***
3 ***The Five "Cs" (Walking conditions should be: Connected, Convenient, Comfortable, Convivial and Conspicuous)***
4 ***A culture of slowness***

The land use dimension

3.20 Planning for walking requires the application of sensitive locational and spatial policies. The reason for this is twofold. First, walking is feasible only for relatively short distances, so activities must be close together. If the separation between activities is greater than the maximum walking threshold distance, then the journey between them will involve a vehicle. No other mode of travel is so sensitive to distance. Second, the decision to walk is sensitive to the quality of the immediate surroundings. People on foot can experience the positive aspects of slow movement through the city, but equally they can more easily be deterred by negative qualities such as danger, noise, dirt and ugliness. Land use planning is the main instrument for arranging new development in such a way that walking is feasible, while street and urban design, together with traffic management will determine the quality of walking.

3.21 In deciding to make a car journey, it matters little if planning has resulted in the journey being three miles or four miles, but for walking, if the distance cannot be kept under a mile, then the walk option is excluded for most people. As J.R. of "Dallas" once said when asked why people don't walk in that city, "it's too far to where you're goin' from where you bin".

3.22 Some basic elements of land use planning that are conducive to walking are contained in the Government's Planning Policy Guidance notes in relation to town centres (PPG6, July 1996), and transport (PPG13, March 1994). Further explanation and examples are given in the PPG13 Guide to Better Practice (Departments of Environment and Transport, 1995). The main elements are high densities, mixed uses, concentration of non-residential activities related to public transport nodes and town centres, and development of complementary transport and traffic measures. Guidance is also given on detailed design to create lively and safe streets, a point also dealt with in DOE Circular 5/94 "Planning out Crime".

3.23 Successful development for walking is primarily a matter of scale and catchment. Large scale uses which attract or require large numbers of people inevitably have a large catchment area. This means that only a small proportion of users will be able to walk. For many years key activities, such as shops, schools, health and recreation facilities, have tended to become more concentrated on fewer sites, which has increased distances, making it increasingly difficult for people to reach them foot, and thus fuelled the growth of motorised travel. Such large scale uses should therefore be avoided, unless they are in locations well served by public transport, and with restricted parking. Central London is the prime example of such a location, though larger suburban centres may also meet the criterion.

3.24 The loss and decline of local facilities could be a major factor in the decline of walking in Outer London, and consideration should be given to measures to support and encourage such facilities. Examples of possible action are the reduced business rates to encourage rural facilities now being considered by Government.

This could be extended by excluding the first 100 square metres of floor space from rates, and discounting the next 1-200 square metres. Small businesses in Vienna are already subsidised as part of planning policy.

3.25 Specialised activities, even small scale, attract people from a wide catchment. There is little chance of enabling a high proportion of trips to such activities to be made on foot, but they can be well served by public transport if they are retained and encouraged in Central London.

3.26 All significant new developments should be subject to a travel audit which determines the trip generation, the likely catchment, and the mode split (see paras 4.17-18 below). If the mode split targets cannot be met, then the development should be refused, or revised to serve a smaller catchment, or relocated to where the targets can be met. Such audits would go beyond "Traffic Impact Assessments" which are mostly concerned with the ability of the local road network to absorb predicted increases in vehicle traffic (Institution of Highways and Transportation, 1994).

3.27 Small developments should not be excluded altogether from travel audits, because of the cumulative traffic impact. However, instead of individual audits being prepared, area audits could be developed to assess the appropriateness of various types of small scale change, for example residential conversions, change of use, infills and extensions.

3.28 Apart from scale and specialisation, the other key land use component is parking. Where parking is plentiful and cheap, most people with a car at their disposal will use it in preference to other modes. Equally, since there is competition for car users between, say, town centre and out-of-town locations, restricting parking in centres whilst providing for 100% demand elsewhere will lead to continued mode switch to the car. From a walking viewpoint, car parking has the additional deterrent effect of increasing distances, and creating unsightly and unpleasant walking conditions. The following actions could be taken:

Ban the provision of private off-street parking in all new developments (but allowing some public parking);
Use financial and planning incentives for the conversion of existing private parking to more productive uses (including public and residential parking);
Introduce new measures to control the creation of footway crossovers;
Prevent driving onto and across footways by legal and physical measures;
Convert existing informal on-street parking space to benefit those on foot.

Total journey quality

3.29 To those on foot the small impediments mean a lot. If people are unable to push a buggy easily across roads, or if street furniture, bins and other clutter create pinch points and obstacles, this will deter walking. It is interesting that so little weight is placed on the economic cost of poor footways. In a shopping centre a spacious and welcoming walking environment with a sense of activity and

fun is one which is economically successful. Detailed design and a view from the kerb is of vital importance, and resources will be needed for training, as well for planning, construction and maintenance.

3.30 There is also a key relationship between whole journey quality and acceptable walking distance, which is generally ignored. For example, in Zürich, a study was made of access to the central station. Walking via the Bahnhofstrasse, an attractive and lively street reserved for trams and pedestrians, produced longer acceptable walking distances than via Limmatstrasse, a less interesting main traffic street with more difficult crossings (see study example on the following page, ARF 1988). Surprisingly this relationship between quality and distance has not been the subject of any major research, and yet is of immense potential significance.

3.31 In addition it is important to understand the nature of each journey: only part of this is pure movement. If the car is acting as a mobile shopping locker or baby changing room these needs have to be addressed. Journey "chains" are important for non-work journeys generally, they too need to be fed into the equation.

3.32 There is thus a dual meaning to quality: first the total quality of achieving access: for example not just getting to the shops but undertaking the desired range of activities (this is where storing the shopping and changing the baby is considered); and secondly the quality of the journey itself and the walking environment at the origin or destination.

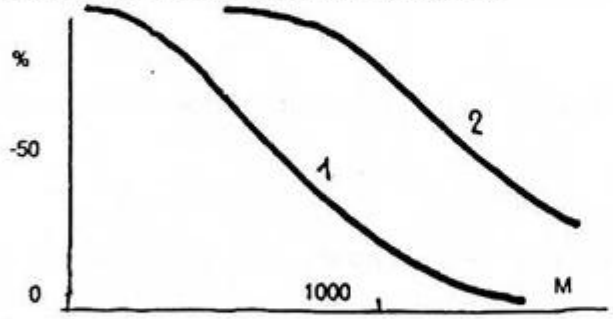
3.33 It is likely that people will walk more frequently and to further destinations where the conditions for walking are of a high quality. Thus more attractive routes for walking will increase the walking catchment both of land uses and public transport stops and stations. This is illustrated in the study examples on the following page.

3.34 London has a great advantage over many of the world's other great cities with its temperate climate. There are relatively few days in the year when walking is made thoroughly unpleasant due to extreme heat, cold or rain. Other attributes of walking conditions are more readily within the control of planners, engineers, architects and urban designers.

3.35 There have been many attempts over the years to identify the specific urban qualities which are conducive to walking and enjoyment. Some concepts have been readily established in the literature, but often have been neglected in planning and transport practice. Examples are: legibility, permeability, defensible space, and diversity. (See Boesch, 1992; Knoflacher 1995. Examples of discussion on footway quality can be found in Parsons & Brinkerhof, 1993, and also on the Internet site: Pednet.) Traffic safety has tended to dominate the planning concerns, reflected in many measures and practices which aim to protect people from vehicles, but often at the expense of their convenience.

Distance and Quality

The acceptable walking distance depends not only on destination and purpose, but on journey quality. This example is from two different routes to Zürich's main station.

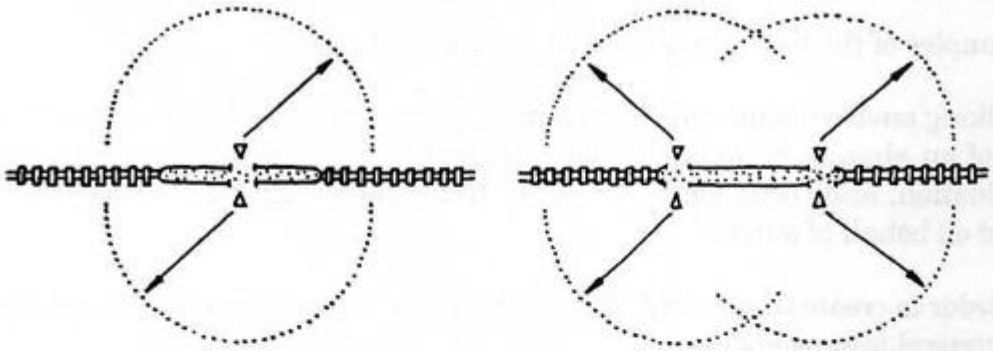


1 = Unattractive route 2 = Attractive route

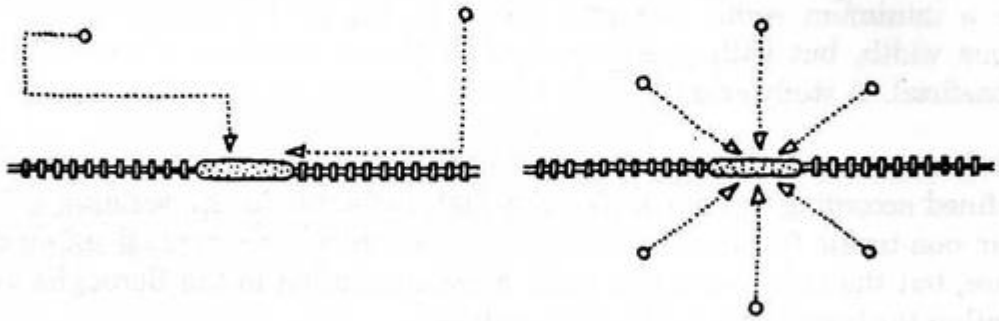
Public transport catchments

Good public transport requires good access on foot. High quality and direct routes can extend the effective catchment of stations and stops.

1 Double entrance to station increases the catchment



2 Direct routes to station or bus stop also help



The Five Cs

3.36 To help guide the development of the strategy, five key attributes of walking quality can be specified. Conditions for walking should be:

Connected:
Comprehensive network, absence of dead-ends, short street blocks

Convenient:
Direct paths and routes without detours or diversions from desire lines, and without restrictions.

Comfortable:
Smooth surfaces, more than adequate widths, absence of obstructions, no steep gradients or steps, good micro climate, good lighting, separation from vehicle traffic, or traffic calmed environment, feeling of safety and security.

Convivial:
Diversity of streetscape, landscape, buildings and activities. Landscaping and furnishing, frequent passers-by, space for relaxation, and enjoyment, interesting ground floor activities, views in and views out of buildings.

Conspicuous:
Legibility of routes, through design and through signing of streets, destinations, public transport stops, and building occupants.

(Study examples of the five Cs are shown on pages 31 to 34.)

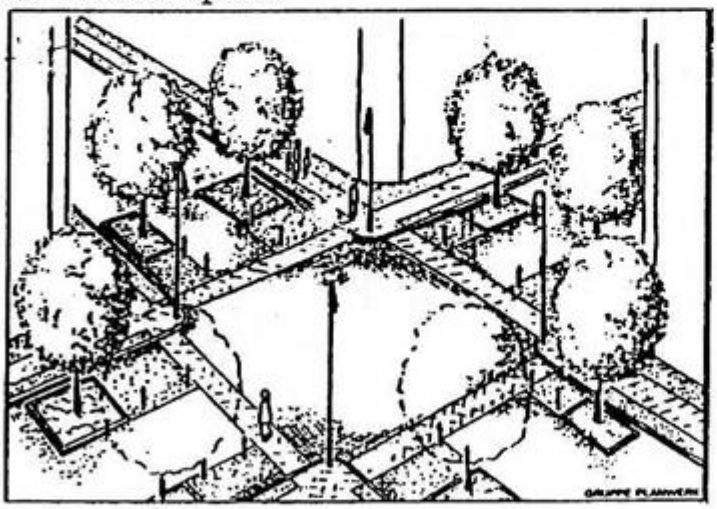
3.37 Walking environments which meet all of these criteria will be safe not only in the sense of an absence of accidents, but also in the sense of freedom from hazard and intimidation, and social safety (freedom from fear of personal attack, both for oneself and on behalf of others).

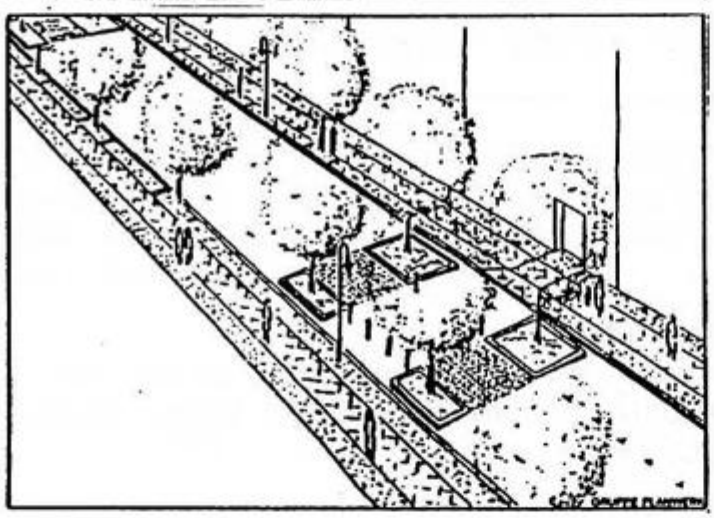
3.38 In order to create these attributes, the strategy for walking should include the following general improvements.

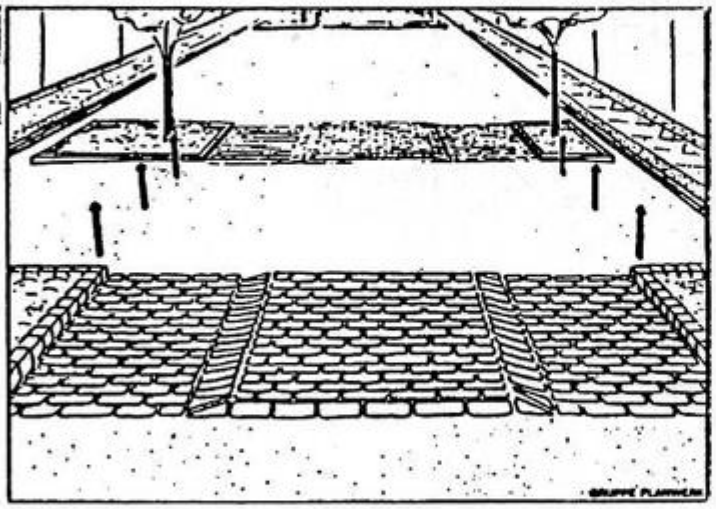
3.39 Footways should not be simply of adequate width to accommodate existing flows. To encourage walking it will be desirable to provide a quality margin. For example a minimum width standard might be set at 1.8 metres unobstructed continuous width, but with greater target widths at locations where this would prove beneficial. A study example from Austria is shown on page 34.

3.40 Default values for carriageway space should be set for different categories of road, defined according to their traffic function, their role in the walking network, and their non-traffic functions. Clearly these would not be applied uniformly in every case, but the objective would be to allow devolution to the Boroughs to take action within the boundaries set by these values.

Convenient, Comfortable and Convivial street layout
Example layouts from Berlin (Moabit) demonstration project.
Footways are at continuous level, direct, and protected from traffic by calming measures. Street trees and car free spaces improve the street as a social space.

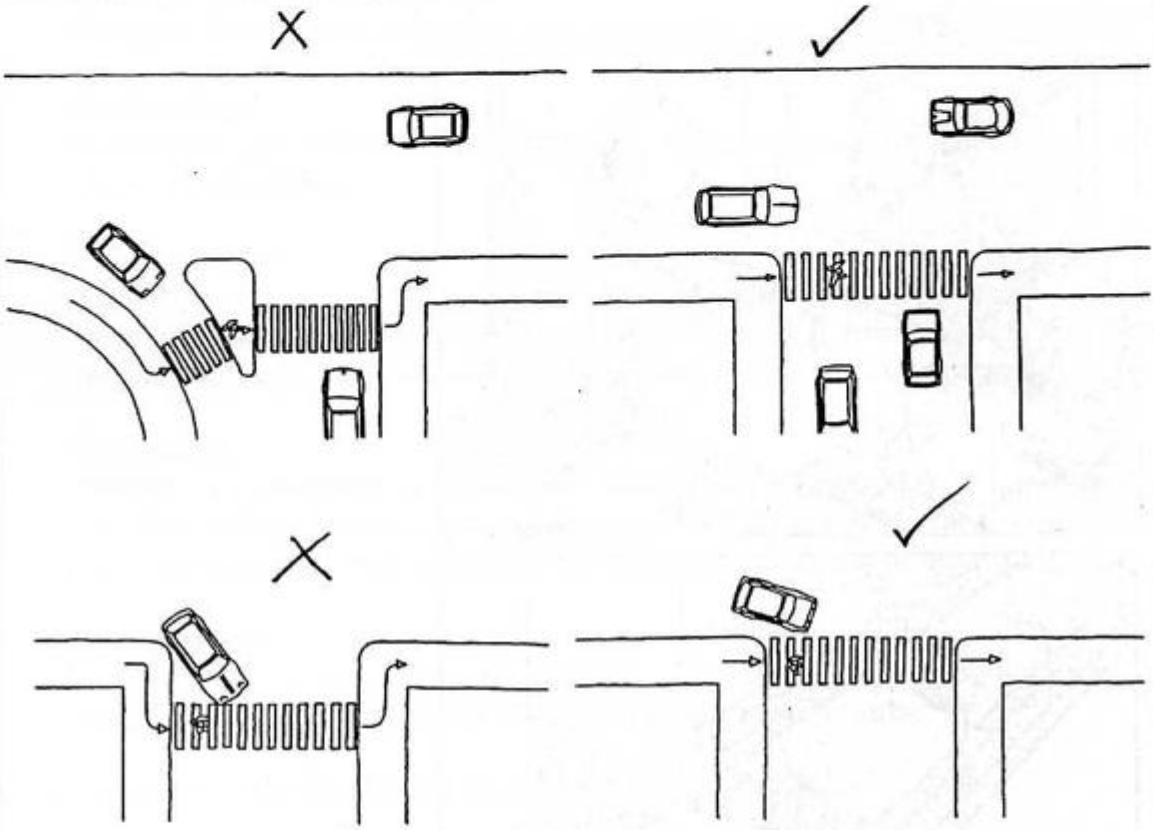






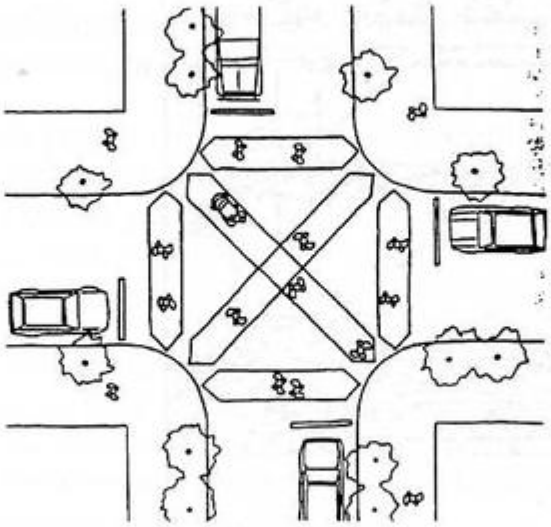
Convenient

Convenient footways should not require people to make detours for the convenience of motor traffic. Convenience requires provision along the most direct route *(VCÖ, 1993)*.



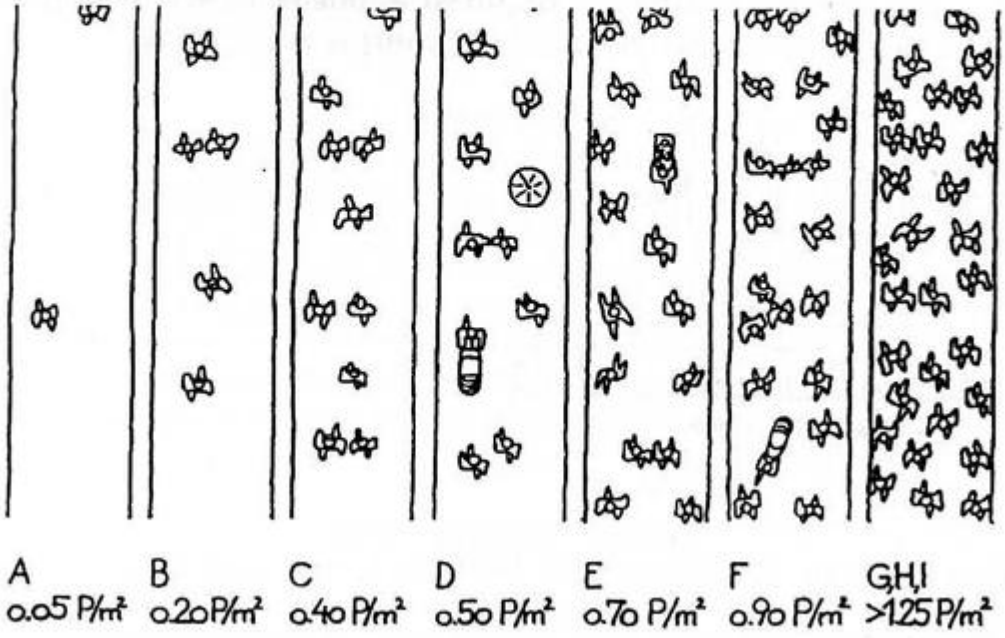
Walking priority at busy junctions

At signal controlled junctions, all-ways pedestrian phases can be provided. Footway extensions and straight ahead zebra crossings provide an alternative *(VCÖ, 1993)*.



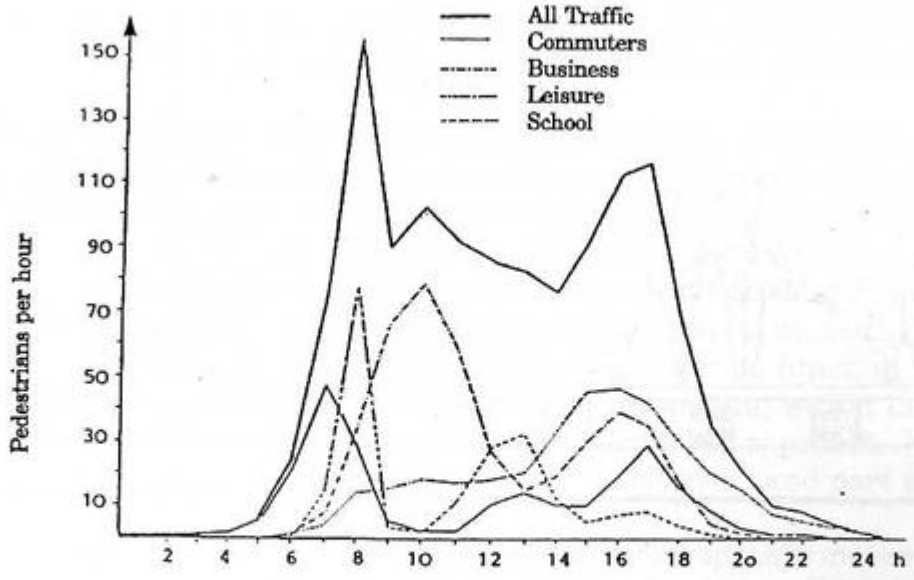
Comfort

The level of comfort depends partly on the density of people (shown here in persons per sq m). *(VCÖ, 1993).*



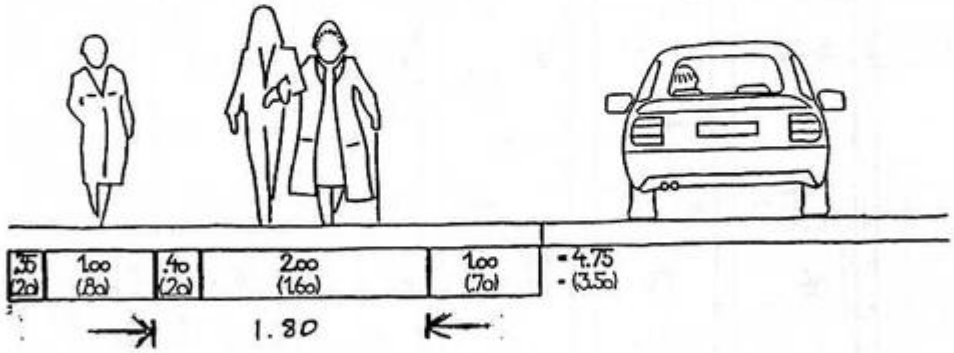
Conviviality

For streets to be safe and lively throughout the day, mixed activities are necessary. Single use areas generate people activity only at certain times of the day. The illustration shows pedestrian traffic by time of day (Vienna). *(Knoflacher, 1995)*

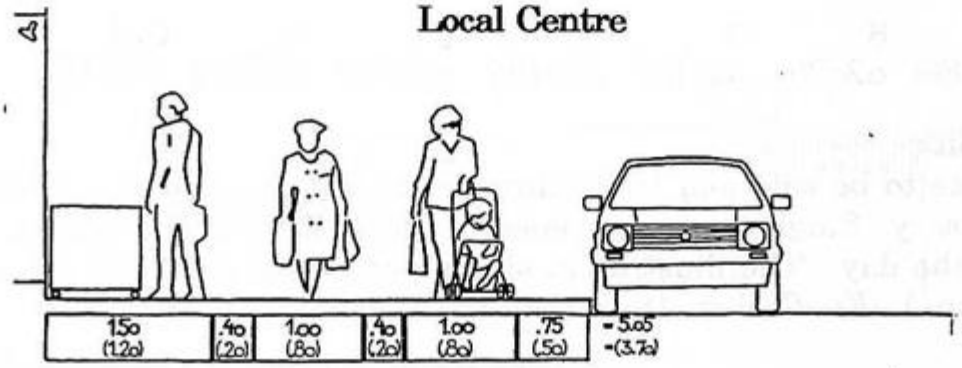


Footway width standards

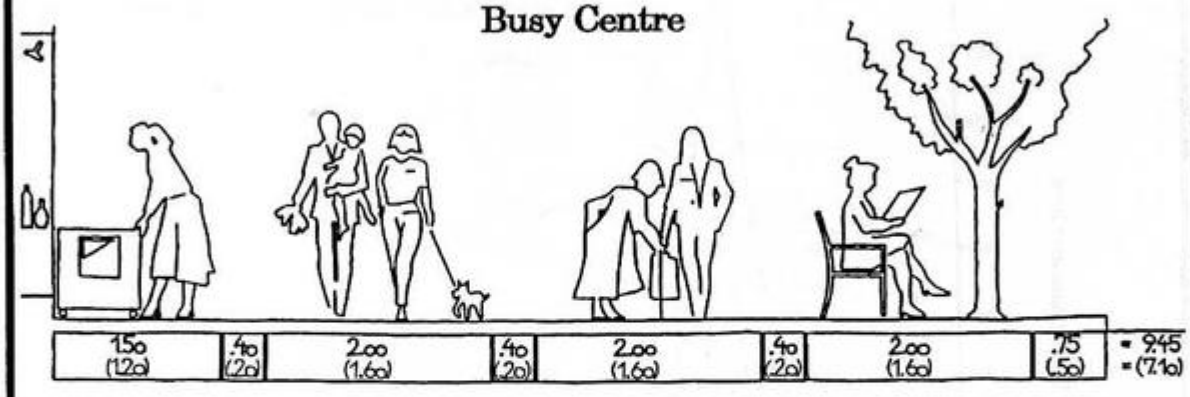
A minimum of about 1.8-2.0 metres provides reasonable comfort where both traffic and pedestrian flows are light (as in most residential areas). But greater widths are required in busier locations to provide more capacity, and also a margin for quality. *(VCÖ, 1993).*



Local Centre



Busy Centre



3.41 One possible way forward would be a classification of streets into "traffic priority", "mixed priority" and "living priority" areas. Such an approach has been adopted by Devon County Council (1991) and was explored by the East London Assessment Study (1989). An extract from the Devon document is given below.

SPEED/PRIORITY CLASSIFICATION OF ROADS

LIVING AREAS

Walking, cycling and other "living" functions have priority over motor vehicles
Speed limits to be self-enforcing by the introduction of physical measures

SUB 20 MPH AREAS

* Pedestrian areas (vehicles mostly excluded)
* Shared-surface streets with little traffic

20 MPH AREAS

* Residential and other streets with no through traffic
* "Collector" streets connecting to main traffic areas, but not designated as through routes

MIXED PRIORITY AREAS

Areas where priority is shared between "living" and "traffic" functions including sections of through routes

20 MPH OR 30 MPH LIMIT (PREFERABLY SELF-ENFORCING)

* Shopping areas, areas near schools, colleges, and other major generators of pedestrian traffic. The use of an area by vulnerable road users, e.g. school children, should weigh heavily in favour of a 20 mph speed limit (with necessary physical measures)

TRAFFIC AREAS

30 MPH SPEED LIMIT (NOT NECESSARILY SELF-ENFORCING)

* Signposted major access and through routes such as peak pressure routes where traffic takes priority, but where vulnerable road users are to be protected.

N.B. Roads with speed limits higher than 30 mph not included.

3.42 Possible default values for carriageways would be, for example, two or three lanes (traffic priority); one lane plus turning pockets (shared priority); single lane only (living priority); and any of these with additional bus or cycle lanes. The lane widths could be set for each successive category to allow all vehicles at speeds of 30-40 mph; buses, smaller delivery vehicles and cars at speeds of 20 mph; and cars at 10 mph. It should be noted that traffic priority routes do not have to form a continuous through network within London. Their prime function is to provide access within the M25. The network concept is misleading within London and is a product of a mobility based rather than an access based approach. For example, part of the A1 may be traffic priority, part of it "shared", and part of it "living".

3.43 Boroughs would be able to rebalance their street space to meet such defaults without any need to refer to higher tier authorities. Where footway or carriageway works are undertaken, traffic lane widths could be reduced to the

default values, and surplus space converted to benefit those on foot, and the non-traffic functions of the street. This can and should be compatible with bus priority measures. It is helpful to think less in terms of carriageway and footway, and more in terms of "traffic areas" and "people areas". Traffic areas will include all the space for vehicle movement, including bus and cycle lanes. People areas will provide for all the functions other than moving vehicles, for example, wider footways, seating and play areas, landscaping, parking and delivery areas.

3.44 A major redesign of junctions should be undertaken, to shift the priority and convenience in favour of those on foot. The following are examples of what could be achieved.

3.45 At all light controlled junctions walking phases should be provided on all junction arms. The maximum interval between walk phases in the cycle should be reduced, if necessary by including two walk phases in each cycle. People should not have to apply to cross the road by pressing buttons, at least at the busier locations and times. Scramble crossings should be provided at junctions in shopping streets and other locations where walking desire lines are multi-directional. Where these measures reduce vehicle traffic capacity, it will be necessary to protect buses from congestion, and to introduce additional traffic restraint. Careful design should mean that buses will not be adversely affected.

3.46 Zebra crossings should be provided on traffic or shared priority routes where there is a need for convenient and frequent crossing, but too much vehicular traffic to allow crossing "at will". Suburban sub-centres are likely examples. Crossing areas should be raised to footway level. They should generally be wider (for the pedestrian) than at present and stop lines should be set further back.

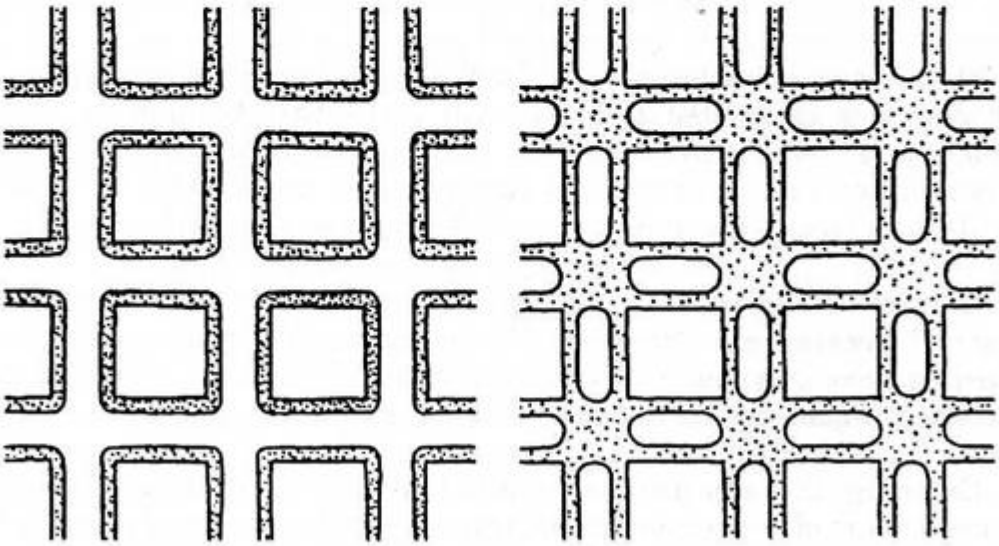
3.47 Footways are at present often continuous around street blocks, but not across junctions. The aim should be to provide for such continuity either by light-protected or zebra facilities at junctions, raised carriageways across the junctions with ramped entry for vehicles to ensure slow speeds. Such measures are already becoming common in London, for example alongside some Red Routes, and examples are found in the Boroughs of Kensington, Lambeth and Wandsworth. A study example is shown on the following page.

3.48 At crossing places on wider and heavily trafficked roads, separation of carriageways by a central strip should be implemented. These central strips should be more comfortable and generous than the so-called "refuge". They should, for example, be a minimum of 2 metres wide to accommodate prams and buggies. Such divisions should be the rule at zebra crossings.

3.49 Vehicle crossovers can interrupt footways and reduce the safety and convenience of those on foot. New crossovers into private developments should be restricted, and when unavoidable should not diminish the continuity of the footway, or its quality. New powers should be sought to control the creation of crossovers to new front garden parking in residential and other areas (see LPAC Report: The Quality of London's Residential Environment, 1994).

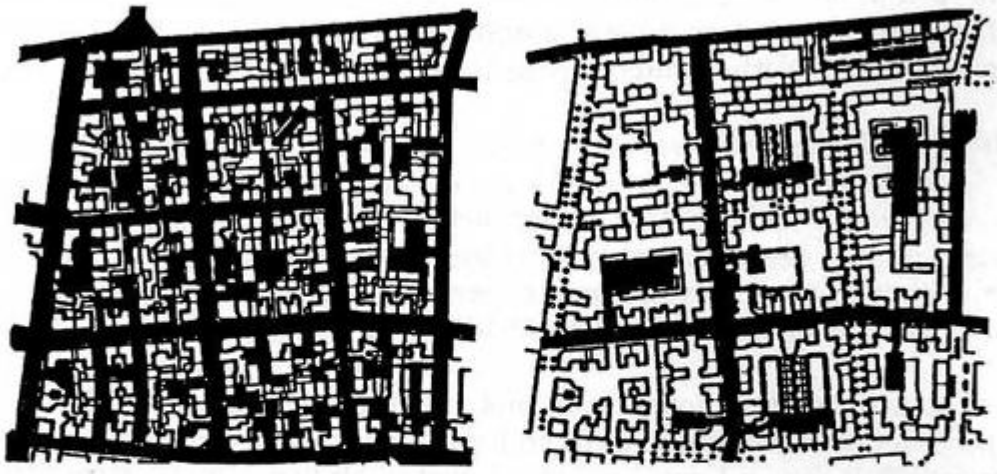
Continuous networks

Car oriented streets have footways interrupted by the traffic stream. Walking oriented streets have continuous footways, and vehicle streams are interrupted to provide pedestrian priority.



Space priority

Priority for people is also about use of space. An area in which most space between buildings is taken up with vehicles cannot provide a walking-friendly environment.



3.50 In residential areas, a general speed limit of 10-20 mph should apply, and physical measures taken both to enforce this maximum speed and to improve walking conditions. The default value in such areas should be continuous and level footways, with vehicles required to change level rather than people on foot. This would usually be achieved by raised footways at junctions and other suitable locations. The design technique is sometimes referred to as "soft separation" or "traffic integration" and an example is shown in the example box on page 35.

3.51 More space should be provided for all four of the walking categories defined. Wider and less obstructed footways will serve best to improve the Access, Sub-mode and Recreation categories, but provision for Circulation/Exchange activity requires additional space by road closures, the creation of "home zones" (sub - 10 mph areas), and conversion of carriageway or parking space.

3.52 Development of the walking network should follow a systematic audit and analysis of present conditions, problems and opportunities. A multi-layered approach is recommended involving both node and network approaches. Some example techniques are referred to in Chapter 5.

3.53 Greening the city through traffic calming and footway enhancement measures is part of the recommended strategy for London, and is provided for in the Traffic Calming Act 1992, which gives powers to introduce a variety of traffic calming measures for environmental enhancement as well as speed reduction. London has a fine tradition of large street trees, such as the London Plane, but this tradition could be more actively maintained. A major programme of street tree planting together with the creation of traffic calmed boulevards with broad and comfortable footways would be a tangible and conspicuous way to promote London as a walking city.

3.54 The design of footways for those with mobility or visual impairment is in need of review, following criticism of standard tactile paving and other provisions. Tactile paving that is less intrusive and uncomfortable has proved successful in Berlin and in the Netherlands.

A culture of slowness

3.55 Walking is unlikely to fulfil its potential by the introduction of physical measures alone. Decisions on how to travel begin in the mind. It is therefore desirable to increase awareness and experience of the positive aspects of walking as a mode of travel and to develop a "culture of slowness" (Boesch, 1992).

3.56 The attitude that longer and motorised journeys are more important and take precedence over shorter walk and cycle journeys is contrary to principles of economic efficiency and environmental sustainability. Such attitudes also can result in land use and transport decisions which have a perverse impact on the quality of life in the city. The EU Pedestrians Charter is based on the premise that the urban area should be designed and organised around the more vulnerable road users rather than cars (EU 1988).

3.57 To develop a "culture of slowness" or a "slow city culture" will require promotional and educational campaigns, alongside the various infrastructure changes already described. It will be important to ensure that the two aspects complement each other, and that physical changes are explicitly designed to benefit those on foot, and are conspicuously seen to be so. Good examples of such work would be the replacement of small pedestrian "refuges" with large, landscaped central strips, removal of pedestrian "pens", the removal of the need to apply to cross the road with push buttons, and the provision of much wider crossing widths. Even shared space schemes which allow vehicle access, conditions can be created which are safe enough for children to play. (For example see City of Copenhagen, 1996)

3.58 A further example (see page 35) would be to change the alignments of zebra stripes, to emphasise the pedestrian direction of travel (i.e. that vehicles are crossing a pedestrian way rather than vice versa). A change in terminology could help to engender more positive attitudes amongst the professionals and decision takers, for example speaking of divided carriageways rather than pedestrian refuges, and of walking rather than pedestrians. A new word is needed for the English language to describe legitimate presence in and enjoyment of public places. At the moment the available words have rather sinister connotations: "loitering", "lingering" or "hanging about".

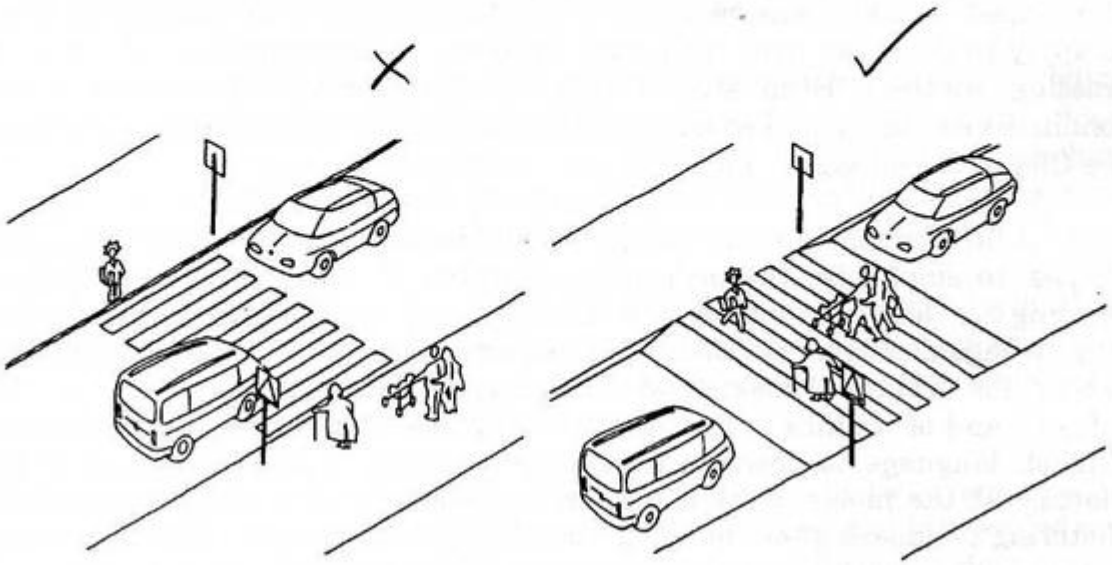
3.59 Many people may be unaware of the potential pleasures and benefits of going on foot, and the sensory pleasures which it allows: appreciation of gardens and architectural detail, the smell of flowers or early morning dew, the feel of a fresh breeze or a light shower, the chance meeting with a friend or neighbour. Most of these pleasures are denied when we shut ourselves up in cars, and, equally important, are interfered with when we are on foot by the presence of motor vehicles. Hillman and others have explored the negative aspects of habitual car use on children's independence and development (Hillman et al 1990).

3.60 Borrowing from a recent telecommunications advertisement campaign, we can put across the message "**It's Good to Walk**".

3.61 There are other influences on where and how often we walk, which could be addressed in a walking strategy. Examples are the growing use of telecommunications to allow working at home, and 24-hour city initiatives which could enliven London's suburban centres. Greater variety in working patterns and demographic changes are also likely to have an impact. Such changes in social composition and organisation will need to be studied further and included in the development of the final strategy.

Changing perceptions and attitudes

Conspicuous measures can be taken to promote awareness of walking as the primary mode. For example, zebra stripes can be changed to show direction of pedestrian travel rather than vehicle travel. Crossing areas should be raised to footway height *(VCÖ, 1993)*.



4 DRAFT STRATEGY ELEMENTS

4.1 The principles, framework and policy directions set out in Chapter 3 need to be translated into more detailed operational objectives. This study provides the basis from which London's pedestrian strategy can be developed, consulted upon and agreed, and thus the full and final targets are not set out here. However, it is possible to set out a first draft of what the targets and constraints would look like, and this helps to translate the general arguments and examples in the first part of this report into a practical action plan. The strategy should include targets, constraints and the setting of standards. Before doing so, there is one further issue which needs to be addressed.

Beyond the Network Approach

4.2 While Red Routes, bus priority and cycle routes are all network approaches, is this entirely appropriate for walking?

4.3 Given the local character of walk trips, and their focus on specific attractions such as shops, schools and public transport stops, defining broad networks may be of little value except for long distance recreational walking. There may also be value in detailed local networks being defined for the purpose of highlighting infrastructural deficiencies and setting priorities for action. For the Circulation/Exchange category of activity, networks are of little value, since its encouragement will be more concerned with areas and spaces rather than with links.

4.4 For these reasons, the study recommends a multi-layered approach, with the following key elements:

1 standards for design and quality audits applied to all streets, although different standards would be evolved for different areas, for example pavement widths in major shopping centres, secondary centres and residential areas;

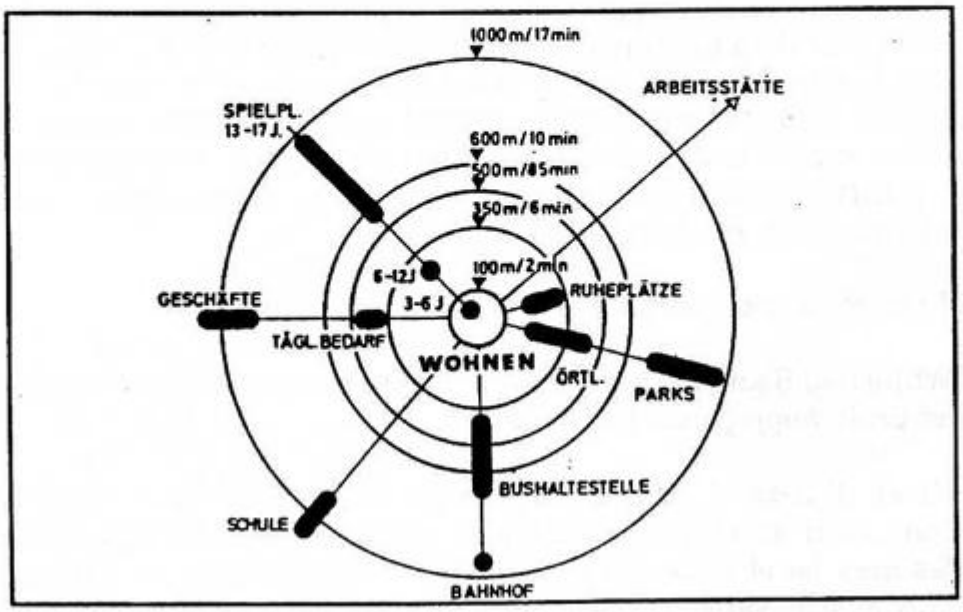
2 identification of key walking routes between places and longer distance recreational routes (the network approach) and prioritising these for improvement (e.g. Zwijndrecht, 1995);

3 identification of locations on those routes where facilities need improvement to ensure network continuity (e.g. Zürich, 1993);

4 identifying key destinations and auditing access quality by foot, this could extend outwards in a 4-500 metre radius, and include stations and main bus stops and interchanges as well as specific facilities like leisure centres or large workplaces. This is explored further in the study example on the following page;

5 as well as pedestrianising town centres, identifying local areas where pedestrians should be given high priority, in particular making it possible to cross the street at will, and for children to play in the street.

Walking distance depends on the destination



Acceptable walking distance depends on various factors, another of which is the type of destination, or the type of trip. *(Machtemes, A, 1979).*

KEY

Arbeitsstätte - Workplace
Ruheplätze - Resting/Quiet Places
Parks - Parks (Örtliche - Local)
Bushaltestelle - Bus Stop
Bahnhof - Station
Schule - School
Tägliche Bedarf - Local Shops (literally daily needs)
Geschäfte - Shopping Centre
Spielplätze - Play Areas (with ages)
Wohnen - Home

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4.2 While Red Routes, bus priority and cycle routes are all network approaches, is this entirely appropriate for walking?

4.3 Given the local character of walk trips, and their focus on specific attractions such as shops, schools and public transport stops, defining broad networks may be of little value except for long distance recreational walking. There may also be value in detailed local networks being defined for the purpose of highlighting infrastructural deficiencies and setting priorities for action. For the Circulation/Exchange category of activity, networks are of little value, since its encouragement will be more concerned with areas and spaces rather than with links.

4.4 For these reasons, the study recommends a multi-layered approach, with the following key elements:

1 standards for design and quality audits applied to all streets, although different standards would be evolved for different areas, for example pavement widths in major shopping centres, secondary centres and residential areas;

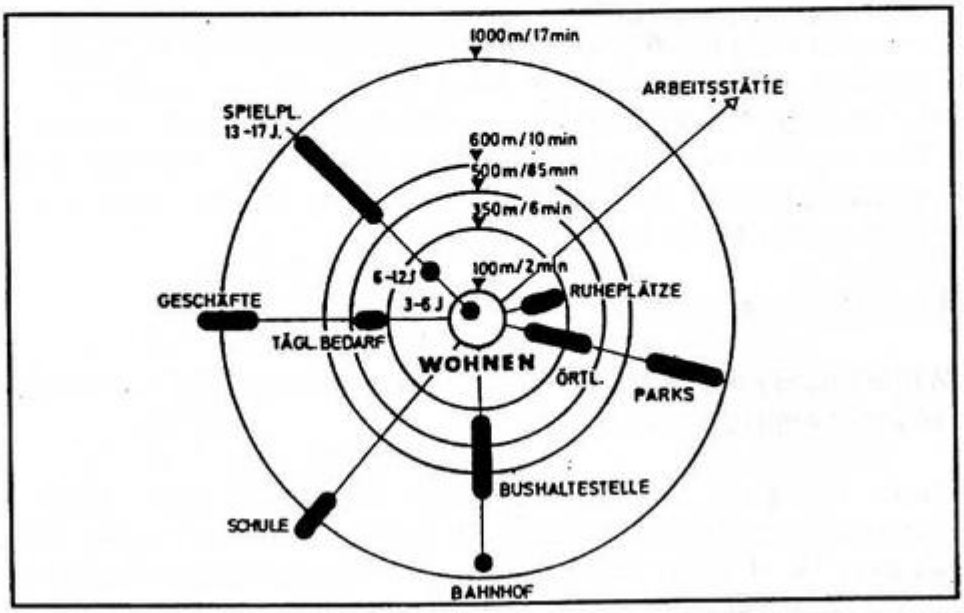
2 identification of key walking routes between places and longer distance recreational routes (the network approach) and prioritising these for improvement (e.g. Zwijndrecht, 1995);

3 identification of locations on those routes where facilities need improvement to ensure network continuity (e.g. Zürich, 1993);

4 identifying key destinations and auditing access quality by foot, this could extend outwards in a 4-500 metre radius, and include stations and main bus stops and interchanges as well as specific facilities like leisure centres or large workplaces. This is explored further in the study example on the following page;

5 as well as pedestrianising town centres, identifying local areas where pedestrians should be given high priority, in particular making it possible to cross the street at will, and for children to play in the street.

Walking distance depends on the destination



Acceptable walking distance depends on various factors, another of which is the type of destination, or the type of trip. *(Machtemes, A, 1979).*

KEY

Arbeitsstätte - Workplace
Ruheplätze - Resting/Quiet Places
Parks - Parks (Örtliche - Local)
Bushaltestelle - Bus Stop
Bahnhof - Station
Schule - School
Tägliche Bedarf - Local Shops (literally daily needs)
Geschäfte - Shopping Centre
Spielplätze - Play Areas (with ages)
Wohnen - Home

Targets, Timetables and Constraints

4.5 ***Targets*** are at the heart of any strategy, and require considerable care in their formulation. There are two key requirements for a useable target: it must be measurable and it must relate to the achievement of one or more quality of life objectives.

4.6 A ***Timetable*** for achievement makes a target directly useable although there are exceptions. For example, long term targets may be needed which are beyond our current ability to achieve them. Thus it may be that the complete removal of particulates from vehicle exhausts is the ultimate target. This is sometimes called "aspirational". Since this is not useable for the development of specific packages in the transport planning process interim targets should be set, for example to reduce particulates by 50% by 2005, 75% by 2010 and 90% by 2015. These are sometimes referred to as "milestones".

4.7 There is little point in setting targets which are going to be achieved anyway, or which are so ambitious that there is no prospect of achieving them. However, in general terms, it is better to set a tough target and review it, than set a weak one and exceed it. It is also helpful to have an aspirational target which guides the timetabled targets when there is uncertainty over precisely when the desired level of improvement can be achieved.

4.8 Targets can cover a range of activities. The air quality example given above is measurable and can be expressed simply. However, other targets can be set as an interim measure, and can relate to finance, for example committing a minimum percentage of transport expenditure to walking, or to organisation, for example producing an annual statement or appointing a pedestrian officer.

4.9 ***Constraints*** complement the targets by setting obvious boundaries, for example not making crossing times longer, or not cutting down trees to provide more walking space. Setting constraints in a strategy for walking will tend to affect other highway users, since the main one will be to prevent walking spaces being used as a free resource to assist motorised traffic.

4.10 ***Standards*** are very similar to aspirational targets in that they help to define a desirable end state, although they often represent a minimum level of provision. Where they are not being met they automatically identify problems which need to be solved. Operational targets can set timetables for the achievement of specified standards.

4.11 The precise numbers and timescales in the following list will need further work, but provide reasonable first drafts based on the information gathered and the wide ranging discussions held during the study process. These provide a focus for finalising what should become an agreed set which can act as a resource for local plans and TPPs.

4.12 At this stage, not all the targets have been given a separate justification,

but all relate to the earlier parts of the report or to the information gathered. Some of the key targets are given a short explanation as they occur. While exact percentages and timescales may need refining, it would be wrong to suppose that change can be achieved without setting clear and sometimes difficult targets. It is hoped that they will stimulate extensive discussion, but also that they will actively promote an early start to the process of finalising and implementing a strategy for walking in London.

Example Targets and Constraints for a Walking Strategy for London

4.13 The type of action required to achieve these targets is further explored in the "Implementation" Chapter which follows this one. Following the example targets, a more detailed draft of the proposed walking inventory is given at the end of this Chapter.

4.14 The following targets will require action by London Boroughs, GoL, the Secretaries of State for Transport and the Environment and their agents (including the Directors for Traffic and for Parking and the Traffic Control System Unit). In the following list, targets are denoted by a "T" prefix and constraints by a "C" prefix (as in Targets T1 and T2, Constraints C3 and C4).

OUTPUT = P / OUTCOME = C

Travel by foot

C T1 London's local and central government and their agents will seek to increase kilometres walked per person by 5% every 5 years for the next ten years.

(The justification for this is to meet health objectives by increasing exercise and is thus not related to specific journey purposes or areas. It could be developed into setting a target for the kilometres to be walked per week)

C T2 The same authorities will also actively pursue the following increases in trips made on foot:

Journey to Work:	5% increase over ten years
Shopping:	15% increase over ten years (Outer)
	10% increase over ten years (Inner)
Leisure:	10% increase over ten years (Outer)
	5% increase over ten years (Inner)

Overall walking's share will rise from 34% of all trips to 39% within ten years.

(Walking has been falling in Outer London and therefore higher targets are needed to restore the position. Shopping is also the fastest land use turnover and therefore greater change is possible within a local plan period. This target could be extended to modal share targets but only within a strategy including all other modes)

C1 Increases in walking will not be achieved by reducing travel by bicycle and public transport.

Continuous networks

T3 At least 90% of footways, except those which cross the London Priority (Red Route) Network, will be provided at one level, including crossings, within ten years, with at least half the network made continuous within six years.

T4 At least 90% of traffic signals in Inner London will have full pedestrian phases within ten years, with at least half the programme complete within six years.

T5 At least 90% of traffic signals in built up areas of Outer London will have full pedestrian phases within ten years, with at least half the programme complete within six years.

Footway standards

T6 Standards will be set for footway widths according to the type of street (main shopping/local shopping/residential), and existing widths will be surveyed and assessed against the desired standards by December 1997 and a full report published by March 1998.

T7 Where footway standards are not being met pavements will be widened so that at least 90% of shopping streets meet the standards within six years of the report's publication, and at least half meet them within three years.

T8 Residential areas may require footway widening, but some may be included in "walking pace places" where traffic speed must be governed by compatibility with walking. Existing legislation already allows street playgrounds to be designated. There should be a demonstration project in each borough by March 1998, and more detailed targets set for residential areas to be covered by such orders within a year.

C2 No scheme affecting footways or highways will cause an increase in crossing time for those on foot.

C3 Footway width will be increased by reducing on-street parking or carriageway width not by removing environmental features such as trees or inhibiting pavement access for retailers.

Organisational

T9 Each Borough will undertake an awareness campaign on walking, and a data collection exercise to establish the extent of each of the four categories of walking, together with a "view from the kerb" quality survey to be complete by March 1998 and publish the findings in full.

T10 Each Borough will prepare an annual report on progress in implementing the strategy and how far targets have been achieved, including a continuous awareness and monitoring programme for walking in its locality. This will be published with the TPP bid and its submission to Government will be a condition of funding applications.

T11 The Government Office for London will publish an overview of walking in London based on the borough reports.

C4 The approval of transport grant and supplementary credits will explicitly take into account the achievement of targets for improving walking provision.

C5 Where there is competition for resources, especially for signal alterations, priority will be given to implementing the walking strategy.

T12 By December 1997 each borough will identify a point of contact for the public for walking policy issues (as opposed to reporting pavement problems).

Crossing standards

C6 New zebra crossings will be designed so that traffic lanes approaching the crossing are limited to one in each direction. They will be at the same level as the footway and have approaches designed to slow down vehicles. This will allow larger central islands of buggy width, and crossing space will be generally wider.

T13 At least 90% of existing zebra crossings will be brought within the standard for new crossings within six years.

T14 A new index of "crossing opportunities" per 100 metres will be developed with crossings which provide greater opportunity, for example diagonal crossings, and greater priority, for example crossings which are raised or with the road narrowed to a single lane, scoring more highly. This will be completed by December 1997.

T15 Minimum standards for crossing opportunities will be set for streets fulfilling different functions, for example High Streets and secondary shopping streets, and streets will be assessed against this criteria. Action will be taken to bring at least 90% of them up to standard within ten years, with half those identified as sub standard completed within six years.

Development control

T16 All significant new developments and redevelopments will be audited for catchment area and modal share targets as follows:

Shopping: 50% of predicted users must live or work within walking distance
No more than 20% of predicted users will come as car drivers

(This may appear tough at first, but is more modest than walk's existing share in Inner London, about 20% higher than Outer London. For the car driver share (there is no limit on passengers) existing usage is lower in Inner London, and higher in Outer London, but new development should be more constrained: see PPGs 6 and 13. A limit needs to be set to exclude small developments)

Other Employment:

No more than 20% of predicted users will come as car drivers

(Targets for the proportion of predicted customers within walking distance must be related to the type of business, and will vary considerably. However, there is less reason to vary a limit on car driver mode. For businesses with large catchments this will mean a need to locate near to public transport and cycle networks. Again this is in line with PPG13, and the target is already achieved in Central and some parts of Inner London)

Other Facilities (leisure, health, education):

No more than 30% of predicted users will come by car

(It should be slightly easier to set targets for users within walking distance for these facilities and this could encourage, for example, more local sports halls and swimming pools where walking will dominate (see survey results MTRU 1996). However, the first drafts are beyond the current state of knowledge in this report. Again, a limit on car driver mode is easier to set, and no limit is placed on how the mix of cycling, public transport or car passenger achieves this)

T17 All planning applications must submit a statement on walking which sets out how people will come by foot, what provision will be made as part of the design and how walking there will be made attractive. A detailed audit for pedestrian access extending 500 metres from the site perimeter should be included. For small developments such audits could be prepared by area and development type.

T18 New housing should be planned at sufficient density to sustain local shops and facilities, and provision made for such facilities, with nominated uses paying low rent and rates. The LPAC minimum densities should apply.

T19 Developments which provide mainly shopping or offices must include a range of facilities which generate street activity outside normal working hours: in any case developments generating large numbers of people movements will not be granted permission outside definable centres which have a 24 hour function.

Public transport links

T20 Stations and main bus stops will be audited for the quality of their access by foot in a programme jointly agreed between the public transport operators and the Boroughs. This will be completed by March 1998 and the results included in

the Borough Walking Report for that year.

T21 As the first stop and station audits are completed, demonstration projects should be set up as soon as possible so that by the time the audits are finished, at least one project per Borough will be in place.

Rights of way

T22 Rights of way are a familiar issue in the countryside, but many have been interrupted in London as part of large developments or redevelopments. These interruptions should be identified and discussions held with the new owners to see how this can be remedied. At the very least they should be restored when redevelopment takes place. Thames side routes are restricted in this way and such networks should establish 24 hour access using persuasion or whatever powers are appropriate. In new developments opportunities should be sought for creating new rights of way to increase walking convenience and the "permeability" of the locality.

C7 Existing or proposed rights of way should not be interrupted by new development or redevelopment.

Developing networks

T23 Networks for access by foot will be built up by identifying key destinations such as parks, shopping streets, swimming pools, cinemas and other leisure facilities, and major employment centres and the links between them. These links will then be subject to the quality audit procedure, and the trip assessed for total journey quality by foot. There will be wide variations between boroughs and therefore no network length targets are proposed here. However, an organisational target can be set to identify networks, prioritise which ones are to be improved first, and set out a programme. Some of the other targets which are network wide, such as T3-T5, T8 and T13-T15 will in any case contribute to the improvement of such networks.

Demonstration projects

T24 In time for this year's TPP round at least one Central London square, a shopping centre and a residential area in each of Inner and Outer London, and a "difficult case" such as Vauxhall Cross should be identified as demonstration projects for implementation in 1997-99.

Creating expertise

T25 In tune with, and drawing on, the demonstration projects all agencies involved in transport in London, together with the professional institutions, should embark on a major awareness and education exercise aimed at practitioners. New guidelines and good practice guides will be needed, and should be launched at a major conference, probably by the end of 1997. The Institution of Highways and

Transportation have already decided to draft guidelines on the provision of pedestrian facilities and are aware of the content of this report.

Walk Mode Inventories and Audits

4.15 Audits or inventories are a key part of the work proposed to implement and monitor the strategy proposed in this report. The Boroughs will need to carry out an inventory of the walk mode, the opportunities for walking, and the facilities provided for it. This inventory will then provide the base for monitoring improvements and changes. For consistency, Boroughs and the other agencies will be need to agree a common approach, and guidance can then to be issued on the content and techniques.

4.16 The following are suggested headings for such an inventory, derived from the discussion earlier in the report. A brief explanation is given of the requirements under each heading.

WALKING INVENTORY

1. WALKING ACTIVITY

Extent of walking activity in each of walk categories (Access, Sub-mode, Circulation, Recreation)
Walk mode share in the mode split, for both Access and Sub-mode categories.
Breakdown by trip purpose, person type.
Analyse goods carrying and "pedestrian vehicle" activity.

2. ACCIDENTS AND ROAD DANGER

Accident data are already available.
Road danger identification will include data on traffic volumes and speeds, and their barrier effects.

3. WALKING OPPORTUNITY

Analysis of the circumstances relevant to walking activity:
Land use density, mix.
Range, scale and distribution of local facilities.
Public transport accessibility and level of service.
Demographic profile: age, infirmity, household structure

4. WALKING QUALITY

An inventory based on the "Five Cs".

Connectedness

Identify gaps in the network and detours necessary
Identify breaks in network due to vehicle crossovers, junctions.

Convenience

Convenience of crossing roads (e.g. at will, with help, with protection)
Is it direct, or are there deviations from desire lines?
At junctions, is there priority over motor traffic? How long do people have to wait?
How much time do people have when crossing?
How much control do people have (e.g. do they have to "apply" to cross)?

Comfort

Is the footway level, smooth, non-slip?
Is the route at a continuous level?
Air quality
Proximity to moving traffic
Absence of pavement footway parking
Uncrowded, a margin of quality over and above bare capacity
Is the route broad enough for its use, and unobstructed?
Lighting quality
Micro climate, weather protection
Litter bins
Public toilets

Conviviality

Diversity of activity
Times at which there is activity
Ground floor interest and activity (e.g. units per 100 metres)
Cleanliness
Quality of design and landscaping
Furniture and equipment, for walking, and for "staying" (e.g. seating)

Conspicuity

Street names comprehensive, visible from eye level, well lit
Property numbers comprehensive
Public buildings and other key locations signposted
Bus stops and stations signposted
Local and service information provided at bus stops and stations
Bus stops and stations as local focal points (with kiosk, telephone, public conveniences etc)
Recreation routes waymarked
Less obvious routes signed (e.g. through housing estates to local centre or school)

TRAVEL AUDITS FOR NEW DEVELOPMENTS

4.17 All new developments should be subject to a travel audit which sets out the trip generation, the likely catchment, and the mode split. If the mode split targets cannot be met, then the development should be refused, or revised to serve a smaller catchment, or relocated to where the targets can be met. Such audits would go beyond "Traffic Impact Assessments" which are mostly concerned with the ability of the local road network to absorb predicted increases in vehicle traffic.

4.18 The following are examples of the questions that will need to be asked to discover whether the development is appropriate for the location.

1 What is the size and density of the development?
2 What activities will take place?
3 What person and goods movement will be attracted and generated?
4 What mixture of activities and uses will there be?
5 What is the degree of specialisation of the activities? (local, district, city, regional, national/international)
6 As a result of 1-5, what will the catchment area be, both for employees and visitors/customers?
7 What proportion of employees/visitors/customers live within walk (and cycle) distance?
8 What proportion of them can reach the site with a single public transport journey?
9 How does the design cater for those on foot? Is the main entrance direct onto the footway?
10 How many units of pedestrian interest per 100 metres of frontage (doorways, window displays) will result?
11 Will there be zero private parking? What demand will arise for public parking?
12 What demand will arise for loading/unloading goods? Can this be done from public space?
13 What vehicle footway crossovers will be created? How will the use of existing crossovers change?
14 What is the visual connectedness between activities inside and outside the buildings?
15 What time of day/week will activity be taking place?
16 How will the development contribute to "exchange/circulation" use of adjacent/nearby public realm?

5 IMPLEMENTATION

The Planning Context

5.1 The strategy will not only need to involve a wide range of people and organisations in its development, but implementation will also have to be negotiated through the various agencies responsible for London's transport and land use planning.

5.2 First and foremost, the principles and targets in the strategy will need to be included in Regional Guidance (RPG3). This should take the form of a supplementary Annex on Policy for Walking in London. Trunk roads will need to be included. Boroughs would then be able to take the appropriate targets into UDPs as soon as their plan timetable allows, and include them in their TPPs with immediate effect.

5.3 The UDPs in particular will also need to include measures to support local facilities, as well as more conventional mode share targets and the new walk travel audits.

Powers and resources

5.4 Any strategy will depend on human and financial resources if its objectives are to be achieved. The issue of how to fund walking projects needs special attention because the cost of individual schemes or scheme elements may be small. In this case it falls outside the protected expenditure on major projects. Consideration should be given to ring-fencing the necessary money. Overall the sums involved are small compared to other forms of transport, and while funding issues need to be addressed, in the context of other expenditure this should not be a major obstacle.

5.5 The second question is how much power the Boroughs would have to implement the strategy. This extends from the ability to progress traffic orders in order to prioritise walking, to the ability to influence land use planning decisions. The latter needs to address the problem of developers playing off one borough against another (as happens on parking policy) and needs firm guidance from central government as well as a clear policy on refusals on appeal. In this case the legal powers seem to be there in principle, but require strong support from central Government if they are to be put into practice.

5.6 A third question concerns the expertise available for designing and implementing schemes to improve walking infrastructure. Few professionals have any training in this as a specific activity, and even fewer have any training in the all-important urban design and landscape aspects. The often poor construction and maintenance quality of footway access can only be overcome by better design, better supervision of construction, and more vigilant maintenance. All are likely to require more resources, though this could be in part achieved by diversion of

existing financial and staff resources currently devoted to meeting the demands of motorised traffic.

Changing Attitudes

5.7 As a first step towards changing attitudes, the data initiatives already described can be used to emphasise to people how much they depend on walking. It will also be necessary to encourage professionals to look afresh at the way walking is included in transport planning and engineering. This again will be helped by the collection and dissemination of data on the nature and extent of walking in London. The suggested new guidelines and good practice guide, and the setting up of demonstration projects in different areas will be important.

5.8 The work of the London Walking Forum, and the assistance and interest shown by the boroughs in this project indicates that there is a widespread appreciation of the need for a strategy to be developed, and a readiness to participate in many local authorities. Of course this will depend on resources, not just finance, but available experience and organisational priority.

Practitioners' Attitudes

5.9 The question of who is responsible for implementing pedestrian strategy in local and central government, and the experience and resources available, will also be critical if a strategy is to be implemented. At the moment there is usually some responsibility falling within traffic or transport policy sections, while recreational walking can be a matter for planning or leisure departments in local authorities. While it is recommended that a lead stays in the transport planning field, it should be noted that a cross-departmental approach will be essential for developing a walking policy. However, a clear line of responsibility for walking issues, preferably leading to senior officers with walking as a major part of their responsibilities, will be needed, for example as proposed by Leeds City Council.

5.10 A further challenge is how to generate the understanding and skills which will be needed throughout the transport planning profession if walking is to be understood and taken seriously. This will be very different from the experience gained in implementing many of the safety schemes which have been put in place in previous years. The use of subways, footbridges, guard rails, walking pens and lengthy multi-stage crossings has sacrificed quality in the name of safety. A change in culture is required, and transport professionals will need to take on board some of the work undertaken in urban design as well as embracing the need for planning and design oriented to walking pace and eye level perceptions rather than the "view from behind the wheel".

Schemes and Opportunities

5.11 Already it is clear that walking policy requires a rather different approach from other modes of transport. Land use planning itself is a key factor, but elements of urban design such as weather protection and environmental quality

will also be important. Thus there will be a range of measures and schemes which will need to be included. Looking at walking catchments for new developments, and trying to encourage local facilities (sometimes by refusing large scale facilities) are land use examples; lighting, paving and planting are design examples; pavement widenings and the introduction of a series of zebra crossings in a local centre would be engineering examples.

5.12 The constant maintenance activity (of carriageways, footways and traffic management infrastructure) provides a major opportunity for strategy implementation at relatively low cost.

5.13 Maintenance forms an important element of Borough expenditure, yet too often this is applied to replace footways, kerb lines and other facilities to previous, inadequate designs. By spending more effort on design, and by preparing prototypical measures for given circumstances, maintenance programmes could be used to secure progressive implementation of walking facilities in accordance with the "Five Cs".

5.14 Opportunities can also be generated to integrate planting and other landscape features with street design. Integrated signing, street furniture and landscape is of vital importance in creating attractive areas for people to walk. The guidance produced by the Civic Trust and English Historic Towns Forum (Davies, 1993 and 1994) provides examples of what to avoid, what can be achieved, and specific guides are already emerging in London (for example, Brixton, Camden and Richmond). (See also Landscape Institute 1996.)

Guidelines and Case Studies

5.15 One way forward is to produce guidelines and examples of good practice, and this is an area where the professional institutions (for example the Institute of Highways and Transportation) can provide valuable help. A second approach to be pursued is to select a variety of places where demonstration projects could be tried, this would need multi-agency participation. Such a selection should include at least one major London square, at least one major obstacle course on a main road (for example Vauxhall Cross), a residential area and a town centre from both Inner and Outer London.

5.16 In London there are already some examples of innovation which can help. One is Wood Green, where an earlier TPP bid for a major traffic capacity increase (a gyratory) at Wood Green station was changed following discussions between the London Borough of Haringey and Government Office for London into a project to manage traffic from the station through the length of the High Street. This includes a diagonal crossing at the station, and an all red phase has already been implemented. The full plan has been issued for public consultation, and places a strong emphasis on urban design. Interestingly, the plans drew on two multi-disciplinary "brainstorm" sessions involving architects, : rts, leisure and recreation, planners, engineers and the town centre manager.

5.17 In East Ham, a scheme has recently been implemented which incorporates some of the techniques which will to be developed, particularly for shared spaces. Borehamwood is an established example of how greater pedestrian priority on a main road can be implemented. Some parts of the Thames-side walks in Southwark show how high quality design can be achieved.

5.18 Beyond this, individual examples of redesigned crossings can be found, although sometimes facilities like zebras with dropped kerbs and large central islands can be found in the same borough which has implemented a walk-with-traffic pen at almost the same time.

5.19 A further example was given by the Corporation of London, which has moved from a position of having no full pedestrian phases at signals to almost 90% coverage. One motivation was that once one facility was implemented near a particular workplace, there was pressure from people who worked elsewhere but became aware of the new facility or were able to use it for part of their journey.

Demonstration Projects

5.20 The next stage of strategic development should also include defining demonstration projects and allocating funds in a parallel way to that provided for the London Bus Priority Network. Using examples from existing MTRU studies, centres such as Hammersmith and Acton could provide very different but fruitful opportunities for a radical revision of policy.

5.21 For example, there is restricted footway space in Acton, a hostile, guard-rail environment for people on foot and a lot of illegal parking. Traffic flows do not require more than one lane and this would allow space for innovative new walking priorities. The centre has declined and is need of radical environmental improvement. Hammersmith has huge walking flows which are poorly served. More people cross its gyratory than drive around it, yet are only given standard width crossings. Delays to those on foot are excessive.

5.22 The conditions found in these two places are not unique in London, and demonstration projects need to be actively sought and funded. This also creates opportunities for the sort of partnerships between local people and businesses and central and local government.

5.23 For this reason, the development of the strategy should include demonstration projects at the earliest possible stage.

5.24 One source of further demonstration projects which is included in the Example Targets in Chapter 4 is improved access to public transport. A project could include high quality waiting areas and walk access for bus stops, another would focus on station access. Specific rail examples from South London were raised during the project discussions, and the variability of provision can be illustrated by the following Table.

Table 2

Facilities for people to cross carriageways outside seven South London stations

Station	Number of traffic streams	Number with ped signal	Light protection no signal	No facility
Kennington	6	4	1	1
Oval	8	0	4	4
Stockwell	6	2	2	2
Clapham North	7	0	4	3
Clapham Common	7	6	0	1
Clapham South	4	2	0	2
Balham	8	8	0	0
Total	46 (100%)	22 (48%)	11 (24%)	13 (28%)

5.25 For the strategy as a whole, different kinds of demonstration project should be undertaken, each highlighting a different aspect of walking. Some examples are listed here:

* Access to a series of stations on a particular rail line (for example those identified in Table 2)

* Recreational walks including open spaces or historic or attractive environments, for example those recommended in the recent GoL study (Land Use Consultants, 1995)

* "Landmark" projects to convert traffic space to pedestrian space (for example the current proposal for a study of Trafalgar and Parliament Squares and Whitehall)

* A high density residential neighbourhood (including resolving parking, street activity, urban design and traffic calming issues)

* A lower density neighbourhood with potential for increased provision of local facilities

* A "connected footway" project demonstrating how an entire local network

of footways can be connected and built to high quality

* Public transport interchange project: relating the transport facility to its neighbourhood through urban design, planning and transport initiatives.

* Suburban station catchment project, identifying routes to the station and improving their quality, convenience and safety

* Safe routes to school project(s), highlighting pupil, PAT and school authority collaboration in a local design programme

* Retrofitting a car based area for greater walking and public transport opportunities (for example the Purley Way retail developments in relation to Tramlink)

* Local centre revitalisation with initiatives to retain/attract local facilities.

Multi-Agency Action

5.26 The question of powers also raises the issue of how many agencies need to be involved. Initiatives such as public awareness ("It's Good to Walk", "Getting London back on its feet") and creating a walking databank will need multi-agency participation. Most importantly it will require some specific funding for this Londonwide initiative. The only realistic source for this is GoL.

5.27 As well as the Boroughs and LPAC itself, there are the Traffic Director, the Parking Director, the Highways Agency, TCSU, LT, DoT, DoE, GoL, Railtrack and the Police. In addition there are a wide range of non-government organisations including transport pressure groups and organisations such as London First. From data collection to implementation there are a range of issues raised which must be settled if progress is to be made.

5.28 As well as the idea of having specific responsibility for walking strategy at Borough level, it would possible to set up a walking office for London. Its task would be to overview and disseminate information on good practice, undertake monitoring and ensure that the strategy is implemented. The equivalents for Parking and Traffic, each with their own Director, provide a precedent. While there is no equivalent for bus priority, there is a sizeable unit at London Transport who work on bus lanes and local schemes, and much innovative work at the design and conceptual level is undertaken and sponsored by LT Buses. There are five Borough "leads" to cover the different areas of London.

5.29 There is no need to create unnecessary levels of bureaucracy but there are many more walking acts than parking acts in London, more people walk than use the bus, and in Inner London at least more people walk than drive. The fact that a Walking Director for London will seem an odd idea to many readers of this report reflects the deep rooted underestimation of the importance of walking which will need to be overcome.

6 AWARENESS, MONITORING AND THE NEW DATA REQUIREMENTS

6.1 Once objectives for walking in London have been agreed, a number of numerical targets have been set, and a strategy for meeting them has been determined, some way of checking progress towards the achievement of the targets is required. This requires data to be collected at frequent intervals. In addition to monitoring progress, the data can also give warning of new trends, whether favourable or unfavourable, which might require revision of the strategy or even the objectives themselves.

Monitoring personal travel

6.2 Some of the targets relate to the number of journeys made on foot in London and/or to the market share of different types of journey held by walking. Types of journey might be defined for this purpose by reference to the characteristics of the traveller (age, gender, social class etc), area of residence (inner or outer London or finer divisions), journey length, journey purpose, destination (perhaps distinguishing between town centres and other destinations) and so on. To collect this kind of information, a household survey of Londoners is required.

6.3 Since 1962, large-scale travel surveys, including a household survey, have been conducted in London at intervals of approximately ten years. These surveys are really too infrequent to be used for monitoring purposes. It is also a huge task to set up and administer such a large data collection exercise, more or less starting afresh on each occasion. In addition to the expense, considerable problems of quality control arise which are unlikely to be fully solvable.

6.4 Frequent and more focussed surveys are not only more useful to users of the data but much easier for the provider. A skilled and experienced staff, both in the field and the office, can be built up and the techniques rapidly refined in response to experience.

6.5 The National Travel Survey is now conducted continuously. It has become a highly reliable survey which could be the prime source for monitoring travel patterns in London. Other surveys should only be considered if there are gaps in the information collected by the NTS or if its scale is insufficient to provide some of the required information with sufficient precision. Even if the NTS could be shown to be deficient in either of those ways, the possibilities of filling the information gaps by adding to the questionnaire, or of achieving greater precision by increasing the number of interviews conducted in London, should be explored before any London-specific surveys are contemplated.

6.6 The NTS is based on a week's travel diary. Walk trips of over a mile are recorded every day; shorter walk trips are recorded only on the seventh day. But "rambles in the country" not involving walking on the public highway are excluded, as are walk trips under 50 metres, even on the seventh day. In towns, and perhaps especially in London, the exclusion of walks under 50 metres could

mislead by ruling out various social journeys, shopping journeys to the corner shop and so on. It would be worth undertaking further work to determine whether walks under 50 metres could be included in a reliable manner.

6.7 The NTS statisticians believe, like this study, that there is a tendency for respondents to under-report short walk trips. Reporting could be improved by redesigning travel diaries or by developing new ways for interviewers to prompt respondents. German sources suggest they have made considerable progress, and this would need to be incorporated in any enhanced NTS-type survey for London. But the constraints of the interviewing situation, in particular the limits to the time and effort which it is reasonable to expect of respondents, may make it impossible to eliminate the tendency to under-report short walks in the NTS altogether. If so, it would at least be desirable to have an approximate idea of its extent. To help estimate that, it might be possible to conduct some comparative surveys based on matched samples. The respondents in one sample would be asked about their travel according to the actual or improved NTS methods; respondents in the other sample would be asked about walking only, using intensive techniques designed to maximise recall.

6.8 In London, it has been possible to analyse origins and destinations by reference to quite small zones. In the past, the NTS has not attempted to collect O-D information although it is possible to extract London information for central London and the rest. Central at the moment is an extended definition comparable to the old LTS, bounded by a line joining the main railway termini plus Elephant and Castle, and crossing the Thames at Tower Bridge and Vauxhall Cross.

6.9 Does this gap matter? Exactly what O-D information is required for monitoring purposes? A good case can be made that some of the targets for transport in London should be concerned with the modes used on journeys to central London, and also, perhaps, to certain other centres. If travel to central London is not now recorded as such on the NTS, that information could perhaps be added. If that is not possible, a good solution might be to put questions concerned only with travel to central London on the omnibus surveys now conducted by a number of market research firms. If the target for central London is set in terms of reducing the share of car travel, rather than increasing pedestrian travel, cordon counts, supplemented by data from public transport operators, could also be very effective.

6.10 Information on means of travel to individual smaller centres would probably also be best provided by cordon surveys, which need not be so frequent - perhaps every three years. In addition, O-D information could be useful not just in its own right but as a means of checking the estimates of journey length given by respondents to a household survey.

6.11 At present the number of journeys recorded by London-based respondents in the NTS each year is of the order of 20,000 and these are already reasonable bases for many purposes.

Monitoring walking quality

6.12 The quality of conditions for walking in London could be monitored by techniques somewhat similar to those used for tracing the cost of living index. Given a sample of walk journeys representing those made in London as a whole, or, perhaps better, those made in individual boroughs, observers could make these journeys at (say) six-monthly intervals and note: the total time taken on each journey; the time spent waiting at each junction or pedestrian crossing (distinguishing between those which were light-controlled and others); and the number of crossovers or similar obstructions. Obviously this would need careful piloting. Such work would preferably be Government funded, and standardised for application nationwide.

6.13 Air pollution is now monitored in London, but possibly the number of sites where monitoring takes place should be augmented in order to get a sub-sample which represents various pedestrian environments. Noise is not now monitored regularly, but it should be. Different monitoring points would be required to monitor both the residential environment and the walking environment (or the outdoor environment).

Monitoring the availability of facilities within walking distance

6.14 A crucial aspect of pedestrian strategy is to ensure that it is possible to satisfy as many journey purposes as possible on foot, which means that there must be good facilities of various kinds within walking distance. There is a lot of evidence of a national trend that facilities of various kinds (shops, hospitals, schools, doctors' practices, post offices) are becoming larger and fewer. That is probably happening in London as well, but a systematic way of tracing such developments is required. This is beyond the scope of this study, but given that this information would be useful in a variety of other contexts as well as pedestrian planning, it would seem desirable for the report to recommend that the LPAC should urge the DoE to set up a geographical data bank on which information of this type would be kept and systematically updated. Some indicators of the size of each facility, such as retail floor space and also turnover for shops, the number of doctors in the practice for doctors' practices, would be required, and possibly also information about the number of car parking spaces (however desirable, it would be too ambitious to include information about the quality of access by other modes).

6.15 For shops, the relevant information used to be provided by the Census of Distribution, which was discontinued after 1971; it might be worthwhile for the local authority associations to attempt to persuade the Government to reinstate it.

6.16 The NTS does already have questions about how long it would take the interviewer (presumably a reasonably fit person) to walk from the respondent's dwelling to the respondent's doctor's surgery, the nearest post office, the nearest dispensing chemist, the nearest shop selling groceries, the nearest main shopping

centre, the nearest hospital providing general treatment. This is very useful but is not a substitute for the kind of information a land-use data bank could provide. Given such a bank, it might no longer be necessary to put questions of this type to respondents: the research organisation might be able to fill in the necessary items of information simply from a knowledge of the respondent's address.

Access to public transport

6.17 This study is also concerned with walking as a means of accessing public transport as well as in walking as the sole mode of transport for a journey. So, just as to complement information about walking conditions we need to monitor what facilities Londoners can reach on foot, so we also need to monitor the availability and quality of the public transport services that they can reach on foot.

6.18 The NTS questionnaire has questions about how long it would take the interviewer to walk to the nearest bus stop and how frequent the services are from that stop, and how long it would take to walk to the nearest railway station (whether BR or Underground) and whether that station has frequent services (at least hourly) throughout the day, frequent services in the rush hour only, or only infrequent services. These questions are a useful start, but more comprehensive measures of the range and quality of public transport services reachable on foot by any given London resident could be devised.

6.19 In addition, one could again establish a "bundle" of journeys to be made by the walk-and-public-transport mode (equivalent to the bundle of goods and services on which the cost of living index is based) and get observers to perform them every so often as a means of tracing changes in the time required to perform the journey.

Understanding Walking

6.20 In these circumstances, the best way forward would be to set up a major awareness and data initiative on walking across London, involving the Boroughs, central Government, and other agencies. Not only would this provide a new baseline from which progress could be measured, but public and practitioners alike would have their attention drawn to this most sustainable, and socially and economically desirable, form of transport.

7 KEY CONCLUSIONS AND RECOMMENDATIONS: THE WHY, HOW AND WHO OF LONDON'S STRATEGY FOR WALKING

Why?

7.1 The many different functions of walking are poorly understood, and four key divisions have been evolved in this study:

Access Mode: where walking is used as the sole mode between two places, for example home and workplace, shop or school;

Access Sub-Mode: walking is a necessary adjunct to the use of other modes, for example getting to and from bus stops, stations or car parks;

Circulation/Exchange Mode: includes window shopping, meeting people in the street, children's play, interfaces between shops and cafes and the street, and a whole range of public space activities which cannot be described as traffic or travel;

Recreation/Leisure Mode: includes long distance walking, and more local activity such as "going for a walk", sometimes without a particular destination.

7.2 There is a significant decline in walking in Outer London, associated with a clear rise in car use, although walking is holding up well in Inner London.

7.3 The effect of doing nothing would be to undermine central and local government objectives for transport in London. There would be serious problems of lengthening journeys, causing more congestion and pollution, combined with the undermining of local economies and plans for urban regeneration.

How?

7.4 A strategy will need to be objectives led, and to be co-ordinated with other transport policies. Walking is not only an activity in its own right, public transport cannot operate without walking as a feeder mode at either end of the journey.

7.5 The strategy will need to measure the level of walking activity across all four key functions, and the quality of each activity.

7.6 The application of the strategy will require a multi-layered approach, not just delineating networks (particularly appropriate for recreation) but analysing walking catchments around key land uses and public transport stops and stations, and taking an area wide approach to walking priority and quality.

7.7 In implementing the vision for walking within the transport policy for London, walking conditions should be:

Connected: Comprehensive network, absence of dead-ends, short street blocks

Convenient: Direct paths and routes without detours or diversions from desire lines, and without restrictions.

Comfortable: Smooth surfaces, more than adequate widths, an absence of obstructions, no steep gradients or steps, good micro climate, good lighting, separation from vehicle traffic, or traffic calmed environment.

Convivial: Diversity of streetscape, landscape, buildings and activities. Landscaping and furnishing, frequent passers-by, space for relaxation, play and enjoyment, interesting ground floor activities, views in and views out of buildings.

Conspicuous: Legibility of routes, through design and through signing of streets, destinations, public transport stops, and building occupants.

7.8 The strategy needs a strong element of education and awareness: walking is so basic that the public underestimate its importance, and practitioners seem to be drawn to transport projects which involve high expenditure on vehicles or infrastructure (road or rail). This element of the strategy could start almost at once.

Who?

7.9 The implementation of strategy requires action across several agencies, but also across many disciplines. Urban design is a key factor in walking journey quality, and this is itself found across departments. A good example is footway maintenance: there needs to be a policy input and a strong design input to this continuing and significant local authority expenditure.

7.10 Land use planners need to redefine the transport analyses required of new developments, and in addition set guidelines for their walking catchments. Some activities are specialised and need wide catchment areas. Some are not, and currently the trend is for walking catchments to shrink.

7.11 Central Government sets guidelines for annual transport grant and credit approval, and has wide ranging powers either directly or through its agents, in particular the Traffic Director. Boroughs have the key implementation role both in transport and land use planning. The Parking Director for London also needs to be involved. London Transport must be involved in walking policy if it is to achieve its own targets for quality and patronage.

7.12 Above all the public and a wide range of practitioners (architects, planners, designers and engineers) need to be excited and involved. Walking is the most sustainable mode of transport, and it also has some of the widest positive impacts on environment, personal health and local economic regeneration.

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