

**GUIDELINES FOR**

**PROVIDING FOR**

**JOURNEYS ON FOOT**

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## 3. PLANNING FOR PEDESTRIANS

This chapter covers the barriers to walking, consultation on pedestrian issues, the types of schemes that can improve conditions for pedestrians and how these should be planned. It distinguishes new development from existing built-up areas. It provides information and tools for planning, including level of service assessment and pedestrian review techniques.

### Barriers to Walking

#### Deterrents

**3.1.** There are many real or perceived deterrents to walking. Most are well known whilst others are less obvious. Amongst the most important are:

- Land use patterns that are unsuited to walking
- Unpleasant pedestrian environments
- Danger from vehicular traffic
- Personal security fears
- Inconvenient pedestrian facilities.

**3.2.** Surveys have been carried out to rank the deterrents to walking but the results often depend on the type of location surveyed and particular local conditions. Further details of the physical problems faced by pedestrians are provided in Boxes 3.1 and 3.2. Some of these problems can be addressed by planners and engineers, whilst others require partnership action by a much wider collection of agencies.



Unpleasant and inconvenient pedestrian subways are a barrier to walking. (This one has now been replaced by a surface crossing).

*Courtesy: TfL.*

#### Needs of pedestrians

**3.3.** Apart from the general needs of all pedestrians, many users will also have specific needs and some locations will require specific treatments. The aim of the planner and designer must always be to provide access and mobility for all pedestrians (including those who are visually impaired or wheelchair-users). Some destinations justify extra attention because of the nature and number of the journeys they generate, and/or of the main category of user. Schools generate large numbers of movements by children at certain times of the day; hospitals generate movements by both able-bodied and mobility-impaired people, and others with a medical condition attending out-patient clinics, who may not be experienced in coping with their mobility difficulties.

### **A Poor Quality Pedestrian Environment**

- inadequate footway maintenance/reinstatement and lack of snow-clearance and de-icing
- litter and a general appearance of neglect
- dog fouling
- splashing by drivers
- buildings that turn their backs on the street and present pedestrians with blank walls, ugly street scenes and an absence of reassuring surveillance
- cul-de-sac housing layouts that turn suburban estates into mazes and increase walking distances to shops and other local services
- lack of benches and public lavatories
- the absence of road signs for visitors on foot
- steep gradients and/or steps

### **Inadequate Pedestrian Safety**

- fear of road accidents
- aggressively designed vehicles with fittings such as bull-bars and, at night, high-powered head lights
- obstructions on footways: roadworks, rubbish bins and sacks, poorly sited traffic sign poles, bus shelters, locked bicycles and parked cars
- inadequate or broken street lighting in both residential streets and at pedestrian crossing points on main traffic routes
- lack of or inadequate footways – particularly in and between villages and the narrower streets of old towns and cities
- illegal cycling on pavements and the sharing of some off road paths with cyclists
- inadequate green time at signal controlled crossings

### **Inadequate Personal Security**

- fear of assault, graffiti and the withdrawal of police from local stations and walking beats
- highly publicised child killings and abductions that have made some parents fearful of letting children walk unaccompanied
- dangerous dogs
- the presence of beggars (some of them aggressive) and intimidating drunks

Physical problems faced by Pedestrians.

*Source: MORI (1995) and National Consumer Council (1998).*

**Box 3.1.**

## **Getting Started**

**3.4.** Adopting new policies that place greater emphasis on providing for pedestrians is likely to prompt the question “Where should we start?”. Local authorities have many functions which affect pedestrians (Box 3.3). Many activities to assist pedestrians will be ongoing, such as maintenance of footways and crossings. There will inevitably be ideas for new initiatives and schemes from a variety of sources, and new development proposals will throw up new opportunities. A local walking strategy will help here.

**3.5.** There are at least four basic ways in which local authorities will want to start planning for pedestrians:

- Assembling existing information on walking and pedestrian needs
- Consulting the public and interested parties regarding problems faced by pedestrians, policies and schemes

- In the Bypass Demonstration Project Towns, the presence or absence of seating as well as seating design was a key factor in determining the distance which elderly people were able to walk. Thus if people could rest for a while *en route* especially on a comfortable seat they could walk much further.
- In the Gloucester Safer City Project, local people identified where they wanted crossings to be placed and these often differed from the sites originally planned by the highway engineers.
- In Wolverhampton, attitude studies showed that fears about personal safety when using subways resulted in people not visiting the town centre from the outer ring road estates. As a result the subways were redesigned and at-level crossings installed at some of the most sites perceived as most dangerous.
- In Ipswich town centre, important deterrents to walking included non-road safety aspects such as dog dirt, lack of toilets and begging.
- A five town study of shared use of routes between pedestrians and cyclists showed that although many people tolerated shared use on altruistic grounds, some people with disabilities (especially those with hearing and visual impairment) were felt unable to walk along shared use routes.

#### Some Less Obvious Problems for Pedestrians.

*Source: Social Research Associates (1999, unpublished).*

Box 3.2.

- Reviewing existing policies, plans, standards and services that affect pedestrians
- Conducting reviews of conditions for pedestrians in priority locations.

**3.6.** The classical model of planning is “Survey – Analysis – Plan”. Some surveys will be required to investigate specific issues and needs. However, a good deal is known about pedestrian requirements and much can be done without elaborate surveys. Adopting design standards and practices that properly provide for the full range of user needs, such as those recommended in these Guidelines, may also obviate the need for some survey work.

**3.7.** A planned, strategic approach to providing for pedestrians is recommended, in order to ensure that resources are used effectively and are targeted at policy objectives. Local authorities will need to consider how best to allocate their effort between comprehensive planning and making progress on specific schemes.

**3.8.** In the case of major new development or redevelopment schemes, comprehensive planning of new networks will be necessary. With the larger schemes, specialist planning staff outside the local authority may be involved, particularly if they are developer-led.

**3.9.** Providing for pedestrians on the existing network requires a different approach. In urban areas of the UK, most roads already have footways; there are also many miles of footpath, bridleway and other paths used by pedestrians. The problem is mainly one of quality and suitability of the existing network, particularly for children and people with a mobility-impairment, rather than one of providing new networks. It seems likely, therefore, that most authorities will need to concentrate their efforts on raising standards, reviewing priorities, making selective modifications and providing occasional missing links rather than planning completely new networks.

**3.10.** Most authorities will have begun to develop local walking strategies, in the context of their LTP. Some authorities, such as Oxfordshire, have formally adopted interim measures, pending more detailed consideration of their strategies.

#### Planning Authority

- Development Plans, Environmental policy, land-use planning, urban design.
- Development Control, Provision of footways, etc, in new development.

#### Highway Authority

- Transport planning and traffic management, including new development.
- Highway, footway and crossing design, transport policy initiatives.
- Footways Structural Maintenance
- Footways Routine Maintenance
- Footways Winter Maintenance
- Footways Sweeping
- Street Lighting
- Road Safety: Local Safety Schemes; road safety publicity and training.
- Rights of Way.

#### Police

- Law and order
- Enforcement of speed limits and responsible driving, parking, and footway cycling.

Local Authority and Police functions relating to provision for pedestrians.

Box 3.3.

## Public Consultation and Involvement

**3.11.** Public consultation and involvement is essential in all major stages of providing for walking, from development of strategic policies through to design details, maintenance issues and monitoring. The new approach to local government and to LTPs emphasises involving the public and partnership working (IHT, 1996).

**3.12.** Consulting the public on walking issues is not significantly different to other areas of local transport consultation, and should not be undertaken in isolation from them. However, some specific aspects are worth noting:

Would you like to contribute to the Nottingham Walking and Cycling Strategy?

Name \_\_\_\_\_

Address \_\_\_\_\_

I support /do not support the aims of the Strategy (delete as necessary)

My comments and suggestions for action are:

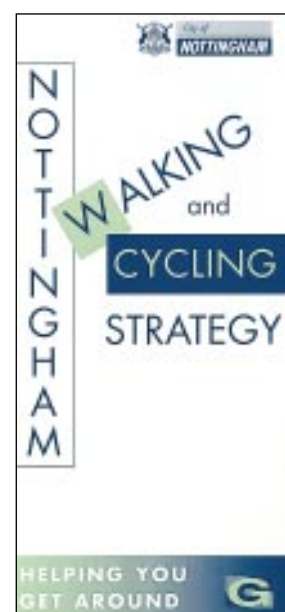
Return to:

Transport Strategy Team  
Development Department  
Nottingham City Council  
Exchange Buildings  
Smithy Row  
Nottingham NG1 3NS

○ Because walking is such a commonplace activity, people may not readily identify themselves as “pedestrians”.

○ Local pedestrian organisations should be consulted where possible but are likely to be too small to cover all local walking issues adequately.

○ Relevant stakeholders, such as local retailers, public transport operators, residents groups, health authorities and the police, should be consulted on pedestrian issues and encouraged to see that walking is relevant to their business, and to become involved.



Pedestrians should be consulted on policies as well as schemes.

*Courtesy: Nottingham City Council.*

- Those who are most dependent on walking and the quality of the pedestrian environment (such as children, older people and those with impaired mobility) may find it difficult to make their views understood. Those undertaking the consultation may fail to understand how to communicate with them. Specific efforts will be needed to ensure that their views are included.
- The concerns of local politicians, professional planners and engineers may not be the same as those of the walking public. The former are often more concerned with new schemes and accidents statistics, the latter are often more worried with more mundane things such as litter and dog dirt.

**3.13.** The public can be consulted on pedestrian issues by means of conventional consultation and market research techniques, such as public meetings, exhibitions, interviews and focus groups. It is useful to employ more than one method in order to cross-check result. This avoids possible over-representation of minority views and the likelihood of errors going unnoticed.

**3.14.** Increasingly the standard public opinion survey is being superseded with more interactive forms of participation. They include citizen audits, mystery consumer studies, Delphi panels, Samoan Circles, Future Search exercises, citizens juries, community commissions, developing community indicators, community call-up, planning for real exercises, interactive board games, festivals and travelling road shows. The trick is to choose the most appropriate from a growing menu of options in the light of the purpose and nature of the group being consulted. Further details can be found in *Modern Local Government: Guidance on Enhancing Public Participation* (DETR, 1999).

## New Development

**3.15.** New development, or significant redevelopment, is likely to provide opportunities for comprehensive new provision for pedestrians. The main task will be to consider pedestrian movements within the site, and between the site and its surrounds. A large scheme will need to thoroughly consider:

- The needs of pedestrians
- The policy objectives
- The setting
- The physical site constraints
- The financial constraints.

**3.16.** Guidance on new residential development is specifically provided in *Places, Streets and Movement* (DETR, 1998a), as described in Chapter 2.

**3.17.** In a major development there will be many planning decisions to be made with regard to walking. These will include:

- The overall disposition of buildings and spaces
- The location of buildings within sites and local access arrangements
- The alignment of routes to serve pedestrians
- The hierarchy of pedestrian routes
- The design standards and levels of service for pedestrians
- The degree of priority to be given to pedestrians (and other sustainable modes)
- The degree of mixing/segregation of pedestrians and vehicles
- How vehicle speeds will be controlled
- The aesthetic design
- The security.

**3.18.** Planning for pedestrians should be a specific and positive part of the development planning process. It should not be treated as something that can be fitted in once decisions about road layouts have been made.

**3.19.** In order to ensure that the alignment and standard of a pedestrian route is satisfactory, the practitioner will need to know, at least at a broad level, the following:

- Principal attractors and generators of pedestrian trips
- Principal pedestrian desire lines
- The level of pedestrian flows, at peak and off-peak times
- The types of pedestrians likely to use the routes.

## Attractors and Generators of Pedestrian Trips

**3.20.** The level of pedestrian traffic can usually be estimated to acceptable levels of accuracy by observing comparable existing developments. Key factors to consider are the proximity of housing to public transport, shops, schools, workplaces and entertainment centres; also land use densities and levels of car ownership and parking provision. Peak periods for walk trips will depend on the land use: for residential areas these will usually be 08.00–09.00 and 15.00–16.00 when school and work trips coincide; for other land uses, particularly retail, midday periods 12.00–14.00 may have higher peaks than the morning or evening period. Nationally, the peak hour for walking is 15.00–16.00 when one in ten walk trips start. This is the main time for collecting children from school and it is also the time when many women working part-time return home (DETR, 1998b).

**3.21.** For residential areas, walking trip generation rates by household can be derived from the NTS. Table 3.1 shows that a typical household will make two journey stages per day to or from the home on foot. (This excludes walk trips that do not start or finish at home.) Of course, householders will not be the only people using the footways in residential areas. There will also be delivery trips made on foot, for example by post and newspaper deliverers, and movements on foot between houses and vehicles, such as refuse collectors and milkmen. These types of travel are not recorded in NTS.

**3.22.** Unfortunately, walking trip generation rates for other land uses, such as retail or entertainment areas are not generally available. Information on data bases which include non-car modes is provided in IHT (1999).

Table 3.1: Walk stages to and from home: 1996/98.

|                                | One person household |      |      | Two person household |      |      | Three+person household |      |      | All households |      |      |
|--------------------------------|----------------------|------|------|----------------------|------|------|------------------------|------|------|----------------|------|------|
|                                | Out                  | In   | All  | Out                  | In   | All  | Out                    | In   | All  | Out            | In   | All  |
| AM peak                        |                      |      |      |                      |      |      |                        |      |      |                |      |      |
| 0800–0859                      | 0.05                 | 0.01 | 0.06 | 0.09                 | 0.02 | 0.11 | 0.46                   | 0.04 | 0.50 | 0.21           | 0.02 | 0.24 |
| PM peak                        |                      |      |      |                      |      |      |                        |      |      |                |      |      |
| 1500–1559                      | 0.02                 | 0.04 | 0.06 | 0.03                 | 0.07 | 0.10 | 0.11                   | 0.41 | 0.52 | 0.06           | 0.19 | 0.24 |
| All day average (Mon–Fri)      | 0.41                 | 0.39 | 0.80 | 0.62                 | 0.58 | 1.21 | 1.38                   | 1.33 | 2.71 | 0.84           | 0.80 | 1.64 |
| All day average (all days)     | 0.55                 | 0.53 | 1.08 | 0.82                 | 0.78 | 1.60 | 1.66                   | 1.61 | 3.27 | 1.05           | 1.01 | 2.06 |
| Number of households in sample | 2,648                |      |      | 3,253                |      |      | 3,383                  |      |      | 9,284          |      |      |
| Number of people in sample     | 2,648                |      |      | 6,506                |      |      | 12,826                 |      |      | 21,980         |      |      |

Source: DETR – National Travel Survey 1996/98 (special tabulation.)

## Desire lines

**3.23.** Pedestrian desire lines (current and post-development) should be identified, between homes and key destinations, such as local shops, bus stops and schools. Existing movement patterns, where applicable, may give a good indication of desire lines but some may be obstructed by barriers. Paths worn across grass are good clues. These should then be translated into routes, whilst minimising walking distances and eliminating or reducing any deterrents. The success of this will vary depending on whether the site is a green field, or already partially developed hence possibly frustrating some desire lines.

**3.24.** Crossings are a vital part of the pedestrian infrastructure and need to be planned as an integral part of the development.



Practitioners need to take account of pedestrian flows and desire lines.

*Courtesy: The Pedestrians Association.*

**3.25.** It is recommended that these key pedestrian routes be assigned a role within a pedestrian route hierarchy, if not already specified in the local plan. The approach adopted can be analogous to that used in highway design:

- Principal routes
- Local distributors
- Access routes

## Pedestrian Flow Levels

**3.26.** Walking is an extremely flexible mode. Provided that a good width standard is initially adopted, pedestrian networks (unlike road networks) can safely and comfortably accommodate considerable fluctuations in flow levels. It is therefore unnecessary to calculate the pedestrian flow levels to the degree of accuracy required for motorised traffic. However, some land uses are likely to attract significant peak pedestrian flows which will require special provision:

- Rail and coach stations
- Schools and colleges
- Entertainment places (theatres, cinemas, night clubs, etc)
- Sports stadia.

Other land uses may attract large numbers of pedestrians but the patterns of movement are more dispersed.

## Types of pedestrians

**3.27.** The types of pedestrian using the route will need to be considered at the planning stage, as this will have implication for layout and design. Significant use by shoppers, tourists, young children, the visually impaired, people using wheelchairs, and other groups with particular needs should be identified where possible. This can usually be worked out from the main land uses and the location.

## Transportation Planning Models

**3.28.** There are various tools available to transportation planners to assist with planning or modifying highway networks for motor vehicles (eg, IHT, 1997, Chapter 8). Models for pedestrian movement are less common. Pedestrian modelling techniques have been developed for those locations where there are large numbers of pedestrians and where virtually all journeys are on foot, for example in large public squares or within passenger terminals. However, they are less well developed for multi-modal situations covering large areas, such as a new settlement or existing town. In these instances conventional origin and destination forecasting techniques/survey results can be used to determine desire lines but modal split assumptions may have to be made on assignment. These assumptions should also take account of the implications of new policies and schemes that will change the current situation.

**3.29.** The absence of specific pedestrian models for planning new developments is not necessarily a major problem. Most pedestrian networks are planned without models. Observation and experience are probably more important. It is also worth remembering that models can be expensive to construct and are not always sufficiently accurate.

## Acceptable walking distances

**3.30.** Approximately 80% of walk journeys and walk stages in urban areas are less than one mile. The average length of a walk journey is one kilometre (0.6 miles). This differs little by age or sex and has remained constant since 1975/76. However, this varies according to location. Average walking distances are longest in Inner London. The main factors that influence both walking distance and walking time in a city or town centre appear to be the size of the city or town itself, the shape and the quality of the pedestrianised area, the type of shops and number of activities carried out. An average walking speed of approximately 1.4 m/s can be assumed, which equates to approximately 400m in five minutes or three miles per hour. The situation of people with mobility difficulties must be kept in mind in applying any specific figures.

**3.31.** “Acceptable” walking distances will obviously vary between individuals and circumstances. Acceptable walking distances will depend on various factors including:

- An individual's fitness and physical ability
- Encumbrances, eg shopping, pushchair
- Availability, cost and convenience of alternatives transport modes
- Time savings
- Journey purpose
- Personal motivation
- General deterrents to walking.

**3.32.** Table 3.2 contains suggested acceptable walking distances, for pedestrians without a mobility impairment for some common facilities. These may be used for planning and evaluation purposes. (See also Table 4.2.)

Table 3.2: Suggested Acceptable Walking Distance.

|                   | Town centres<br>(m) | Commuting/School<br>Sight-seeing (m) | Elsewhere<br>(m) |
|-------------------|---------------------|--------------------------------------|------------------|
| Desirable         | 200                 | 500                                  | 400              |
| Acceptable        | 400                 | 1000                                 | 800              |
| Preferred maximum | 800                 | 2000                                 | 1200             |

**3.33.** Planning Policy Guidance Note 6 states that the acceptable distance from a supermarket car park to the town centre is about 200–300m (DOE, 1996). Further sources of information on acceptable walking distances are provide by IHT (1997 and 1999) and DETR (1998).

**3.34.** For shopping, Carley and Donaldsons (1996) advise that that “acceptable” walking distances depend on the quality of the shops, the size of the shopping centre and the length of stay of the shopper. Specifically, they state that parking time governs the distance walked from parking. See Table 3.3) Higher quality and larger centres generate longer acceptable walking distances with up to 1250m of walking journey to 100,000m<sup>2</sup> of floor space.

Table 3.3: Acceptable walking distances for car–borne shoppers.

| Parking time (hours) | Acceptable walking distance (metres) |
|----------------------|--------------------------------------|
| 30 mins              | 100                                  |
| 1                    | 200                                  |
| 2                    | 400                                  |
| 4                    | 800                                  |
| 8                    | 1000                                 |

*Source: Carley and Donaldsons (1997)*

## Individual Sites/Redevelopment

**3.35.** For smaller areas and individual new developments or redevelopment, usually within an existing urban area, origin /destination surveys and network planning may not be appropriate. It will be important to identify the anticipated desire lines, crossing locations, volume and type of pedestrian activity. The practicality and attractiveness of walking depend not only on the general location but also on the access details. The most important considerations are likely to be:

- the ease of pedestrian access to the site
- the orientation and location of buildings within the site
- the access arrangements within the site
- the architectural style of the development (car or pedestrian oriented).

**3.36.** Additional walking distances or gradients, can be crucial in determining whether a development is pedestrian friendly. Layouts that require pedestrians to walk through car parks or to follow indirect footpaths should be avoided as far as possible. These are issues that should be addressed jointly by planners and engineers involved in development control.

**3.37.** If the development is sufficiently large to warrant a Transport Impact Assessment, the local authority should ensure that this thoroughly addresses the issues of pedestrian access, both to the site and within it. Some guidance is provided in IHT *Guidelines for Providing for Public Transport in Developments* (IHT, 1999). Further Guidelines on Transport Assessments are expected from DETR.

**3.38.** It may be appropriate for the developer to contribute towards new or improved pedestrian facilities, either directly or via commuted payments. A Travel Plan may also be made a condition of planning consent. (See Chapter 7.)

## Existing Pedestrian Routes

**3.39.** On existing urban routes, the main task is likely to be one of improving the quality and suitability of the current walking infrastructure, rather than constructing new routes. The improvements can be categorised into four main headings as below.

### Improving the Quality of the Environment

**3.40.** If people are to choose to walk rather than drive, at least for more short trips, the pedestrian environment must be more than just functionally adequate. It needs to be of high quality, so that the walk is a pleasant experience. This requires not only the specific improvements to facilities described above but also an urban design approach to designing, constructing and managing the pedestrian environment. This will involve multi-disciplinary skills and sustained partnership working. Specific measures will include:

- **Cleaner pavements.** Better and more frequent street sweeping, action to prevent littering and dog fouling, etc.
- **Improved footway surfaces.** Prompt repairs, use of higher quality materials, and accessible footway defect reporting systems.
- **Tackling graffiti.** Prompt removal of graffiti and fly-posters, and working with young people to discourage graffiti artists.
- **Trees and street furniture.** Introducing more greenery, improved quality of street furniture, providing benches and public art.

### Improving Road Safety

**3.41.** Reducing traffic dangers to pedestrians and their fear of accidents is important in order to enable more people to walk, especially children and elderly people. The volume of motorised traffic, the percentage of large vehicles, its noise and its proximity to pedestrian routes, can be intimidating for pedestrians and make them feel uncomfortable. The following are amongst the key measures available to improve safety for pedestrians:

- **Reducing vehicle speeds.** This can be achieved by physical measures and increased enforcement, supported by publicity, education and community involvement. Reducing the speed limit may also be appropriate. Local authorities are encouraged to introduce 20mph zones around schools and in residential areas (DETR, 2000c). They now have powers to introduce 20mph limits without physical measures.
- **Reducing traffic intimidation.** Traffic reduction, traffic management, traffic calming measures can alleviate these problems. Reallocation of road space to increase the physical separation distance will help. So too will positioning physical objects, such as trees, street lighting columns and street furniture, between the footway and the carriageway. However, they should not cause an obstruction to pedestrians or interfere with sight lines.
- **Providing safer crossings.** If the speed and volume of traffic are reduced, as above, crossing the roads should become easier and safer. However, specific crossing facilities may still be needed. There is a range of types of crossing facility and *Local Transport Note 1/95* (DOT, 1995) gives local authorities considerable flexibility in deciding when to install a crossing and the type of crossing to install. The objective should be to provide frequent, safe and convenient crossing opportunities.

- **Reducing footway hazards.** Driving, parking and cycling on the footway is hazardous for pedestrians and can deter travel on foot. These offences should be tackled by appropriate design, education and enforcement.

## Improving Personal Security

**3.42.** Fear of crime, particularly personal assault, is a significant deterrent to walking, especially for women, and after dark. The incidence and the fear of crime can be reduced by a number of physical and management measures.

- **Crime and Disorder Audits.** These audits (See Chapter 2) may have identified specific problems affecting pedestrians, and suggested solutions. Further audits of specific local security issues may be useful.
- **Improved street lighting.** It may be possible to install additional or upgraded street lighting; or to improve the maintenance of existing lighting, taking into account the views of local residents. (In rural areas particularly, street lighting may not be popular.)
- **Increasing visibility and surveillance.** Pedestrian routes and areas may be concealed or isolated from natural surveillance. It may be possible to improve visibility by removing obstructions, such as excessive vegetation, or even to modify the alignment of routes so that pedestrians are more easily seen by residents and other road users.
- **CCTV installation.** In certain areas, notably town centres, CCTV may be appropriate.
- **More effective policing.** Action by the Police, Special Constables or street wardens may be possible. This could include increased officer presence, improved liaison with the local community, and tackling specific problems or known trouble-makers.
- **Increasing local activity.** Increased local activity tends to reduce the fear of crime. Whilst this is not always an easy thing for a local authority to influence, it can be affected by land use and development control policies, and other local authority functions such as education and recreation.

**3.43.** Detailed examples of projects that have successfully cut crime and increased walking are reported in *Personal Security Issues in Pedestrian Journeys* (Crime Concern and SRA, 1999).

**3.44.** Guidance is given on the detailed design methods required to create lively and safe streets in Circular 5/94 “Designing Out Crime” (DOE, 1994). Overall, increasing pedestrian activity helps to break the vicious circle of more isolated areas encouraging higher crime rates and greater public fear of crime. Advice should be sought at an early stage from the Police Architectural Liaison Officer/Crime Prevention Officer.

## Improving Footway Widths

**3.45.** Providing a satisfactory width of footway, including separation distance from motor vehicles, is important to enable pedestrians to walk at their chosen speed, to escort children, to walk in groups, and to pass others safely. Existing footway widths may be inadequate, or it may be desirable to increase them in order to improve pedestrian comfort and safety. This can be particularly important at specific locations, such as where pedestrians are waiting to crossing a road. Footway widths can be increased by:

- **Reallocating road space.** Road space can be reallocated from motor vehicles to pedestrians, including pedestrianisation schemes, narrowing the carriageway or providing shared surfaces (although shared surfaces can lead to new problems).

- **Increasing the usable footway width.** The usable width of existing footways can sometimes be increased by physical measures and by improved management. Measures include repositioning street furniture, preventing pavement parking and cycling, cutting back overhanging vegetation, reducing signboards and similar footway obstructions, and, in limited cases, paving part or all of the verge.



The footways on Camden High Street have been widened to accommodate the very large number of pedestrians. Vehicles are permitted to park on the footway at certain times. *Courtesy: David Davies.*

## Assessing the Walking Environment – Pedestrian Reviews

**3.46.** *Encouraging walking: advice to local authorities* (DETR, 2000a) recommends using “The Five Cs” as a checklist to assess the overall quality of the existing environment for walking. See Box 3.4.

**3.47.** These criteria, which were developed by the London Planning Advisory Committee, are described more fully in *Encouraging Walking: Advice to Local Authorities*.

Is the local walking environment:

- Connected?
- Comfortable?
- Convenient?
- Convivial?
- Conspicuous?

“The Five Cs”.

Box 3.4.

**3.48.** Where it is necessary or desirable to take a comprehensive look at existing conditions for pedestrians, a pedestrian review may be a useful approach. (The term “pedestrian review” is used, in these Guidelines, to describe a systematic examination of existing conditions. This is to distinguish it from the term “pedestrian audit” which refers to the examination of planned schemes. This is analogous to the terminology and procedures set out in the *Guidelines for Cycle Audit and Cycle Review* (IHT, 1998)).

**3.49.** A pedestrian review can be defined as a systematic process, applied to the transport network, which is designed to identify its positive and negative aspects for walking, and to assess ways in which those networks can be improved in order to encourage walking.

**3.50.** The purpose of a pedestrian review will include some or all of the following. To:

- Systematically and comprehensively assess walking conditions on a route or network;
- Identify the problems and locations that most require attention;
- Enable the level of service for pedestrian of a route to be assessed;
- Identify those measures that seem most feasible and beneficial;
- Produce a framework for more detailed investigation and action.

**3.51.** A pedestrian review is likely to be helpful in relation to the following:

- Consultation on local walking issues
- As a factual basis of a detailed Local Walking Strategy or action plan
- A major redevelopment or town centre enhancement.

**3.52.** The principle of pedestrian review is to assess the existing conditions in relation to the factors that are most important to pedestrians, on the basis of desirable standards of provision. The factors are those listed in section 3 above. The standards are set out in subsequent chapters which cover design and maintenance standards.

**3.53.** A pedestrian review will involve addressing some or all of the issues in Table 3.4.

**3.54.** The review should concentrate on objective assessments but some issues, such as personal security, will require “subjective” judgements. Some information will already be available to the local authority, such as street lighting standards, footway condition surveys, traffic flows and casualty data. Other information will require site visits to check, for example, footway widths, and parking problems. As experience is gained, it should become easier to collect standardised, quantifiable information that will enable comparison between areas.

**3.55.** Public consultation and involvement will be an essential part of the review process. It is likely to pick up the more subjective issues, such as personal security, that are hard to objectively assess. The public is more likely to take the consultation seriously if the local authority provides a framework backed by local surveys and information. Consultation will complement, but is not a substitute for, objective assessment.

**3.56.** Once conditions have been assessed and problems, if any, identified, it will be helpful to list potential solutions and to test their initial feasibility. Further advice is provided in *Developing Urban Transport Strategies* (IHT, 1999).

## Reviews by User Groups

**3.57.** Local pedestrian groups, residents’ organisations, disability groups, and other community groups or individuals are sometimes willing to undertake pedestrian reviews themselves. These can be very valuable as they may supplement the resources of the local authority and provide details from the perspective of certain types of user. An example of a Pedestrian Audit form for use by local pedestrians is provided in Appendix B. Case study examples from the Partnership for a Walkable America can be viewed at [www.walkable.org](http://www.walkable.org).

**3.58.** Taking photographs, slides or video can also be valuable audit methods, particularly for presenting at meetings where they can portray conditions more convincingly than a written report.

## Level of Service Measurement Methods

**3.59.** Pedestrians are very efficient users of space. Because they can move in close proximity to one another, a relatively narrow footway can have a very high pedestrian flow capacity. However, although people might be able to make progress, conditions that would be acceptable at a football match would not be considered acceptable on a residential street. Simple capacity is therefore only part of the requirement and must be combined with a concept of the level of service.

**3.60.** Techniques have been developed in the US and elsewhere to measure the pedestrian level of service – the “pedestrian-friendliness” – provided by a route. (Level of service measurement is commonly used in relation to roads and motorised traffic but less frequently in relation to facilities for non-motorised users.)

**3.61.** Fruin (1971) developed a method for assessing the pedestrian level of service in terms of the pedestrian’s freedom to walk at his/her chosen speed and to pass others – a measure of

| Issue               | Question                                                                                                  | Suggested Criteria                                                                                |
|---------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Directness          | How direct are principal pedestrian routes between significant journey origins and destinations?          | Walking distances relative to crow–flies distance.                                                |
| Comprehensiveness   | Do pedestrian routes serve all significant destinations?                                                  | Locations not served.                                                                             |
| Width               | Are routes wide enough to enable pedestrians to proceed and to pass others comfortably?                   | Usable footway width.<br>Pedestrian flow/density.                                                 |
| Obstructions/misuse | Are there problems of pavement parking, pavement cycling, illegal signs, or other obstructions?           | Negligible/slight/regular/serious                                                                 |
| Surfaces            | Are surfaces firm, even, non–slip, clean and well drained?                                                | Footway maintenance survey data. Frequency of inspection and sweeping.                            |
| Crossings           | Are footways linked by safe and convenient crossings?                                                     | Locations on known desire lines where crossing is slow or hazardous.                              |
| Personal security   | Are pedestrian routes well lit, surveilled and otherwise safe in term of personal security?               | Streets with lighting below standard. Footways not overlooked. Presence of vandalism or graffiti. |
| Pleasant            | Are levels of traffic noise and fumes excessive? Is the immediate environment attractive for pedestrians? | Traffic flows and speeds.                                                                         |
| Signing             | Are street names and destinations clearly signed? Are local map boards provided?                          | No. missing or damaged.                                                                           |
| Suitability         | Are the different needs and abilities of users provided for?                                              | Dropped crossings, tactile paving, etc.                                                           |

Table 3.4: Pedestrian Review: Assessing Existing Conditions.

pedestrian congestion and convenience. It is based on the amount of space available to each pedestrian and converted to pedestrian flow per minute relative to the available width. The method was originally intended for use in relation to walkways in pedestrian–only areas, such as within shopping centres and underground stations, but it is also useful for assessing some aspects of the quality of footways and other pedestrian routes. The method is relatively simple and inexpensive, and has been widely used.

Table 3.5: Footway Level of Service Measurement. *Source: Fruin, 1971.*

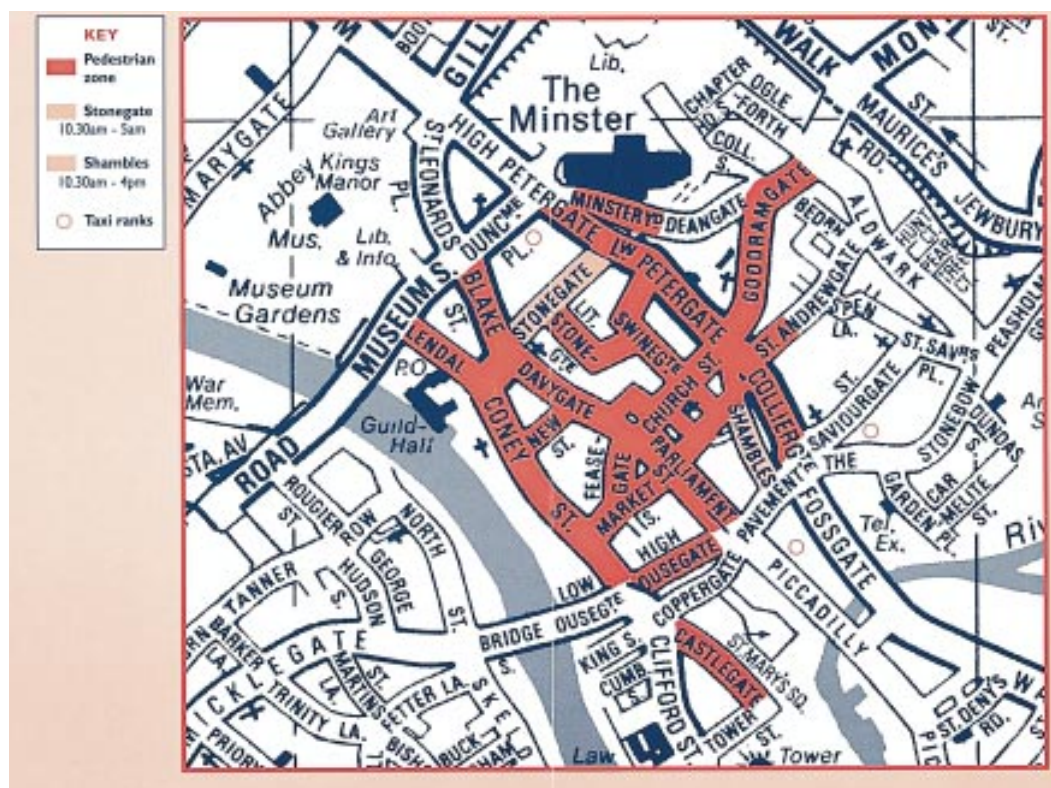
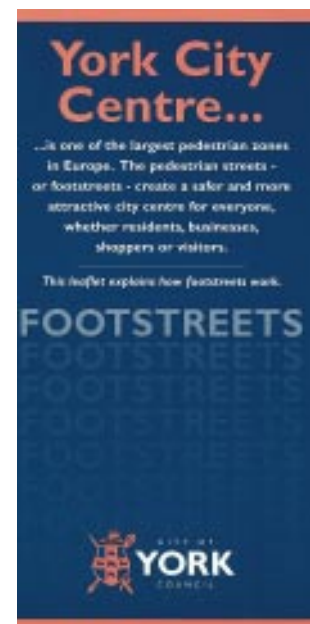
| Level of Service | Sq Ft per Pedestrian* | Pedestrians per minute per foot width |
|------------------|-----------------------|---------------------------------------|
| A                | >35                   | <7                                    |
| B                | 25–35                 | 7–10                                  |
| C                | 15–25                 | 10–15                                 |
| D                | 10–15                 | 15–20                                 |
| E                | 5–10                  | 20–25                                 |
| F                | <5                    | >25                                   |

\*The measurements in columns two and three are alternative ways of measuring the same thing. Where the flow is bi-directional (normal on public streets) or where shoppers are involved the lower values will apply.

**3.62.** Fruin classifies six levels of service (A–F). At the highest level of service (A), pedestrians are able to select freely their own walking speed and to pass others. At the lowest level of service (F), the density is such that walking speeds are extremely restricted and akin to queuing. For most footways, level of service A would be normal outside peak periods. Central shopping streets would experience levels B or sometimes C during busy periods. Railway stations, sports stadia, etc might experience levels D or above at very busy peaks. The levels of service are calculated as shown in Table 3.5.

The York pedestrian area – one of the largest in Europe.

*Courtesy: City of York.*



**3.63.** Footway conditions in the peak periods are most relevant for assessment. They can be measured either by an observer counting (or videoing) the flow of pedestrians past a given location. Alternatively, pedestrian densities could be calculated from photographs. These may be available from CCTV, or cameras could be set up for the survey.

**3.64.** Dixon (1996) describes a more comprehensive method that incorporates traffic conflict and other factors. It classifies pedestrian routes into six overall levels of service (A–F) on the basis of awarding points for the following:

- Footway width and continuity
- Conflicts and delays
- Amenities
- Motor vehicle flow and carriageway widths
- Maintenance
- Public transport provision.

**3.65.** Dixon provides details of how to measure each factor and how to calculate the pedestrian level of service. Some adaptation would be required in order to apply this method to the UK situation.

## Planning Pedestrian Priority

**3.66.** The Government is encouraging local authorities to give greater priority to pedestrians by reallocating road space, and reducing the speed and volume of motorised traffic. (The term “pedestrian priority” is often used, if loosely. It needs to be recognised that although measures such as pedestrianisation and traffic calming do give pedestrians greater effective priority, it is not a priority in the legal sense.) Giving pedestrians more priority in the design of streets involves considering how pedestrians use the street. Pedestrians need not only to be able to walk comfortably along the street, but also they need to spend time in the street, window shopping, talking to others, waiting for buses, sitting and, in some locations, playing. In many streets, non-movement functions may be more important than the movement functions.

**3.67.** The volume and the speed of motorised traffic are important determinants of safety and attractiveness of a street for pedestrians. They are factors that need to be taken into account when considering the types of measure that can be achieved.

**3.68.** In developing a local walking strategy for a town or district, local authorities may find it helpful to categorise the roads in a town or area according to their current ‘pedestrian friendliness’ status and desirable/proposed status. The categories in Box 3.5 are recommended. This would be consistent with the road hierarchy approach recommended in the Review of speed policy (DETR, 2000b).

Pedestrian zone (no motor vehicles)  
VRA (limited vehicle access)  
Home zone  
20mph zone (with physical measures)  
20mph speed limit (physical measures optional)  
30mph speed limit  
40mph speed limit  
>40mph speed limit

(More or less detailed categories can be used as appropriate.)

Pedestrian–Friendliness Road Classifications.

Box 3.5.

**3.69.** In the initial stages, such classifications would not be definitive and detailed work would be needed before proposals for schemes could be put forward. However, the technique might be useful for discussing and planning varying levels of pedestrian-friendly measures on an area basis. An example is shown in Table 3.6.

| Table 3.6: Existing and Desirable Speed Limits. |          |                 |
|-------------------------------------------------|----------|-----------------|
| Road Name                                       | Existing | Desirable       |
| High Street                                     | 30 mph   | Pedestrian zone |
| Foley Avenue                                    | 30 mph   | 20 mph limit    |
| Lawson Terrace                                  | 30 mph   | Home zone       |
| London Road                                     | 40 mph   | 30 mph          |

**Pedestrian Zones**

**3.70.** This would provide the safest area for pedestrians to move about unrestricted. Typically this would be particularly appropriate to central retail and commercial areas; residential estates, leisure and holiday parks where they are purposely designed as car-free environments and in some instances areas where there is a particular accident problem. However, certain factors have to be considered, in particular the need for:

- Extensive consultation.
- Night time or rear or underground servicing to premises.
- Out of hours street cleansing and maintenance.
- Access arrangements for emergency services.

**3.71.** *Pedestrian Streets: Guidelines for Planning, Design and Management* (IHT, forthcoming) will provide guidance on this topic.



Nutford Place, London has been closed to vehicles and attractively landscaped, with York stone paving, new trees and lighting. *Courtesy: TDFL.*

## Vehicle Restricted Areas

**3.72.** It is often necessary and sometimes desirable to permit limited vehicle access to pedestrian areas. For example, buses, orange badge holders, cycles and delivery vehicles may be exempted. This is currently used extensively throughout the UK in retail and commercial centres where total pedestrianisation is either not practical or desirable. Vehicle restrictions often vary by time of day. Typically deliveries and servicing of premises would be prohibited between the hours of 10:00 and 16:00. In some instances, in areas of evening entertainment, it may be more appropriate to restrict vehicle access in the evenings, say between 20:00 and 02:00. Guidance is provided in *LTN 1/87 Getting the Right Balance* (DOT, 1987).

**3.73.** The factors that need special consideration include:

- Extensive consultation.
- Strict enforcement required.
- Special access may be needed for emergency services if barriers are used.
- Avoiding providing a false sense of safety to pedestrians
- Access for or proximity of public transport



Home zones are common in Holland. © Crown Copyright 2000. Photograph reproduced by permission of DETR.

## Home zones

**3.74.** Home zones, now widespread in many parts of Europe, originated in the Netherlands. The continental examples tend to comprise residential streets in which the road space is shared between motor vehicles and other road users, with the needs of pedestrians, including children, and cyclists in some countries coming first. Speed limits are set very low – usually 15kph or below – and the layout of the street is altered to indicate the new priorities and to enforce low speeds. The aim of home zones is to change the way the street is used in order to achieve a

wider range of benefits to communities than are typically achieved in conventional residential streets. To fully adopt the continental model in the UK would require changes in legislation.

**3.75.** The UK Government's Transport White Paper recognises the value of home zones in improving the places where people live and children play, and states that with good design many of the objectives of home zones could be achieved in the UK within existing legislation. It provides a commitment to work with local authorities who wish to pilot the idea.

**3.76.** In England and Wales a number of local authorities are developing plans to introduce home zones and the DETR is investigating the extent to which the home zone concept can be implemented within existing legislation. To that end, nine local authority home zone schemes have been selected by the DETR for inclusion in a three year research project (1999–2002) to monitor their impact.

**3.77.** Home zones enhance streets so that they are not just traffic routes but urban spaces, physically changing them to provide for local activities rather than through movement alone. The street designs should emphasise this change in status. The priorities and desires of the local community will be very important in determining the character and design of a home zone. Typically designs will encourage more social and recreational activities than in traditional streets. Home zones will involve blending traffic calming techniques with urban design and community planning. Examples of good practice are provided in *Living Streets* (Transport 2000, 1999a).

**3.78.** Factors that need particular attention when developing home zone proposals include:–

- Extensive consultation and local “ownership” of the scheme.
- Speed enforcement – very low speeds can be difficult to achieve without engineering measures.
- Speed reduction – this is essential in order to reduce the risk and severity of accidents to pedestrians.

## Enhanced Pedestrian Safety – Vehicle Speed Reduction Measures

### 20mph Speed Limits

**3.79.** The severity of a pedestrian injury sustained in a road traffic accident is closely linked to the speed of the approaching vehicle. The extent of the benefits that can be achieved through reduced speeds has been clearly demonstrated by the success of 20mph zones in substantially reducing pedestrian and cyclist casualty rates amongst both adults and children.

**3.80.** In 20mph zones, average speeds are kept below 20mph by self-enforcing physical measures, such as traffic calming, or the layout of the streets. These zones have been very successful at reducing casualties and shifting the priorities in streets more in favour of shoppers, residents, school children and pedestrians. However, the high cost of the works, and objections to some of the physical measures, have inevitably limited the application of 20mph zones.

**3.81.** Since July 1999, local authorities have also been permitted to set 20mph limits without self-enforcing measures. 20mph limits are likely to be useful where average speeds are already below 30mph. This is likely to enable much wider use of lower speed limits, particularly in residential streets, near schools, shopping streets and town centres. Traffic calming measures can be used in 20mph limits but (unlike in 20mph zones) must be individually signed. Further advice is provided in *Traffic Advisory Leaflet 9/99 20mph Speed Limits and Zones* (DETR, 1999). The use of 30kph (19mph) limits, with and without self-enforcing measures, is increasingly common in parts of mainland Europe. However, the use of signs alone, without enforcement or physical measures, has only a slight impact on actual speeds.

## Quiet Lanes

**3.82.** The rural equivalent to home zones are Quiet Lanes. These are a Countryside Agency initiative aimed at making networks of country lanes more attractive for walking, cycling and horse riding in the interests of a more tranquil and attractive rural environment. (See the UK Transport White Paper, para. 3.121.) It is believed that much can be achieved under existing legislation to improve conditions for pedestrians, cyclists and horse riders within such networks. Studies are being undertaken in the three demonstration areas established in Norfolk, Kent and Devon. The Norfolk quiet lane network was installed in March 2000, Kent's scheme should be installed in summer 2000 and Devon's scheme is expected at the end of 2000. Information on these projects can be viewed at the Countryside Agency's website [www.quiet-roads.gov.uk](http://www.quiet-roads.gov.uk).

## School Travel Plans

**3.83.** A good example of when and how to cater for a special pedestrian need lies in the concept of school travel plans which incorporate the safer routes to school projects pioneered by Sustrans and various local authorities.

**3.84.** Despite a decline in the percentage of children who walk to school, walking is still by far the main mode of travel to school and is likely to remain so. The best scope for increasing walking to school is generally with children below 10 years of age.

**3.85.** There are four main driving forces behind school travel plans:

- Improving safety and security for school children
- Promoting the health benefits of walking and cycling
- Reducing the use of cars with the attendant problems of traffic congestion and air pollution
- Minimising demands on local education authority transport budgets.

**3.86.** The successful development of school travel plans depends critically on participation and partnership. The school children, their parents and teachers are involved in the process from the beginning.

**3.87.** The perceived barriers to walking to school usually include the following:

- Safety (traffic danger)
- Personal security (stranger danger and bullying)
- Effort (too far, too lazy, too much to carry, Easier by car/ bus/bike)
- Environment (bad weather, traffic pollution, poor quality of route)
- Other (no one to travel with, not allowed)

**3.88.** The reasons and priorities of school children differ to some extent from those of adults. They also differ according to the school and locality and local surveys will be necessary. However these barriers do give the practitioner guidance on actions to take in designing for and promoting walking to school.

**3.89.** School travel plans can address the twin fears of traffic and strangers: when the proportion of non-car journeys is increased there is a sense that "more people are about". For this reason other local measures which promote bus use and cycling will assist pedestrians in the majority of cases.

## Good Practice

**3.90.** There are now several guides specifically about school travel plans. *School Travel* –

*Strategies and Plans* (DETR, 1999) is a best practice guide for local authorities. *A Safer Journey to School* (Transport 2000, 1999b) is a guide for parents, teachers and governors. Further advice on walking aspects is provided in *The Walking Class* (Pedestrians Association, 1999). Key elements in the development of safer routes to schools include the following.

**3.91. Participation/Survey.** This involves establishing existing routes, identifying actual and perceived hazards and areas of risk and seeking views on options for change. The essential feature of the process is that it is carried out with the participation of the children themselves, with parents, local residents and school staff. Children are then more likely to use the preferred routes. The costs of consultation and participation can be a substantial part of the total.

**3.92. Development of Proposals.** As far as practical, safer routes should start with the situation immediately within and outside the school and follow those routes generally used by the majority of pupils. Consideration needs to be given to footway / cycleway widths, opportunities for reducing and calming traffic volumes (such as speed cushions, humps and tables, road narrowing, gateways, use of variable or lower speed limits, stricter parking restrictions outside schools and other traffic management measures), and nature of pedestrian crossing points. Layouts within school grounds should be designed in close consultation with the school, along with further measures such as cycle parking and locker provision. Changes to school policies should also be investigated.

**3.93. Implementation.** Implementation of safer routes takes time and many involve substantial staff and financial resources. It is therefore worth stressing the importance of a holistic approach to costs and benefits for the various funding partners. There is also an emphasis on school travel plans in LTP guidance, but it is essential to examine all possible sources of funding including opportunities for planning gain from developers and, particularly for measures within school grounds, sponsorship from local companies.

**3.94. Maintaining Contact/Media Coverage.** Ensuring adequate public participation takes time as does development of detailed designs and complying with any necessary statutory procedures (such as those associated with the promotion of traffic regulation orders). A three-year period is typical of the timescale associated with the development and implementation of a comprehensive network of safer routes for any new school. This makes it the more essential that children and parents are kept fully informed of progress. The media also have a vital role to play in terms of raising general awareness, helping to achieve public support and in encouraging a more considerate attitude in car owners to the journeys that they make and to where and how they park.

**3.95. Promotion.** Fundamental to the success of the scheme is the role of the school in promoting walking. These aspects are covered in Chapter 7.

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- |                                                     |                                                                                   |
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|                                  |                                                                                                                           |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------|
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