

Planning for Walking

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Broad Quay, Bristol

1. Introduction

After driving and being driven, walking is the most common form of travel in Britain. It accounted for 22% of all journeys in 2012 (National Travel Survey). At approximately 200 to 250 journeys per person a year, walking is remarkably constant from cities to small towns. Only in rural districts do people walk significantly less than this.

People make fewer short journeys by all modes than they used to. As a result, walking has been declining, although the reduction in the number of walk journeys largely stopped in 2007.

Some key points:

- **Most short journeys are still made wholly on foot.**
- **Walking is also part of longer journeys. Very few trips by car or public transport are completed without some walking.**
- **Pedestrian “footfall” determines the viability of shops.**
- **Walking contributes to physical and mental health.**

The Welsh Government is promoting active travel and has passed the Active Travel (Wales) Act 2013. This act created new duties for local authorities in Wales and also gave the Welsh ministers the power to issue guidance on the location, nature and condition of active travel routes and facilities to ensure they are suitable for use.

This Chartered Institution of Highways and Transportation (CIHT) guideline *Planning for Walking*:

- **describes the characteristics of pedestrian journeys,**
- **lists the benefits of walking,**
- **identifies factors that discourage walking and how they can be overcome,**
- **summarises the legal framework that applies to pedestrians and**
- **outlines the way that plans and strategies for pedestrian travel are developed.**

As it is a web-based publication that can be modified relatively easily, CIHT would welcome examples that build on the content of this guidance for inclusion in further guidance on the subject.

These guidelines are complemented by another CIHT document, *Designing for Walking* (CIHT, 2015), which covers the design and evaluation of facilities for pedestrians.

2. Walking Characteristics, Behaviour and Trends

In 2012, people in all types of urban areas made between 196 and 252 pedestrian journeys a year. Size of settlement made little difference, and even in rural districts - communities with fewer than 3,000 residents - people averaged 147 walk trips a year.

Across Britain, approximately 80% of journeys shorter than 1 mile are made wholly on foot – something that has changed little in 30 years (Figure 1). The main reason for the decline in walking is the fall in the total number of journeys shorter than 1 mile, which has halved in thirty years (Figure 2). It is not that people are less likely to make short journeys on foot but rather that fewer of the journeys they make can be accomplished on foot. If destinations are within walking distance, people are more likely to walk if walking is safe and comfortable and the environment is attractive.

Historically, the most common reason for walking was to go shopping, but the number of shopping trips has sharply declined over the past two decades, roughly halving in number. Now, approximately equal numbers of walk trips are made for shopping, leisure, education and education escort, going for a walk and others.



As people age, they walk less. Over the whole population, approximately 15% of people, most of them elderly, have an impairment that affects their mobility. People with mobility difficulties use a variety of aids. By far the most common aids to walking are sticks, which account for approximately 69% of all aids.

Approximately half of people with mobility difficulties are able to get about on their own, but it is estimated that 10% of adults cannot walk 400 yards, and 5% cannot walk 200 yards, without a rest or severe discomfort.

The number of mobility scooters is rapidly increasing, with an estimated 300,000 in use in 2011. Such scooters should be considered in transport planning and in the design of pedestrian areas.

Figure 1: Percentage of journeys on foot 1972/73 to 2012

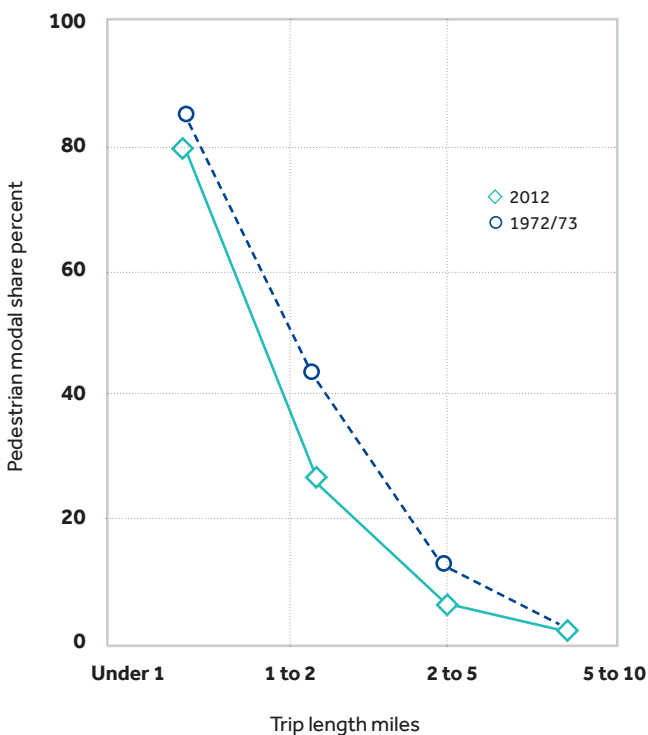
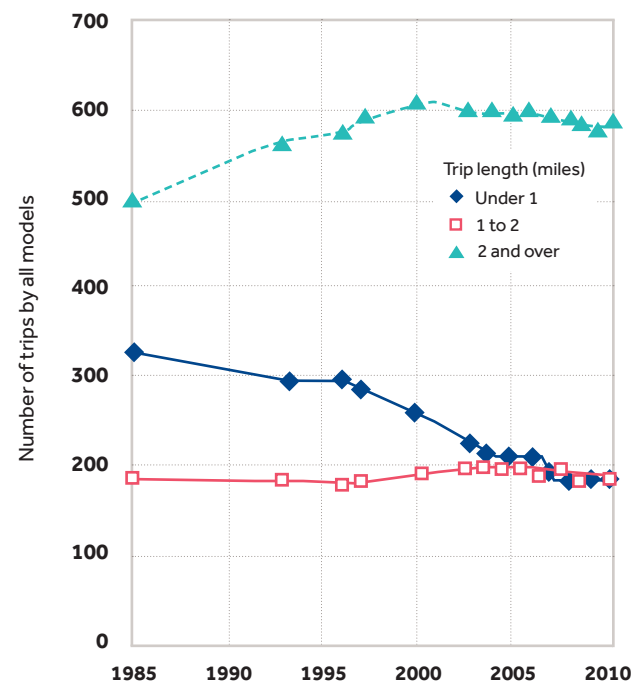


Figure 2: Trend in the number of journeys of different length, Great Britain



(National Travel Survey, Department for Transport [DfT])

3. Benefits Of Walking

Health

Walking more offers benefits, such as improved health and a reduced risk of obesity. A recent study of over 334,000 European men and women found that just a modest increase in physical activity could have significant health benefits.

Economic benefits

The economic benefits of a good-quality pedestrian environment include increased property prices and greater pedestrian footfall, leading to increased retail turnover. In Coventry, for instance, new pedestrian areas, a new civic square, clearer signage and better placement of street furniture in the centre were credited with a 25% rise in footfall on Saturdays (The Pedestrian Pound, Living Streets, 2013). Evidence suggests that pedestrians spend more than people arriving by motorised transport. Improving conditions for pedestrians in town centres can also encourage urban regeneration by stimulating and supporting new markets and enterprise.

Relieving public transport

Encouraging walking can be an effective way to help relieve congestion on public transport. During the 2012 Olympic Games, Transport for London (TfL) ran a campaign encouraging people to walk and free up public transport for those attending the Games. The campaign was successful. It particularly persuaded commuters who arrived at main line stations to walk. Furthermore, 15% of regular travellers who made a change to their travel during the Games have continued with that change, equivalent to around one in ten (11%) of all regular London travellers.

Photo: Edinburgh City Council



A pleasant environment encourages commercial activity. Grassmarket, Edinburgh

4. Current Conditions and Challenges

Problems faced by pedestrians

Pedestrians can face challenges caused by a combination of poor planning for pedestrians, poor maintenance and management of pedestrian routes, conflicts with motor vehicles and lack of personal security. Problems cited include inadequate footway maintenance, dog fouling, splashing by drivers, cul-de-sac that turn suburban areas into mazes, lack of benches and public lavatories, lack of signs for visitors on foot, steep gradients and/or steps, fear of road accidents, obstructions on footways including parked cars, cycling on pavements, inadequate green time at signal-controlled crossings, graffiti and fear of assault. These problems have not changed over several decades.



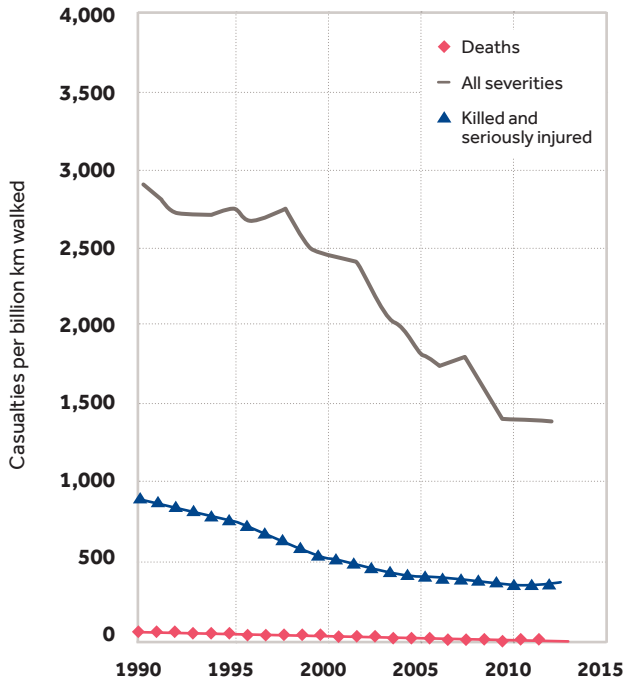
Photo: Lynda Addison

Graffiti and unpleasant environments for walking

Road safety and fear of traffic

The risk for pedestrians of being involved in road accidents can be measured by the number of pedestrian casualties, the casualty rate per passing vehicle and the casualty rate per distance walked. By all three measures, pedestrian safety has significantly improved in the past 20 to 40 years. Pedestrian deaths declined from approximately 3,000 in 1970 to approximately 400 in 2013 and the fatality rate from 80 in 1990 to 23 in 2012 per billion kilometres walked (Figure 3).

Figure 3: Pedestrian casualty rate per distance walked, Great Britain (Reported Road Casualties Great Britain, DfT)



Another risk to pedestrians is from tripping or falling on pedestrian pavements. These incidents are not recorded as transport accidents, and no central records of them are kept. The National Consumer Council (NCC) reported in *Whats Wrong with Walking* that in 1984 in England and Wales, 189 people died in "street and highway accidental falls." (Reported Road Casualties Great Britain, DfT) NCC estimated that approximately 2½ times as many people required in-patient medical treatment for trips and falls as did for pedestrian accidents involving a motor vehicle.

Risk of injury from collisions increases with age

Over 40% of pedestrian deaths are from the 23% of the population aged 60 and over. The high fatality rate is because people become more fragile as they age. If in an accident, they are more likely to suffer injury; if injured, they are more likely to die. For pedestrians in their 30s, approximately 2% of casualties die; in their 70s, approximately 6%; and by the later 80s, approximately 10%.

The large majority of pedestrian casualties occur in built-up areas because that is where most walking happens. In 2013, half of the urban collisions with pedestrians that were fatal occurred on A roads (124 of 250), 37% of serious injury collisions were on A roads (1,633 of 4,412) and 34% of slight injury collisions were on A roads (7,236 of 21,198) (RRCGB Table 10011).

Vehicle types involved in collisions with pedestrians

Cars are involved in about three out of four collisions with pedestrians. Cyclists were involved in six fatal accidents with pedestrians in 2013, about double the average for the past few years. Nine serious injuries in 2013 involved a mobility scooter.

Risk factors for pedestrians

An Organisation for Economic Cooperation and Development study "Ageing and Transport" (2001) provides a list of risk factors for pedestrians. It relates specifically to older people but is, in practice, relevant to all. These factors are crossing busy two-way streets; crossing major roads, particularly ones with fast traffic; junctions with heavy traffic, particularly where there is no centre refuge; and complex situations, where vehicles can come from several directions. Activities of other road users that endanger older pedestrians include exceeding speed limits, infringing red lights, parking on and blocking footways, reversing and turning at junctions.

Importance of traffic speed

Many studies have shown that reducing vehicle speeds reduces danger for pedestrians. One study estimates that reducing speed limits on residential roads to 20 mph would reduce the number of children killed or seriously injured in North West England by 140 per year, or 26%. The authors expect a similar 26% reduction in pedestrian casualties of all ages.

Street crime

Walking Good Practice (TfL, 2012) states that many people have concerns about their safety while on foot, especially at night and in winter. While such feelings can be a result of perception of risk, rather than the actual probability of being a victim of crime, they nonetheless stop some people from choosing to walk.

Actions that increase safety and security include improvements to the following:

- unlit routes
- places of concealment
- alleyways
- blind corners
- routes under bridges
- subways and footbridges
- inactive frontages

Before action is taken, walking audits should, where possible, be used to identify what worries residents.

Barriers to movement

Many elements of towns and cities, such as rivers, major roads, railways and canals, are difficult or impossible for pedestrians to cross and sever adjacent districts. Where such barriers have existed for generations, adjoining districts often turn their backs on them. If a major attractor of walking trips, such as a college, supermarket or clinic, lies or is built close to a barrier, the case for overcoming it is strengthened.

5. Legal and Regulatory Context for Walking

This section quotes legislation that affects pedestrians and defines terms such as *footway*, *footpath* and *carriageway*.

The Rights of Pedestrians

Vehicles are, by law, obliged to stay in the carriageway and can be prosecuted for travelling along the footway; people on foot have a right to use all parts of a highway, subject only to an obligation to cause neither an obstruction nor a hazard.

The Highways Act 1980

defines powers and duties for highway authorities with regard to pedestrians.

Disability discrimination

Highway and planning authorities must comply with the Public Sector Equality Duty under the Equality Act 2010, which has replaced the Disability Equality Duty under the Disability Discrimination Act 2005. Those who fail to observe these requirements will be at risk of a claim.

The Active Travel (Wales) Act 2013

is intended to require local authorities in Wales to continuously improve facilities and routes for pedestrians and cyclists and to prepare maps identifying current and potential future routes for their use.

6. Developing Strategies and Plans for Walking

The desire to improve “walkability” increases as awareness of the benefits of walking increases. In Britain generally, it is considered to be good practice to include in local and neighbourhood plans both existing pedestrian networks and those

to be developed over the lives of plans. It is equally important to:

- gear Section 106 policies, infrastructure delivery programmes and Community Infrastructure Levy to the same aim and
- ensure that development management officers consider pedestrian networks and land uses prior to granting planning permissions.

Funding

Section 106 agreements with developers and the new tariff-based planning charge, the Community Infrastructure Levy, can be used to fund improved and new pedestrian infrastructure. Local authorities need to include a walking strategy and network in their local plan that is spatially explicit so that both Section 106 Planning Agreements and Community Infrastructure Levy charges can be related to its delivery.

Delivering walking schemes

The government has clarified its commitment to supporting walking over the long term through the Infrastructure Act 2015, which requires it to put in place a cycling and walking investment strategy. Traffic Advisory Leaflet 2/00 Framework for a Local Walking Strategy aimed to help local authorities prepare strategies for walking (DfT, 2000). It complemented the DETR publication Encouraging Walking: Advice to Local Authorities (2000) and described the minimum actions necessary to achieve real change. In due course these documents will be superseded by a new publication from the DfT, but at the time of going to press, they still offer useful advice.

TfL defines the “5Cs” of good walking networks in Improving walkability (TfL, 2005):

Connected:

Routes should connect locally and at district level, forming a comprehensive network.

Convivial:

Walking routes and public spaces should be pleasant to use and allow walkers and other road users to interact.

Conspicuous:

Routes should be clear and legible, if necessary with the help of signposting and waymarking.

Comfortable:

Comfortable walking requires high-quality pavements, attractive landscapes and buildings and as much freedom as possible from the noise, fumes and harassment of vehicles. Opportunities for rest and shelter should be provided.

Convenient:

Routes should be direct and designed for the convenience of those on foot, not those in vehicles.

Plans for walking will often refer to a user hierarchy. This provides that in the planning, designing and maintenance of most urban roads, highest priority is given to meeting the needs of pedestrians.

Pedestrian networks

Pedestrian routes should connect all parts of a town, including its centre, to one another and link with footpaths running into the countryside to adjacent settlements. Paths along riverbanks, canal towpaths, paths across open spaces, bridges of all kinds and diverse shortcuts complete such networks. The Department of the Environment Northern Ireland guidelines *Creating Places* (2000) lists priorities for pedestrian routes in residential developments as to be as direct as practicable in relation to local facilities, bus stops and railway halts; to provide attractive routes and accommodate conveniently and safely the numbers of pedestrians and cyclists likely to use the routes; to minimise the hazards associated with vehicular traffic; to enhance the appearance of developments by providing space for planting; and to have the easiest practicable gradients (taking into account the special needs of people whose mobility is impaired).

Culs-de-sac need special attention, as the deterrent to walking they and gated communities pose should be recognised and, if possible, eliminated. Wherever possible, culs-de-sac should be linked by footpaths (ways for walkers not alongside roads) to provide through routes for walkers and cyclists despite being dead ends for motor vehicles. They should provide direct pedestrian paths to bus stops and neighbourhood centres. Pedestrian routes should be plotted on local maps to check permeability.

The importance of following desire lines

Networks of routes for pedestrians should be based on the understanding that pedestrians prefer the shortest, most direct paths between their origins and destinations. Road crossings should be safe both objectively and as perceived by pedestrians. They should not require pedestrians to divert from direct routes or cause excessive delays.

Footways and footpaths should link main trip generators as directly as possible. Pedestrians prefer to see places to which they are heading, and although gentle curves will generally be followed, sharp changes in direction will not. Walkers can only be deflected from shortcuts if these are blocked, which is undesirable and often requires guardrail or other street clutter.

Most walking trips begin at home, but most town-centre trips begin and end at public buildings or transport interchanges. Locating building entrances well is important for the convenience of pedestrians and public transport passengers. Front doors should be close to and face streets, bus stops and other walking routes (*Planning for Public Transport in Developments*, IHT, 2000).

Subways and footbridges are usually unpopular as they generally require people to deviate from their desire line and can feel threatening and unsafe. There is a move in recent years to remove them and replace them with at-grade crossings.

Land use planning for pedestrians

Most people will only walk if their destination is less than a mile away. Land use patterns most conducive to walking are thus mixed in use and resemble patchworks of "walkable neighbourhoods," with a typical catchment of around 800 m, or 10 minutes walk.



Footpath linking culs de sac



Front entrances should face streets and bus stops

The National Planning Policy Framework states (Department for Communities and Local Government [DCLG], 2012),

Plans should protect and exploit opportunities for the use of sustainable transport modes for the movement of goods or people. Therefore, developments should be located and designed where practical to:

- accommodate the efficient delivery of goods and supplies;
- give priority to pedestrian and cycle movements, and have access to high quality public transport facilities;
- create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians, avoiding street clutter and where appropriate establishing home zones.

Pedestrian catchments

The power of a destination determines how far people will walk to get to it. For bus stops in residential areas, 400 m has traditionally been regarded as a cut-off point and, in town centres, 200 m. People will walk up to 800 m to get to a railway station, which reflects the greater perceived quality or importance of rail services.

Improving pedestrian safety

In general, the fundamental requirements are to separate pedestrians from vehicle traffic and to limit vehicle speed. Separation can be in space, by providing separate areas for pedestrians and vehicles, or in time, by the use of traffic signals. The exception is that pedestrians and vehicles can share space in areas where traffic speeds are very low.

Infrastructure to improve pedestrian safety includes the following:

- adequate footway and footpath widths
- kerb line build-outs to minimise the time taken to cross carriageways and slow traffic;
- preventing parked vehicles blocking footways through better enforcement or physical means;
- good pedestrian access to public transport;
- more crossings that provide effective pedestrian priority;
- fully protected pedestrian phases at traffic signals;
- median pedestrian refuges;
- 20 mph speed limits.



Bollards to prevent pavement parking



Carriageway narrowing at an informal crossing



Pedestrian median refuge

Giving pedestrians priority

Providing priority for pedestrians comes in various forms:

pedestrianised streets; pedestrian precincts, which are traffic-free shopping streets with or without linking arcades; and pedestrian priority streets where only a few vehicles, such as buses, cycles or cars with blue badges, are allowed to enter, usually at low speeds. Pedestrian areas are sections of town centres covering several streets and squares in which access by vehicles is limited. Such areas sometimes contain covered modern shopping centres or older arcades.

Developing more balanced streets

Cities such as Birmingham and Nottingham were once equipped with almost uncrossable inner ring roads. These roads constrained the growth of city centres and deterred access by pedestrians. They have since been transformed into pleasant places as tree-lined boulevards punctuated by spacious surface crossings and spaces for people to gather.

Vehicle carriageways have been narrowed, footways widened and vehicle speeds reduced. Both Manual for Streets (DfT, 2007) and Street Design for All (Davis, 2014) suggest ways in which the role of streets as places can be maintained despite modern levels of motor vehicle traffic.

Shared space

The use of shared space has become more common in recent years, involving the removal of much of the conventional apparatus of traffic control, including traffic signs, signals and markings. The approach can also include the removal of kerbs between carriageway and footway, known as a "level surface."

Concerns have been expressed on behalf of blind and partially sighted people about the lack of clarity as to which parts of the street might be used by vehicles. DfT guidance in Local Transport Note 1/11 Shared Space makes it clear that the needs of all road users should be considered during the design phase and recommends the demarcation of "comfort space" areas in projects where a level surface is part of the scheme.

Transport terminals

Railway stations and bus terminals attract large numbers of pedestrian journeys. Care should be taken that pedestrian routes to and from them are provided and are well signed. It is important that passengers arriving at stations should be able to find the way to nearby neighbourhoods and to buses to other parts of the town. Direct pedestrian routes suitable for wheeled



York – pedestrianised street



Pedestrian precinct

luggage are part of the answer. Good information and clear signing to pedestrian routes and bus stops (with clear bus service information) are also important.

Wayfinding

Pedestrians are helped if walking routes are well signed and show the distances and/or times to useful destinations. Maps showing walking routes are also valuable, particularly in places frequented by tourists. Strangers often find it difficult to follow pedestrian routes and do not appreciate the nearness of many destinations. Research by TfL for the Legible London scheme shows that not even the best street-based maps can be expected to suit the needs of all. The preferred mix of information is a wide variety of commercially available paper maps, A to Zs and “rough guides” plus carefully thought-out on-street fingerposts or other wayfinding displays (*Legible London 2013/14 SDG/TfL, 2014*).

Developments in digital wayfinding provide new opportunities to help walkers and encourage walking. All wayfinding systems should therefore be designed to work alongside digital guidance services.

7. Promoting Walking

Delivering Travel Plans through the Planning Process (DfT and DCLG, 2009) defines a travel plan as a long-term management strategy for an occupier or site that seeks to deliver sustainable transport objectives through positive action and is articulated in a document that is regularly reviewed. Travel plans have been successfully used for many years whether secured

through planning or prepared on a voluntary basis. They are an important tool for promoting sustainable travel, such as walking, cycling, and public transport, and help to reduce single-occupancy car use.

The travel plan process may be centred on an activity centre, such as a school, a workplace or a hospital; on individuals, through personal travel plans; or on a complete area, as in the sustainable travel towns. In each case, the process involves identifying barriers to the use of sustainable travel modes, followed by a programme of information and persuasion to encourage their use, plus relatively low-cost investments to reduce or remove the barriers.

To achieve clarity, local authorities should publish guidance stating the nature and scale of new developments that will require travel plans, what type of travel plan is needed in different situations and the broad objectives they are seeking. Considering the transport assessment and travel plan as an integrated package to deal with the transport impacts of a development is the most effective approach. These two documents should be submitted with the planning application wherever possible.

Using the current DfT practice for estimating the value of the effects on travel times of a reduction in the number of vehicles, each £1 spent on travel plans and other soft measures could produce benefits of about £10 on average and considerably more in congested conditions.

8. Looking to the Future

Sustainability

The threat of climate change has, for at least two decades, led to demands to raise the fuel efficiency of buildings and to make day-to-day living less dependent on cars - “sustainable development.” This has, in turn, led to planning guidance to increase residential densities and to prioritise walking, cycling and public transport. In the longer term, rising energy costs could reinforce these policies or new power technologies could create a changed policy context. Another reason for biasing development towards more sustainable forms is the growth in the number of older people. The requirements of such individuals are fully compatible with environmental sustainability.

Residential densities

Even though characteristics of towns, such as housing densities, change only slowly, there are reasons to expect that, in the foreseeable future, inner-city

residential densities will be driven upwards. This will be particularly the case in towns and cities where demand for accommodation is strong. Shortage of building sites, the high cost of recycling “brownfield” land and political pressure for sustainable development will also play a part in raising residential densities. This will potentially create greater opportunities for walking, provided land use is mixed and there are useful destinations within easy distance.

Planning for more elderly and disabled pedestrians

In 2013, 7.45 million of those living in Great Britain were aged 70 and over (12.0%). By 2032, this total is forecast to rise to 11.62 million (16.6%). The presence of more elderly people at work (and walking to work), increasing total numbers of elderly people and growing numbers of very old people all need to be considered when planning for pedestrians.

The elderly typically walk more slowly, find steps and stairs more difficult, are more tired by long or steep inclines, find seats and resting particularly welcome, have poorer eyesight and hearing and are more timid when crossing busy streets than younger people. A combination of level, good-quality pavements and walking routes, protected crossings of busy streets and attractive place at which to stop and sit are thus core considerations in planning for elderly pedestrians. Median pedestrian refuges are a particular help for older people in busy roads and at junctions. Pavement scooters should also be considered. One possibility is that they might be allowed to share reserved lanes with cyclists - although the acceptability of this approach has yet to be proved.

Rising concern about health and physical exercise

Doctors, health authorities, schools and campaigning groups are all working on raising public consciousness about the unhealthy side effects of sedentary lifestyles, being overweight and neglecting to take exercise. In time, these messages seem likely to have some effect on behaviour and on increasing walking. If so, they will enhance opportunities for planners to create places that are good to be in and comfortable to walk to, from and through.

Streets as places rather than just corridors for movement

City streets and squares were once places in which people walked, hawkers sold their wares, markets came and went and other civic, religious and popular events took place—together with the movement of goods and people. Residential streets were places where children played. As streets in towns and cities filled with motor vehicles, they became more crowded

and dangerous and squeezed out other uses. Reaction then set in and led to the creation of pedestrian shopping streets, pedestrian zones, and a wide variety of designs of spaces shared by people and vehicles. While many further pedestrian-only spaces will no doubt be created, conditions for pedestrians need to be improved over large parts of city centres, inner cities and suburbs by developing the concept of sharing. Street Design for All (Davis, 2014) provides many examples of ways in which the quality of a street as a place can be improved by good-quality design.

Navigation on foot by smartphones and other digital aids

Digital technology, and the invention of numerous mobile phone applications, is causing a revolution in the lives of urban travellers. Bus companies in many cities tell passengers when the next bus will arrive by digital displays at stops, apps on smart phones or in response to a text message coded with the number of the stop. Likewise, pedestrians can use smartphones to plug in postcode destinations and be guided to them by maps in their displays. An array of other kinds of app can be used to flag up good pubs and even, in a reverse direction, to enable merchants to attract the attention of passing walkers.

Developments in digital wayfinding technology will continue to provide new opportunities to encourage walking. Smart phones are likely to become ever more useful and widespread. All wayfinding systems should therefore be designed to work alongside digital guidance services.

Autonomous

(or self-driving) road vehicles may be just around the corner, at least on some types of road. Firms such as Google, having demonstrated safe self-driving cars, are now turning to developing fuel-efficient, low-polluting, self-driving cars for the sprawling suburbs. Such vehicles, travelling door to door like a taxi, could be rented from car clubs or privately owned. One important characteristic of the new sensory technologies is that they can detect pedestrians and, if necessary, stop. Will such vehicles usher in an urban-driving and car-owning revolution? Will lines of on-street parked cars fade away as inner-city residents opt to join autonomous car clubs? Will small versions of such vehicles turn up at low speeds on pavements, as is planned for Central Milton Keynes later in 2015?

A Pandora's box of possibilities is opened up by the likelihood of true autonomous mobility. Might it lead to more or less walking? Might it lead to more or less attractive street environments? Might it, above all, usher in the possibility of shared space on an almost citywide scale? That is certainly a vision worth pursuing.