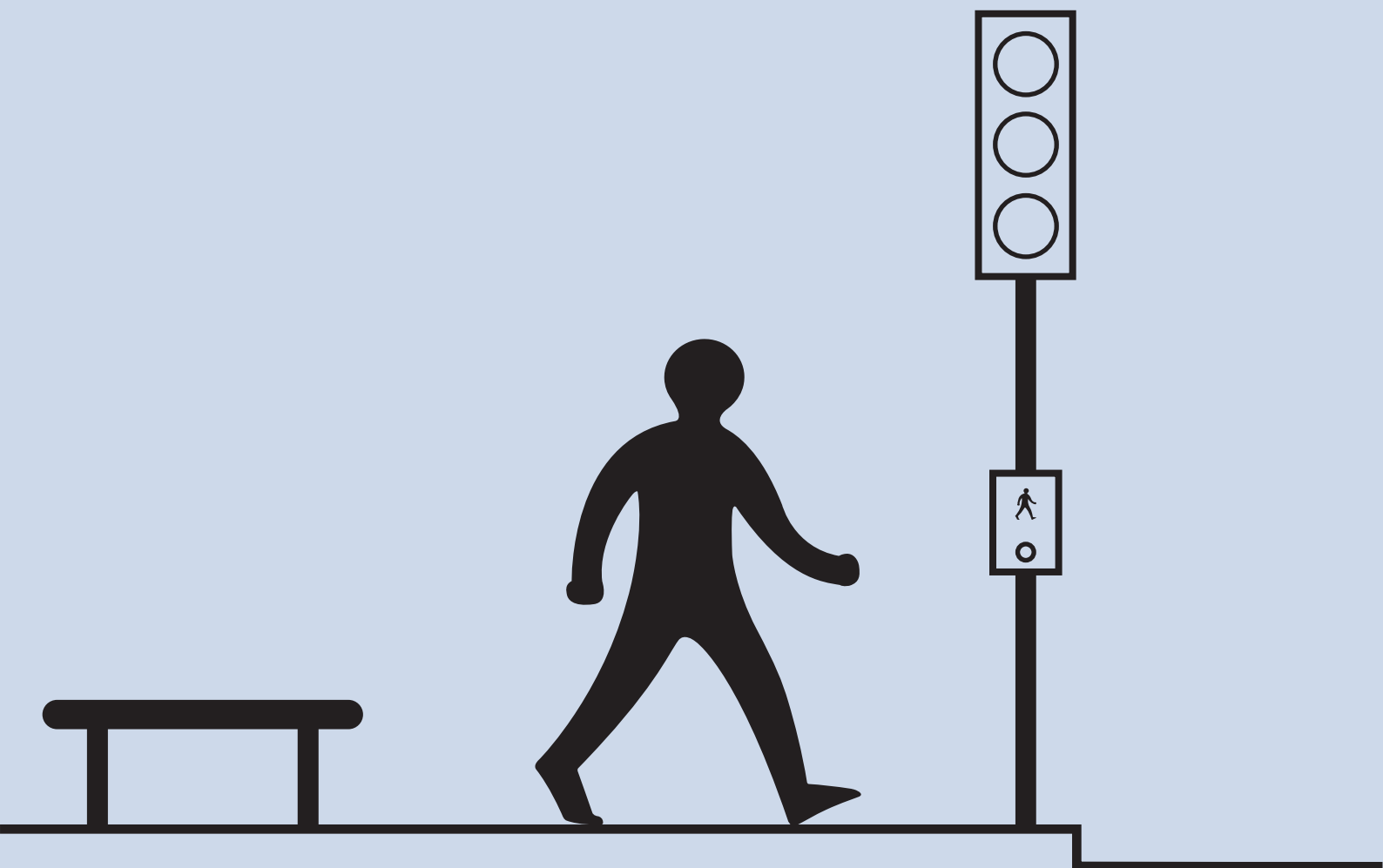


Transport for London

Walking Good Practice

Prepared for all London
boroughs

Version 4 - April 2012



Contents

Summary	4
1 Introduction.....	5
1.1 Context	5
1.2 Objectives.....	5
1.3 Funding.....	6
2 Walking in London	7
2.1 The current picture	7
2.2 Identifying the potential opportunities for increasing walk travel.....	8
2.2.1 Walking segmentation.....	8
2.2.2 Analysis of walking potential.....	9
2.2.2.1 Walking in the Sub-Regions.....	10
2.2.3 Onward distribution from central London rail termini	10
3 Walking Infrastructure	12
3.1 Key Walking Routes.....	12
3.1.1 What is a Key Walking Route?	12
3.2 Tackling pedestrian personal safety	16
3.3 Pedestrian road safety.....	18
3.3.1 The Three E's.....	18
3.3.2 Improving pedestrian crossing facilities	18
3.4 Creating & enjoying public space.....	22
3.5 The Walk London Network	24
4 Information	26
4.1 Legible London.....	26
4.1.1 The Legible London products.....	28
4.2 Pedestrian road safety information.....	29
4.3 Using audit tools	30
4.3.1 PERS & Streetaudit	30



4.3.2 PERS detail.....	30
4.4 Other audit tools.....	31
4.5 Levels of Service tools.....	31
4.5.1 Pedestrian Comfort Guidance.....	31
4.5.2 Pedestrian Comfort Guidance details	31
4.6 Walking monitoring.....	32
4.6.1 TfL monitoring data	32
5 Promotion	33
5.1 Pedestrian road safety campaigns	33
5.2 Launch events and publicity materials	34
5.3 Walking promotions & pilots	34
Appendix 1 - Useful Contacts	36
Appendix 2 - Design Guidelines.....	37
Appendix 3 - Glossary of Terms	39

Summary

This fourth edition of Walking Good Practice publicises successful walking programmes and initiatives that have delivered real and proven benefits so that the lessons learnt can be more widely understood and applied across London. It is primarily for use by the London Boroughs, but is applicable to other organisations involved in walking. The booklet is designed to assist in planning, designing and implementing walking schemes through Local Implementation Plan (LIP) or other funding programmes.

Building on the principle of previous editions, the booklet promotes the introduction of route and corridor based walking schemes whilst considering the need for cross-modal improvements, to provide an equitable balance based on local transport needs and priorities.

The booklet focuses on the three main Transport for London (TfL) walking themes, characterised as:

- Infrastructure
- Information
- Promotion

To deliver these themes, TfL and partners have evolved a series of walking programmes and initiatives, that are set out in this booklet. Outcome monitoring supports the delivery of these programmes and confirms their effectiveness in encouraging more people to walk in London.

4

Walking contributes to the Mayor of London's vision to improve London's Great Outdoors, deliver Better Streets and regenerate town centres because of the natural links between walking and the public realm.

It is important to recognise that walking as a mode is not just about numbers of pedestrians, but the experience of being part of London and the activities that occur when walking in the Capital, such as socialising, shopping and relaxing.

Knowledge sharing is an important element in the successful delivery of walking schemes. This booklet shares good practice, knowledge and experience. To further promote this good practice, the TfL led Walking Core Delivery Group was established to identify projects that have been successful, inform new working partnerships and help identify new funding.

A selection of these successful projects are presented through case studies to showcase how investment in walking can deliver real and desirable benefits for London, particularly in these uncertain economic times.

By doing so, it is hoped that knowledge of what works for walking will lead to an even higher quality of delivery across London and so deliver the Mayor's vision for walking in the capital by 'Making Walking Count'.



I Introduction

1.1 Context

Walking is the glue that binds London's transport system together, integrating public transport, our streets and public spaces. Improving walking environments is the responsibility of TfL, the Boroughs and walking organisations working together in partnership.

The Mayor of London wishes to deliver a step change for walking in the Capital. The Mayor's Transport Strategy (MTS) and London Plan (LP2) set out the Mayor's policies and proposals for walking in London and provide detail on the programmes and projects that will support the realisation of these objectives.

The ambition to improve the quality of London's streets, its urban realm and access to green and open spaces are articulated in the Mayor's 'Better Streets' and 'London's Great Outdoors' publications.

The walking programme supports these Mayoral initiatives; the Key Walking Routes programme contributes to the delivery of Better Streets, whilst the Walk London network provides high quality access to the Great Outdoors.

Boroughs are encouraged to deliver walking infrastructure programmes as part of integrated schemes, such as LIP Corridors and Neighbourhoods. These schemes can contribute to broader agendas, such as other cross-modal and local interests (in the form of Local Area Agreements and Sustainable Communities). They can also help the fight against climate change, safety and security improvements, encouraging improved personal health through greater exercise and encouraging adults to achieve 150 minutes of physical activity a week. This latter, health focussed goal assists in obesity reduction and creating a transport environment that is inclusive.

In addition to physical walking improvements, boroughs and organisations should consider other factors and influences, such as changing political

climates and note how this can influence walking and the public realm. This good practice is set against a background where the importance and usefulness of walking is increasingly emerging, especially in respect of London's economy. For example, London's growing population poses considerable challenges for London's transport capacity that walking may help to address and alleviate.

This good practice provides successful examples of walking interventions that directly address the Mayor's priorities, ensuring Londoners benefit from high-quality and value for money walking improvements within quality urban realm and green spaces.

1.2 Objectives

Successful walking schemes, be they infrastructure, information or promotion, should encourage more people to walk; increase the numbers of walking trips undertaken; and make walking in London easier, more convenient and enjoyable. They should also aim to bring about a change in people's travel patterns, by raising awareness of walking as a transport choice, but also improve the level of service offered to those who are already walking.

Walking offers a range of benefits that include, but are not limited to:

- Reduced CO2 output and motor traffic congestion
- Improved public health and reduced obesity through exercise
- Improved perceptions of personal safety and security
- Greater accessibility to public transport
- Greater accessibility to local services
- Economic regeneration
- Leisure opportunities



Swakeleys Drive zebra crossing, Hillingdon, using new 'Zebrite' technology to enhance visibility for pedestrians and motor vehicle drivers.

1.3 Funding

The majority of walking schemes in London are funded through the LIP programme, principally the LIP formula funded budget. The Major Schemes funds transformational urban realm schemes that benefit pedestrians. The Mayor also periodically makes funding available through specific programmes such as the Outer London Fund that can be used to improve transport infrastructure including walking. Limited funding for promotion, research and monitoring is also available from the Walking, Accessibility and Urban Realm team within TfL. For further information please contact the Walking team at walking@tfl.gov.uk.

There are opportunities for walking schemes to be funded through integration with other social,

environmental or economic programmes, for instance health, social, marketing and transport funds from the European Union.



2 Walking in London



Local high street improvements delivered at Wallington in Sutton, with improved pedestrian conditions supporting borough efforts to enhance the economic vitality of this local centre.

2.1 The current picture

To understand the current walking situation in London, TfL has undertaken an analysis of the potential for walking. This highlights that:

- The mode share for walking in 2009 was 24%, or around 5.8 million trips walked out of an estimated total of 24.4 million trips by all modes per day.¹ This trend has largely been static since the 1990's.
- By 2031, the total number of trips made in London per day is expected to have increased by 15% to around 27.3 million trips.²

- The mode share for walking is anticipated to increase from 24% to 25% between 2006 and 2031 (a 4% growth in mode share).
- In total, the MTS anticipates that 6.8 million trips will be walked every day in London in 2031, more than a million additional walk trips than in 2006, an increase of 20%.

This growth in walk travel is expected to come from two sources: growth in population and employment, accounting for around three quarters of this increase – over 800,000 walk trips; and growth resulting from mode shift to walking accounting for around one quarter – nearly 300,000 walk trips. This is summarised in Figure 1.

1 Based on observed data and in line with figures published in Travel in London reports

2 Based on model outputs

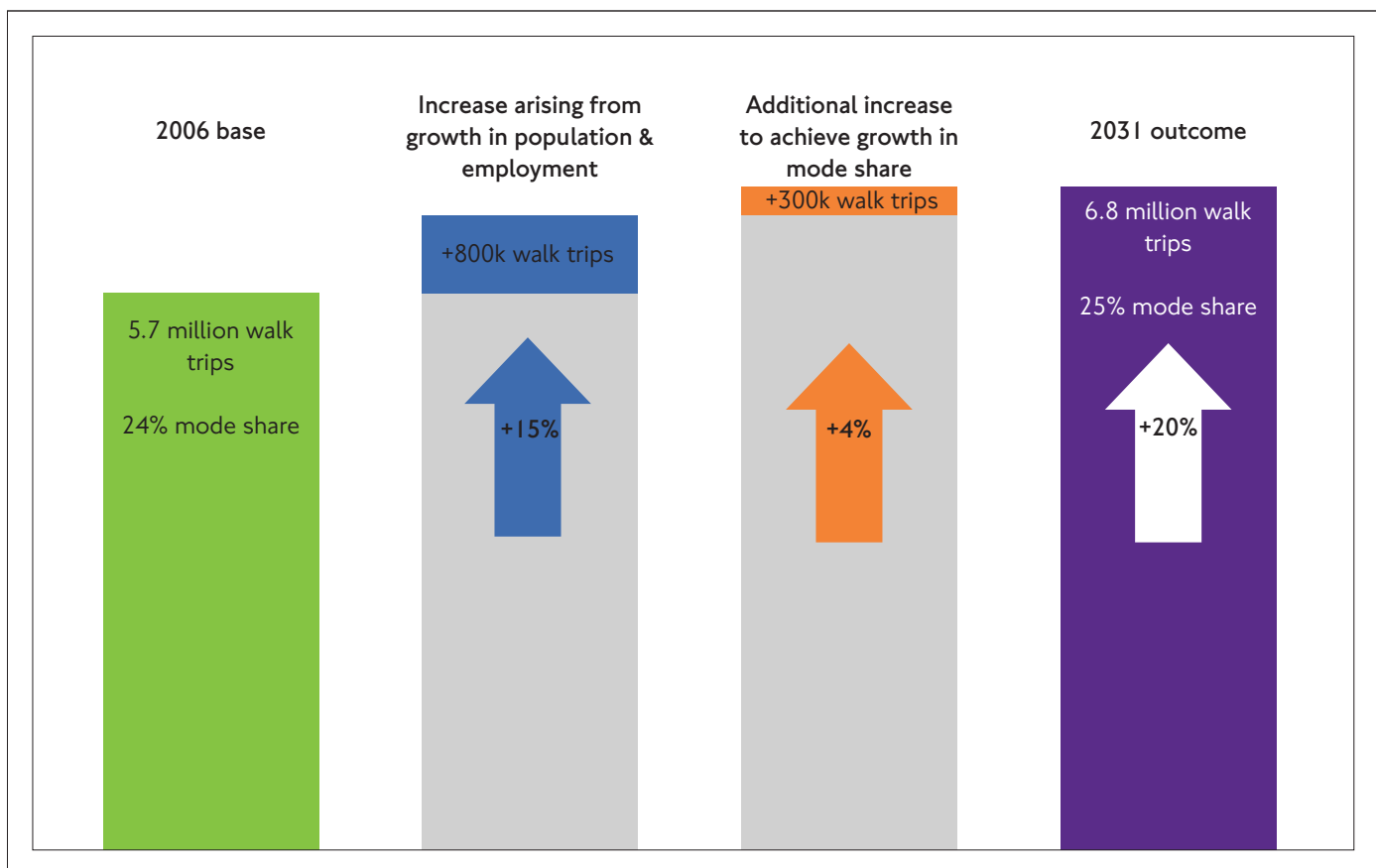


Figure 1 – Aspects of growth in walk travel, 2006 to 2031

2.2 Identifying the potential opportunities for increasing walk travel

TfL has undertaken extensive analysis to identify where growth in walking might arise, where this potential growth exists and those sectors of the population that could be more amenable to walking in the future.

2.2.1 Walking segmentation

TfL's Walking Market Segmentation classifies the London population into seven segments, evaluating the influences over travel behaviour in order to identify households most amenable to walking in future and most likely to walk at present. Market segmentation exercises provide a means of describing who is most likely to make certain

choices now and in future and identifying where they live. The seven walking segments and their proportions are:

1. Active urbanites – 18% of the population
2. Cosmopolitan lives – 12% of the population
3. Cultural diversity – 26% of the population
4. Suburban living – 20% of the population
5. Family enterprise – 7% of the population
6. Well-off and well educated – 10% of the population
7. Comfortably settled – 7% of the population

The segment with the highest propensity to walk at present is 'Active urbanites', representing nearly a fifth of the London population. A postcode classified as 'Active urbanites' can be expected



to generate 1.5 times as many walk stages as a postcode of comparative population classified as 'Comfortably settled'.

The groups with the highest propensity to walk, 'Active urbanites' and 'Cosmopolitan lives' are concentrated in central and inner London, South West London and in some outer London town centres. The segments least likely to walk, 'Well off and well educated' and 'Comfortably settled', tend to be located in the outer reaches of the Greater London area.

The 'Suburban living' and 'Cultural diversity' segments offer the best potential sectors of population for walking growth. In total, they account for half of all potentially walkable trips and have a middling propensity to walk. However, negative attitudes towards walking will act as a barrier to growth.

The walking segmentation can be a valuable source of planning for smarter travel campaigns and events. For further information on segmentation for any borough, please contact the Walking team email address.

2.2.2 Analysis of walking potential – trips by London residents that could be walked all the way

Analysis has been carried out using the London Travel Demand Survey (2005/06 to 2007/08) to identify trips made by London residents that could potentially be walked all the way, but are not walked (or cycled) at present, based on a set of criteria about the trip and the person travelling.

This analysis has identified that in total, 1.9 million trips currently made by mechanised modes are potentially walkable. The 1.9 million potential trips are equivalent to 10 percent of trips by all modes

and 16 percent of trips by mechanised modes.³

Of these walkable trips:

- 82 percent are currently made by car (1.5 million trips), three quarters of which take place in outer London.
- 1.2 million trips that are less than 2 km are driven in outer London every day, which could be walked in less than half an hour.
- Around 300,000 trips are currently made by bus that could be walked all the way – around 180,000 in central and inner London and 130,000 in outer London.
- Very few tube or rail trips made by London residents could be walked all the way. It is plausible that visitors to London are more likely than Londoners to make very short trips by public transport, due to lack of familiarity with the city.



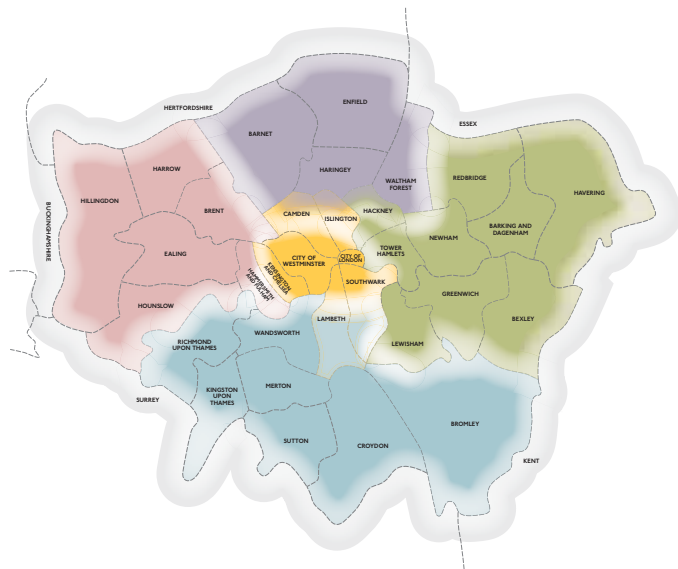
New zebra crossing outside South Woodford tube station to enhance access to the public transport network for those on foot and that supports a more permeable pedestrian environment in this popular location.

³ Note that the filters are intended as a rule of thumb to identify those trips most likely to be walkable. As a result, some trips are excluded which could actually be walked, and others are included that may not in practice be walkable. The analysis is limited to trips made by London residents and only identifies trips that could be walked all the way.

Although there is greater potential in terms of trip volumes to increase walk travel by targeting car travel in outer London, TfL market segmentation analysis shows that those travelling by public transport in central and inner London may be more amenable to changing mode. It would be reasonable to assume that a higher proportion of these trips could therefore be converted to walking.

2.2.2.1 Walking in the Sub-Regions

TfL has also undertaken analysis of walking potential across the five London sub-regions.



Map 1 showing London's sub-regions

Table 1 shows the total potential for walk travel in each of the London sub-regions, to include all trips with an origin and/or destination in the sub-region (so that trips crossing from one region to another are counted in both regional totals).

Currently, just over a quarter of all walk trips have an origin and/or destination in the central sub-region (27 per cent). In comparison, only 15 per cent of potentially walkable trips have an origin and/or destination in the central sub-region so that relatively more of the potential has been realised in the central sub-region than elsewhere. The north sub-region has realised the least of its total walk potential, with 69 per cent of trips that could be

walked actually being walked.

Sub-region of origin and/or destination	Current walk trips	Potential walk trips	Proportion of potential realised
Central sub-region	1,570,000	293,000	84%
East sub-region	1,330,000	459,000	74%
North sub-region	808,000	362,000	69%
South sub-region	1,231,000	474,000	72%
West sub-region	1,097,000	438,000	71%
Greater London	5,796,000	1,923,000	75%

Table 1: Current and potential walk trips by sub-region of origin and/or destination

This illustrates that there is significant outstanding potential to be realised. More detailed sub-regional analysis including borough level data is available by contacting the Walking team email address.

2.2.3 Onward distribution from central London rail termini

Surveys were carried out in 2010 amongst people arriving at and departing from the central London rail termini in weekday peak periods.

Analysis of the survey data found that there are around 125,000 onward journeys currently made by a mechanised mode that are less than 2 km and therefore, could potentially be walked. This amounts to 12 percent of onward journeys by all modes and 19 percent of those by mechanised modes. Of these:

- Around four in ten of the journeys were made by tube / DLR and a similar proportion by bus – around 50,000 potentially walkable journeys made by each mode.

- The stations offering the greatest potential in walk trip volumes were Waterloo, London Bridge and Victoria.

Together, these analyses identify more than 2 million potentially walkable journeys, though this should be thought of as the outer bounds of the available walking market.

However, the analysis does indicate that there is sufficient potential to deliver the required growth in walk travel (1 percent increase ~ 1.1 million extra walk trips) that the Mayor of London is seeking. TfL, boroughs and walking organisations will work together to deliver this growth.

Through the Mayor's Making Walking Count programme, TfL is focusing on three main themes:

- Infrastructure
- Information
- Promotion

Each theme is supported by a series of walking programmes and projects that deliver walking enhancements and realise the Mayor's walking objectives. These themes and key supporting measures are now detailed through the use of case studies, to showcase successful walking initiatives and how they have been applied and delivered.



Morning rush hour for commuters outside Waterloo Station.

3 Walking Infrastructure

3.1 Key Walking Routes

TfL has been working with boroughs for a number of years to implement Key Walking Routes. Significant successes have already been achieved through this infrastructure programme. Many more Key Walking Routes are now underway.

3.1.1 What is a Key Walking Route?

In simple terms, a Key Walking Route links together places that people need to travel between, with high quality walking facilities.

Key Walking Routes offer proven potential to increase walking trips and pedestrian numbers. They also support town centre regeneration and local businesses whilst helping to reduce the number of short car and public transport trips undertaken. The choice to walk to and within town centres across London has to date often been inhibited by poor walking environments that encourage car dependency.

The type of place that Key Walking Routes might link together includes:

- public transport stations and stops
- schools
- local shopping parades and centres
- health, care and community centres
- leisure facilities
- other key destinations

Key Walking Routes directly tackle the factors that Londoners consistently state as preventing them from walking more often (Attitudes to Walking, TfL 2011):

- dirty and vandalised streets
- traffic fumes
- lack of good walking routes

- lack of pedestrian information
- perceptions that walking can be unsafe in some areas

Key Walking Routes deliver complete route makeovers along defined corridors. The main features of a Key Walking Route might include:

- widened and repaved footways
- new and improved pedestrian crossings on desire lines
- improved accessibility through step-free access
- removal of obsolete signs, poles, columns and railings
- trees and planting to green streets
- seating
- removal of hiding spaces and blind corners
- signing, in particular Legible London
- street lighting for pedestrians
- shared space

Key Walking Routes are applicable to central, inner and outer London but are especially relevant to metropolitan town centres where known walking potential exists.

Key Walking Routes should be implemented in areas that are currently used by large volumes of people or places with a known pedestrian demand that is not being met. They should be based on an understanding of pedestrian needs and behaviour. There are a number of walking audit tools and methodologies that can help with this analysis. These tools are covered in Chapter 4.

It is important to emphasise that Key Walking Routes are not about one-off treatments, but are coordinated approaches to walking improvements.

Case Study 1 – Wanstead High Street Key Walking Route

This scheme was the first Key Walking Route in London, delivered by Redbridge and TfL. Wanstead High Street is an important local shopping centre, lying between the tube stations of Wanstead and Snaresbrook.

This Key Walking Route focussed heavily on improving pedestrian safety, especially on the busy walking routes from surrounding residential areas towards Wanstead tube station.

Christ Church Green offers a short cut to commuting pedestrians to the tube station but was perceived to be unsafe at night prior to delivery of the Key Walking Route. Lighting was poor and as a result, pedestrians walked around the Green, involving a lengthy detour.

Part of the Key Walking Route delivery directly tackled this perceived safety problem. Pedestrian focussed lighting was comprehensively installed throughout the Green. This provided much improved light levels at night and consequently, improved visibility for pedestrians and higher levels of natural surveillance.

The Green lighting element of this Key Walking Route was monitored to assess the impact of the investment. Headline figures show:

- Pedestrian numbers using the Green during day up 75%
- Pedestrian numbers using the Green at night up by 122%

Substantial trip reassignment has taken place in Christ Church Green. People are now more confident using the more direct route through the Green, rather than using the lengthy external detour.

The success of this Key Walking Route has encouraged Redbridge to apply the same approach to other town centres, notably South Woodford and Woodford. The Wanstead scheme is now being extended to provide additional pedestrian improvements at this busy local centre.



New paths and lighting installed as part of the Wanstead Key Walking Route. For more information on this scheme and other Redbridge Key Walking Routes, please contact scott.wilding@redbridge.gov.uk.

Case Study 2 – Wallington Integrated Transport Package

As part of the Smarter Travel Sutton initiative, improvements have recently been made to Wallington High Street (Woodcote Road). The scheme has been implemented by the London Borough of Sutton in partnership with TfL, as part of a programme designed to deliver local traffic, streetscape and environmental improvements.

A principal objective of this scheme was to build on the significant progress made in increasing walking and cycling trips made in the borough.

The design of the scheme was shaped by extensive input from local stakeholders, with the area recognised as a Key Walking Route that connects Wallington train station, bus services and various important local destinations such as the library and shops. This has helped to tailor the high street improvements to tackle specific local issues.

The Wallington High Street scheme includes a wide range of improvements to the walking environment such as wider pavements, new and improved crossings, new street lighting and landscaping.

The valuable input from local stakeholders has not only improved the physical pedestrian environment, but also provided a better use of space for all street users.

Improved junction design has reduced road congestion, creating smoother traffic flow, which has benefitted all drivers. New cycle lanes and cycle parking have been introduced, as well as upgrades to bus stop facilities.

These measures benefit visitors and residents to Wallington and will encourage more people to walk, cycle and use the bus as healthy and sustainable ways to get to town.

14



Before and after photos of Woodcote Road showing the re-laid footways, decluttering and general public realm improvements that have taken place as part of this Key Walking Route.

Case Study 3 – Redcross Way, Southwark Key Walking Route

The Redcross Way Key Walking Route is the result of a partnership between the London Borough of Southwark, TfL and Cross River Partnership, together with Better Bankside business improvement district.

Redcross Way Key Walking Route also forms the first phase of a wider regeneration initiative that is known as the Bankside Urban Forest, one of the Mayor of London's Great Spaces.

Redcross Way is an important walking route for pedestrians walking between Borough and London Bridge. It is home to a school and public gardens as well as local shops and is a destination in its own right.

Developed in close consultation with local residents and businesses, this scheme reflects the improvements users wanted to see in their street. As such, the street not only has an improved physical pedestrian environment but it provides a better balance between all street users.

A key feature of the changed layout of Redcross Way is the shared space design. This has removed the traditional change in height between the footways and road, with all road users sharing the street. Low kerbs provide a safe pedestrian zone for those who need it and offer some reassurance of the delineation between footways and road space.

The use of a shared space design has improved accessibility levels on Redcross Way, whilst the use of different coloured materials for the footway and carriageway helps those with visual impairments to continue to move confidently.

Other improvements on Redcross Way included widened and resurfaced pavements and carriageway. New cycle parking and street trees have been introduced to provide benefits for cyclists and help to enhance the quality of the streetscape. The second phase of this Key Walking Route will continue with similar improvements at the southern end of Redcross Way.



Before and after photos of Redcross Way, showing the shared space design and comprehensive urban realm improvements delivered through this scheme.

The key message to be drawn from the Redcross Way and Wanstead High Street Key Walking Route case studies is that investment into walking delivery produces clear successes in increasing pedestrian numbers and tackling known barriers to walking.

3.2 Tackling pedestrian personal safety

Many people have concerns about their safety whilst on foot, especially at night and during winter months. Whilst this unsafe feeling can be due to perceived, rather than actual fear of crime, it nonetheless stops some people from choosing to walk. These concerns for personal safety vary for different sections of the community and are often strongly related to age and sex.

Tackling these issues of personal safety not only improves people's perceptions of the walking environment, it can also help to encourage new and additional walking trips. This in turn increases the level of natural surveillance; forming a positive circle as more people walk and people feel safer, choosing to walk more often. Safety and security improvements should be considered as part of Key Walking Routes (see Wanstead case study 1), but are applicable at all locations where real or perceived problems exist.

Walking interventions that address issues of safety and security could include improvements to locations such as:

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

Personal safety initiatives should include members of the local community where possible, using

walking audit tools to identify their concerns and feedback. To support successful results, local communities could also be involved in the development of initiatives. For instance by involving local schools and community colleges in producing artwork for renovated areas, which may encourage a sense of civic pride.

There are a number of safety measures that can be introduced that reduce opportunities for anti-social behaviour. For example, façade improvements, removal of clutter and better signage, and replacing subways or footbridges with surface level crossings and footways as part of corridor neighbourhood programmes. In addition to this, support from local Community Support Officers or local police officers can help to ensure that any transport improvements are upheld and maintained through the prevention of any antisocial behaviour.



Case Study 4 – Light at the End of the Tunnel Programme

Cross River Partnership with TfL support has been tackling the severance and barriers to walking posed by railway viaducts in South London.

The railway viaducts physically separate communities from employment opportunities and leisure activities. They can pose a threat to personal safety for some pedestrians, especially women, the very young and older people.

The Light at the End of the Tunnel programme tackles the problems associated with the viaducts through a mixture of commonsense and innovative treatments.

When any tunnel or viaduct is improved, it is always cleaned and pigeon proofed. This improves the appearance of the brickwork and makes for more pleasant walking conditions. Where necessary, footways are also refurbished and widened.

New pedestrian lighting forms the centrepiece of many tunnel improvements. This improves visibility for pedestrians, but also offers the opportunity to feature unusual designs, styles and artwork to add interest to the pedestrian environment and make walking more enjoyable. Monitoring some of these improved tunnels (e.g. Burrell Street tunnel) to understand the impact of walking investment shows an increase of:

- 27% in people who felt safer using the tunnel at night
- 41% in people who felt very safe in day when using the tunnel
- 82% in people who felt tunnel lighting was improved
- 17% in female users using the tunnel

The lessons learnt from this programme have been shared with all London boroughs. The successful improvements are increasingly being used across other parts of London where tunnels and viaducts pose a barrier to walking.



The Burrell Street Arch 406 Light at the End of the Tunnel scheme after completion, showing how lighting can be used to both enhance personal safety and add distinctiveness to the street network.

3.3 Pedestrian road safety

TfL research has identified that some people choose not to walk as they are concerned about being involved in an accident with other forms of transport.

In 2010 there were a total of 28,889 casualties on London's streets. Although high, this represents a 35 percent reduction from 2001 figures, showing the progress made in road safety across the Capital.

5,391 of these 28,889 casualties in 2010 involved pedestrians, this represents 19 percent of all London casualties; pedestrians are particularly vulnerable when it comes to collisions with road traffic.

913 of the 5,391 pedestrian casualties are classed as KSI (killed or seriously injured). Pedestrian KSIs comprise 32 percent of all London 2010 KSIs in London in 2010.

There were a total of 58 pedestrian fatalities in London in 2010. Of these, 20 (34 percent) were aged 65 years or over, suggesting that older people are a particularly vulnerable subset of pedestrians in relation to KSIs.

Much work remains to be done to improve road safety for all pedestrians.

3.3.1 The Three E's

A mixture of engineering, education (training and publicity), and enforcement measures are employed to help reduce the number of casualties on London's roads amongst all users including pedestrians.

These measures work by delivering better designed, safer streets, encouraging safer behaviour from all road users and increasing compliance with the law.

Analysis of casualty data identifies 'high risk' sites for pedestrians. Each year a priority list of roads and junctions is developed in London (Transport for London Road Network [TLRN] and borough) to

form a programme of engineering remedial schemes. Specific road safety schemes can make London's road network safer; e.g. improved pedestrian crossings with supporting measures such as improved lighting and anti-skid surfacing.

3.3.2 Improving pedestrian crossing facilities

Pedestrian crossings help to make walking easier, convenient and accessible. They should be provided wherever possible on pedestrian desire lines.

All Key Walking Route schemes should look for opportunities to introduce new crossings or amend existing facilities to assist pedestrians, whilst also considering ways to smooth traffic flow.. However, particular accident problems or public demand will always require specific treatments.

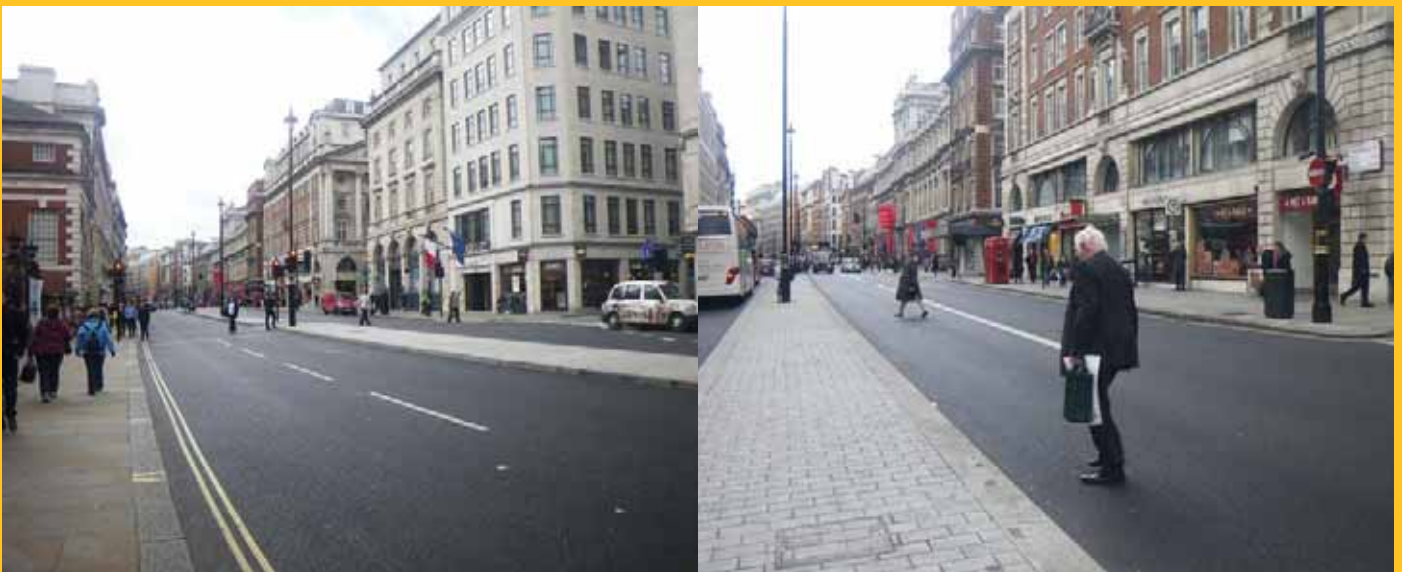
Non-signal facilities such as zebra crossings, pedestrian refuges and raised table junctions can offer pedestrians opportunities to cross safely without the cost, complexity and impact on motor traffic throughput that signalised crossings incur. Alternatively, shared space schemes, where different modes negotiate and share priority, in some cases allows traffic signals to be removed altogether.



Case Study 5 – Improving informal pedestrian crossing movements

Crossing facilities do not have to be signalised to be effective.

The re-introduction of two-way working on Piccadilly, St James and Pall Mall has enabled the creation of a simplified streetscape, overcoming severance, clutter and traffic dominance, resulting in revitalisation of a key part of the West End. The scheme was delivered by Westminster City Council, with half of the £14m budget coming from the TfL Major Schemes programme.



Images of Piccadilly showing the simplified streetscape and central median that supports informal crossing movements.



Piccadilly two-way has helped to improve the sense of place and the setting of historic buildings along this corridor. It has also delivered significant improvements for pedestrians through simpler crossings, informal crossing points along a newly introduced median strip and less cluttered footways. The design has been modelled to provide additional resilience in the highway network, assisting the flow of motorised traffic.

In summary the scheme includes:

- Widened footways for pedestrians on important walking routes
- De-cluttering of the urban environment in this historic area
- Better pedestrian crossings, including a central median strip

- Removal of 800m of guard-railings
- Replacement of modern design street lighting with heritage street lighting
- Introduction of two way working, easing conditions for motorised vehicles and re-creating a more relaxed environment for pedestrians
- Use of high quality materials to improve the experience of being in the area.

The scheme is important for supporting London's tourist industry with Piccadilly an important tourist destination attracting inward investment and creating employment. The Crown Estates contributed to the project funding as a part of their £500 million investment in Regent Street, aimed at building the street's reputation as an international destination.



Along High Holborn, a widened central median has been used to provide additional cycle parking, as well as support pedestrian crossing movements.

Case Study 6 – Sharing road space

The Venn Street scheme in Clapham Common introduced a shared surface to create a sense of place for visitors to the street's bars, cafes, cinema and farmers and flower market days. The scheme, which cost £465,000, was funded through the Local Implementation Plan (LIP) and delivered by the London Borough of Lambeth.

Venn Street is a popular weekend market in Clapham that sells locally sourced food as well as flowers and plants. Venn Street market in Clapham has proved hugely popular since it started operating on a monthly basis in late 2009 and from October 2011 it opened every weekend.

The Venn Street scheme allows the road to be closed to traffic and operate as a pedestrian zone every Friday to Sunday between Clapham High Street and Bromell's Road.

A new central paved area has been introduced on Venn Street, creating a 'Covent Garden' feel to the street, benefiting the Clapham Picturehouse and the adjacent cafes and restaurants.

High quality paving materials have been used to bring the pavement and road to the same level. The scheme includes new trees and cycle parking. Signage and street lighting has been fixed onto buildings wherever possible to reduce street clutter. Electrical power points have also been introduced for market traders.

TfL allowed the red route return on Venn Street (amount of highway adjacent to the TLRN with red route restrictions) to be reduced, thus contributing to de-cluttering and creating space for residential and business parking.



The new shared surface at Venn Street showing the transformation brought about by this scheme.



3.4 Creating & enjoying public space

“I want to encourage some of the wonderful urban realm projects that are now being pioneered in boroughs across London.”

Boris Johnson, Mayor of London ‘Way to Go!’ 2009

High quality urban realm and access to public space is a great generator of walking trips, supports a liveable city and can increase the value of surrounding land and buildings. It is important to remember that streets are not just transport corridors but are places to live, work and play.

Developers and landowners often apply this concept in their designs. They understand the value of investing in spaces that are vibrant and lively and pleasant to both live and work in. TfL and the boroughs should apply the same ideas to create improved public realm throughout London.

Urban realm interventions can range from large scale public realm schemes that incorporate multi-modal improvements, such as Woolwich Town Centre, through to smaller community orientated public spaces or simple small areas to sit, socialise and rest.



Case Study 7 – Grants Quay Wharf, City of London

Grants Quay Wharf public space is located on the north bank of the Thames in the City of London, just east of London Bridge. The Walk London network Thames Path route also runs through the space.

The project included a complete re-build of the public space with a new public facing design, new seating, new lighting, landscaping and accessibility improvements, which provide both step-free access at this location of the riverside walk and a new destination space.

This space was monitored to assess changes in pedestrian behaviours and numbers generated by the scheme. Headline figures show an increase of:

- 48% in users rating the space as 'very good'
- 38% in seating usage
- 34% in daily pedestrian numbers
- 29% in user dwell time in the space
- 19% in commuter pedestrian numbers
- 10% in pleasure pedestrian numbers
- 8% in tourist numbers



New public space also offers the opportunity to explore shared space principles, where different modes co-exist through balanced priority with a reduction in formal space definition.

3.5 The Walk London Network

Leisure walking plays an important role in helping to improve the quality of life and vibrancy of the Capital for both visitors and Londoners alike. These routes also provide easy access to green places and water spaces that form London's great outdoors.

TfL has funded the Walk London network (also known as the Strategic Walk Network) for the past eight years to deliver a pan-London walking resource comprised of seven high quality walking routes. 90% of Londoners are within 10 minutes of one of the routes and the seven routes are used by over seven million people annually to get to work, go to school or simply for enjoyment.

The Walk London network of routes is increasingly playing an important role in tackling rising obesity levels and improving the general health of Londoners. TfL and Walk England are working with the London National Health Service (NHS), boroughs and partners to use these walking routes as a means of reducing obesity as part of healthcare treatments, tying together transport and health investment to encourage more walking.

For more information visit www.walklondon.org.uk.



The Walk London network offers superb views of London whichever route is walked. This view is from the Jubilee Greenway, the newest route that connects key 2012 Games sites.

Case Study 8 – Walk London Network

Outcome monitoring on the Walk London network is undertaken annually to assess the effectiveness of TfL's investment and to confirm progress against the 2012 delivery deadline.

The outcome monitoring uses a range of measures and techniques, from user surveys and pedestrian counts to website analysis to provide a full picture of performance, both qualitative and quantitative.

The network uses 26 automatic pedestrian counters to monitor usage levels at specific sites. This allows walking trends on the network to be gauged over long periods of time, as well as capturing spikes in use arising from special events like organised led-walks. This data is available to all boroughs and organisations should it be required.

User surveys capture users' perceptions and attitudes towards the network. This type of monitoring is useful to understand how the network is performing and how pedestrians perceive the network.

Lastly, analysis is performed on the www.walklondon.org.uk website to assess visits, content download levels and levels of user satisfaction with the information provided on the seven routes.

This analysis gives greater understanding of the information people require, whether they can find what they are looking for, how long they spend online at the site and the type of information they download.

Headline Walk London monitoring figures for 2010 show:

- 7.0m users
- 91% user satisfaction with the network
- 650,000 website visits
- 612,000 route maps and directions downloaded
- 1.1m route leaflets distributed across London
- 9,800 participants introduced to walking by free led walks programme

This cross-network monitoring programme is important for a number of reasons. It confirms that TfL investment is producing tangible results, with more people choosing to walk. Furthermore, how people feel about a walking environment and how they access information about the Walk London network are also measures of success.



Left: New Jubilee Greenway route discs made of recycled glass.

Right: A fingerpost at an intersection of the Capital Ring and Green Chain Walk routes.

4 Information

4.1 Legible London

“You are more likely to make the right choices, and speed up your journey, if you are in possession of all the relevant facts... If it’s quicker to walk... you need to know.”

Boris Johnson, Mayor of London “Way to Go!” 2008

Not all barriers to walking are physical: TfL research consistently identifies that wayfinding and awareness are critical factors when choosing to walk. One in four Londoners cite concern about getting lost as a barrier to walking.

We also know that missing or uncoordinated pedestrian information discourages walking. Parts of London remain home to a multitude of wayfinding systems. The number and variety of signs in use, and the inconsistent information they display all create confusion for those on foot.



Legible London in use; the signs typically attract around 40 users per hour.

To ensure pedestrians throughout London have access to high quality, consistent pedestrian information, TfL, working closely with London boroughs and business groups, has developed and continues to expand the coverage of Legible London.

Legible London is a consistent and effective pedestrian wayfinding system for London, designed to provide useful, accessible information for people moving around the Capital on foot.

Consistency is important not only between areas of London, but also across transport modes. A key feature of Legible London is its ability to deliver end-to-end journey information, with consistent maps displayed on TfL’s transport estate. Legible London signs are not only available on-street, the maps are used in tube stations, bus shelters, on Cycle Hire docking stations and cycle superhighways. The maps are also now rolling out across all Network Rail central London termini and across local London rail stations.

London’s boroughs, developers and landowners are playing a lead role in expanding the coverage of Legible London, as they recognise the value it can bring to their areas by highlighting attractions and making locations more accessible.

Legible London is now in place across much of the West End, South Bank, Bloomsbury, Shepherd’s Bush and Richmond and Twickenham areas. Its coverage is expanding all the time, with many more schemes on the way, at locations such as Bow Road, Croydon town centre and much of the Olympic fringe.

As well as providing consistent, high quality pedestrian information, Legible London is designed to make navigating on foot easy. The maps give people the relevant facts about their journey, with five and fifteen minute walking circles that show how many destinations and neighbourhoods are within easy walking distance.

Features useful to pedestrians, such as pavements, crossings and short-cuts are all shown.

The on-street maps also reflect the direction people are facing to help them understand their surroundings more easily. If a building is ahead and to the right of you on the street, it will be shown on





the map above and right of the 'you are here' marker.

Legible London is applicable to all of London, already being installed in central, inner and outer London. In outer London, the Legible London focus is on centres of activity, such as town centres and public transport interchanges.

In central and inner London, a higher level of sign concentration meets the needs of increased pedestrian density and demand.

Legible London is especially effective around transport hubs such as St Pancras station, helping people to continue their onward journeys on foot.

Case Study 9 – Legible London Decluttering

Reducing street clutter is a key principle of any Legible London installation. Part of the process of installing Legible London signs is an audit to identify old signs and other furniture that can be removed.

As an example, when the first 19 Legible London prototype signs were installed in the Bond Street – Oxford Street area in November 2007, 40 other pieces of street furniture were removed from the area. This amounts to a declutter ratio of over 2:1.

The removal of obsolete signs and their replacement with fewer and more attractive, easy to understand maps reduces overall visual clutter on-street significantly.



Old wayfinding signs removed from Richmond as part of their Legible London implementation.

4.1.1 The Legible London products

The Legible London system is flexible and a range of on-street sign types, paper maps and hoardings are available to suit a diverse range of requirements.

Legible London predominantly uses information boards known as 'liths' to provide wayfinding information. The liths come in a number of sizes, to suit a variety of requirements and street conditions.

The lith family comprises:

- Microlith – for canal towpath environments and route reassurance
- Minilith – for constrained street environments and route reassurance
- Midilith – for hub locations where space is at a premium
- Monolith – to convey the maximum amount of information at hub locations

The lith products are supported by:

- Wall mounted signs – where information and space is limited
- Directional fingerposts – for canal towpath environments
- Fingerposts – for on-street environments

TfL is keen to support London Boroughs and other interested parties in implementing Legible London more widely, using suitable funding such as LIPs or development contributions such as s106.

While way finding information is an important walking intervention in its own right, it is also valuable as a part of wider projects and corridor activities. Legible London has already formed one element of successful Key Walking Routes and Major Schemes in town centres.



Any borough, landowner or developer interested in implementing Legible London should contact TfL. All necessary guidance and support will then be provided from inception to implementation and maintenance. Further information on Legible London can be found online at tfl.gov.uk/legiblelondon or contact walking@tfl.gov.uk.

Case Study 10 – Legible London Evaluation

TfL and partners have undertaken extensive evaluation of the Legible London system to understand and assess its effectiveness.

The prototype system showed overwhelmingly positive indicators in technical and attitudinal evaluation:

- 16% time saving improvement for pedestrian journeys within the Bond Street area
- 85% satisfaction level for ease of use of the new system

- 91% of interviewees stated that the system should be rolled out across the capital

The larger pilot projects also showed more positive factors including:

- 23% increase in wayfinding confidence levels
- 32% decline in feeling lost
- Average of 40 users per sign per hour

4.2 Pedestrian road safety information

TfL annually publishes reports showing trends in overall collision numbers for specific categories of road users (including pedestrians).

Specific research that looks into unique London road safety issues in more depth e.g. the link between older pedestrians and KSIs, which is supported by the Department for Transport, is also available from TfL (see appendix).

A Pedestrian Factsheet analysing all fatal and serious pedestrian collisions in London is currently produced by TfL and will be made available when ready.

Copies of TfL's road safety factsheets including those relating to pedestrians are available from www.londonroadsafety.co.uk.

Additional research relating to pedestrian road safety will be available in the forthcoming 'London Pedestrian Fatal Study', which is being conducted by Transport Research Laboratory Consultants and is due to be available by Autumn 2012.



Legible London mapping already exists in all Cycle Hire docking stations and is being trialled on Cycle Superhighway liths as well, demonstrating the versatility of this wayfinding system.

4.3 Using audit tools

Understanding the issues pedestrians face, by studying relevant information, is fundamental to providing improvements that will enhance the walking environment and encourage people to take more walking trips. Two of the most effective ways to understand the issues pedestrians face and identify deficiencies in pedestrian environments, is to undertake walking audits and level of service assessments.

4.3.1 PERS & Streetaudit

The Pedestrian Environment Review System (PERS), also now known as Streetaudit, is a walking audit tool developed by TRL (formerly Transport Research Laboratory). The tool is used by TfL, London boroughs and developers.

PERS is used to assess any type of environment where pedestrians might be found, from a street to a crossing or a public space. It is used to collect a mixture of quantitative and qualitative data about these environments.

The resulting data can be used to plan improvements to the pedestrian environment, as PERS identifies shortcomings that might impact pedestrians, and it can also be used to prioritise where walking investment should be spent.

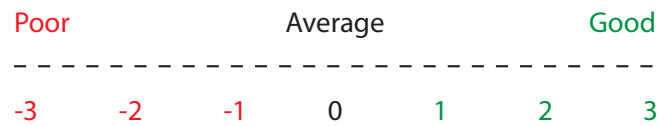
4.3.2 PERS detail

PERS as a walking audit tool consists of two main parts:

- Check sheets with accompanying guidance for use in the field to score pedestrian environments and capture comments and
- Software that is used to store the scored results and produce outputs for reports.

When using PERS, a score is assigned to the environment which is being assessed. The PERS

scoring system ranges from -3 to +3, as below:



PERS assesses a wide range of factors that are important to pedestrians, ranging from criteria such as footway width and condition to street lighting, litter and feelings of personal safety.

Pedestrian environments with issues that detrimentally impact pedestrians generally score negatively. TfL and other users use the audit scores and data from PERS assessments to plan improvements.

TfL recommends a PERS audit as the ideal first step for boroughs planning to implement any LIP scheme with a pedestrian element to it, such as a Key Walking Route or for developers seeking to improve a site. This is because using PERS will capture current walking conditions, understand the issues facing pedestrians and allow prioritisation of walking investment.

Case Study 11 – Willesden Green & PERS

A good example of PERS being used to support the development of a Key Walking Route is in Brent, at Willesden Green. Brent's first step was to acquire a better understanding of the issues pedestrians faced in this inner London location.

By understanding current issues, the Borough could be sure that the design of the Key Walking Route included measures to tackle and resolve the pedestrian issues identified first time.

Brent undertook a PERS audit and the results from this audit were used to directly inform their new Key Walking Route, to provide better walking conditions for pedestrians in this area.



PERS can be purchased from TRL (see Appendix I for contacts).

PERS training is periodically available from Urban Design London at www.urbandesignlondon.com.

TfL has undertaken a significant number of PERS audits, mostly focused on the TLRN. To access these PERS audits, please contact walking@tfl.gov.uk.

4.4 Other audit tools

Other walking audits, such as Living Street's Community Street Audits (CSAs), which provide qualitative data through pedestrian feedback and local knowledge are also accepted by TfL as tools that identify walking issues. The results from all such audits can inform scheme design and can be used when developing LIP projects (see Appendix I for contacts or visit <http://www.livingstreets.org.uk>).

4.5 Levels of Service tools

Level of Service is a means to describe the conditions offered to pedestrians within an environment, usually in respect of crowding and capacity. Pedestrian Comfort Guidance (PCG) is a TfL walking tool designed specifically for use in London.

PCG provides a measure of pedestrian comfort for London's streets using a pedestrian focussed Level of Service (LoS). LoS is a qualitative term used to describe the degree of pedestrian comfort on footways.

4.5.1 Pedestrian Comfort Guidance

PCG was developed for TfL in order to tackle existing confusion over the LoS tools available (Fruin, Gehl, Platoon etc) and their general applicability and relevance to London. London experiences much higher pedestrian flows in comparison to standard locations, which the LoS tools were designed for.

All footways vary in terms of their widths and the numbers of pedestrians that use them. PCG uses the factors of widths and user numbers to quantify the performance of the footway at specific environments across London, and allows TfL and partners to understand the level of service being offered to users. The Guidance has also been developed to provide an assessment for crossings.

PCG provides those working on schemes in London, such as TfL and borough officers, engineers and designers, with the necessary background information to ensure pedestrians' needs are sufficiently addressed across all walking environments.

4.5.2 Pedestrian Comfort Guidance details

The PCG tool is comprised of three elements.

PCG level of service scores are calculated through a simple spreadsheet tool. Data fed into the spreadsheet gives a pedestrian comfort score to guide decisions and scheme types.

The spreadsheet tool is supported by an overview guide and a more detailed technical guide. The technical guide provides policy, context, technical information / rationale and crucially, case studies and examples of where the PCG tool has been used already in London.

PCG is used by TfL on the TLRN, as well as in transport interchange studies to understand how the environments cater for pedestrian flows.

Most recently, the guidance has been used on the TfL Cycle Hire and Cycle Superhighways projects. For the cycle projects, PCG has been used to determine the impact of introducing new cycle infrastructure onto the footway, and the consequent change in footway widths and pedestrian flows that result from this. The guidance has also been tested on borough roads to ensure it is applicable for London-wide use.

PCG can be used by developers, designers, consultants and maintenance workers to understand and provide for enhanced pedestrian levels of service in London.

PCG training is periodically available from Urban Design London at www.urbandesignlondon.com.

4.6 Walking monitoring

Monitoring of walking investment takes place at the pan-London level through the Walk London network and TfL key sites, using automatic pedestrian counters and user surveys. It also takes place at a scheme level, as with Key Walking Routes, where pedestrian numbers, attitudes and behaviour can be analysed more closely to assess the impact of walking investment.

Monitoring can aid the design of new walking projects, inform future decisions on the most effective walking interventions, and help ensure that walking schemes meet their objectives.

TfL commissioned Colin Buchanan to produce a transparent guide on the techniques and methodologies used for pedestrian monitoring within 'Measuring Pedestrian Activity – version 1.0' in 2007. Copies of this can be obtained from the TfL

walking web pages at: www.tfl.gov.uk/walking.

There are generally three types of data collection; pedestrian counts, observational data or attitudinal surveys depending on the type of scheme being implemented. Please contact the Walking, Accessibility and Urban Realm team at TfL to discuss monitoring in more detail.

4.6.1 TfL monitoring data

TfL has conducted annual monitoring of the LIP Walking programme through financial years 2005/06 to 2009/10. The results provide boroughs and partnerships with a valuable resource when planning possible walking interventions, highlighting successful schemes implemented and those schemes that did not realise all of their planned objectives.

This library of monitoring reports is available from the Borough Extranet and copies can also be obtained from the Walking team at walking@tfl.gov.uk.

Annual monitoring of the Walk London network continues to take place and this information is also freely available from the same locations as above.



New signalised pedestrian crossing at Tolworth Broadway, Kingston. This new facility replaced a subway and the effects were monitored by TfL.

5 Promotion

5.1 Pedestrian road safety campaigns

Not all pedestrian road safety problems can be fixed by engineering and education. Campaigns are an important measure in the fight to reduce pedestrian collisions in London. TfL has undertaken and will continue to deliver road safety campaigns.

Case Study 12 – Children’s Traffic Club

The Children’s Traffic Club (CTC) is a useful example of a pedestrian road safety education project for children focused on an especially vulnerable section of the pedestrian population.

The aim of this project is to ensure that the road safety message starts at an early age for younger people, given they are future pedestrians (and cyclists and car drivers). CTC is aimed at children aged between three and four and a half years. Information is delivered through nursery / playgroup and health visitor packs.

TfL high-level evidence suggests that schemes and projects such as CTC are beneficial and have contributed (along with other measures) to a 71% reduction in child KSI casualties over the last decade.

Along with CTC, other major TfL campaigns for pedestrian road user groups have been implemented, including the hard-hitting campaign aimed at teenagers, “Look Out For Your Mates”.

This campaign plays on the idea of friendships and looking out for your friends, particularly in relation to moving around London on foot. Posters around London, on the underground and at bus stops used the tag line “Don’t let your friendship die on the road”.



The “Look Out For Your Mates” campaign poster.

5.2 Launch events and publicity materials

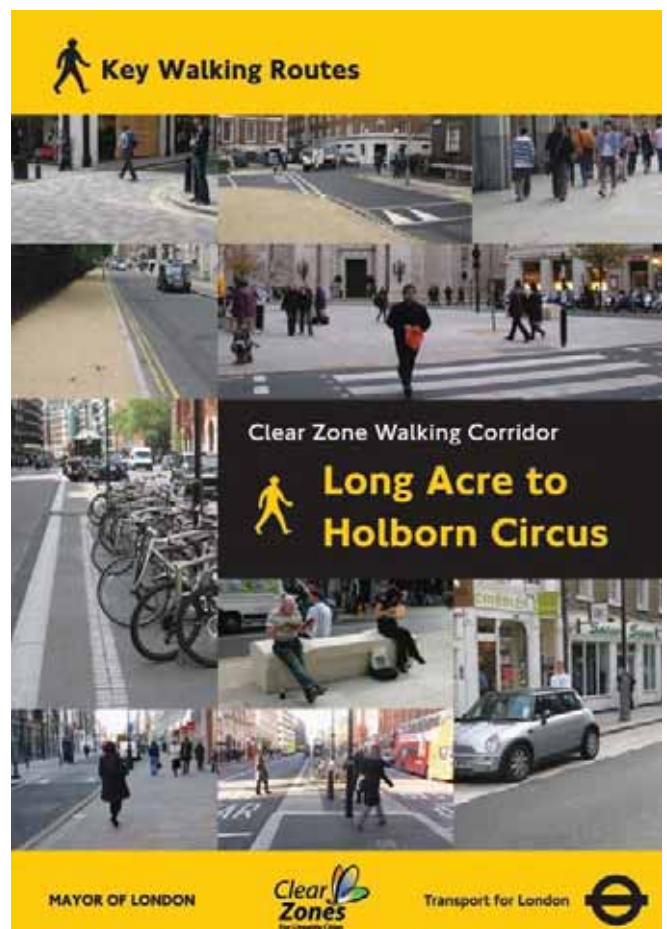
TfL has worked with delivery partners and stakeholders to publicise successful walking schemes that have been implemented using launch events and publicity materials. TfL is keen to continue this partnership working and it has already been successfully used for Key Walking Route completions and Legible London area launches.

Case Study 13 – Key Walking Route launches

The launch of a Key Walking Route deserves significant media attention, as it represents the culmination of high levels of investment and substantial effort by all partners. Launches serve to highlight walking investment made in a particular area and offer the opportunity for those involved to celebrate successful delivery.

TfL has worked with boroughs including Redbridge, Sutton, Camden, Westminster and the City of London (Clear Zones) to launch Key Walking Routes in London.

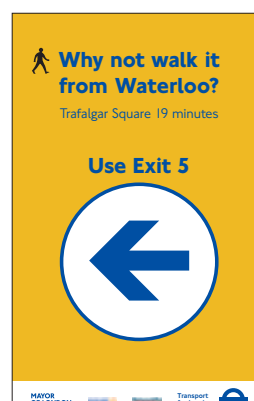
Launches such as this involve partnership working to agree invitees, obtain elected Member and Director quotes for press releases, obtain speakers and organise launch event materials. The latter often includes video and scheme displays, information leaflets for public distribution and press photographers.



The launch leaflet created for the Clear Zone Key Walking Route. Other Key Walking Route launches use similar materials that are handed out to the public.

5.3 Walking promotions & pilots

It is important to investigate and trial new ideas to encourage walking within London. TfL is particularly interested in encouraging more walking in place of short distance car and public transport trips. This recently led to a new walking project that sought to raise awareness of walking and encourage people to walk from Waterloo station.



Example of the station posters used to support the Waterloo hotspot congestion relief pilot.

Case Study 14 – Waterloo Hotspot Congestion Relief pilot

Many visitors to London, and indeed many Londoners, don't realise how closely linked many parts of London are. For instance, for people arriving into Waterloo station, it only takes around 15 minutes to walk to Westminster or Covent Garden and around 25 minutes to reach the heart of the City on foot.

To help people understand how walkable much of London is from Waterloo, and to reduce the number of very short trips made on public transport, TfL undertook a walking pilot to reduce congestion from Waterloo.

This pilot project operated between the 12th to the 23rd September 2011, with the support of Network Rail and South-West Trains.

TfL and partners encouraged people to consider walking from Waterloo to their destination instead of using the bus or tube.

Staff were based at the station every weekday morning, during peak hours (7-10am) to hand out bespoke free Legible London walking maps that showed the key destinations that can be reached on foot from Waterloo within 20 minutes.



Staff handing out Waterloo walking maps as part of the pilot.

Walking posters and messages were also displayed throughout Waterloo station around station exits, to raise the profile of walking and encourage people to consider making a trip on foot.

During the fortnight pilot period, 54,325 maps were given out directly to the public. Maps were also supplied to South-West trains and Network Rail to distribute as needed.

TfL is now evaluating the impact of this pilot project, through a mixture of face-to-face interviews and online surveys. The evaluation will measure:

- awareness of the initiative
- recognition of campaign elements (leaflet and poster)
- attitudes to walking
- whether people have started walking
- whether people expect to continue to walk

This trial will provide TfL with valuable data and information on the receptiveness of the public to consider mode switch to walking. If the results are positive, TfL can then look to implement similar schemes at other major London rail stations.

Appendix 1 - Useful Contacts

TfL Walking, Accessibility & Urban Realm Team

Team email address - walking@tfl.gov.uk

Legible London email address - legiblelondon@tfl.gov.uk

Intelligent Space Atkins (Pedestrian Comfort Guidance)

Gillian Iversen - gillian.iversen@atkinsglobal.com - 020 7121 2558

Living Streets (CSAs)

Richard Smith - richard.smith@livingstreets.org.uk - 0191 2457329

Ramblers

Simon Barnett - simon.barnett@ramblers.org.uk

SKM Colin Buchanan

Martin Wedderburn - martin.wedderburn@cbuchanan.co.uk - 020 7643 5623

Sustrans

Carl Pittam - carl.pittam@sustrans.org.uk

TRL (PERS & Streetaudit)

Ellie Gould - egould@trl.co.uk - 01344 770473

Walk England (Walk London)

Jim Walker - jim.walker@walkengland.org.uk - 07801 334915



Appendix 2 - Design Guidelines

Boroughs and partnerships may wish to use this list as useful reference material but are free to follow appropriate borough guidance.

General

Department for Transport (2007) Manual for Streets.
<http://www.manualforstreets.org.uk/>

Department for Transport (2010) Manual for Streets 2.
<http://www.ciht.org.uk>

Department for Transport (2002) LTN 3/08 Mixed Priority Routes: Practitioners Guide.
<http://www.dft.gov.uk/pgr/roadsafety/dpp/mpr/>

Department for Transport, Local Government and Regions (2000) Encouraging Walking Advice to Local Authorities. HMSO, London

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Department for Transport, Local Government and Regions (1995) The Design of Pedestrian Crossings, (1995), Local Transport Note 2/95. HMSO, London

Greater London Authority (2010) Mayor's Transport Strategy

Greater London Authority (2009) Way to Go!

Greater London Authority (2009) Statement of Intent

Greater London Authority (2009) London's Great Outdoors & Better Streets & Better Green and Water Spaces

The Institution of Highways and Transportation (2000) Providing for Journeys on Foot. IHT

Transport for London (2004) Walking Plan for London. <http://www.tfl.gov.uk/assets/downloads/walking-plan-2004.pdf>

Transport for London (2005) Improving Walkability. <http://www.tfl.gov.uk/assets/downloads/improving-walkability2005.pdf>

Accessible streets

Department for Transport (2005) Inclusive Mobility: A guide to best practice to pedestrian and transport infrastructure.
<http://www.dft.gov.uk/transportforyou/access/tipws/inclusivemobility>

Department for Transport, Local Government and Regions (1986) Audible and Tactile Signals at Pelican Crossings, Local transport Note 4/91. HMSO, London

The Institution of Highways and Transportation (1991) Revised Guidelines for Reducing Mobility Handicaps – Towards a Barrier-Free Environment. IHT, London

Streetscape

Living Streets, Designing Living Streets.
<http://www.livingstreets.org.uk>

Transport for London (2009) Streetscape Guidance.
<http://www.tfl.gov.uk/businessandpartners/publications/4858.aspx>

Jan Gehl (2004) Towards a fine City for People: Public Spaces and Public Life – London.
http://www.gehlarchitects.dk/images/28780_tfl_public_spaces.pdf



Appendix 3 - Glossary of Terms

BSP – Borough Spending Plan (replaced by LIP)

CSA – Community Street Audit

CTC – Children’s Traffic Club

KSI – Killed or Seriously Injured

KWR – Key Walking Route

LIP – Local Implementation Plan

LoS – Level of Service (Pedestrian Comfort Guidance)

MTS – Mayor’s Transport Strategy

PCG – Pedestrian Comfort Guidance

PERS – Pedestrian Environment Review System

SWN – Strategic Walk Network (also Walk London network)

TfL – Transport for London

TLRN – Transport for London Road Network

