

Analysis of Walking Potential 2016

Policy Analysis Report
March 2017

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Executive summary

Key findings

- Londoners make 3.6 million daily journeys by motorised modes (car, motorcycle, taxi or public transport) that could be walked, at least in part
- Of these, nearly 2.4 million trips could be walked all the way
- These trips are mostly made by car or bus, with most taking place in outer London
- Forty per cent of these trips would take less than 10 minutes for most people to walk
- The remaining 1.2 million potentially walkable journeys are those that could only be walked part of the way (such as driving or taking the bus to/from a rail station). These are referred to as walk stages.
- Most potentially walkable stages in central London or in outer London town centres are currently made by public transport and are for work reasons

Walking is already a popular mode of travel in London – the most recent Travel in London report shows that on an average day there are 6.3 million walk trips (where walking was the only mode used) and 6.8 million walk stages (where walking was part of a longer trip using other modes) of more than five minutes made in London.

More, however, can be done to encourage more people to walk more often – given that, at present, only 34 per cent of adults in London are achieving two 10-minute periods of active travel per day.

This report presents the results of the Analysis of Walking Potential, an analytical tool designed to understand the potential for growth in walk travel. The finding will help planners and policy-makers to target infrastructure and other interventions where they will be most effective.

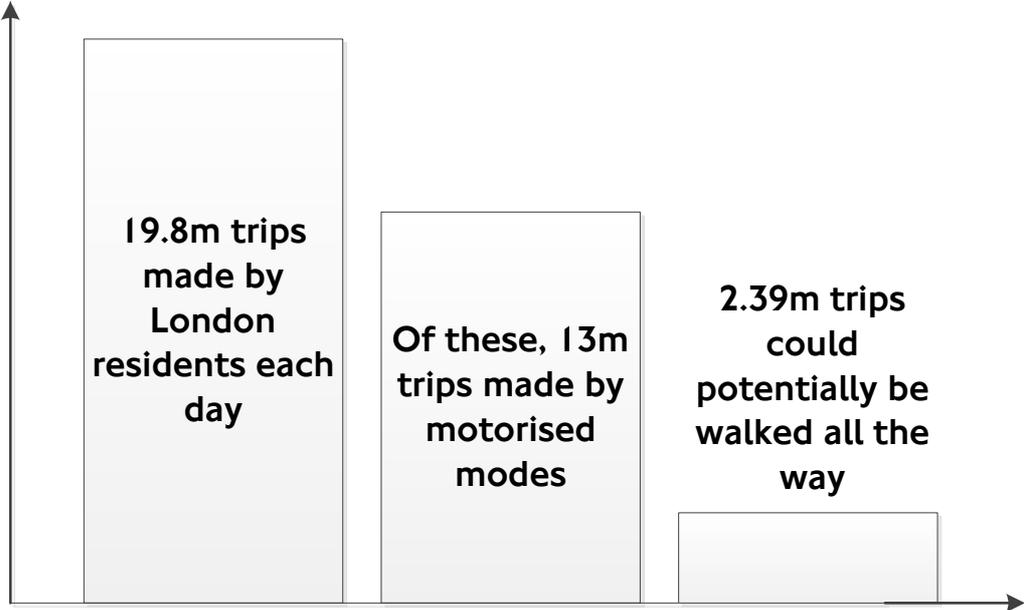
This analysis uses data on current travel patterns from the London Travel Demand Survey (LTDS) from 2012 to 2015 to determine whether or not a trip currently made by a motorised mode could be walked (potentially walkable trips). This report also includes analysis of the potential for walking as part of a trip made by another mode, such as walking to and from a train station (potentially walkable stages).

This work is an extension of previous analysis carried out in 2010 (and recently updated) to understand the potential for cycling in London (the Analysis of Cycling Potential). This work was described by the All Party Parliamentary Cycling Group as 'seminal', and has been used extensively both by TfL and the London boroughs.

Walking potential in London

There are 2.39 million trips on an average day currently made by a motorised mode that could be walked all the way. This is equivalent to 18 per cent of trips by motorised modes (see Figure E1).

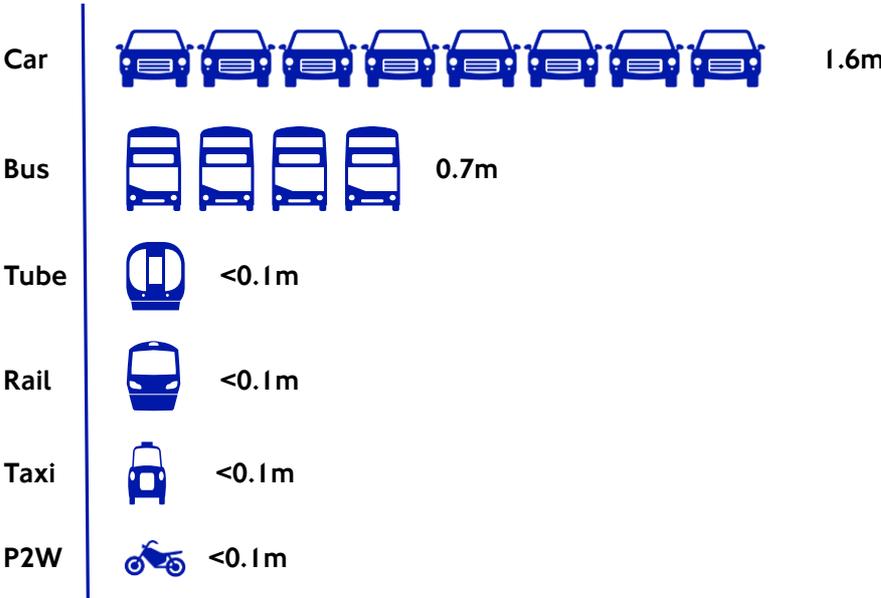
Figure E1: summary of potentially walkable trips



Source: LTDS 2012/13 – 2014/15

Most potentially walkable trips comes from people currently travelling by car or bus; collectively, these two modes account for 97 per cent of potentially walkable trips (see Figure E2), with car travel accounting for two-thirds of this figure.

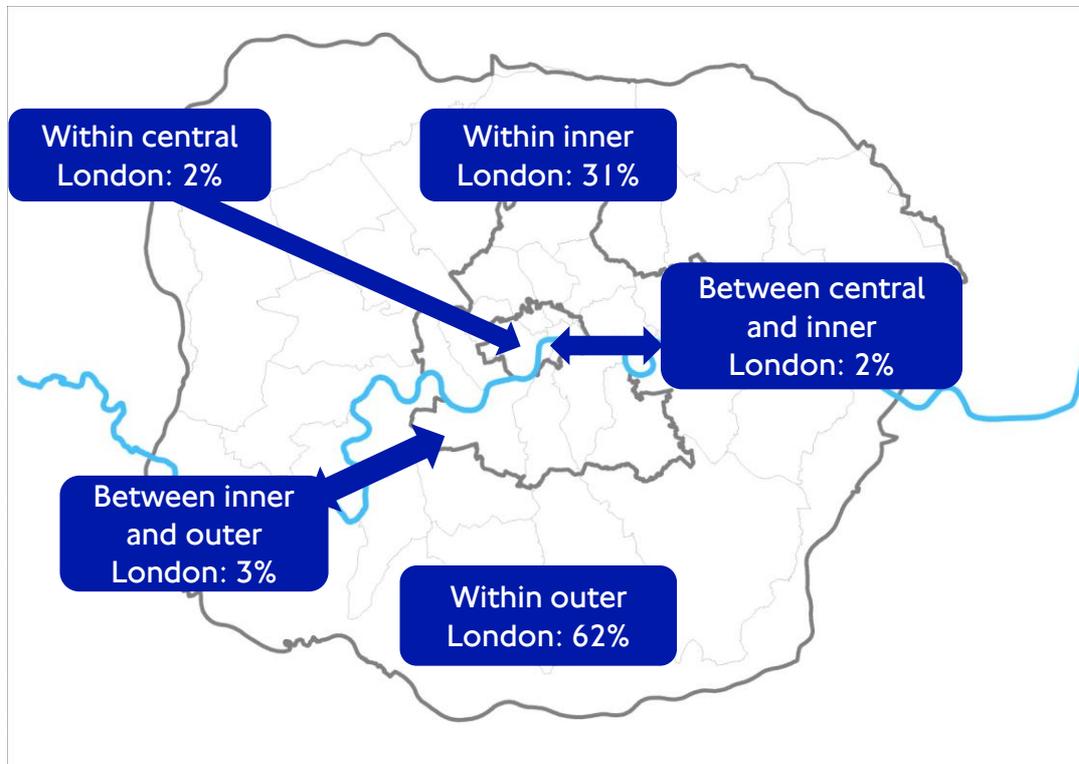
Figure E2: potentially walkable trips per day, by mode currently used



Source: LTDS 2012/13 – 2014/15

Potentially walkable trips are widely dispersed across the city, with significantly more potential for growth in outer London, particularly in places such as Barnet and Croydon. Overall, 62 per cent of potentially walkable trips are made in outer London.

Figure E3: location of potentially walkable trips

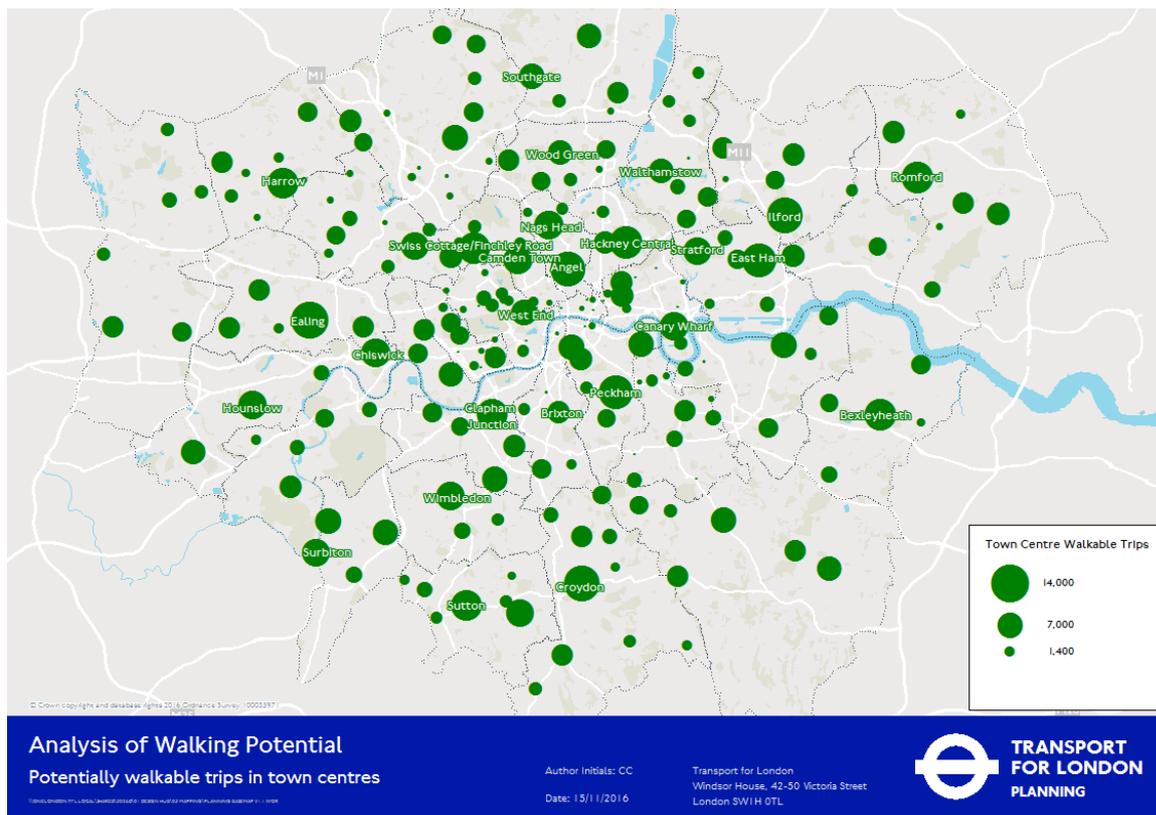


Source: LTDS 2012/13 – 2014/15

There is significant potential for more walking trips to be made to and from London's town centres, with more than 700,000 walkable trips made on an average day. In particular, outer London Metropolitan town centres (such as Croydon, Ealing and Ilford) and some inner London centres (eg, Peckham, Hackney and Angel) offer a high density of potentially walkable trips.

Areas that show little walking potential are where there is already high levels of walking (eg in central London).

Figure E4: potentially walkable trips in London town centres



Source: LTDS 2012/13 – 2014/15

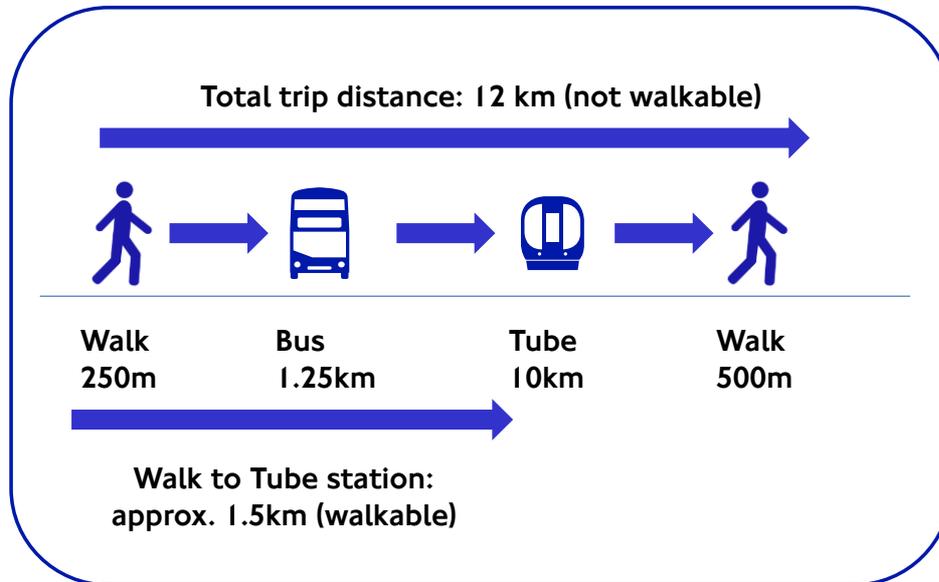
Other key findings include:

- More than half of all potentially walkable trips are for shopping and leisure purposes
- There are nearly a million journeys that would take less than 10 minutes for most people to walk – most of which are made by car
- There is potential for more walking at all times of day, with the greatest number of potentially walkable trips occurring between 8am and 9am and 3pm and 4pm (in line with the profile of existing walk trips)
- The potential for walking is greater among women. Around 1.4 million potentially walkable trips (58 per cent) are currently made by women, compared to just over one million walkable trips for men. This difference is most pronounced for those aged 25-54. By mode, potentially walkable trips made by men are slightly more likely to be car driver trips, with women more likely to be travelling by bus or as a car passenger
- All demographic groups could be walking more. The profile of both potentially walkable trips and overall Londoners' travel is broadly similar with regard to ethnicity, age, household income and disability

Potentially walkable stages

In addition to the 2.39m potentially walkable trips, a number of potentially walkable stages have been identified in this analysis, where although the trip could not be walked in its entirety, some elements of it could be. An example of this is shown below:

Figure E5: potentially walkable stage example



Source: LTDS 2012/13 – 2014/15

There are currently 1.2 million trip stages made by motorised modes on an average day that could be walked. The profile of these potentially walkable stages is very different to that of the 2.4m potentially walkable trips.

Most of the potentially walkable stages (86 per cent) are currently either made by bus or by Underground. Approximately three in five of these are currently made by bus, interchanging to/from another bus service or the Underground/DLR network (see Figure E6). This is in contrast to the potentially walkable trips, where car travel accounts for the majority.

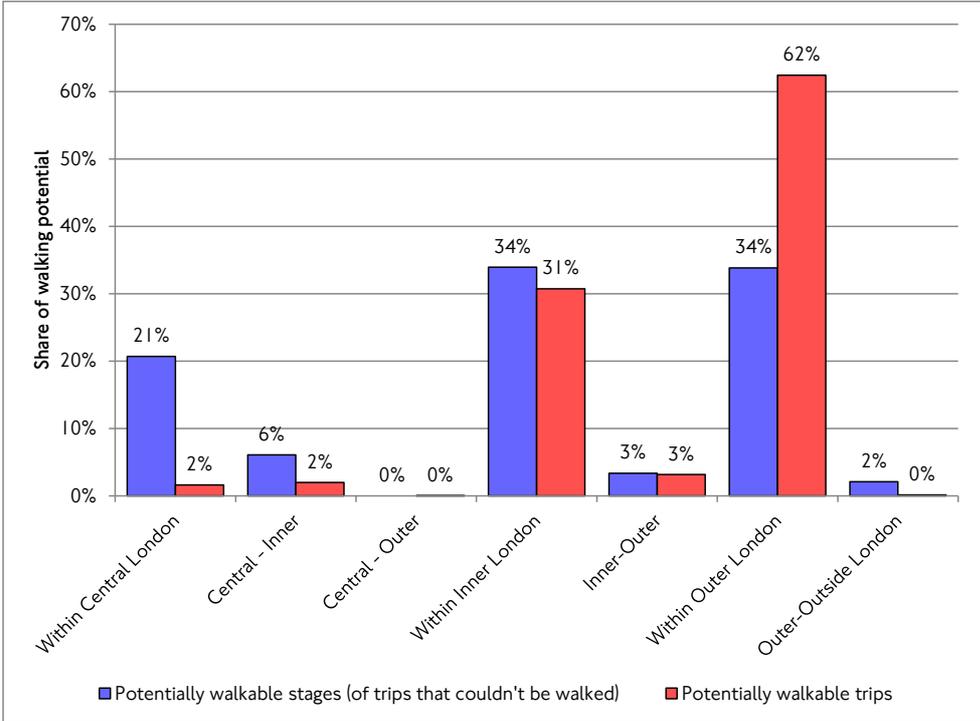
Figure E6: mode of potentially walkable stages (with main mode of trip)

Mode of walkable stage	Main mode of trip	Number of walkable stages
		330,000
		250,000
		230,000
		160,000
		100,000
		40,000

Source: LTDS 2012/13 – 2014/15

A total of 21 per cent of walkable stages are made within central London – this compares to just two per cent of walkable trips. 34 per cent of walkable stages are made in outer London (against 62 per cent of walkable trips).

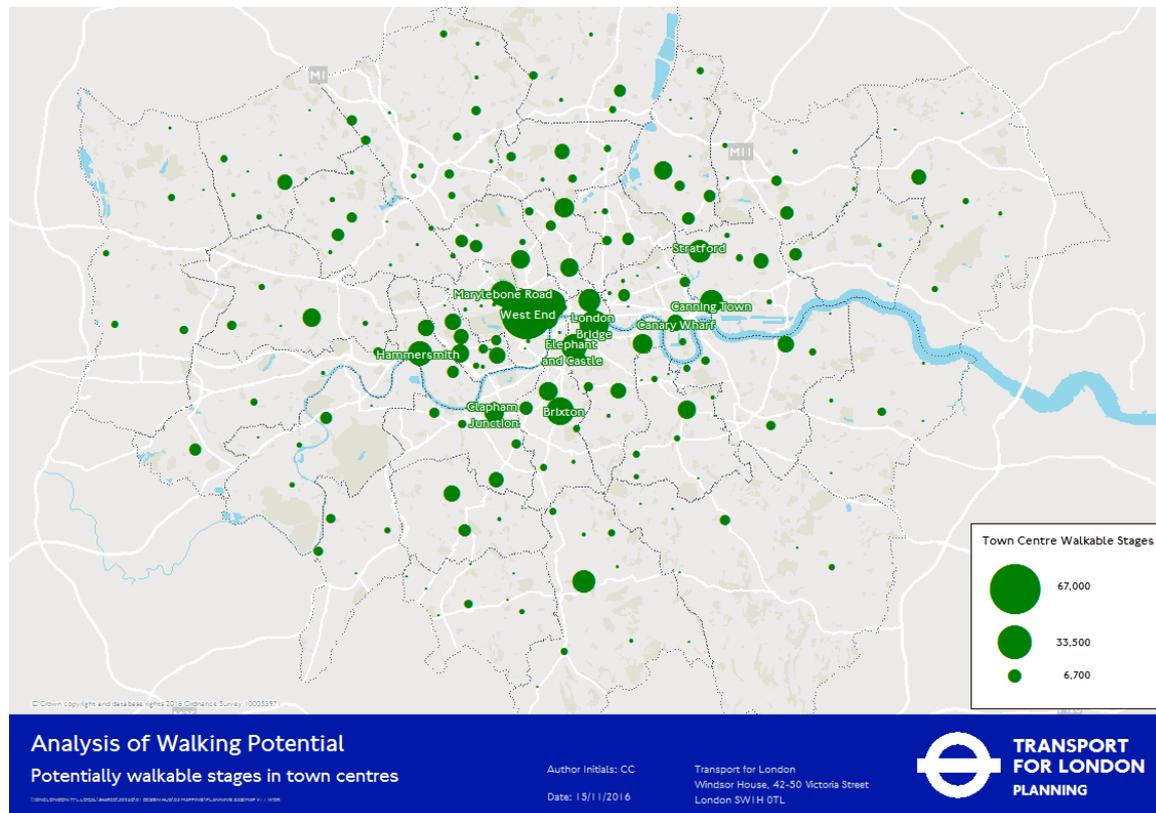
Figure E7: origin and destination of potential walk stages and trips, London residents



Source: LTDS 2012/13 – 2014/15

Most potentially walkable stages (67 per cent) involve travel to or from one of the London town centres. Much of this is in centres within the Central Activity Zone (CAZ) (West End, London Bridge and Marylebone Road) or in centres in inner London (Brixton, Clapham Junction, Hammersmith and Stratford).

Figure E8: potentially walkable stages to/from London town centres



Source: LTDS 2012/13 – 2014/15

A comparison of the demographic profile of potentially walkable trips and potentially walkable stages shows notable differences:

- While potentially walkable trips are more likely to be made by women, potentially walkable stages are more likely to be made by men
- People aged 17-44 are more likely to be making potentially walkable stages – around 65 per cent of the total, compared to only 40 per cent of walkable trips
- People in higher income households are more likely to make walkable stages
- Potentially walkable stages are more prevalent at peak times (8-9am and 4-7pm), whereas the peak for potentially walkable stages is 3-4pm

Conclusions

Drawing upon the evidence presented in this report and other research collected by TfL in recent years, this report concludes:

- There is significant potential for more walking throughout London. Most of the potentially walkable trips (as well as one-third of the potentially walkable

stages) lie within outer London. For every trip that could be walked all the way in central London, there are almost 20 in outer London. In these areas, much of this potential comprises people making short car trips to and from their home

- Though there are fewer potentially walkable trips in central and inner London, there are much more potentially walkable stages.
- The general profile of walking potential is very dispersed across London, but one-third of all walkable trips, and two-thirds of all walkable stages involve travel in London town centres (as defined in the London Plan). Walkable trips to/from town centres are most likely to be made by car to one of the outer London centres (such as Croydon or Ealing), while walkable stages are most likely to be made by public transport in inner London centres (such as Brixton or Stratford)
- There is no single group that has a significantly greater share of the walking potential: the splits by age, gender, income, ethnicity and disability are all broadly consistent with the overall population profile of London. Similarly, there is potential for trips of all purposes to be walked (at least in part) across all times of the day. However, while there is scope for everybody in London to walk more, the profile of trips that could be walked all the way varies substantially from the profile of trips that could only be partly walked. This means the messages used to encourage people to change their behaviour cannot rely on a universal approach.
- There are other factors to take into account when considering the potential for more walking in London:
 1. Cycling ambition and its likely impact on walking: not only are virtually all walkable trips and stages potentially cyclable, but there are many current walk trips that could be cycled in future
 2. Extra future trips: the forecasted growth in population and employment in London over the next 25 years will bring greater densification of housing and therefore more walking opportunities
 3. The willingness of people making potentially walkable trips and stages to change their travel behaviour: to better understand this, TfL has developed a new multi-modal market segmentation tool, the Transport Classification for Londoners (TCoL). TCoL is a geo-demographic classification derived from the London Output Area Classification. It describes who is most likely to make certain choices now and in future and identifies where they live. Using TCoL and the Analysis of Walking Potential together will help identify those segments of the population where there is greatest potential for growth in walk travel in future.

Further information

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1. Introduction

This document presents the results of analysis carried out to better understand the potential to increase travel on foot, in terms of what type of trips, people and places offer the best opportunities. The analysis, carried out at TfL using existing data sources, aims to inform policy development. This report does not seek to present a complete picture of all aspects of the potential for growth; in particular, there is potential beyond that identified by this analysis to increase walking as a method of accessing other public transport modes for those visiting London, and in terms of people walking for leisure purposes. Nevertheless, the data provides a unique insight into walking potential, and can help the Mayor, TfL and London's boroughs to plan policy interventions that provide good value for money, while meeting the needs of Londoners.

Introducing the analysis

The Analysis of Walking Potential was originally developed in 2010. It sought to identify trips currently made by Londoners which could reasonably be walked all the way but are not at present.

The analysis is derived from TfL's London Travel Demand Survey (LTDS). This is a continuous household survey of the London area, covering all London boroughs and the City of London, recording detailed information about the household, the people that live there and the trips they make. Each year, around 8,000 households take part in the survey and provide an insight into how Londoners travel.

The Analysis of Walking Potential seeks to quantify the nature and extent of the potential for walking in London. It identifies trips made at present by other modes and assess whether they could be walked, based on a set of criteria about the person and trip.

Other relevant reports

This report has been carried out with a similar piece of analysis to look at the potential for cycling in London – the Analysis of Cycling Potential. This can also be found on the TfL website.

Structure of the report

- Chapter 2 describes the methodology used to identify potentially walkable trips and stages
- Chapter 3 summarises the trips made by London residents which could reasonably be walked all the way but are not walked at present, and the residents making those trips
- Chapter 4 describes where these potentially walkable trips are being made, identifying locations with the greatest potential for walking growth. It presents analysis of areas containing dense 'clusters' of potentially walkable trips and analysis of town centres (as designated in the London Plan)

- Chapter 5 describes the method used to identify stages of trips that could be walked (ie, while the entire trip could not reasonably be walked all the way, parts of it could be)
- Chapter 6 brings together the analysis of potentially walkable trips and stages to assess the total potential
- Chapter 7 collates the conclusions from the analysis

2. Methodology

This chapter describes the methodology used to identify potentially walkable trips made by Londoners.

Defining potentially walkable trips

The Analysis of Walking Potential is derived from three years worth of data from TfL's London Travel Demand Survey (LTDS), captured between 2012/13 and 2014/15.

The definition of a potentially walkable trip is one which could reasonably be walked all the way, but is not currently. A trip is defined as a one-way movement from one place to another to achieve a single main purpose. More than one mode of transport may be used during a single trip; the analysis looked at trips currently made by a motorised mode (car, motorcycle, taxi or public transport) that could be walked all the way.

All trips made by motorised modes have been assessed according to criteria based on the characteristics of currently walked trips. The filters reflect the characteristics of most trips made on foot and act as a 'rule of thumb' to identify trips most likely to be considered walkable by most people.

Table 2.1: 2015 walking potential criteria

Criteria	Filter
Encumbrance	The person making the trip is carrying tools or heavy work equipment.
Age	Trips of more than 1.5km made by those aged under 12 or over 69; trips of more than 2km made by those aged 12-69.
Current mode	Trip made by van, dial-a-ride, plane or boat.
Trip chaining	The trip is part of a wider chain of trips that cannot be walked in its entirety.

Trip chaining

A trip chain is defined as a series of individual trips that (to the person making the trip) are linked together due to the nature or location of the trip. One example of such a chain would be a person travelling from home to work, then work to the shops and then from the shops back home.

The identification of trip chains within the dataset has been completed using journey purpose information provided by the individual. Each trip recorded by an individual is assumed to be linked to all preceding trips up until the individual returns home. If a further trip is made by that person, that becomes the start of a new trip chain.

To apply this filter, trips considered to be walkable at this stage were reviewed together with the other trips in that trip chain. If one or more of the other trips in that

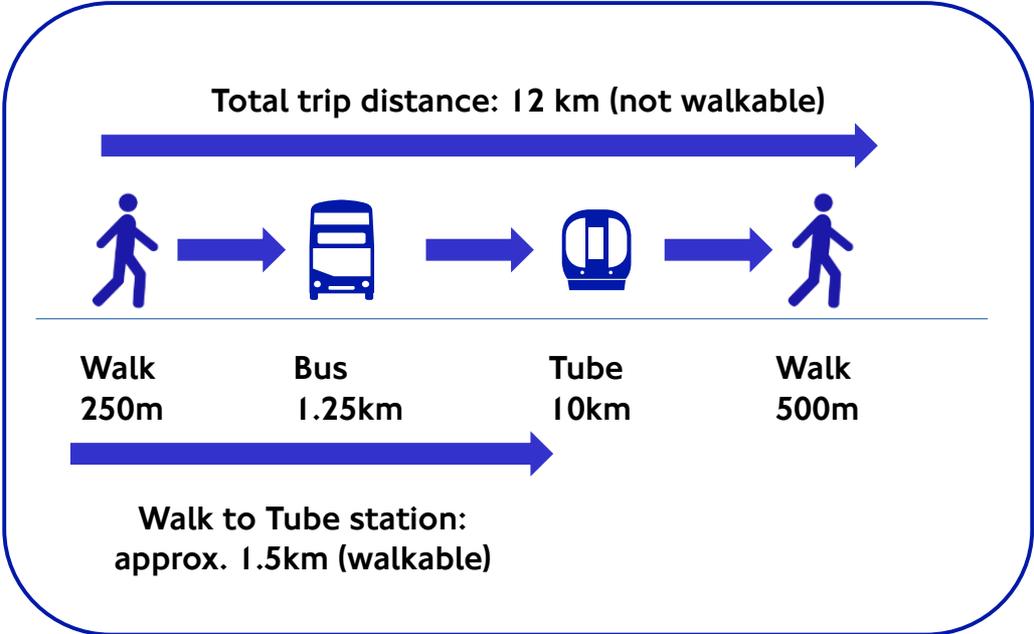
chain has already been assessed as a) not potentially walkable; and b) currently made by car, then the potentially walkable trips in that chain are also removed. For example, in the chain above, if the trip from home to work is too long to be walked and is currently made by car, then the remaining trips in the chain, work to shops and shops to home, are also eliminated under the assumption that the person would still have to have the car with them for the second and third trips.

Defining potentially walkable stages

The analysis of potentially walkable trip stages is again based on LTDS data from 2012/13 to 2014/15.

The definition of a potentially walkable stage is a trip stage currently made by a motorised mode that could instead be walked, but where the whole trip could not be walked. An example of this is shown in the following diagram.

Figure 2.1: example of a potentially walkable stage



The analysis of potentially walkable stages only includes trips not deemed walkable solely on the basis of distance. Any trip excluded on the basis of one of the other criteria (such as encumbrance) was not considered in this analysis, given that this would still be true of the individual trip stages.

Trips with a single stage made by a mechanised mode are also not considered as part of this potentially walkable stage analysis, on the basis that if the *trip* had not previously been considered walkable, it is unrealistic to consider this *stage* to be walkable.

CAVEATS

The criteria outlined in this chapter act as a 'rule of thumb' to identify trips most likely to be walkable. As a result, some trips are excluded which could, in fact be walked. It takes around 15-20 minutes to walk 2km and more than nine in 10 current walk trips are shorter than 2km; however, many people are willing to walk further than this for their journey.

Some trips excluded as being part of a longer train of trips could also be walked. For example, trips made during the day from a workplace.

There is also much we do not know about the trips identified as potentially walkable and the people making them, for example, what else the person may be doing on that day. Therefore, some of the trips identified as potentially walkable could not, in fact, be walked.

The analysis is limited to trips made by Londoners (excluding those who travel to London from elsewhere to work, shop and use services) and to trips which could be walked all the way. Therefore, any potential for increases in travel on foot for parts of trips made by people who aren't London residents, such as after rail, is not captured here. This will particularly understate the potential for growth in walk travel in central London, which receives a high volume of daily visitors.

Finally, it is necessary to draw on a wider range of data sources to reach conclusions about whether these trips could or would transfer to walking, and under what circumstances such a change might happen.

3. Potentially walkable trips

Key findings

- Londoners currently make 2.39 million daily trips by mechanised modes which are potentially walkable
- Two-thirds of the potential trips are currently made by car, with the remainder largely made by bus
- More than half of all potentially walkable trips are made for leisure and shopping purposes
- Of the 2.39 million potentially walkable trips made every day, 40 per cent would take less than 10 minutes for most people to walk

This chapter presents a summary of the potential for walking in terms of the nature of trips being made and compares the characteristics of potentially walkable trips with current travel on foot.

Identifying potentially walkable trips

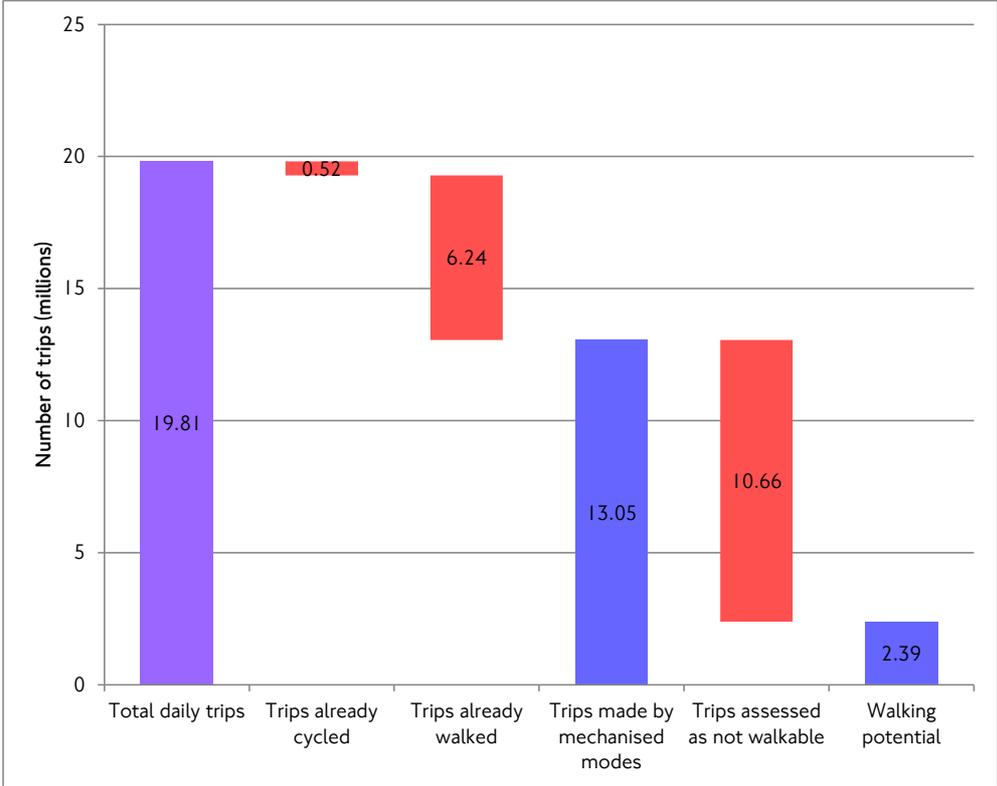
Between 2012/13 and 2014/15, Londoners made an average of 19.8 million trips per day by all modes. Of these, just over 520,000 were cycled and 6.3 million walked. The remainder, 13.1 million trips, were made by motorised modes, primarily car, bus, Underground and rail.

This analysis identified 2.39 million trips currently made by motorised modes as potentially walkable.

Assuming the 'total potential' is the sum of the currently walked and potentially walkable trips, and noting that London residents currently make 6.3 million walk trips on an average day, this amounts to more than 70 per cent of potentially walkable trips already being walked.

This total excludes trips which are currently cycled but could be walked, reflecting the Mayor and TfL's ambitions to increase the overall mode share for active travel modes, without necessarily substituting one for the other. Both cycling and walking are attractive modes for short trips and therefore we might expect that an increase in cycle travel would lead to some people switching from walk to cycle, as well as from mechanised modes. This total also excludes walking made as part of a longer trip by another mode (though this is considered separately in chapter 5). Figure 3.1 provides a summary of the analysis.

Figure 3.1: summary of potentially walkable trips

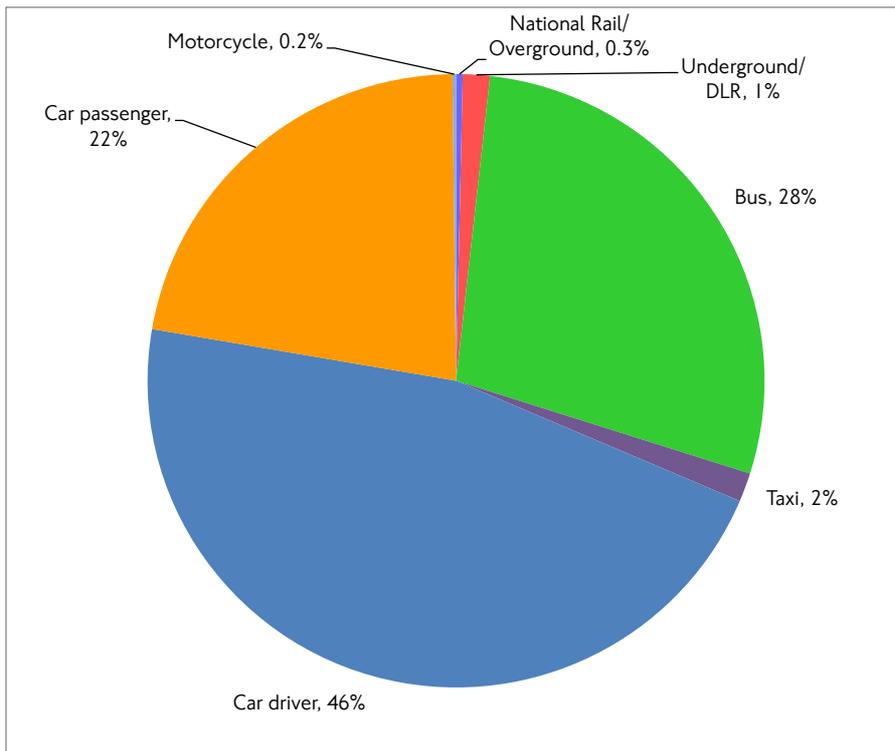


Source: LTDS 2012/13 – 2014/15

On which modes are walkable trips currently made?

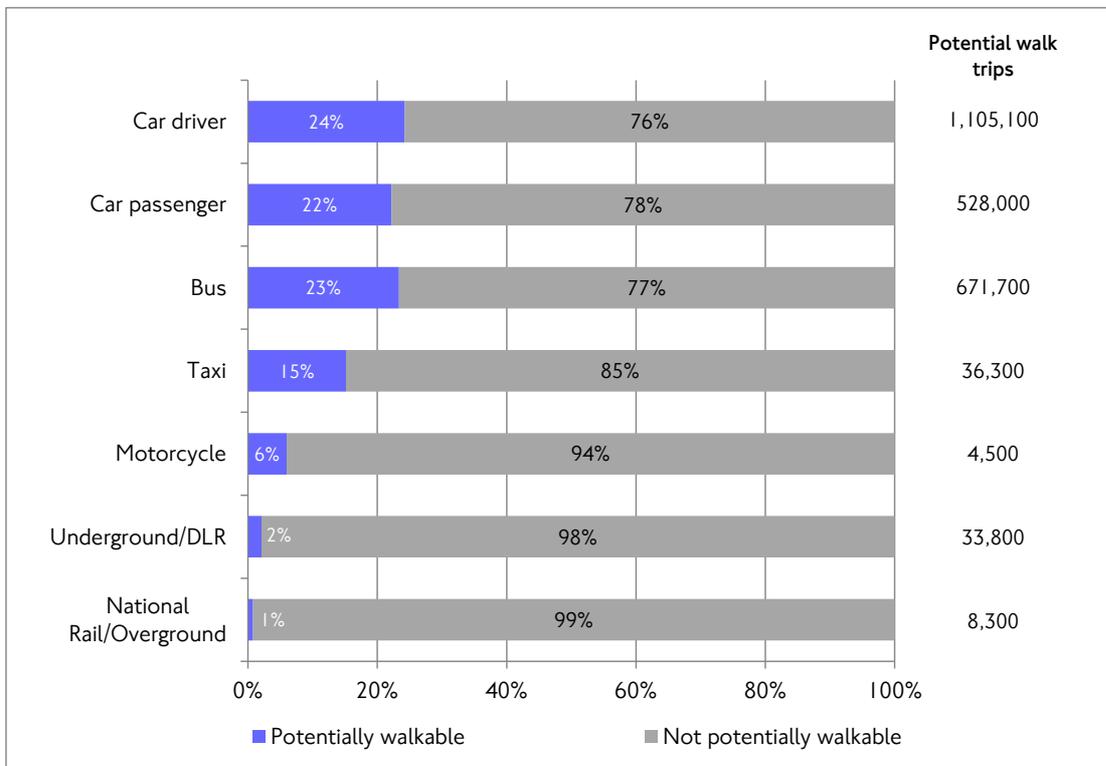
Just over two-thirds of all potentially walkable trips are currently made by car – 24 per cent of all car trips currently made by Londoners. This reflects the high numbers of short car trips made by London residents, particularly in outer London. Trips made by Underground and rail were the least likely to be potentially walkable, reflecting the longer average distance travelled by rail and Tube.

Figure 3.2: potentially walkable trips by current mode



Source: LTDS 2012/13 – 2014/15

Figure 3.3: trips by each mode identified as potentially walkable or otherwise



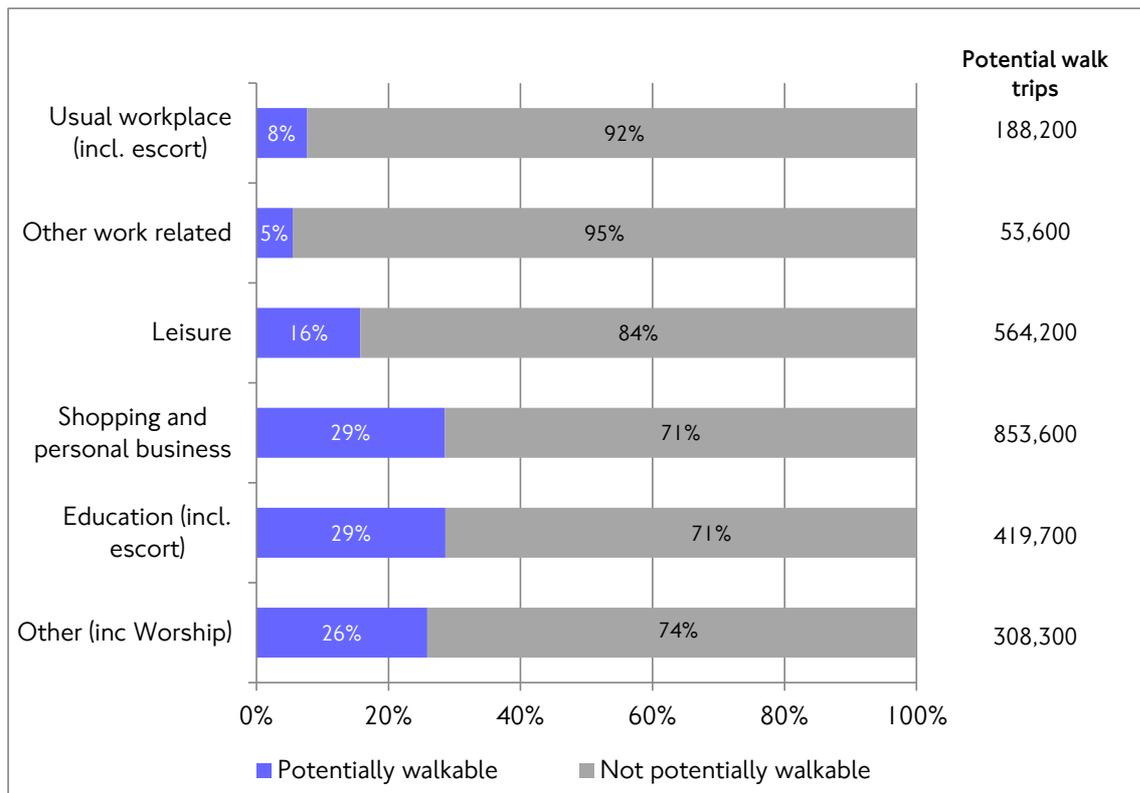
Source: LTDS 2012/13 – 2014/15

Why are these trips being made?

Shopping and personal business account for the highest share – 37 per cent – of all potentially walkable trips. This is largely equal to the profile of existing walk trips, where nearly four in 10 trips are made for shopping or personal business purposes. Just less than 30 per cent of all shopping and personal business trips not currently walked are potentially walkable.

The lowest number of potentially walkable trips are for travel to a usual workplace, or travel for other work related reasons. Combined, these two categories account for only eight per cent of potentially walkable trips, with more than 90 per cent of all trips of this nature deemed not walkable.

Figure 3.4: trips by each purpose identified as potentially walkable or otherwise



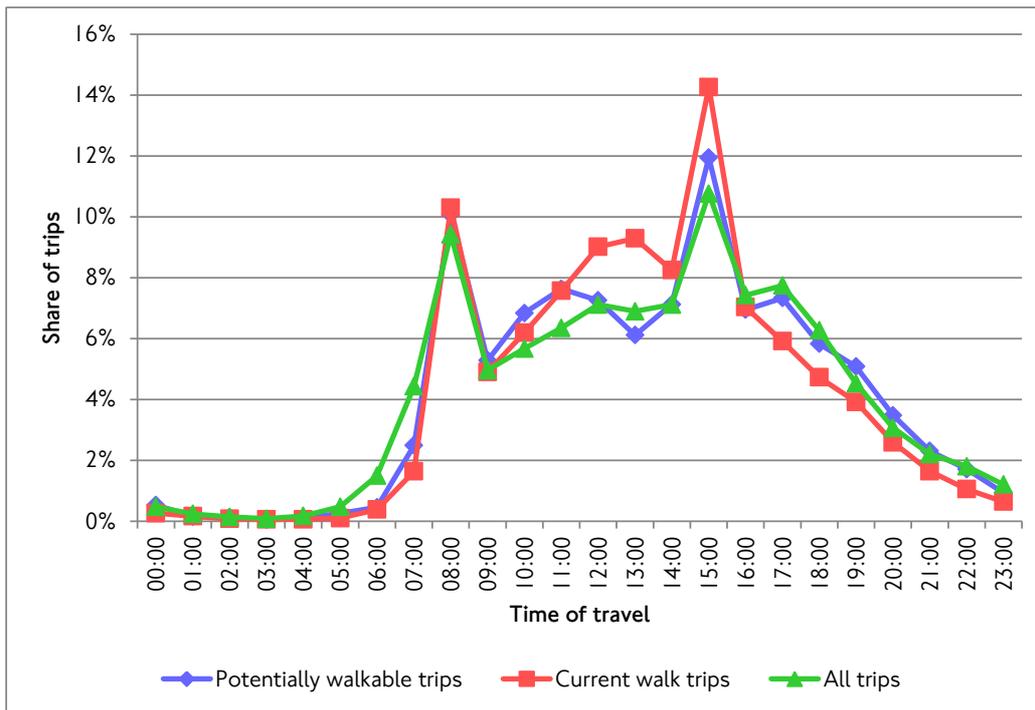
Source: LTDS 2012/13 – 2014/15

A notable proportion (34 per cent) of car trips that could be walked are made to drop off or collect someone, be it for work, education or other reasons. Bus trips that could be walked are more likely to be for shopping (39 per cent, compared to overall average of 28 per cent) or for education reasons (12 per cent compared to seven per cent).

When are these trips being made?

The time of day profile of potentially walkable trip and trips already walked are similar, particularly before 12 noon. The early afternoon (between 12 noon and 4pm) sees higher shares of trips already walked, with more potentially walkable trips in the evening peak.

Figure 3.5: potentially walkable trips by time of travel



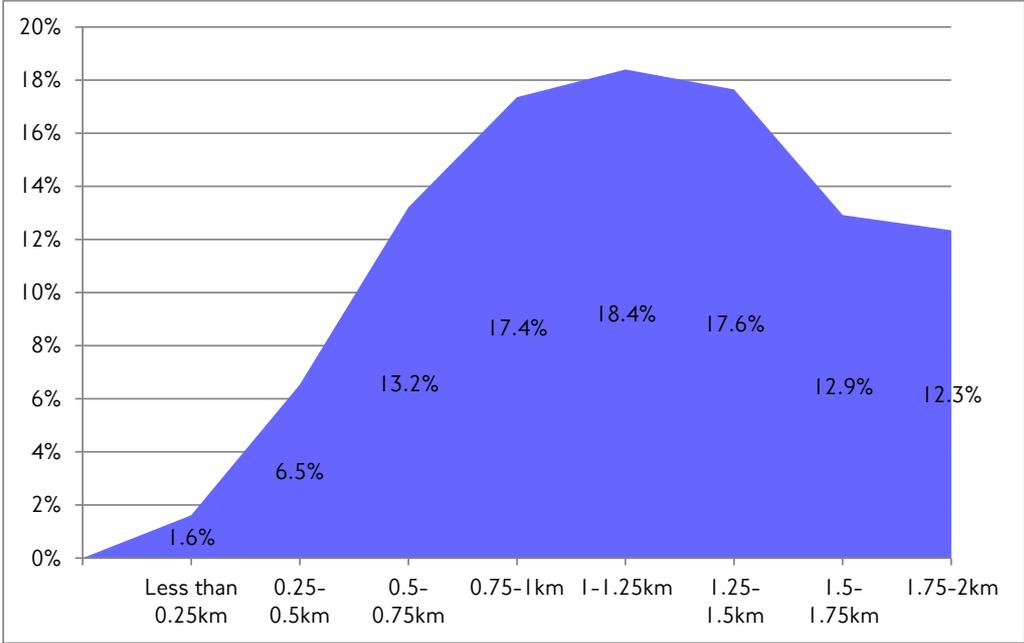
Source: LTDS 2012/13 – 2014/15

How long are these trips?

As shown in Figure 3.6, 39 per cent of the potential walk trips (or 1.2 million trips) made each day are less than 1km and would take only 10-15 minutes to walk.

Almost 90 per cent of potentially walkable trips that are less than 1km (0.95 million out of the 1.06 million) are made by car, either as a driver or passenger. The potentially walkable trips currently made by public transport or by taxi tend to be longer, and are more likely to be 1-2km in length.

Figure 3.6: potentially walkable trips by distance (crow-fly)



Source: LTDS 2012/13 – 2014/15

Who could be walking more?

The potential for walking is greater among women. Around 1.4 million walkable trips (58 per cent) are made by women, compared to just over one million walkable trips for men (see Figure 3.7). This difference is most pronounced for those aged 25-54. Potentially walkable trips made by men are slightly more likely to be car driver trips, with women more likely to travel by bus or as a car passenger.

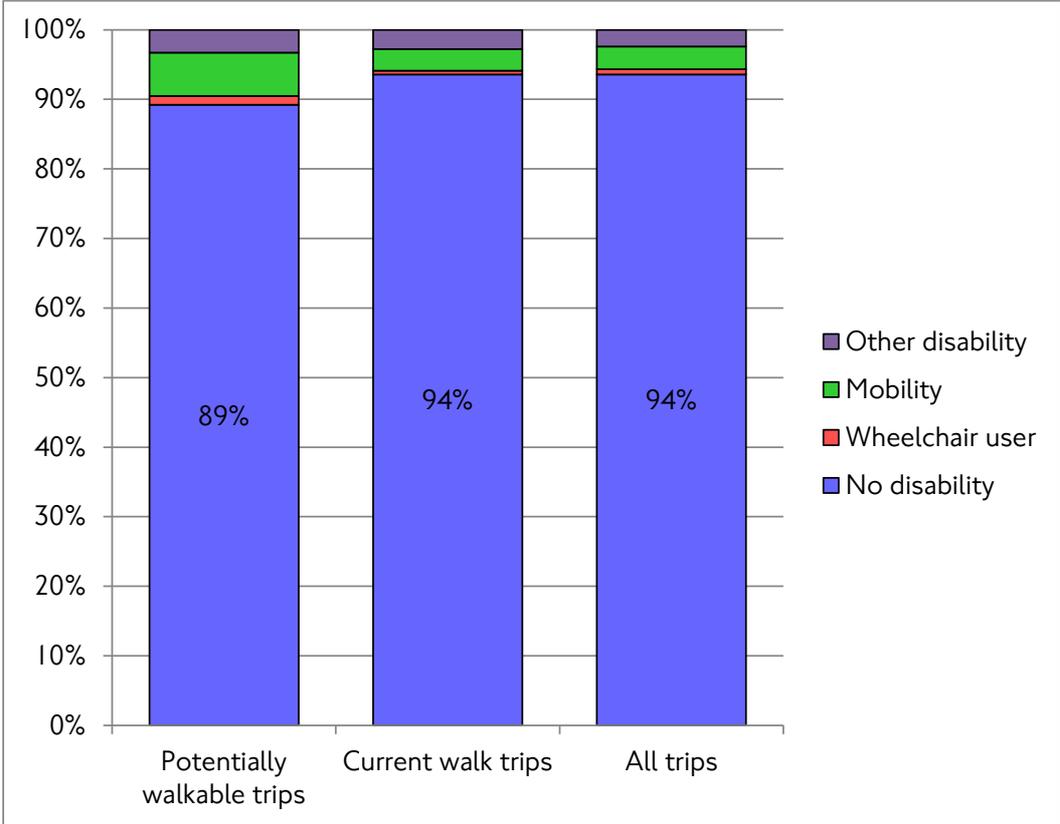
Figure 3.7: potential walk trips by age and gender



Source: LTDS 2012/13 – 2014/15

Most potentially walkable trips are made by people with no disability – only 11 per cent are made by someone with a form of disability that affects their daily activity. This is, however, higher than the current profile of walk trips and indeed of all trips, where the share of trips made by disabled people is at six per cent.

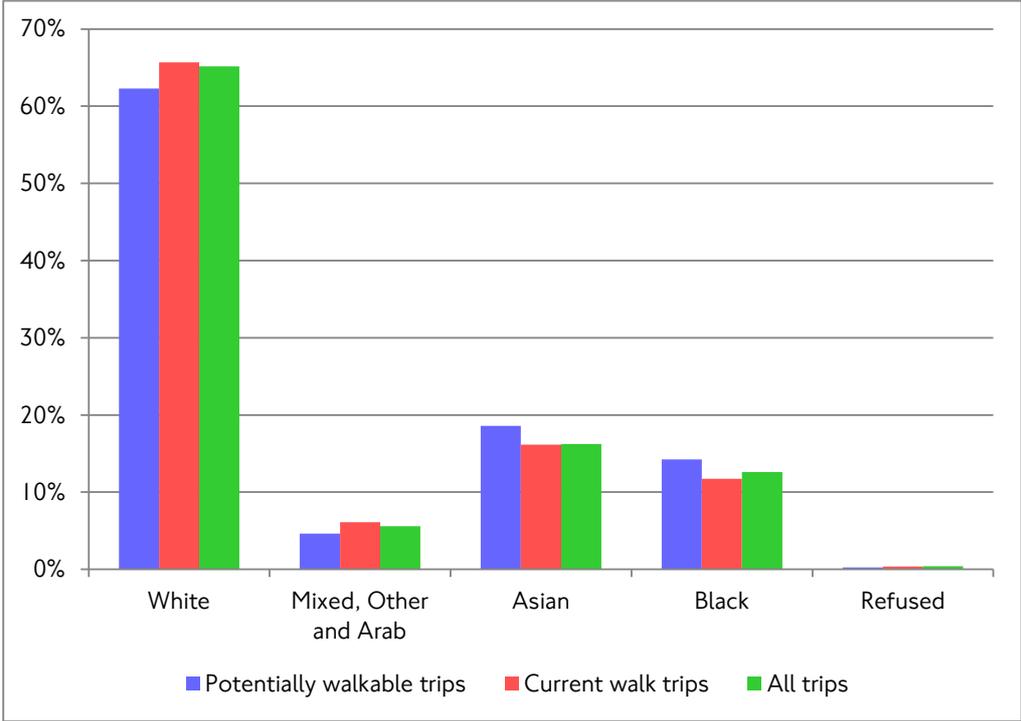
Figure 3.8: potential walk trips by disability



Source: LTDS 2012/13 – 2014/15

The ethnic profile of people making potentially walkable trips is broadly similar to those that already walk: there were 62 per cent of potentially walkable trips made by people of white ethnicity, compared to 66 per cent of trips already walked.

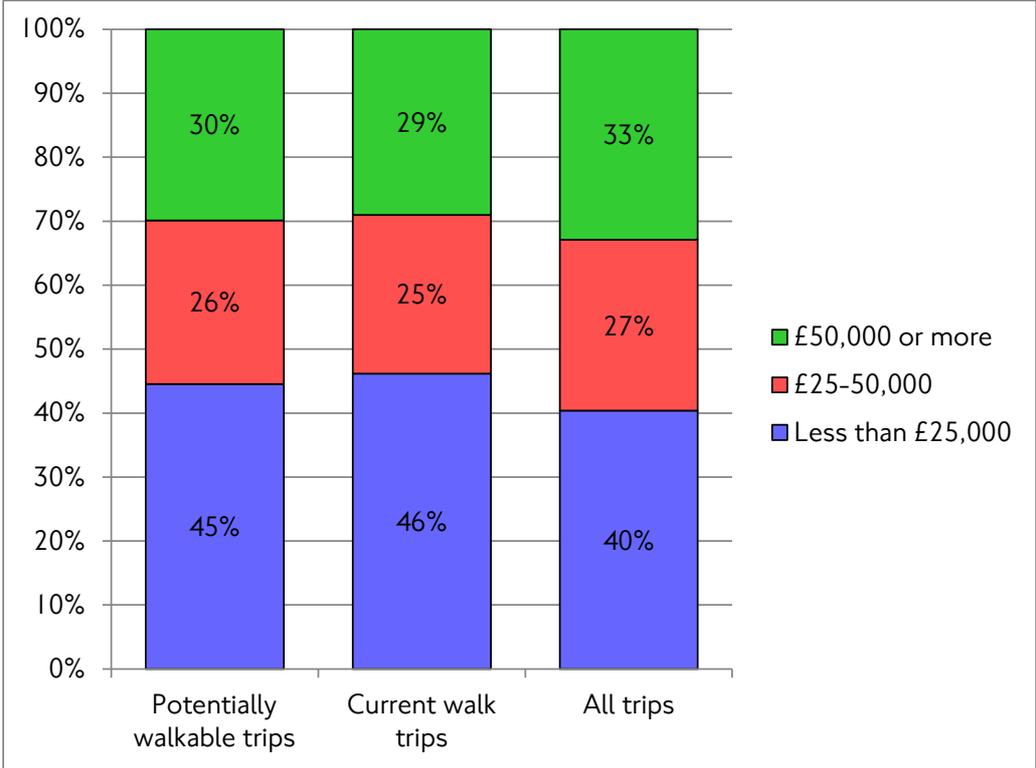
Figure 3.9: potential walk trips by ethnicity



Source: LTDS 2012/13 – 2014/15

The household income profile of people making potentially walkable trips is also similar to the income profile of existing walk trips, with around 45 per cent made by people with household income below £25,000 per year. These are both slightly different to the profile for all modes, where around 40 per cent of trips are made by people with income below £25,000 (see Figure 3.10).

Figure 3.10: potential walk trips by household income



Source: LTDS 2012/13 – 2014/15

4. Where are potentially walkable trips being made?

Key Findings

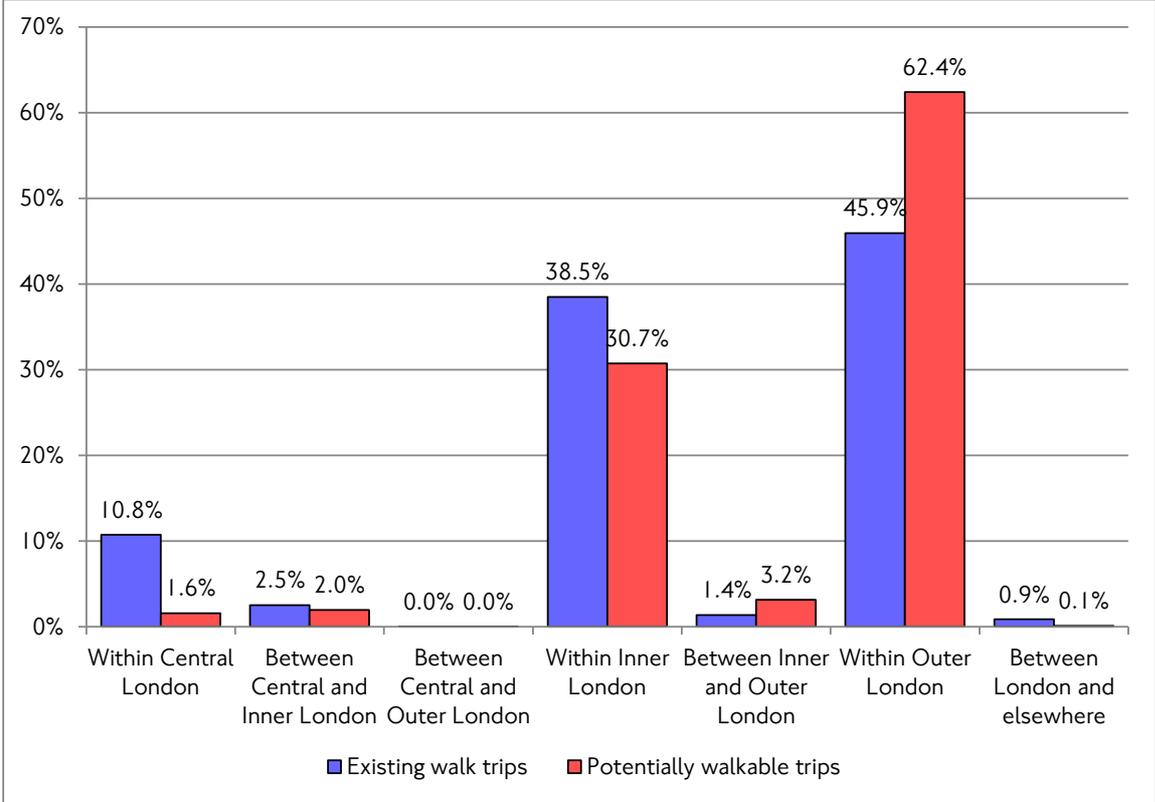
- There are 31 per cent potentially walkable trips made within inner London, 62 per cent within outer London and three per cent travelling between the two regions.
- The potential for walking is highly dispersed across the city, with few areas identified as demonstrating a high density of potentially walkable trips.
- There are some outer London town centre areas with reasonable levels of walking potential identified, particularly in Croydon, Ealing and Ilford.

Introduction

Nearly two-thirds (62 per cent) of all potential walk trips are made in outer London, although only 46 per cent of existing walk trips are actually walked there. In inner London, nearly 31 per cent of walkable trips were made (compared to 38% existing walk trips), with a further three per cent made between inner and outer London. There was little walking potential identified in central London (see Figure 4.1).

This analysis is limited to travel by London residents only and trips that can be walked all the way. Central London attracts a vast number of non-Londoners every day and also has a high public transport mode share; there are probably many more trips made by bus, rail and Tube where part, or all, of the trip could be walked, but is not at present. Therefore, the real potential for walking in central London may be considerably higher than is represented here.

Figure 4.1: origin and destination of current and potential walk trips, London residents



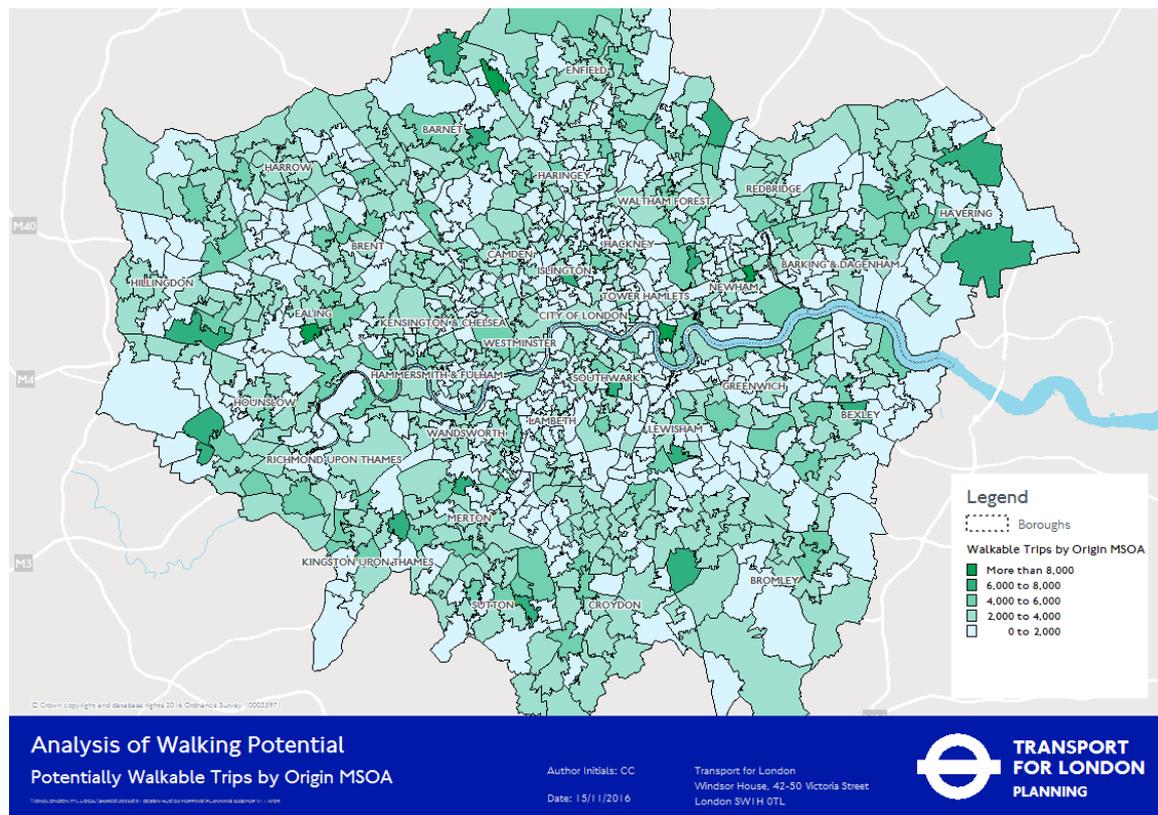
Source: LTDS 2012/13 – 2014/15

Note: central London defined as the CAZ, broadly equivalent to Zone 1.

Areas with high density walking potential

The following figures show there are few areas identified across London with a high density of walking potential, other than in small pockets of outer London. This reflects the highly dispersed nature of potentially walkable trips across London as a whole.

Figure 4.2: origins of potentially walkable trips



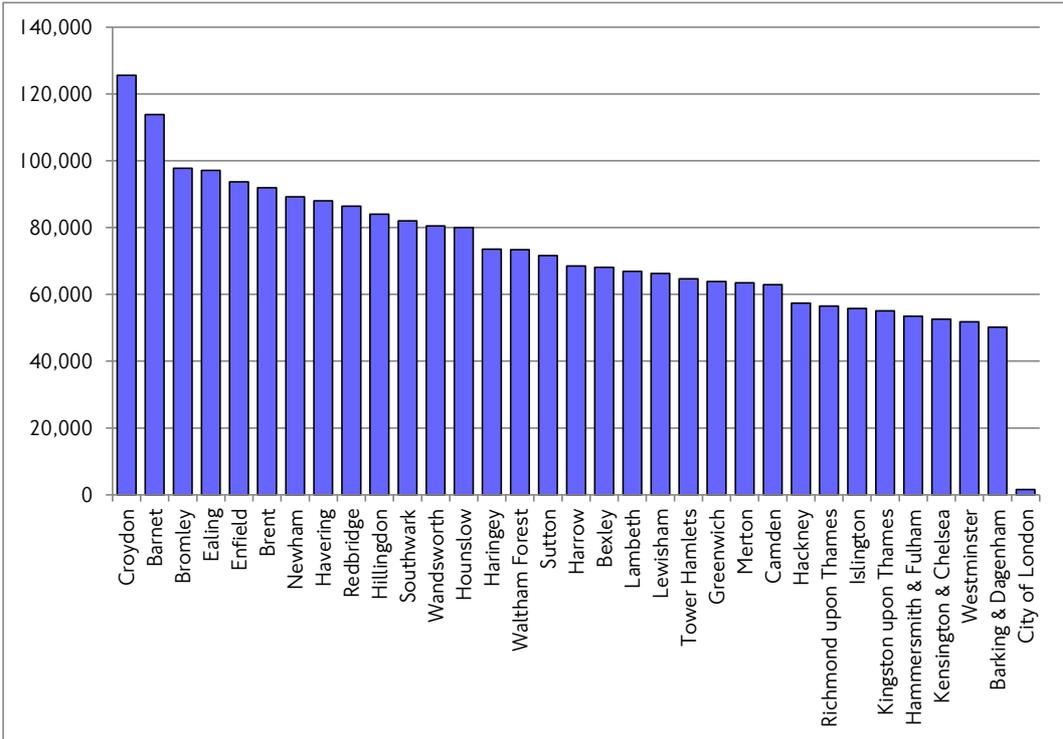
Source: LTDS 2012/13 – 2014/15

Walking potential by borough of residence

In general, the mode share for walking is significantly higher in inner than outer London. This reflects shorter trip distances and lower levels of car ownership.

The number of potential walk trips is highest in Croydon and Barnet where the number of daily trips is more than 100,000. While the lower numbers of trips generally occur in inner London boroughs, such as Islington, Hammersmith & Fulham and Westminster, there are a number of boroughs in outer London (eg, Kingston upon Thames and Barking and Dagenham) which also have a much lower level of walking potential. This is largely due to the smaller population in these boroughs; it is also in part a consequence of longer average trip lengths, excluding a higher number of mechanised mode trips.

Figure 4.3: potential walk trips by borough of residence, London residents



Source: LTDS 2012/13 – 2014/15

The level of walking potential already achieved is much higher in inner London than outer London – 80 per cent compared to 69 per cent, against the overall London average of 74 per cent. Excluding the City of London, Westminster and Camden have the greatest levels of potential achieved, at 85 and 83 per cent respectively. By contrast, only three out of every five walkable trips in Havering are currently walked.

Table 4.1: current and potential walk trips by borough of residence

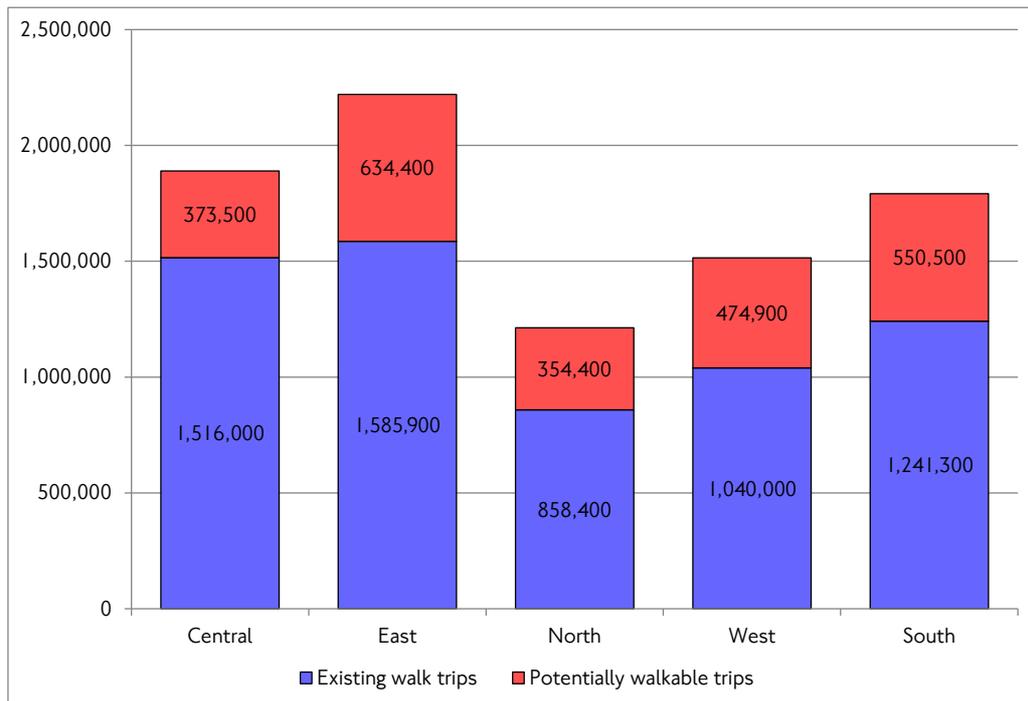
Borough of Residence	Existing walk trips	Potentially walkable trips
Camden	289,600	62,900
City of London	16,800	1,600
Hackney	174,000	57,400
Hammersmith & Fulham	194,600	53,500
Haringey	208,100	73,500
Islington	220,800	55,800
Kensington & Chelsea	158,200	52,600
Lambeth	231,800	66,900
Lewisham	220,400	66,300
Newham	238,600	89,200
Southwark	330,300	82,000
Tower Hamlets	263,700	64,700
Wandsworth	256,700	80,500
Westminster	268,500	51,800
Inner London	3,072,100	858,700
Barking & Dagenham	100,500	50,200
Barnet	238,100	113,800
Bexley	138,100	68,100
Brent	179,400	91,900
Bromley	184,600	97,800
Croydon	222,100	125,600
Ealing	216,100	97,100
Enfield	206,600	93,700
Greenwich	176,900	63,900
Harrow	141,700	68,500
Havering	120,500	88,000
Hillingdon	153,500	84,000
Hounslow	154,700	80,000
Kingston upon Thames	113,600	55,100
Merton	154,100	63,500
Redbridge	153,200	86,400
Richmond upon Thames	183,100	56,500
Sutton	127,100	71,600
Waltham Forest	205,600	73,400
Outer London	3,169,500	1,529,100
London average	6,241,400	2,387,700

Source: LTDS 2012/13 – 2014/15

Walking potential by sub-region

A series of sub-regional plans were published in autumn 2010. These further develop London-wide policies, as set out in the Mayor's Transport Strategy, exploring how the Mayor's aspirations can be delivered on a local level, recognising the different characteristics and challenges present in each sub-region. The Sub-Regional Plans

Figure 4.5: existing and potential walk trips by sub-region



Source: LTDS 2012/13 – 2014/15

Which town centres have the most potentially walkable trips?

There is significant potential for trips to and from town centres within London to be walked. Just under a third of the potentially walkable trips have either an origin or a destination in one of London's town centres (as defined in the London Plan).

These trips are concentrated in outer London metropolitan town centres, such as Croydon, Ealing and Ilford (each with approximately 13,000 potential walking trips per day), as well as major town centres such as Peckham and East Ham (11,000 walkable trips per day) and Angel and Bexleyheath (10,000 walkable trips per day).

More than half (53 per cent) of travel to and from town centres that could be walked is currently made by car, of which two-thirds is as the car driver. A further 39 per cent is made by bus, though the car mode share is higher among town centres in outer London.

Figure 4.6 provides a summary for each of the town centres (as well as the two international centres) identified in the London Plan, with Tables 4.2 and 4.3 providing the same information in tabular form.

Table 4.3: potential walk trips to/from major town centres

Centre	Borough	Potentially walkable trips
<i>Major centres</i>		
Angel	Islington	12,000
Barking	Barking & Dagenham	5,800
Bexleyheath	Bexley	10,200
Brixton	Lambeth	5,700
Camden Town	Camden	9,200
Canary Wharf	Tower Hamlets	8,600
Catford	Lewisham	3,400
Chiswick	Hounslow	8,800
Clapham Junction	Wandsworth	9,800
Dalston	Hackney	5,600
East Ham	Newham	11,300
Edgware	Barnet	5,300
Eltham	Greenwich	4,700
Enfield Town	Enfield	6,600
Fulham	Hammersmith & Fulham	6,400
Hammersmith	Hammersmith & Fulham	4,400
Holloway - Nag's Head	Islington	9,000
Kensington High Street	Kensington and Chelsea	4,200
Kilburn	Brent	5,700
King's Road East	Kensington and Chelsea	5,200
Lewisham	Lewisham	4,900
Orpington	Bromley	6,400
Peckham	Southwark	11,100
Putney	Wandsworth	4,700
Queensway/Westbourne Grove	Westminster	700
Richmond	Richmond upon Thames	4,200
Southall	Ealing	5,100
Streatham	Lambeth	4,700
Tooting	Wandsworth	7,000
Walthamstow	Waltham Forest	6,100
Wandsworth	Wandsworth	3,700
Wembley	Brent	4,200
Whitechapel	Tower Hamlets	5,700
Wimbledon	Merton	8,300
Woolwich	Greenwich	7,100

Source: LTDS 2012/13 – 2014/15

5. Potentially walkable stages

Key findings

- This analysis provides an estimate of the potential for walking stages of existing mechanised mode trips that could not be walked in their entirety.
- There are 1.25 million journey stages made each day that could be walked
- Most potentially walkable stages are made by bus or Underground.
- Walkable stages are more likely than walkable trips to be in central and inner London.
- Most walkable stages involve travel to or from a London town centre.
- Men, people aged 17-44, and those in higher income households, are more likely to be making a potentially walkable stage.

Introduction

This chapter explores the potential for additional walking as a part of a longer journey using public transport. These trips, when looked at as a whole, are not considered to be potentially walkable, but have stages that could be walked, both in terms of the distance of the stage, and in the suitability of making that stage on foot within the overall context of the trip.

Considerations for analysis

As outlined in chapter 2, there are approximately 10.7 million trips currently made by mechanised modes each day that were not deemed potentially walkable, with many excluded on the basis of distance (ie, being longer than 2km). Of these, around half were made by car (32 per cent as the driver, 17 per cent as a passenger), with most of the remainder made by public transport (with the exception of a small number of motorcycle and taxi trips).

The analysis of potentially walkable trip stages only includes trips not deemed walkable solely on the basis of distance. Any trip excluded on the basis of one of the other criteria (such as encumbrance) was not considered in this analysis.

Approximately 8.8 million trips were not deemed potentially walkable solely on the basis of being longer than 2km, and it is these trips on which the analysis is based.

Trips with a single stage made by a mechanised mode have not been considered as part of this potentially walkable stage analysis, on the grounds that if the *trip* had not been considered walkable, it is unrealistic to consider this *stage* to be walkable. On this basis, trips made solely by car, or trips with a single public transport stage (and no private vehicle stages) were not considered.

Most trips not potentially walkable fall into one of the two categories above. Half of trips that are not walkable because of distance are car, motorcycle or taxi trips, and a further 26 per cent are journeys made up of three stages, of which two are walked or cycled, and one is a public transport stage. Therefore only 24 per cent of trips (which

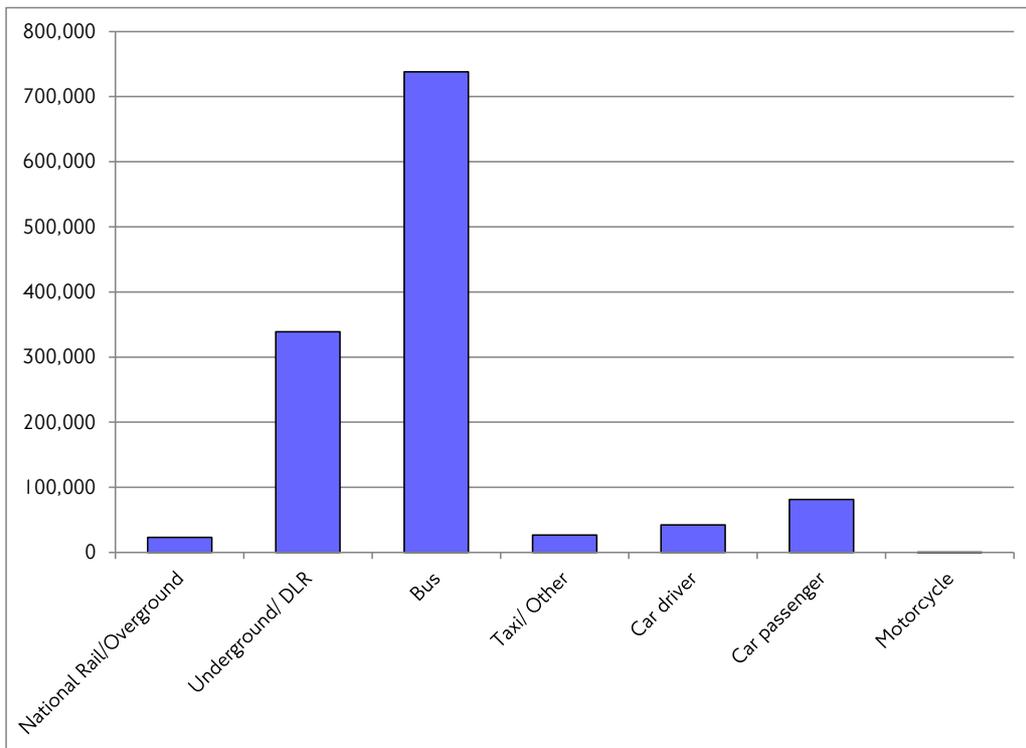
equates to 2.1 million daily trips) that are not walkable solely on the basis of distance can be considered as part of the walkable trip stage analysis.

Summary of walk stage potential

Across the 2.1 million daily trips considered as part of the walk stage analysis, approximately 1.25 million stages currently made by a mechanised mode have been identified as potentially walkable.

Most of the potentially walkable stages are currently either made by bus or by Underground – 86 per cent of the potential. More than half of all potentially walkable stages are currently made by bus.

Figure 5.1: potentially walkable stages, by current stage mode



Source: LTDS 2012/13 – 2014/15

Most potentially walkable stages are bus stages made as part of trip involving a longer journey by the same mode (ie, a trip involving at least one bus interchange). This is closely followed by bus stages made as part of a trip involving a longer journey by Underground or DLR, and Underground or DLR stages made as part of a trip involving a longer journey by Underground or DLR (ie, at least one Underground/DLR interchange involved).

Figure 5.2: potentially walkable stages, by current stage mode and trip main mode

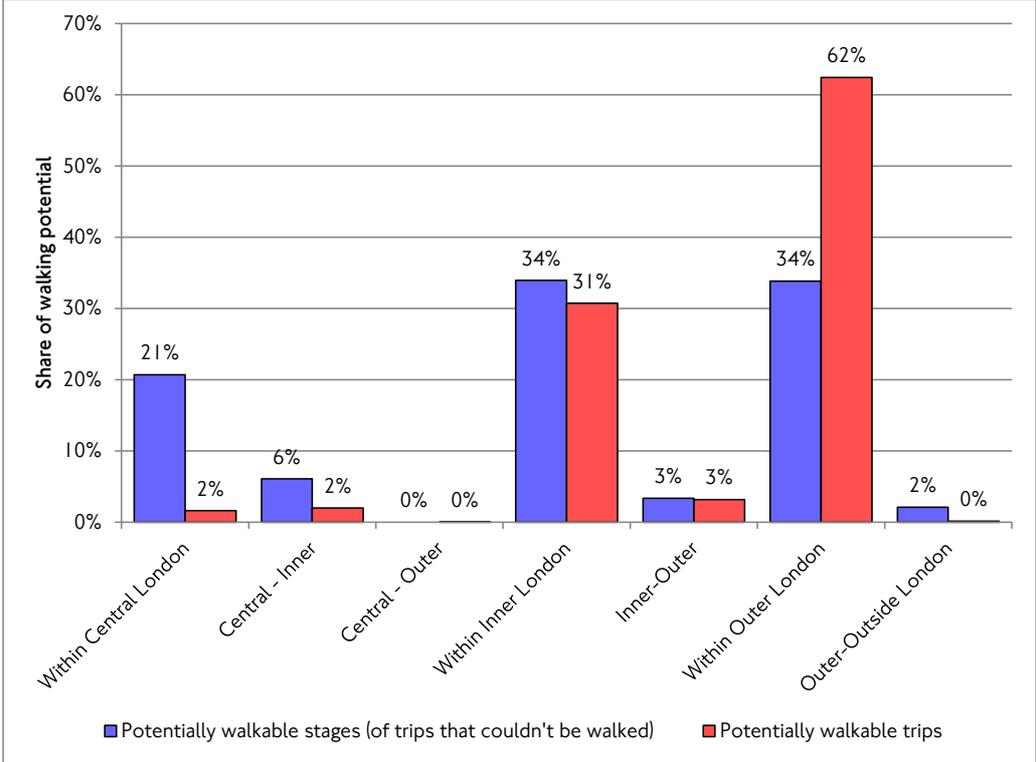
Mode of walkable stage	Main mode of trip	Number of walkable stages
		330,000
		250,000
		230,000
		160,000
		100,000
		40,000

Source: LTDS 2012/13 – 2014/15

Where are potentially walkable stages made?

The location of potentially walkable stages is markedly different to the profile of potentially walkable trips, with a greater emphasis on central London. More than 21 per cent of potentially walkable stages are made within central London, compared to 1.5 per cent of potentially walkable trips. By contrast, just over 30 per cent of potentially walkable stages are made in outer London, compared to nearly 55 per cent of potentially walkable trips.

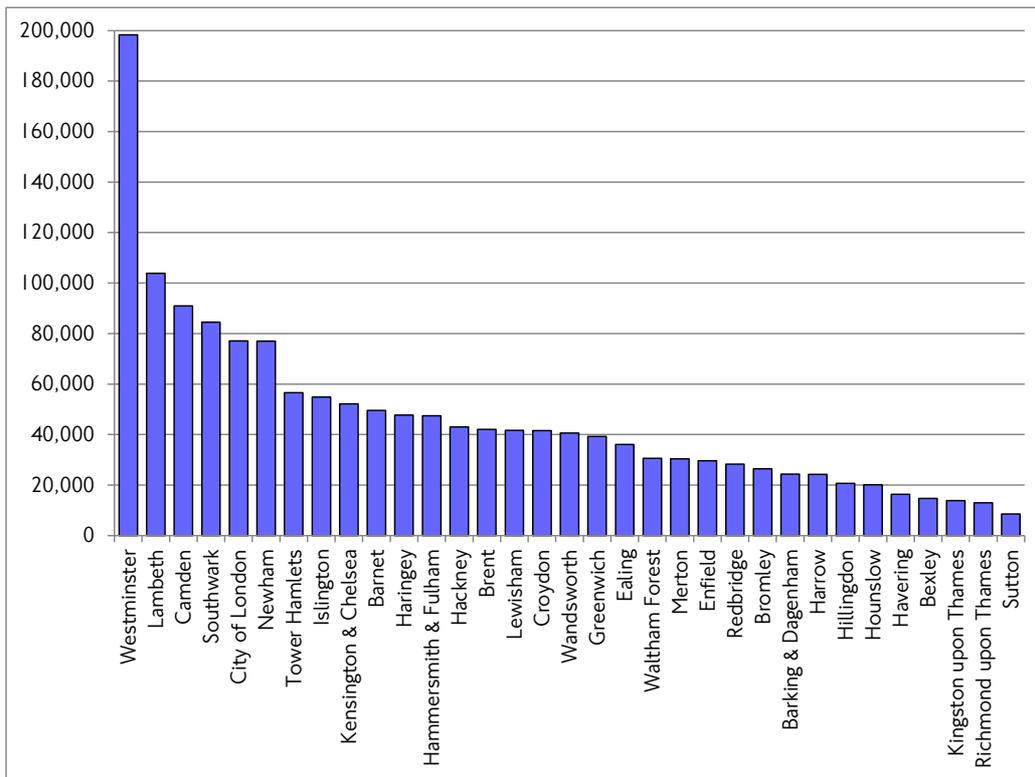
Figure 5.3: origin and destination of potential walk stages and trips, London residents



Source: LTDS 2012/13 – 2014/15

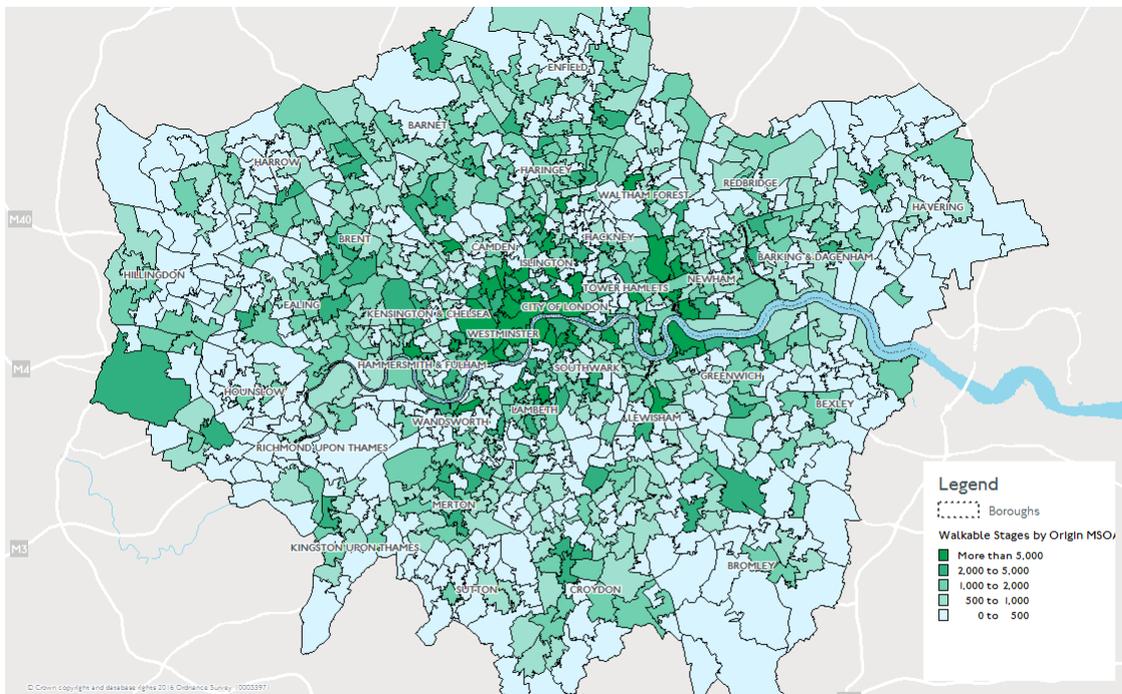
As shown in Figure 5.4, potentially walkable stages are more heavily concentrated in central boroughs, such as Westminster, Camden and Lambeth. Westminster has nearly twice the total number of potentially walkable stages of any other boroughs (in terms of the number of stages with an origin or destination within the borough), with 200,000 stages per day that could be walked. By contrast, the 16 boroughs with the lowest number of walkable stages are all in outer London. In particular, Sutton, Havering, Bexley, Richmond and Kingston all have less than 20,000 daily walkable stages – less than 10 per cent of the total for Westminster.

Figure 5.4: potentially walkable stages, by borough of origin/destination



Source: LTDS 2012/13 – 2014/15

Figure 5.5: potentially walkable stages, by origin MSA



Analysis of Walking Potential
Potentially Walkable Stages by Origin MSA

Author Initials: CC
Date: 15/11/2016

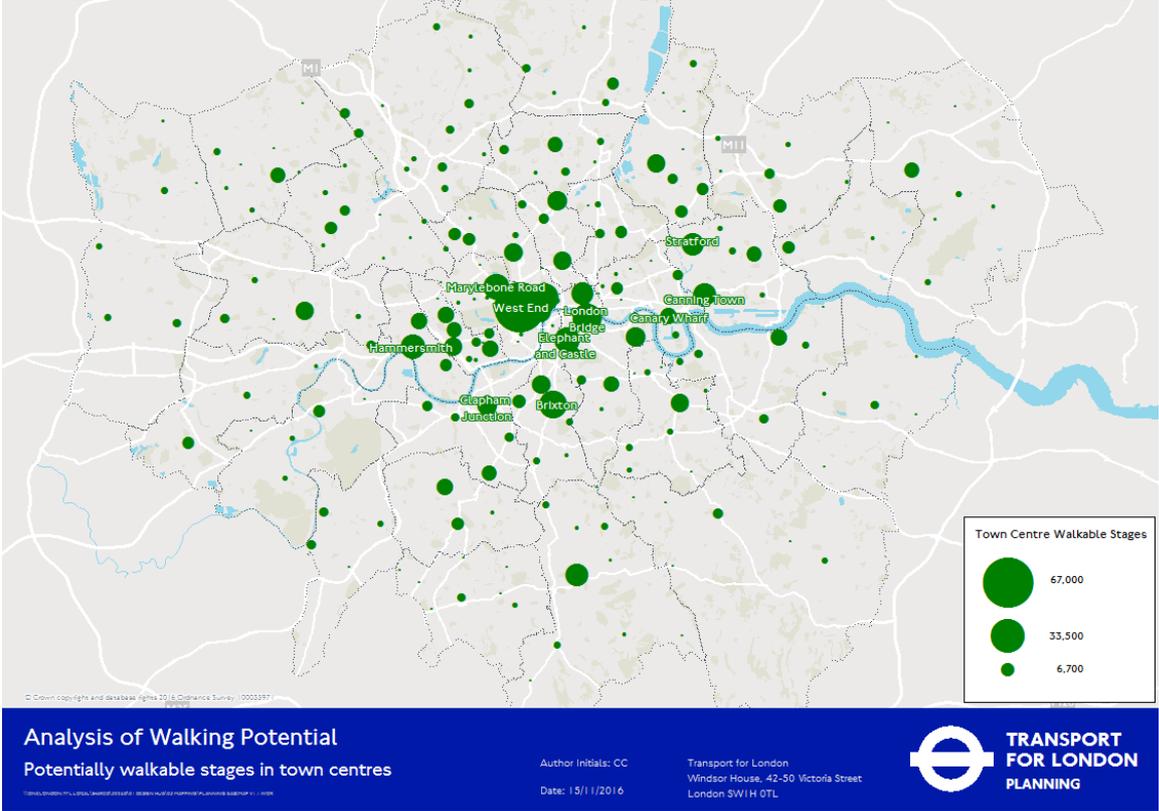
Transport for London
Windsor House, 42-50 Victoria Street
London SW1H 0TL

TRANSPORT FOR LONDON PLANNING

Source: LTDS 2012/13 – 2014/15

Around 840,000 walkable stages involve town centre travel – more than two-thirds of the total. The main locations for these stages are across central London, in particular the West End, but also in other locations in the CAZ, such as London Bridge, the Strand, High Holborn and Marylebone Road. In addition, there are town centres across inner London (Clapham Junction, Brixton, Stratford, and Hammersmith) with significant potential for walking.

Figure 5.6: potentially walkable stages to/from London town centres

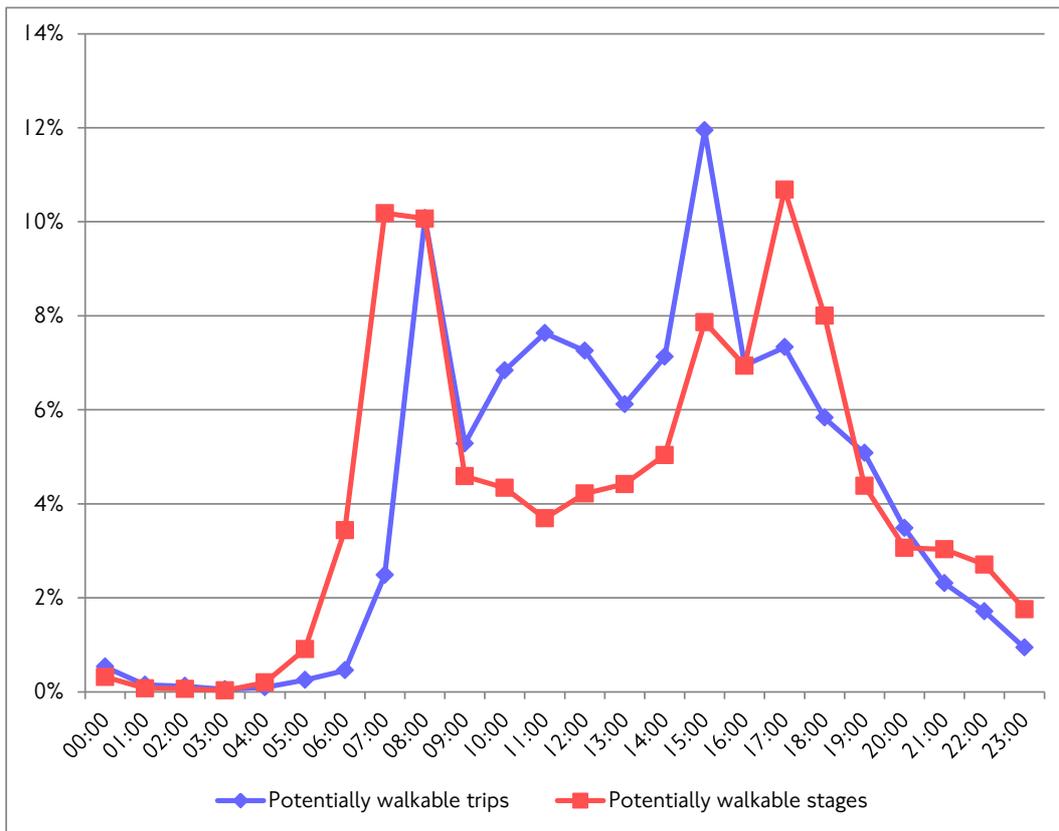


Source: LTDS 2012/13 – 2014/15

When are potentially walkable stages made?

The time of day that potentially walkable stages are made is slightly different to the equivalent profile of potentially walkable trips, with walkable stages more concentrated in traditional peak times. For example, 10 per cent of potentially walkable stages are made between 7am and 8am, compared to only two per cent of potentially walkable trips. The evening peak for potentially walkable stages occurs later than the peak for potentially walkable trips (5-6pm compared to 3-4pm). The inter-peak period between 10am and 4pm also accounts for a much lower share of potentially walkable stages (34 per cent compared to 52 per cent).

Figure 5.7: potentially walkable stages, by time of day

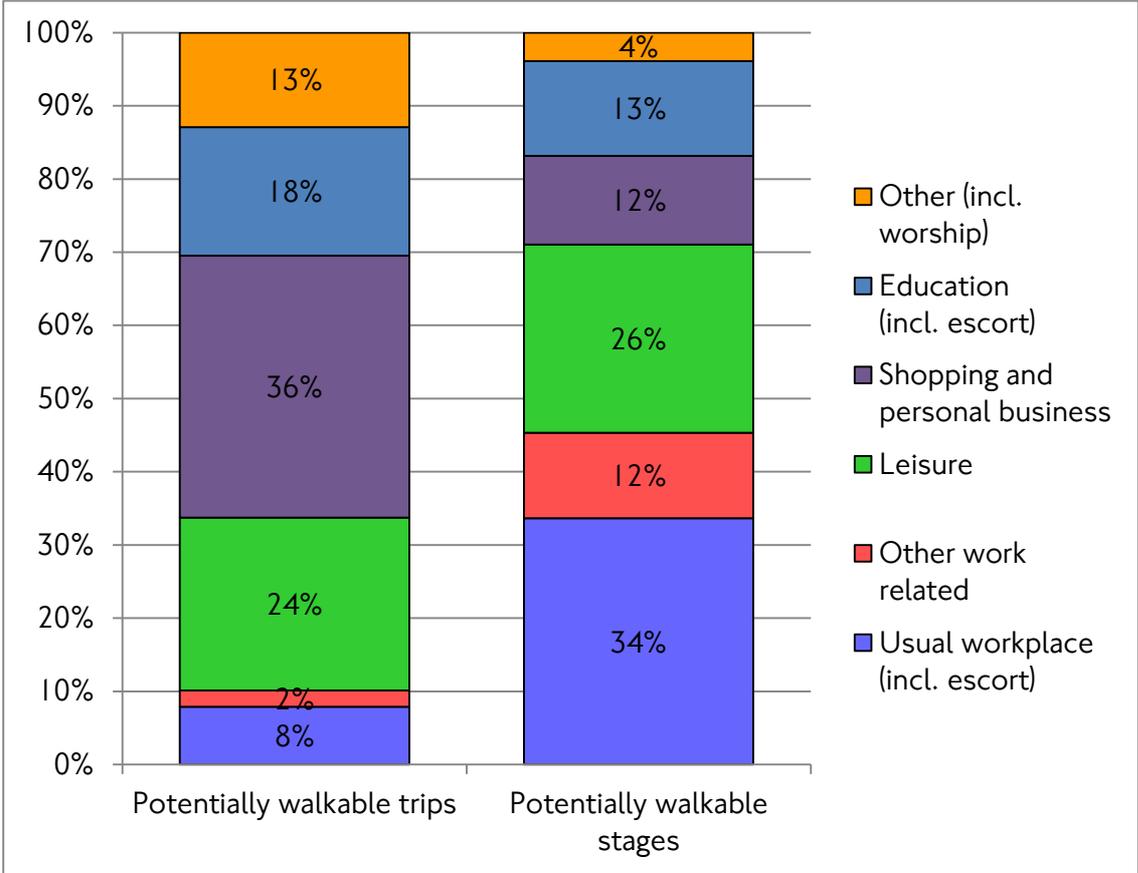


Source: LTDS 2012/13 – 2014/15

Why are potentially walkable stages made?

The journey purposes of potentially walkable stages are also significantly different to those of potentially walkable trips. Stages as part of work-based trips (commuting, work escort and other work trips) account for 46 per cent of potentially walkable stages, compared to only 10 per cent of potentially walkable trips. Stages as part of shopping and personal business trips, however, account for only 12 per cent of potentially walkable stages, compared to 36 per cent of potentially walkable trips.

Figure 5.8: potentially walkable stages, by journey purpose



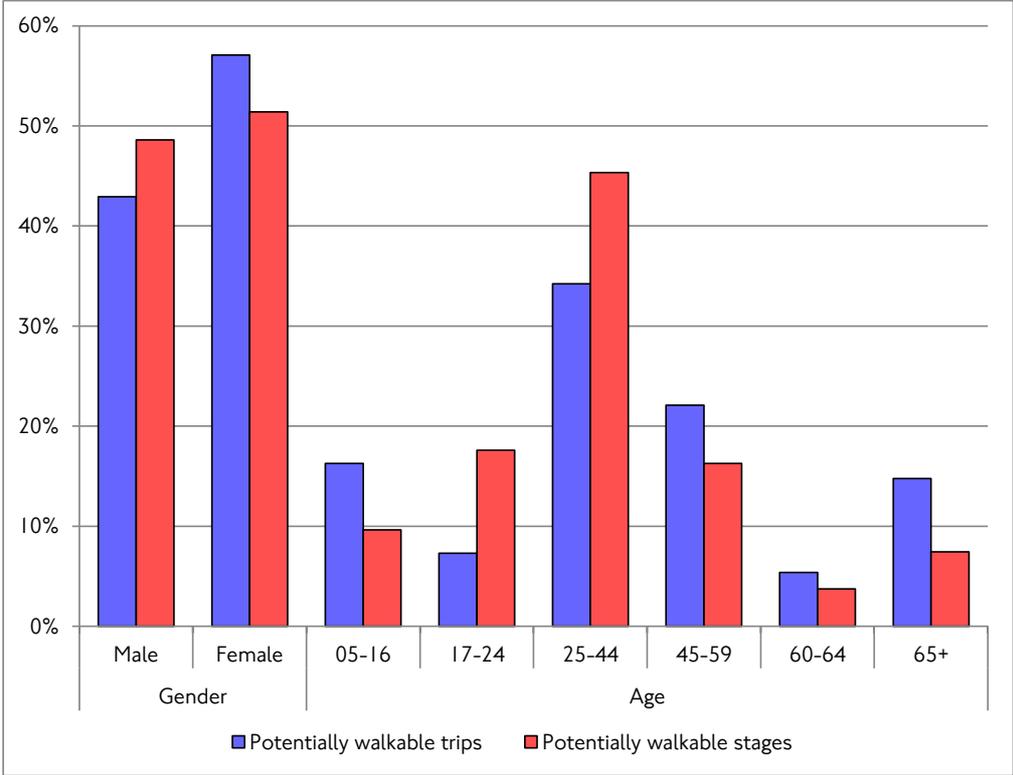
Source: LTDS 2012/13 – 2014/15

Who is making potentially walkable stages?

Women account for the majority of potentially walkable stages, albeit with a lower majority than seen for potentially walkable trips.

With regards to age, potentially walkable stages are more likely to be made by adults under 45 than potentially walkable trips; 63 per cent of potentially walkable stages are made by those aged 16-44, with 45 per cent made by those aged 25-44 – this compared to 42 per cent of potentially walkable trips.

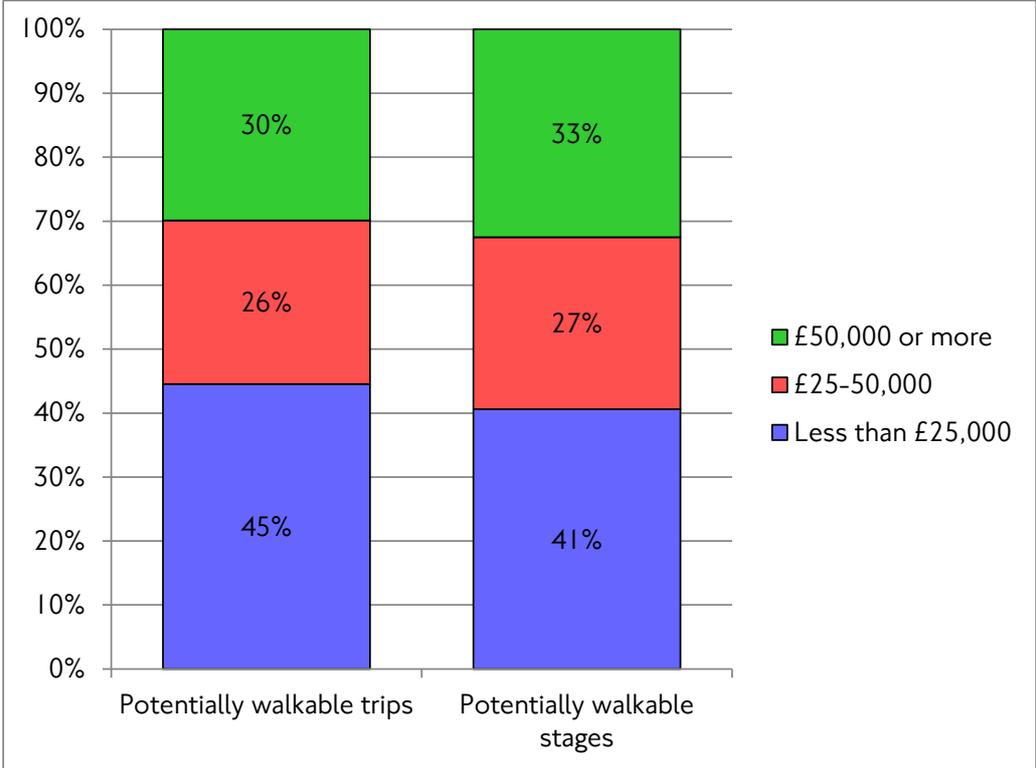
Figure 5.9: potentially walkable stages, by age and gender



Source: LTDS 2012/13 – 2014/15

The household income profile for people making potentially walkable stages is similar to that for potentially walkable trips, with the greatest share coming from those in low income households (less than £25,000).

Figure 5.10: potentially walkable stages, by household income



Source: LTDS 2012/13 – 2014/15

6. The total potential for walking

Key findings

- Overall there are 3.64 million trips and stages currently made by a motorised mode that could be walked
- There is significant potential for trips to be walked in all 33 London boroughs, with central London boroughs (Westminster, Camden and Lambeth) having the greatest overall levels of walking potential
- There are relatively equal opportunities to walk instead of using either private or public transport.

Introduction

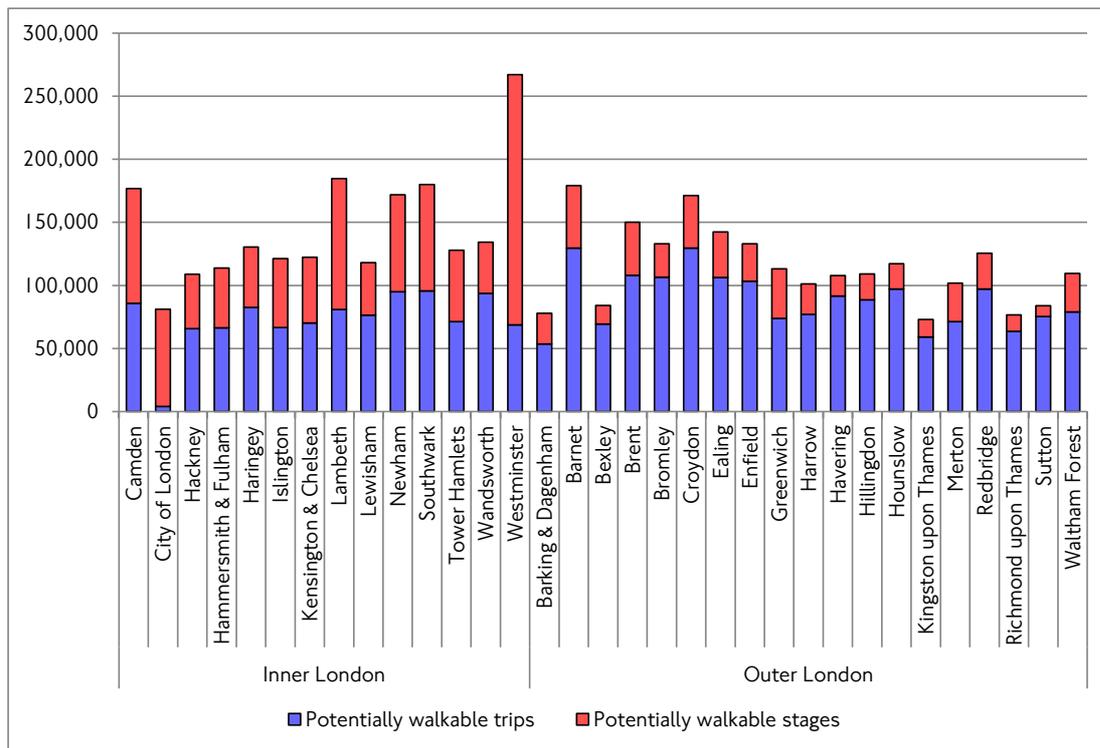
This chapter brings together the analysis detailed in the previous three chapters, to look at the overall potential for walking, once both the potential trips and stages have been combined.

Summary of potentially walkable trips and stages

There are 3.64 million trips and stages currently made by a motorised mode that are potentially walkable. Of these, 2.39 million (66 per cent) are potentially walkable trips (ie, where there is the potential for the trip to be walked all the way), with the remaining 1.25 million being potentially walkable stages (where the trip in its entirety could not be walked, but where part of the journey could be).

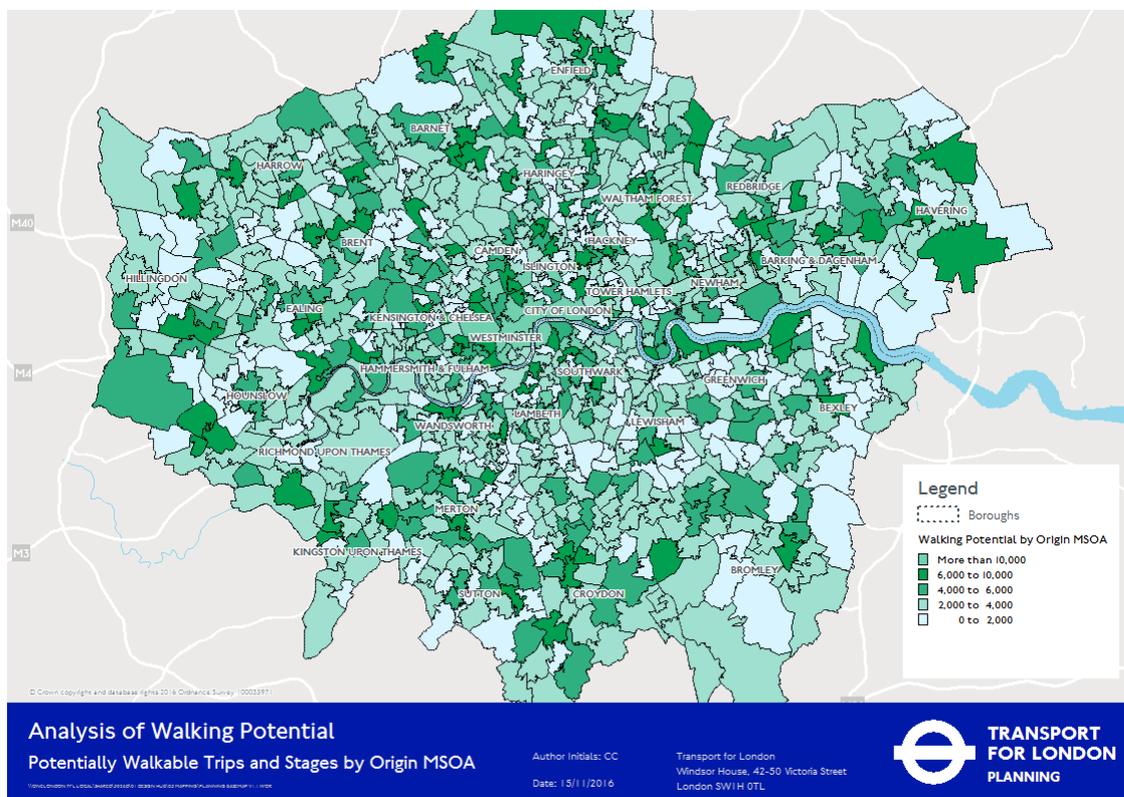
The boroughs with the greatest walking potential are in central London, in particular Westminster (with around 267,000 trips and stages with an origin or destination in the borough), Southwark and Lambeth (each with over 180,000 trips and stages). The overall total is skewed towards inner London boroughs, largely due to the higher number of potentially walkable stages compared to outer London. Nevertheless, there are more than 70,000 daily trips and stages with an origin or destination in each of the 19 outer London boroughs (including nearly 180,000 in Barnet and Croydon).

Figure 6.1: potentially walkable trips and stages – origins and destinations (by borough)



Source: LTDS 2012/13 – 2014/15

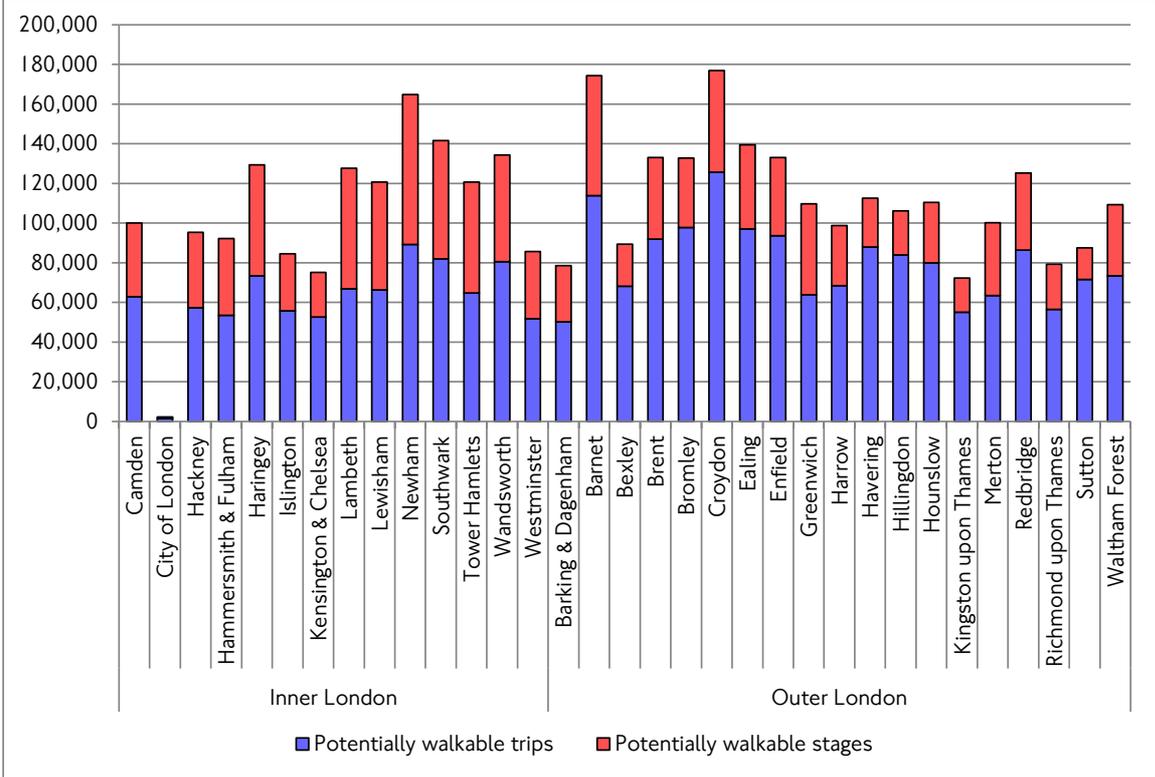
Figure 6.2: potentially walkable trips and stages – by origin MSOA



Source: LTDS 2012/13 – 2014/15

The profile of potentially walkable trips and stages is very different for the borough of residence of the person making the trip. Outer London has much more walking potential, with Barnet and Croydon residents showing the most potential. Overall, the number of potentially walkable trips and stages combined exceeds 70,000 for residents of every London borough (with the exception of the City of London), as shown in Figure 6.3.

Figure 6.3: potentially walkable trips and stages – by borough of residence

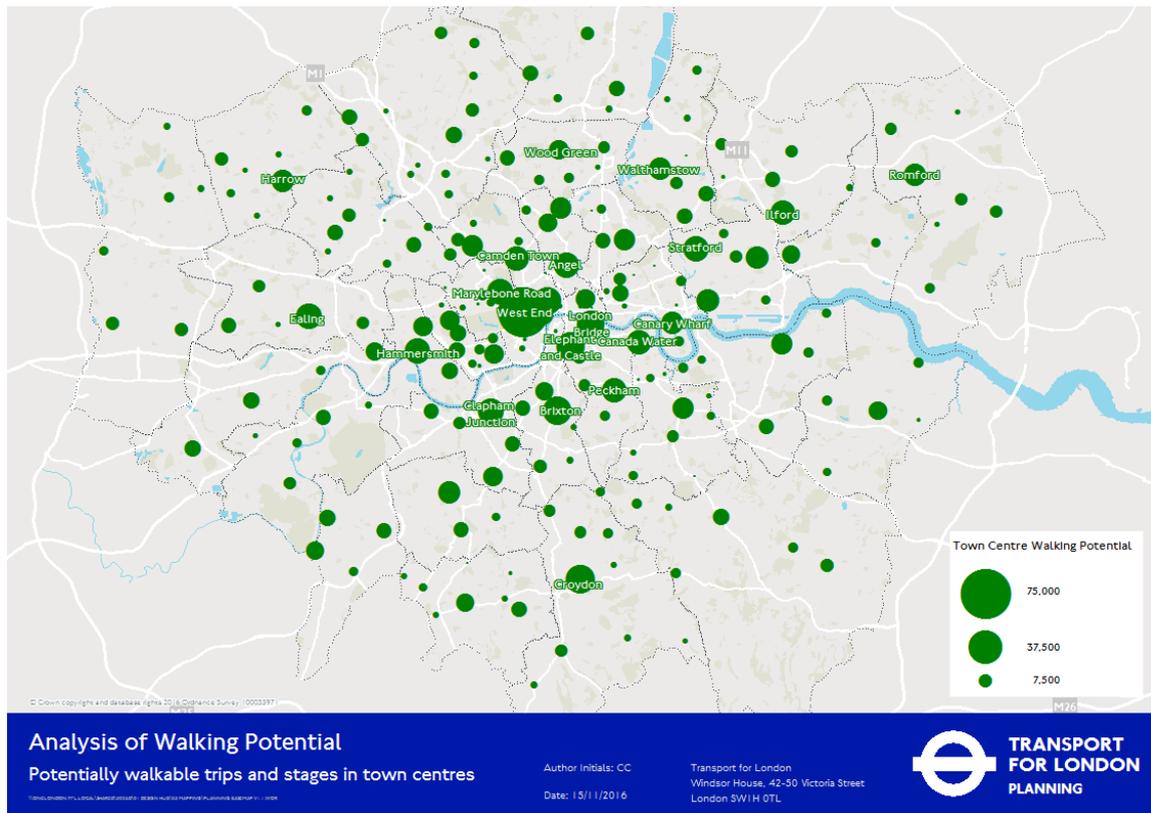


Source: LTDS 2012/13 – 2014/15

The potential for walking in town centres accounts for 45 per cent of the total, with a greater emphasis on trip stages that could be walked (rather than trips that could be walked all the way).

As Figure 6.4 shows, the greatest potential for walking is in the West End, with around 75,000 trips and trip stages that could be walked. Elsewhere there is significant potential across inner London, most notably in east London, and also some parts of outer London, such as Croydon.

Figure 6.4: potentially walkable trips and stages to/from London town centres



Source: LTDS 2012/13 – 2014/15

Table 6.1: potential walk trips to/from International and Metropolitan town centres

Centre	Borough	Potentially walkable trips and stages
<i>International centres</i>		
Knightsbridge	Kensington and Chelsea	5,000
West End	Westminster	74,300
<i>Metropolitan centres</i>		
Bromley	Bromley	11,400
Croydon	Croydon	29,600
Ealing	Ealing	23,800
Harrow	Harrow	17,700
Hounslow	Hounslow	10,800
Ilford	Redbridge	19,900
Kingston	Kingston upon Thames	11,100
Romford	Havering	17,600
Shepherds Bush	Hammersmith & Fulham	15,400
Stratford	Newham	22,900
Sutton	Sutton	12,200
Uxbridge	Hillingdon	4,000
Wood Green	Haringey	14,800

Source: LTDS 2012/13 – 2014/15

Table 6.2: potential walk trips to/from major town centres

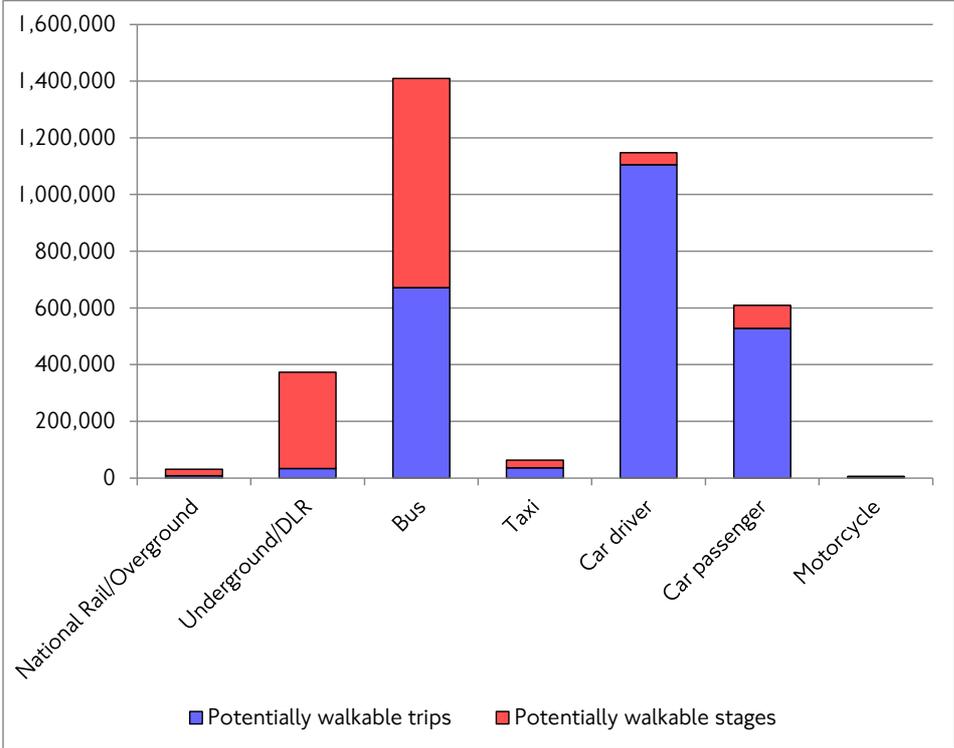
Centre	Borough	Potentially walkable trips and stages
<i>Major centres</i>		
Angel	Islington	23,000
Barking	Barking & Dagenham	11,900
Bexleyheath	Bexley	13,300
Brixton	Lambeth	28,100
Camden Town	Camden	11,700
Canary Wharf	Tower Hamlets	18,000
Catford	Lewisham	5,300
Chiswick	Hounslow	12,300
Clapham Junction	Wandsworth	23,300
Dalston	Hackney	9,000
East Ham	Newham	19,500
Edgware	Barnet	9,400
Eltham	Greenwich	8,300
Enfield Town	Enfield	7,500
Fulham	Hammersmith & Fulham	11,300
Hammersmith	Hammersmith & Fulham	22,200
Holloway - Nag's Head	Islington	13,400
Kensington High Street	Kensington and Chelsea	11,500
Kilburn	Brent	6,900
King's Road East	Kensington and Chelsea	15,000
Lewisham	Lewisham	16,000
Orpington	Bromley	8,000
Peckham	Southwark	20,000
Putney	Wandsworth	9,200
Queensway/Westbourne Grove	Westminster	1,700
Richmond	Richmond upon Thames	9,100
Southall	Ealing	8,700
Streatham	Lambeth	7,200
Tooting	Wandsworth	14,900
Walthamstow	Waltham Forest	17,100
Wandsworth	Wandsworth	6,400
Wembley	Brent	10,000
Whitechapel	Tower Hamlets	10,600
Wimbledon	Merton	17,600
Woolwich	Greenwich	16,600

Source: LTDS 2012/13 – 2014/15

The overall walking potential is relatively evenly distributed between private vehicles and public transport – approximately 1.8 million trips and stages could be walked from each of these two groups, with the greatest potential found in car and bus travel.

Figure 6.5 illustrates the difference between switching from public transport to walking, compared to switching from private transport. The walking potential among private transport is in trips that could be walked all the way – in contrast to public transport trips, where only one leg of the trip could be walked.

Figure 6.5: potentially walkable trips and stages – by current mode



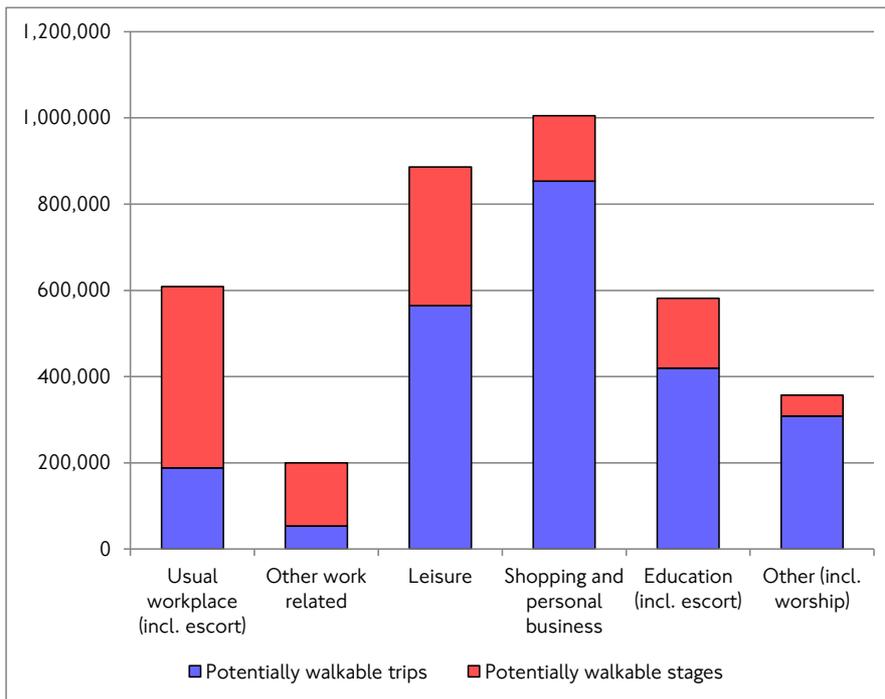
Source: LTDS 2012/13 – 2014/15

Overall, the highest potential for walking is in non-work trips, in particular for shopping or for leisure reasons. More than half of the total walking potential (and 60 per cent of potentially walkable trips) is for shopping or leisure, equating to around 1.9 million trips and stages.

Travel to a person’s usual workplace accounts for a significant amount of the total, with around 600,000 potentially walkable trips and stages. Most of these are potentially walkable stages, which suggests that while many people could not walk all the way to work, they could walk part of the journey.

Travel for education reasons accounts for a similar share of the walking potential to work travel (just under 600,000 walkable trips and stages), but is comprised largely of trips that could be walked all the way. Many of these trips that could be walked are made in outer London by car (either as the driver or passenger).

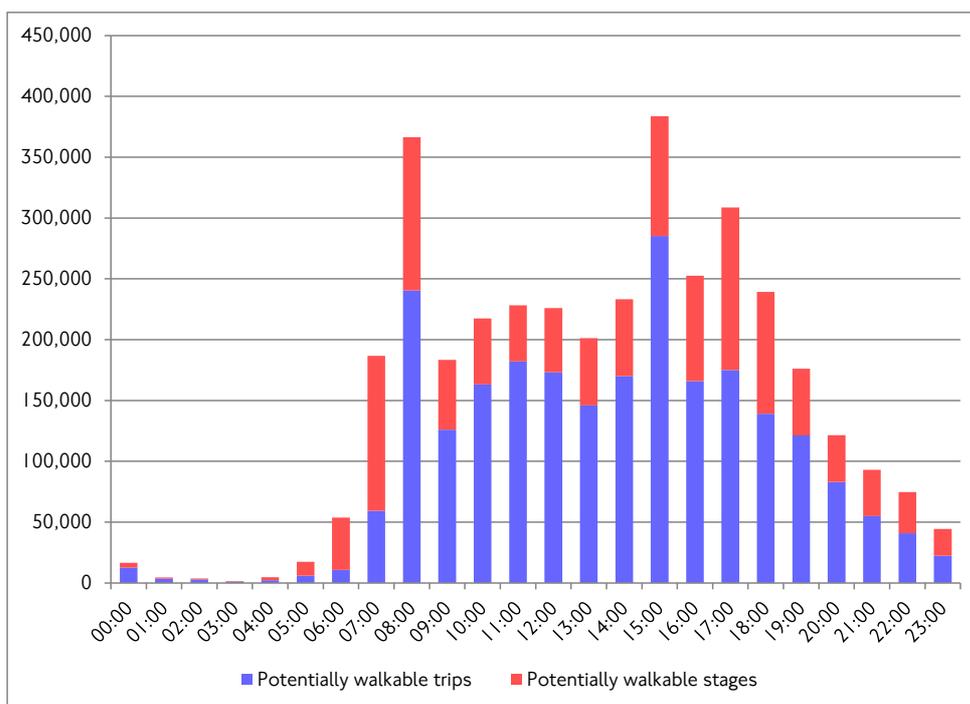
Figure 6.6: potentially walkable trips and stages – by trip purpose



Source: LTDS 2012/13 – 2014/15

There are many potentially walkable trips and stages made throughout the day, peaking at 8am and again at 3pm. As Figure 6.7 shows, potentially walkable stages are more concentrated at peak times and with greater emphasis on potentially walkable trips at other times, particularly between 10am and 3pm.

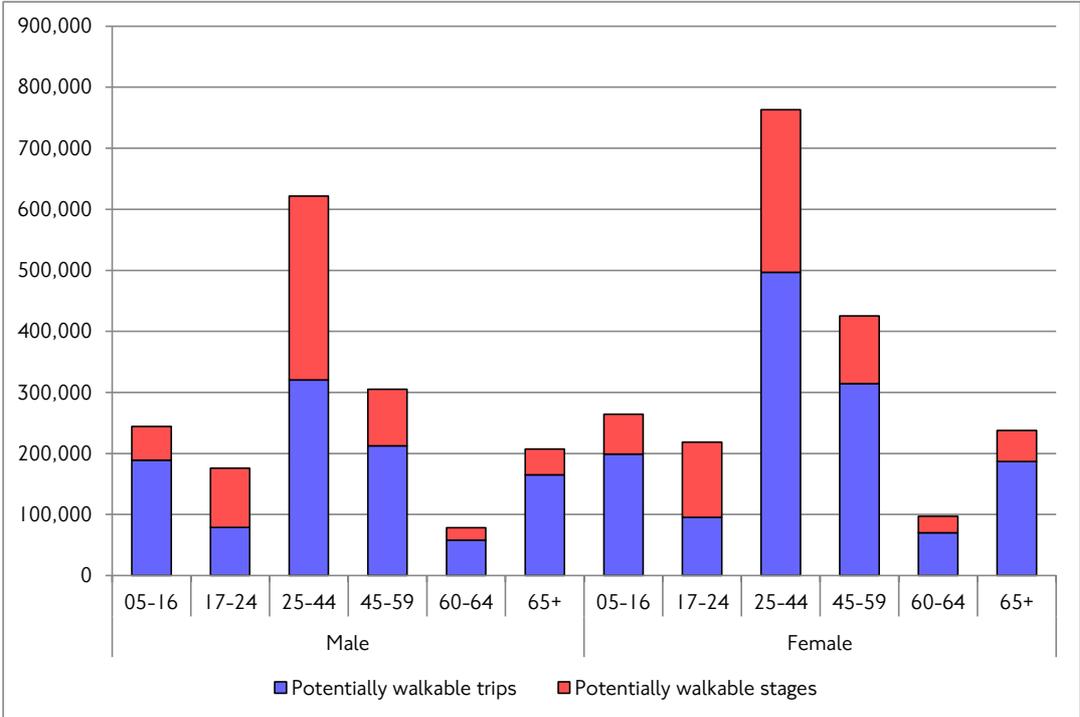
Figure 6.7: potentially walkable trips and stages – by time of travel



Source: LTDS 2012/13 – 2014/15

Figure 6.8 shows that the greatest potential for walking is among people aged 25-44. Overall, they account for almost 1.4 million potentially walkable trips and stages – nearly 40 per cent of the total. This is largely because potentially walkable stages are more likely to be made by someone aged 25-44. This is particularly true of men in this age group, who are more than three times more likely to be making a trip with a walkable stage than any other age group.

Figure 6.8: potentially walkable trips and stages – by age and gender



Source: LTDS 2012/13 – 2014/15

7. Conclusions

This chapter presents a summary of the key findings of the Analysis of Walking Potential.

While walking is already a popular mode of travel for London residents, this report identifies that there are more than two million potentially walkable trips made by Londoners every day in the city. There are also more than a million stages of trips that could be walked, as well as further trips made within the city by the many people that travel into the Capital every day to work, shop and use London's services.

There is the potential to increase walking across all parts of London

The analysis summarised in this report shows there are at least 70,000 potentially walkable trips and stages in every London borough on an average day – demonstrating the need for policies that are targeted at all areas of London, rather than specific ones.

The report also shows that the profile of that walking potential is very different across London, and that a one-size-fits-all approach is unlikely to prove effective.

Trips that could be walked all the way are most likely to be in outer London

Some 62 per cent of trips that could be walked all the way lie entirely in outer London – this equates to nearly 1.5 million trips made by private or public transport that could be walked every day. For every trip that could be walked all the way in central London, there are almost 20 in outer London. In these areas, much of this potential comprises people making short car trips to and from their home, typically for leisure or shopping reasons.

In addition to these trips, there are also many walkable trip stages (approximately 400,000) made in outer London. While these further add to the walking potential in outer London, they are very different in nature (they are almost entirely made at present by public transport, for example) and should be treated as such.

A further consideration of outer London walking potential is the highly dispersed nature of these trips. As the maps in this report show, there are few areas in outer London with a high density of walking potential, despite the overall number of trips and trip stages that could be walked. This will also need to be taken into account when considering possible interventions.

There is a higher density of walking potential in central and inner London

The number of trips in central and inner London that could be walked all the way is far lower than in outer London. However, there is much more walking potential in central London compared to outer London because of the high number of potentially walkable stages in central and inner London. These are trip stages being made by public transport as part of a longer public transport trip (such as someone interchanging between two buses, or travelling a short distance by bus before or after travelling by Underground or National Rail). This factor alone warrants continued investment in pedestrian schemes in central London.

Journeys to or from town centres across London provide a great opportunity to encourage more walking

There are clusters of high walking potential across a range of locations in inner and outer London, with just under one in three potentially walkable trips having either an origin or a destination in one of the town centres defined in the London Plan. In particular, Bromley, Croydon, Ealing and Kingston offer a high density of potentially walkable trips.

There is even greater town centre-based walking potential among trips with stages that could be walked. Two-thirds of all potentially walkable stages involve travel to or from a town centre. Much of this potential is in town centres in central and inner London, in particular the West End. There are also other smaller 'town centre' areas within the CAZ (such as Marylebone Road and London Bridge) with high walking potential, as well as inner London town centres in close proximity to key rail and Underground stations (eg, Clapham Junction, Brixton, Stratford and Canada Water).

Leisure and shopping trips offer the greatest potential for increased walking

Three out of every five trips that could be walked all the way are either for leisure or for shopping and personal business. Many of these trips (particularly shopping trips) are in town centres across London, particularly the outer London metropolitan town centres.

While people do already walk these trips (40 per cent of walk trips are for these reasons), it shows there are still many people travelling for these reasons who could be walking.

There is potential for more commuter journeys to be partly walked

In contrast to leisure and shopping, there are few potentially walkable trips for travel to a usual workplace, or travel for other work-related reasons. Combined, these two categories account for only eight per cent of potentially walkable trips, with more than 90 per cent of all trips of this nature deemed not walkable.

While this would suggest limited potential for increased walking among commuters, there is still significant potential for walking in commuter trips where a stage of the trip could be walked. Almost half of all potentially walkable stages (around 600,000 trip stages on an average day) are for work-based reasons, with most of these concentrated in central London.

There is potential for all Londoners to walk more, at all times of day

This report shows there is no single group that has a significantly greater share of the walking potential; cross-tabulation of the data has shown that the splits by age, gender, income, ethnicity and disability are all broadly consistent with the overall population profile of London. Looking at the breakdown of potentially walkable trips and potentially walkable stages does, however, show notable difference between the two:

- People aged 17-44 are more likely to be making potentially walkable stages (around 65 per cent of the total – compared to only 40 per cent of walkable trips)

- People in higher income households are more likely to be making walkable stages
- Potentially walkable stages are more prevalent at peak times (8am-9am and 4pm-7pm), whereas the peak for potentially walkable stages is 3pm-4pm

This shows that while there is scope for everybody in London to be walking more, the trips that could be walked can vary substantially, which means the messages used to encourage those people to change their behaviour cannot rely on a universal approach.

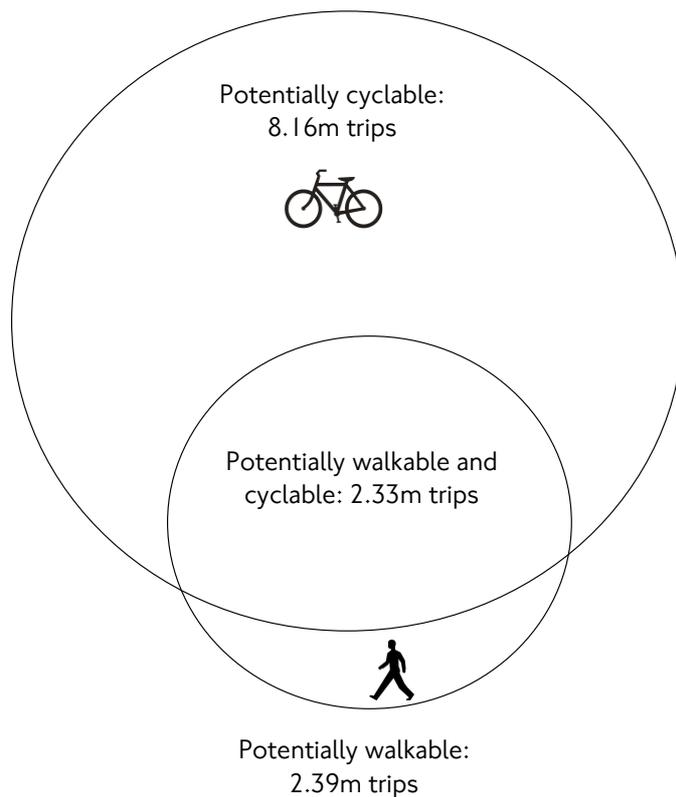
Other considerations

Any consideration of walking potential must also be made with cycling in mind

This report focuses solely on those trips and stages currently made by a motorised mode with the potential to be walked. There is a separate report (the Analysis of Cycling Potential) documenting a similar exercise carried out to identify trips and stages that could be cycled. Together, the two pieces of analysis look at the potential for active travel as a whole in London.

The Analysis of Cycling Potential identified approximately 8.17 million trips that could be cycled. Of these, 2.33 million could also be walked, suggesting that most potentially walkable trips are also potentially cyclable (and that, a number of potentially cyclable trips could be walked).

Figure 7.1: potential walk and cycle trips



Source: LTDS 2012/13 – 2014/15

An increase in cycling may come (at least in part) from people switching from walking – analysis of the 2014 Strategic Cycle Monitoring surveys showed that 20 per cent of people cycling had switched from walking. Any switching from walking to cycling, therefore, would have no change on overall numbers of active travel trips as a whole.

London's expected future growth

The potential for walking could go well beyond the trips and trip stages identified in this report.

One example of this is the potential for walking generated by new public transport schemes. Previous analysis has shown that walking as part of public transport trips is as prevalent as 'walk all the way' trips in London. Therefore, any new schemes (such as the Elizabeth Line or the Northern Line Extension) that encourage a shift away from car and onto public transport will also boost walking.

London's population is also expected to increase significantly in the next 25 years. New policies around densification are required to accommodate this population growth (and consequent travel demand), while simultaneously reducing congestion, crowding and emissions on the transport network. More emphasis on new housing closer to employment centres, town centres and stations will undoubtedly change the travel behaviour of people moving to those areas, with greater emphasis on walking and cycling and reducing the need for car use.

The opportunities to realise walking potential will greatly depend on willingness to change behaviour

This report demonstrates that the potential for more walking in London is not constrained to a particular part of the city, to a certain type of trip, or to any individual demographic group. Nonetheless, realising the potential is down to finding a way to encourage the person making that trip to change their travel behaviour.

How amenable (and able) a person is to make a change will vary significantly. However, small geographic areas are highly homogenised in terms of the people that live there and their typical travel behaviour. It is therefore possible to characterise these areas in terms of the typical behaviour, characteristics or attitudes of the people living in them. The segments can be used to understand the choices people make.

To do this, TfL has recently developed a new multi-modal customer segmentation tool, the Transport Classification of Londoners (TCoL). This classifies the London population into nine segments (comprised of 32 sub-segments) and evaluates the influences over travel behaviour to identify households most amenable to walking now and in future. The segmentation is a geo-demographic classification derived from the London Output Area Classification.

In combination with the Analysis of Walking Potential, we can identify those segments of the population where there is greatest potential for growth in walk travel in the future. This analysis will be covered in the Transport Classification of Londoners suite of reports, which will be published following this report.