Central London

Sub-regional Transport Plan 2016 update

Enter

MAYOR OF LONDON

TRANSPORT FOR LONDON
EVERY JOURNEY MATTERS

Introduction

Sub-regional Transport Plans (SRTP) for Central London

The sub-regional process is an ongoing programme, enabling TfL to work closely with boroughs to address strategic issues, progress medium-longer term priorities and also respond to changing circumstances.

When the Central Sub-Regional Transport Plan was first developed in 2010 it helped to translate the Mayor's Transport Strategy (MTS) goals, challenges and outcomes at a sub-regional level.

It was agreed with boroughs that while all MTS challenges must be considered across London, and addressed locally through Local Implementation Plans (LIPs), there were some which would benefit from having a concerted effort at a sub-regional level.

Consequently, the challenges of improving air quality, reducing CO_2 emissions and achieving the targets for – and desired results from – an increase in the mode share of cycling and walking were all identified as challenges for all sub-regions. In addition, four other challenges were identified and agreed specifically for the west sub-region.

Challenges in every sub-region

- Improve air quality to meet and exceed legal requirements and ensure health benefits for Londoners
- Transform the role of cycling and walking in the sub-region
- Meet CO_2 targets

Central London-specific challenges

- Reduce public transport crowding and improving reliability
- Support growth areas and regeneration
- Ensure capacity at rail stations and efficient onward distribution
- Improve the urban realm and promote walking
- Manage the different demands on streets
- Improve air quality

Continue

Introduction

Sub-regional Transport Plans (SRTP) for Central London

The focus of this year's plans

Since 2010, the Central sub-region has seen significant change. Population growth has been faster than expected, placing greater demand on the transport network. The sub-region needs to increase its rate of housing delivery to cope with a growing population, with effective transport links critical to achieve this. The way that people travel has changed too, with growing demand for rail and cycling in particular.

With the imminent arrival of a new Mayor, it is likely that we will see the preparation of a new London Plan and a new Mayor's Transport Strategy, with a new set of objectives and priorities for London. To inform this process, we will need to update our understanding of the medium to longer-term challenges for London and the sub-regions.

This is the key purpose of this year's Sub-Regional Transport Plans – to provide a comprehensive update on the 'Story of Growth' for each sub-region.

This 'story' includes a comprehensive analysis of recent population and employment growth, changes in travel behaviour and areas where the transport network will have to change to cope with the challenge of future growth.

This updated Story of Growth for each sub-region has the following purpose:

- As a tool to help engage Boroughs in the preparation of the new Mayors Transport Strategy, particularly in the development of new priorities and projects;
- To help Boroughs to develop their own priorities for transport investment, including the development of their LIPS;
- To inform Borough's spatial planning activities, including updates to Local Plans;
- To assist TfL in developing priorities for business planning.

Projects and schemes

Previous updates to the Sub-Regional Transport Plan included a look forward to identify the potential projects and schemes that could be delivered to address the sub-region's transport challenges.

However, unlike previous years, we are now in a unique environment where TfL will have a new funding settlement, where a much greater proportion of our income will come from business rates collected by the Mayor, as well as the imminent arrival of a new Mayor, who will have their own priorities about how to allocate the available funding. It is therefore not appropriate to assume that the current list transport schemes being considered will be exactly the same as that by a new Mayor. For this reason, there is no map or list of projects in this year's plans.

There has, of course, been significant engagement with Boroughs and sub-regions during the past year to identify key priorities for investment, and to inform the development of major schemes. This process will continue, particularly as part of the preparation of the new MTS, informed by the information set out in this document.

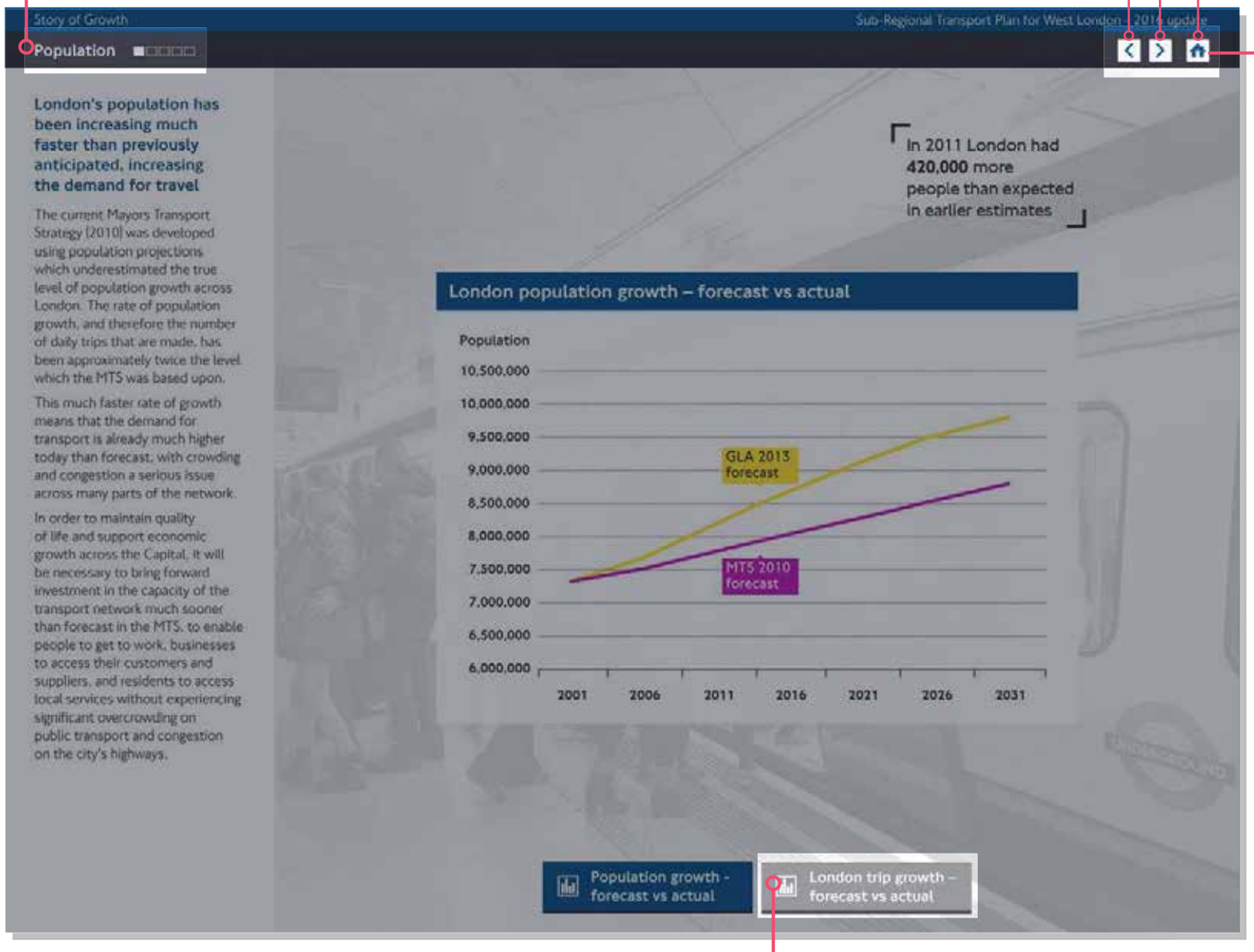
Continue

How to use this document

This document contains a series of figures and supporting text in order to convey the Story of Growth within the sub-region, which is the key focus of this year's Sub-Regional Transport Plans. The document has been designed to enable the reader to navigate between this content using the interactive buttons on each page.

Orientation within a chapter
The progress bar shows you in which chapter and on which page within a chapter you currently are

Previous, Next and Home
Click the respective button to go to either the previous or the next page, or back to 'Home'.



Home
Navigate to either chapter from the home page by clicking onto the chapter image or title.

Buttons
Click on buttons to see all graphs and maps within a page.

OK

Contents

Story of Growth

Click on any of the six categories below to explore how the sub-region has changed, is expected to change, and the implications for how the transport network needs to adapt to reflect this.

Population ›

London's population has been increasing much faster than previously anticipated, increasing the demand for travel

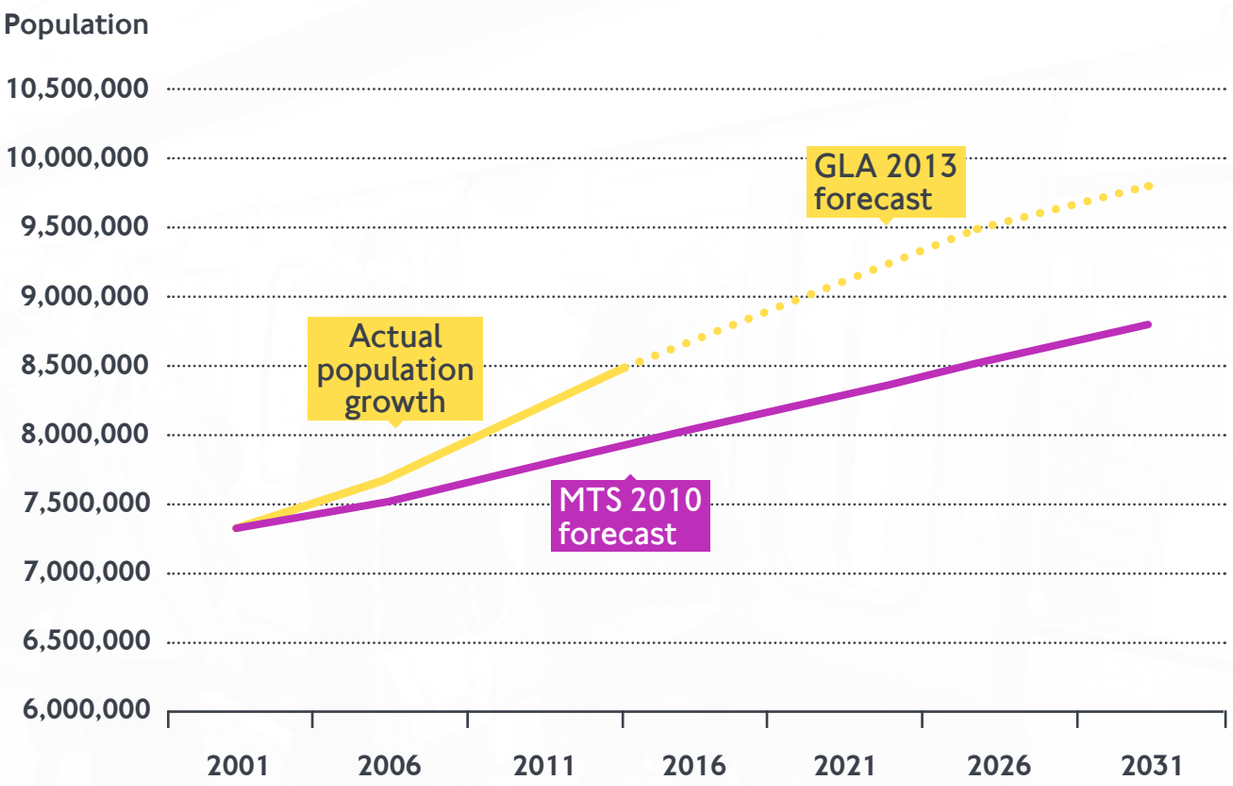
The current Mayors Transport Strategy (2010) was developed using population projections which underestimated the true level of population growth across London. The rate of population growth, and therefore the number of daily trips that are made, has been approximately twice the level which the MTS was based upon.

This much faster rate of growth means that the demand for transport is already much higher today than forecast, with crowding and congestion a serious issue across many parts of the network.

In order to maintain quality of life and support economic growth across the Capital, it will be necessary to bring forward investment in the capacity of the transport network much sooner than forecast in the MTS, to enable people to get to work, businesses to access their customers and suppliers, and residents to access local services without experiencing significant overcrowding on public transport and congestion on the city's highways.

In 2011 London had **420,000** more people than expected in earlier estimates

London population growth – forecast vs actual



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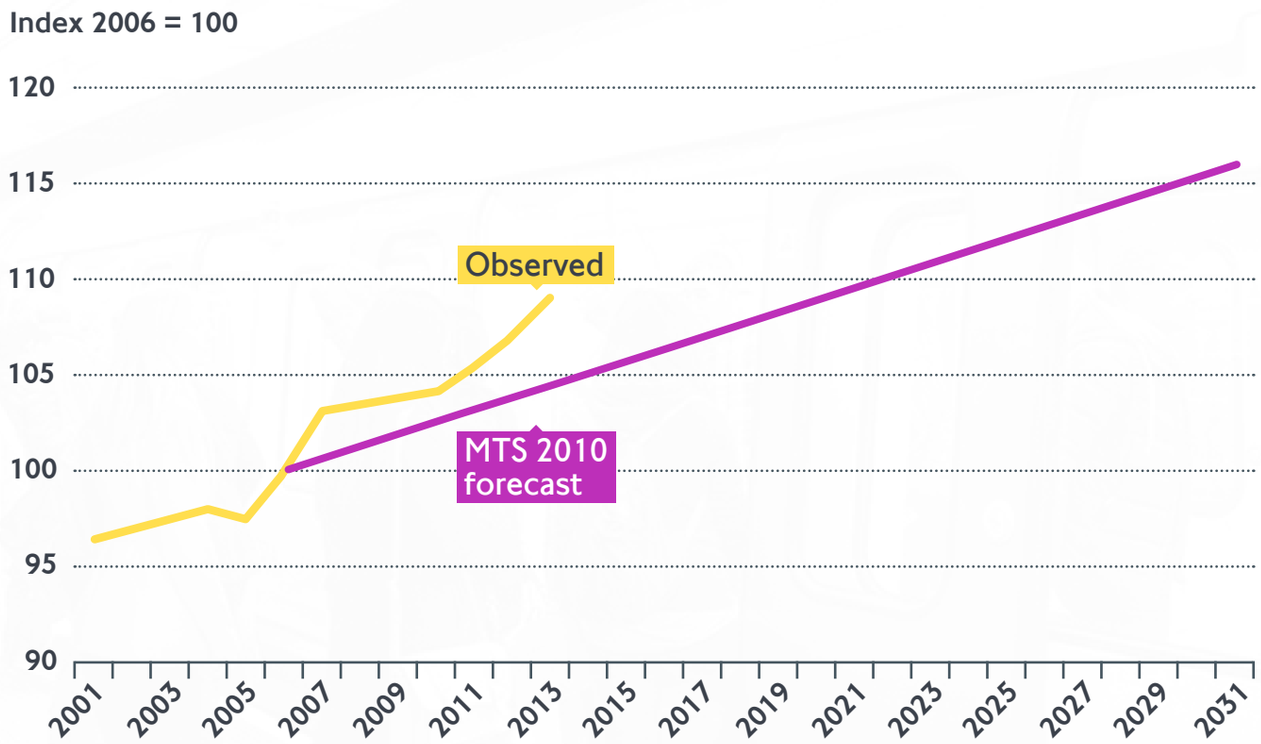
> The growth in trips made has been **twice as high** as that expected since the 2010 Mayors Transport Strategy

London trip growth – forecast vs actual



Population growth - forecast vs actual
London trip growth – forecast vs actual

Some areas have seen very high levels of population growth, placing strain on certain parts of the network

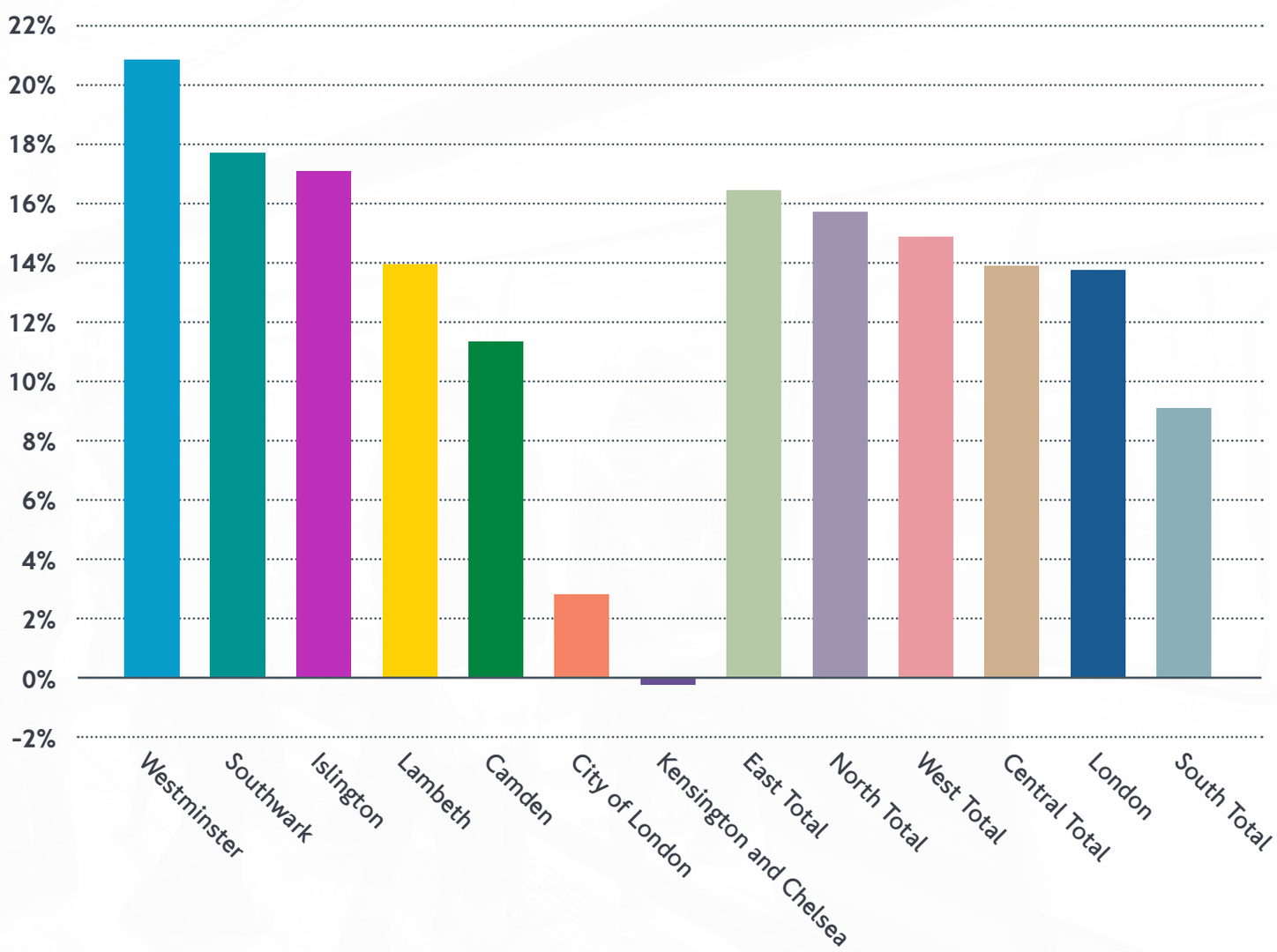
Population growth in the Central sub-region has been in line with the London average, with growth in all Boroughs in excess of 10% between 2001 and 2011. The rate of growth has been faster than previously forecast, generating additional demand for transport above that expected in the Mayors Transport Strategy.

Growth has been highest in Westminster, Islington and Southwark, driving growth in the demand for public transport in particular (as set out in the Mode and Movement section).

The rate of population growth has been higher than previously forecast across large parts of the sub-region, although growth has been slower than expected across Kensington and Chelsea and some growth areas which are being devleoped more slowly than previously forecast.

The sub-region's population is **1% higher** than expected in earlier estimates

Population growth 2001 – 2011



Population growth 2001 - 2011 | Absolute population growth 2001 – 2011 | Difference between actual and forecast

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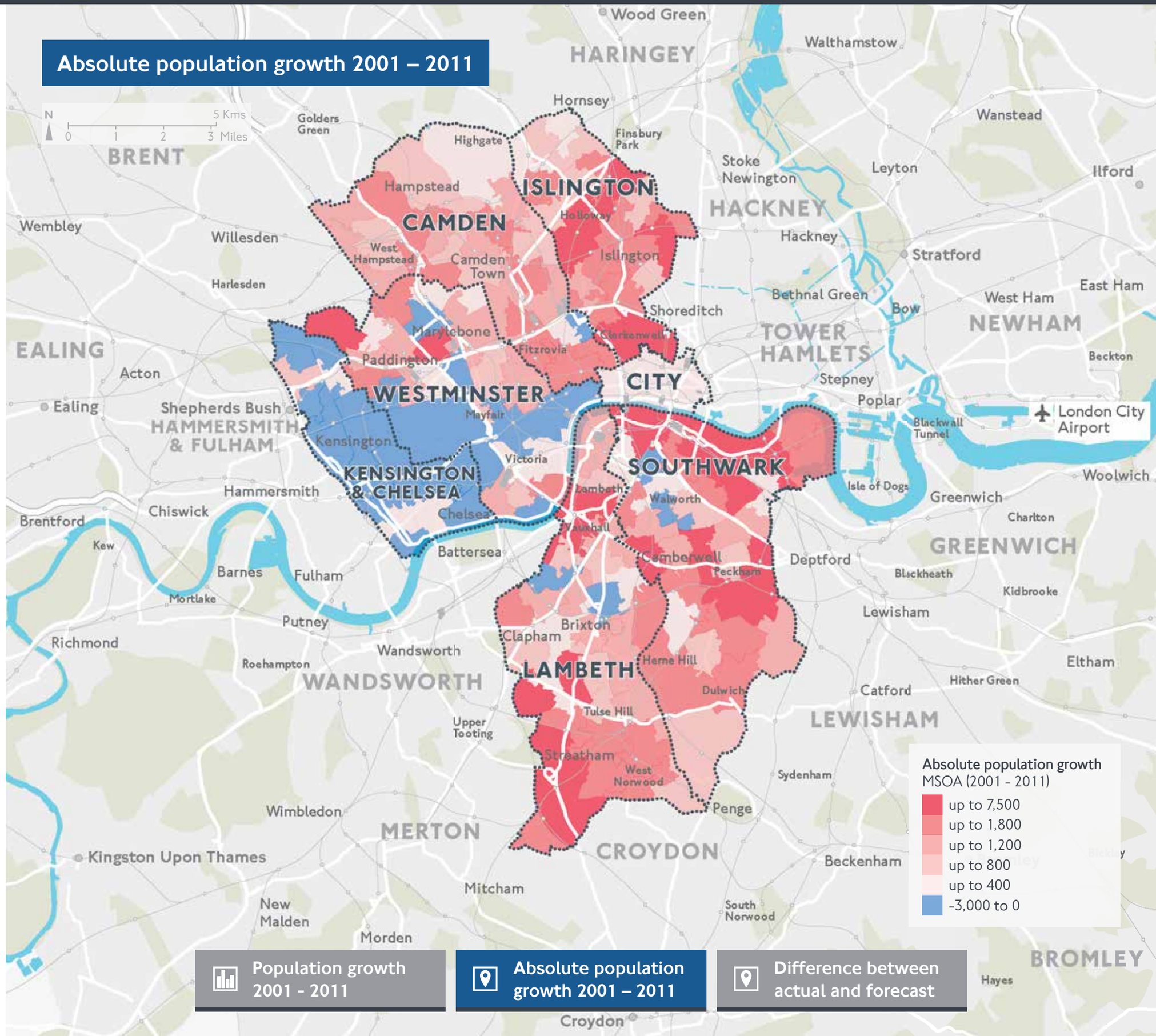

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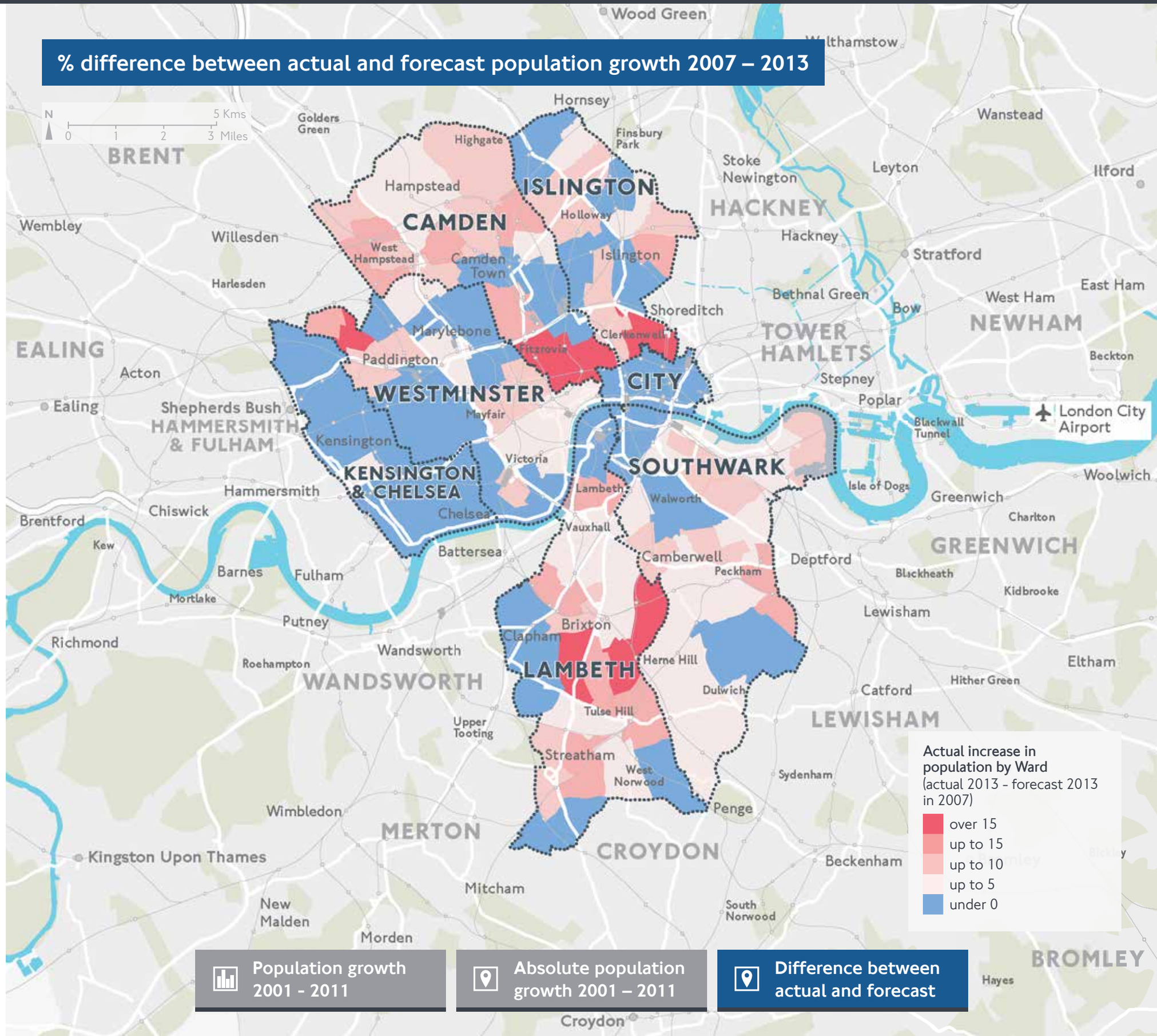


Housing has failed to keep up with population growth, increasing household size

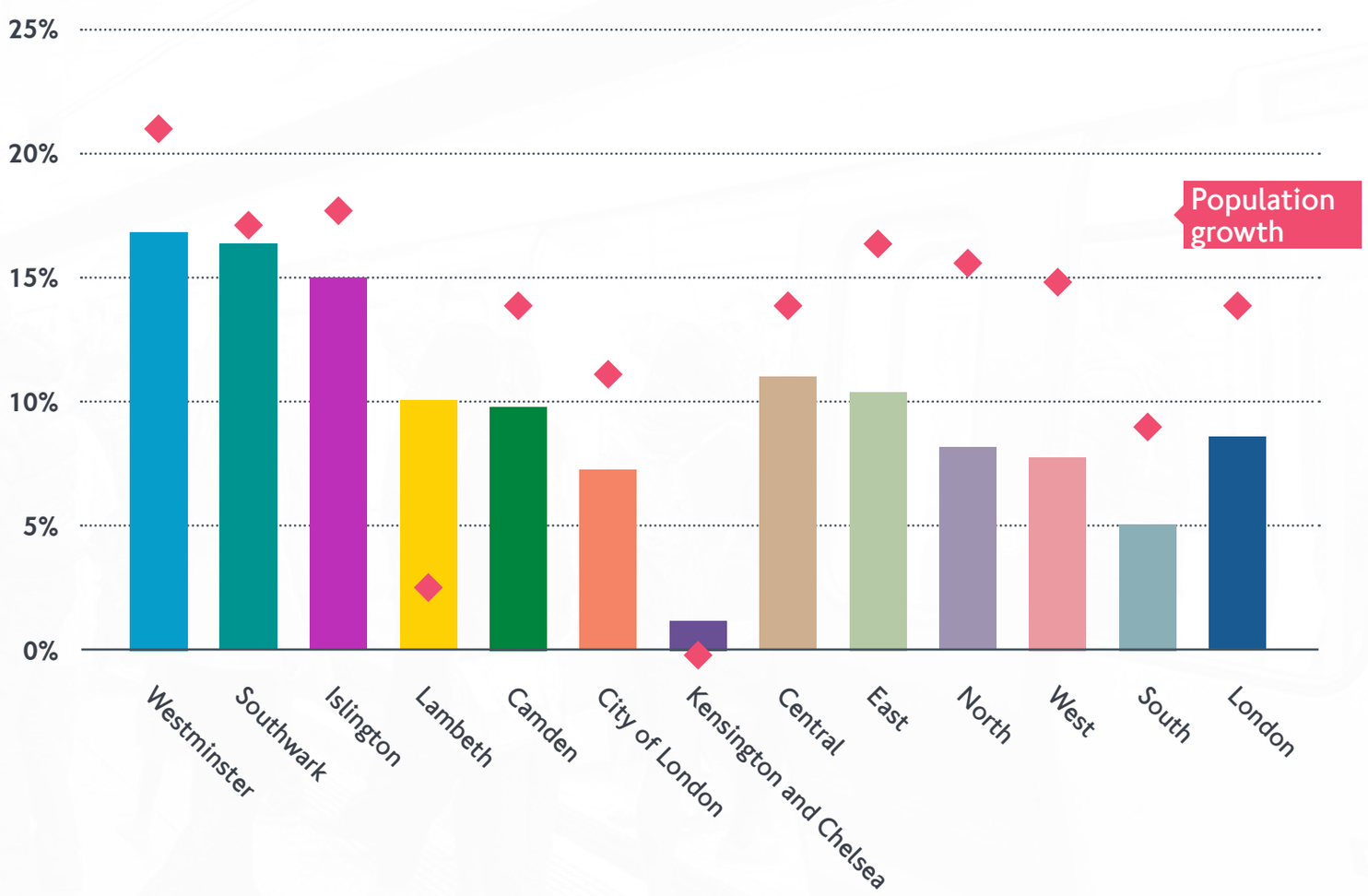
Across London, the average number of people per household started to increase after 2001 for the first time since the 1950s, which is a direct result of the supply of housing failing to keep up with the rate of population growth. Increasing the rate of housing delivery across the sub-region will be key to addressing affordability issues, reducing overcrowding and maintaining London's competitiveness. Transport connectivity and capacity is becoming increasingly important to unlocking new homes, and is something which is now a key consideration in the assessment of future transport investment decisions.

Whilst the sub-region's population has grown at 15%, the growth in the number of homes has been slower, resulting in an increase in average household size, particularly in Camden, Lambeth and Westminster.

There may be opportunities for future densification across all Boroughs in the sub-region, particularly around key transport nodes (considered further in the Future Growth section).

Population growth in the sub-region has been **20% higher** the rate of housing growth

Change in housing stock 2001 – 2011



Change in housing stock

Change in average household size

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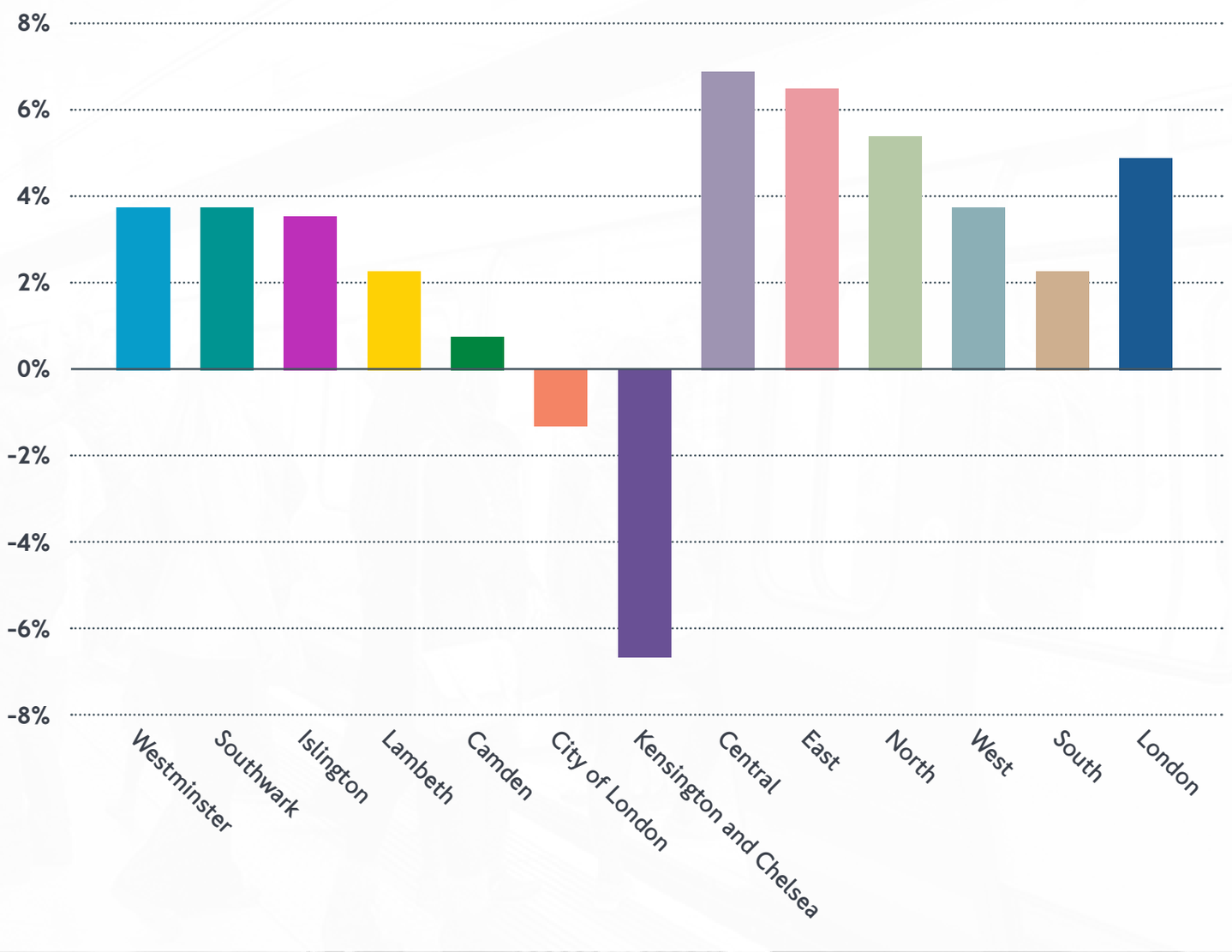
Change in average household size 2001 – 2011



Change in housing stock

Change in average household size

Most of the Central London's population growth has occured in places with good access to public transport

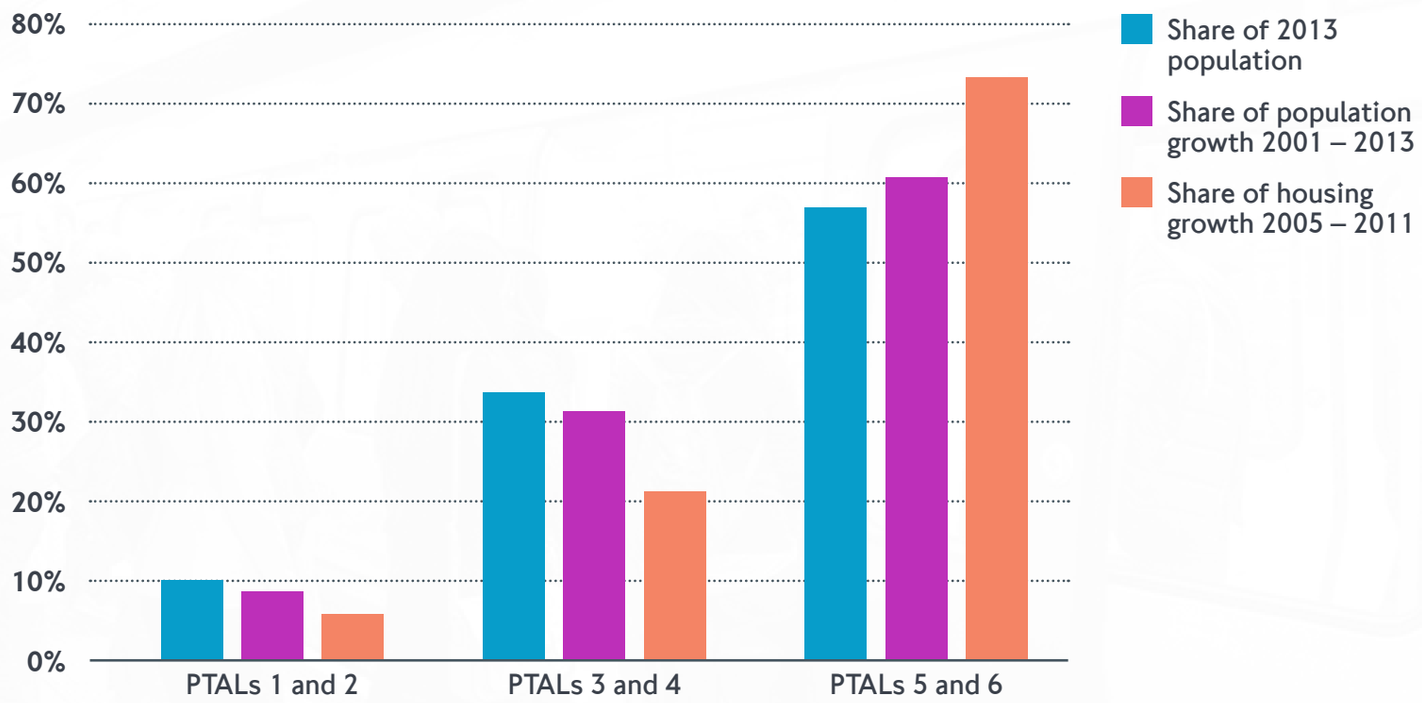
The majority of the sub-region's population live in areas where the Public Transport Accessibility Level (PTAL) is high. However, there is scope for the public transport network to be enhanced where it serves existing communities, to support mode shift away from the private car and support the movement of greater numbers of people, particularly as the population of the sub-region continues to grow.

Housing delivery in the sub-region has been focused on more accessible locations by public transport, with 74% of houses developed in areas with PTALs 5 and 6. has come forward in the most accessible places.

Further growth can be supported by expanding the quality, connectivity and capacity of the public transport network.

57% of the sub-region's population live in PTALs 1 and 2

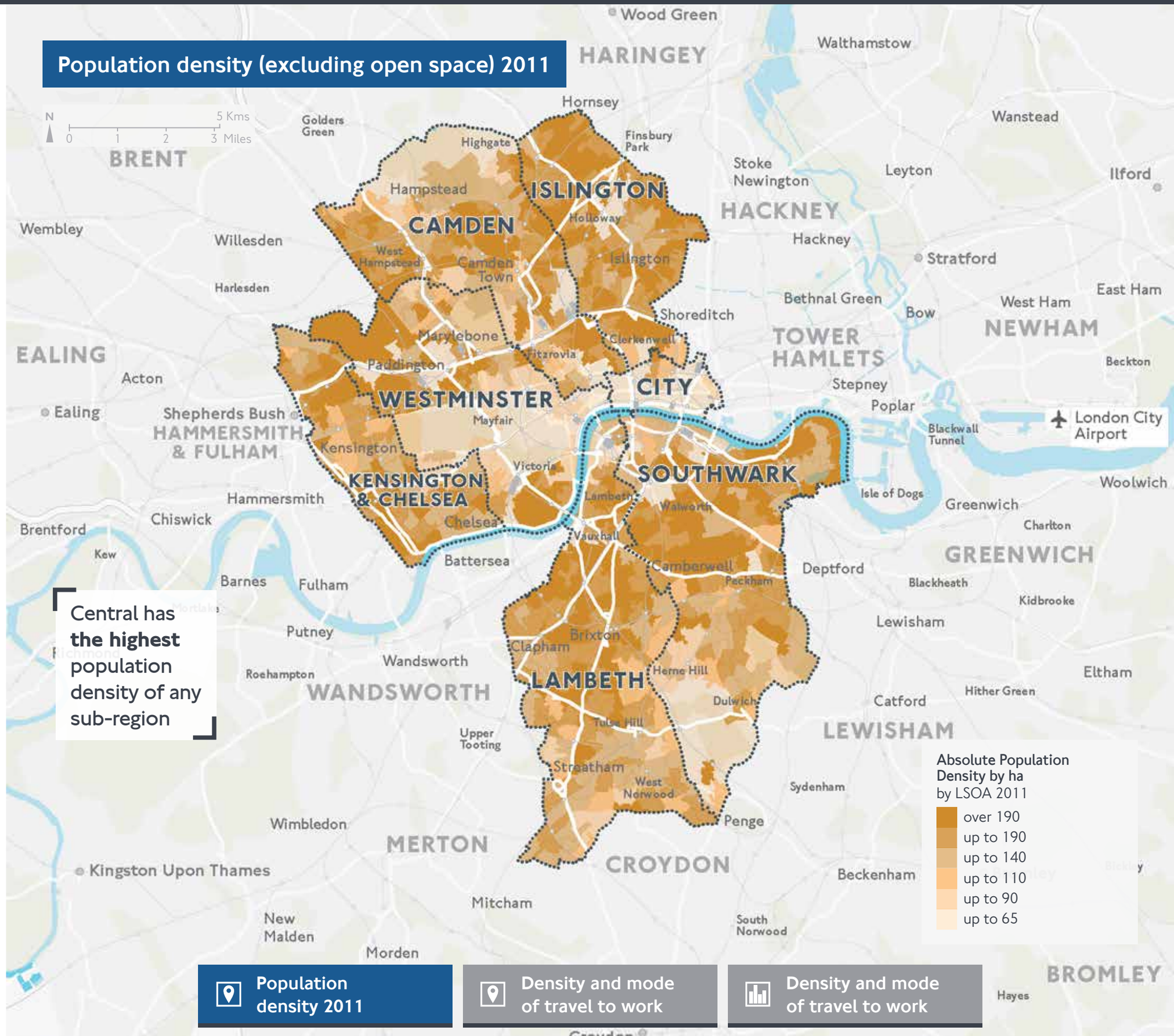
Share of population and growth by Public Transport Accessibility Level



Increasing population and employment density has driven higher levels of public transport use, with potential for further growth

Population density across the sub-region varies significantly from Islington, which is the most dense local authority in the UK, to parts of southern Southwark which a much less dense

Across London, there is a positive relationship between the density of development and propensity to travel by public transport, as denser areas typically have access to more extensive public transport access, and the costs of highway congestion are generally higher. As the population of the sub-region continues to densify, it will be necessary to further improve the public transport network to support growth and encourage continued mode shift away from private vehicles to reduce congestion.



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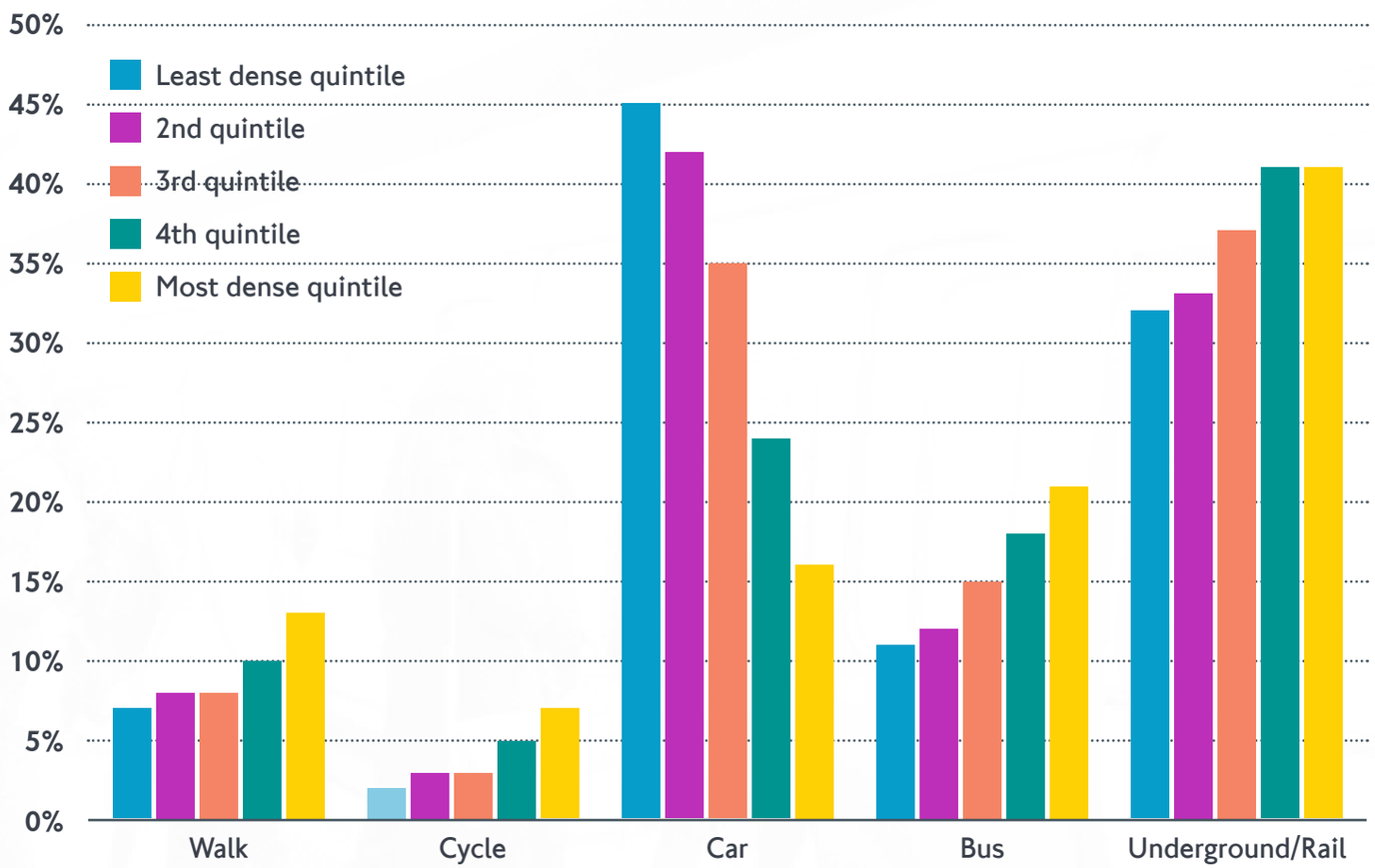
People that live in London's most dense areas are **three times less likely** to travel to work by car

Population density and mode of travel to work 2011 – Greater London



Employment ›

London is the powerhouse economy of the UK, with strong employment growth and an increasing share of GVA

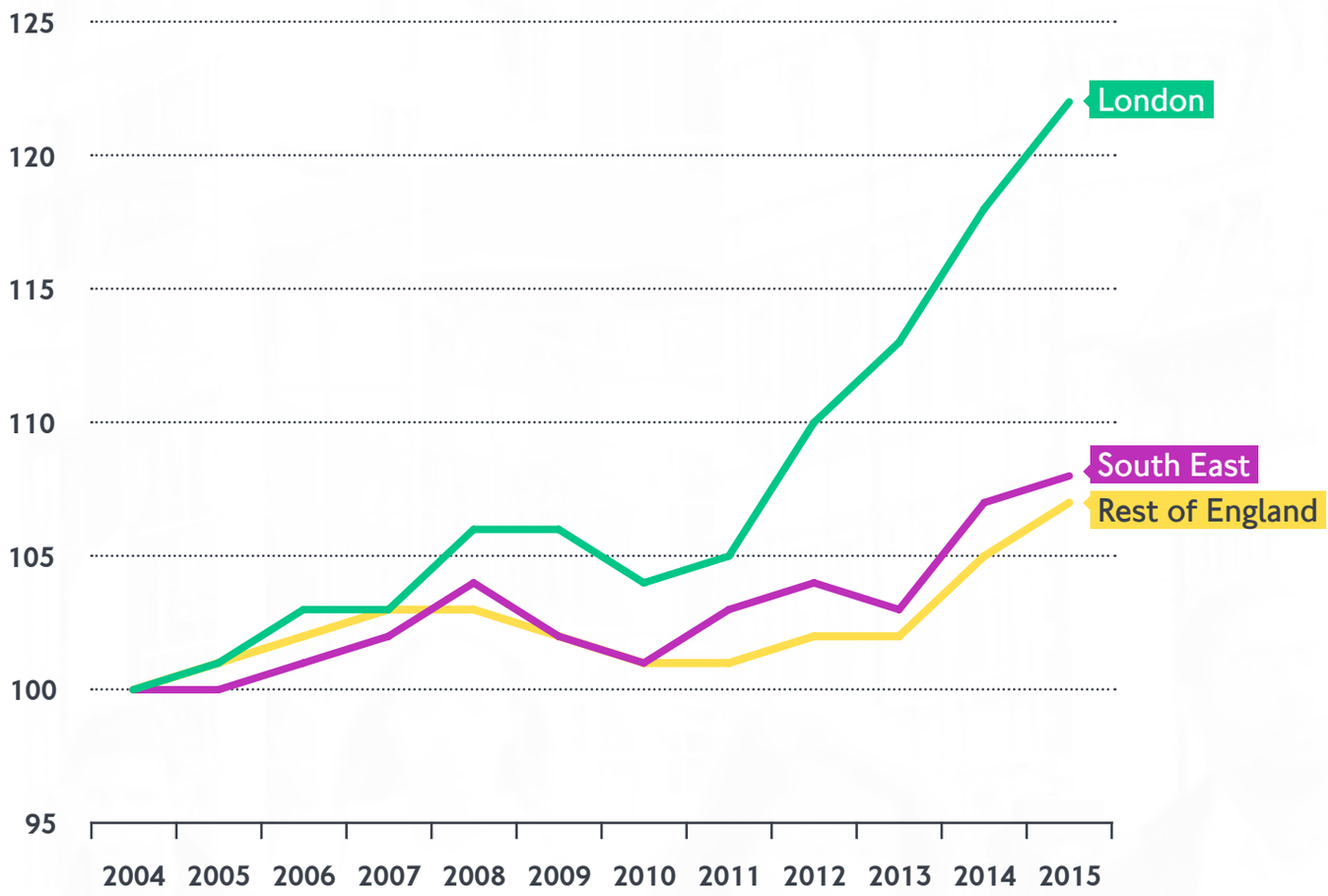
London has one of the most dynamic economies in the world, and is consistently rated as one of the premier World Cities which attracts significant flows of international capital, people and ideas. The Capital's employment growth since 2004 has consistently outstripped all other regions of the UK, with the rate of growth since 2011 nearly three times faster than that of England or the South East. As a result, London's share of England's Gross Value Added, which is a measure of economic output, has increased from 23% in 2001 to 26% in 2013.

As London's economy has continued to evolve, it has seen strong growth in high valued-added sectors such as professional and scientific activities, which includes activities as diverse as managment consultancy, architecture, and research and development. These sectors are typically located in areas with the best public transport connectivity, and as they have grown, more people are travelling to work by public transport, particularly by rail.

Conversely, as sectors which are less well served by public transport, such as manufacturing, have contracted, the number of people driving to work has decreased. However, a significant number of jobs created have been in local services such as health and education. As these tend to be more local, with much of this employment in Outer London, the car and bus still play an important role in accessing these growing sectors.

Total workforce jobs have **increased by over 1 million** in London since 2004

Growth in workplace jobs 2004 – 2015



Growth in workplace jobs | London's share of (GVA) 1997-2013 | Employment growth in London by sector

London is the powerhouse economy of the UK, with strong employment growth and an increasing share of GVA

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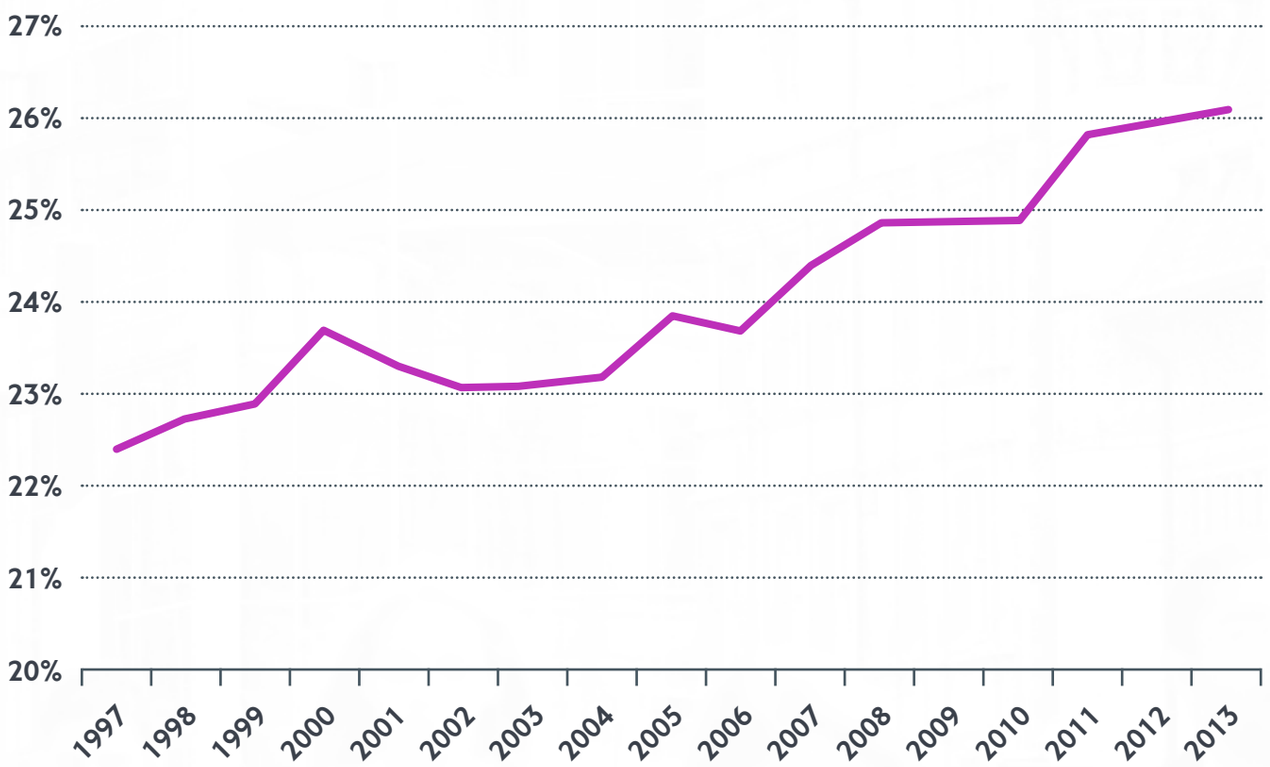
London's Gross Value Added has **increased by over 60%** since 2003

London's share of Gross Value Added (GVA) 1997 – 2013



Growth in workplace jobs
London's share of (GVA) 1997-2013
Employment growth in London by sector

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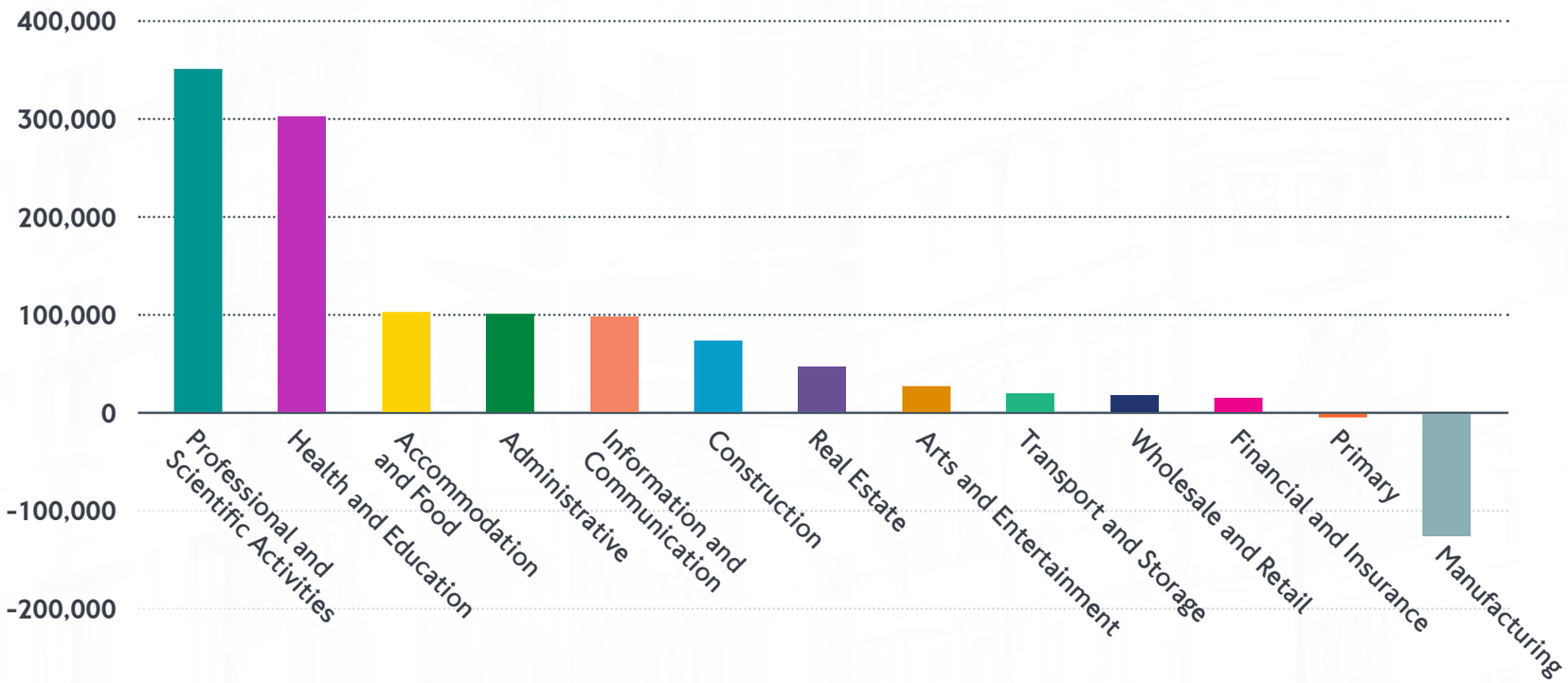
Employment growth in London by sector 2004 – 2014



Most common modes to employment growth sectors

57%	37%	36%	40%	56%	51%	39%	39%	50%	36%	66%	49%	52%

% of employment in PTALs 5 and 6

72%	35%	60%	52%	66%	30%	62%	53%	32%	46%	84%	30%	20%

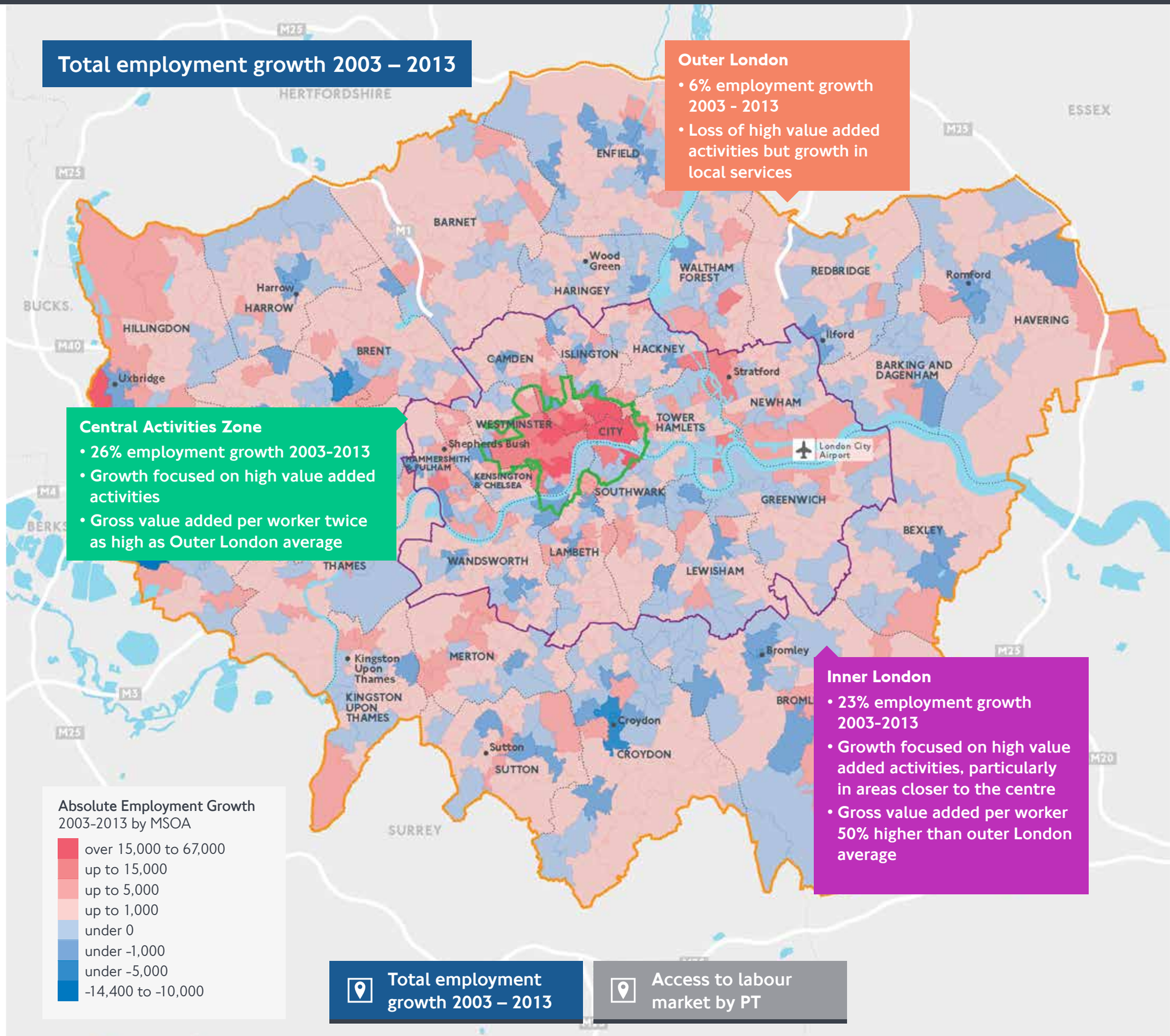
Growth in workplace jobs
London's share of (GVA) 1997-2013
Employment growth in London by sector

Employment growth has been focused on central and Inner London, which depends on excellent access by public transport

The excellent levels of transport connectivity required by high value sectors means that central London, which is the best connected part of the UK, is the most attractive part of the Capital for businesses. It is therefore the Central Activities Zone (CAZ) and locations on the edge of the CAZ within Inner London, which have seen the strongest employment growth, which is only been made possible by London's extensive rail network which allows access to over 3million people and thousands of businesses within 45 minutes by public transport.

As the density of businesses and employees increases, firms benefit from economies of agglomeration - they are in greater competition with each other, become more innovative, and are therefore more productive. Employees in central London are twice as productive as those in Outer London. By facilitating the movement of large volumes of commuters into the CAZ, public transport is therefore key to maintaining the city's competitiveness and World City status.

Conversely, as lower value office sectors have increasingly sought less expensive locations outside of the Capital, Outer London has become a less attractive place for businesses. Although there are a number of notable exceptions, most of the employment growth in Outer London has therefore been related to serving a growing population, including sectors such as health, education and retail.



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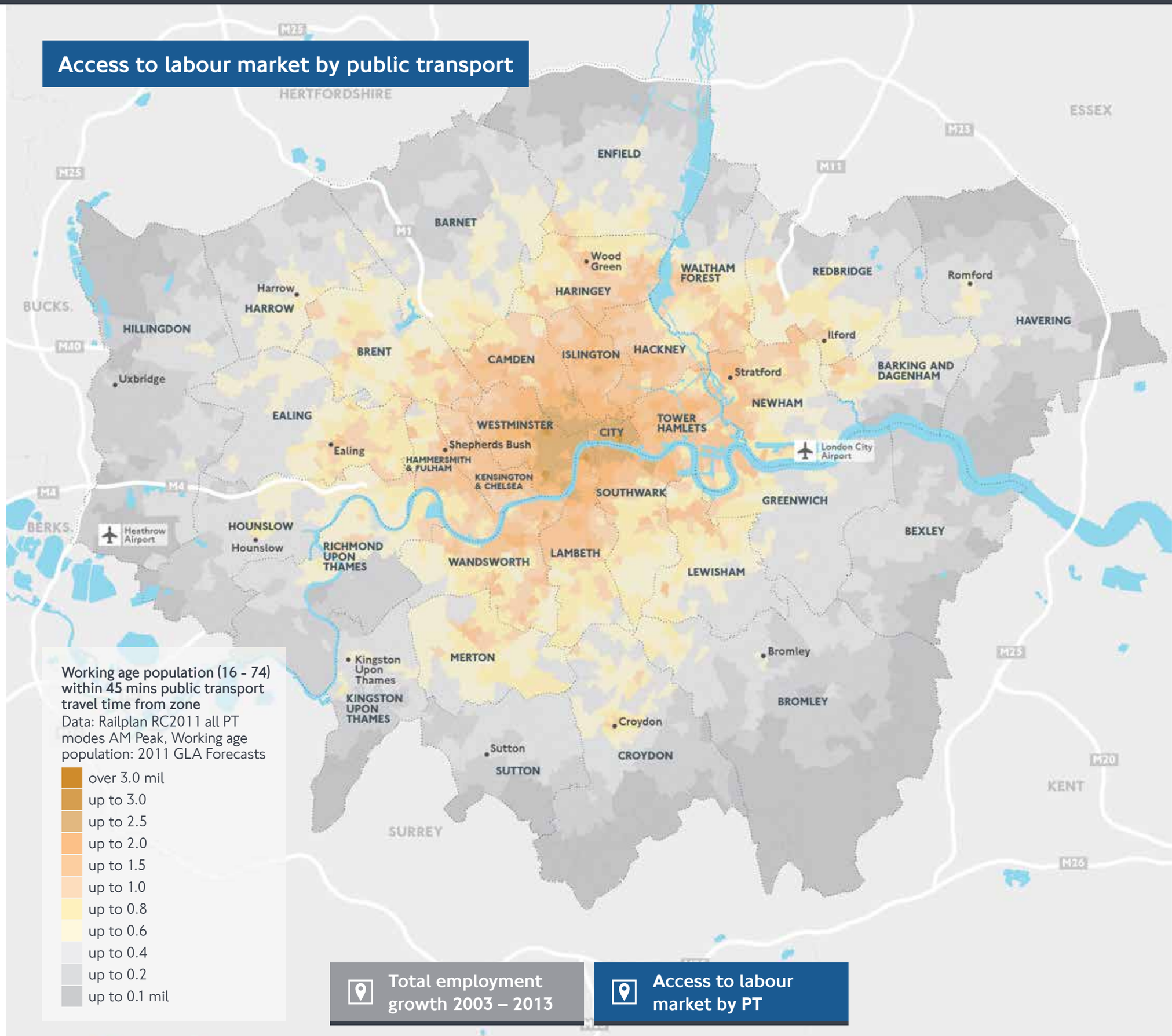
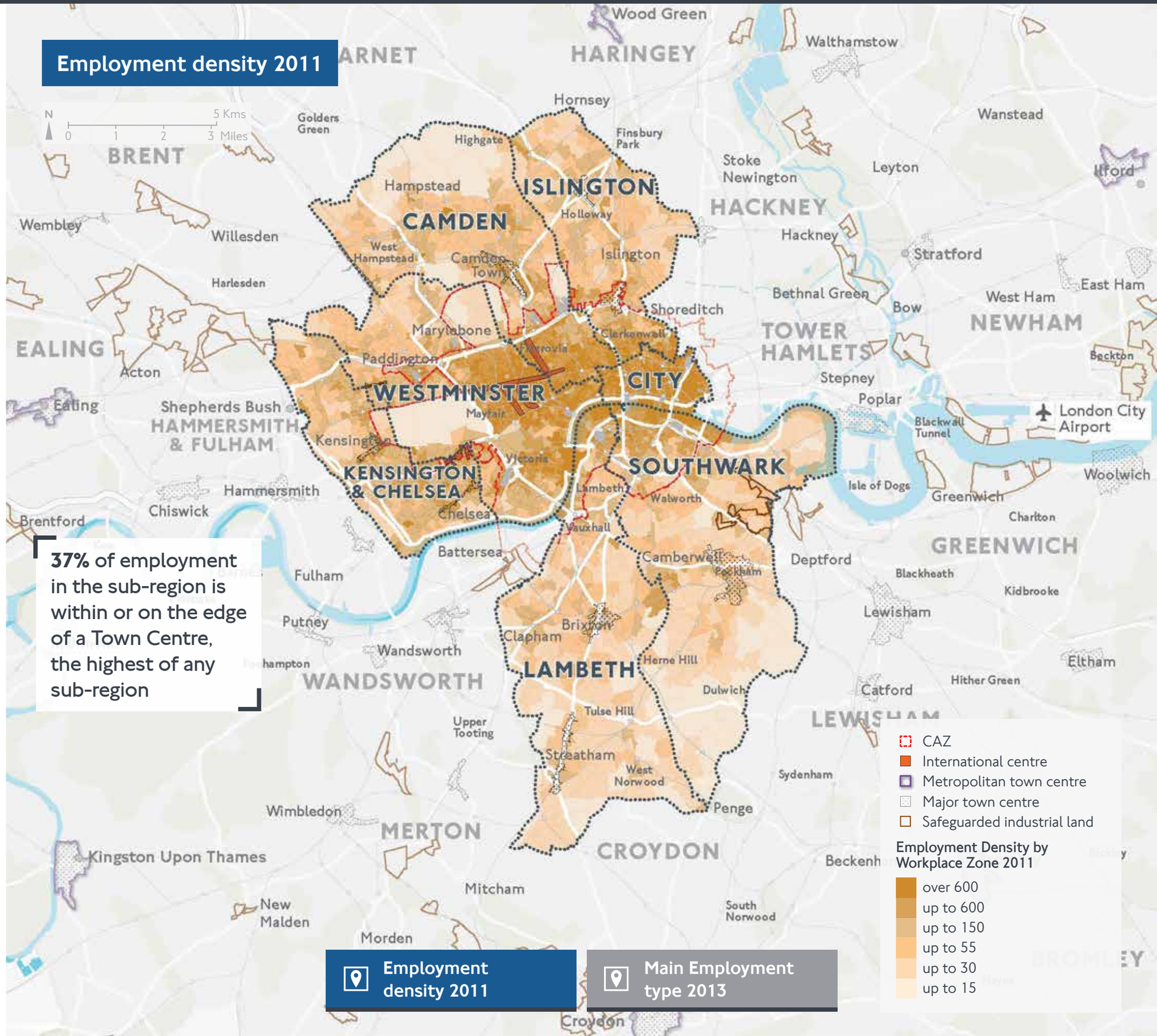


The CAZ contains significant concentrations of high value added employment, with local services and retail in other parts

The Central sub-region has a diverse economy which supports a mix of professional services, local public services, retail, industrial activities and logistics. It is the most productive area of the UK, with significant growth occurring on the edge of the CAZ in recent years.

Much of the retail, as well as some of the public services and office activity is located outside of the centre, whilst industrial and logistics businesses tend to be located in industrial estates, much of which are protected as Strategic Industrial Land.

These locations all depend on different types of transport provision, with office development within the CAZ highly dependent on rail, town centres depending on buses, rail and car, and industrial parks relying on car as well as van and lorry movements. Maintaining the efficiency of these networks will be key to the future economic performance of the sub-region.



37% of employment in the sub-region is within or on the edge of a Town Centre, the highest of any sub-region

Employment density 2011

Main Employment type 2013

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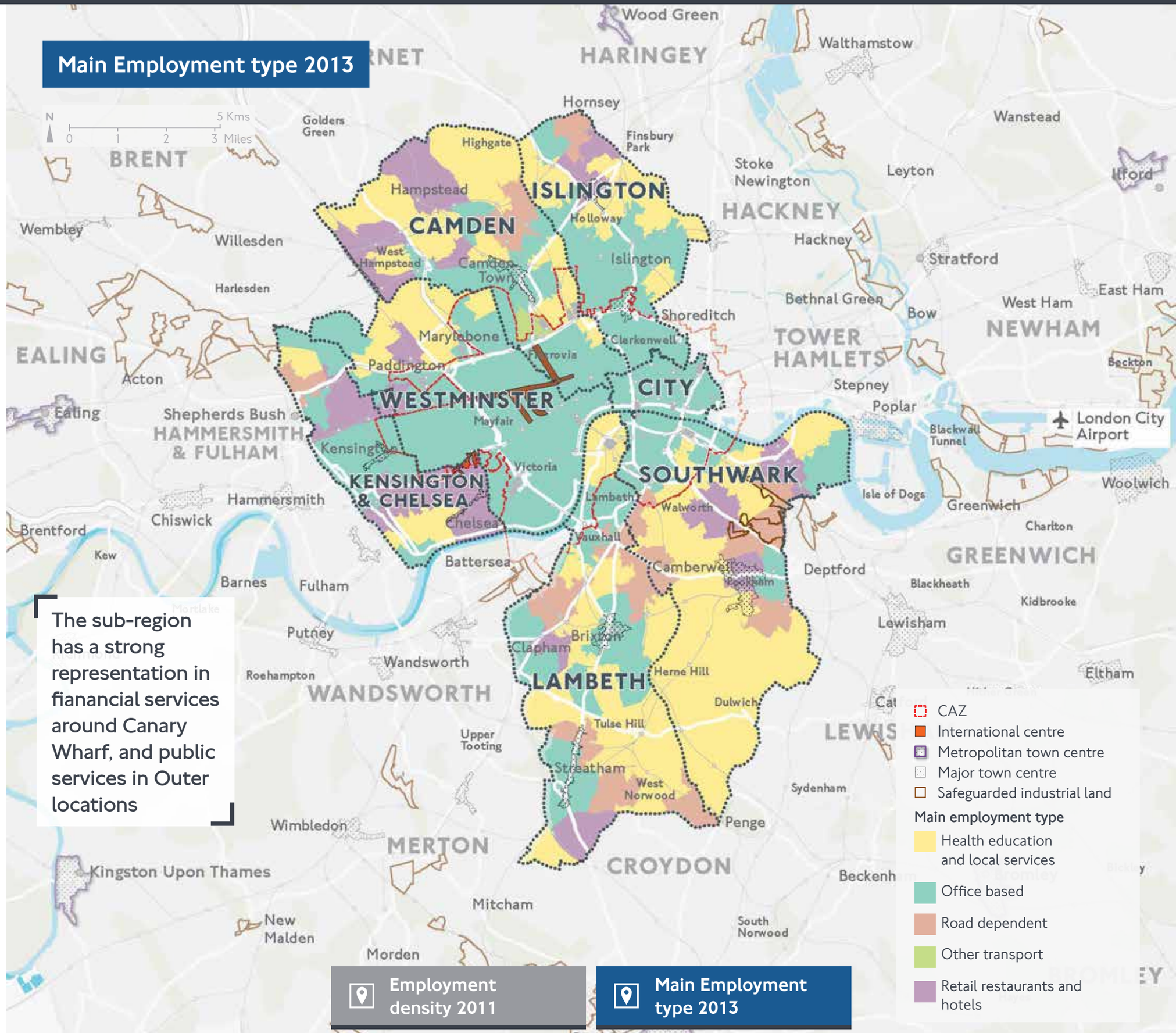


Most employment growth has occured around the most accessible places by public transport

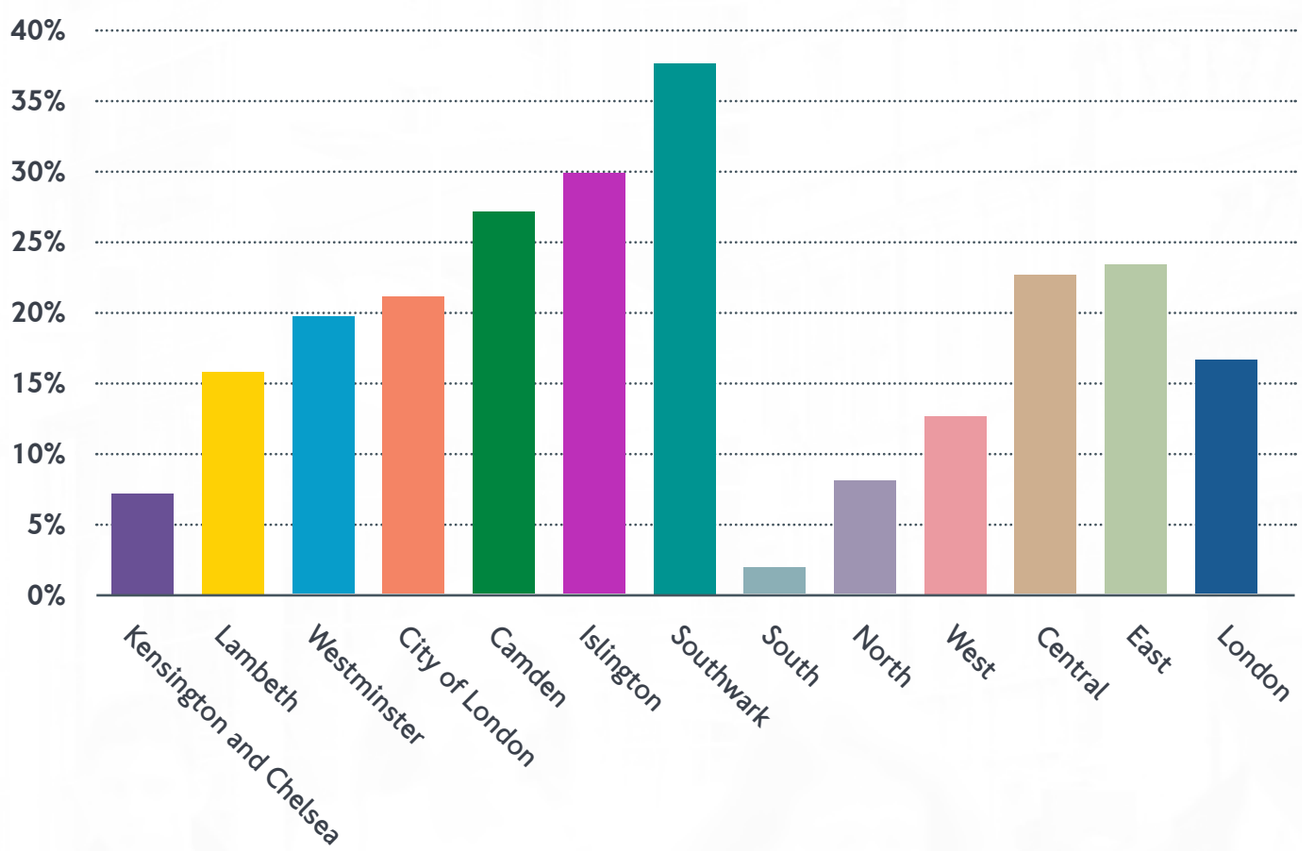
The sub-region has seen very strong levels of employment growth , driven by the expansion of the CAZ.

Growth in the sub-region's Gross Value Added has been strong, partly due to the scale of employment growth but also due to the high levels of productivity associated with the type of jobs that exist in the sub-region. An efficient transport network will be key to the maintaining the efficient movement of goods and people required to support continued growth.

Much of the employment growth in the sub-region has taken place in the most accessible locations, with over 90% of all office floorspace developed within 500m of a station. Supporting the capacity and connectivity of the rail network will be key to maintaining the competitiveness of the CAZ and the rest of the sub-region.

The rate of employment growth since 2003 has been **the second highest** of any sub-region

Employment growth 2003 – 2013



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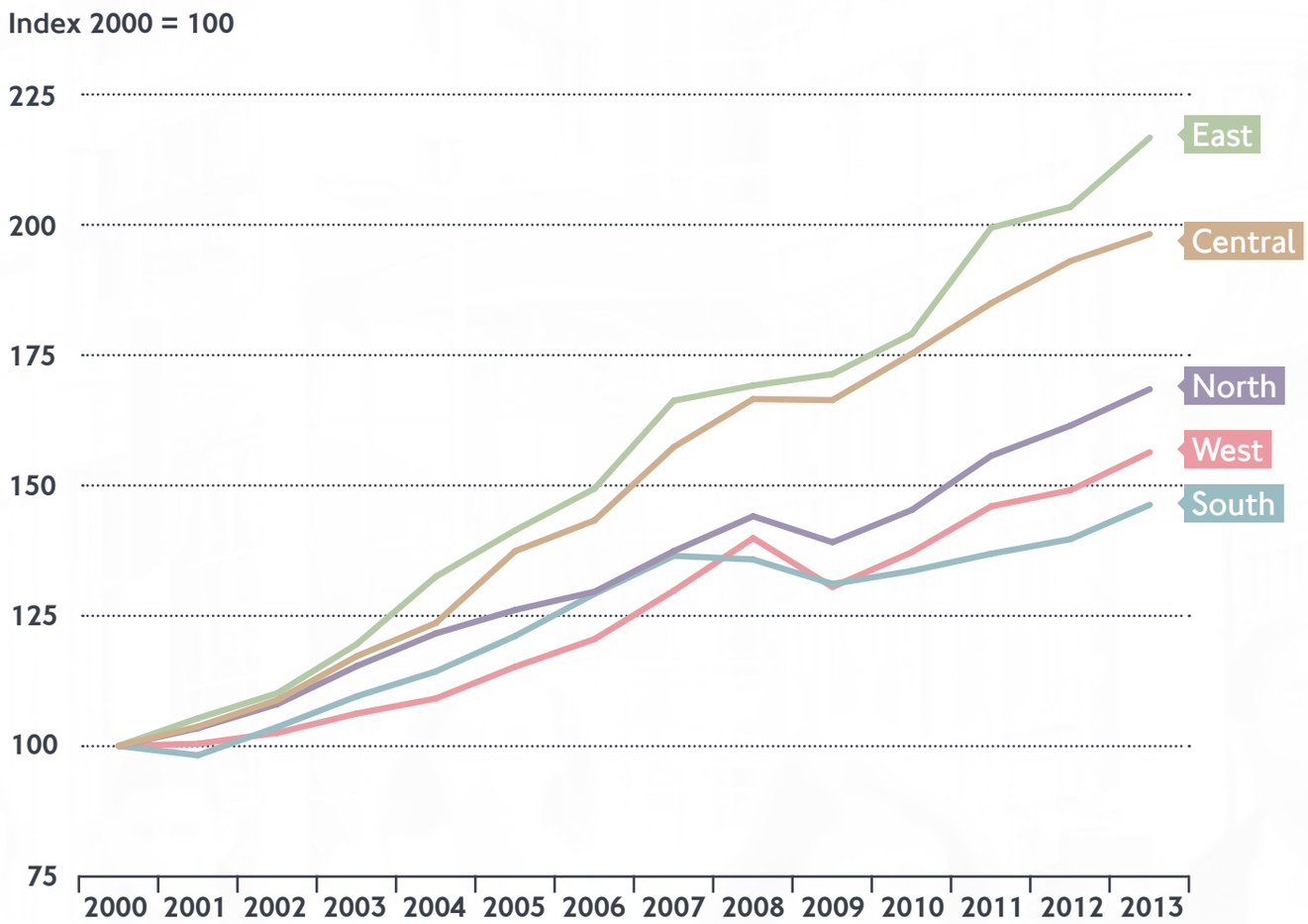
Much of the employment growth in the sub-region has taken place in the most accessible locations, with over 90% of all office floorspace developed within 500m of a station. Supporting the capacity and connectivity of the rail network will be key to maintaining the competitiveness of the CAZ and the rest of the sub-region.

Growth in Gross Value Added (GVA) by sub-region



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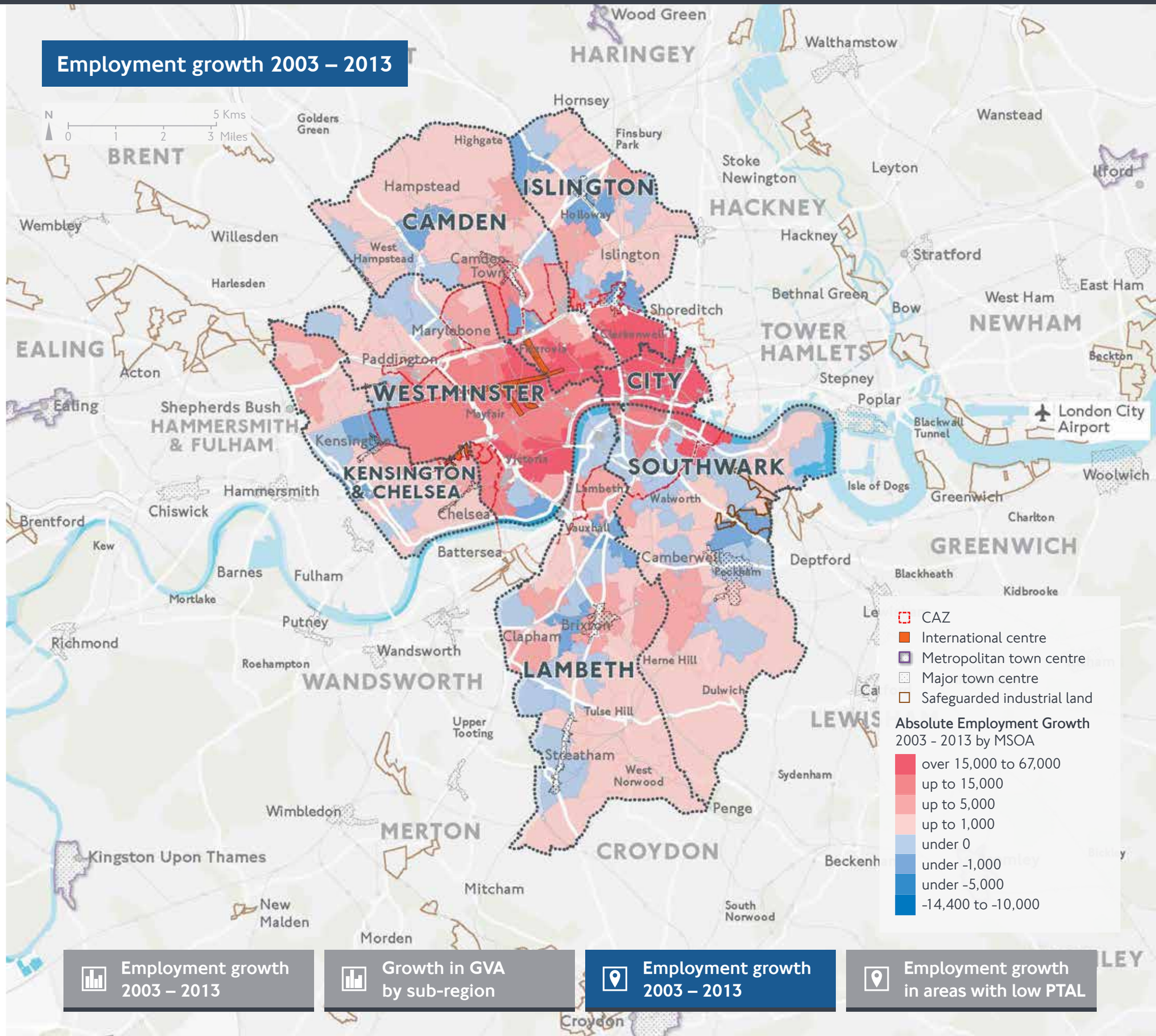

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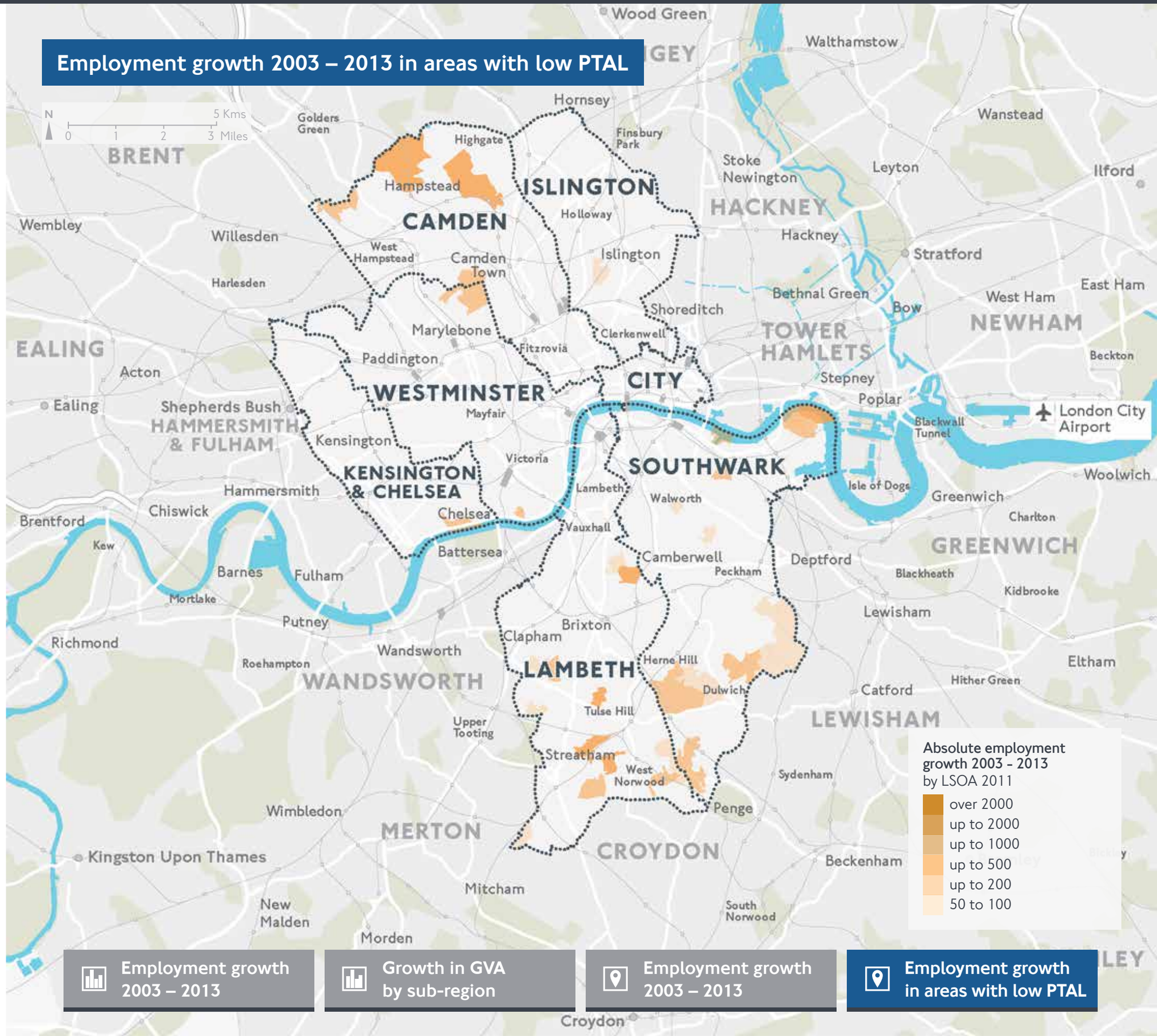
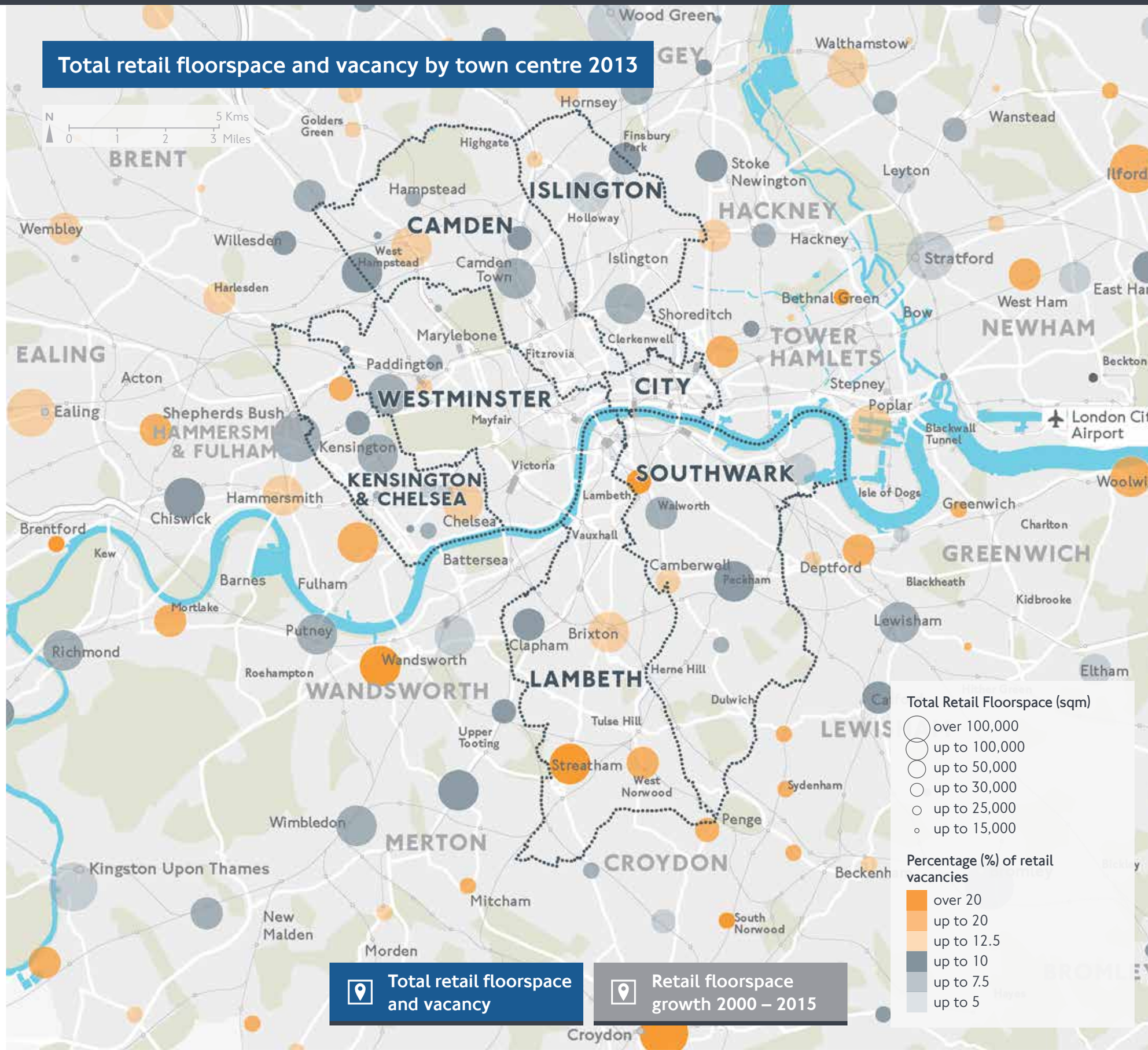


Employment growth 2003 – 2013 | Growth in GVA by sub-region | Employment growth 2003 – 2013 | Employment growth in areas with low PTAL

The Central sub-area has a network of town centres which depend on good transport links

The sub-region's town centres appear to be performing reasonably well, with low levels of vacancy. However, the amount of retail floorspace has actually declined across the sub-region, possibly as a result of conversion to other uses.

Maintaining the viability of town centres will require multiple actions which include supporting continued access to the catchment areas of town centres, particularly by public transport; maintaining the quality of the place and shopping experience through traffic management and quality of the public realm; maintaining an appropriate level of car parking provision and supporting the efficient delivery of goods.



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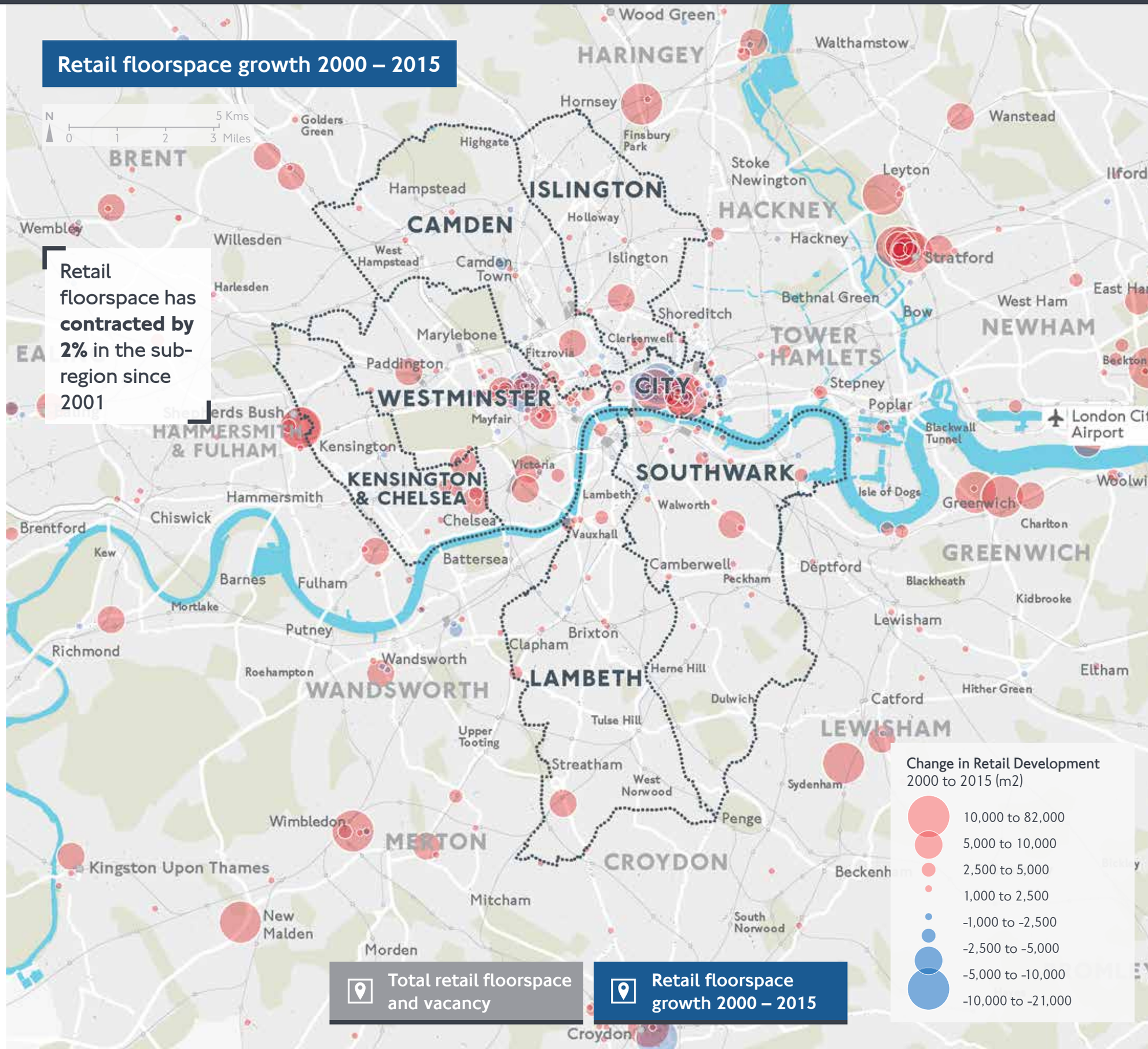
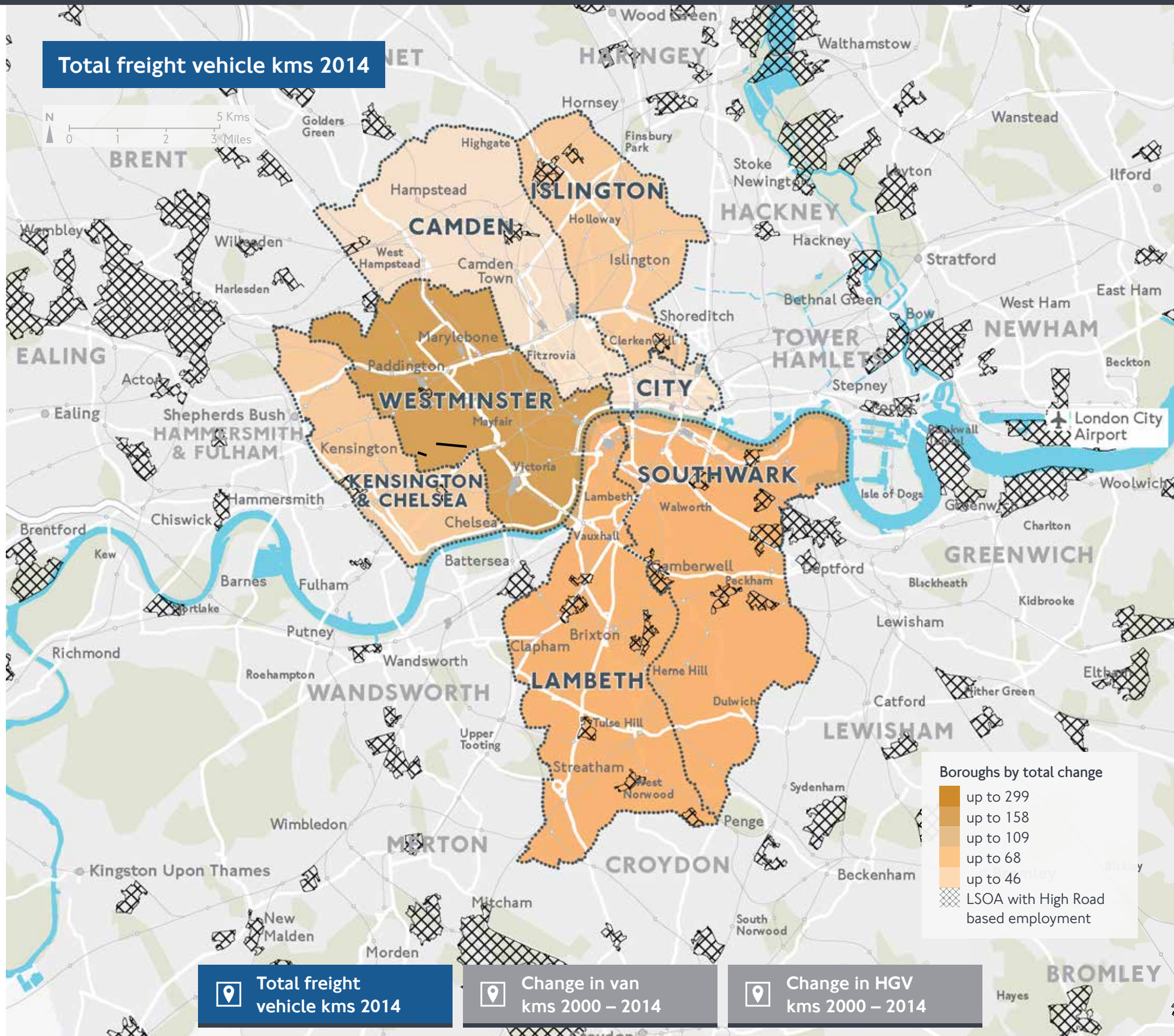


Large parts of Central's economy rely on the efficient movement of freight by road, with vans increasingly important, but HGVs growing recently too

The sub-region has a significant concentration of businesses where the movement of freight is a key part of their day to day operations. Whilst there are not large numbers of manufacturing or distribution businesses based within the sub-region, the sub-region's businesses rely on the road network for the the delivery of goods and services.

The growth in the number of vans on the sub-region's roads has far outnumbered the growth in HGVs, driven in part by the growth of e-commerce. However, HGVs use is now starting to grow again, driven partly from construction projects.



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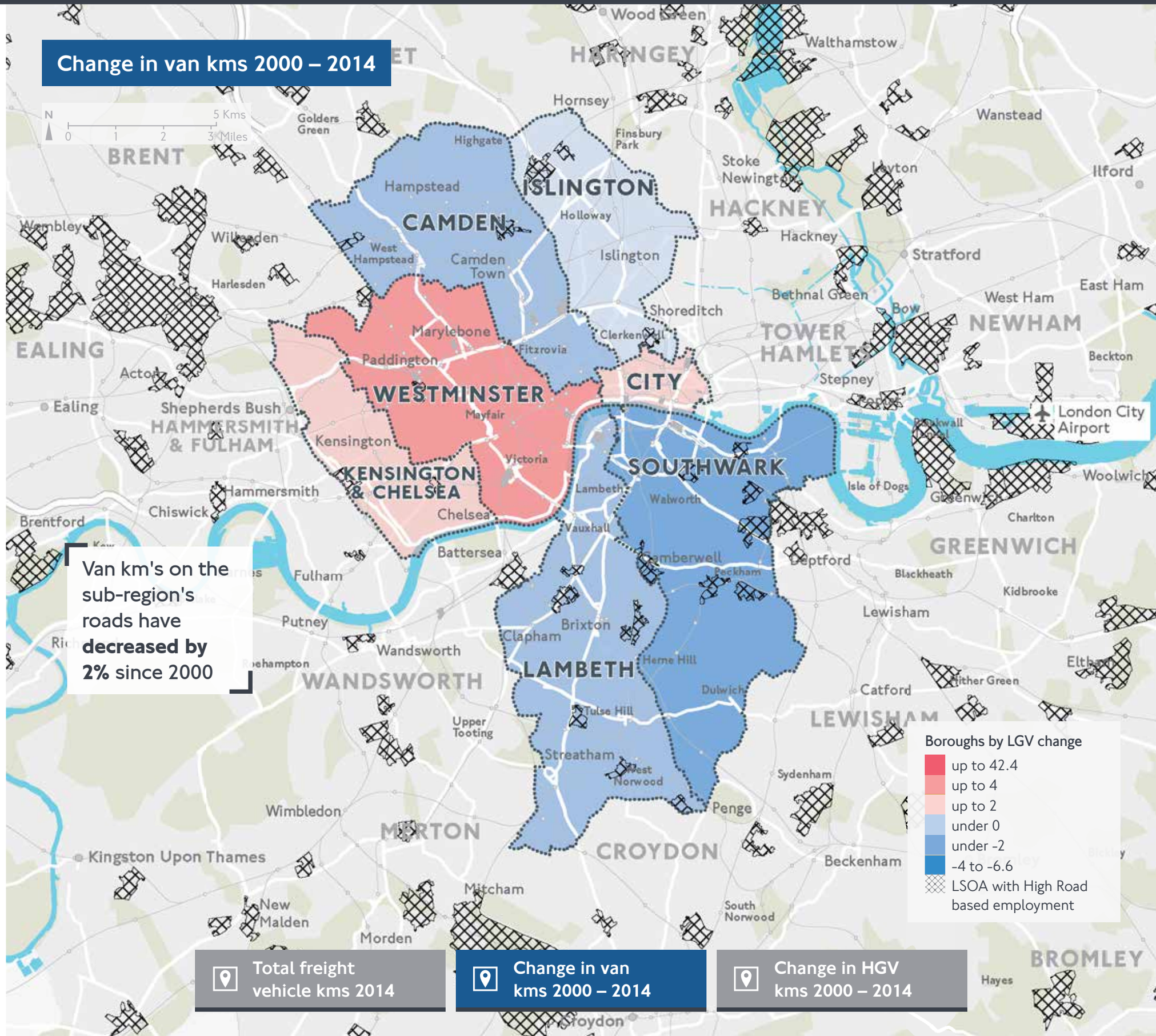

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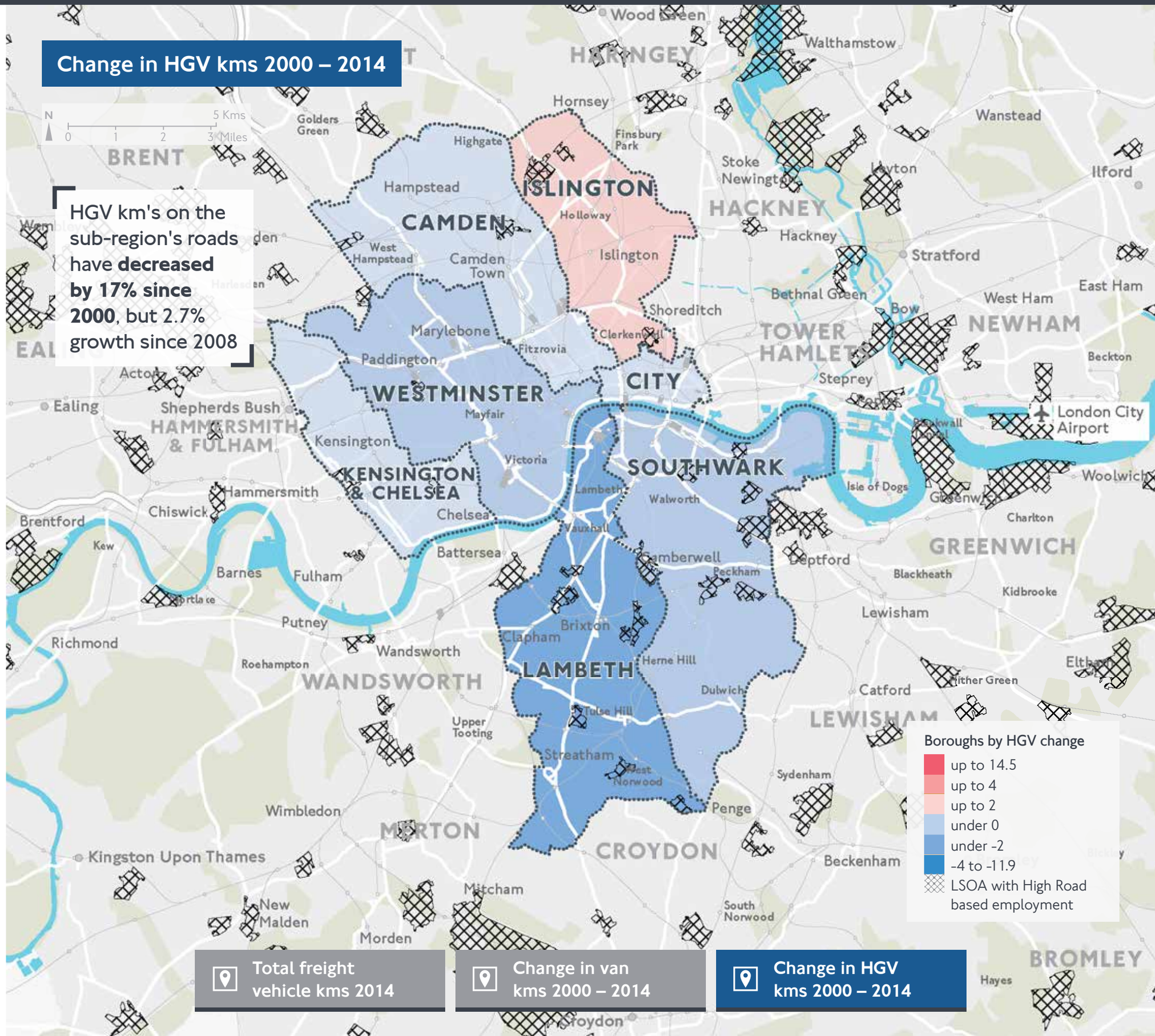
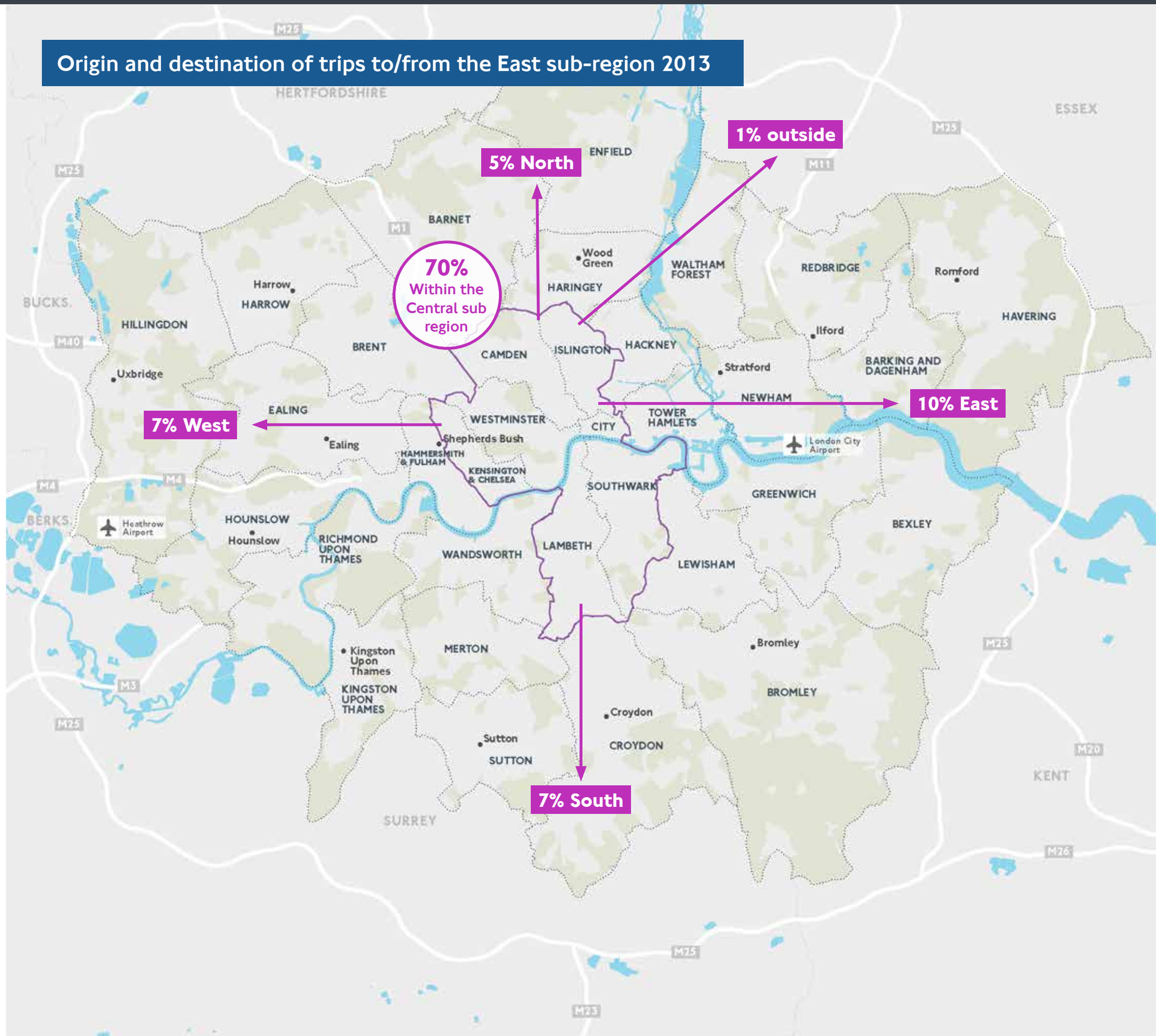


Mode and movement ›

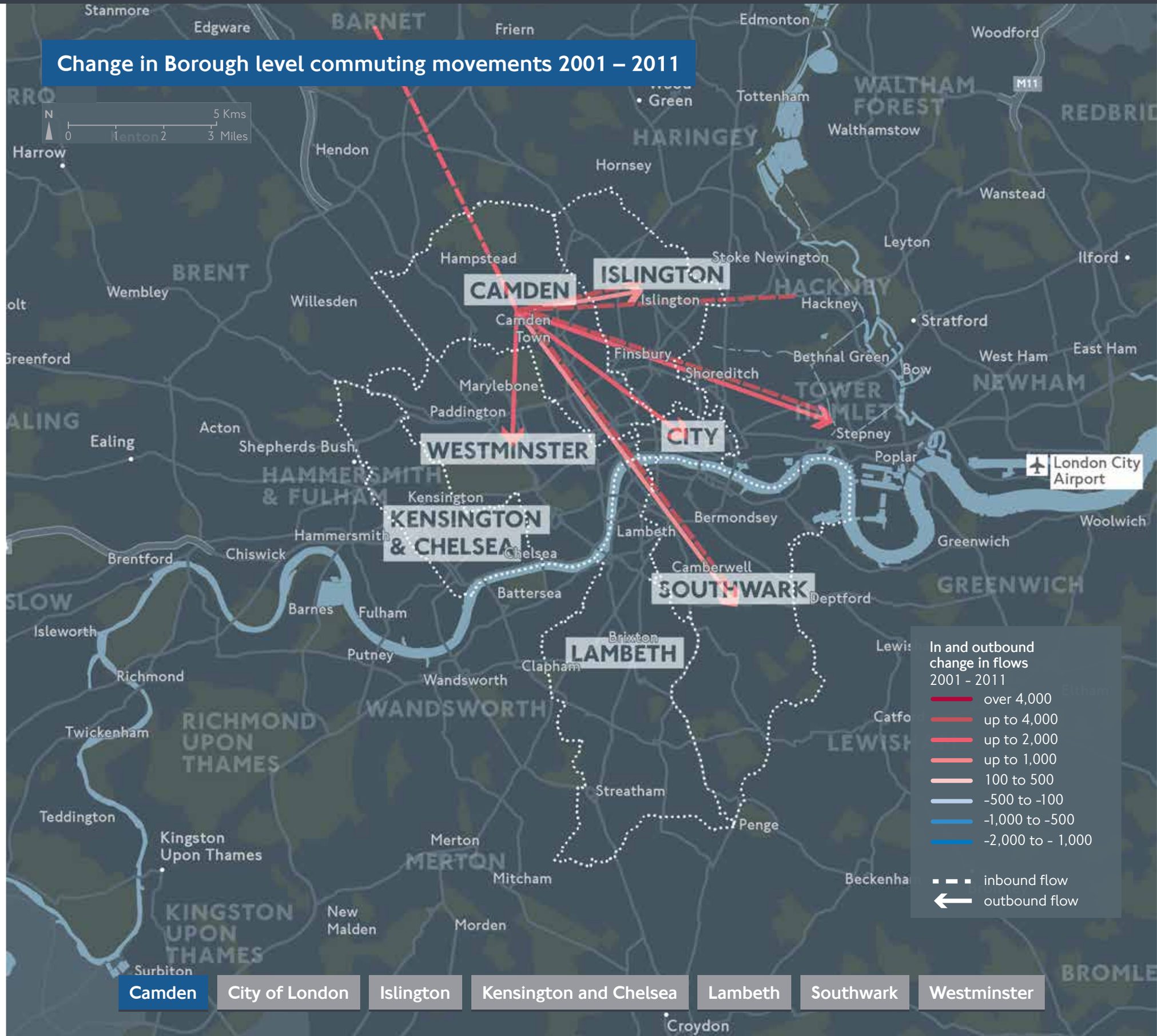
Although large numbers of trips made to Central start from other parts of London, the majority of trips start and end in the sub-region

The majority of commuting trips start from outside the sub-region, whilst education, shopping and leisure trips are all much more likely to be internal to the sub-region. There is a need to ensure a well functioning transport network that can support the huge range of local movements, particularly by bus, walking and cycling, as well as the need for a network that can support both orbital and radial movements.



More people are commuting into central and Inner Boroughs for work

As employment has increased rapidly within central and Inner London, and with lower levels of growth in Outer London, there has been an increase in people commuting towards more central areas. Maintaining the capacity and frequency of public transport connections between other sub-regions and central London will be important, both to support employment growth in the most productive part of the UK and also to enable London's residents to access the huge range of employment opportunities that exist there.



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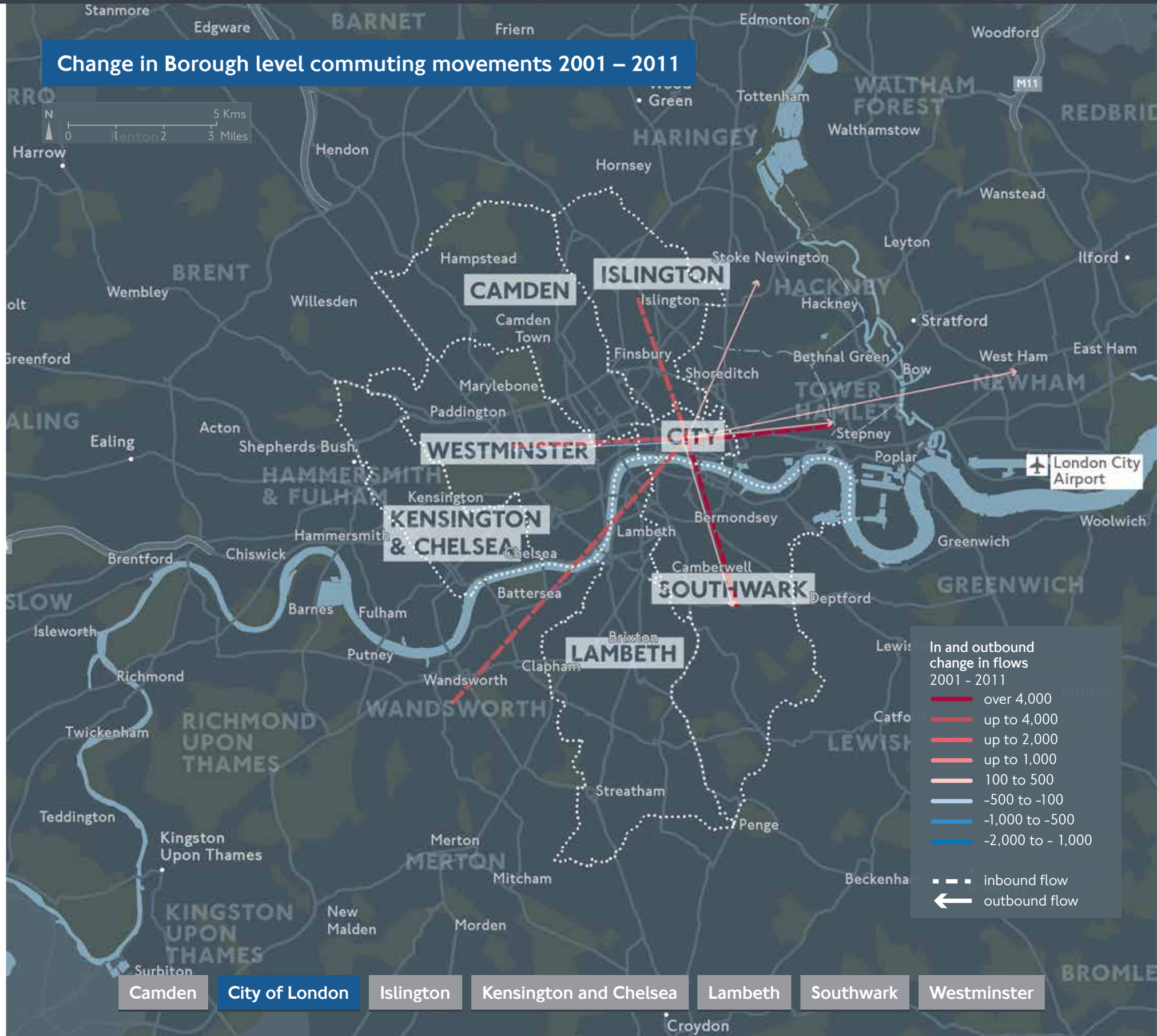

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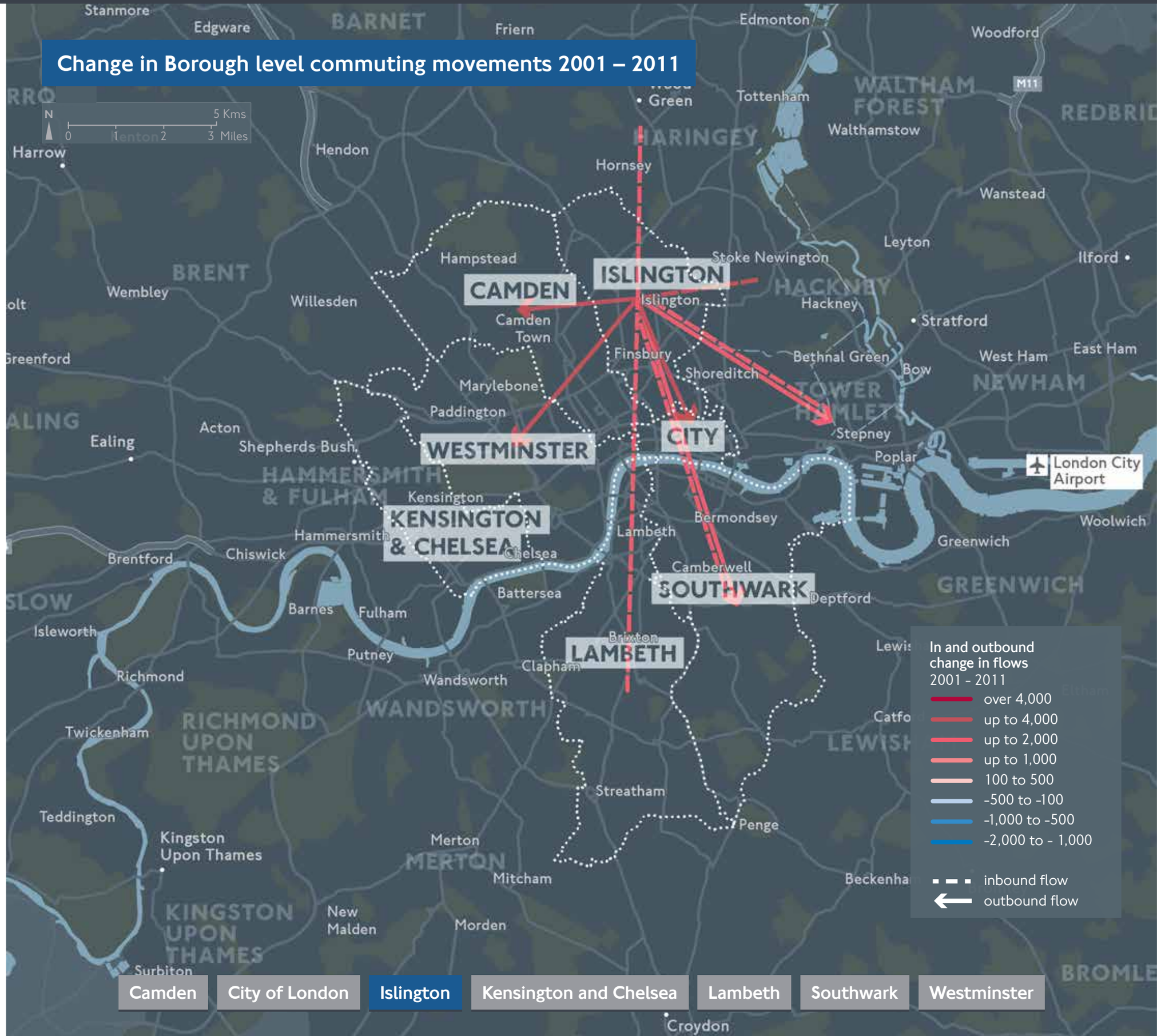

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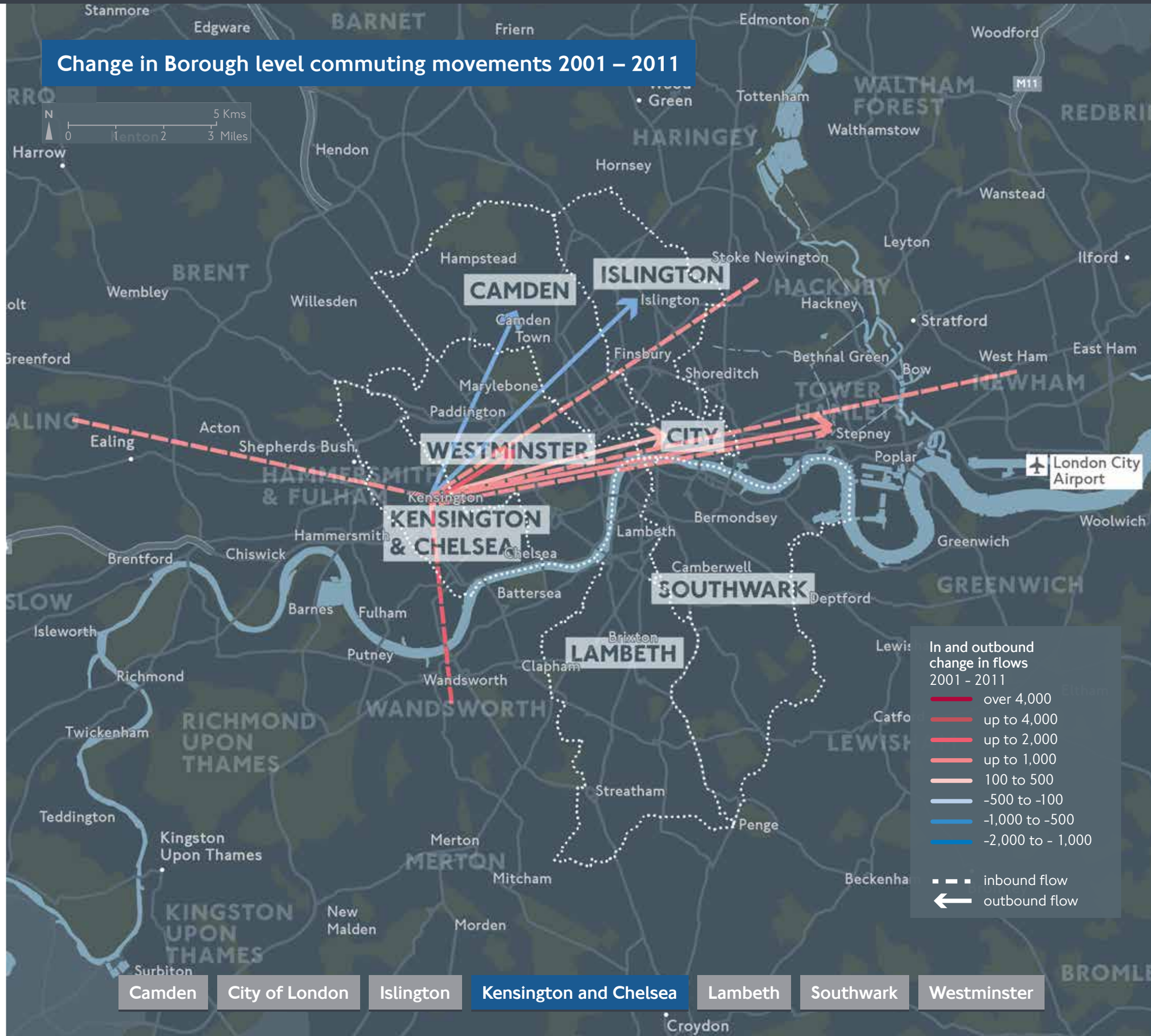

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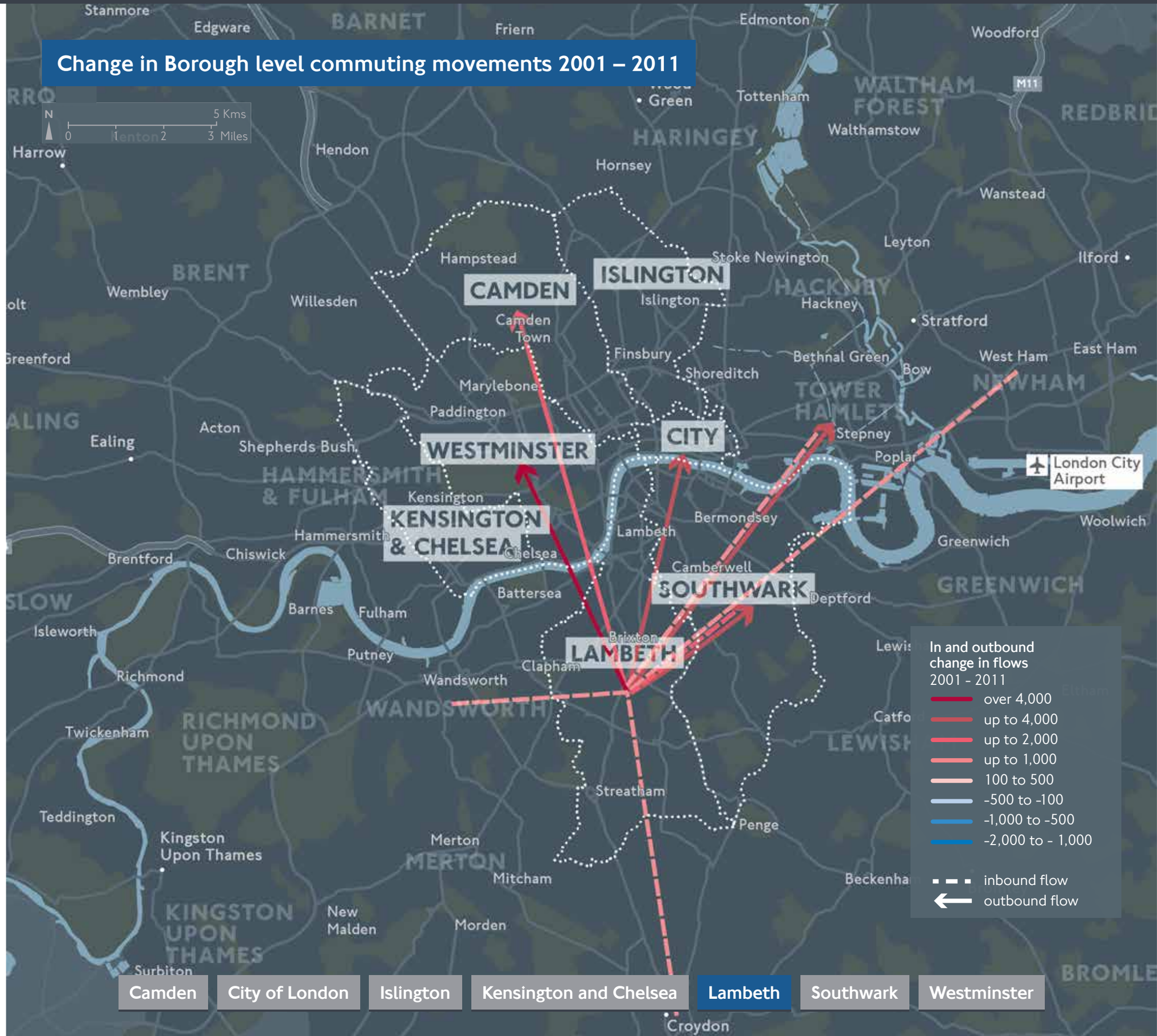

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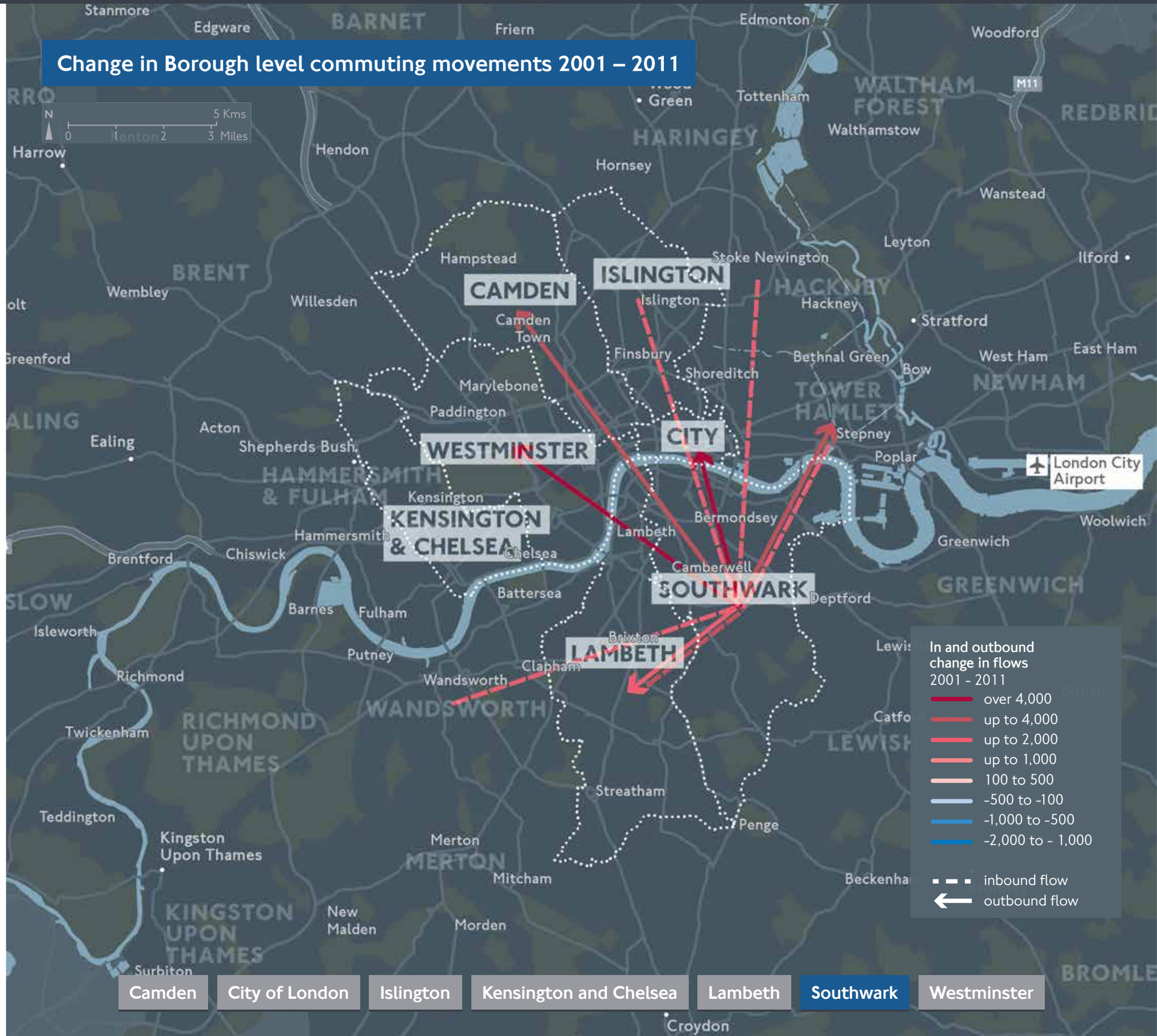

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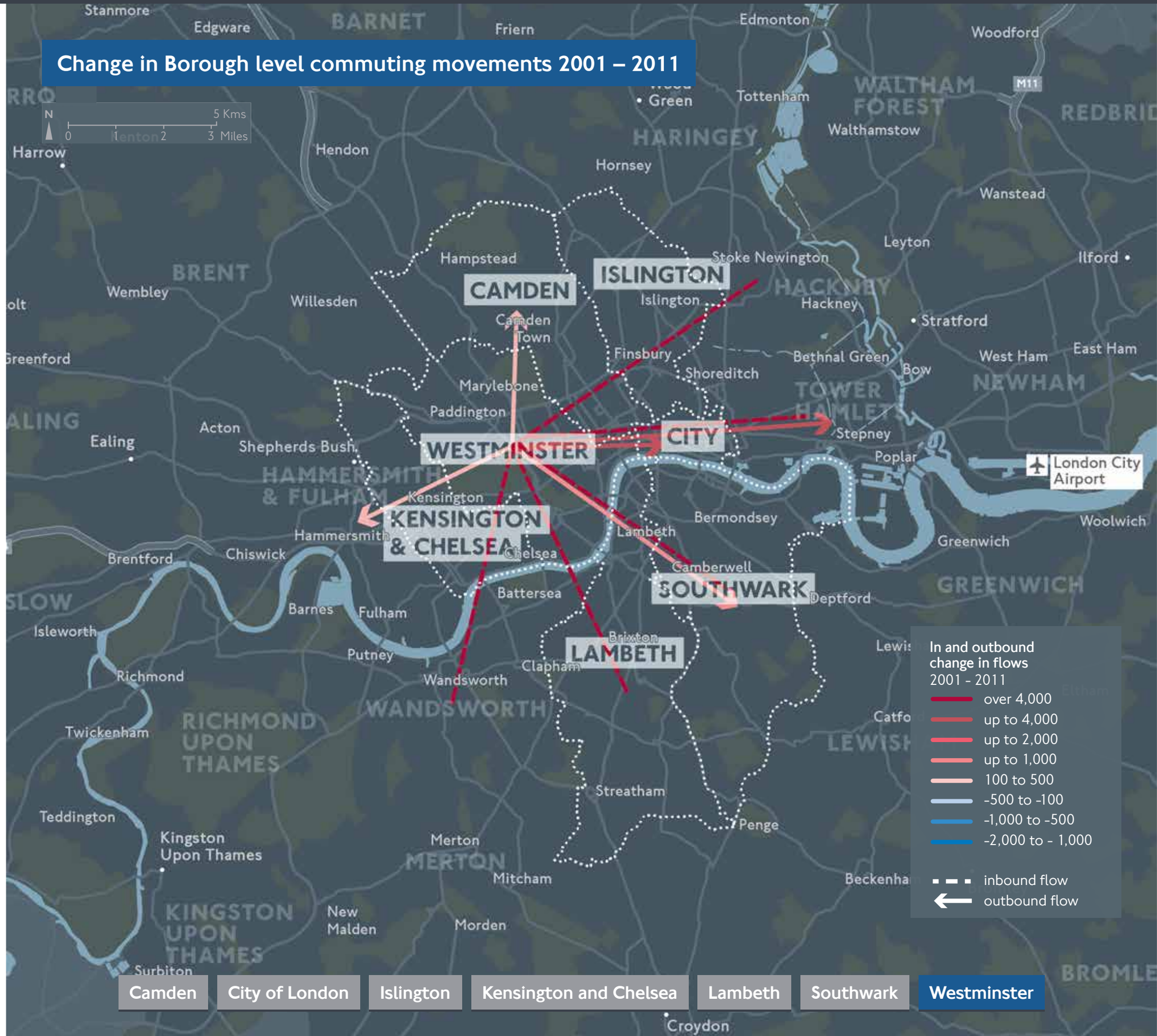
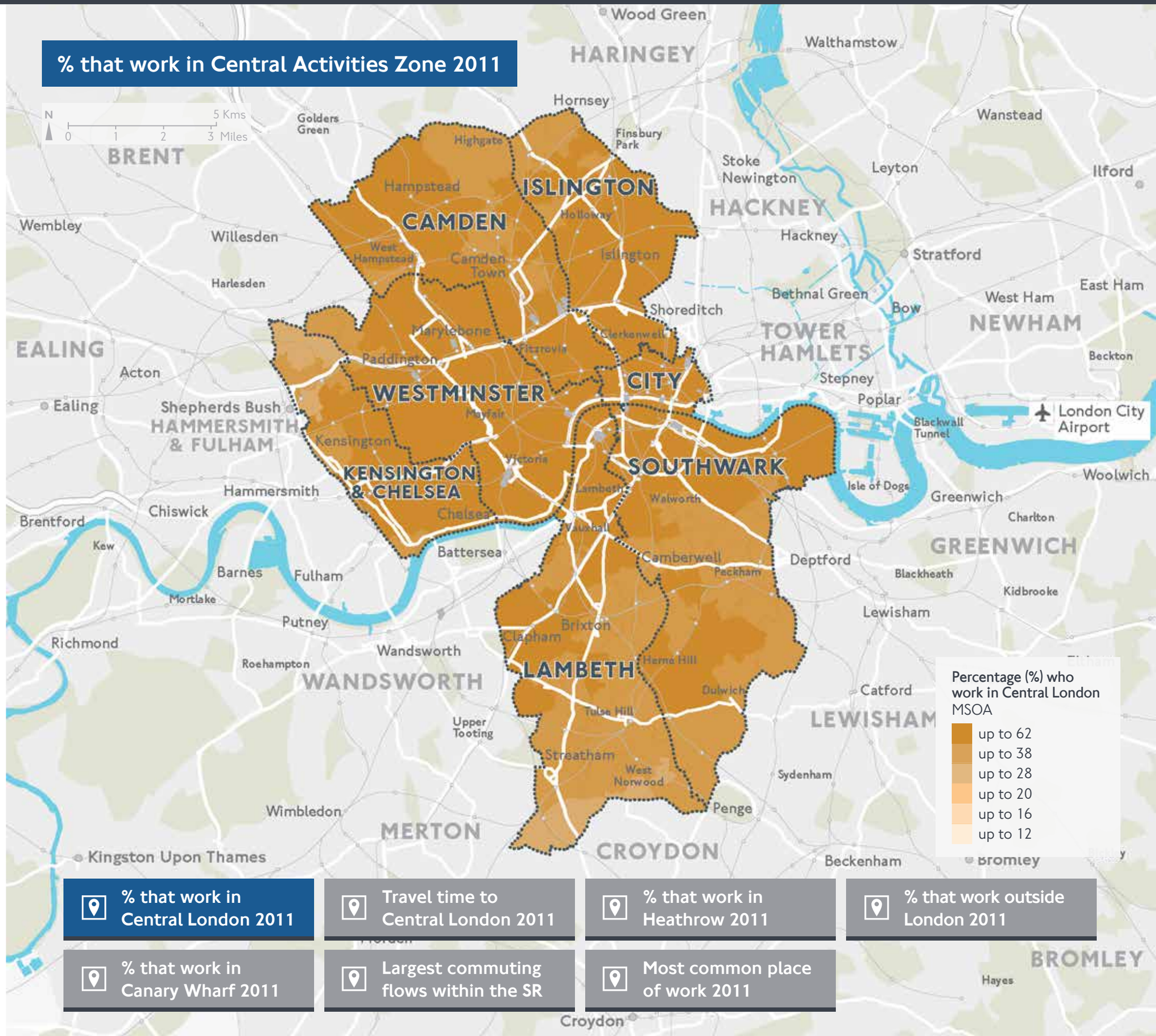


The majority of people that work within Central London come from outside the sub-region

Although there is some variation in where residents commute to work, the majority work in the CAZ.



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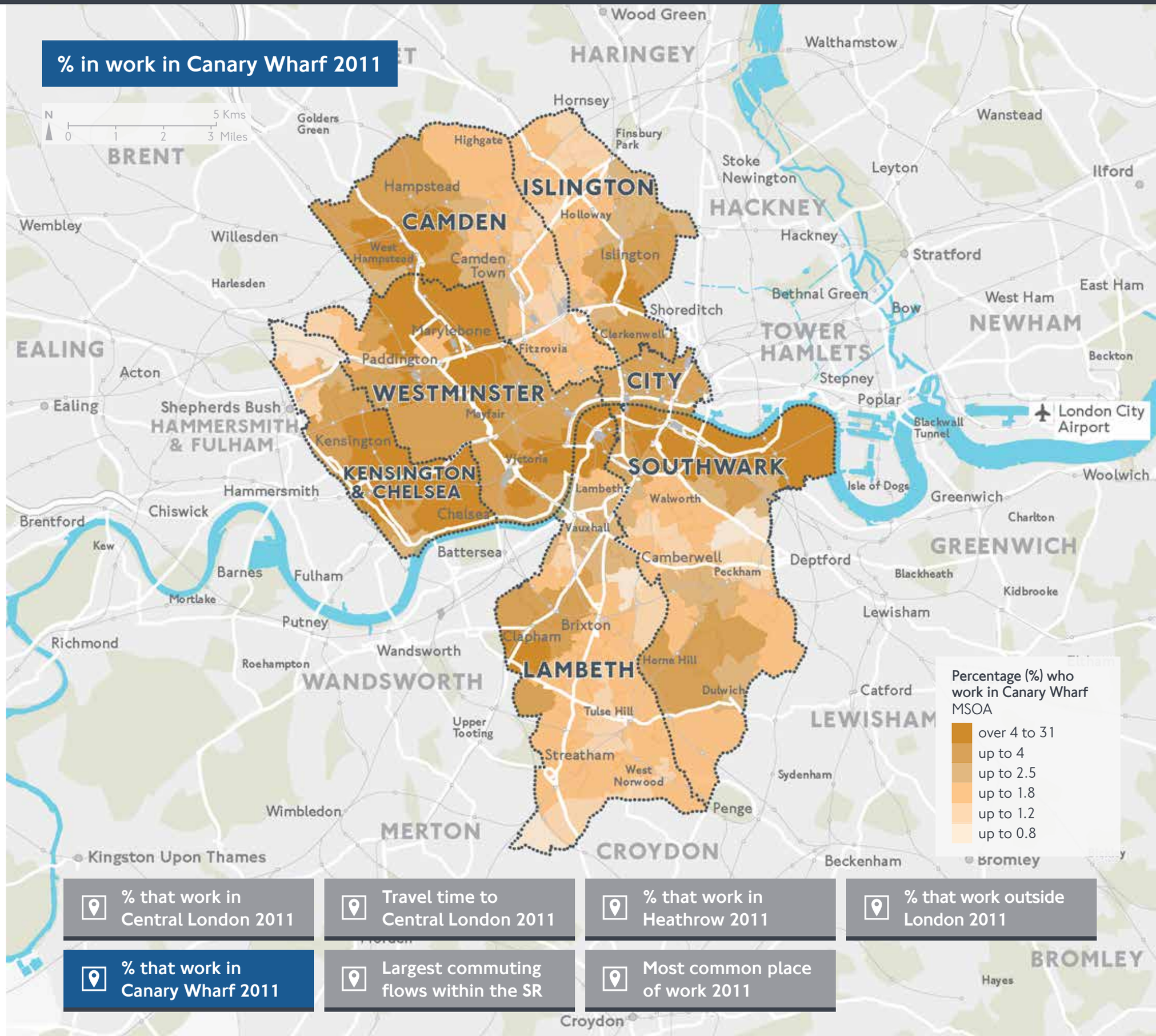

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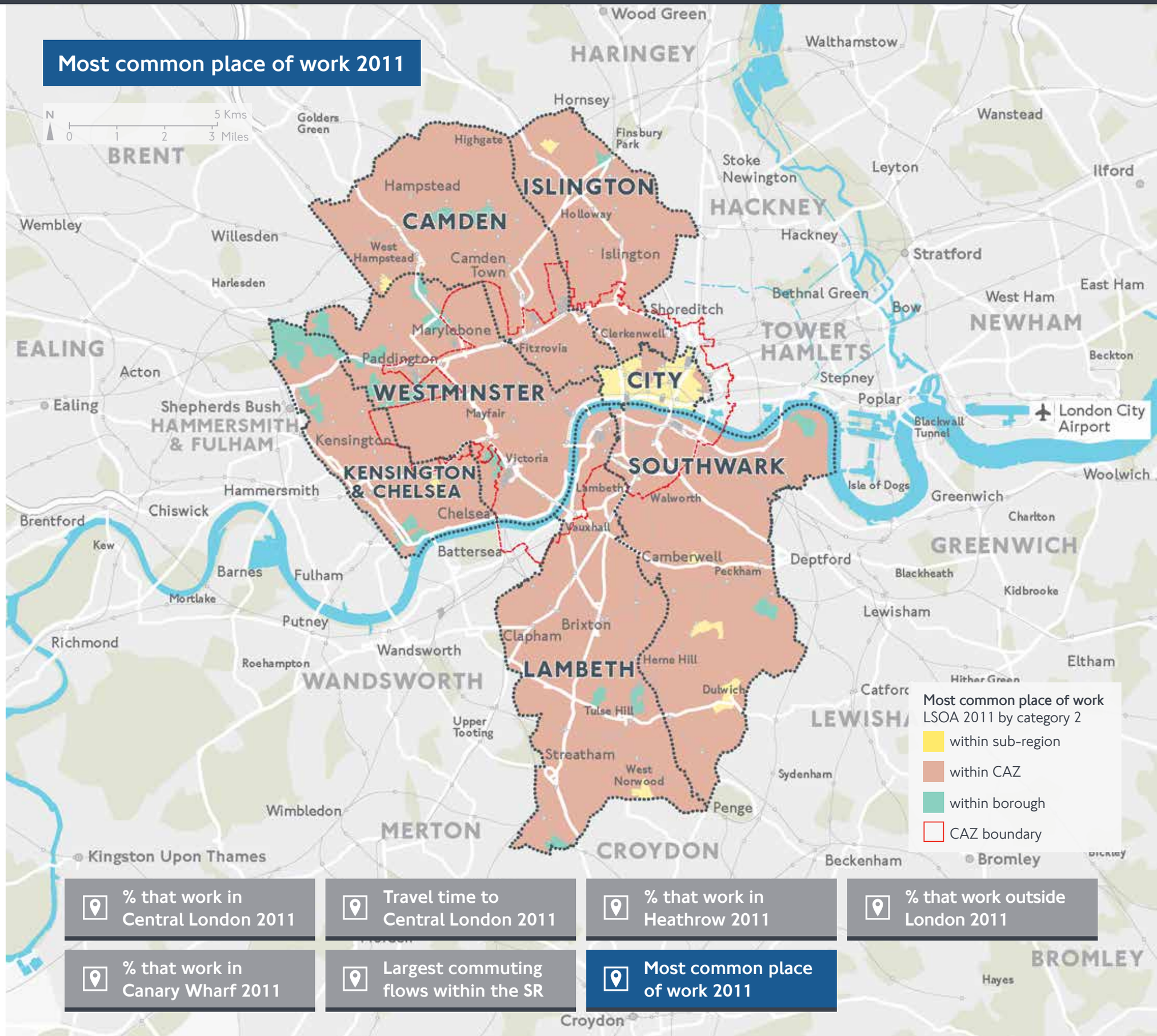

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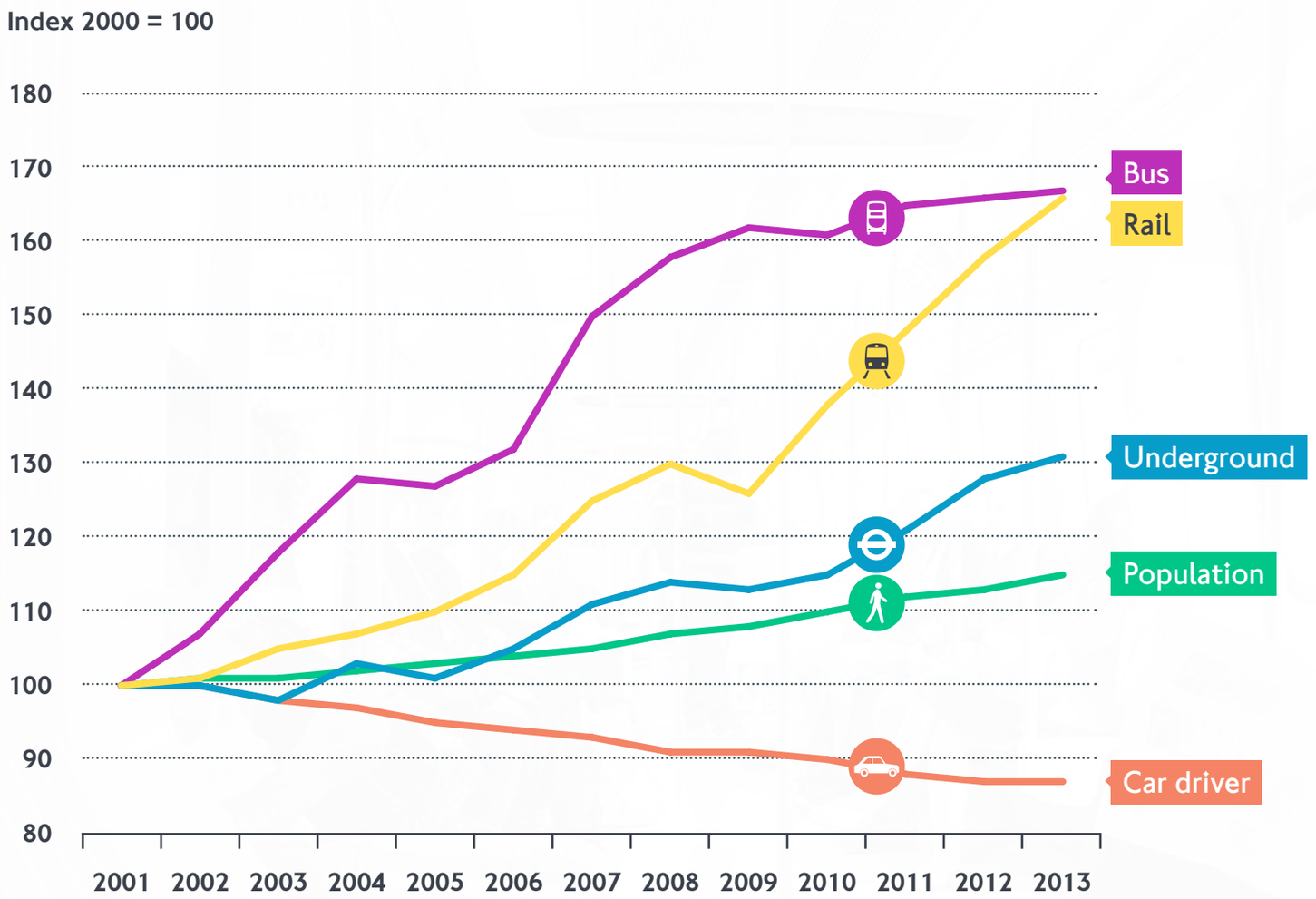
More trips are being made by rail and bus across London as more people travel into central locations and the quality of service improves

As employment has increasingly moved towards more central locations, which are typically most easily accessed by rail, there has been a strong growth in journeys made using National Rail and the Underground across London. Investment in service quality has also played a major part in this, with customer satisfaction levels across the Tube and London Overground now at historically high levels.

The number of journeys made by bus has also grown rapidly, particularly up to 2010 as significant investment in the network was made during the previous decade to increase frequency, reliability and service quality, although the number of trips by bus has now remained stable in recent years

Conversely, the number of trips made using the private car has fallen during the same period, as people have switched to public transport and active travel modes. The largest shift has been within Central and Inner London, although Outer London has also seen a decline in car use too. Further analysis of the reasons behind this is available in TfL's Drivers of Demand study: https://tfl.gov.uk/cdn/static/cms/documents/drivers-of-demand-for-travel-in-london.pdf.

Growth in journey stages by mode 2001 – 2013



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The sub-region has the lowest share of trips made by car, with just 16% of all journeys made using this mode. There has been a significant decline in the share of trips made by car, falling by 4.6% percentage points

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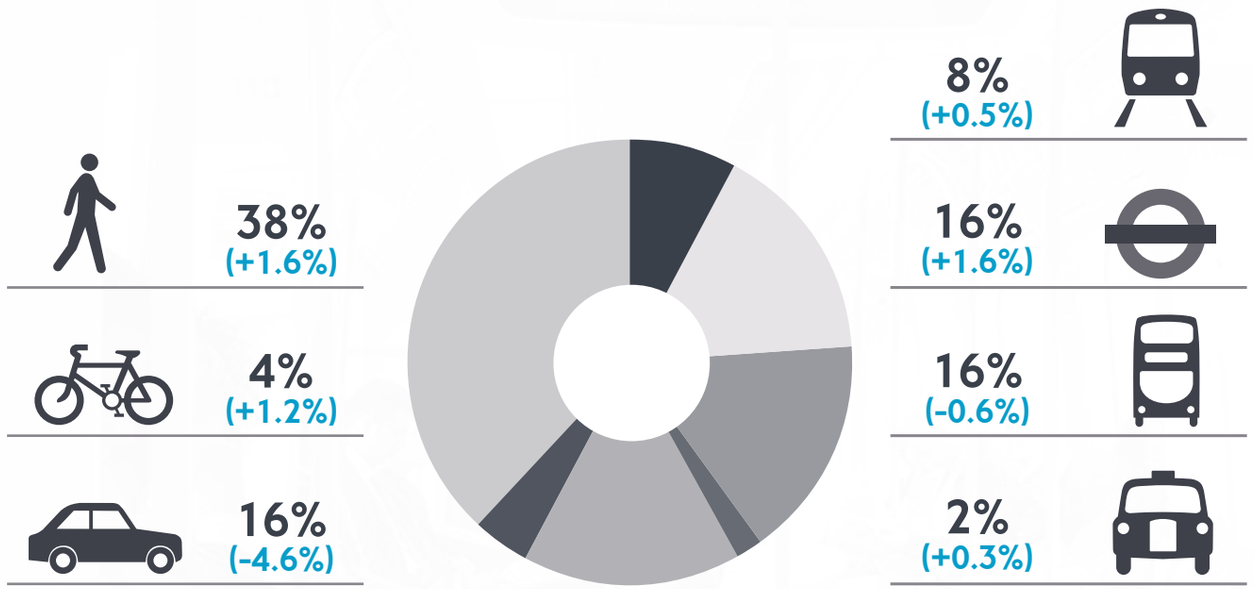
Mode share 2013

2013 Mode share Change since 2006



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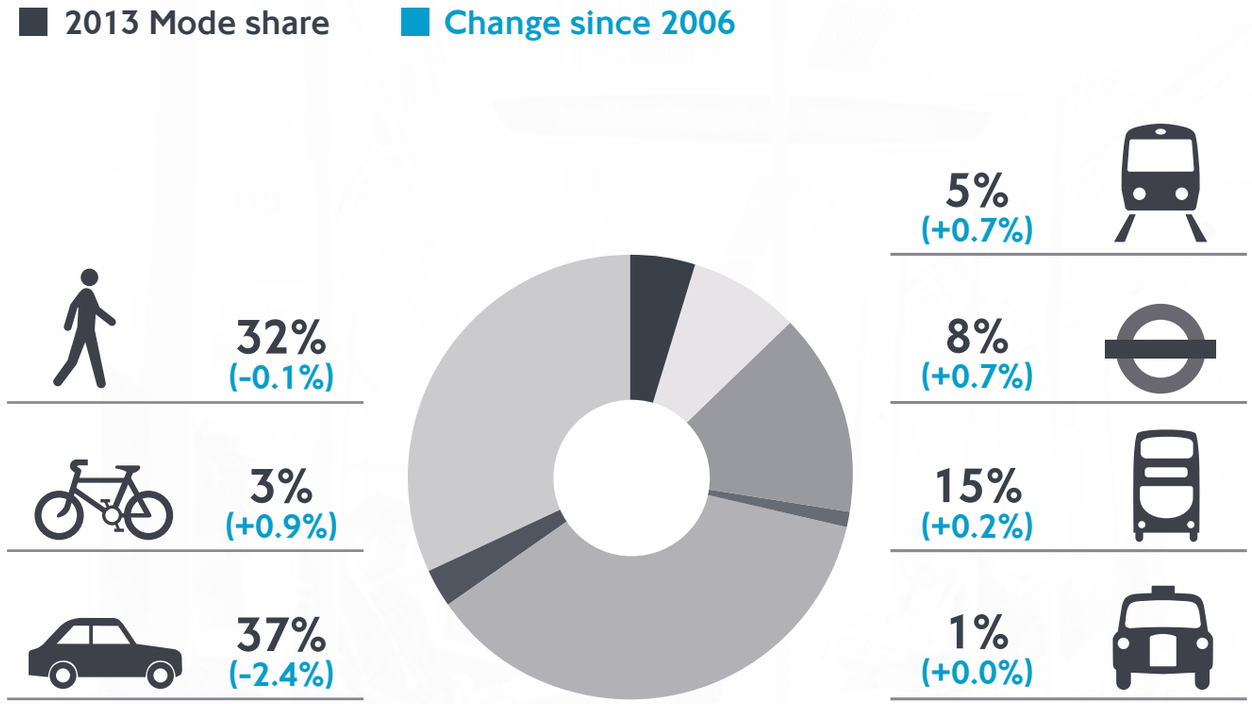

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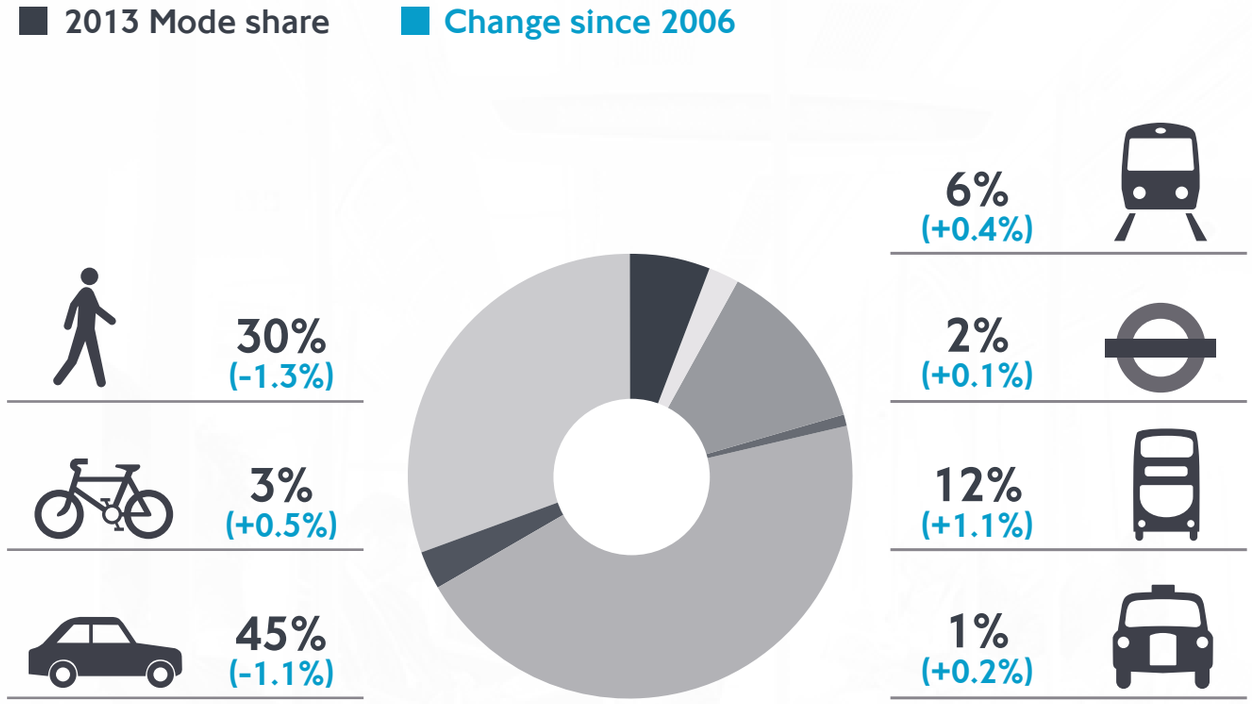

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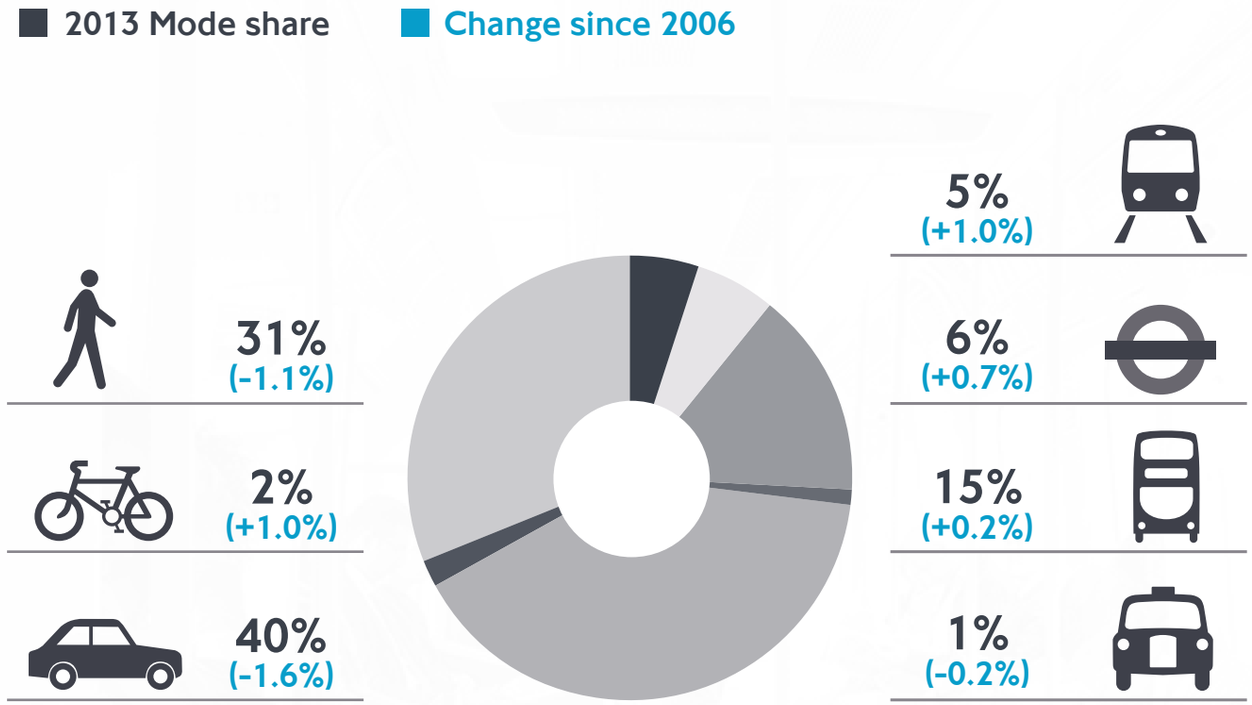

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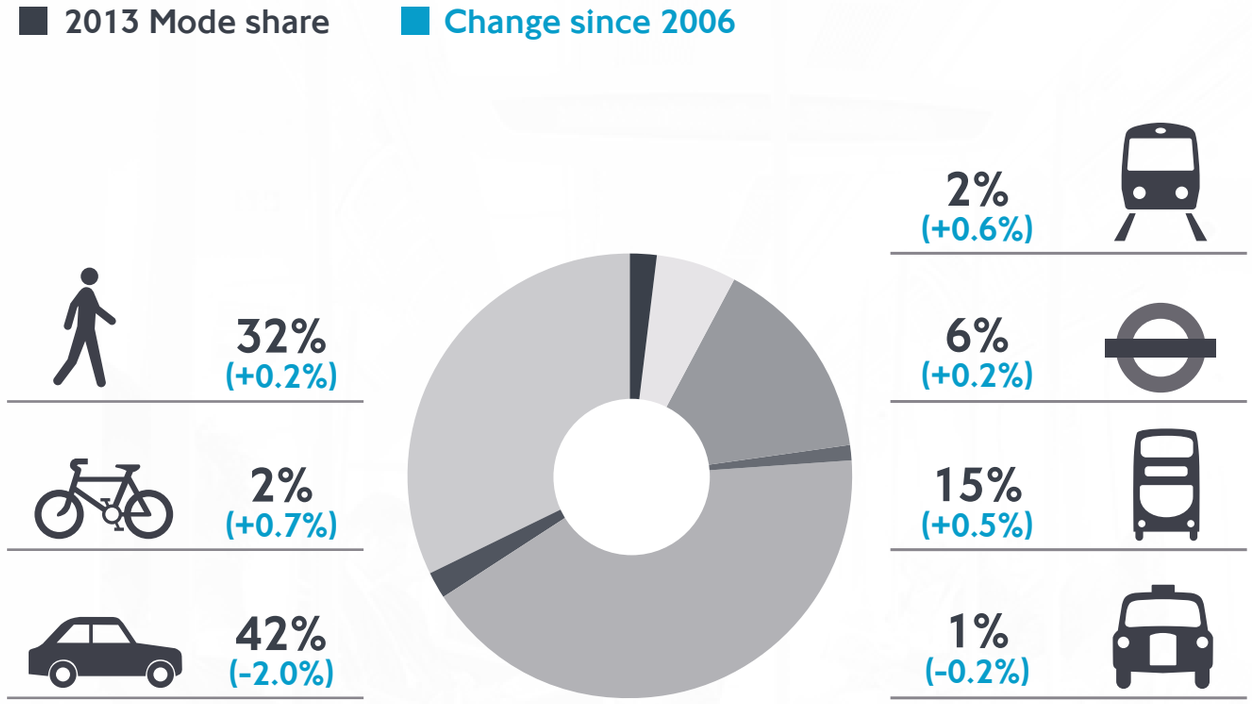

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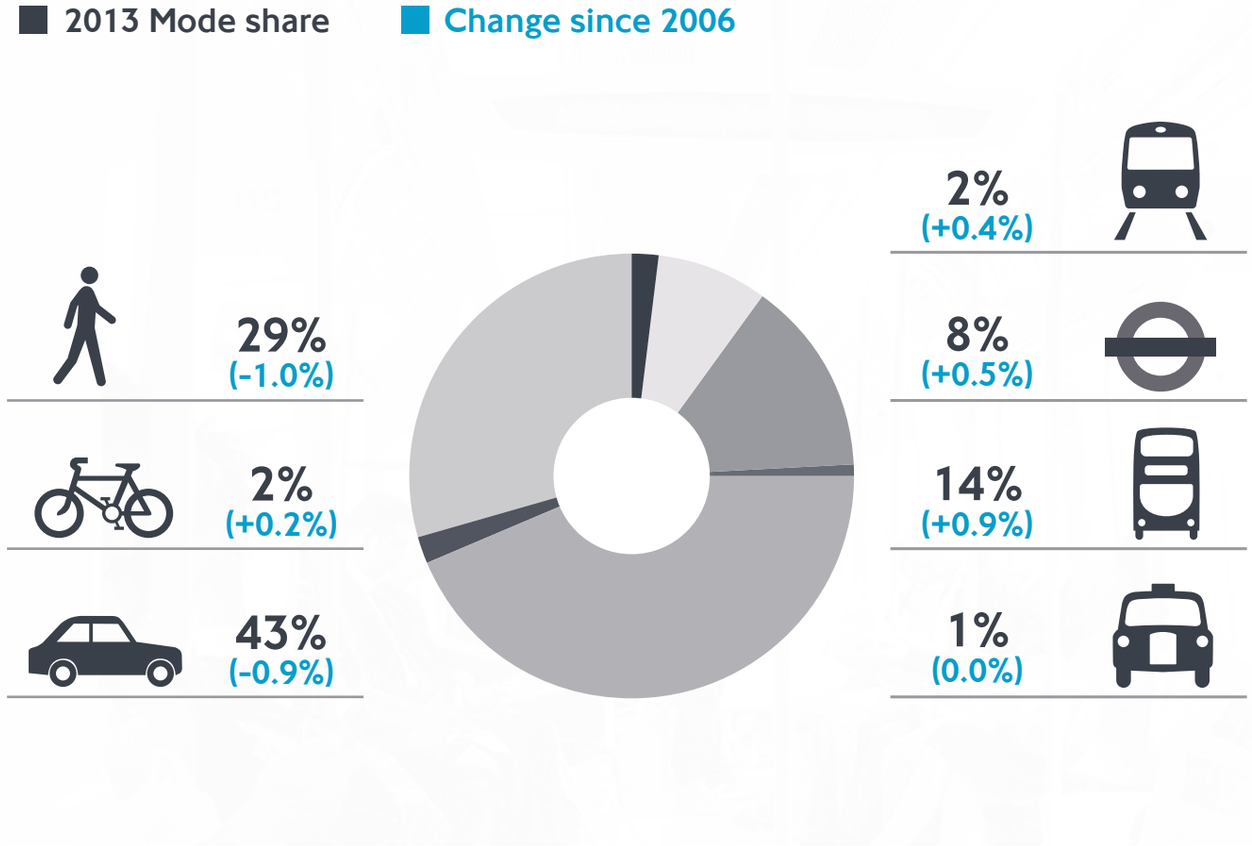

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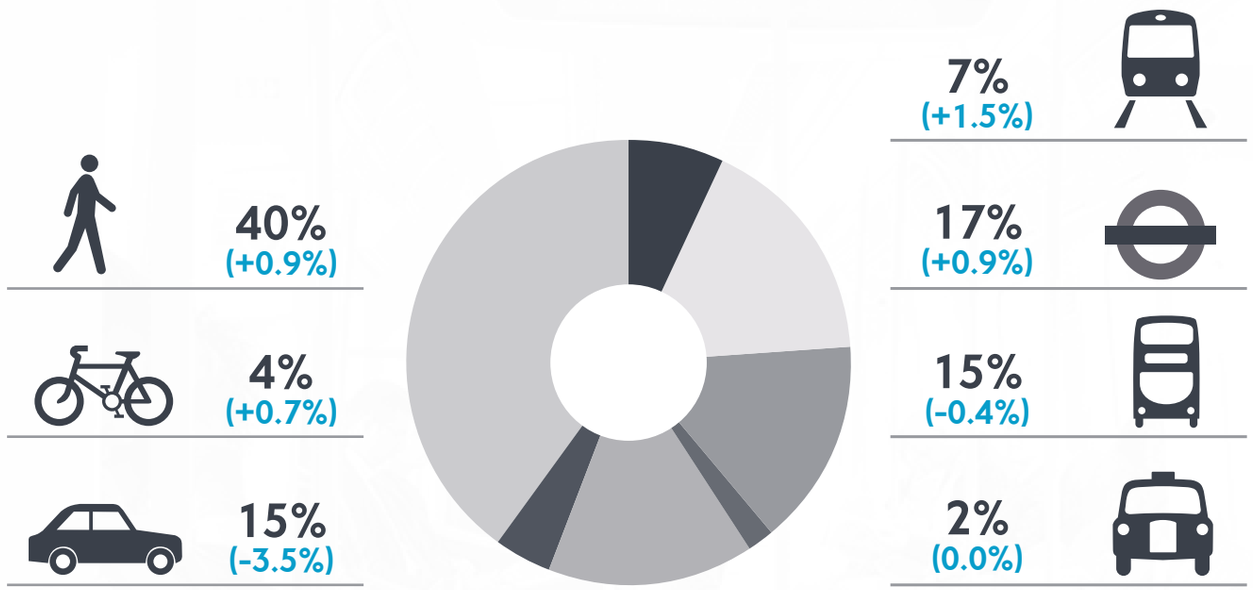

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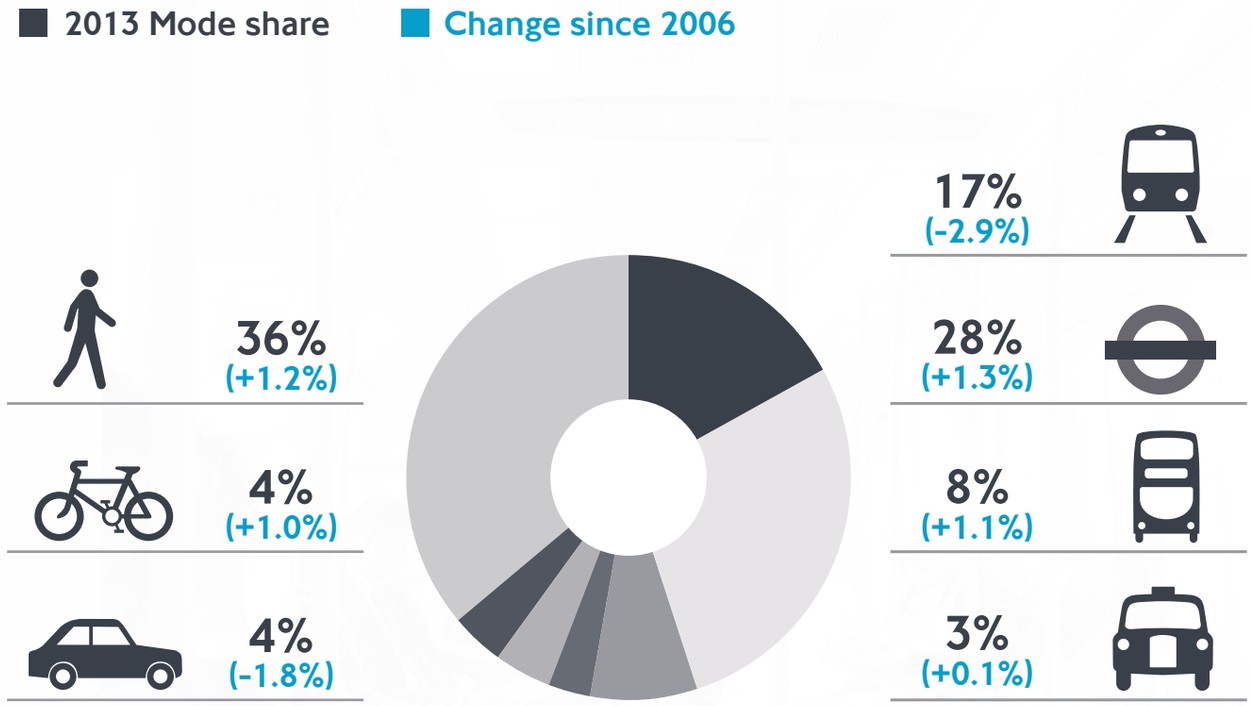

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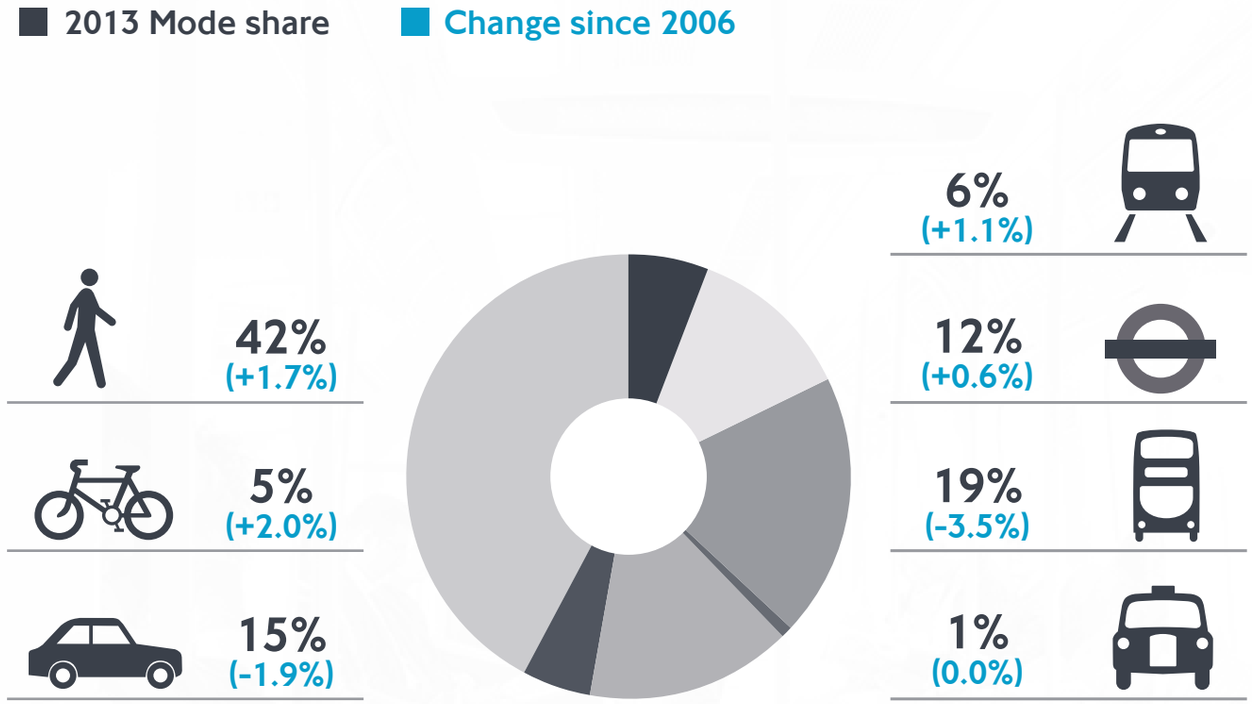

London | Central | South | East & SE | North | West

Camden | City of London | Islington | Kensington and Chelsea | Lambeth | Southwark | Westminster

There has been significant shift from car to active modes, as well as to rail services, particularly Underground. But bus mode share has fallen

The sub-region has the lowest share of trips made by car, with just 16% of all journeys made using this mode. There has been a significant decline in the share of trips made by car, falling by 4.6% percentage points

The share of National Rail trips, at 8%, is the highest of any sub-region, whilst the share of Underground trips, at 16% is twice as high as the London average. However, whilst the increase in Underground mode share has been higher than the London average, National Rail growth has been below.

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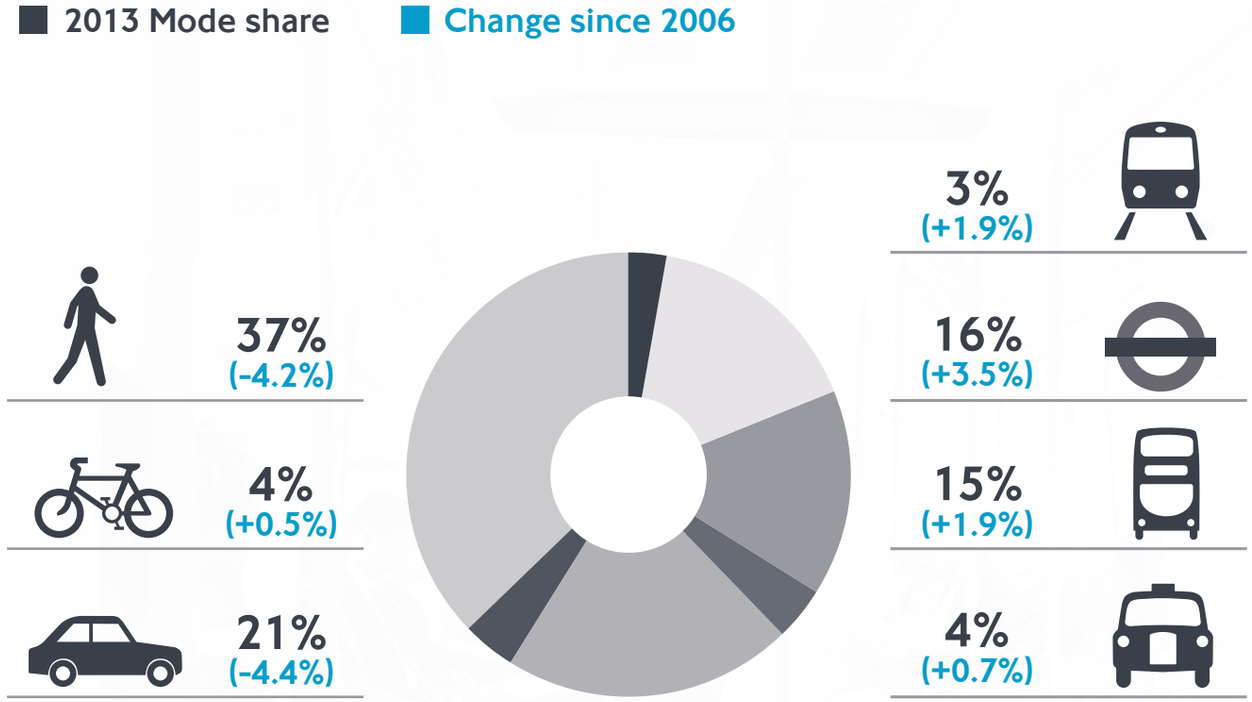

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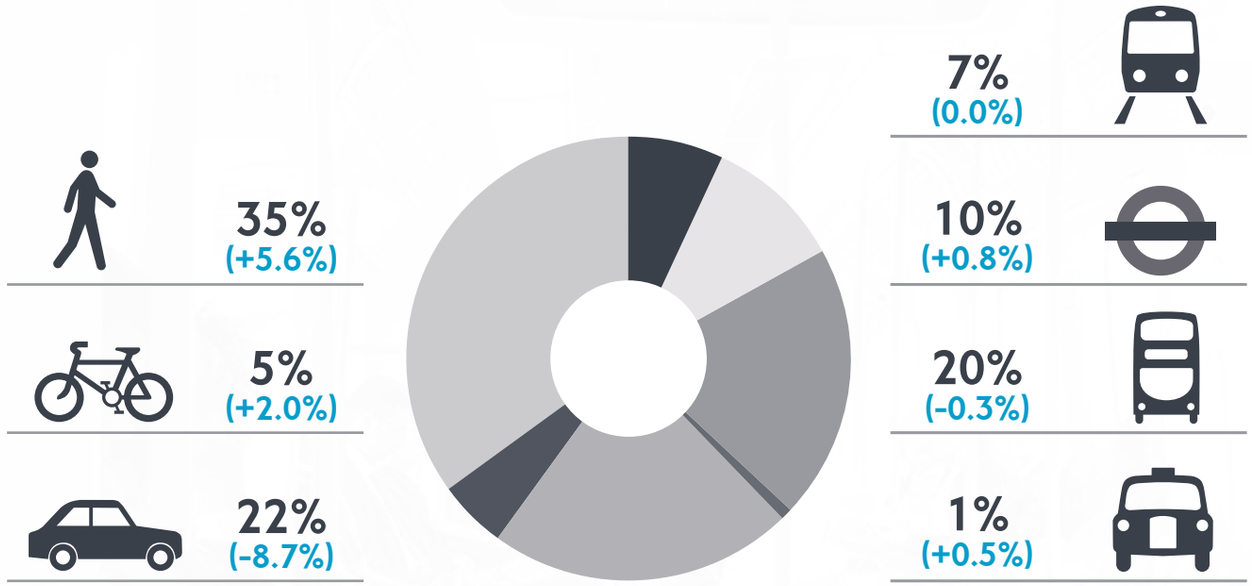

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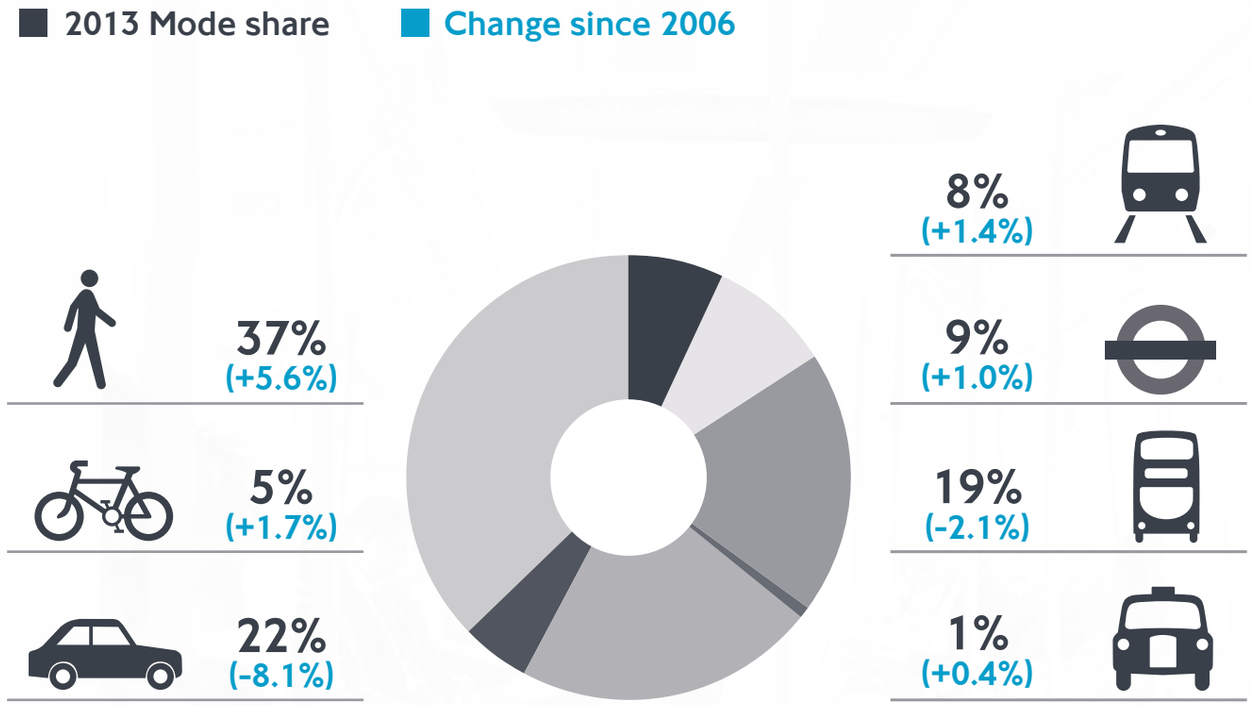

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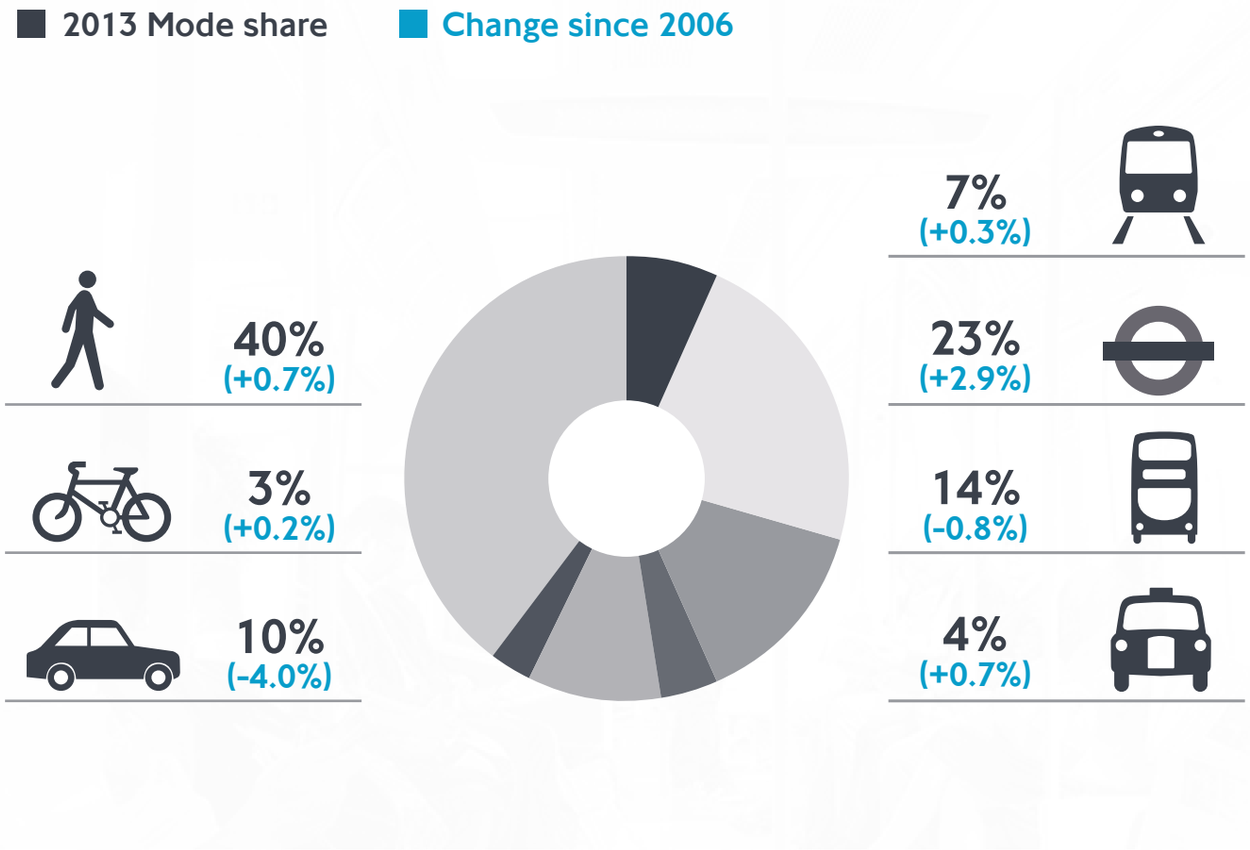

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Central London has seen strong growth in the number of people walking and cycling

The number of walking trips has increased by over 60% in Lambeth and Southwark. Only Westminster and Kensington and Chelsea saw a slight decline in the number of walking trips.

Enabling the sub-region's residents to make their journeys by cycling and walking will be key to reducing highway congestion as the population continues to grow. Key to this will be the provision of an extensive network of cycle routes to allow simpler and safer access to and around London and local town centres.

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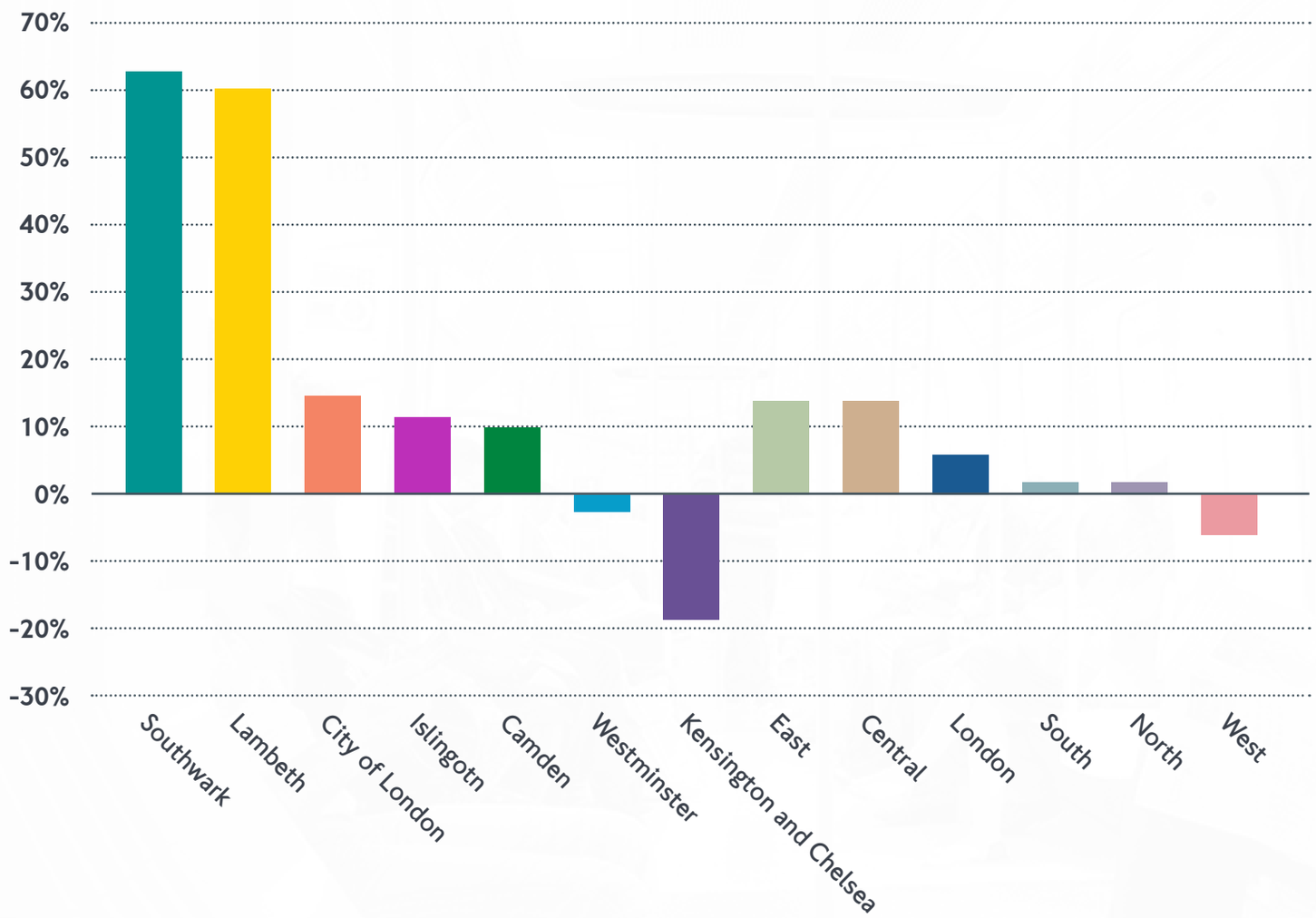

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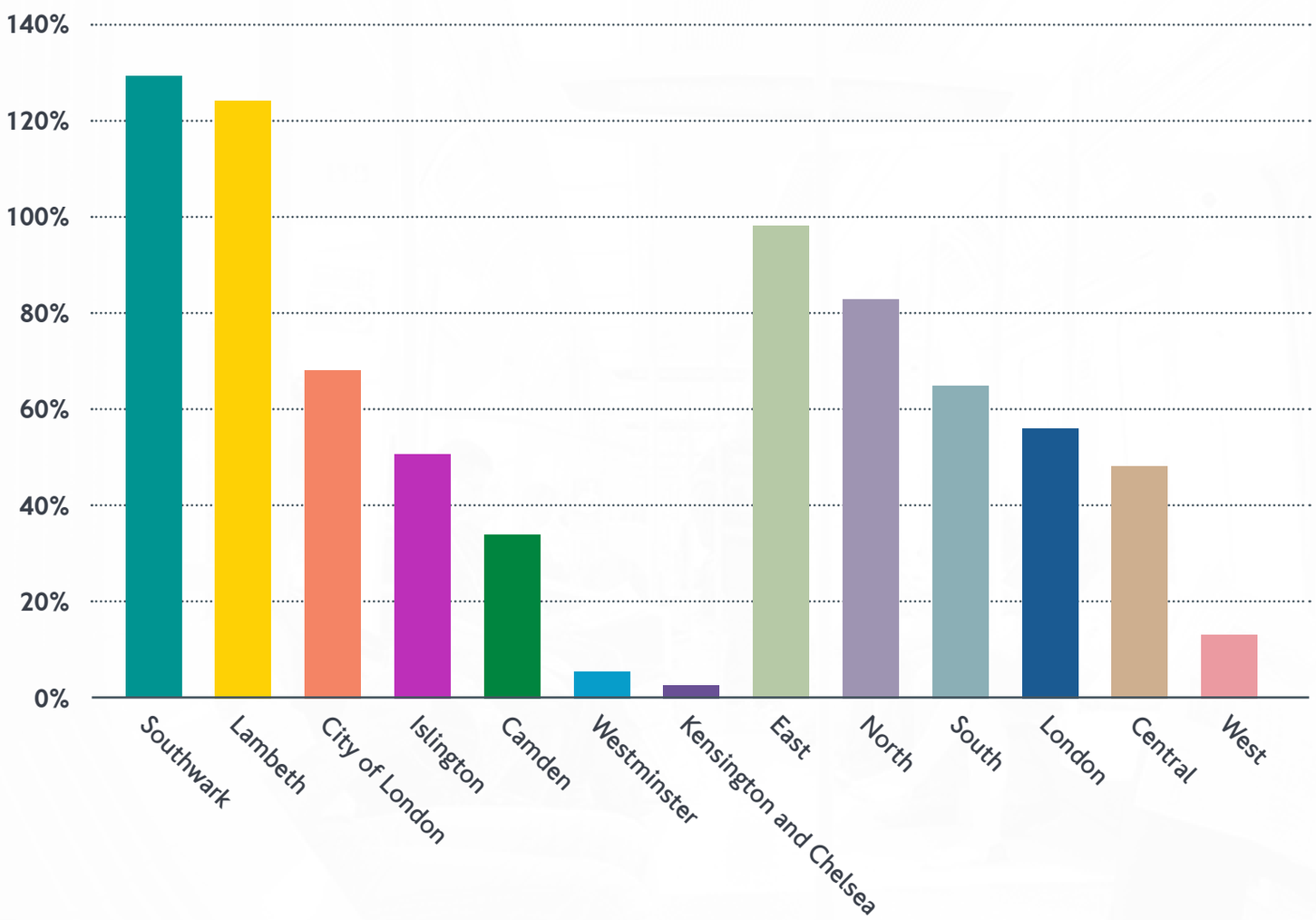
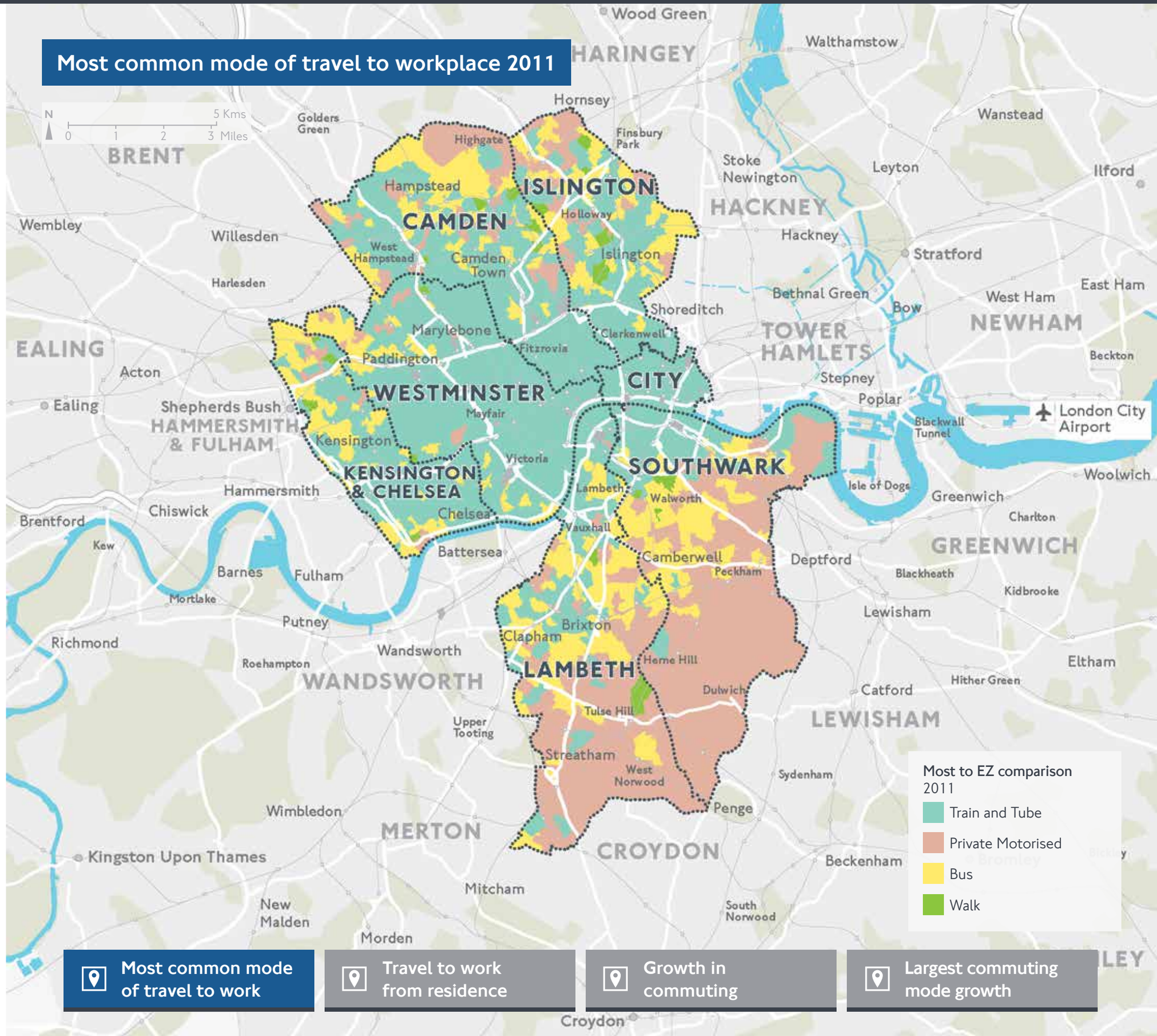


There has been strong growth in commuting journeys by active modes and rail

Train and tube are the most popular modes of travel to work across the sub-region, although walking is very popular in central London, whilst the bus is common in Southwark, where the rail network is less extensive. There are still some areas of Southwark and Lambeth where the car is the most common mode of travel to workplaces based here.



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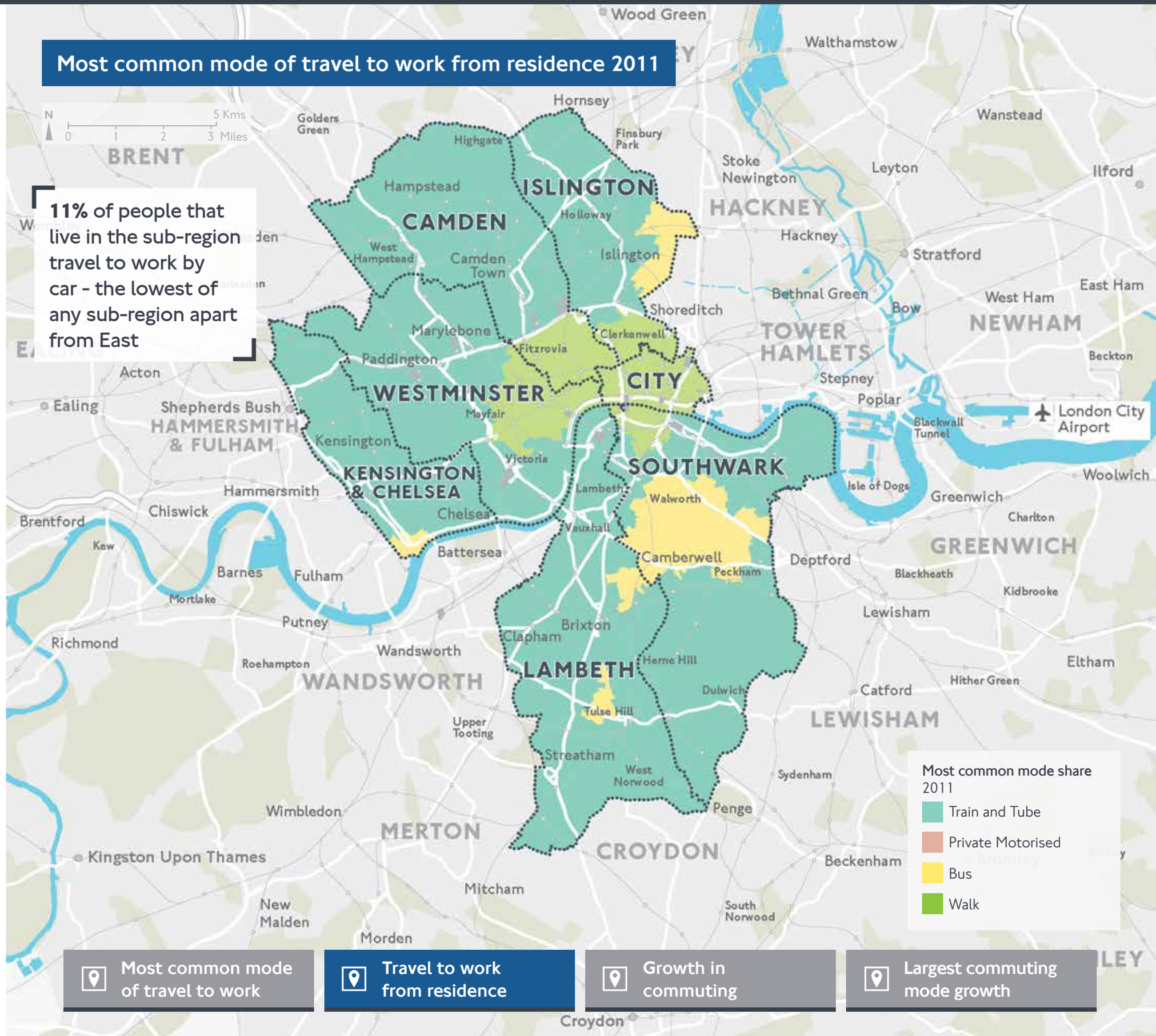

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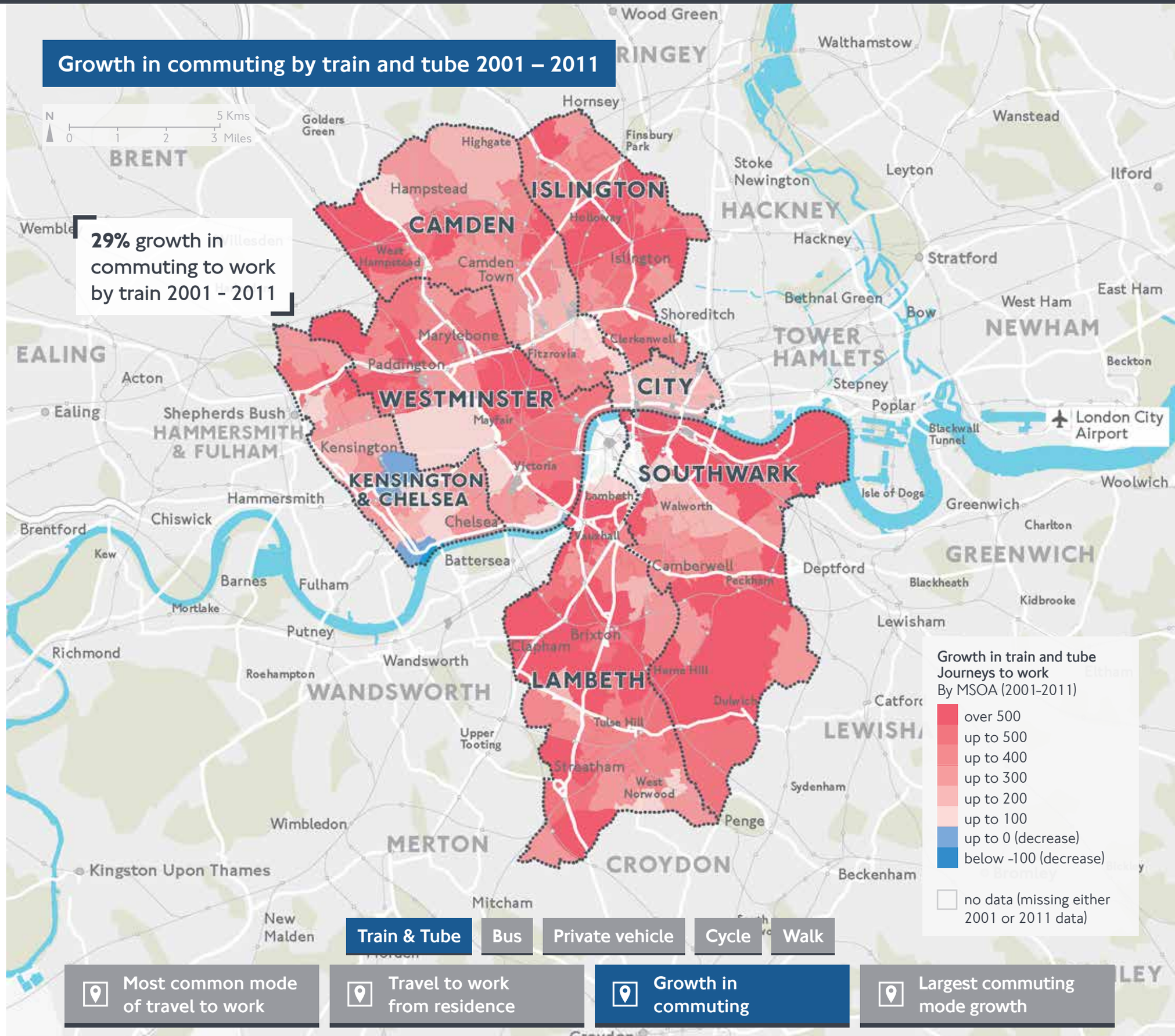
Growth in commuting by train and tube 2001 – 2011



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Growth in commuting by bus 2001 – 2011

N
0 1 2 3 5 Kms Miles

50% growth in commuting to work by bus 2001 - 2011

Growth in bus journeys to work
By MSOA (2001-2011)
- over 500
- up to 500
- up to 400
- up to 300
- up to 200
- up to 100
- up to 0 (decrease)
- below -100 (decrease)
- no data (missing either 2001 or 2011 data)

Train & Tube | **Bus** | Private vehicle | Cycle | Walk

Most common mode of travel to work | Travel to work from residence | **Growth in commuting** | Largest commuting mode growth

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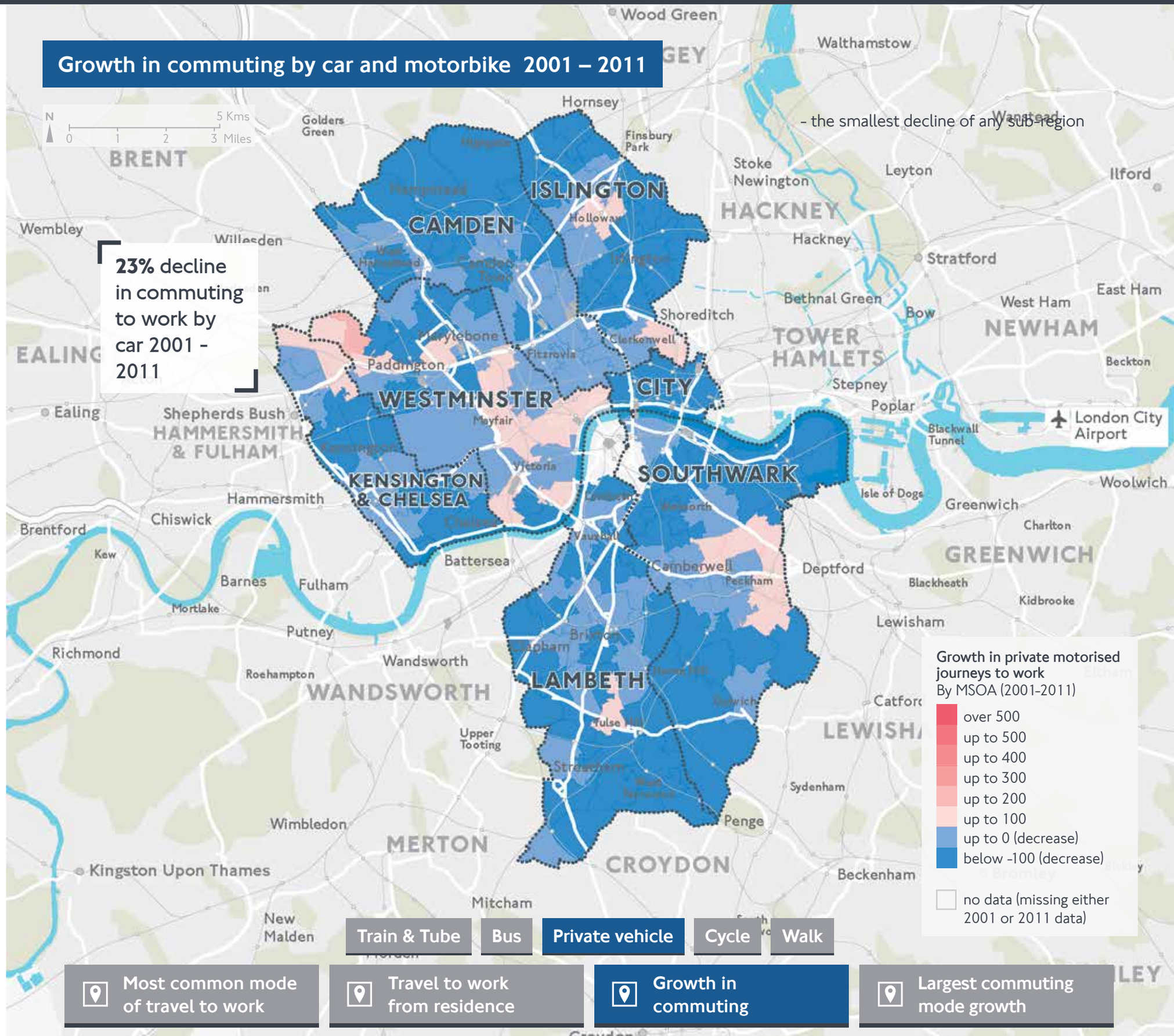
Growth in commuting by car and motorbike 2001 – 2011

23% decline in commuting to work by car 2001 - 2011

- the smallest decline of any sub-region



Growth in private motorised journeys to work
By MSOA (2001-2011)

- over 500
- up to 500
- up to 400
- up to 300
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- up to 100
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Train & Tube | Bus | **Private vehicle** | Cycle | Walk

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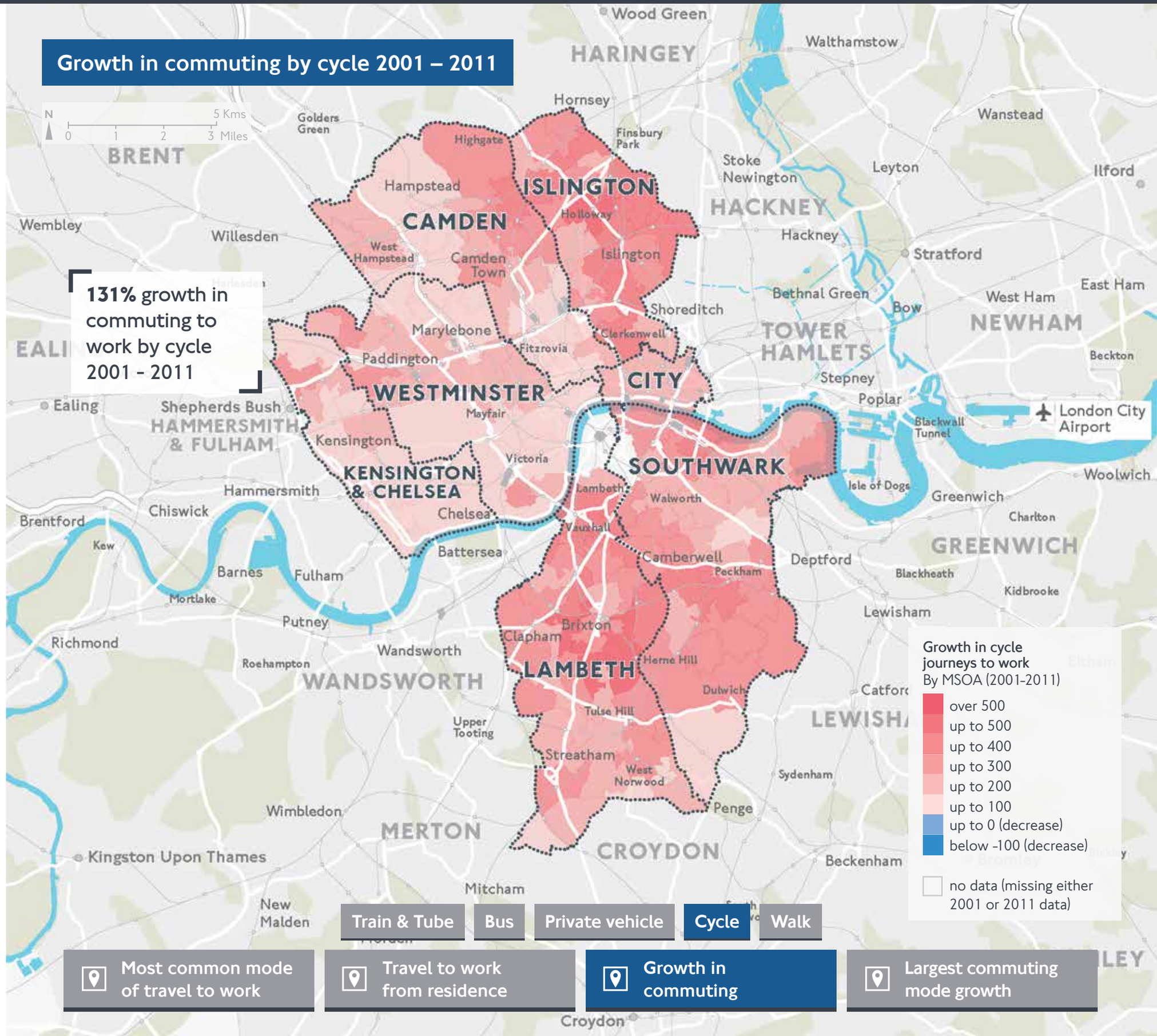

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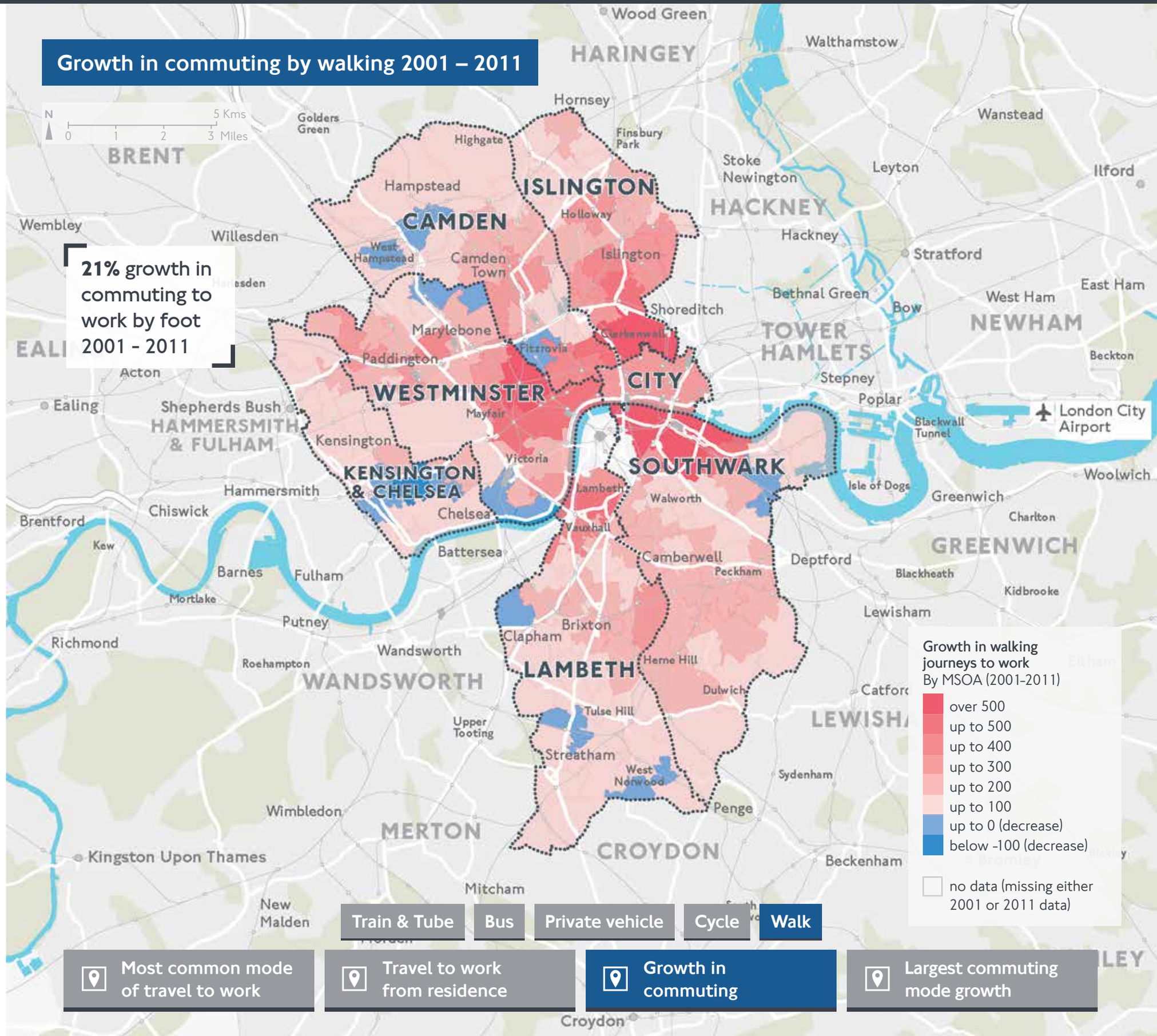

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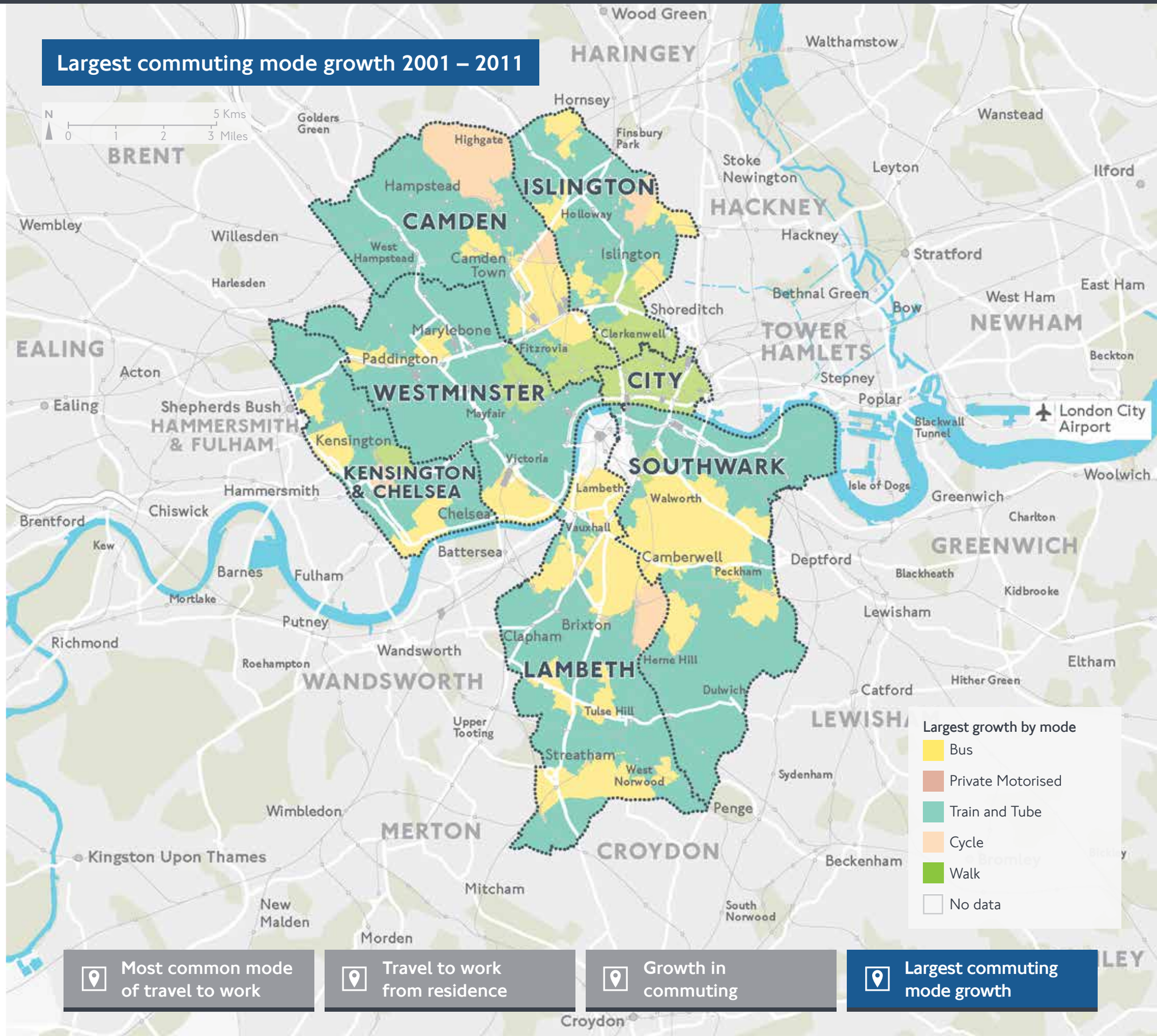

Car availability is declining as people switch modes. Potential exists for further mode shift, particularly in more denser areas

As residents have switched to public transport, car ownership levels have declined across all Boroughs, but particularly in Southwarkand Islington, which have seen the greatest mode shift to bus and rail.

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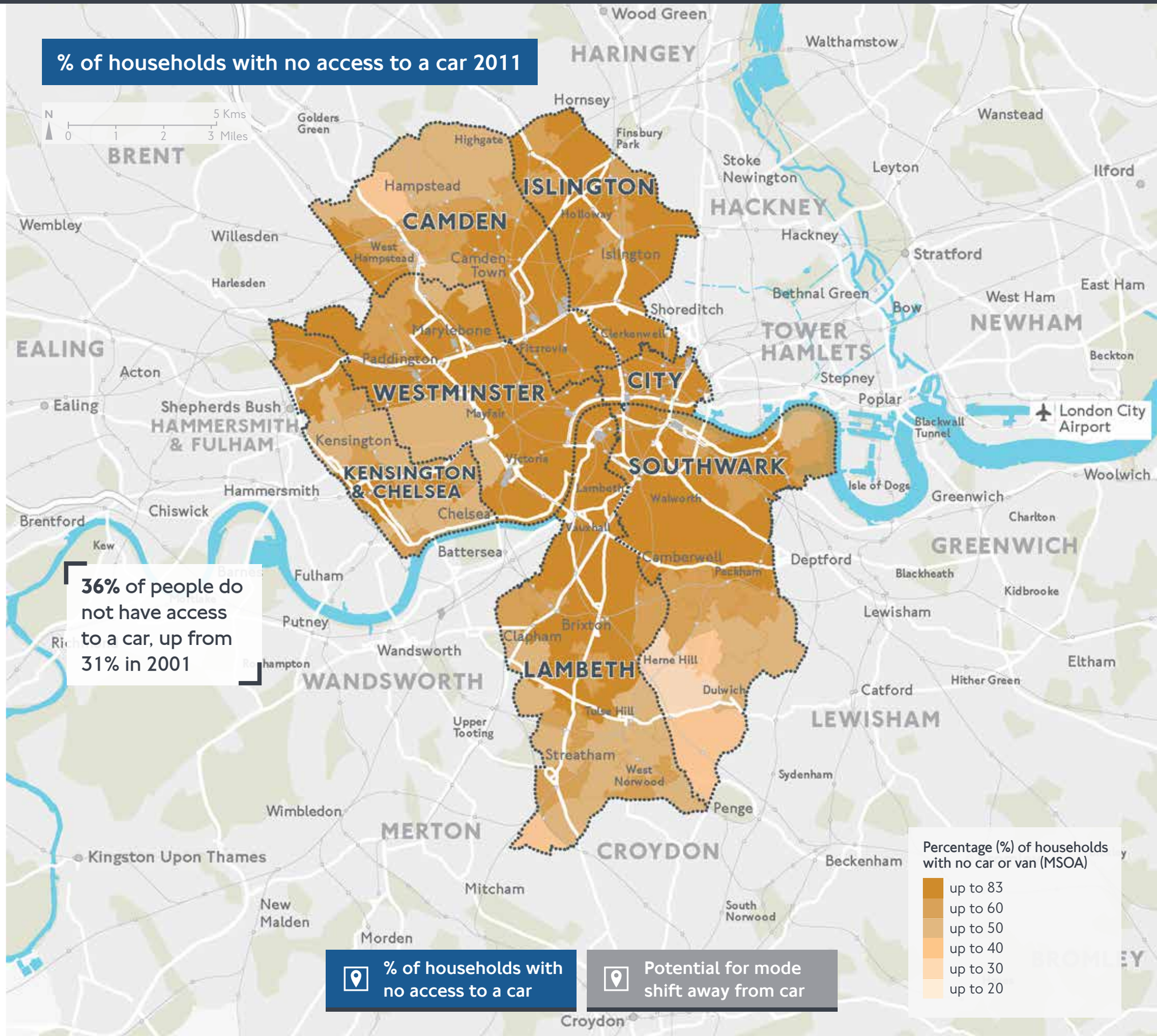

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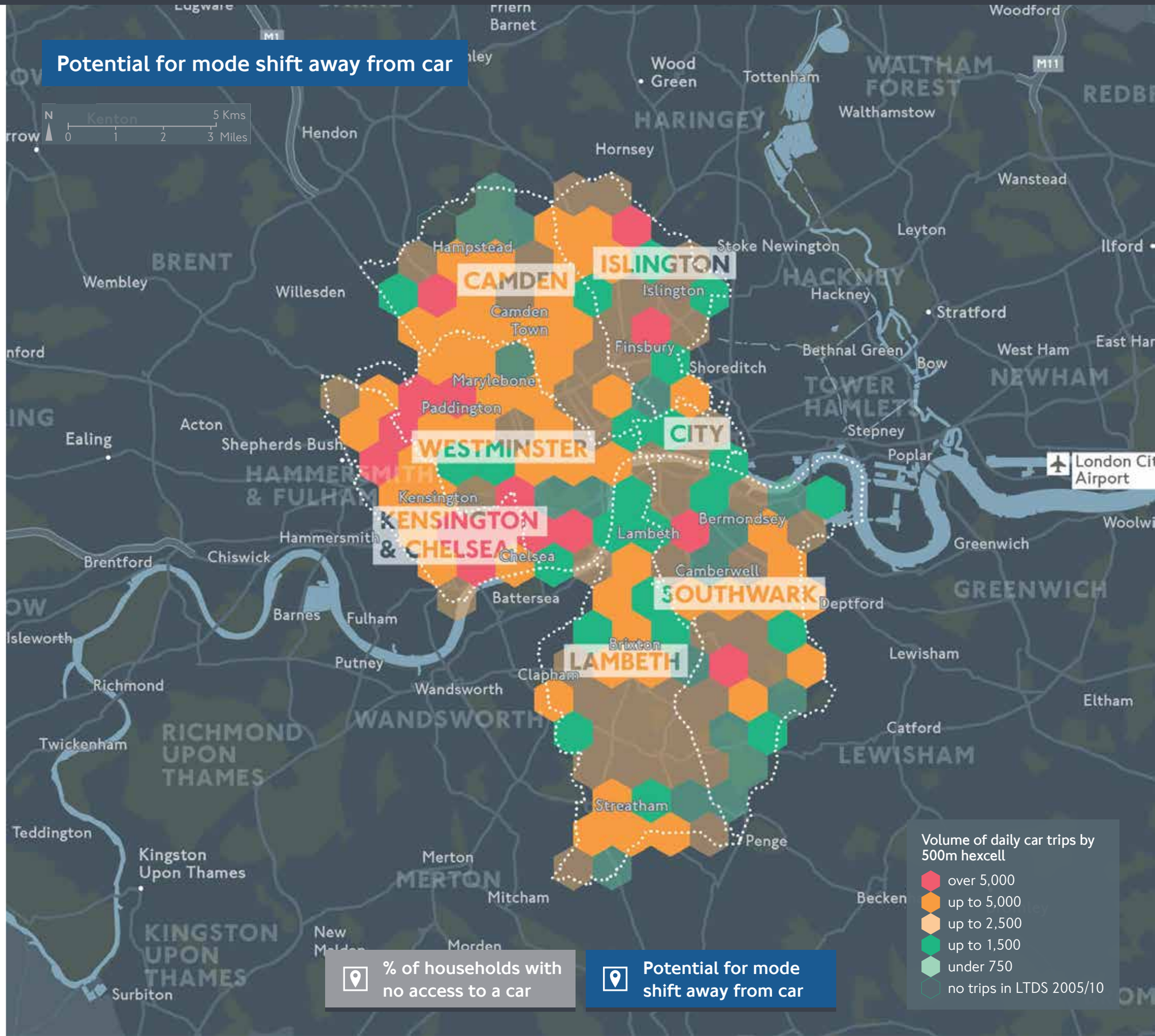

Network capacity and connectivity ›

Significant parts of the rail network are already overcrowded, causing passenger discomfort and potentially restraining economic growth

The sub-region is well served by the Underground and National Rail network. However, large parts of the network are already very crowded, leading to stations to be closed on a regular basis.

There are a number of radial National Rail routes in the sub-region, with crowding levels relatively low for suburban stopping services. However, National Rail services generally do not provide as frequent a service as the Underground. Frequency is a key component of the overall perception of the quality of service and low levels of frequency can make an area seem less connected, therefore restricting the potential for future housing and employment growth.

Improving the frequency and quality of service of National Rail lines will be key to maximising the growth potential of the sub-region.

Underground and DLR crowding 2011

Underground and DLR crowding 2011 | National Rail crowding 2011 | Station frequency 2015

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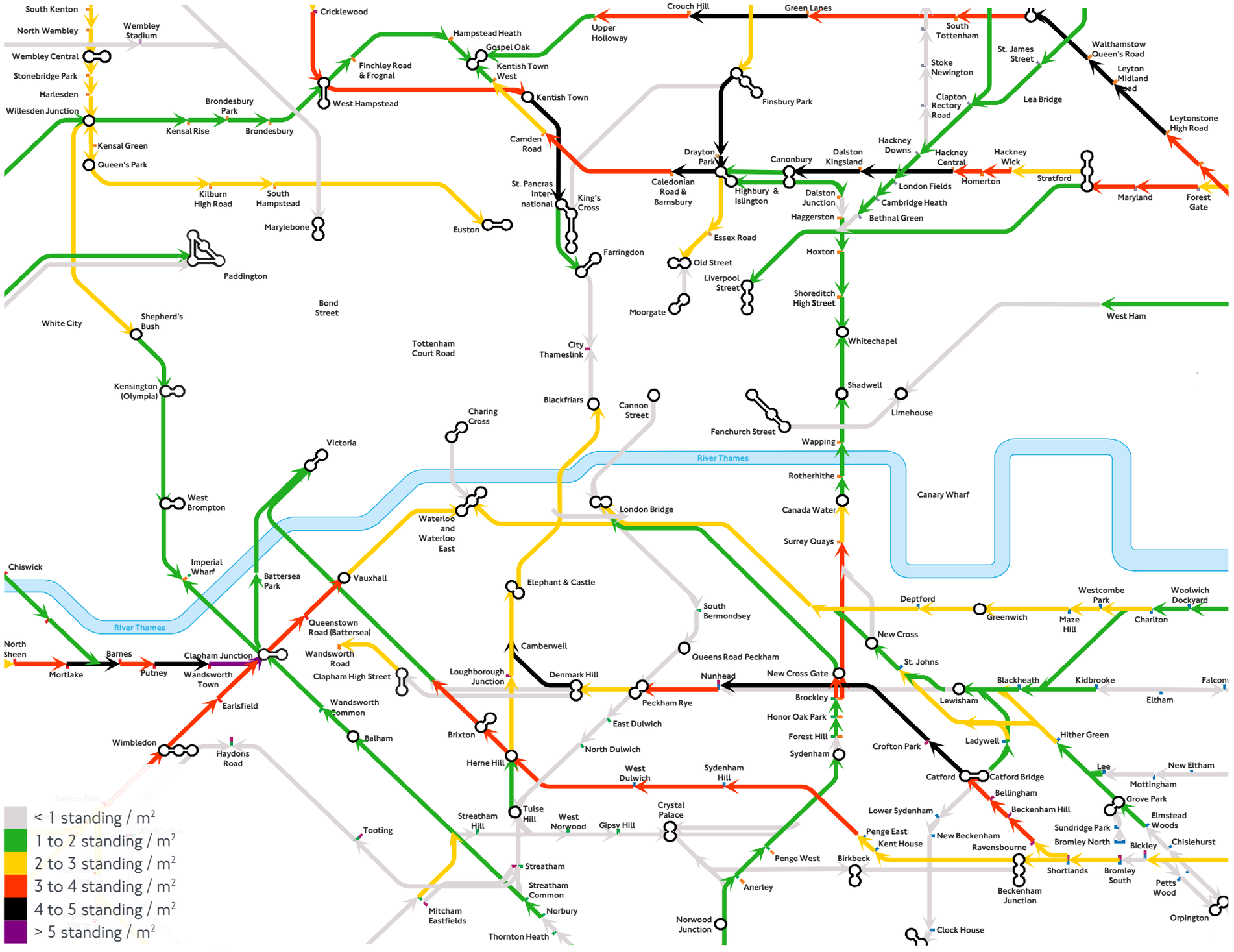

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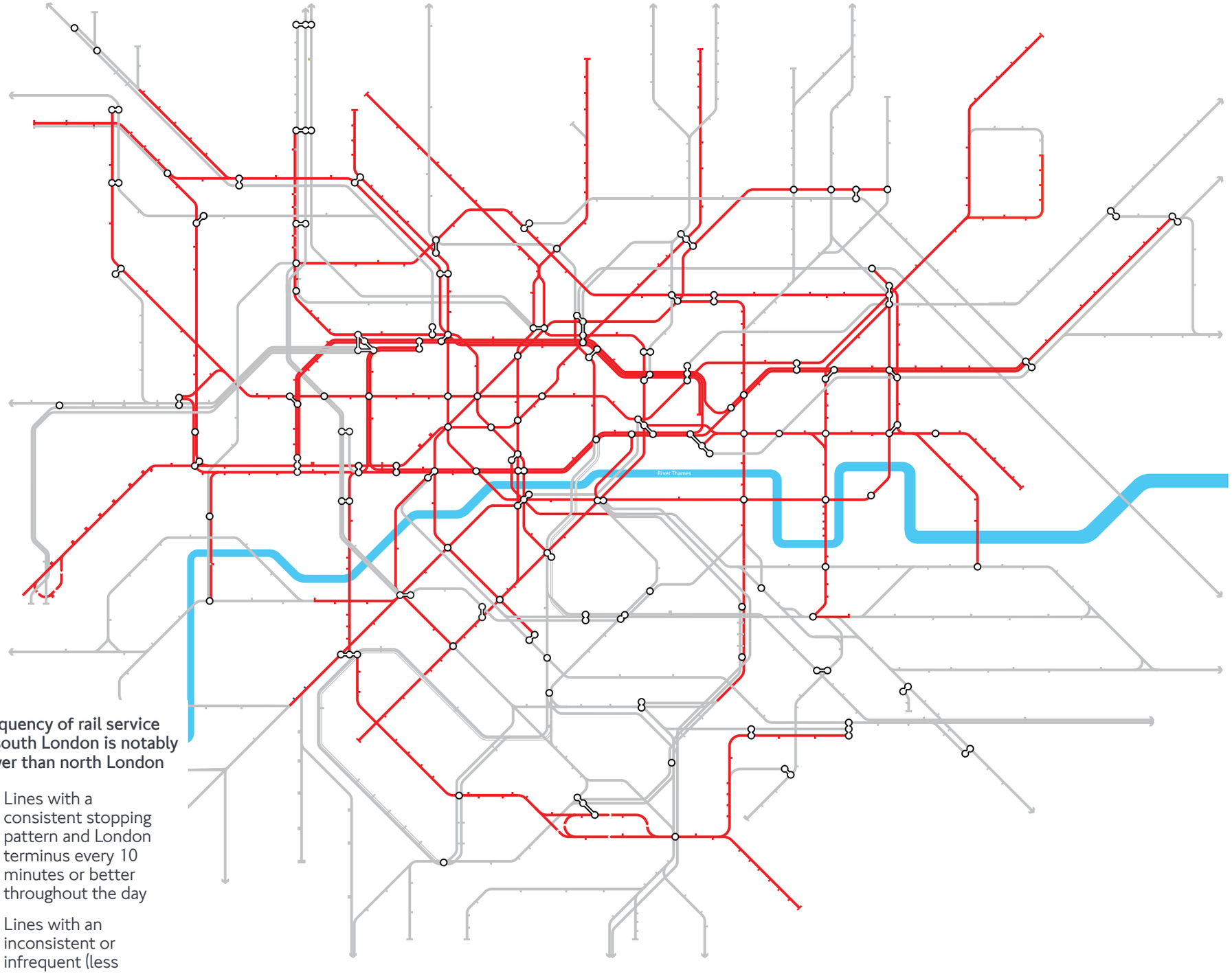


Frequency of rail service in south London is notably lower than north London

- Lines with a consistent stopping pattern and London terminus every 10 minutes or better throughout the day
- Lines with an inconsistent or infrequent (less often than every 10 minutes) stopping pattern throughout the day

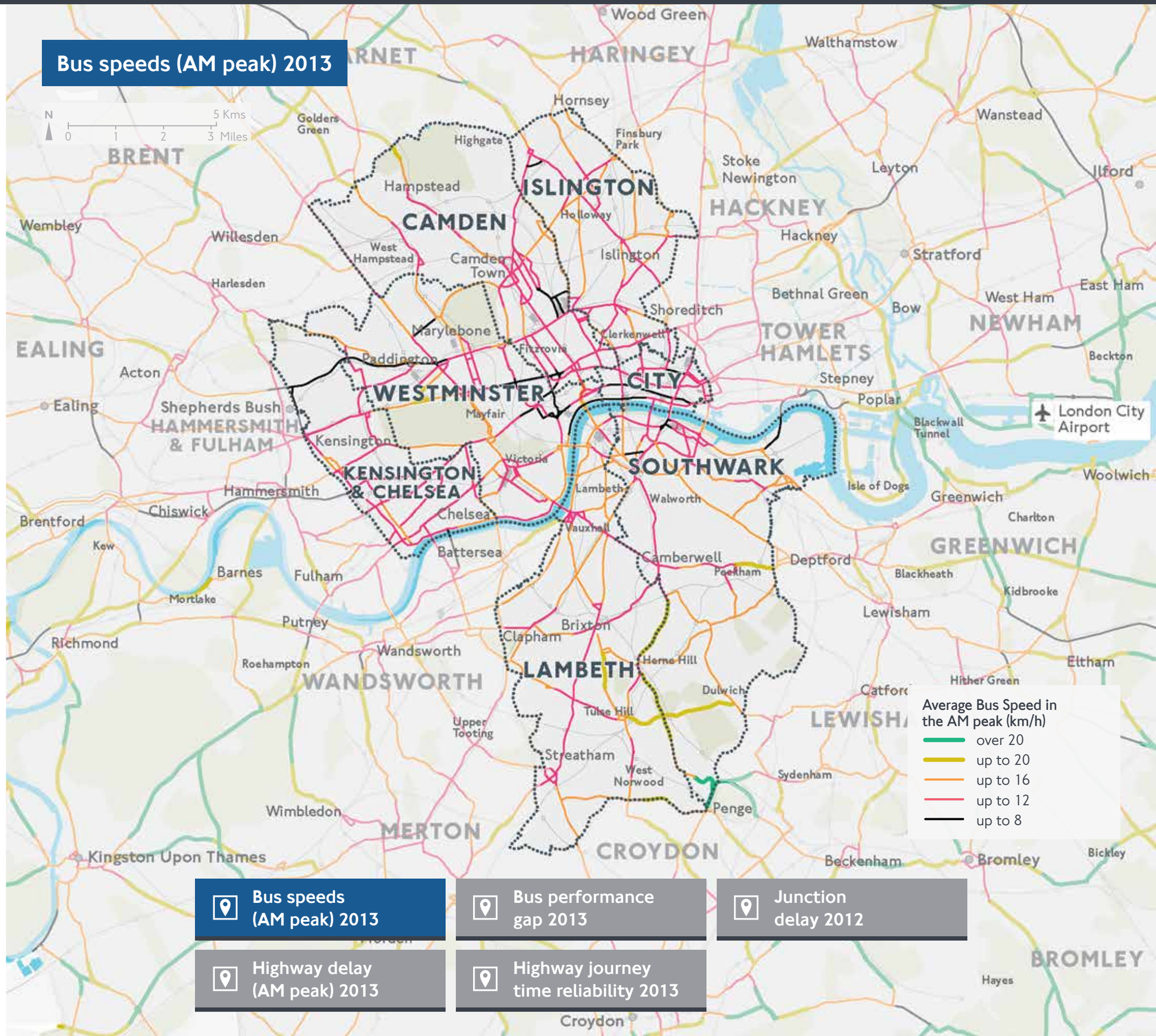
Underground and DLR crowding 2011 | National Rail crowding 2011 | Station frequency 2015

Increasing congestion has decreased journey time reliability at key locations, and has increased bus wait times significantly

Highway delays and congestion are a significant problem across the sub-region and affect access to a number of key radial and orbital routes. This may constrain employment growth in these locations, as congestion and poor journey time reliability adds costs to business operations and restricts accessibility to potential customers and suppliers. Continued employment and population growth have meant that congestion has increased in recent years.

Over the past ten years excess wait time for high-frequency buses has continued to fall (and is now just over a minute on average). However, bus wait times have been relatively stable in the sub-region during the past two years, and increasing congestion is likely to increase them in the future without further action.

As London continues to grow there is a need to ensure that appropriate measures are taken to maintain attractive and reliable bus services.



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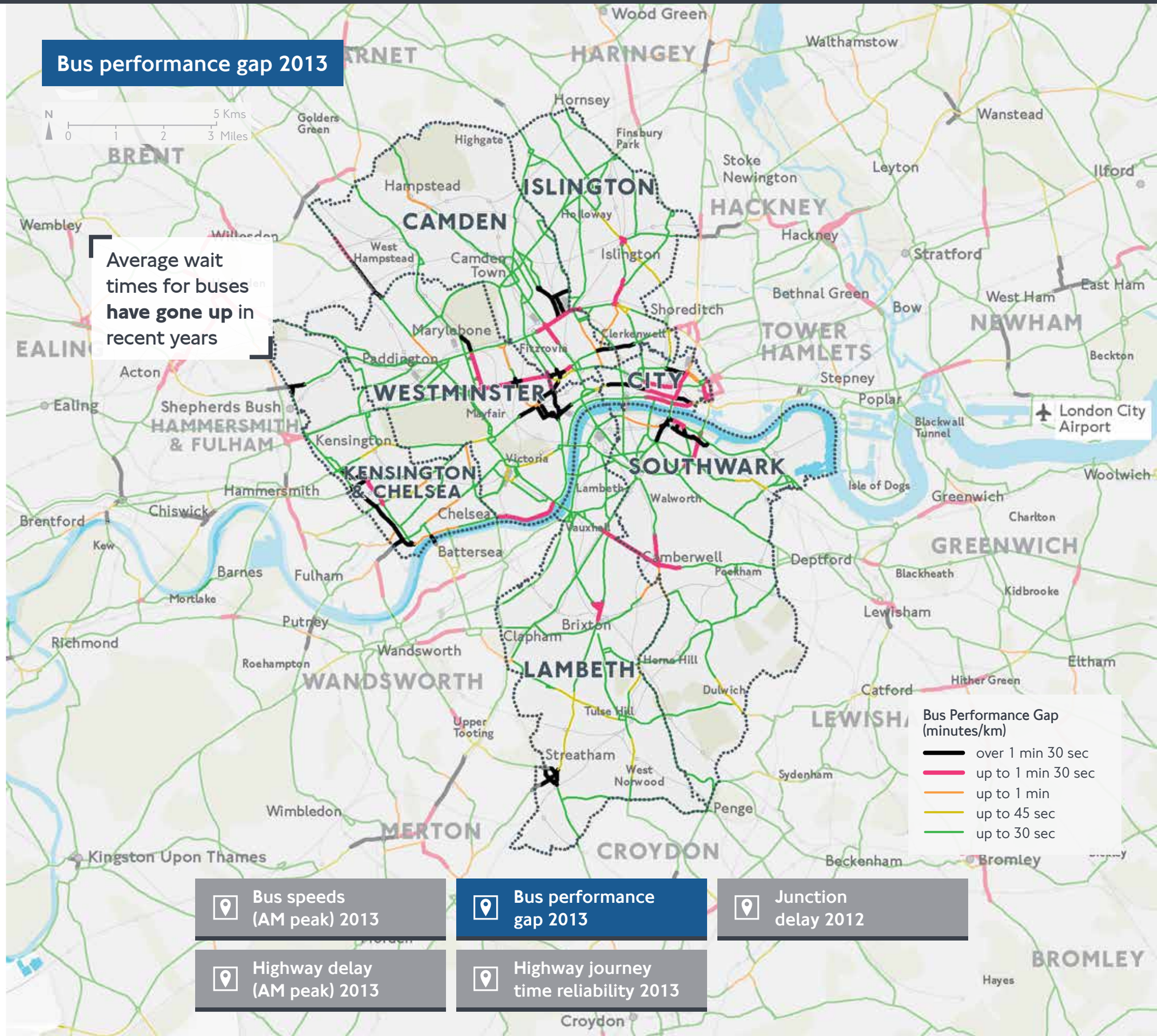

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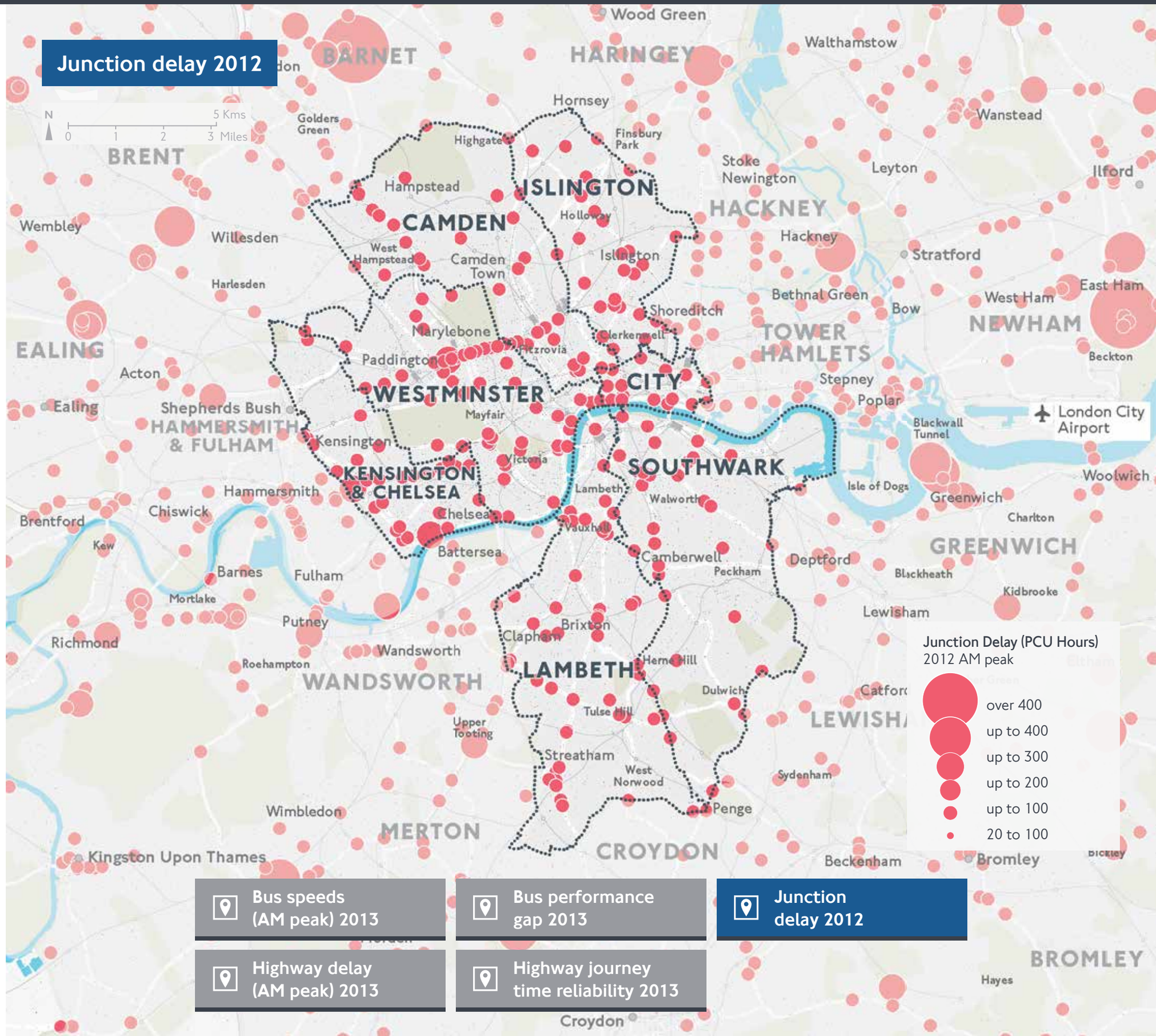

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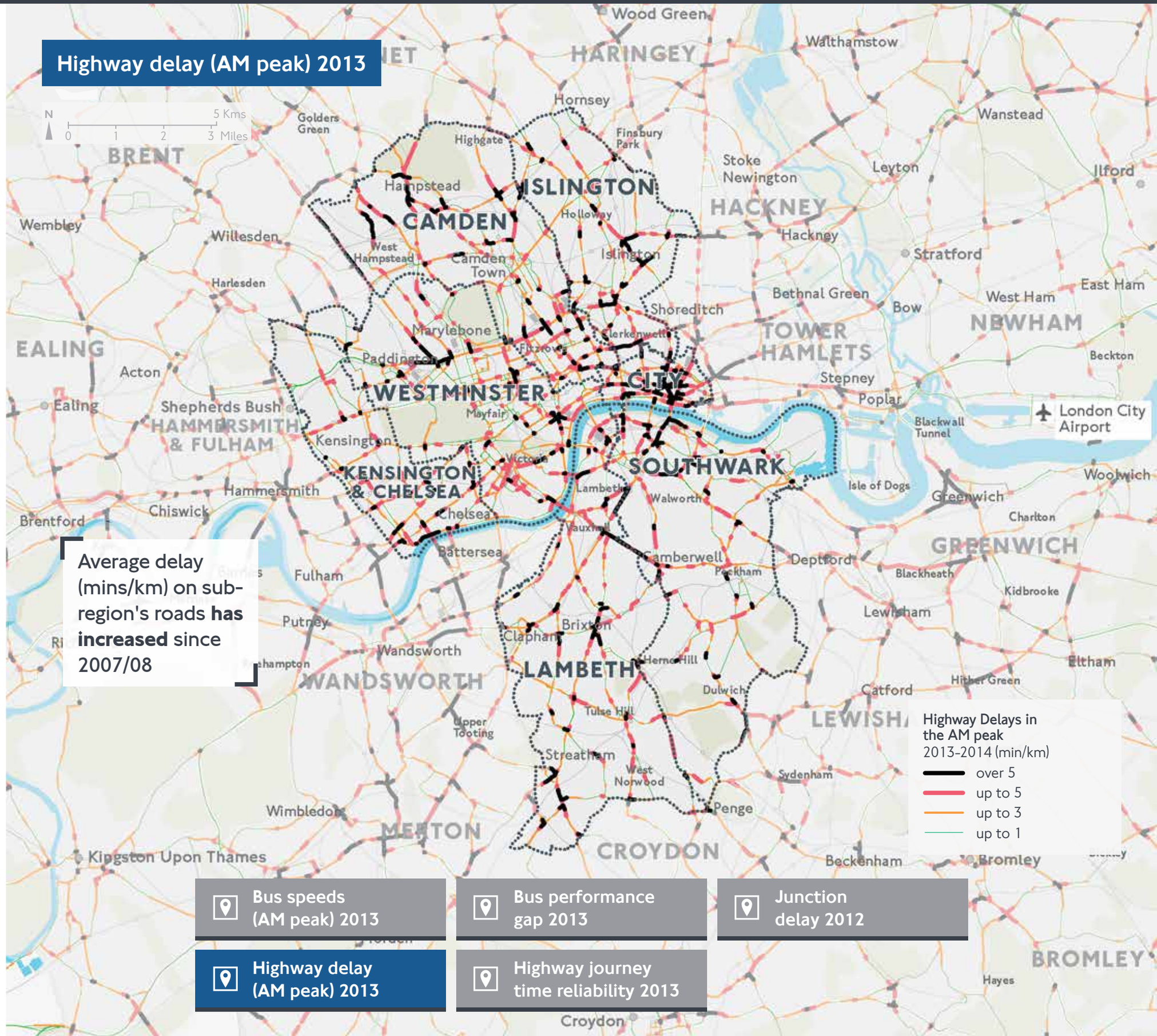

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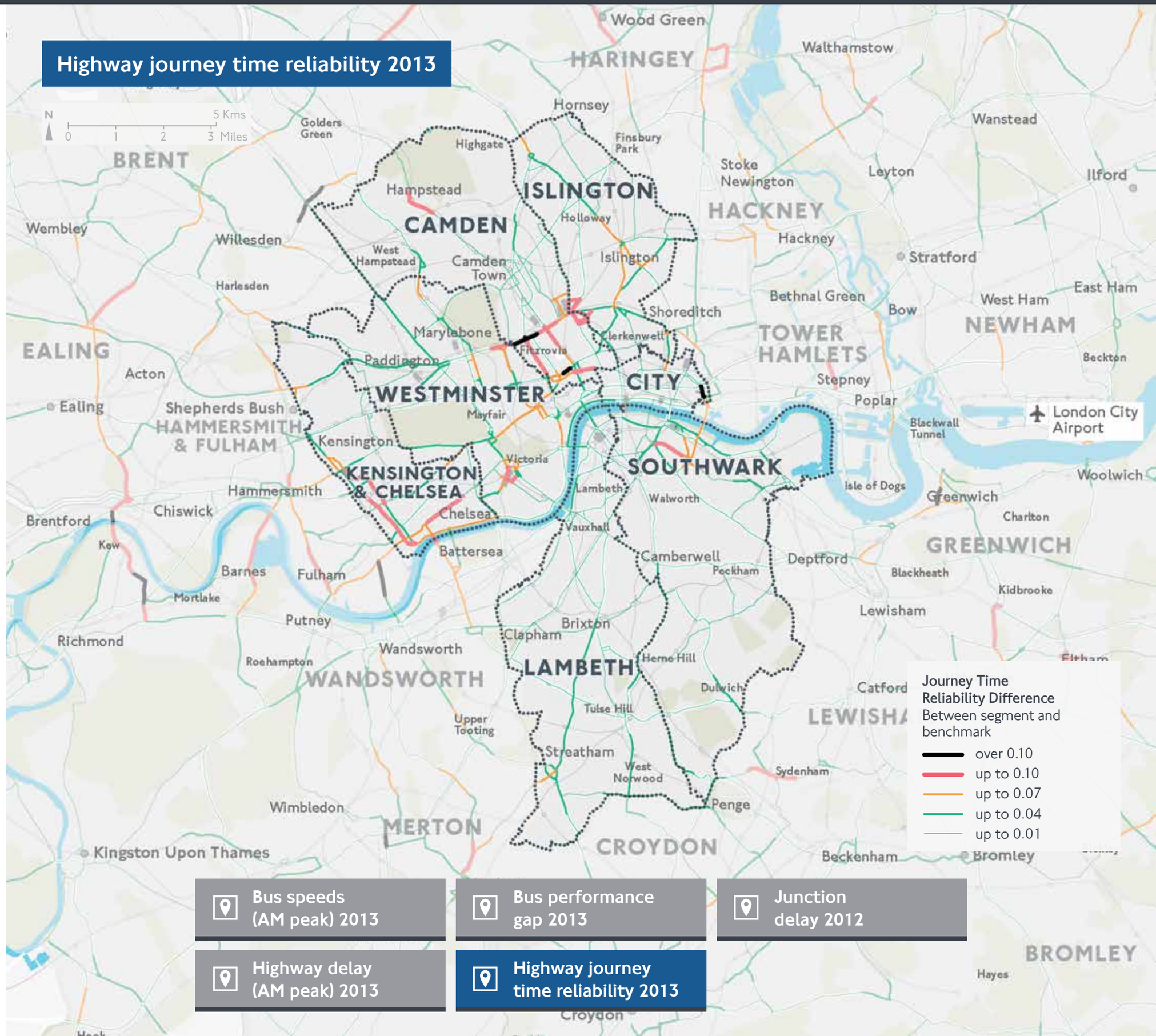
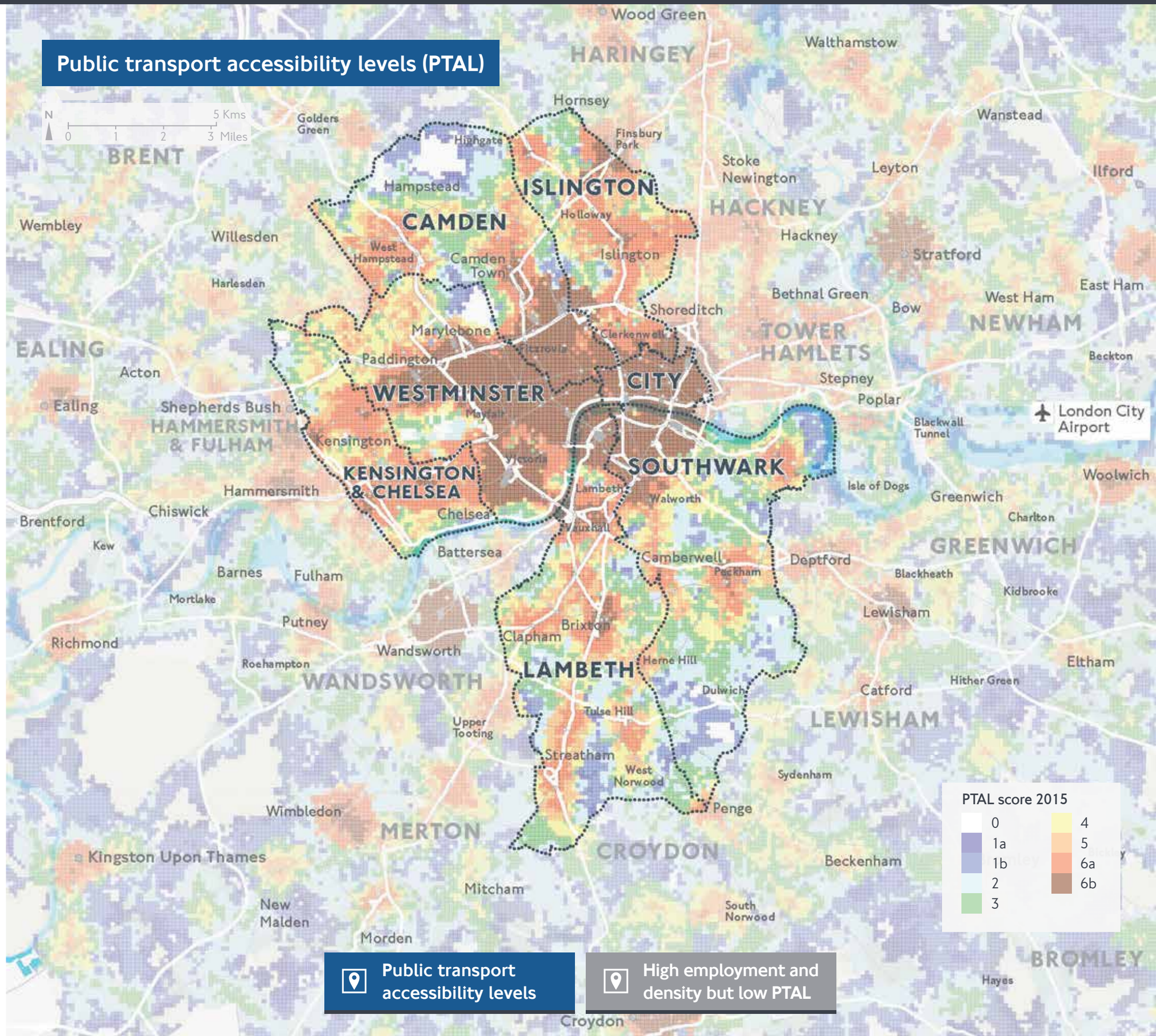


Some areas need improvements in public transport connectivity to support high levels of activity

Public Transport Accessibility Levels (PTALs) are based on the combination of the walk distance to the nearest public transport service and the wait time for that service. The extensive bus network plays a fundamental role in providing public transport connectivity throughout the sub-region, including orbital journeys and journeys to town centres, with rail supporting largely radial journeys.

Poor accessibility levels are located in parts of Southwark and Lambeth. There are some areas where total population and employment density is higher than would usually be expected for the PTAL level, particularly in Southwark. There may be opportunities to enhance public transport accessibility here, to enable faster journeys for those that already use bus and rail, and to encourage further mode shift away from the car and reduce congestion.



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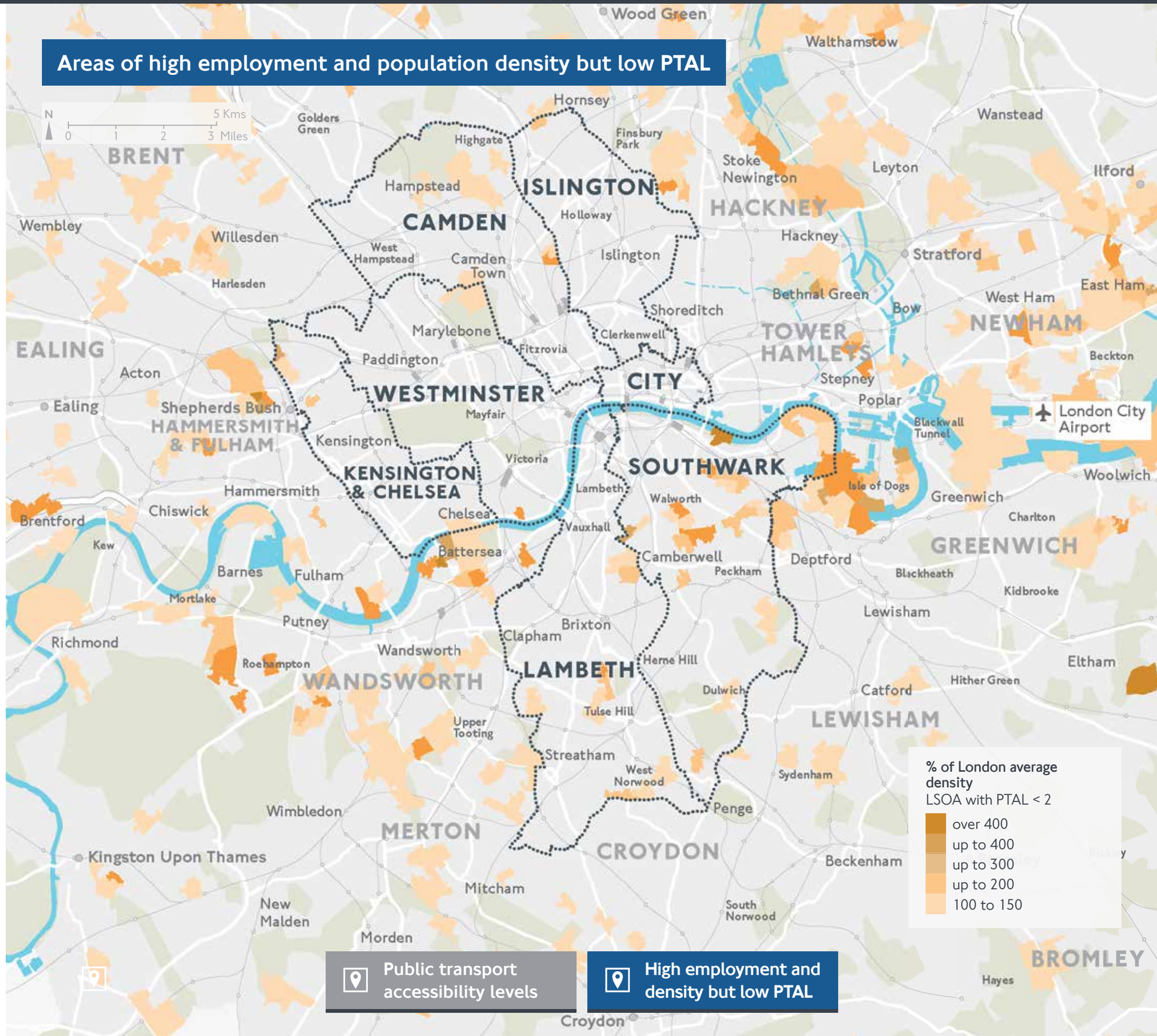
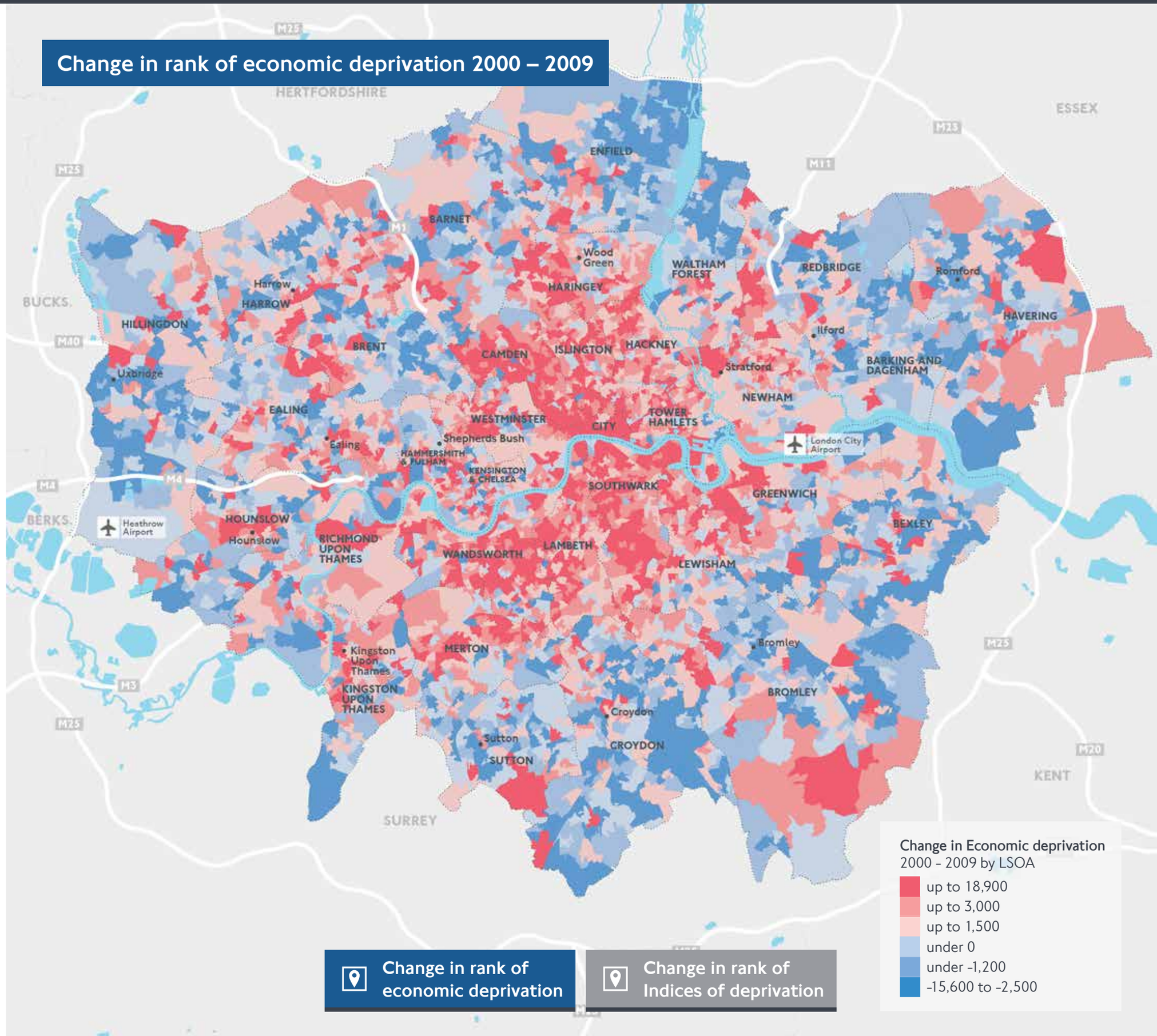


Liveability ›

Outer London has seen an increase in relative deprivation, whilst Inner London has improved

The pattern of deprivation in London is changing, with Inner London becoming less deprived and Outer London becoming more deprived in relative terms. The reasons for this are complex, but include an influx of well qualified, high earning people into Inner London, as well as housing affordability pressures pushing less affluent groups into Outer London.

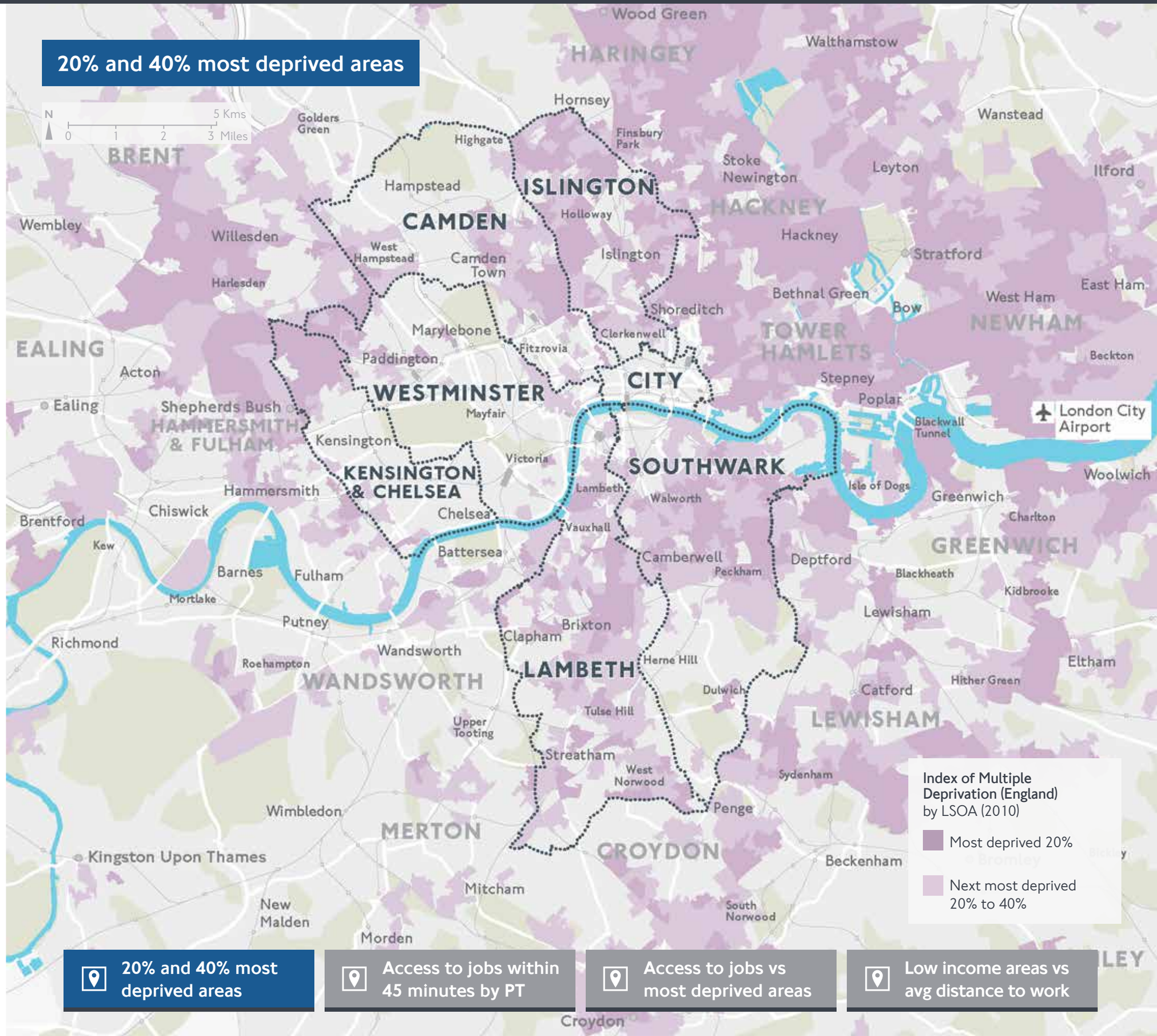
These changes are likely to impact on the demand for travel as people from less affluent socio-economic groups traditionally tend to travel more by bus than rail or Tube, with trips also typically more local.



There are a number of deprived areas in the sub-region where access to jobs could be improved

The Central sub-region contains some of the most deprived areas in England, with particular concentrations in Southwark and Lambeth, as well as parts of Camden and Islington.

Ensuring that residents of deprived areas have sufficient access to a range of suitable employment opportunities is key to tackling deprivation. At present, a large proportion of the sub-region's most deprived areas have access to fewer jobs by public transport within 45 minutes. This is particularly the case in southern parts of the sub-region.



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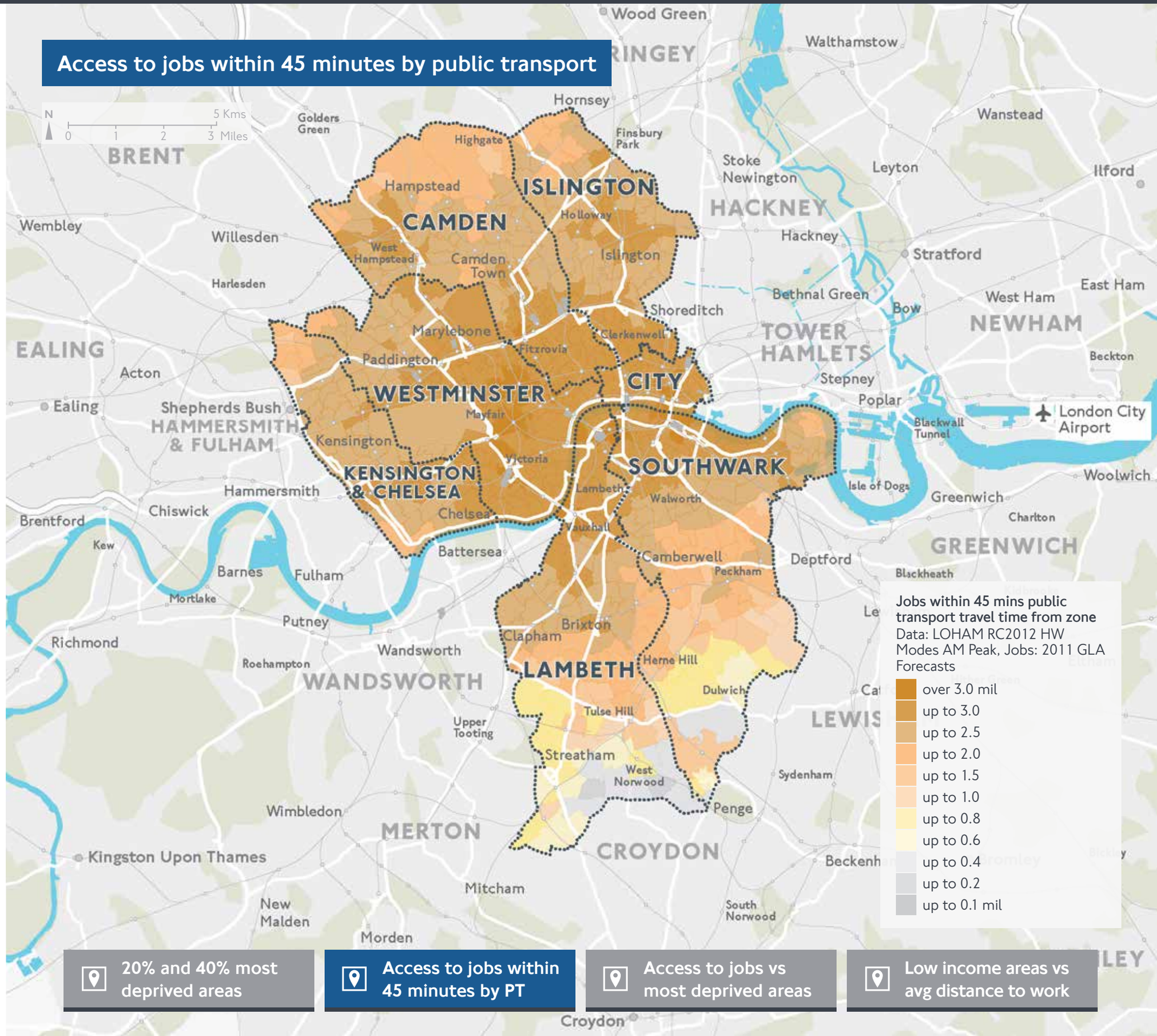

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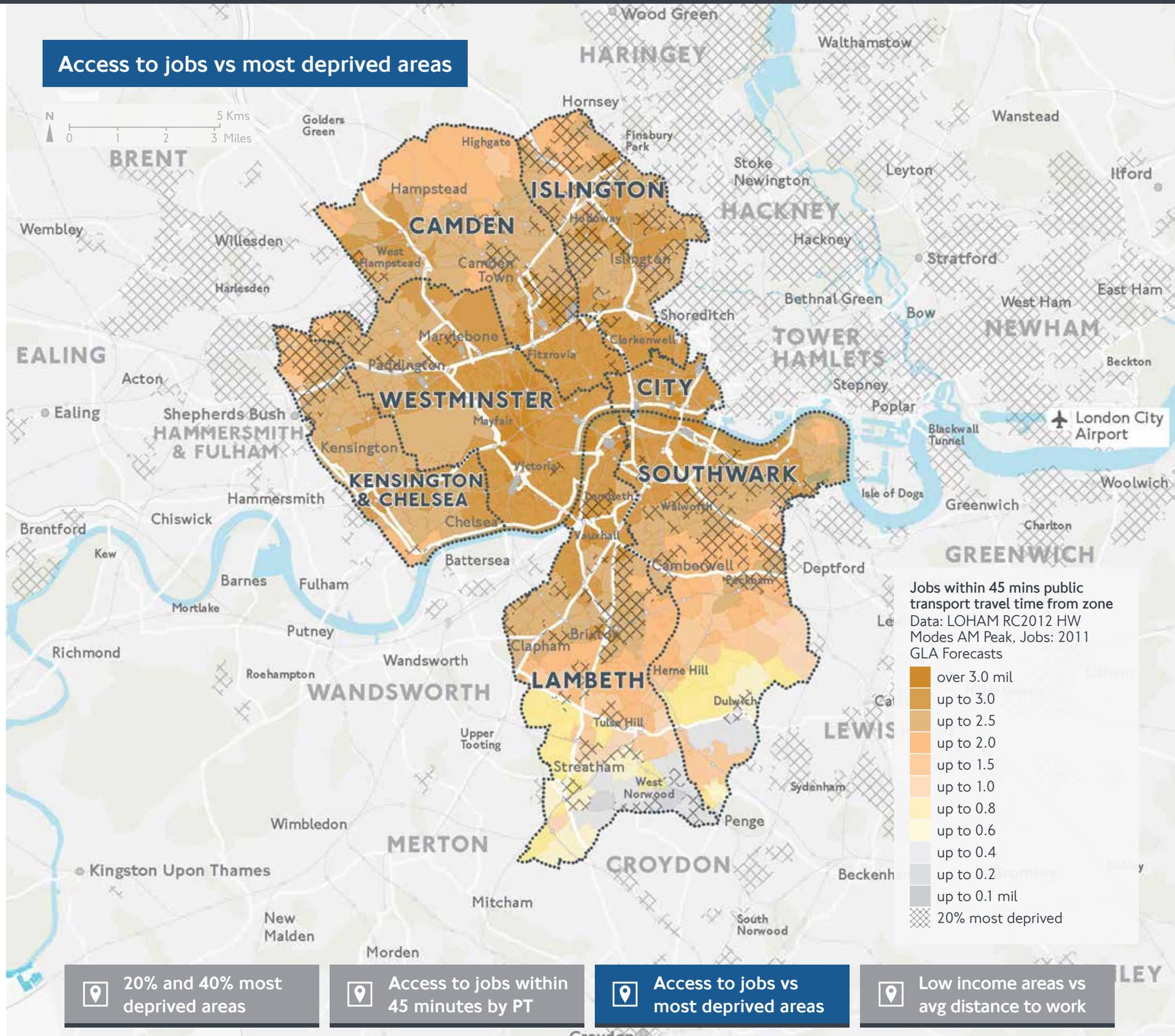
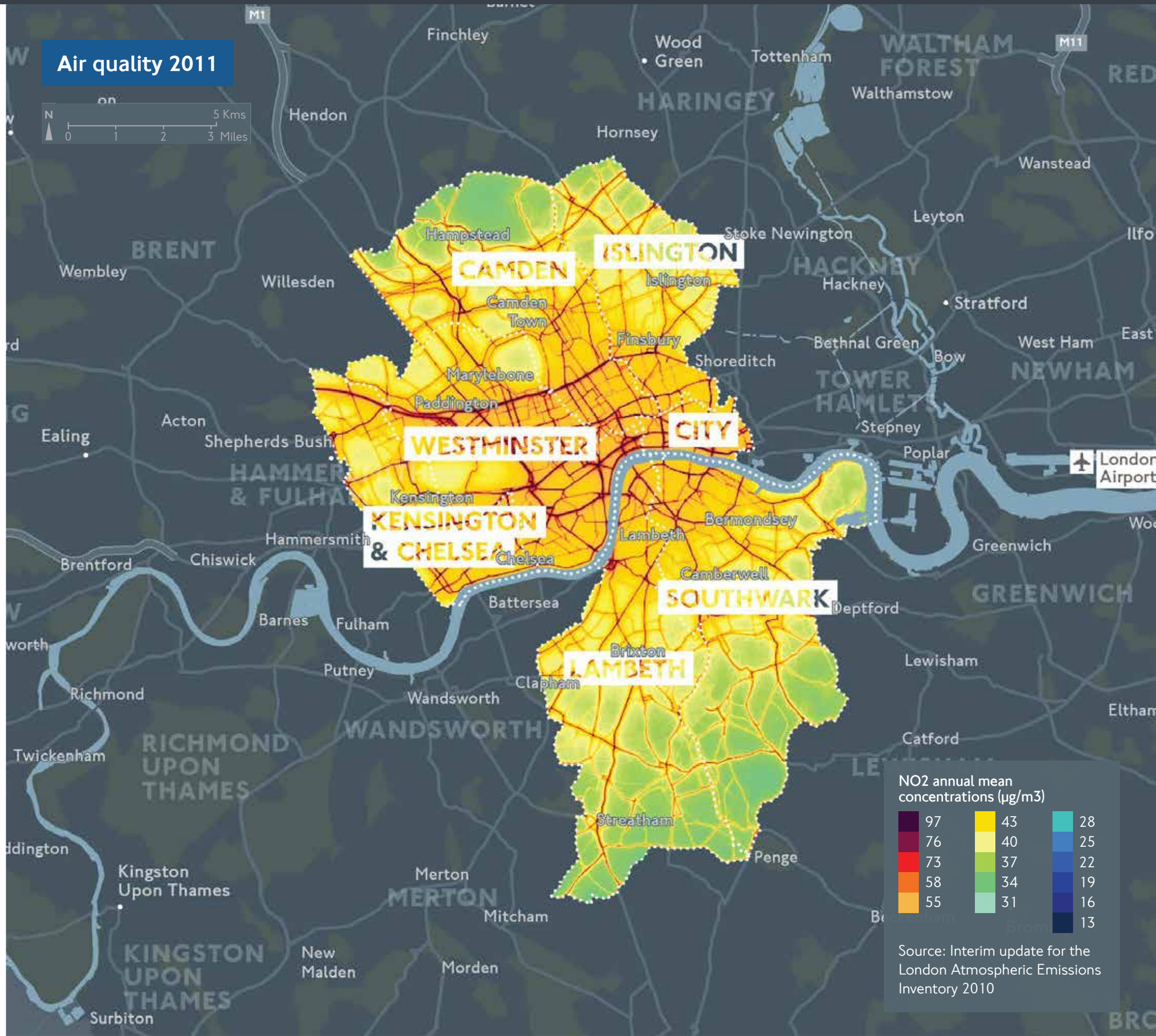


Air quality in the sub-region is a particular issue which affects the health of its residents

The Central sub-region has poor air quality compared to other parts of the UK and London. Air quality is also generally poorest around major road corridors where traffic and congestion contributes to elevated emission levels. Tackling poor air quality will have significant health benefits for Londoners.



Safety on the network has been improving but more needs to be done on key routes

Significant improvements in road safety have been achieved in London during the last 15 years. However, there is still scope for further improvement. In 2013, each borough had at least one fatality. Incidences of serious injury were concentrated within Central London.

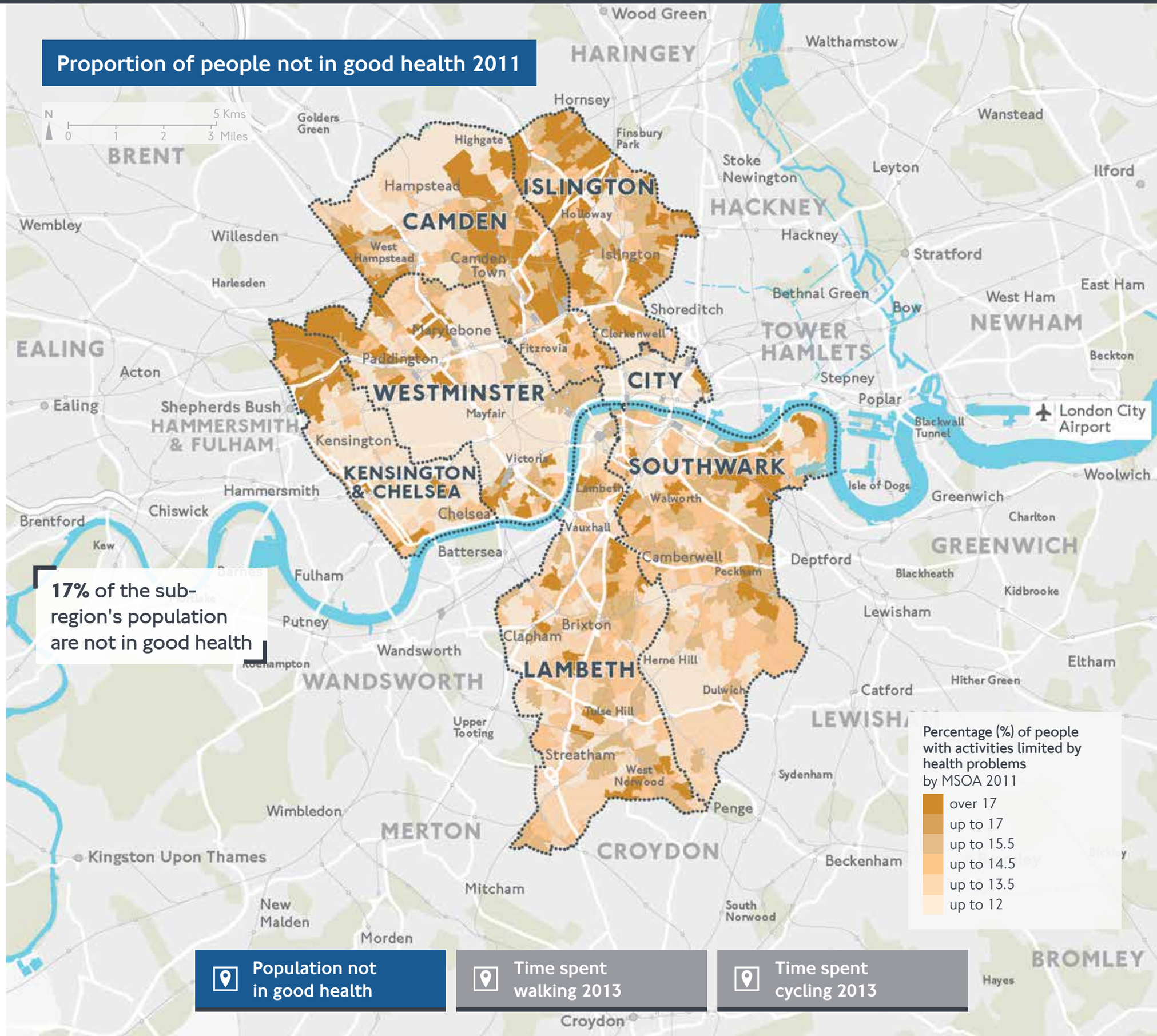
Where there is evidence of clusters of accidents occurring consideration should be given to implementing local road safety schemes. The majority of KSIs occurred on 30mph 'A' roads in the west sub-region, although there were also some on the local highway network. While reductions in speed limits are generally not appropriate for these roads, there could be scope for targeted enforcement and public information campaigns to improve awareness and behaviour across all road users.

There is significant potential to further increase active travel to address health issues across the sub-region

London's transport system plays an important role in people's health by providing access to jobs, education, services and leisure, all of which are essential for a healthy, fulfilling life. It also provides access to healthcare. But the biggest role of transport in health is to help people stay active and prevent a wide range of illnesses including heart disease, stroke, depressions, type 2 diabetes and some cancers.

TfL is taking a whole-street approach to improving health in London, to make them good for health and attractive places to spend time. Further details of the whole street approach can be found in TfL's 'Improving the health of Londoners' transport action plan: http://content.tfl.gov.uk/improving-the-health-of-londoners-transport-action-plan.pdf.

There is significant scope to improve levels of physical activity across the sub-region, and therefore improve health. As set out in the previous section, the number of journeys made by walking or cycling have fallen in most Boroughs. Providing a safe environment to support the growth of trips on these modes will be important to supporting the health of the West London's residents.



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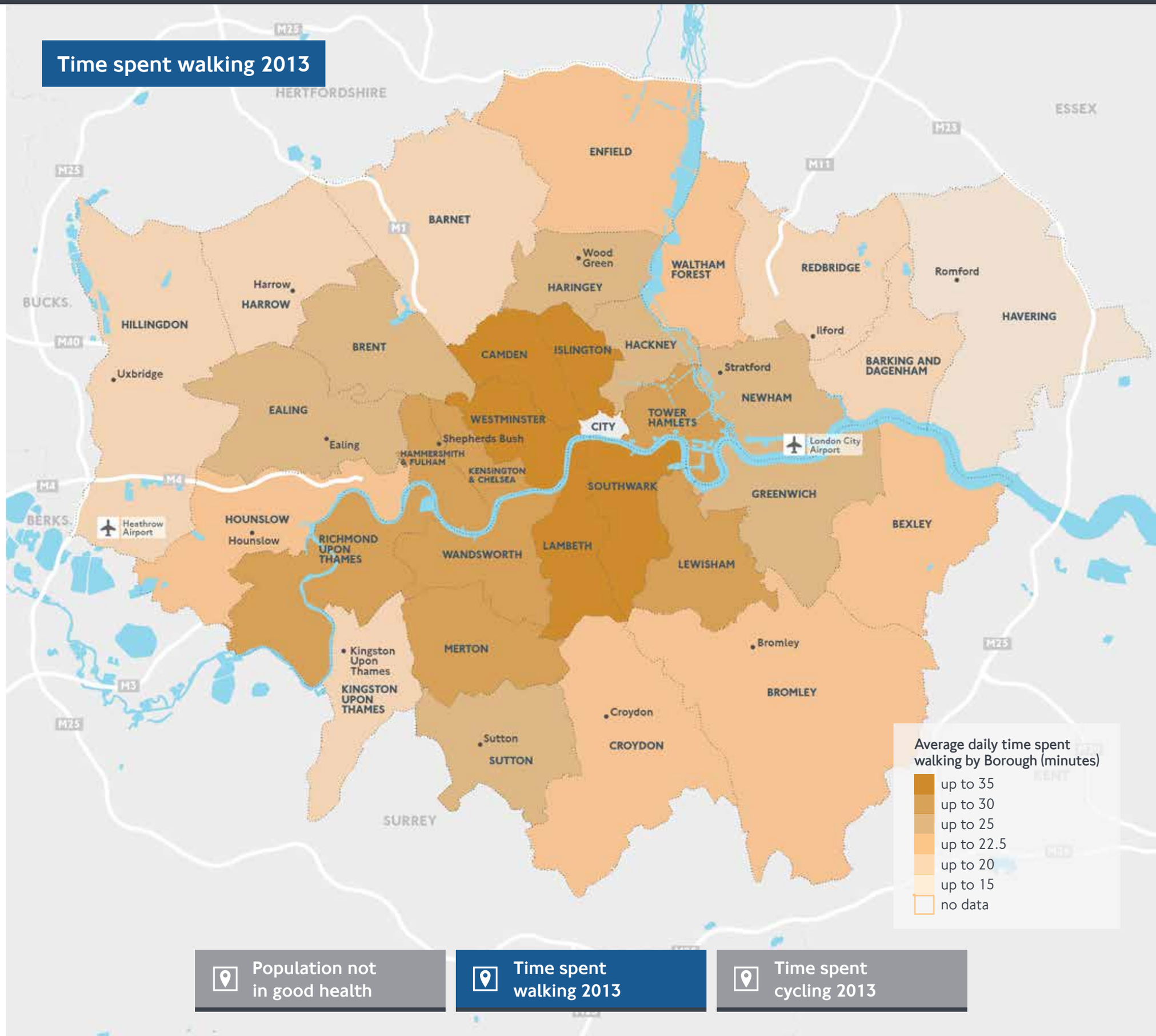

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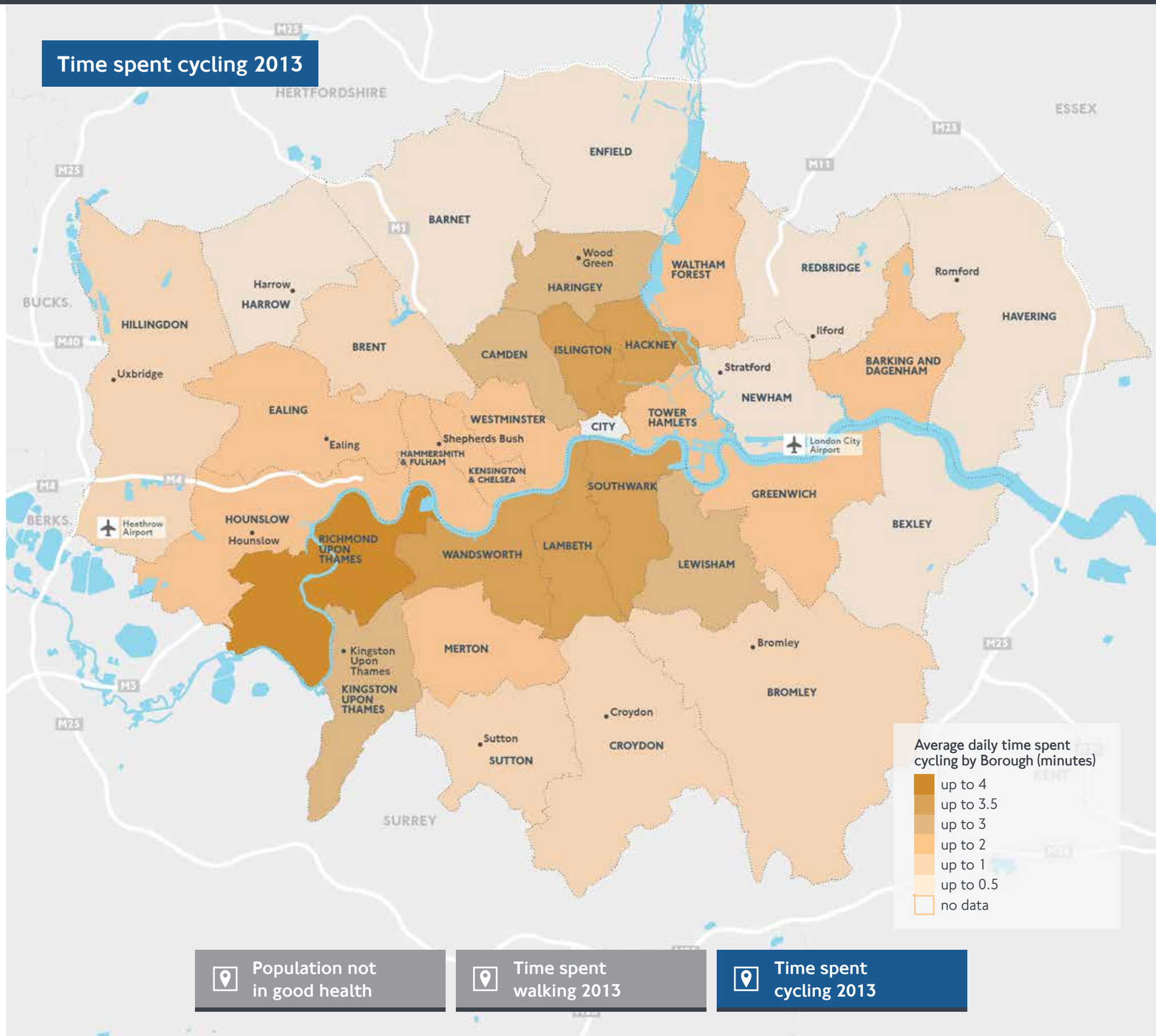


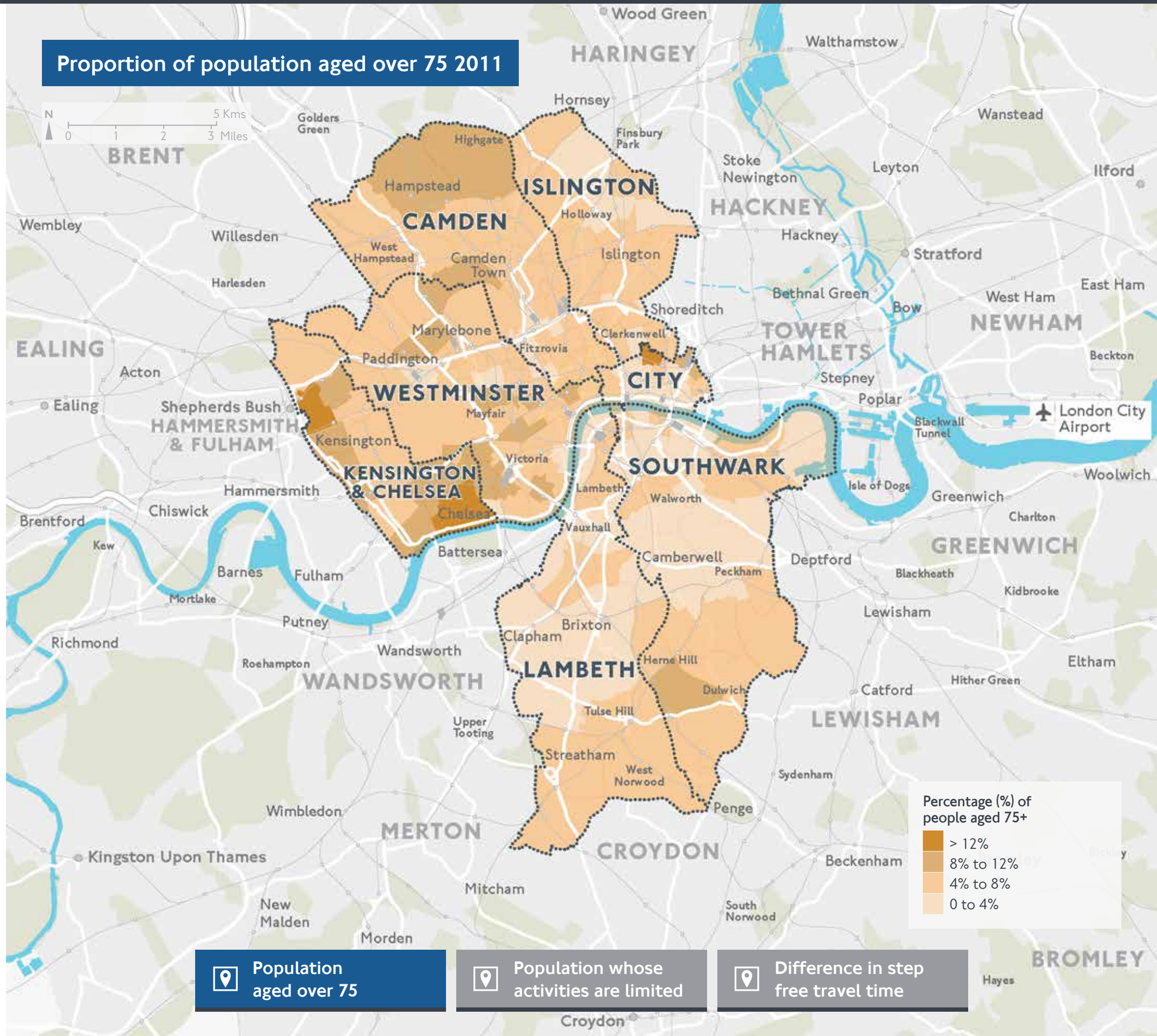
Population not in good health | Time spent walking 2013 | Time spent cycling 2013

Travel times on the step free network have improved but more needs to be done

As London's population ages, its transport network will need to adapt to allow more people with mobility impairment to access services. There are high concentrations of people whose day to day activities are limited, particularly in Camden, Islington and Southwark.

Other residents may have problems accessing the transport network due to mobility issues and a corresponding lack of step-free access. In particular there are parts of where a lack of step-free access increases journey times for those with mobility needs. Consideration should be given to implementing measures which could help to rectify this.

Physical accessibility involves the design and layout of all the main component parts of the transport network; vehicles, stations and streets. Improving one of these alone however is likely to produce little benefit and all three need to be addressed simultaneously to have significant impacts.



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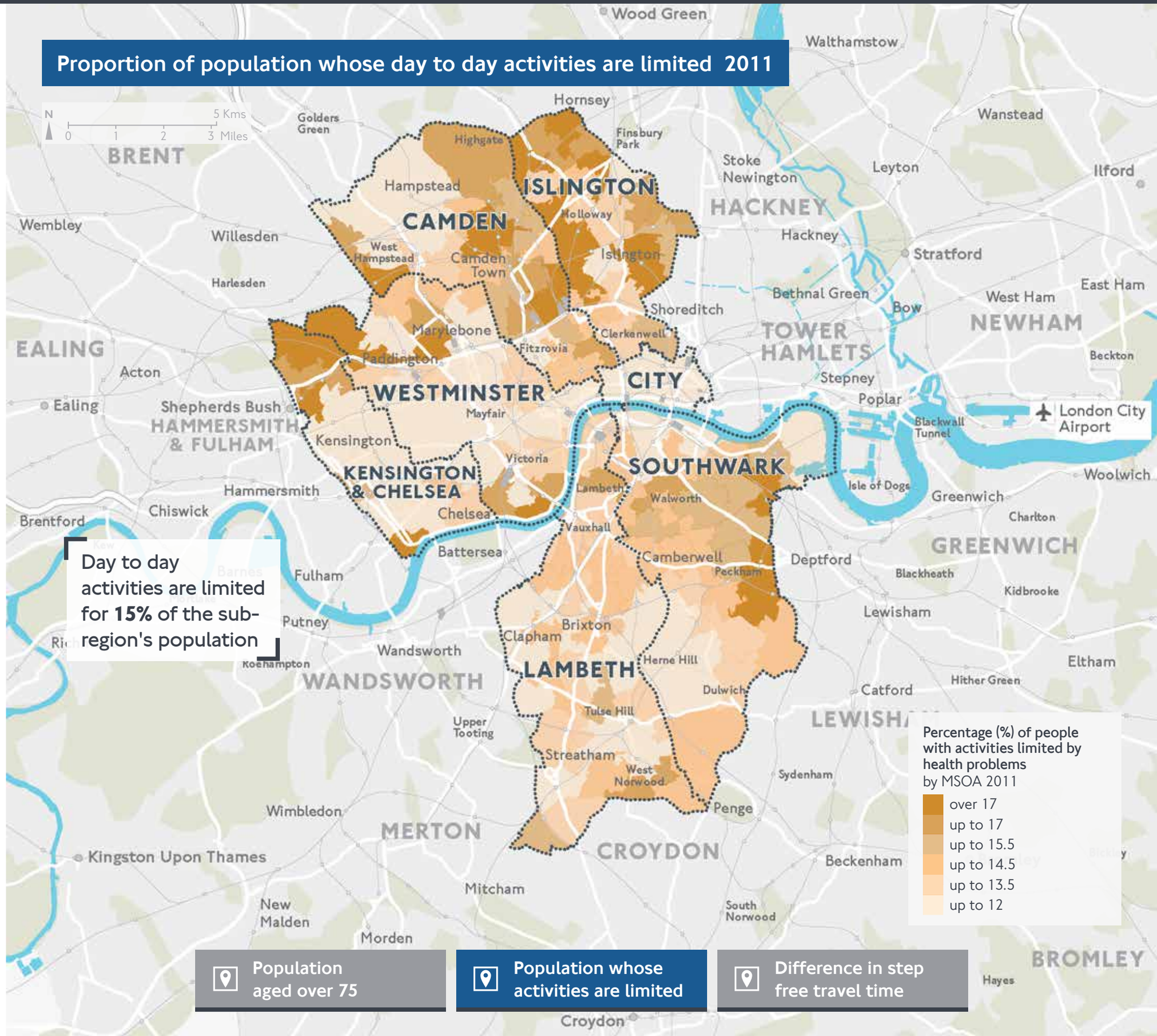


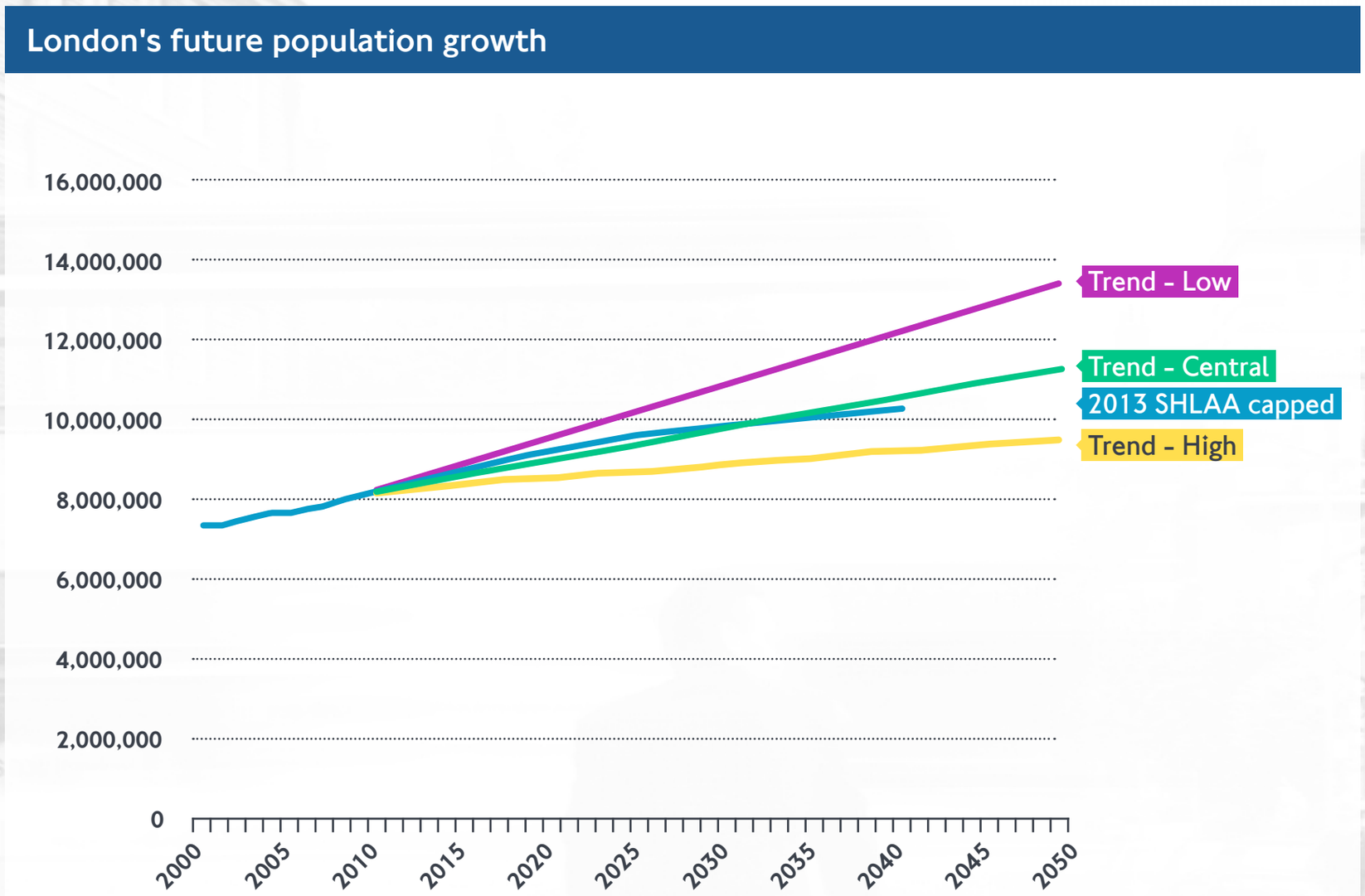
Future growth ›

London's population will continue to grow, generating more demand for transport

Population projections which informed the Further Alterations to the London Plan estimate that the Capital's population will increase to almost 10 million by 2030. Further projections produced to inform the London Infrastructure Plan 2050 estimate that the population will continue to grow to almost 11.5 million by 2050. This will only be possible if sufficient infrastructure, particularly transport infrastructure, is delivered to support what will be a much larger and denser city compared to today.

Despite previous predictions of homeworking and technology reducing the need to travel, trip rates have remained stable for many years. While there may be some more flexible working, individual trip rates are likely to remain fairly stable and, with increasing population, overall the number of trips are expected to increase. This would mean an increase of 35-40% in the number of trips under the central population projection by 2050, with an increase in public transport trips of about 70% compared to today.

London's future population growth



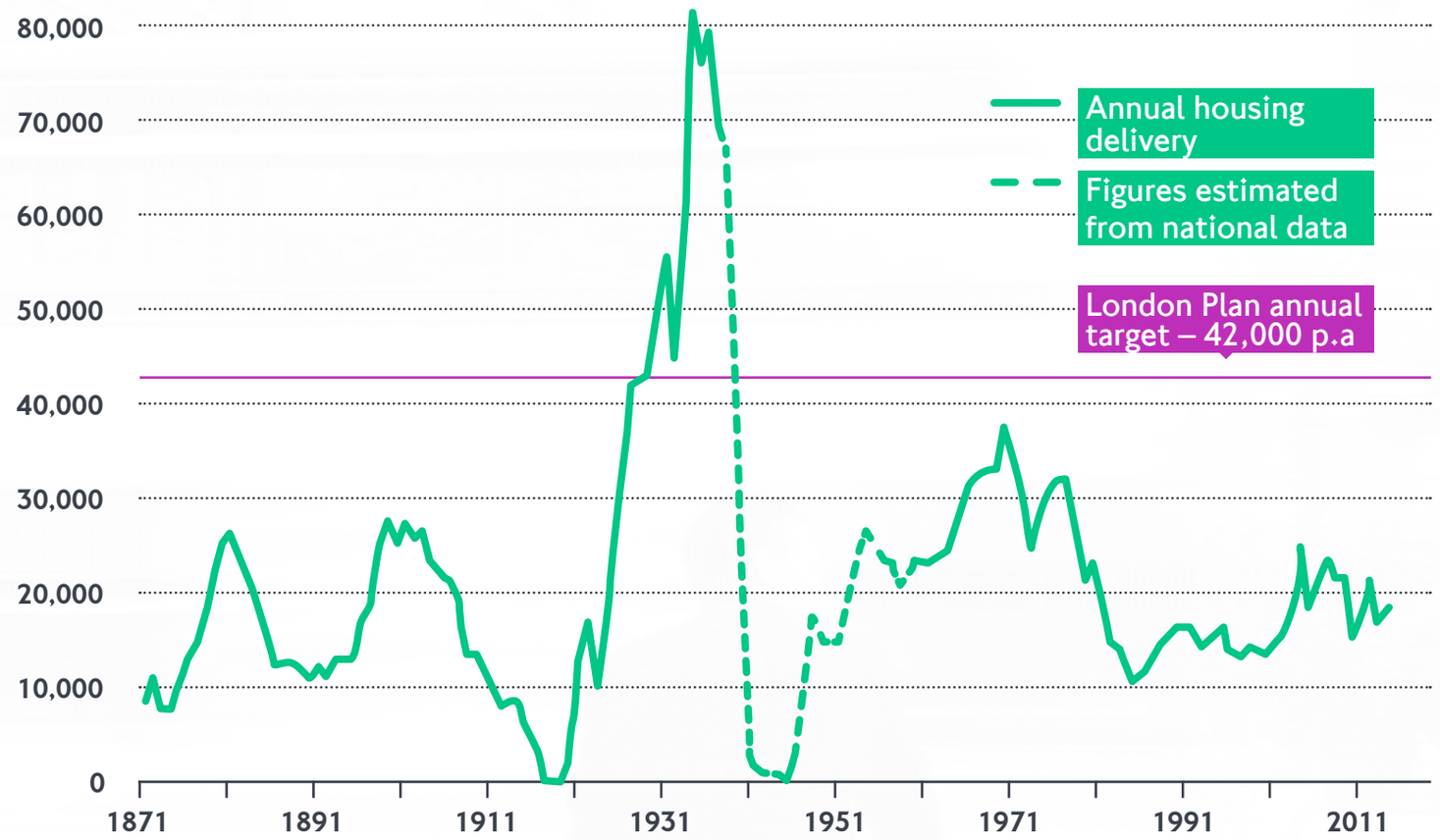
Insufficient levels of housing are a risk to London's competitiveness. Transport is key to unlocking new homes

In order to cater for London's rapidly growing population, the GLA estimates that the city will need 49,000 housing units a year. However, just half this rate is currently being delivered across the city. The only time that London has ever built more than 49,000 units was in the interwar period, although during this time London did not have a planning system or a Greenbelt to manage growth.

The shortage of housing has been a key factor in rising prices, with low levels of affordability driving overcrowding, restricting locational choice and causing concern from businesses who believe that it is constraining the labour market and hurting London's competitiveness.

Good transport connectivity, as well as frequency and quality of service are key drivers in unlocking housing. Accessible places are more attractive, attract higher prices and therefore increase the viability of housing development. Investment in the existing network, as well as extensions to the network, can help to unlock significant levels of housing.

Delivery of housing units vs current London wide housing target



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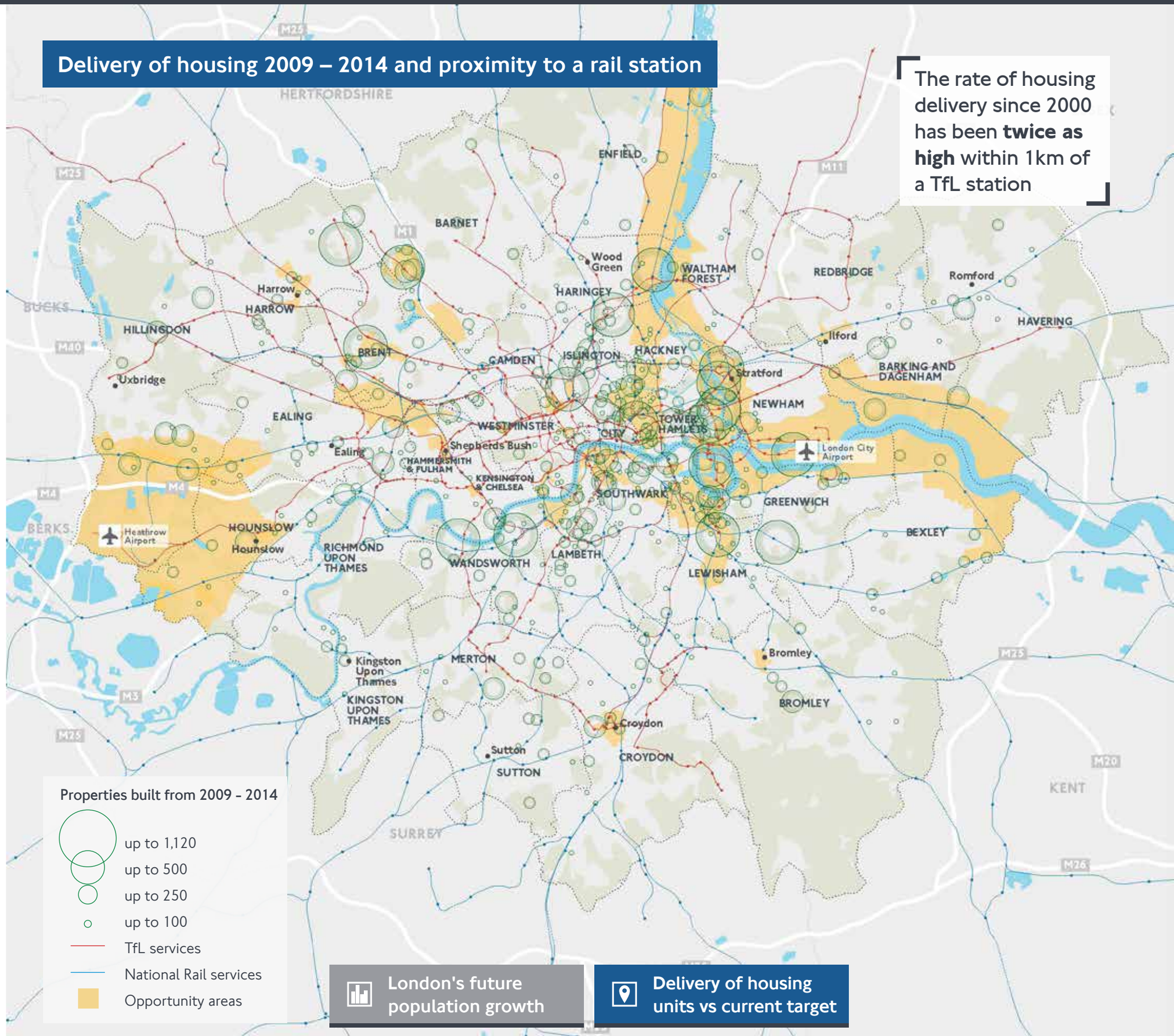
Delivery of housing 2009 – 2014 and proximity to a rail station

The rate of housing delivery since 2000 has been **twice as high** within 1km of a TfL station



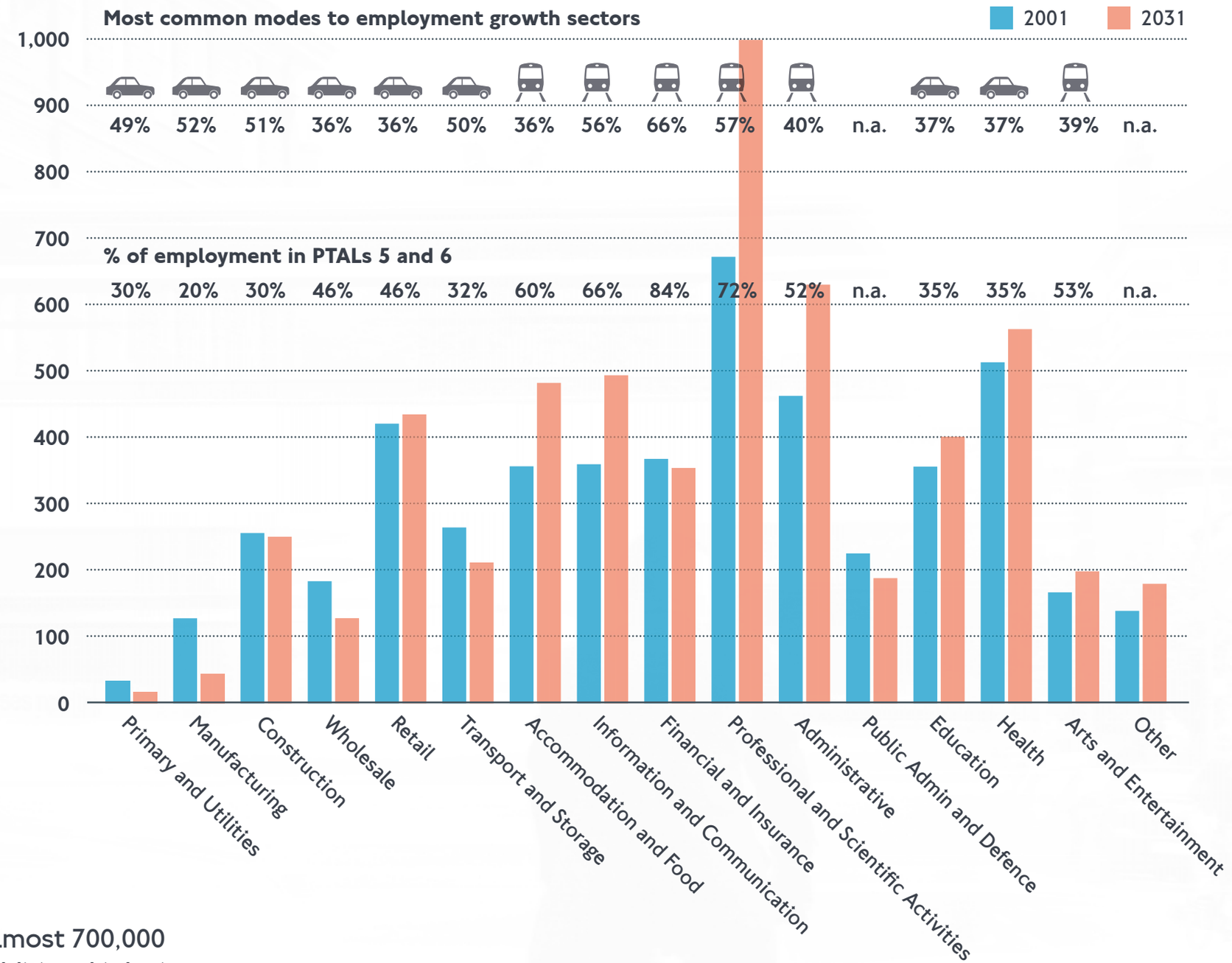
Future employment growth in office based sectors will increase demand for rail based modes

London's strong employment growth is expected to continue, with a 14% increase in employment across all sectors to 2031. Growth is expected to continue in office based sectors, including professional and scientific activities, whilst employment in manufacturing, transport, wholesale and construction will decline.

As office based sectors are increasingly seeking the most accessible locations by public transport, particularly in Central London, demand for public transport modes is likely to increase. It will be important to ensure there is sufficient capacity on the network to serve these growing sectors, and support London's economic growth.

Most of the sectors which are expected to contract are typically access by car, which could continue to push down commuting to work by car. The decline of these sectors also has the potential to free up land for housing or other land uses for more intensive development.

Change in employment sectors in London 2011 – 2031



Almost 700,000 additional jobs in London by 2031

The sub-region's population will continue to grow, along with its housing need

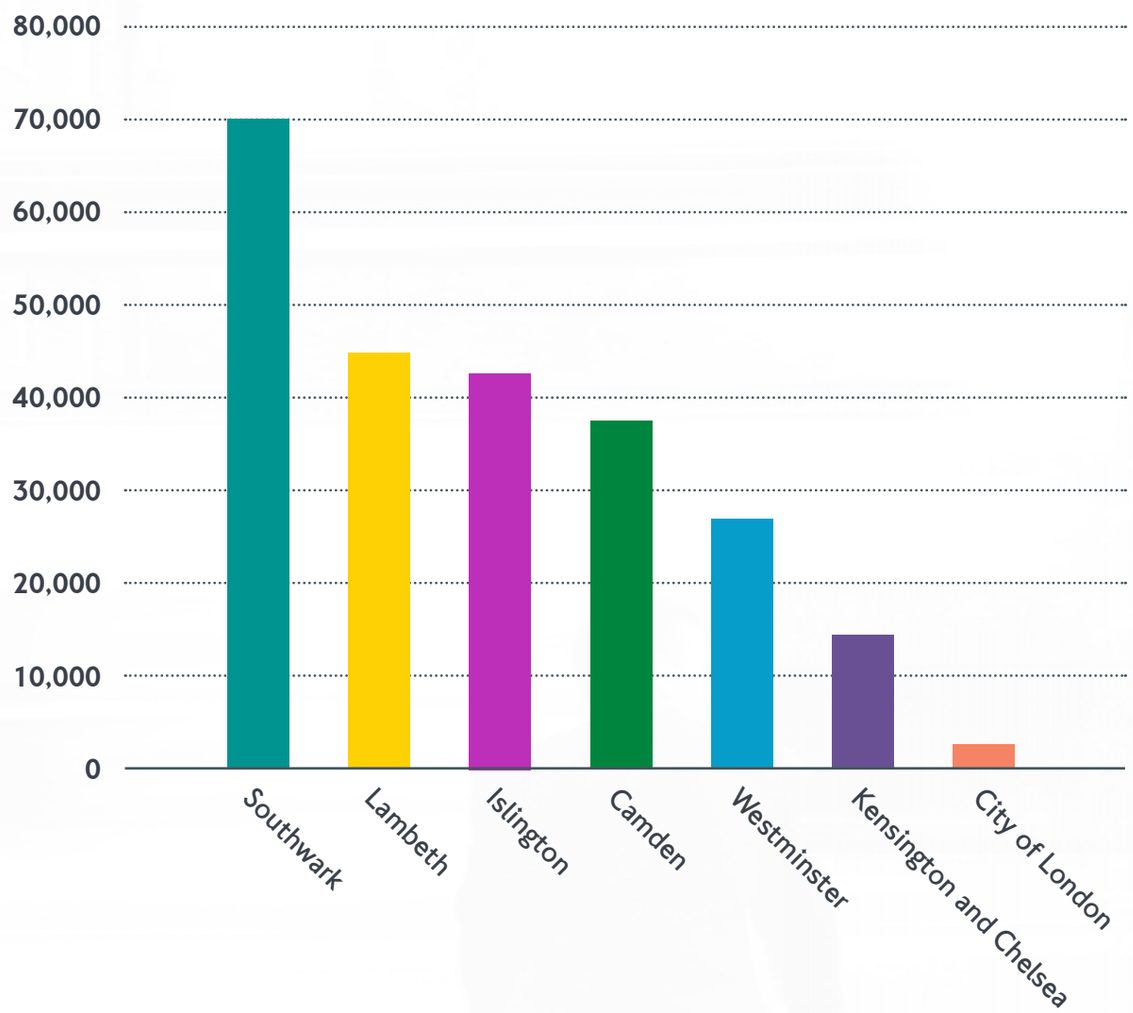
Population projections which informed the Further Alterations to the London Plan estimate that the population of the sub-region will grow by an additional 230,000 people between 2011 and 2031, with some boroughs expected to see significantly higher levels of growth than others.

Southwark, where there is significant potential for housing growth, is expected to see the greatest population increase. At the other end of the scale, population growth in the City, where there is little housing development planned, is expected to be relatively low.

Most Boroughs are on track to meet their housing targets, by continuing recent rates of delivery. Rates of housing delivery will need to increase in Lambeth with a well functioning transport network key to achieving this.

230,000 additional people by 2031

Population growth 2011 – 2031



London's future population growth

Delivery of housing units vs current target

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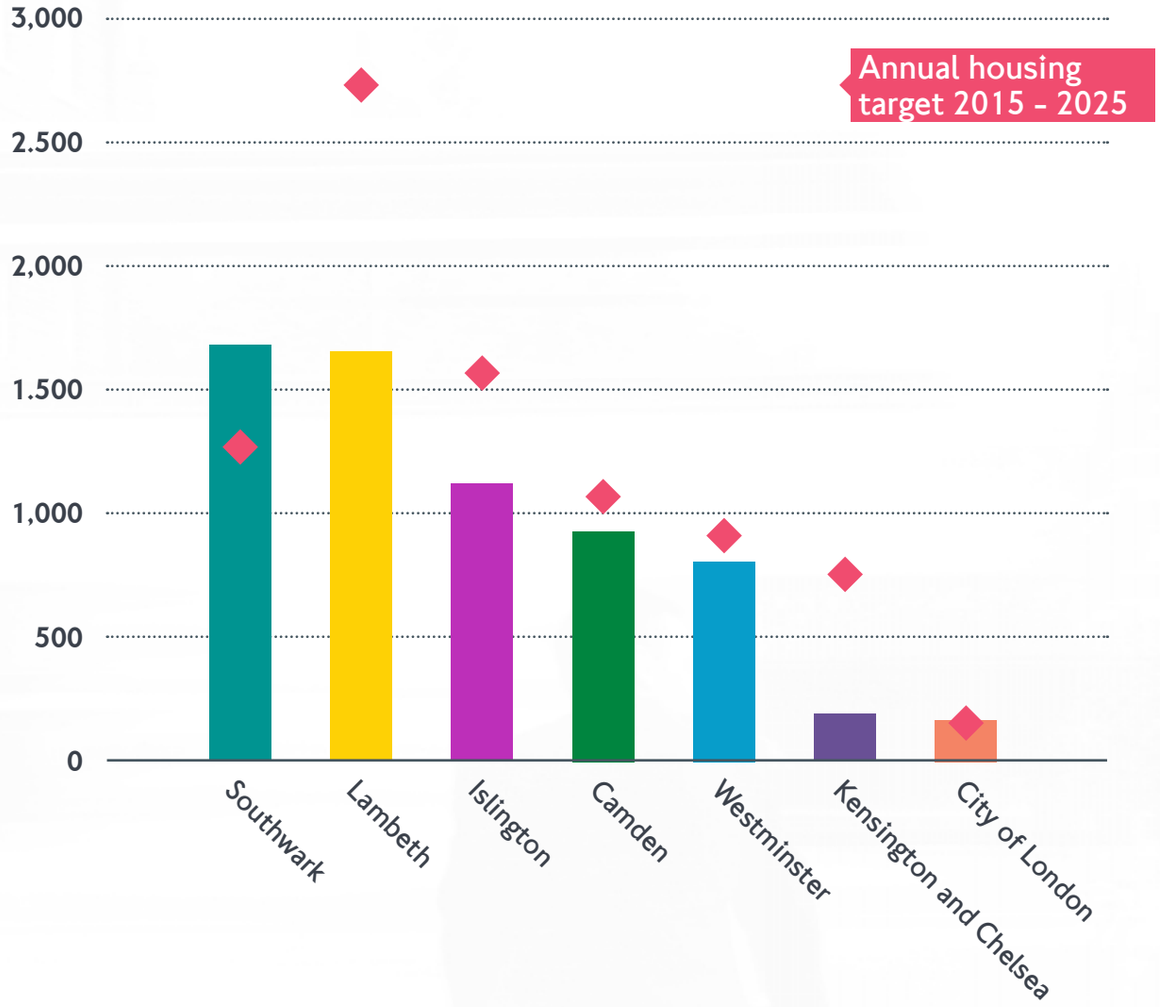
Annual housing delivery 2004 – 2014



London's future population growth

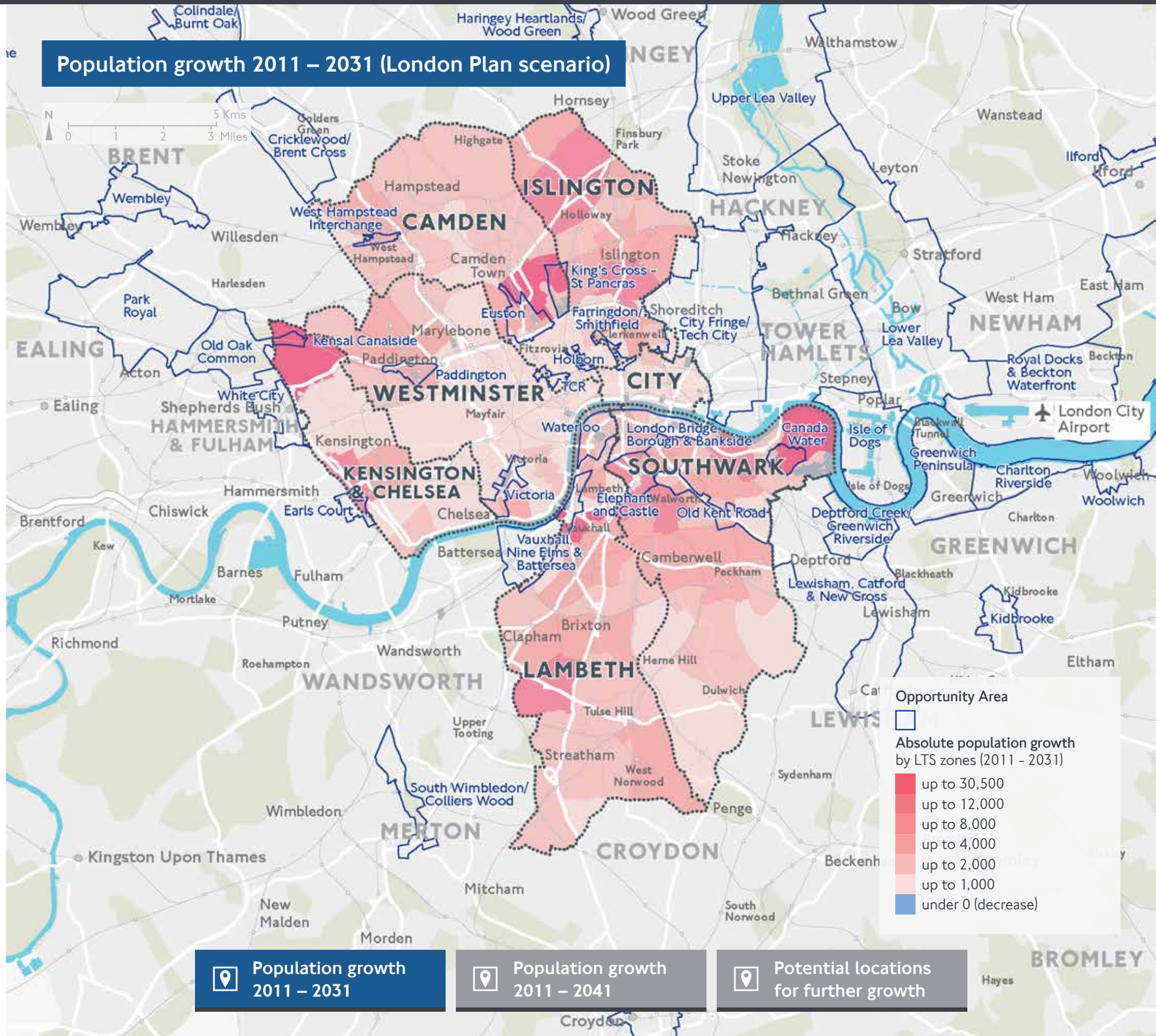
Delivery of housing units vs current target

There is potential to support higher levels of population growth than currently being planned for

The Further Alterations to the London Plan identified opportunities for significant housing growth at VNEB, Canada Water, Kings Cross, Kensal Canalside, as well as other places for intensification in Central London. Maintaining the capacity and connectivity of the transport network will be key to unlcoking these growth sites. Other locations throughout the sub-region will also see housing growth from conversions, infill and smaller development schemes.

There is also significant potential for higher levels of growth than those set out in the Further Alterations to the London Plan, particularly at locations already well served by transport infrastructure and at places where significant improvements are planned. In particular there is potential for significant growth at Old Kent Road. Over x units could be accommodated here.

Denser levels of development could also come forward around station locations, subject to addressing wider planning policy objectives.



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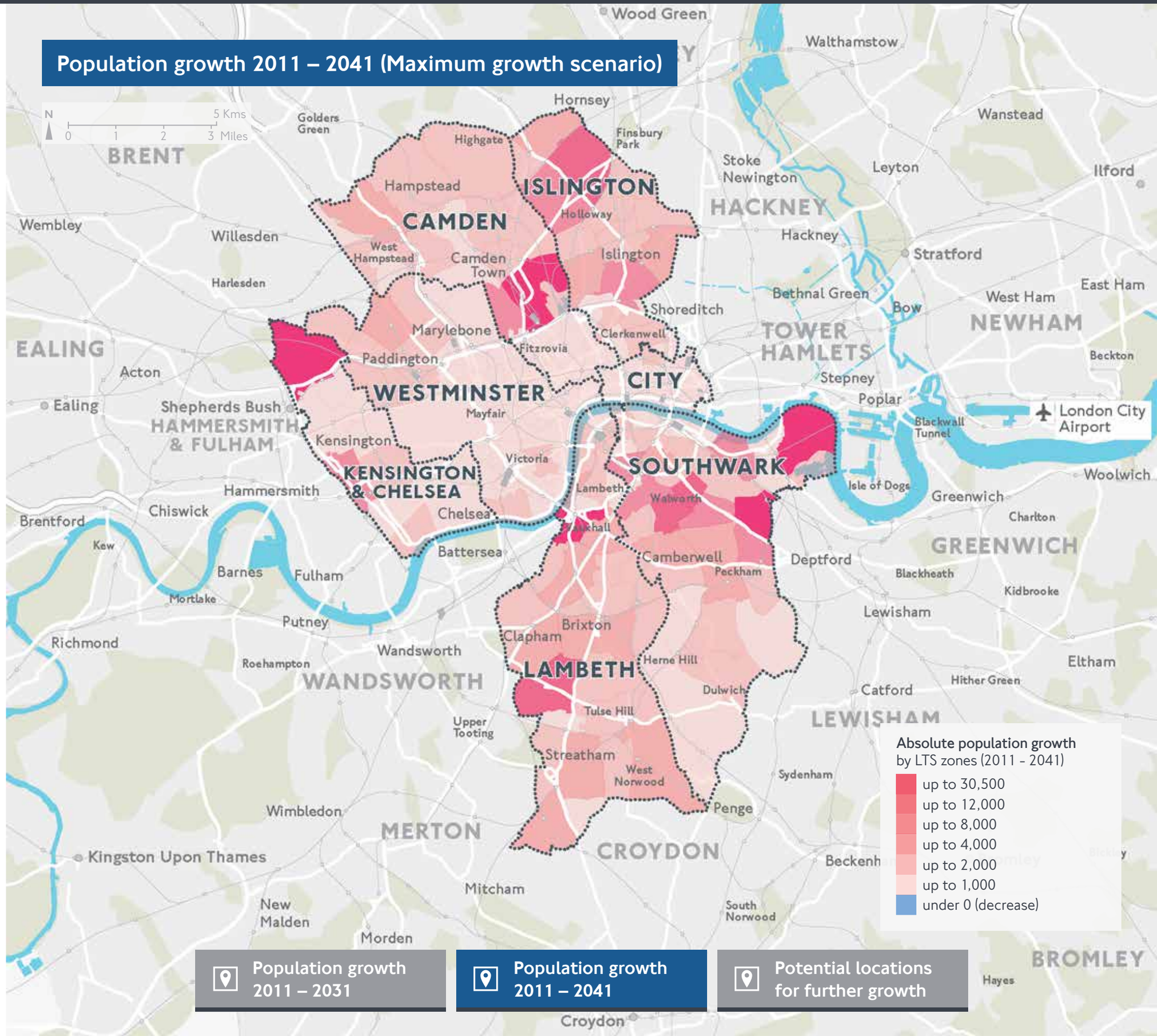
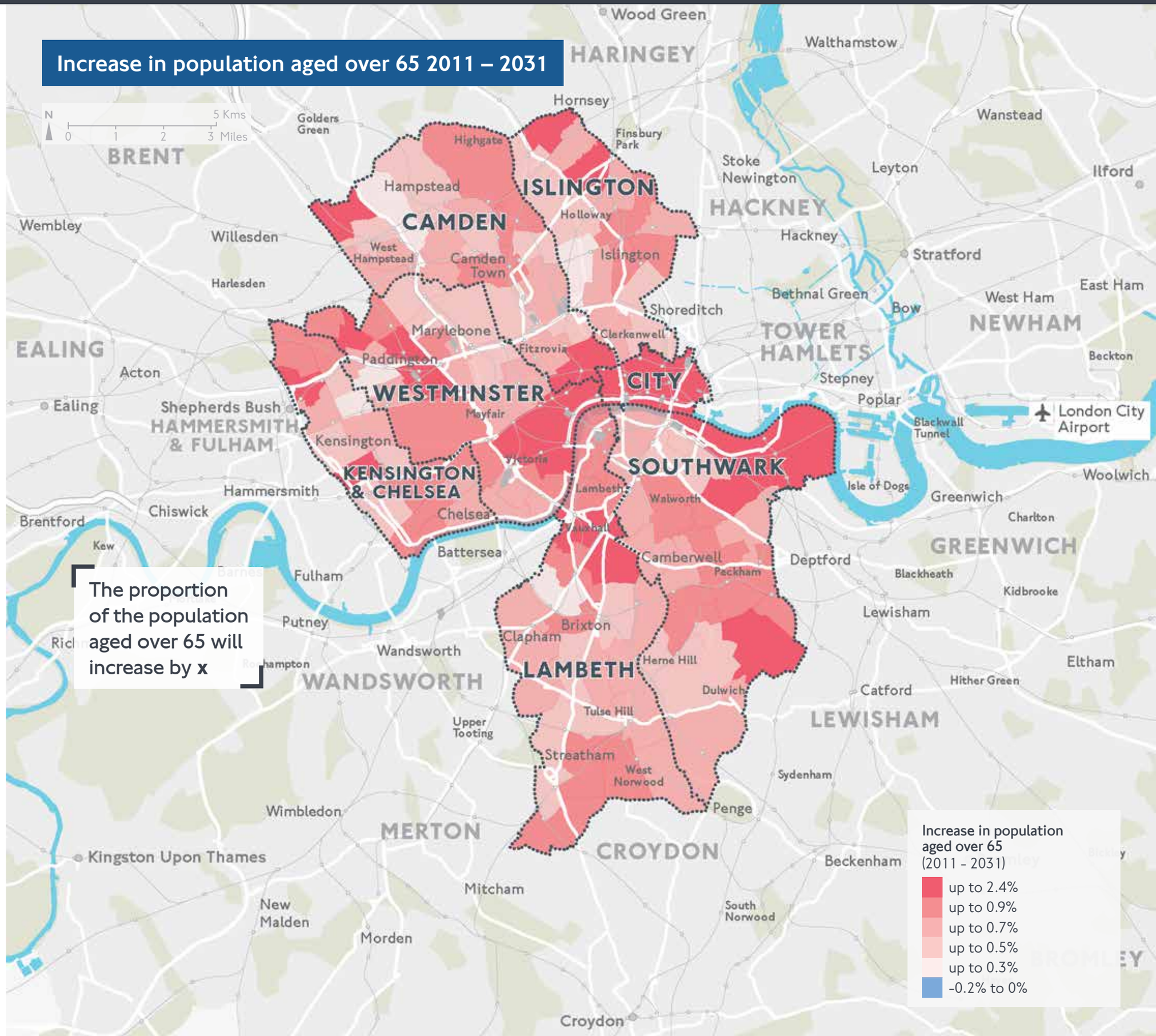


The proportion of older people will increase, generating more demand for an accessible transport network

The number of people aged over 65 is expected to x between 2011 and 2031, with the greatest increase in x. These areas may need to be considered for the prioritisation of measures to enhance step free access, particularly in the City, where the difference between the step free and non-step free travel time is already greatest.



There is potential to support higher levels of employment growth at key transport nodes

The Further Alterations to the London Plan identified that employment could grow by 14% between 2011 and 2031 in the sub-region. The Plan also identified opportunities for significant employment floorspace growth at Park Royal, Shepherd's Bush and Wembley, Maintaining the capacity and connectivity of the transport network will be key to unlocking these growth sites. Other locations throughout the sub-region will also see employment growth through redevelopment and the expansion of existing businesses.

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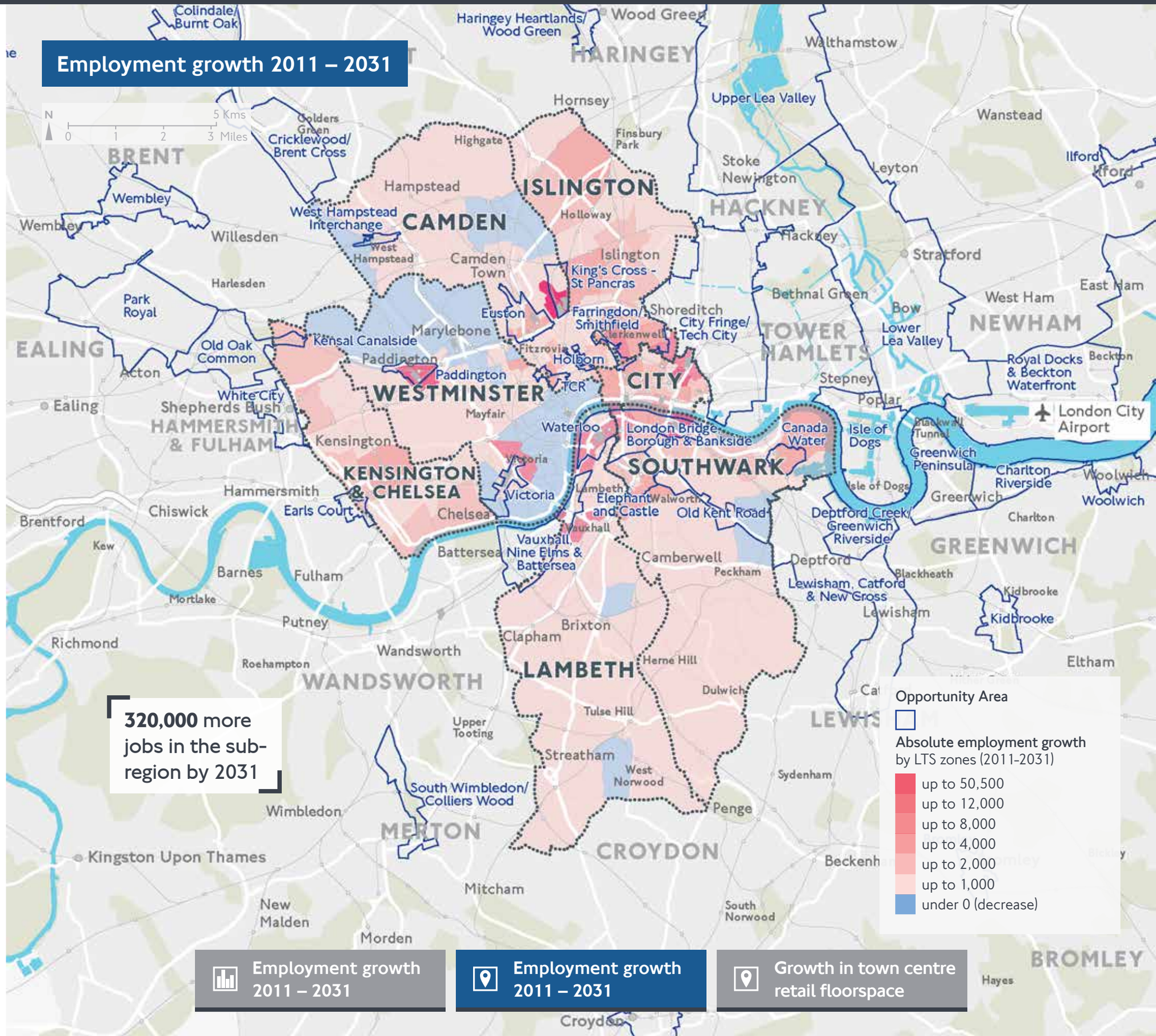
Retail floorspace in the sub-region's town centres is also expected to grow, with most of the growth expected to occur in the Metropolitan centres, and smaller District Centres expected to contract.



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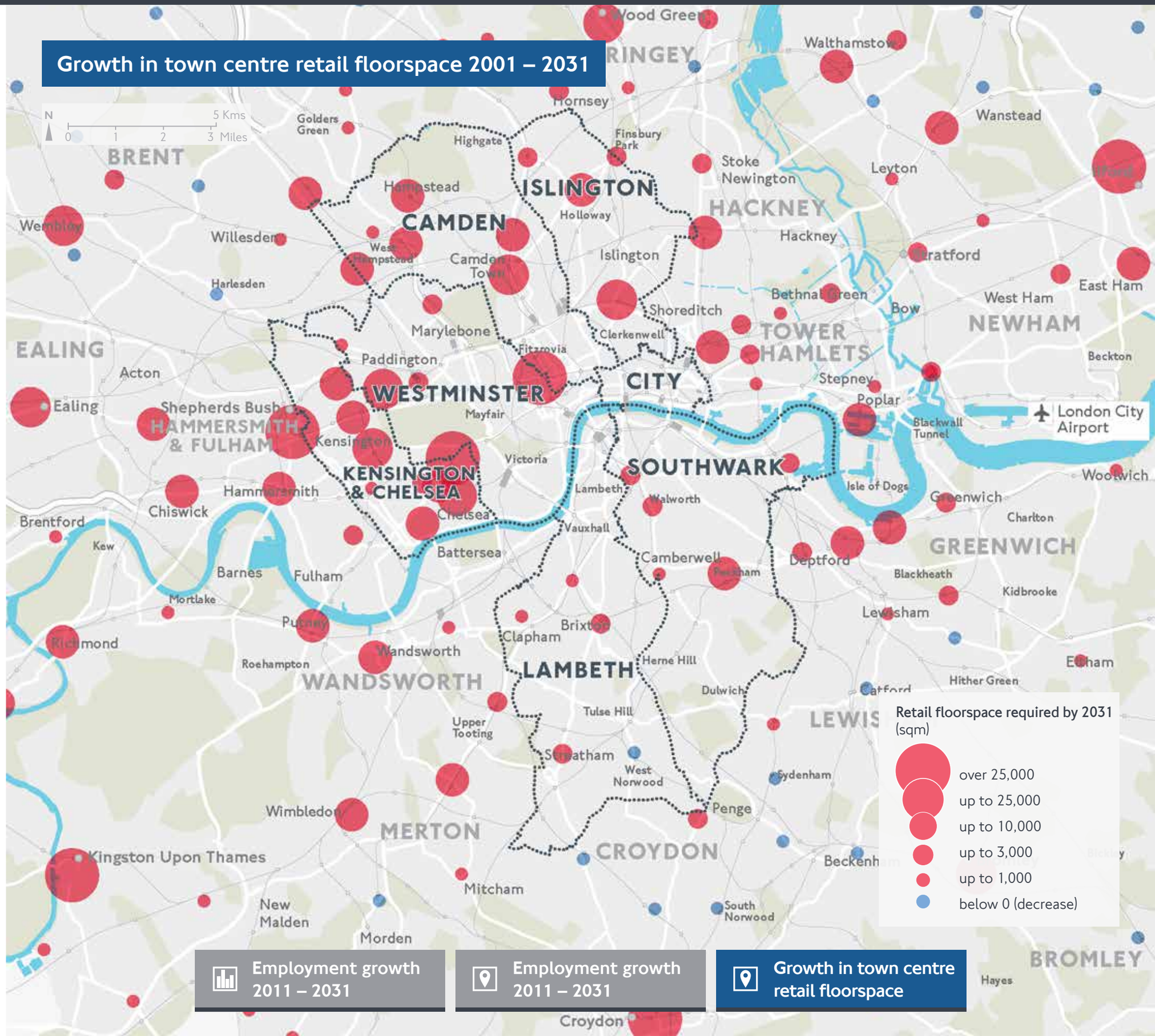
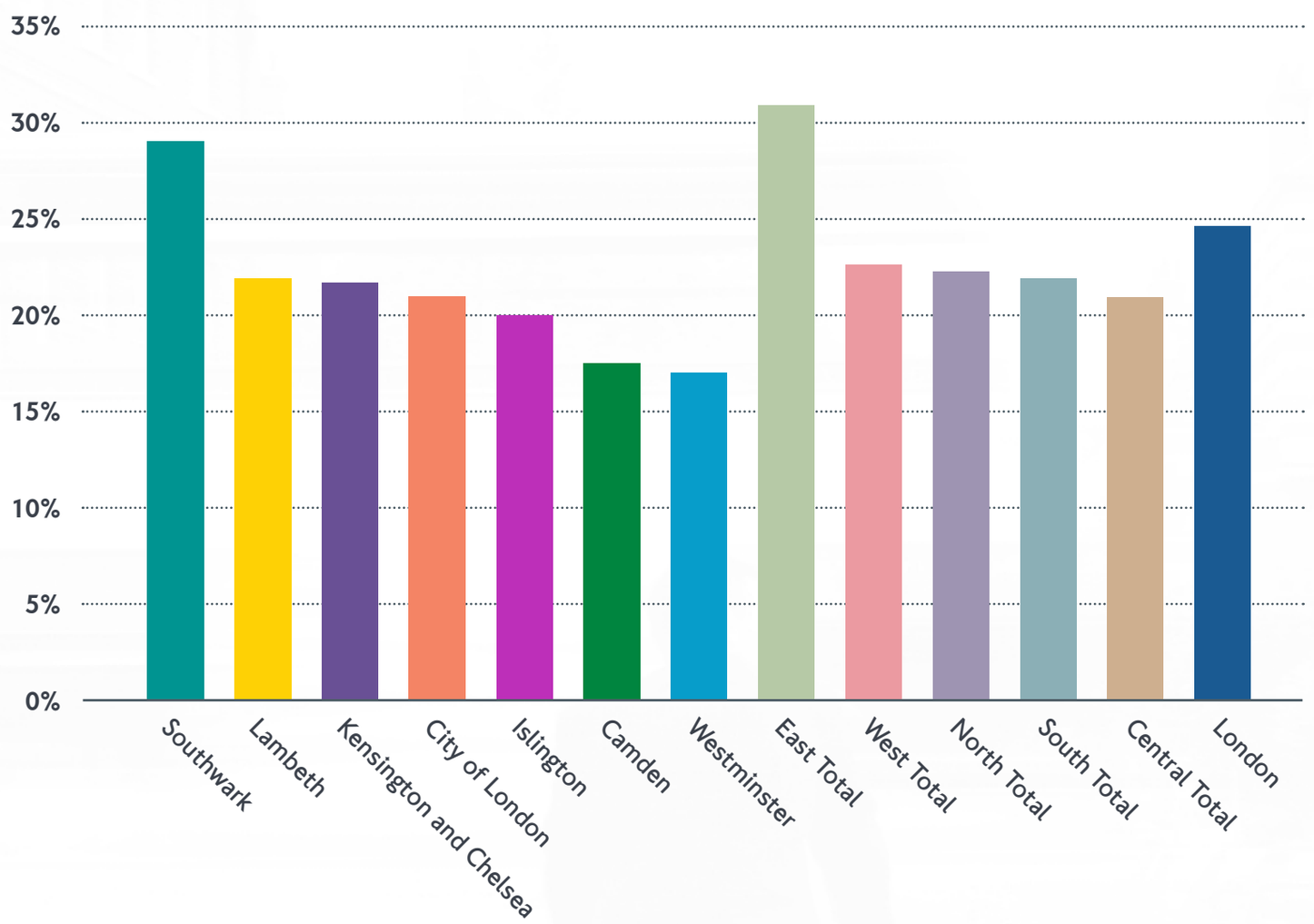


The number of vans on the highway network will continue to grow

The logistics sector plays a key role in supporting London's economy, providing vital support to commercial activities through the delivery of goods. Online commerce is expected to continue growing, in part contributing to an estimated 23% increase in demand for vans on the sub-region's roads.

Vehicle kms by van expected to **increase by 31%** by 2031 - the most of any sub-region

Growth in van vehicle kms 2001 – 2031



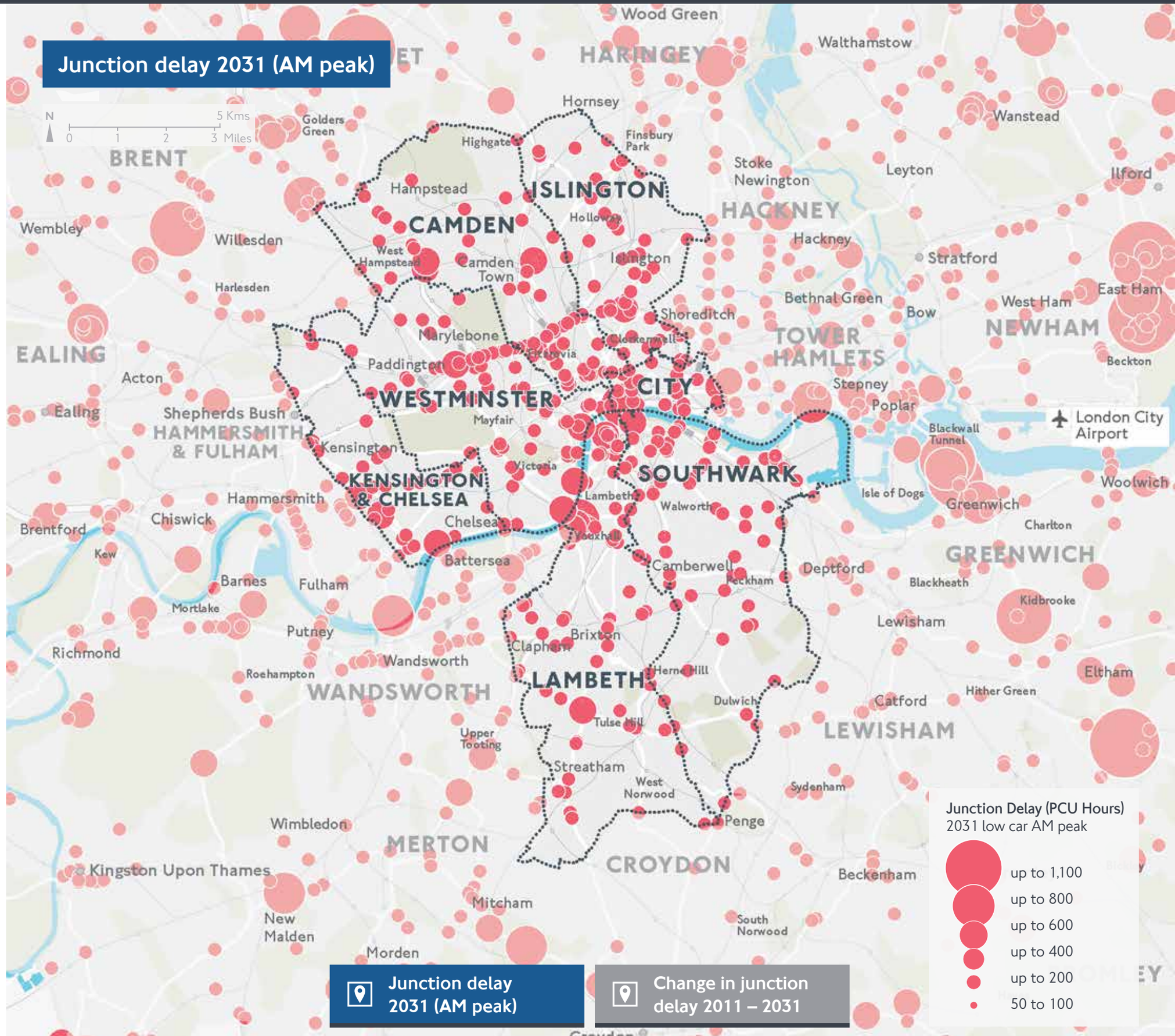
Public transport mode share will continue to increase, but only if capacity is increased to accommodate growth

Based on the continuation of recent trends, mode share of public transport and active travel modes will increase as mode share for car falls. Much of this change is expected to come about from new residents, whose travel patterns are often different to existing residents. Boroughs will therefore need to take action to encourage mode shift amongst existing travellers too. In order to achieve this shift to more sustainable modes there will need to be considerable behavioural change in addition to investment in infrastructure. Measures to encourage a shift away from car could include smarter travel initiatives and measures to turn walking and cycling potential into reality. Other measures still allow access to services without having to travel as far, for example through better use of IT and freight consolidation.

Mode shift 2011 – 2031

Highway congestion will get worse without many more people switching to alternative modes or investment to address pinch points

Under current forecasts, whilst car mode share will fall, population and employment growth mean there will be an increase in the number of cars using the highway network in the sub-region, resulting in increased congestion. This could constrain economic growth, lower quality of life for existing residents and prevent the sub-region from fulfilling its growth potential.



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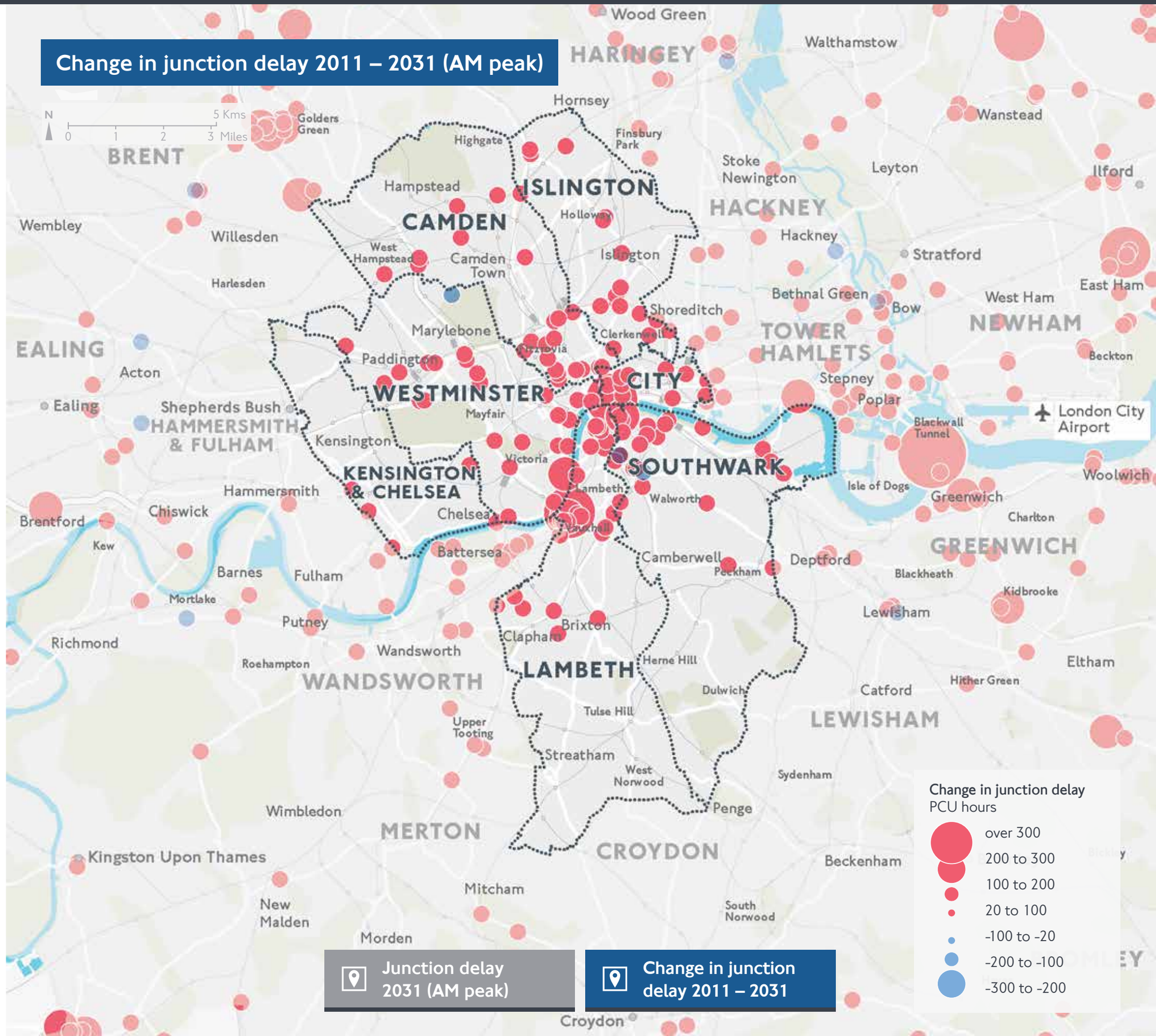

Without investment in the rail network, many lines will be at capacity, constraining growth

As the sub-region's population continues to grow, and as its residents increasingly use rail based modes to access growing employment opportunities across London, the demand for rail and Underground trips will increase significantly. Without investment, this will mean sections of both the Underground and National Rail network will be over capacity by 2031. The Piccadilly line will be over capacity approaching central London, as well as the whole of the Great Western mainline. Without investment, this will restrict the number of people that can access jobs and services from, to and within the sub-region, harming quality of life and constraining growth.

Underground and DLR crowding 2031 without delivery of 2015 Business Plan

Underground and DLR crowding 2031 | National Rail crowding 2031 | Change in UG and DLR crowding | Change in National Rail crowding

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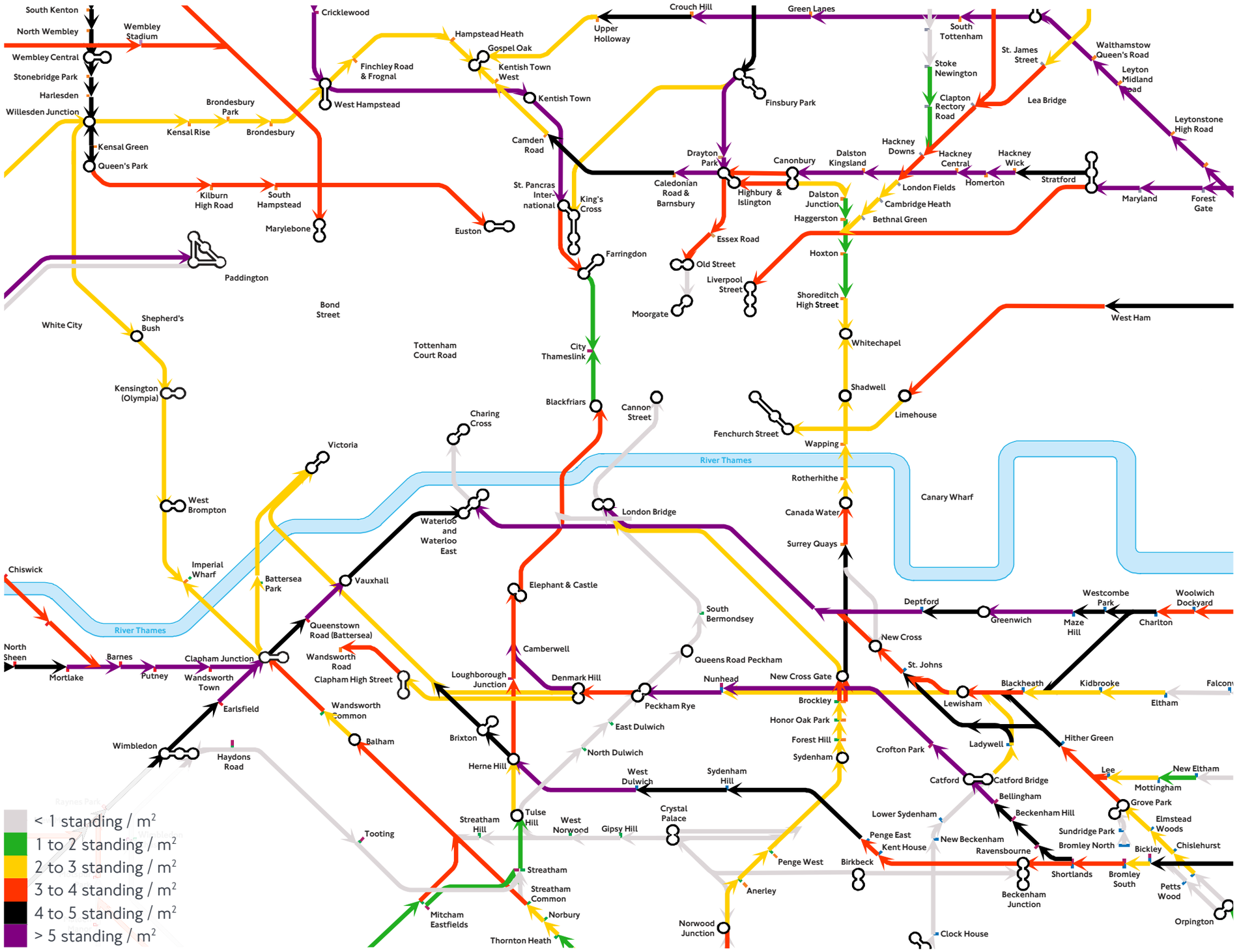
National Rail crowding 2031 without investment



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Underground and DLR crowding 2031 | National Rail crowding 2031 | Change in UG and DLR crowding | Change in National Rail crowding

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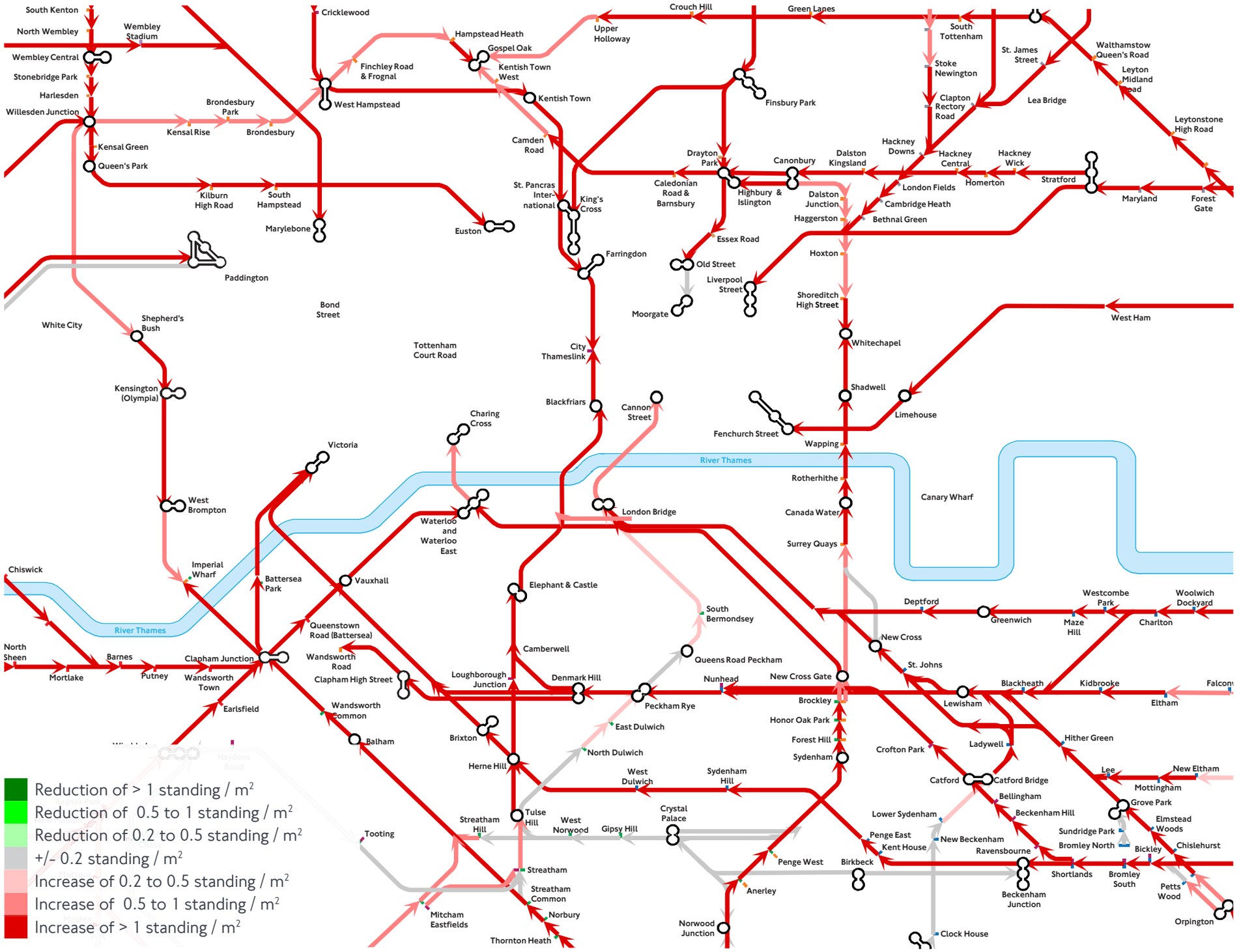
As the sub-region's population continues to grow, and as its residents increasingly use rail based modes to access growing employment opportunities across London, the demand for rail and Underground trips will increase significantly. Without investment, this will mean sections of both the Underground and National Rail network will be over capacity by 2031. The Piccadilly line will be over capacity approaching central London, as well as the whole of the Great Western mainline. Without investment, this will restrict the number of people that can access jobs and services from, to and within the sub-region, harming quality of life and constraining growth.

Change in National Rail crowding 2031 without investment



Underground and DLR crowding 2031 | National Rail crowding 2031 | Change in UG and DLR crowding | Change in National Rail crowding

With planned levels of investment in the rail network, capacity constraints will improve compared to today, but problems will still remain

In order to address the forecast increase in demand for rail, both TfL and Network Rail have commited to investment which will increase the capacity of rail lines serving the sub-region. This investment will bring estimated crowding down to levels slightly below those experienced today by 2031, which could mean that the sub-region could support higher levels of growth in some areas. However, this still means that, despite funded interventions, crowding will worsen on a number of lines.

Underground and DLR crowding 2031 with delivery of 2015 Business Plan

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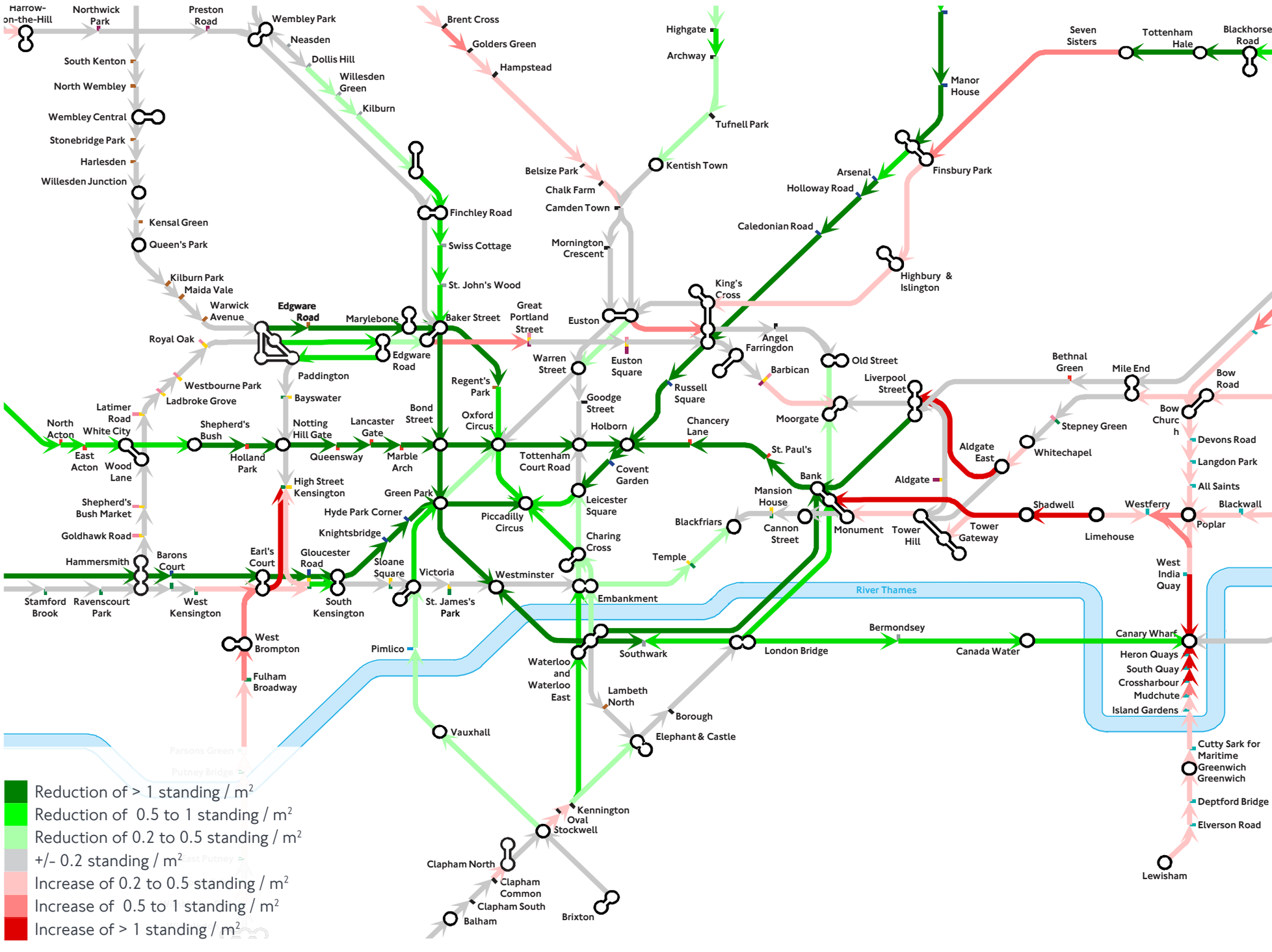
National Rail crowding 2031 with investment



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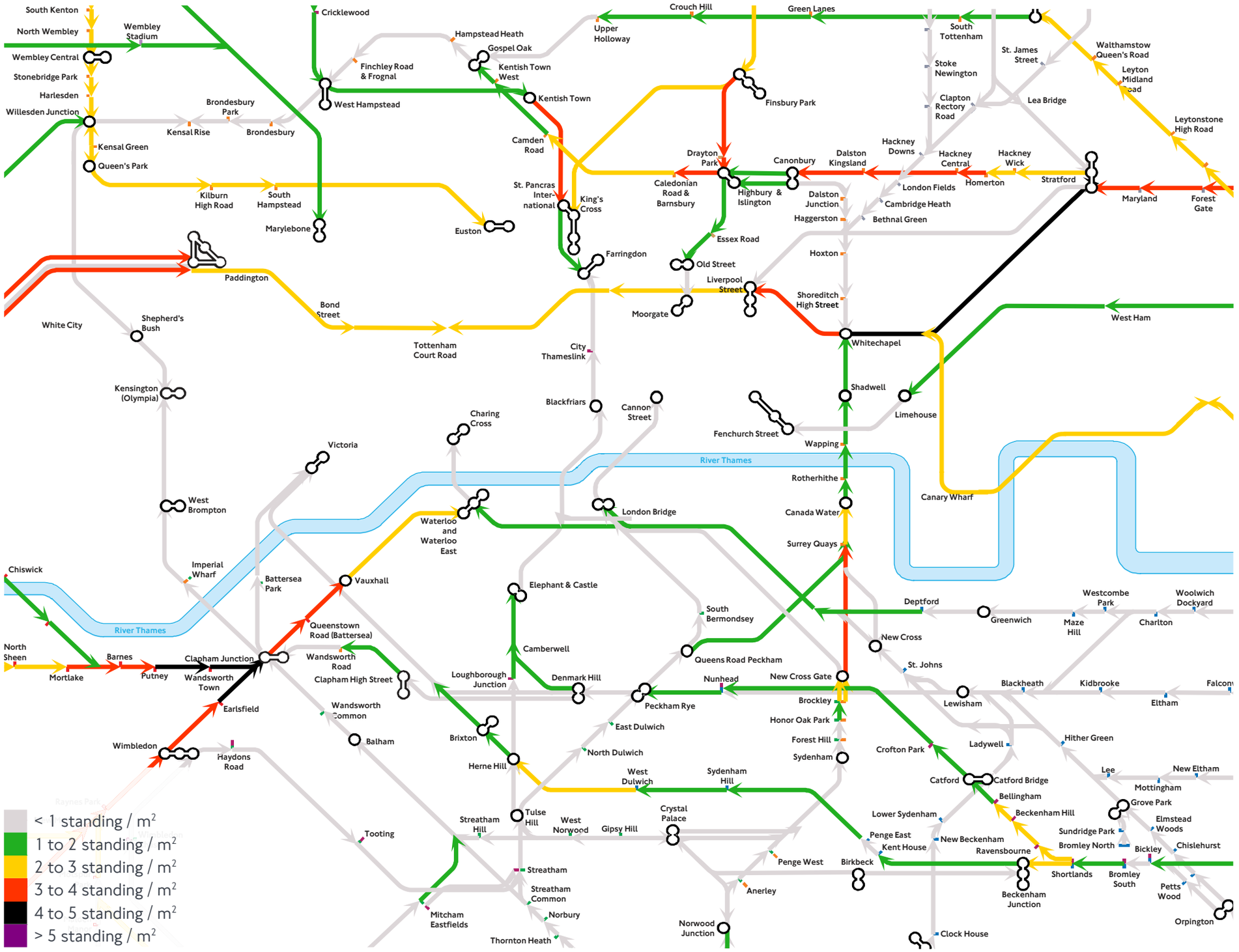
Change in Underground and DLR crowding 2031 with delivery of 2015 Business Plan



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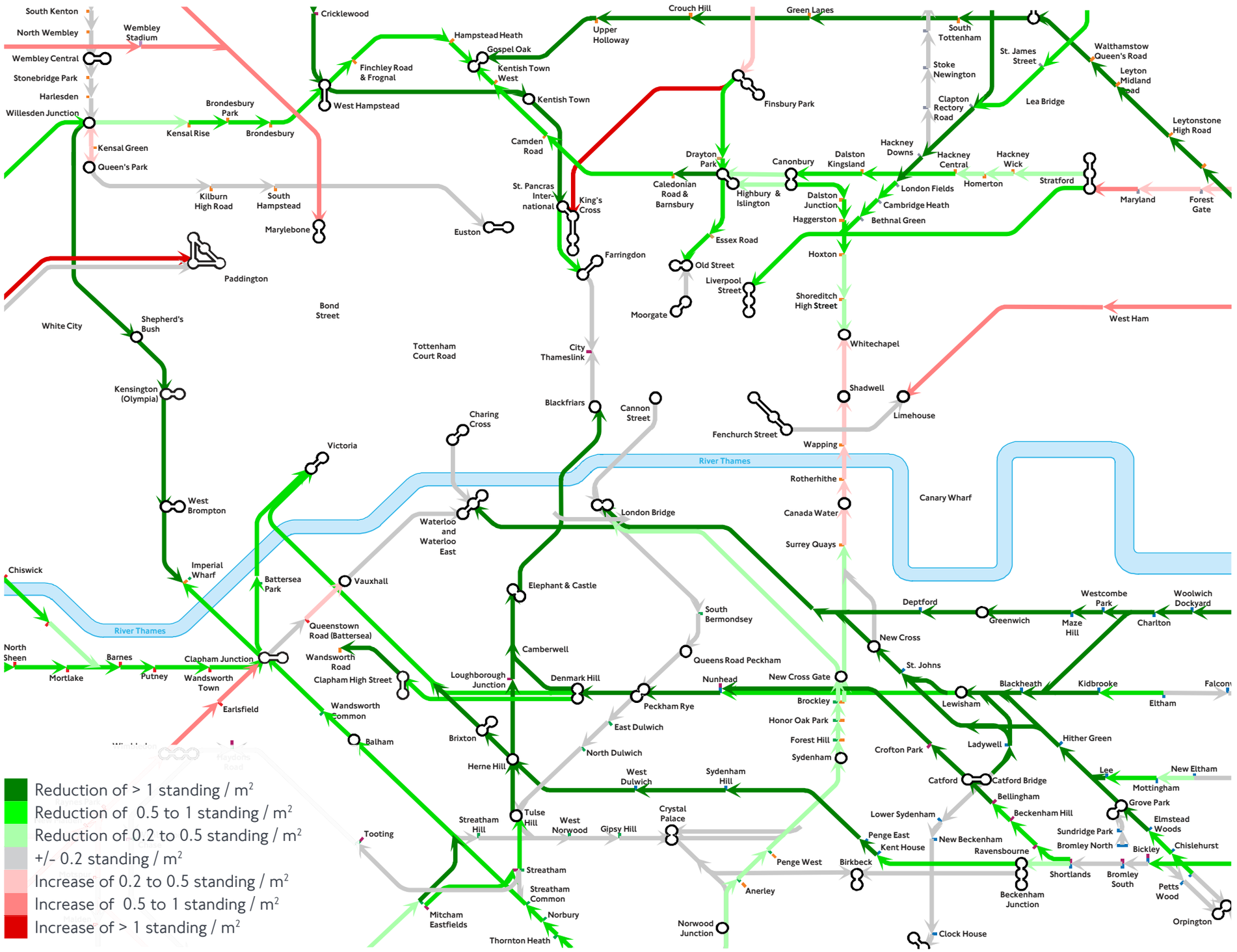

Underground and DLR crowding 2031 | National Rail crowding 2031 | Change in UG and DLR crowding | Change in National Rail crowding

Further investment on the rail network above that already committed will be required to support higher levels of growth

Once higher levels of growth to 2041 are taken into account, crowding is expected to worsen further on the many lines, although not to the same level as today on some lines. The Circle and DLR lines will also see higher levels of crowding than currently experienced today. However, there may be opportunities for further growth to be accommodated along the Central line as a result of Crossrail removing some of the pressure.

Underground and DLR crowding 2041 with delivery of 2015 Business Plan

Underground and DLR crowding 2041 | National Rail crowding 2041 | Change in UG and DLR crowding | Change in National Rail crowding

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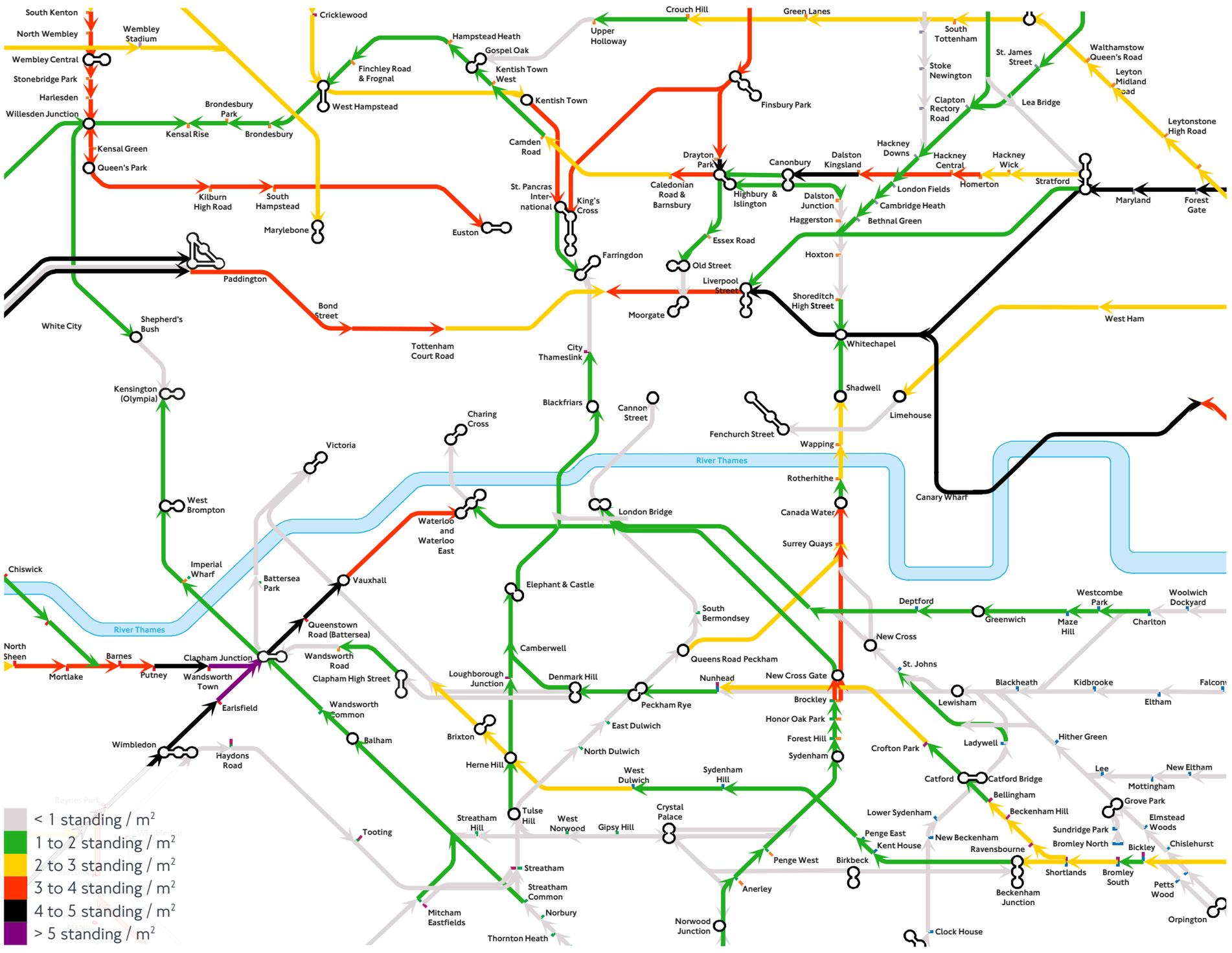
National Rail crowding 2041 with investment



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Change in Underground and DLR crowding 2041 with delivery of 2015 Business Plan

Underground and DLR crowding 2041
National Rail crowding 2041
Change in UG and DLR crowding
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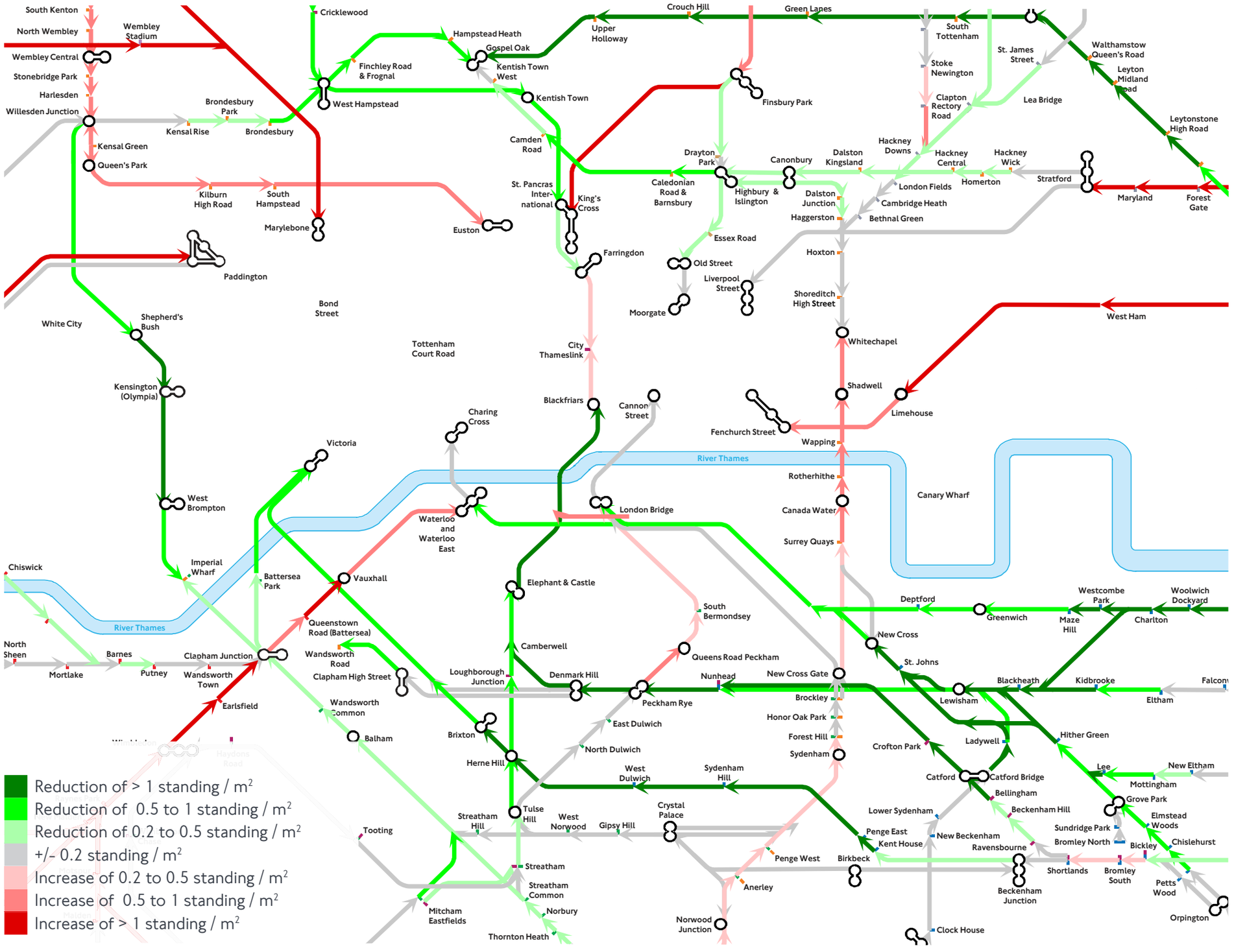
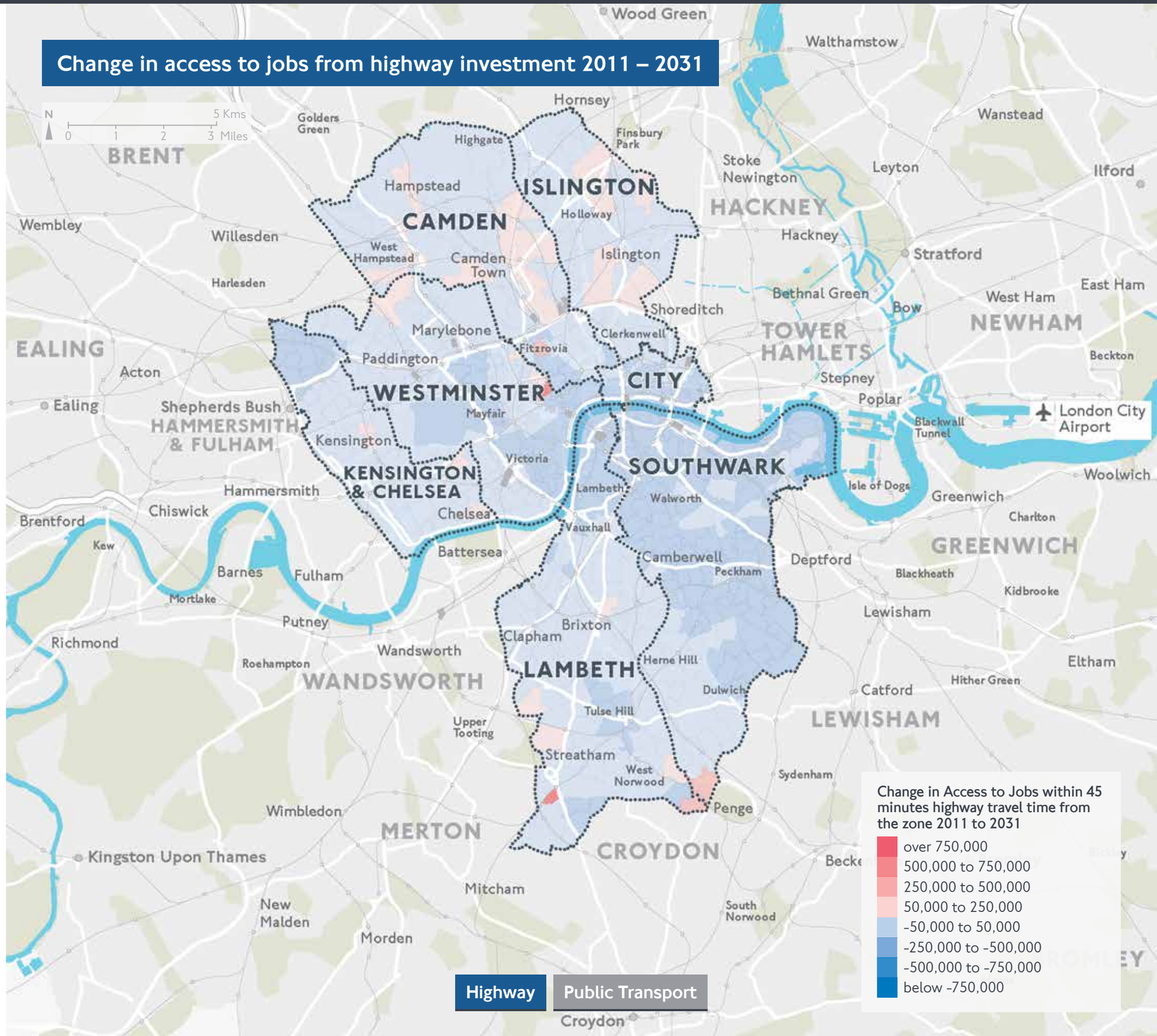
Change in National Rail crowding 2011 – 2041 with investment



The number of jobs accessible by public transport will increase, although congestion will reduce access to jobs by car in some areas

Committed investment in the Underground network will result in increased frequency and capacity that will mean residents of the sub-region will be able to access a greater number of jobs by public transport within a 45 minute travel time. However, due to forecast increases in highway congestion, fewer jobs will be accessible within 45 minutes by car from some places. This means that residents of places which do not have good access to the Underground network, such as in northern and central Hillingdon, are at a disadvantage. Measures to improve public transport access, such as bus priority measures, will be required to ensure residents of these areas have the greatest possible range of employment opportunities, and maintain quality of life.



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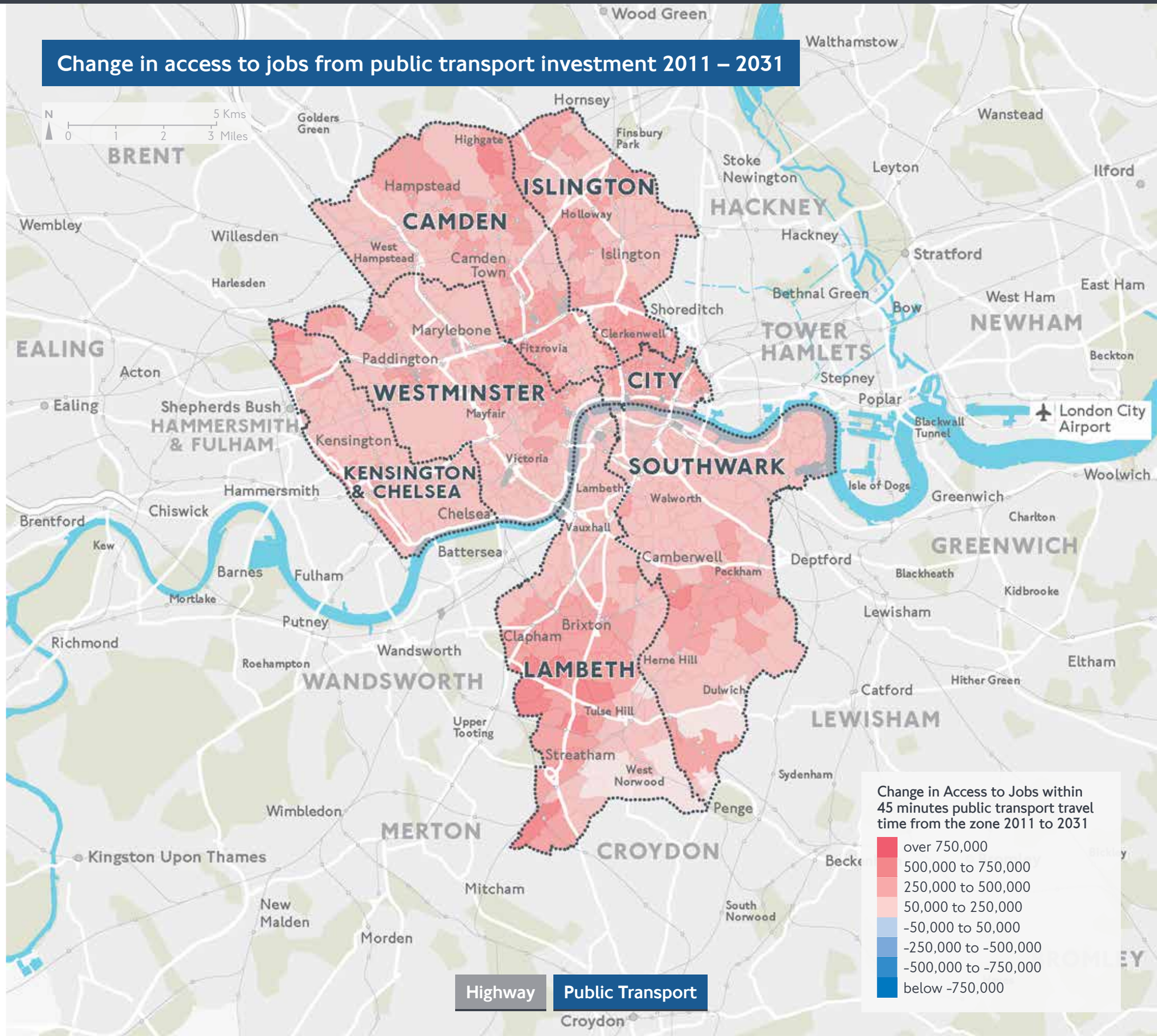
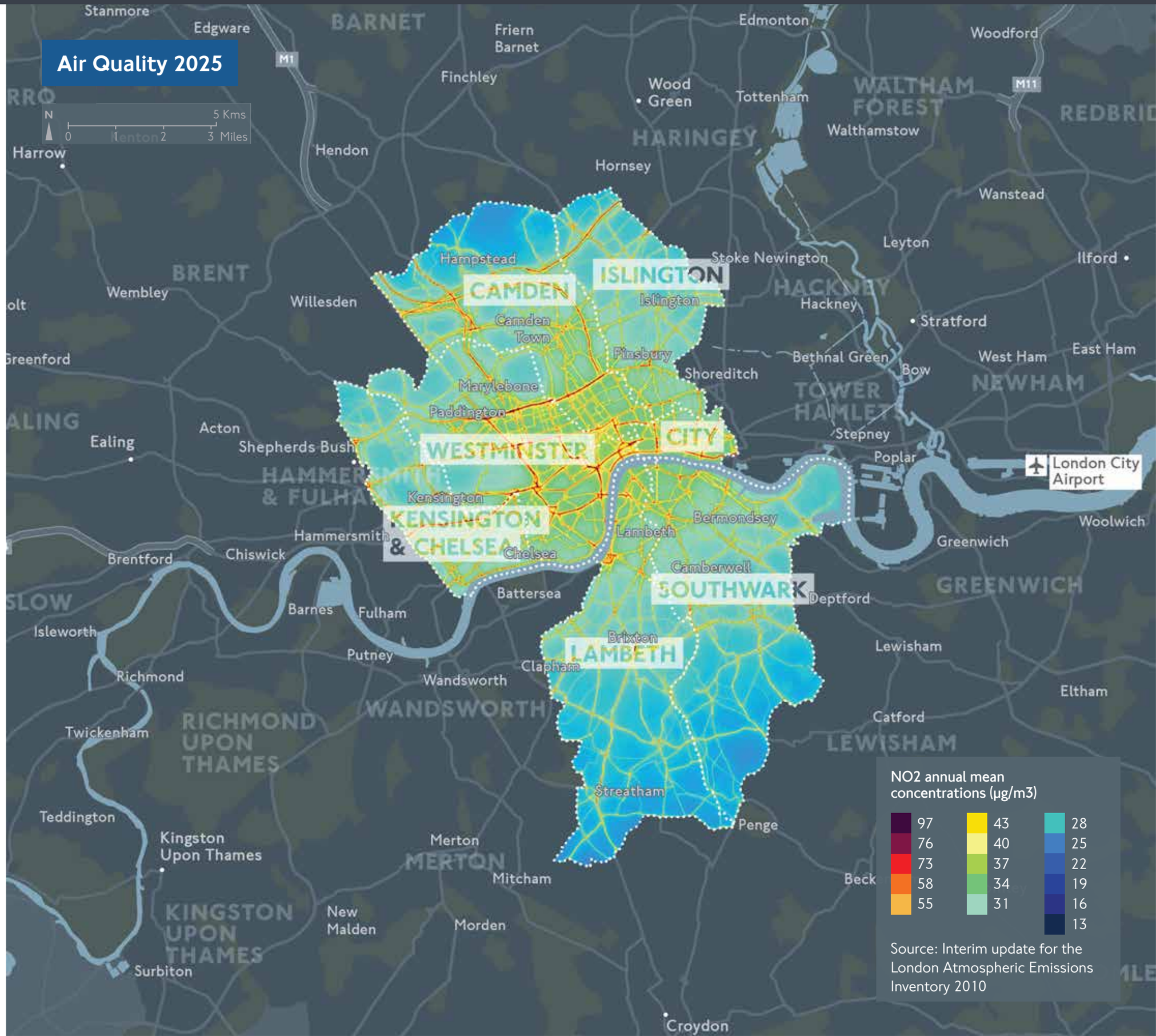


Air quality is expected to improve with technology, but more will need to be done

Although harmful emissions from vehicles are expected to reduce as engines become more efficient, growth and development in the sub-region presents challenges in terms of balancing air quality management with economic and transport aspirations. In addition, strategic industrial areas in the sub-region including Park Royal may result in higher movements of LGVs, or increased industrial emissions – the potential air quality impacts associated with these increases need to be sustainably managed.



Central London Sub-Regional Transport Plan

Story of Growth - 2016 Update

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