The changing nature of travel demand in London

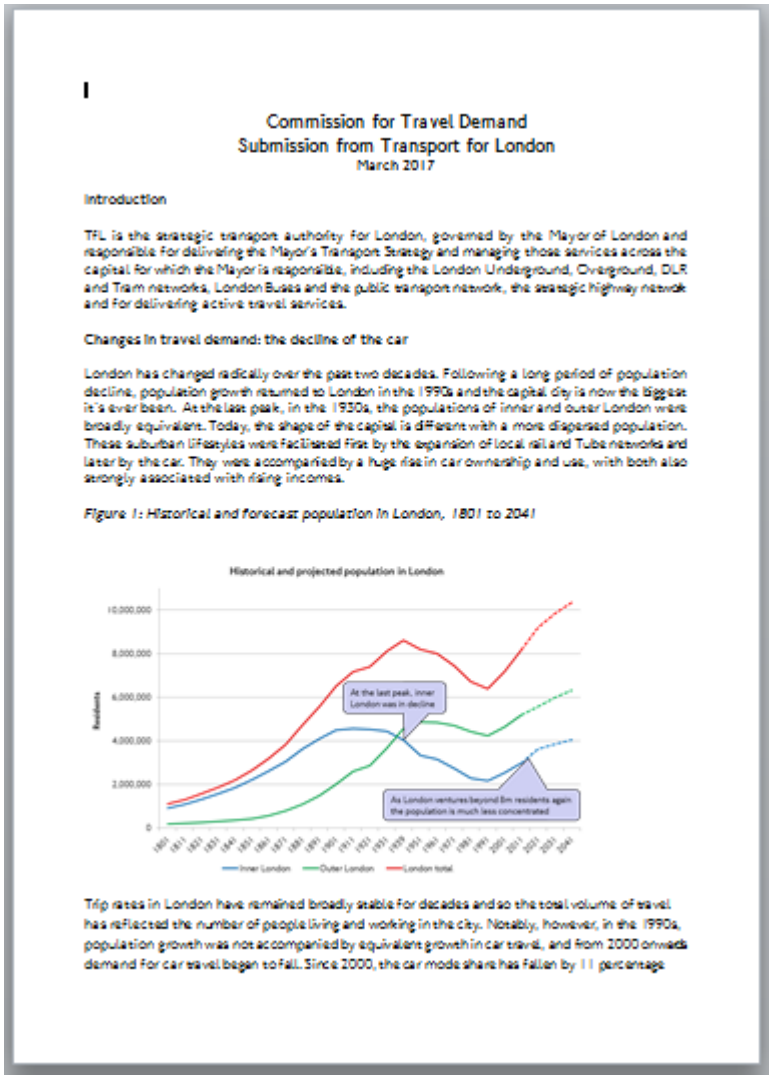
Introducing myself

- Sociology graduate – prior experience in local authority policy & research
- 12 years transport experience – congestion charging, policy unit, planning
- Manage analysis & research team within TfL's strategic planning directorate

Group Planning - Policy Analysis

- Carry out analysis & research to support emerging policies and projects, specialising in cross-cutting questions, road-based modes & minor modes
- Experts in travel patterns and trends, describing the drivers of demand
- Conduct fieldwork & produce bespoke tools & spreadsheet models to answer questions outside the scope of the strategic models
- Support scheme appraisal & production of business cases

What I'm going to talk about today



Commission for Travel Demand
Submission from Transport for London
March 2017

Introduction

TfL is the strategic transport authority for London, governed by the Mayor of London and responsible for delivering the Mayor's Transport Strategy and managing those services across the capital for which the Mayor is responsible, including the London Underground, Overground, DLR and Tram networks, London Buses and the public transport network, the strategic highway network and for delivering active travel services.

Changes in travel demand: the decline of the car

London has changed radically over the past two decades. Following a long period of population decline, population growth resumed in London in the 1990s and the capital city is now the biggest it's ever been. At the last peak, in the 1930s, the populations of inner and outer London were broadly equivalent. Today, the shape of the capital is different with a more dispersed population. These suburban lifestyles were facilitated first by the expansion of local rail and Tube networks and later by the car. They were accompanied by a huge rise in car ownership and use, with both also strongly associated with rising incomes.

Figure 1: Historical and forecast population in London, 1801 to 2041

Historical and projected population in London

Trip rates in London have remained broadly stable for decades and so the total volume of travel has reflected the number of people living and working in the city. Notably, however, in the 1990s, population growth was not accompanied by equivalent growth in car travel, and from 2000 onwards demand for car travel began to fall. Since 2000, the car mode share has fallen by 11 percentage

TfL's submission to the Commission for Travel Demand reflected some of our key areas of interest:

1. The importance of the *nature* of growth in defining travel demand trends – and what could this mean for the future of London?

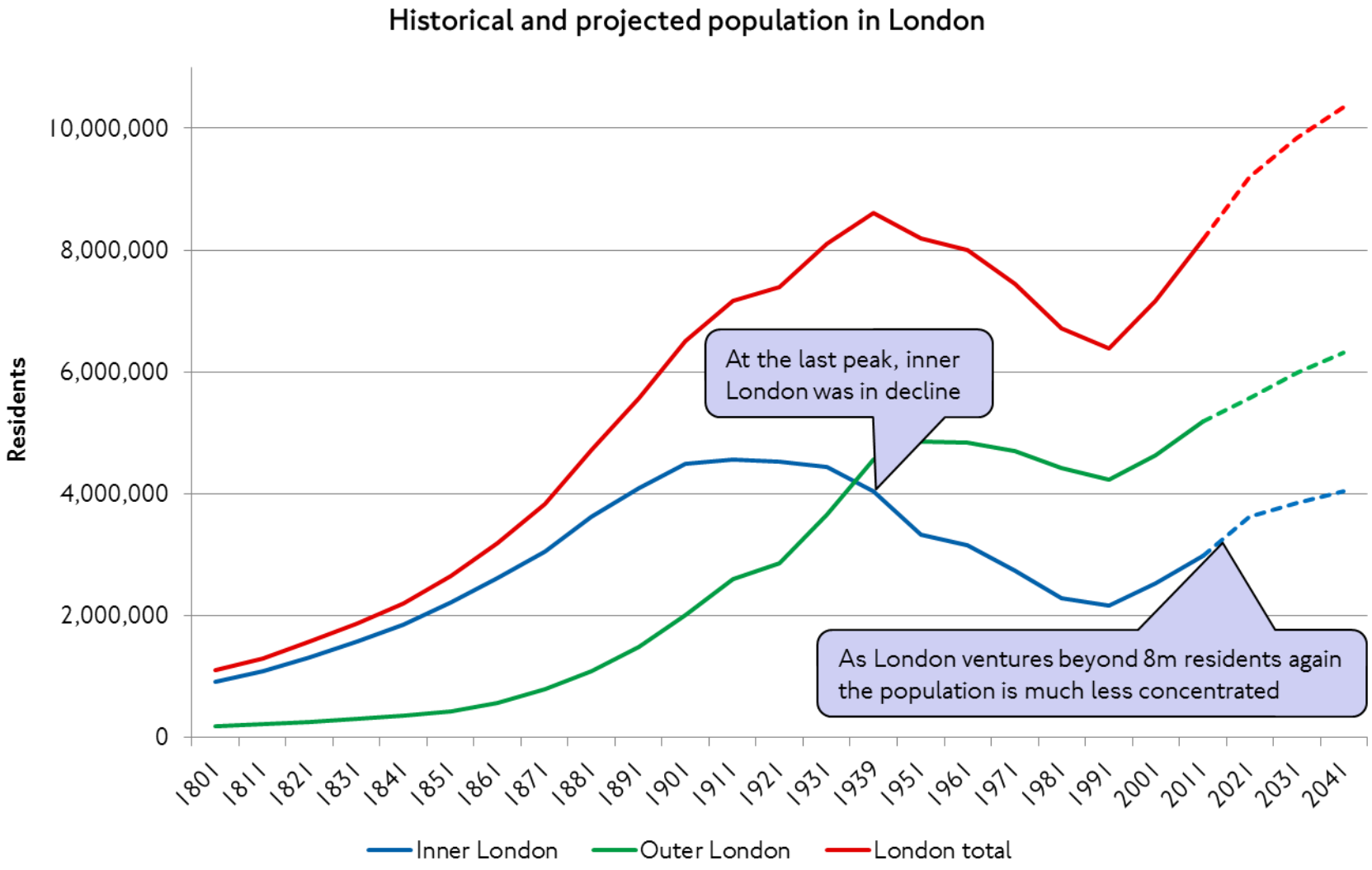
2. The emergence of new trends of less travel – what is driving these changes and will it continue?

3. How can we put ourselves in a better position to explore and represent uncertainty in our forecasting and long term planning?

Beyond the contents of our submission, I am also going to provide some insights into the temporal aspects of travel demand.

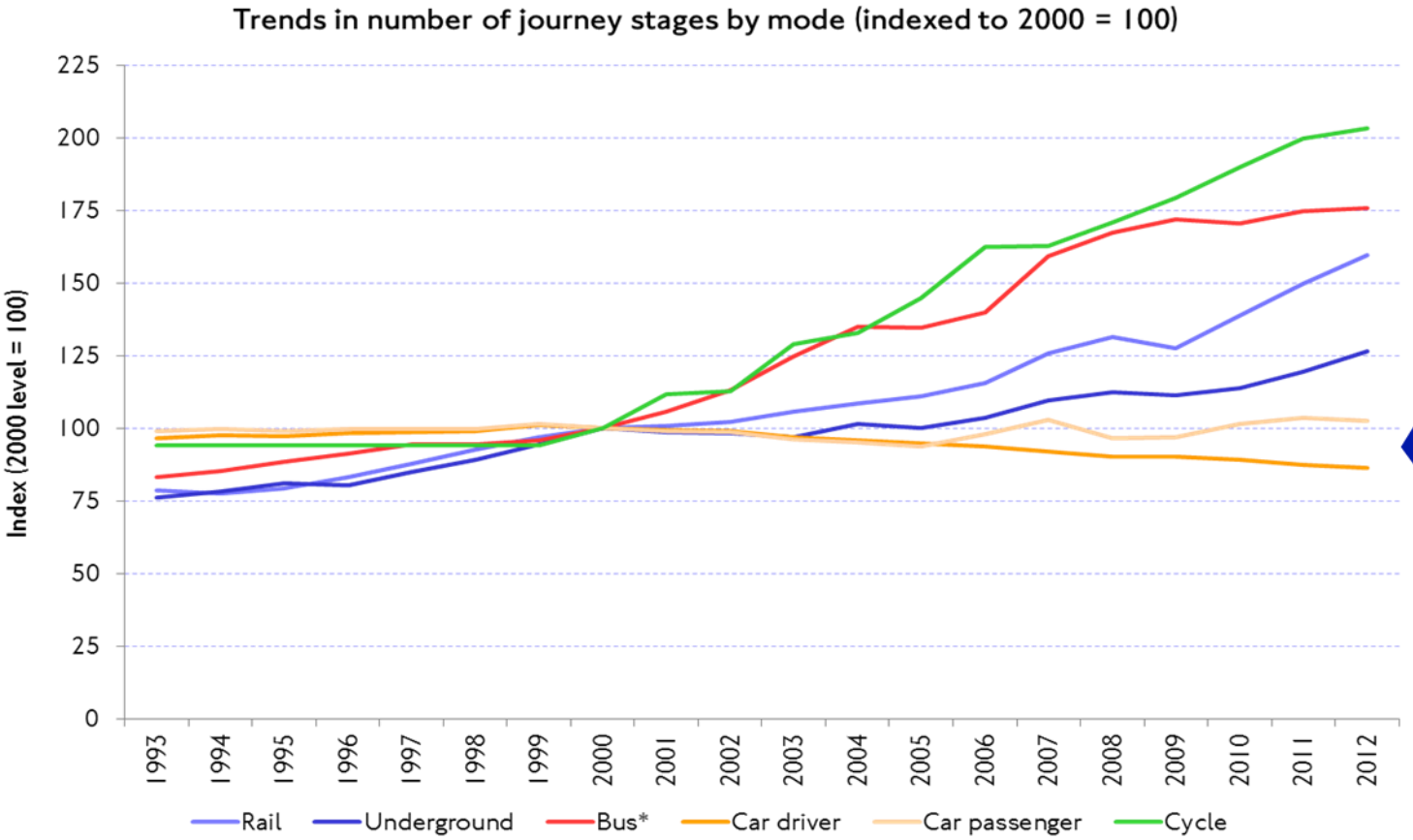
Understanding what determines travel patterns and trends

London is the biggest it's ever been, but the shape of the capital is different



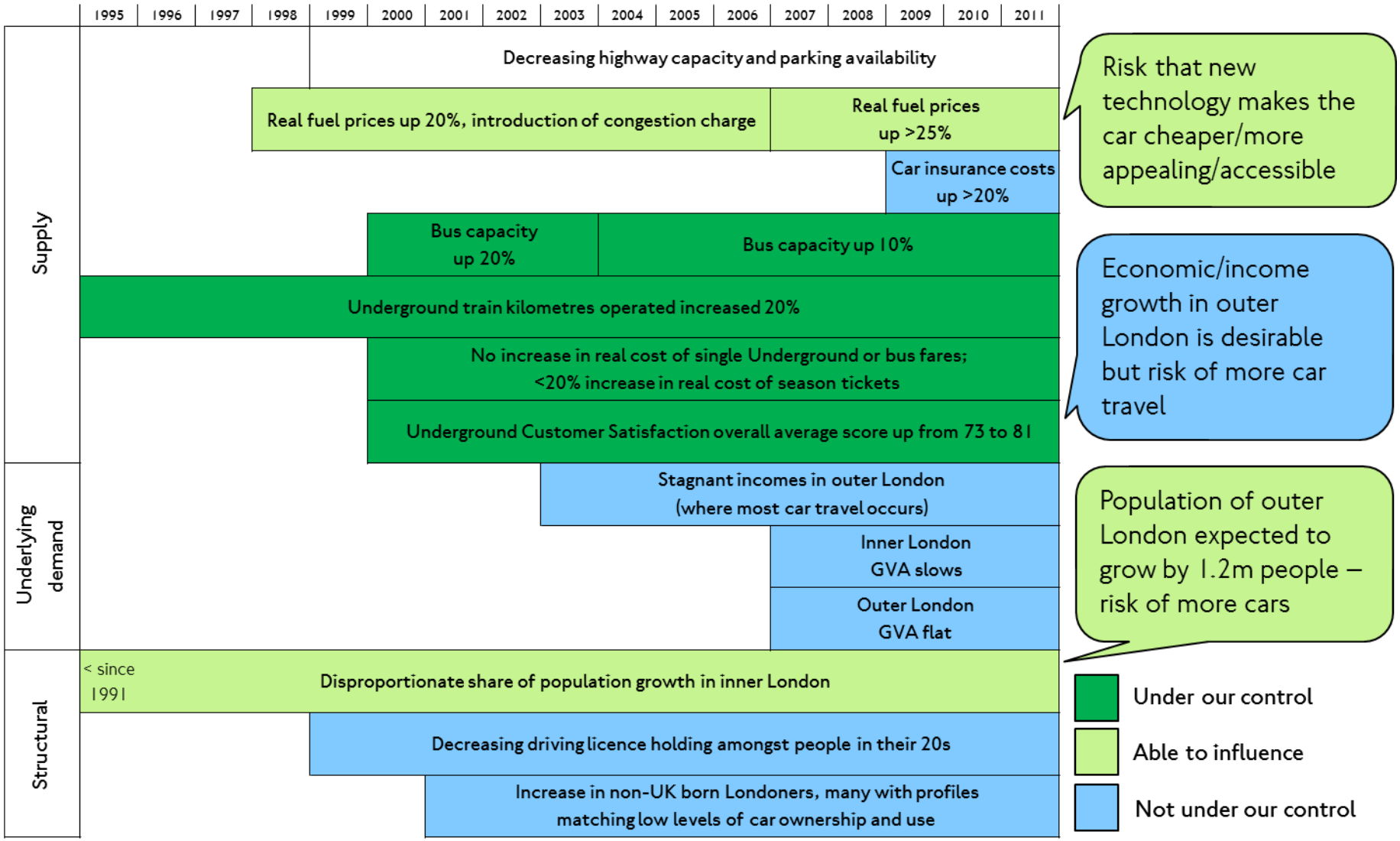
Travel patterns have changed too

- Since TfL was formed in 2000, the car mode share has fallen by 11 percentage points from 48% to 37%
- Car kilometres travelled in London have been falling since 1999. From 2007, car travel also started to fall outside London, albeit by much less.



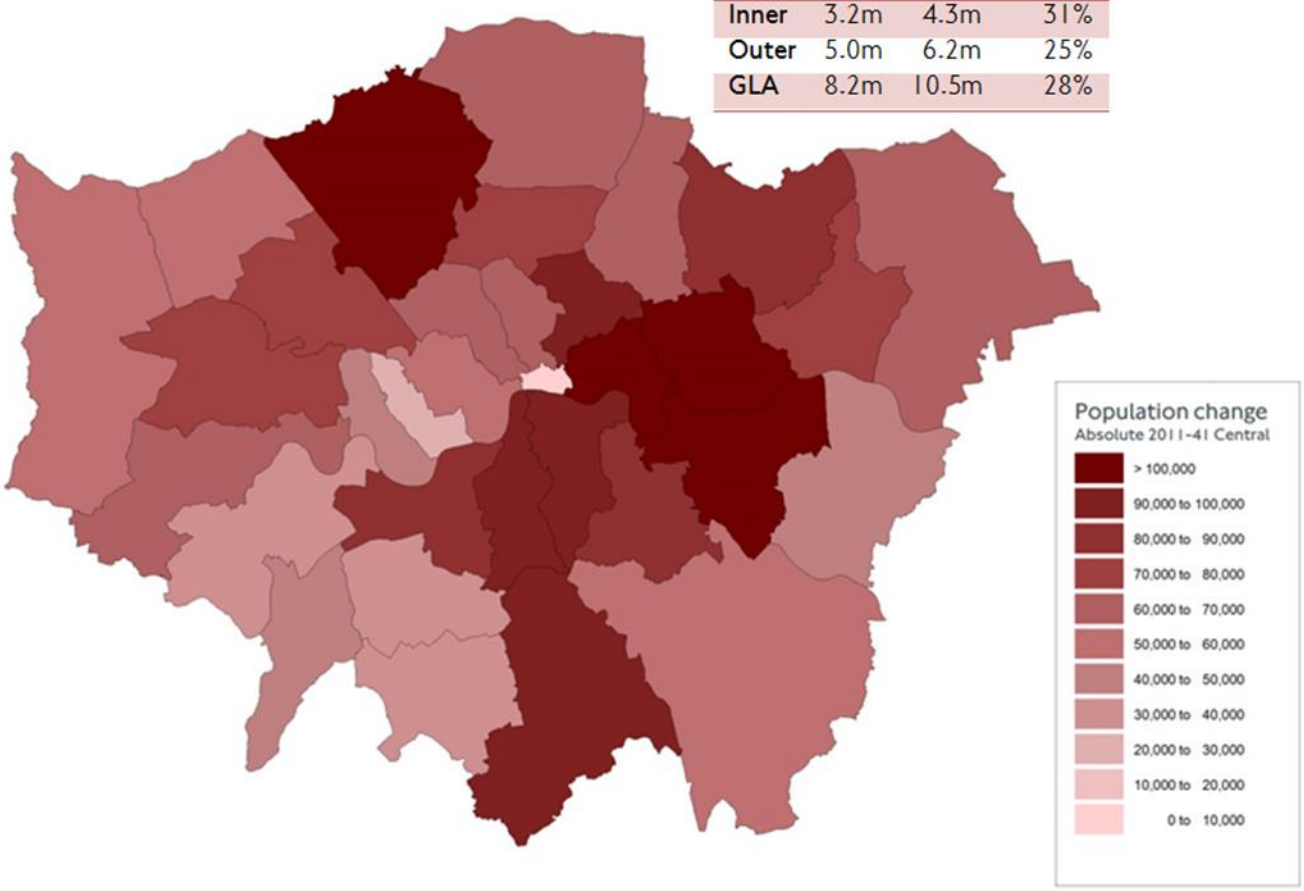
However, in the past two years, traffic levels have started to rise again.

Most determining factors helped mode shift from the car, including those out of our control



By 2041, London's population is expected to reach 10.5 million

Popn	2011	2041	Change
Inner	3.2m	4.3m	31%
Outer	5.0m	6.2m	25%
GLA	8.2m	10.5m	28%



The recent 'baby boom' will stabilise, giving net natural change of +80,000 per year.

By 2041, the number of Londoners over 70 will have grown by 85%.

More people will leave London than arrive, with net out-migration of 20,000 per year.

We better understand the importance of the *nature* of growth - is a return to car growth possible?

Some variants on our assumptions would make mode shift easier…

	1971-81	1981-91	1991-01	2001-11
All ages	-10	0	+7	+12
0-14	-22	+2	+8	+8
15-64	-8	+2	+10	+17
65+	+4	-8	-7	+1

London has never had an ageing population in a period of growth – a younger profile would place pressure on the PT network but would be less likely to use car.

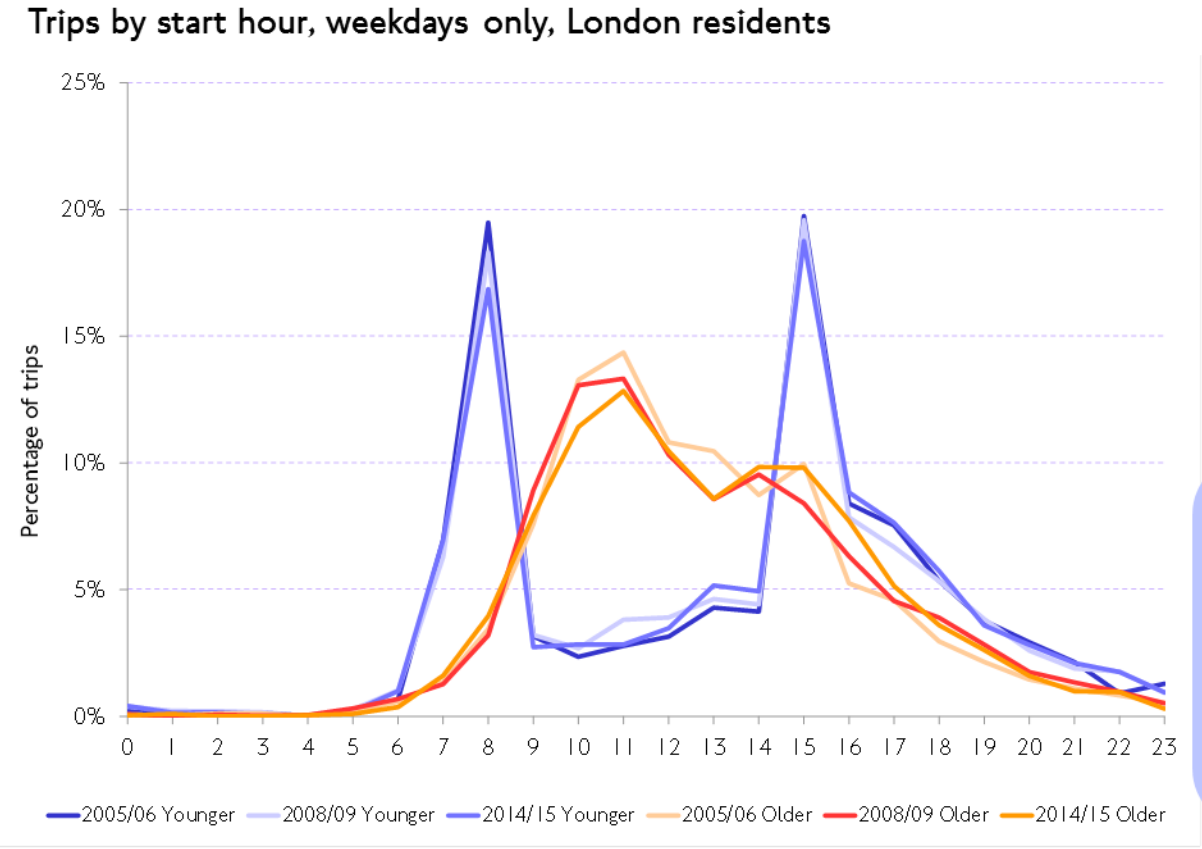
Whilst others might lead to a return to car growth...

If more of the growth than expected is in outer London

If the balance between the cost of driving & PT makes PT less attractive

If new technology makes 'car' travel easier, cheaper, more accessible

For example, travel patterns vary by age and these patterns are also changing in different ways



Source: Travel in London Report 8 Fig 11.24 p233

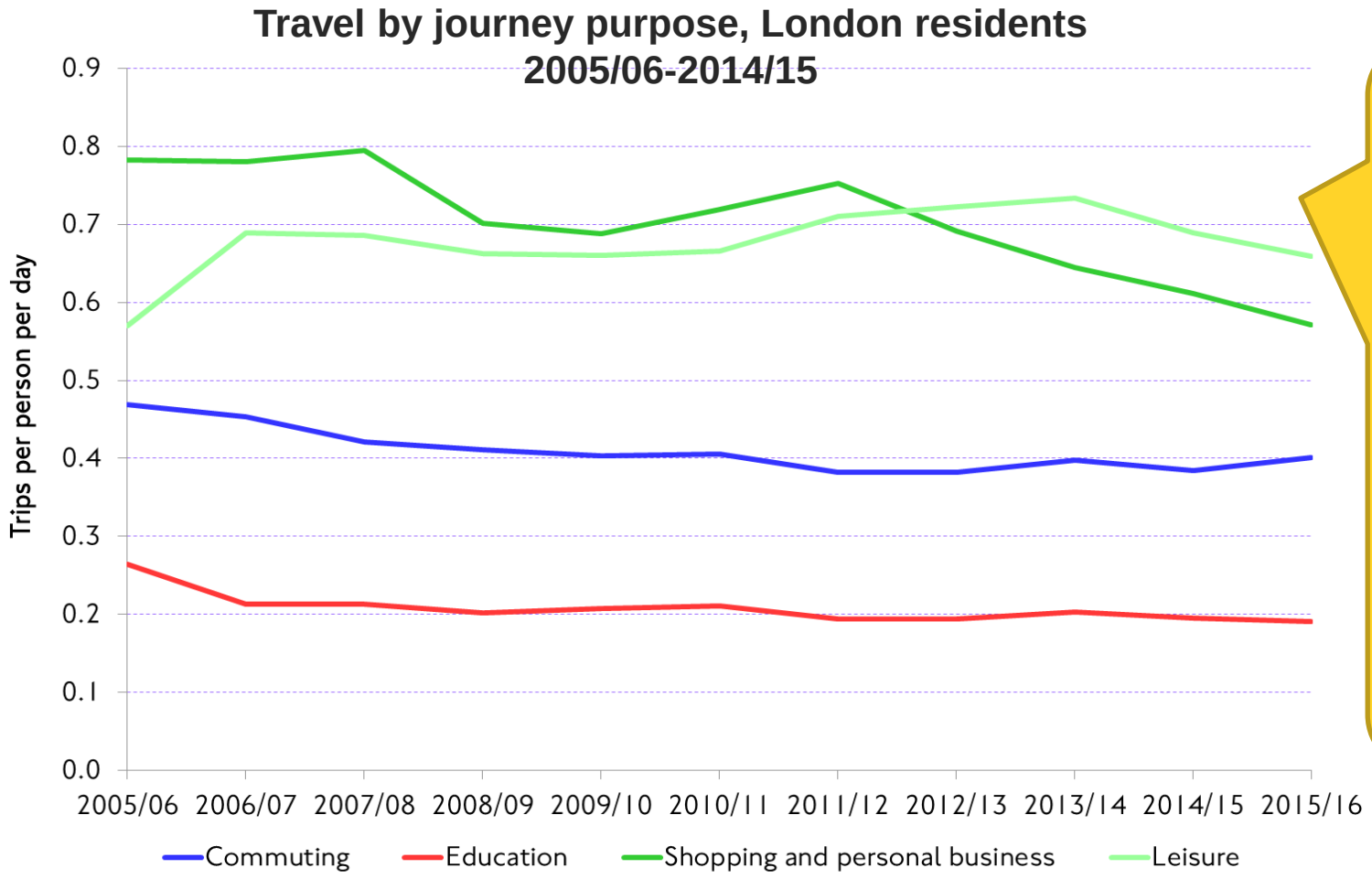
Trip rates are gradually falling amongst working age population but remain stable amongst over 65s

If growth is as forecast, places pressure on road network & need for accessible services

If growth is as recent trend, places pressure on peak hour PT network

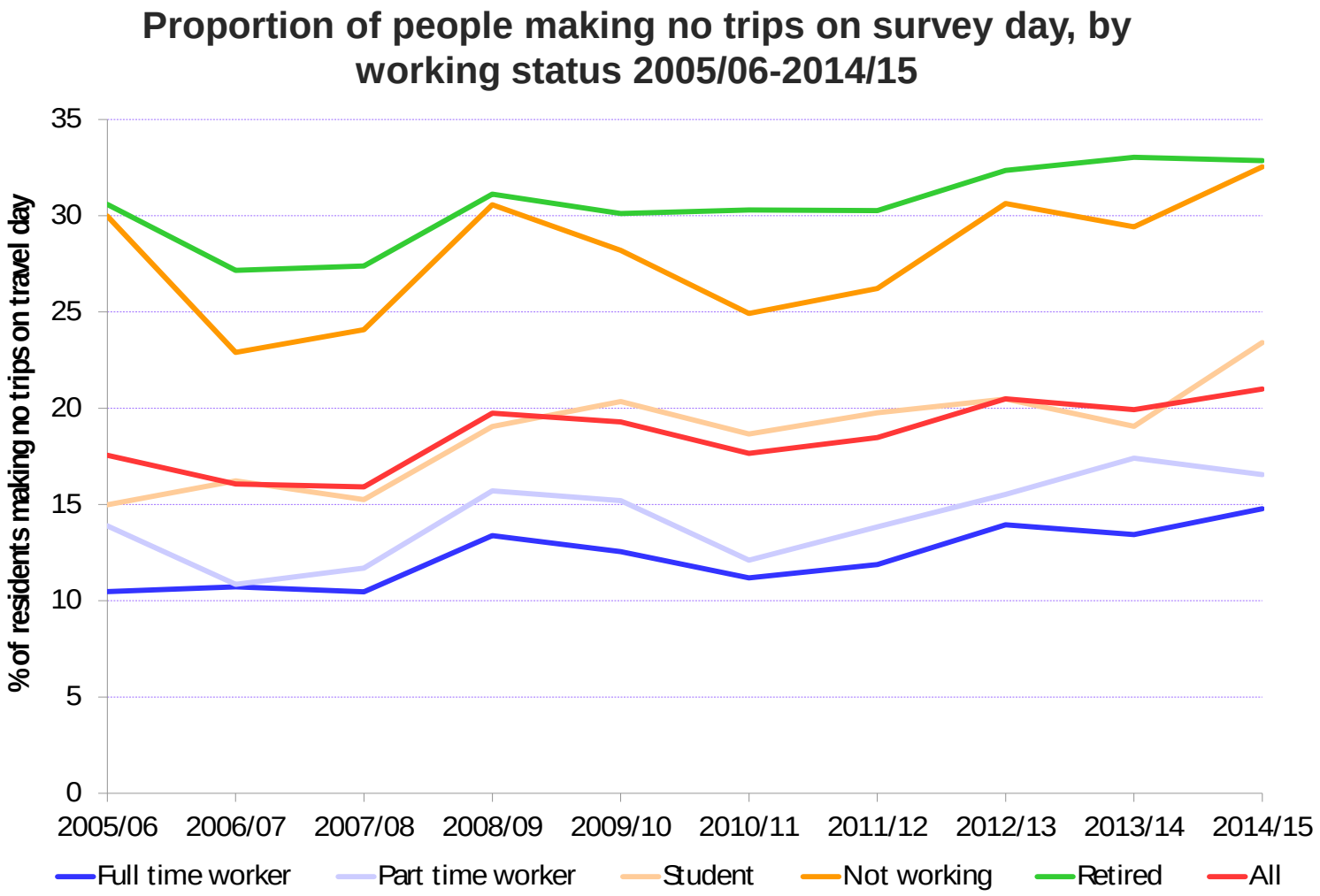
Emerging trend of declining travel & non-travel

Whilst total travel has been rising with population growth, travel per person has fallen steadily

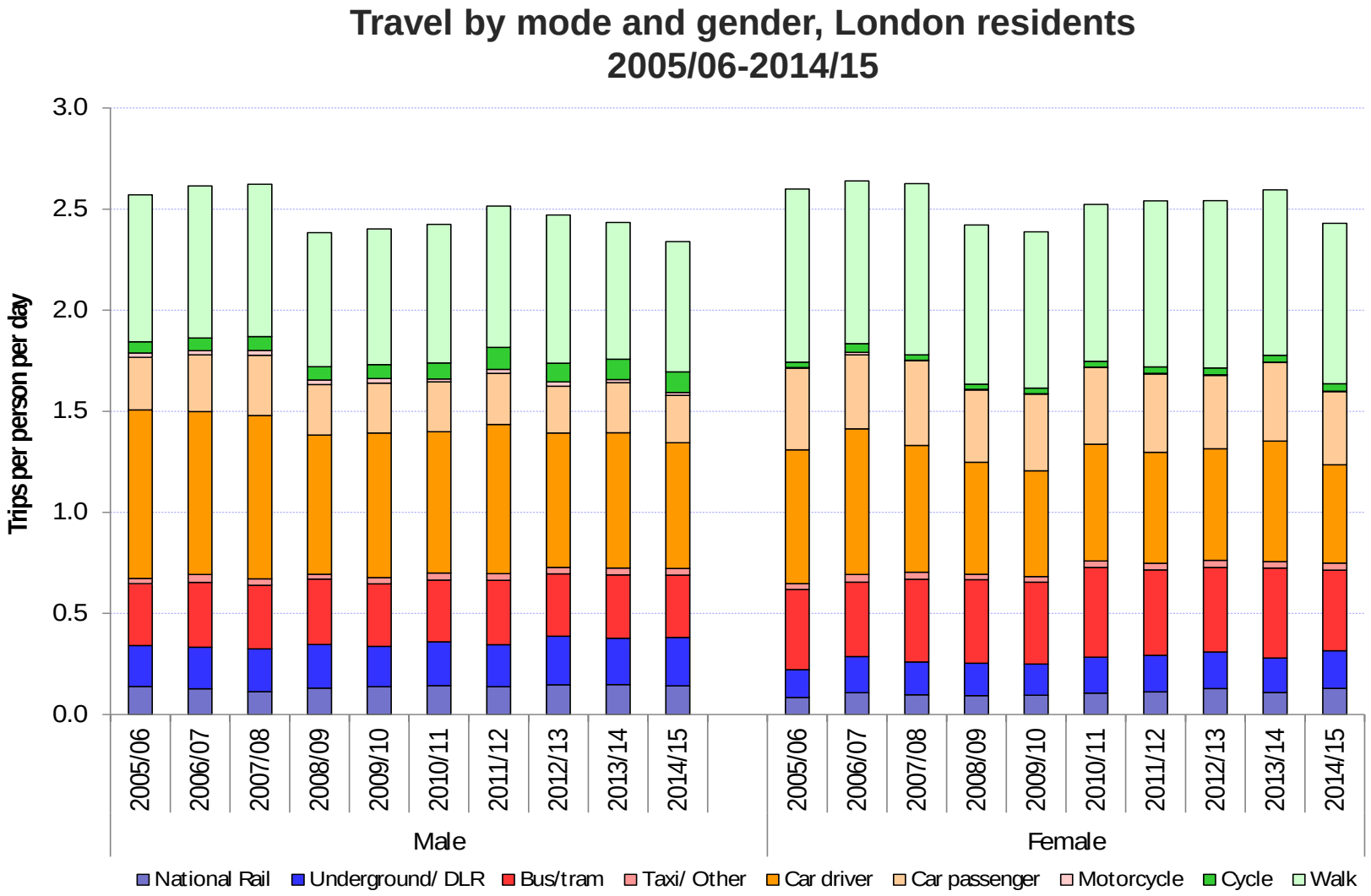


Bigger falls seen during worst recessionary years – but consistently falling throughout LTDS period which pre-dates 2008 financial crash

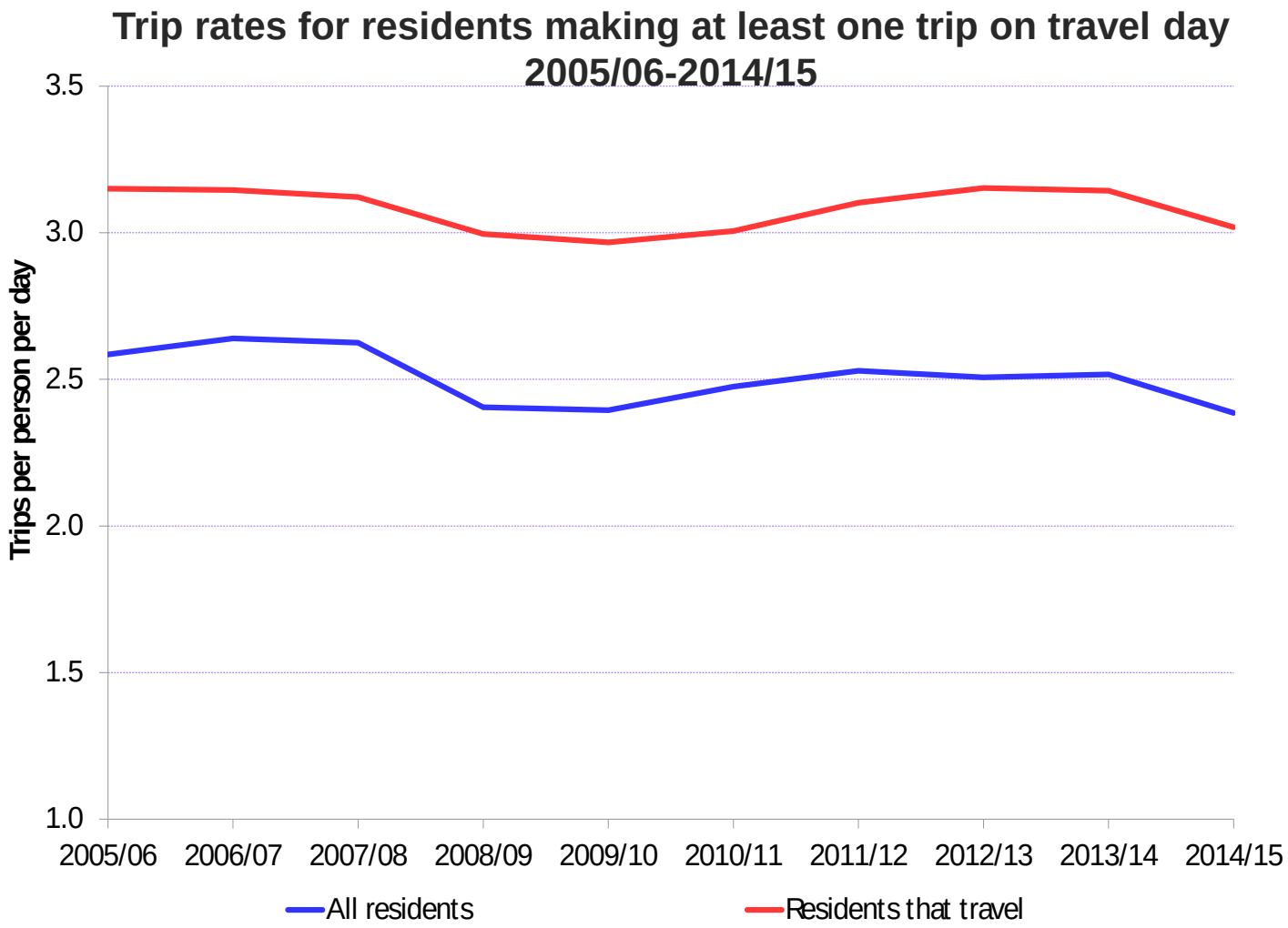
The increase in non-travel is not explained by changing demographics – it is seen in all groups



The reduction in car use accounts for most of the fall – what does this mean for our understanding of mode shift?

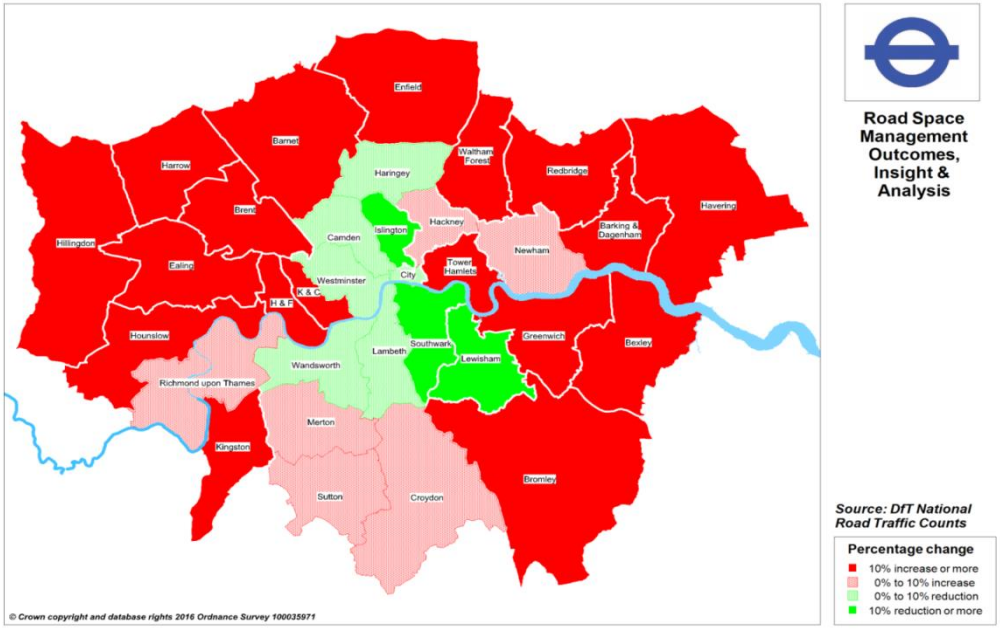


Nor are falling trip rates simply explained by the rise in non-travel – those who travel, also travel less

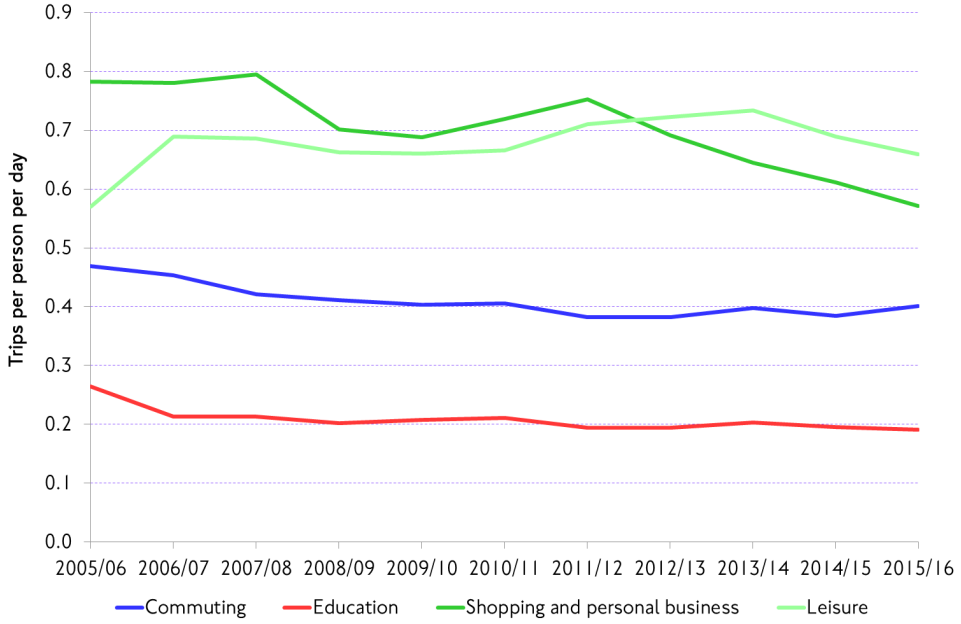


There is some evidence of a change in lifestyles changing travel patterns

Travel is reducing, particularly for shopping purposes, and an increasing proportion of people do not leave the house on any given day.



Travel by journey purpose, London residents 2005/06 – 2015/16

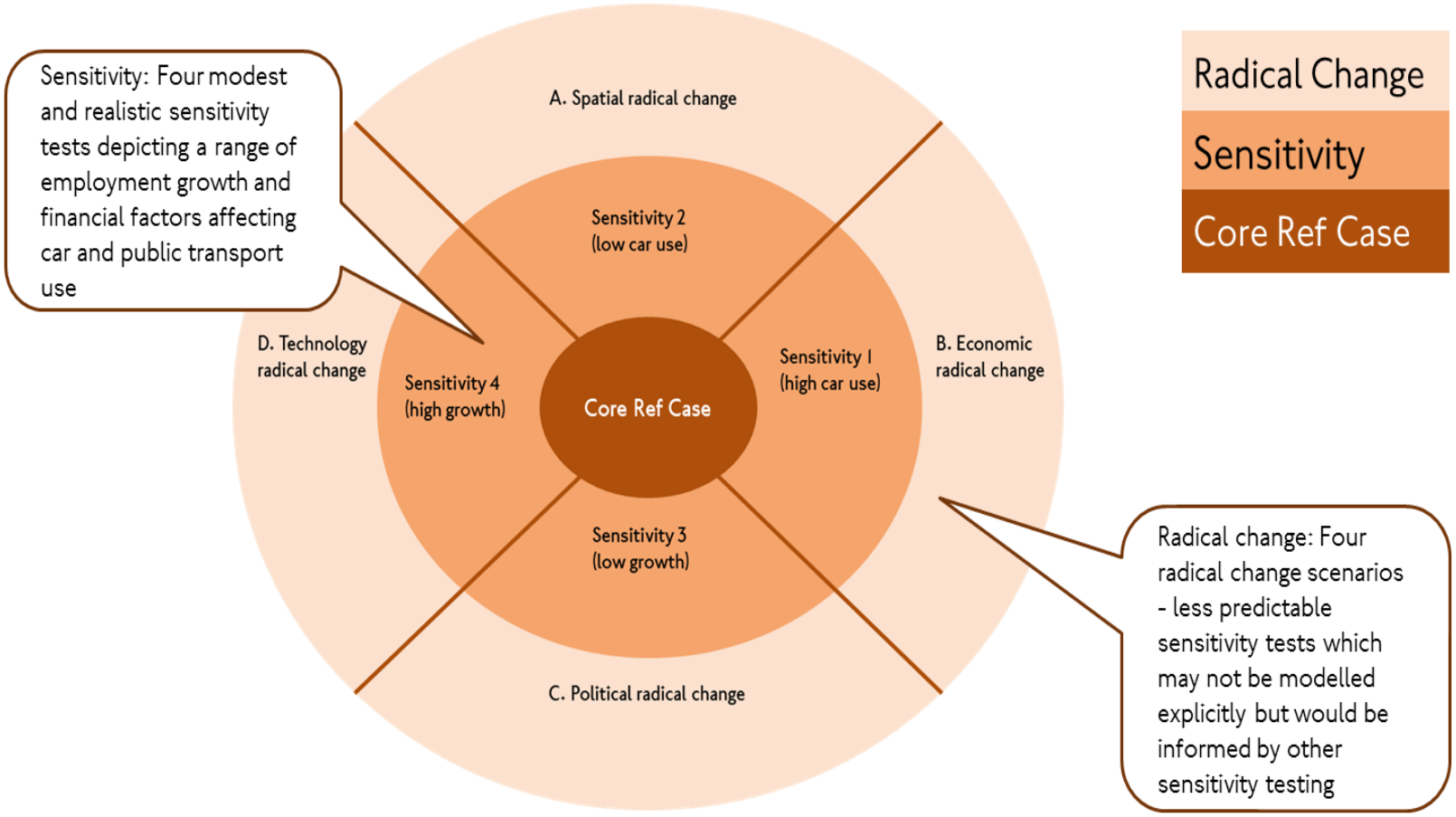


LGV traffic, percentage change, 1994-99 - 2015

Van traffic has risen by a fifth over the past 20 years. As well as the huge growth in residential areas, estimates suggest that between 20-60% of deliveries in central London may be for personal rather than business purposes.

Improving our understanding of uncertainty

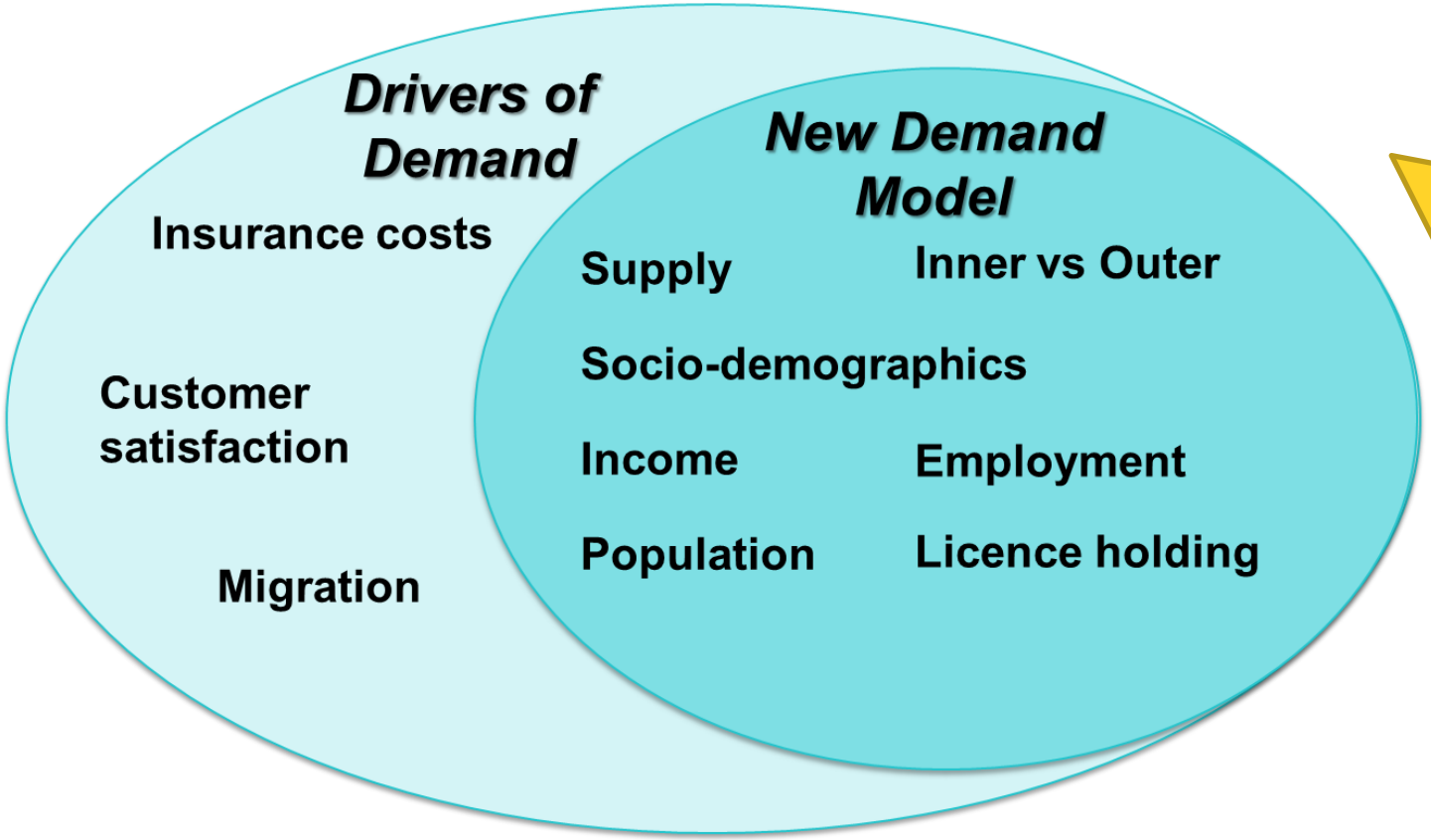
We have developed a new approach to sensitivity testing to help understand the resilience of proposals



Note: Only changes to population or employment will affect total trip making by all modes

TfL is developing a new demand model to incorporate what we've learned

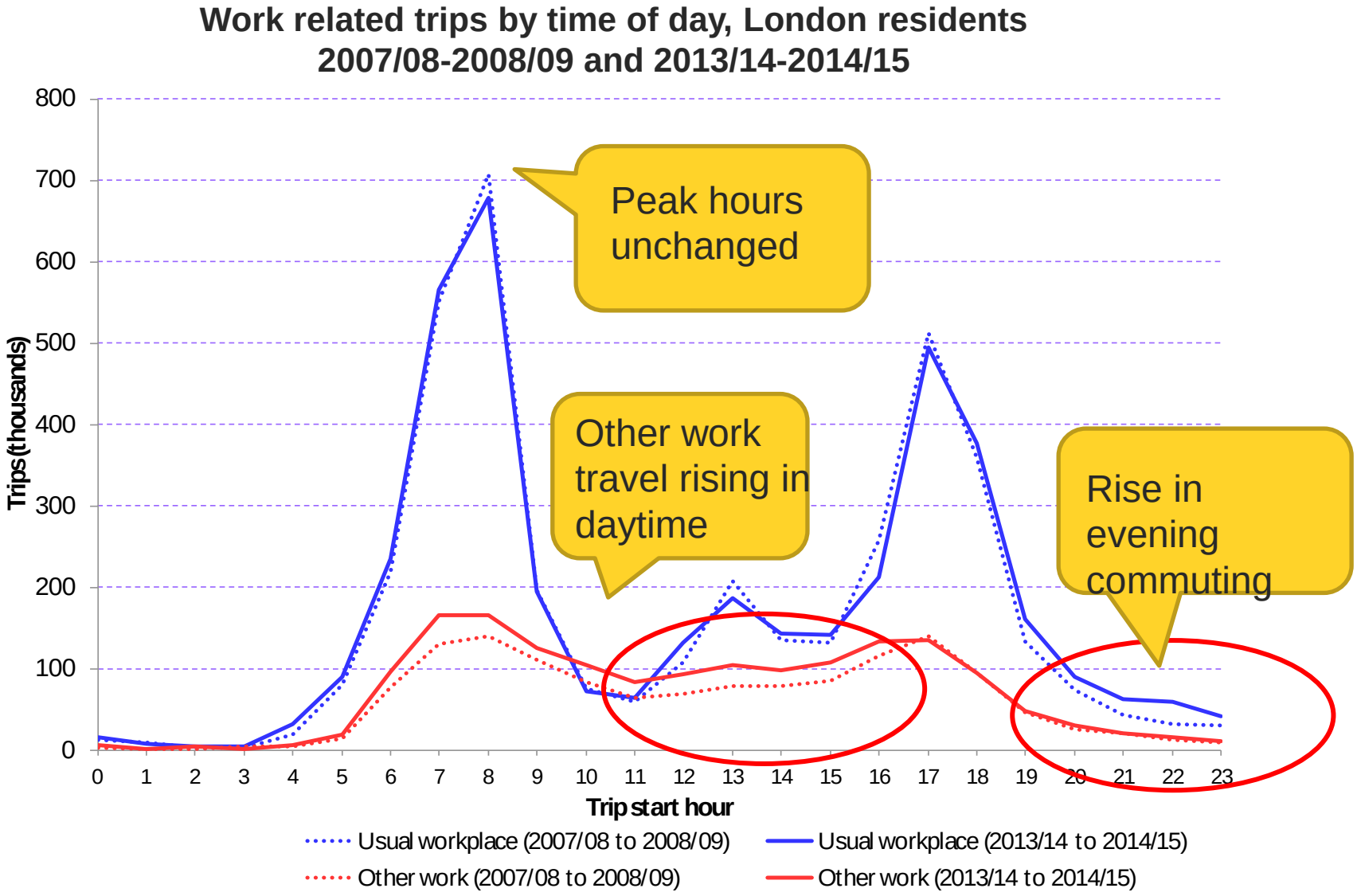
- Re-estimated for improved mode choice
- Improved segmentation
- Brings LoHAM and CYNEMON into same model
- Functionality for C/AVs/ shared mobility



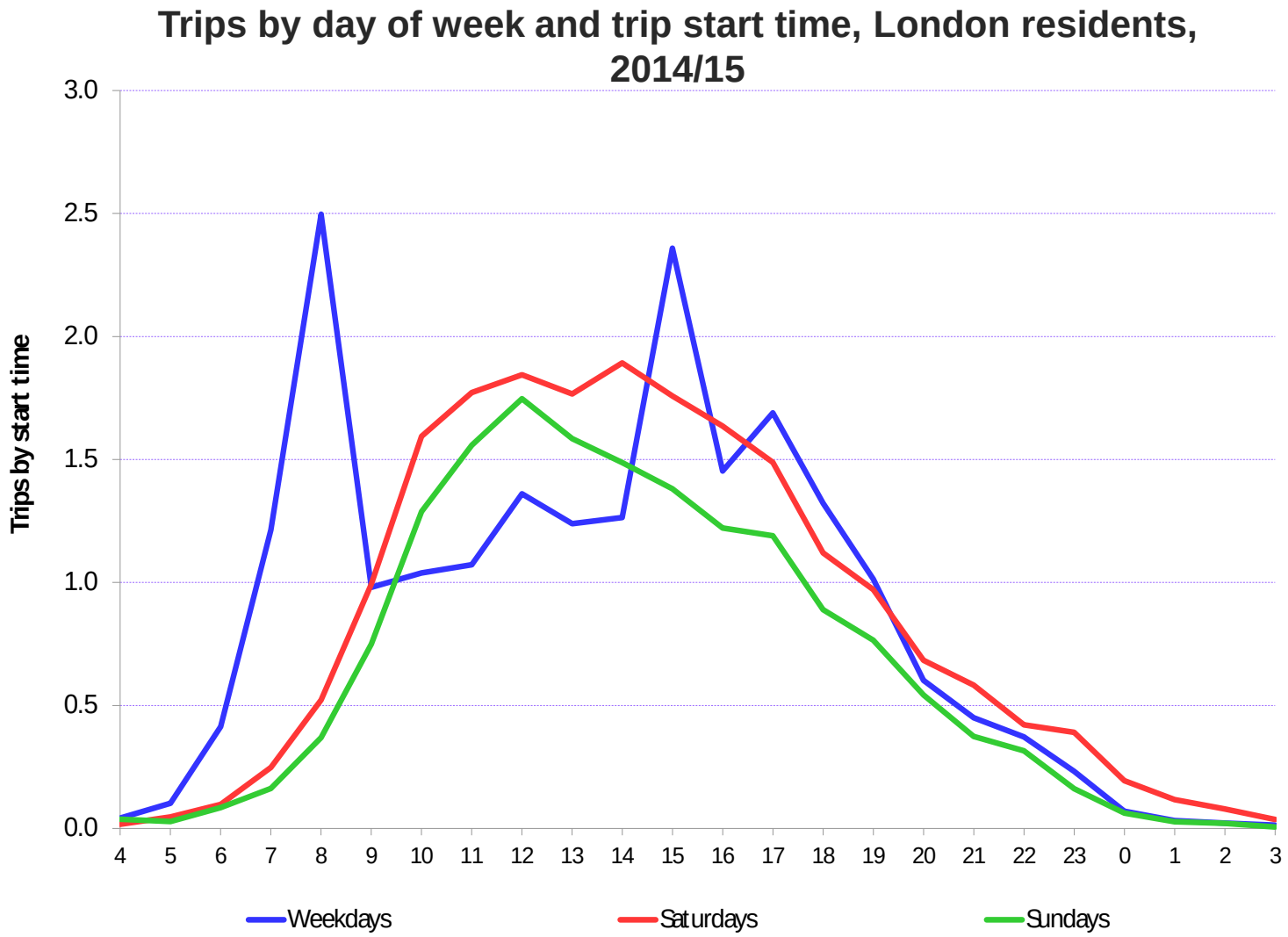
Key goal is to be able to do more scenario testing and 'illustrative' modelling of conceptual proposals

Insight into temporal travel patterns and trends in London

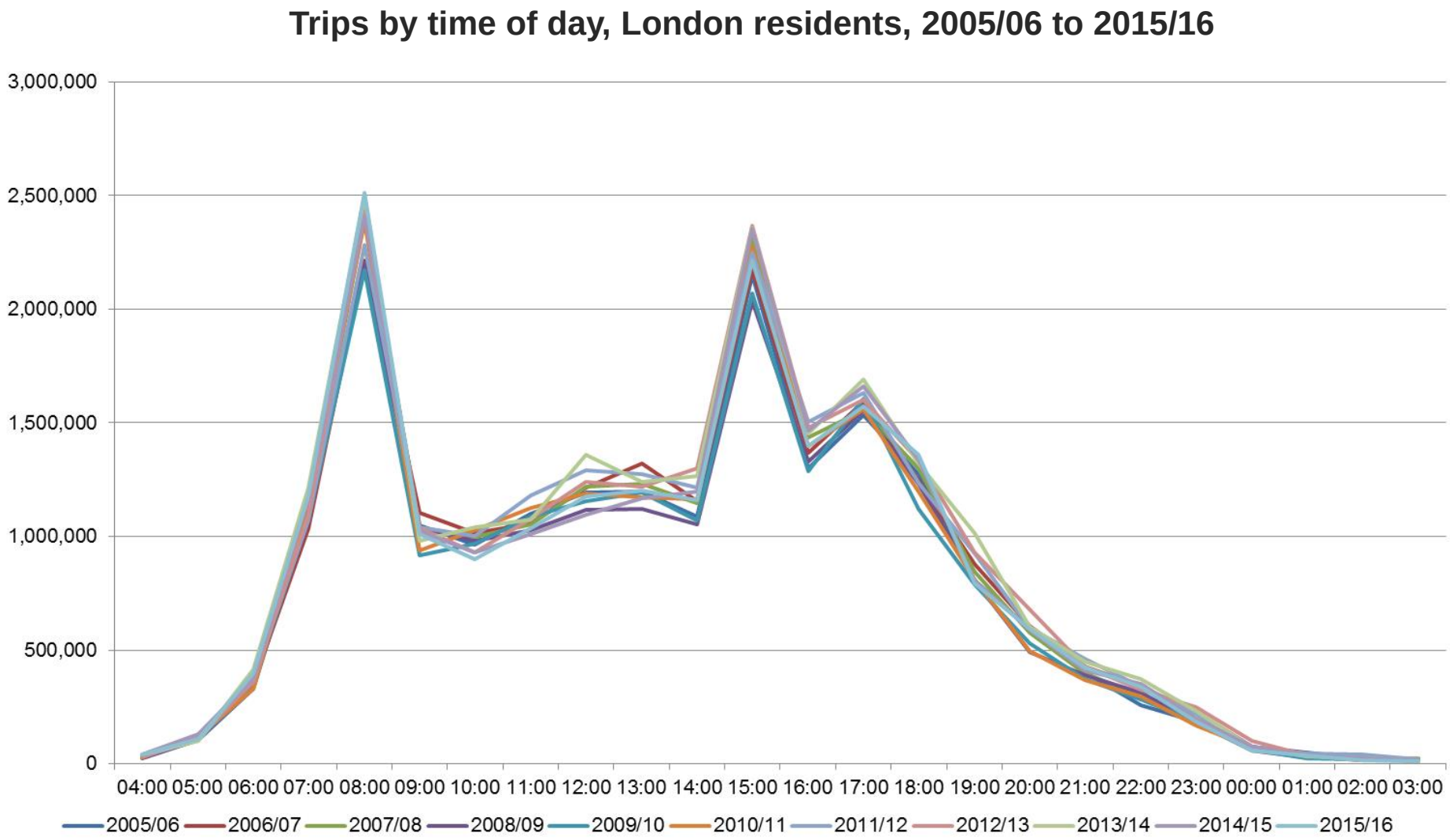
Little evidence of flexible working changing commute patterns



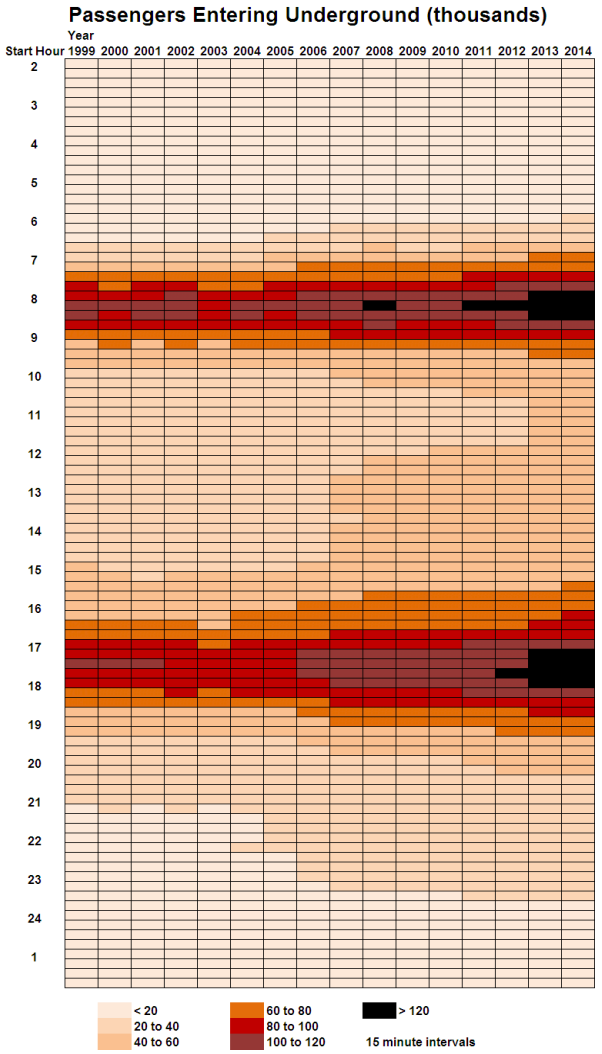
For 15 hours of the day, trip volumes are higher on Saturdays than on weekdays for residents

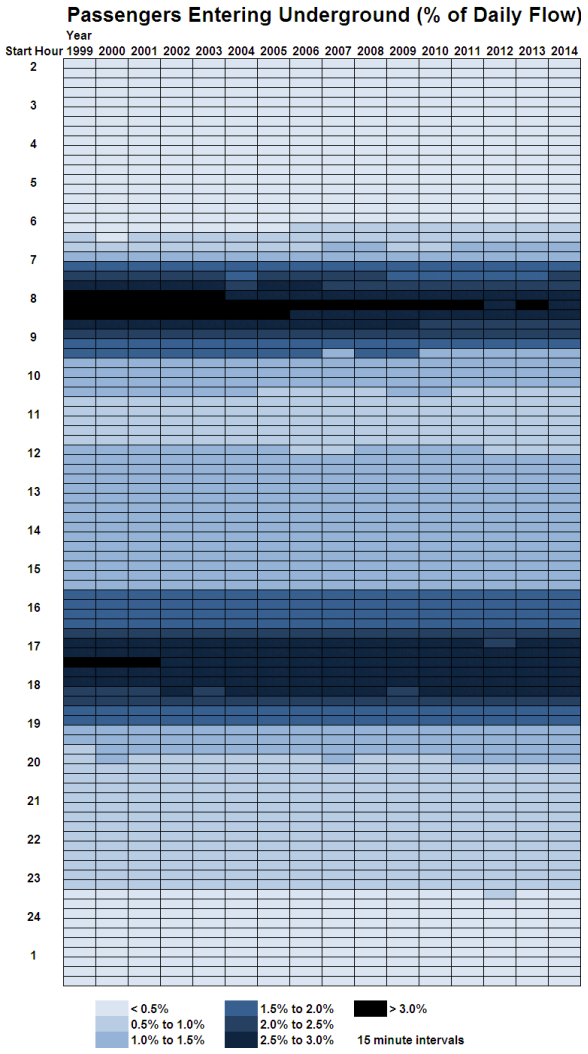


Little evidence that time of day profile is changing over time – if anything, getting slightly peakier



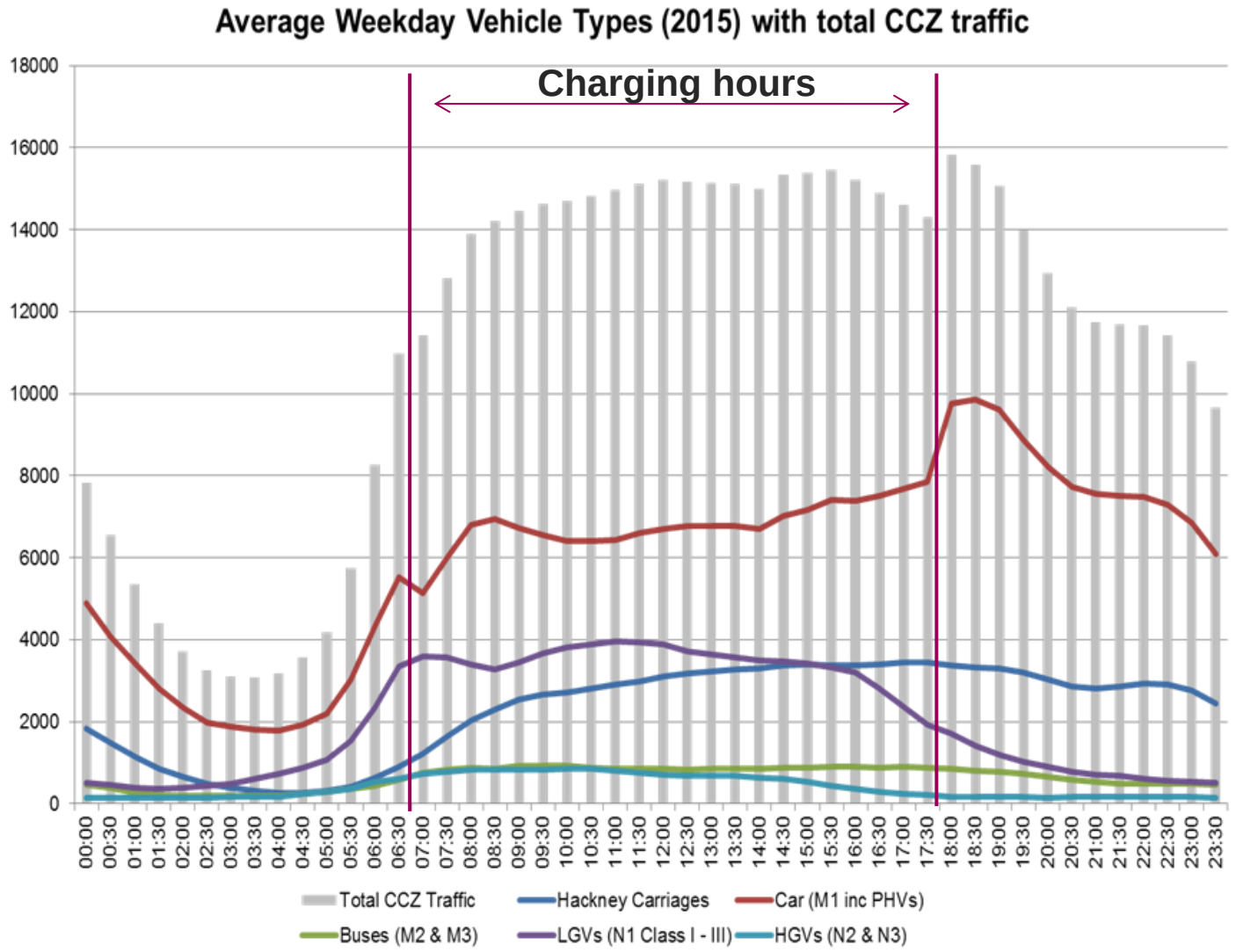
In central London – is evidence of 'peak spreading' on the tube network





Historical trends show that peak demand intensity is growing whilst peaks are broadening and flattening

The highest traffic levels in central London are now seen outside charging hours in the early evenings



Conclusion

Questions of interest

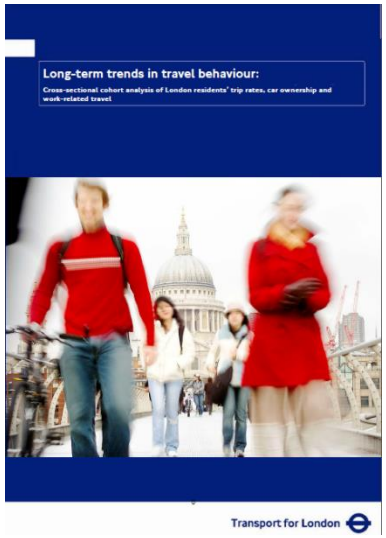
1. Have we reached ‘peak car’? What factors may help and hinder us if we want to achieve mode shift from the car to more sustainable modes?

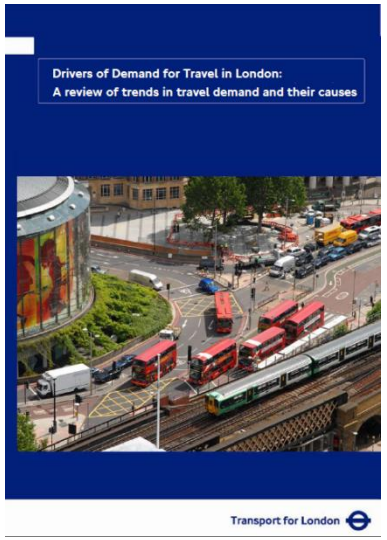
2. What is driving the reduction in travel? Can we expect this to continue? – we are currently undertaking a study (Drivers of Demand #2) into this question.

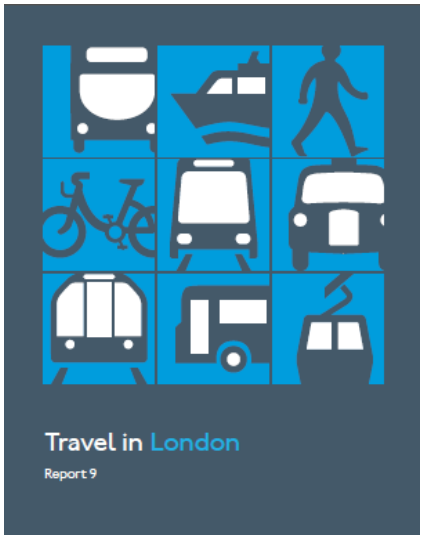
3. What more can we do to better understand and describe uncertainty in our forecasting?

4. How could new technology ‘disrupt’ current trends? How can we plan for this when we can’t predict what it will be?

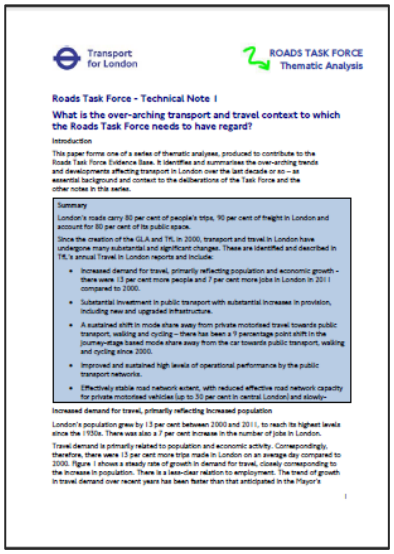
Relevant TfL publications







9 annual reports published 2007-2016



23 technical notes produced to inform the Roads Task Force in 2013

Further analysis will be published as part of the evidence base for the forthcoming Mayor's Transport Strategy

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