Travel in the Twenty-First Century: reconsidering appraisal and forecasting methodologies

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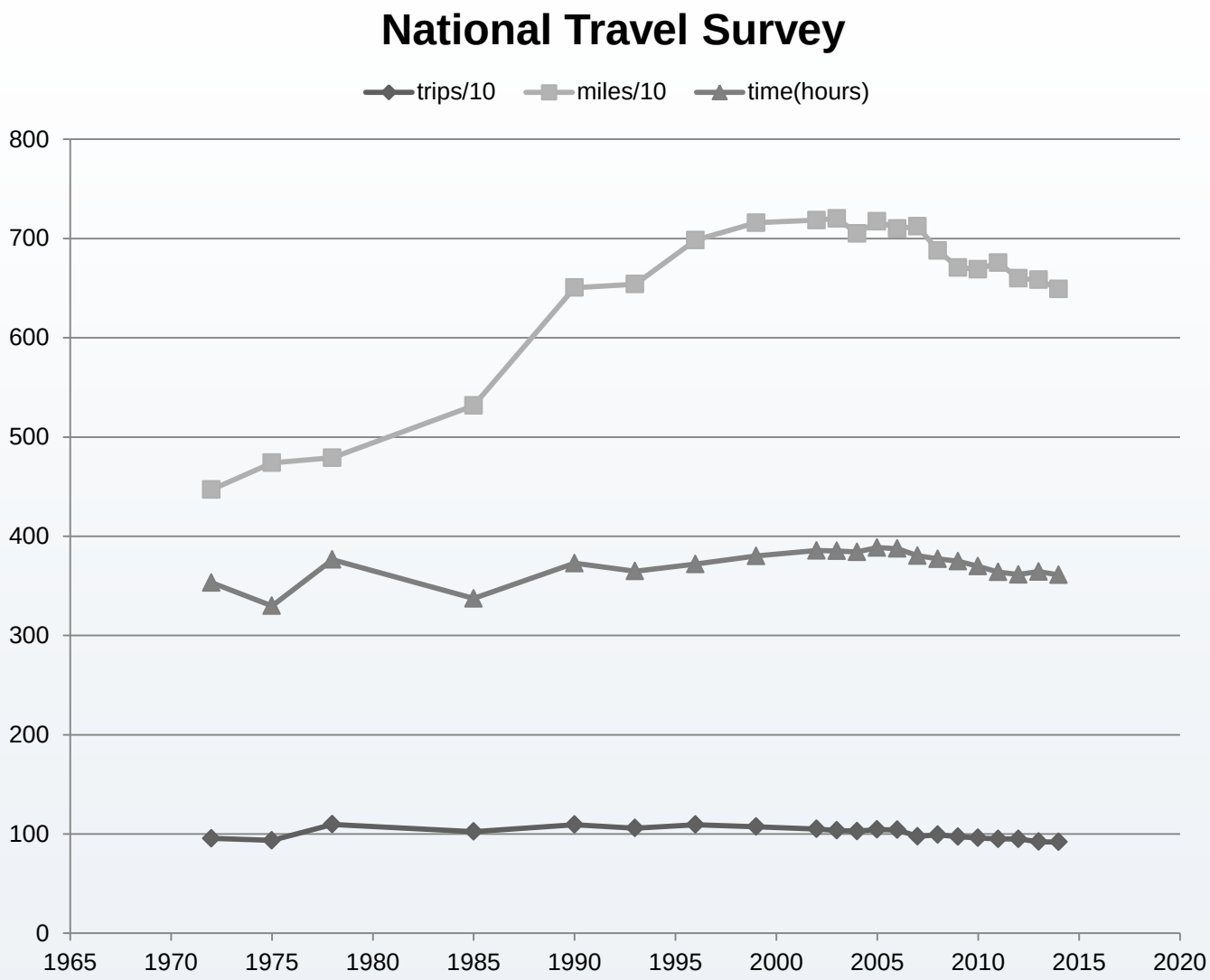
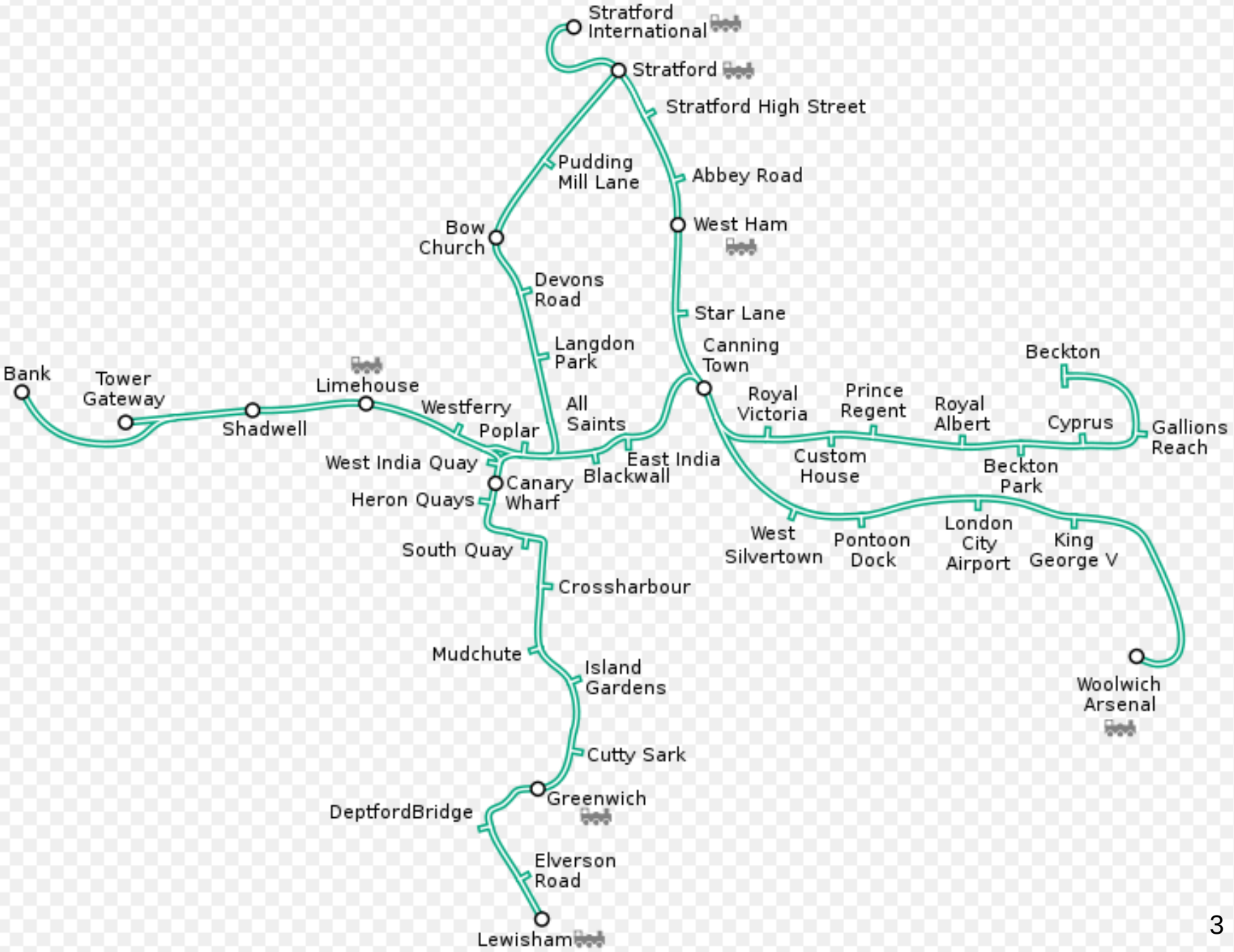
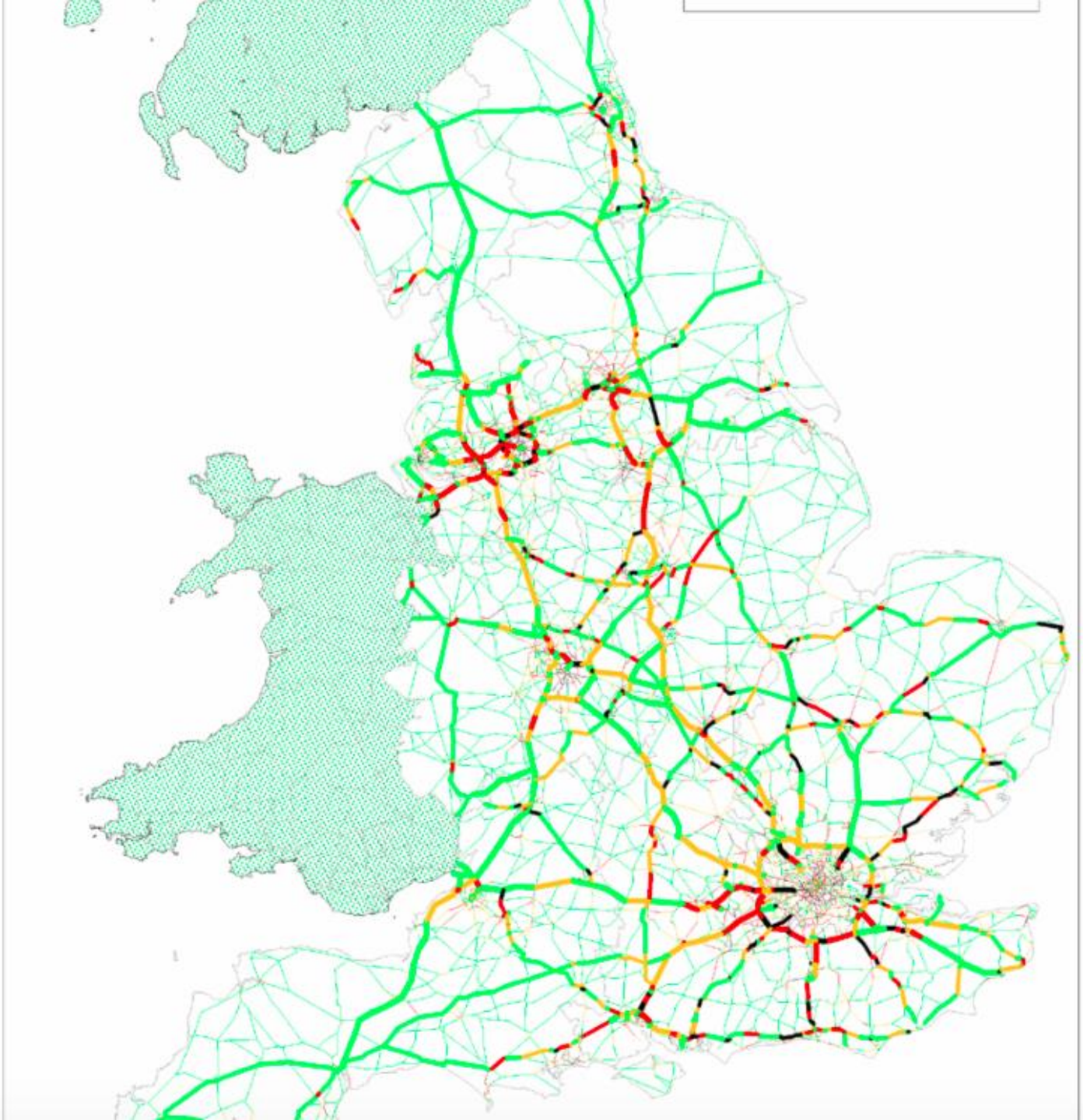
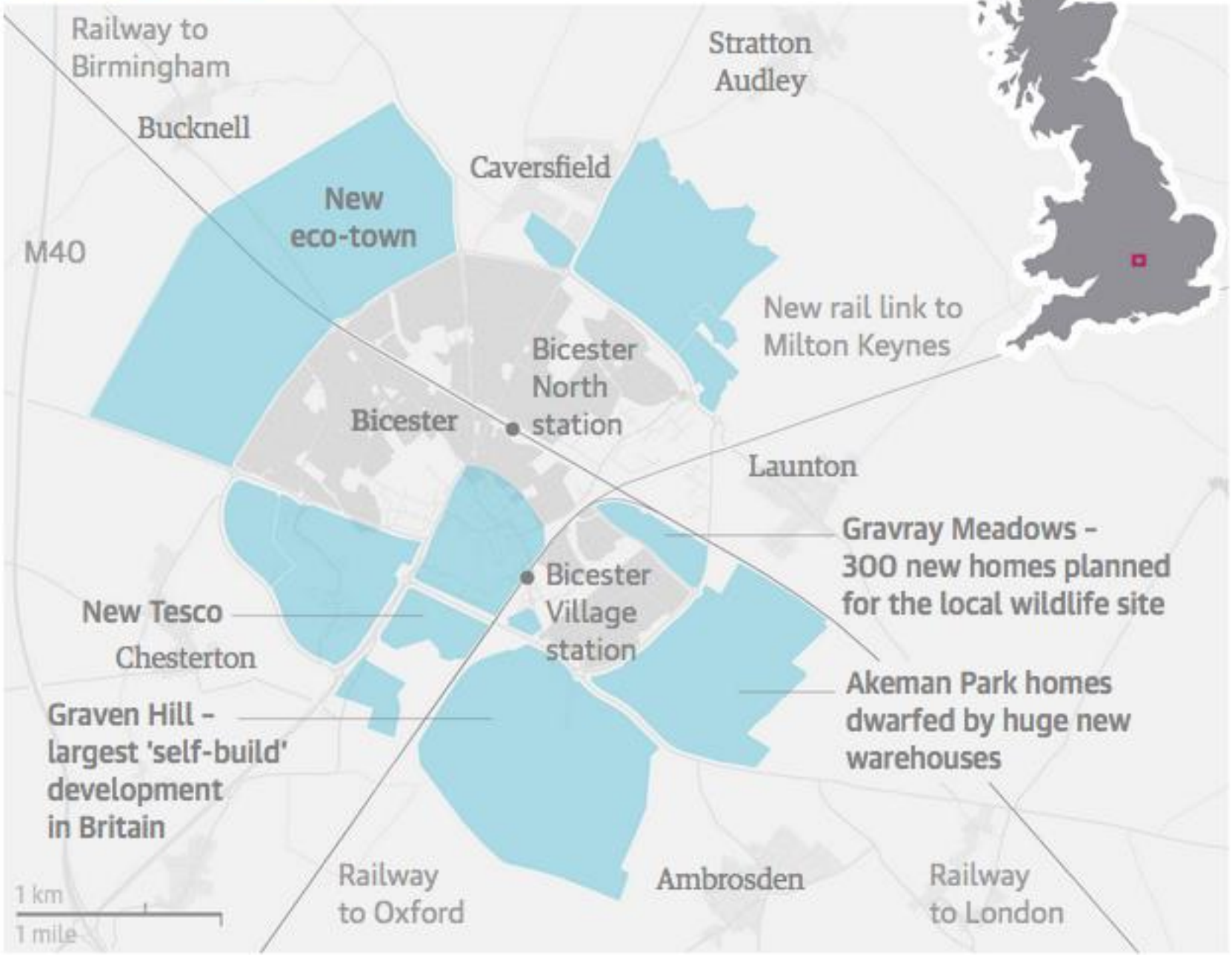

National Travel Survey
trips/10
miles/10
time(hours)
800
700
600
500
400
300
200
100
0
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020

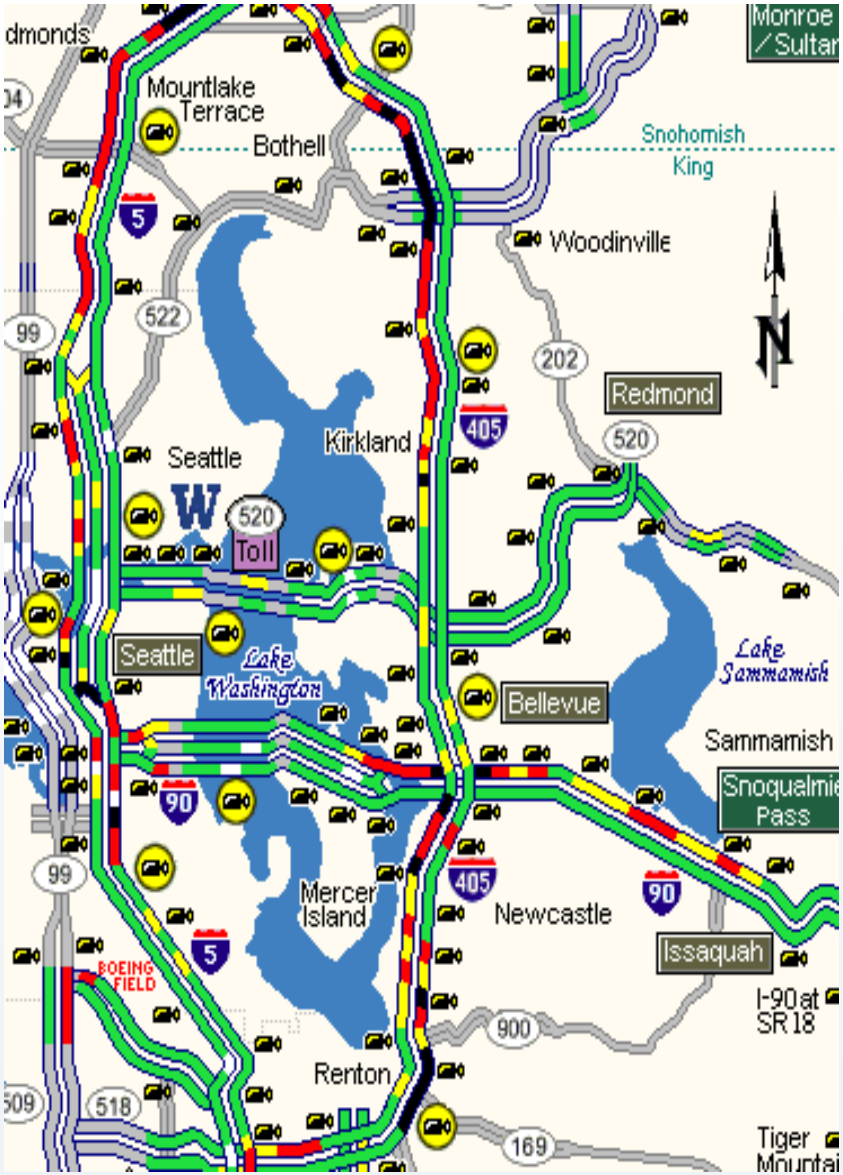

Stratford International
Stratford
Stratford High Street
Pudding Mill Lane
Abbey Road
Bow Church
West Ham
Devons Road
Star Lane
Langdon Park
Canning Town
Beckton
Bank
Tower Gateway
Limehouse
Shadwell
Westferry
Poplar
All Saints
Royal Victoria
Prince Regent
Royal Albert
Cyprus
Gallions Reach
West India Quay
East India
Blackwall
Custom House
Beckton Park
Canary Wharf
Heron Quays
West Silvertown
Pontoon Dock
London City Airport
King George V
South Quay
Crossharbour
Mudchute
Island Gardens
Woolwich Arsenal
Cutty Sark
Greenwich
DeptfordBridge
Elverson Road
Lewisham



Bicester development areas




JOURNEY TIME (MIN)
J1 HERMISTON GAIT 5
EDINBURGH VIA A71 16



Plan Your Commute - 95% Reliable Travel Times

Calculate Your Commute - This feature uses travel time data to provide a reasonable approximation of the "worst case" travel time scenario. By allowing for the calculated travel time, commuters can expect to arrive at the end of the route, on time, 19 out of 20 working days a month (95 percent of trips). These travel times are based on weekday travel time data from the hours of 6:00 AM to 7:00 PM.

Use **WSDOT's 95% Reliable Travel Times** commute calculator. This feature accesses travel time data to provide a reasonable approximation of the "worst case" travel time scenario during weekdays. It's easy to use. Enter:

- Where you are starting from,
- Where you are going,
- What time you need to get there.

Google Now. The right information at just the right time.

See helpful cards with information that you need throughout your day, before you even ask.

The Google app

GET IT ON Google play

Traffic
Get traffic conditions and alternative routes before you leave for work

Implications of National Travel Survey

- Evaluation of cumulative transport investment
- Benefit taken in long run as access, opportunities, choices – not time saving (RP)
- Time savings are short run – observable but not observed
- Average distance travelled has stabilised
- Travel demand now driven by demographics, not income

Problems with investment appraisal based on travel time savings

- Infrastructure investments are long-lived, DCF to 60 years
- Long run time savings are notional, not real
- Disregards
  - Land use change and value enhancement
  - Spatial and socio-economic distribution of benefits
- Biases
  - against urban rail
  - in favour of inter-urban road civil engineering
  - against digital technologies

Reconsider economic appraisal of transport investments

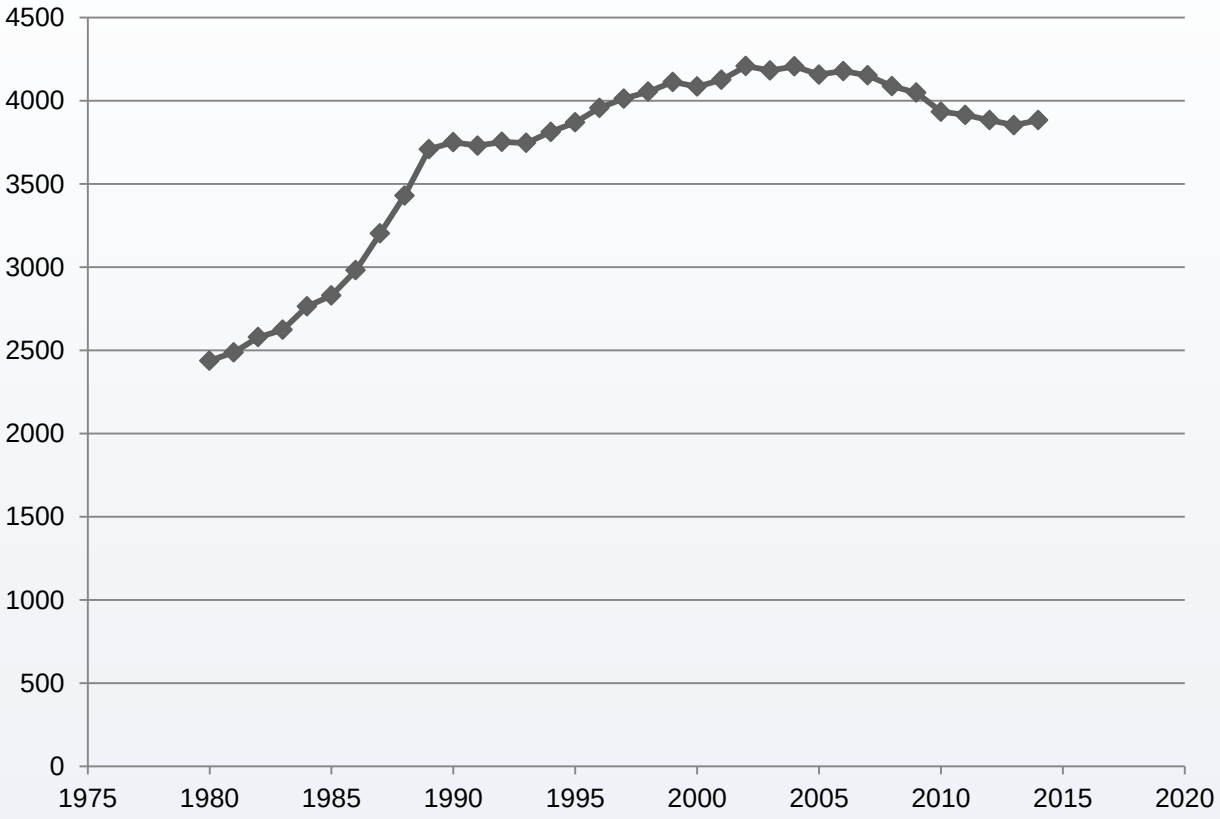
- Based on findings of open-minded evaluation of completed schemes
- Recognise changes in land use and value
- Evidence-based approach avoids double counting
- Economic framework: spatial economics, urban economics
- Align economic and business/financial cases
- Principles-based, less detailed guidance
- Better data on use of SRN (cf rail)
- Policy implication: link transport investment to development to capture benefits

The Northern Line Extension

The Northern line extension (NLE) from Kennington will provide the fast, high capacity transport link needed to support a major increase in the number of residents and businesses based in Nine Elms on the South Bank. It would provide two new tube stops within the area – one would be located at Nine Elms on Wandsworth Road and another at Battersea Power Station.

The Government confirmed a £1bn loan guarantee to fund the scheme and Transport for London (TfL)'s formal planning application under the Transport and Works Act was approved by the Secretary of State for Transport in November 2014. TfL appointed the joint venture Ferrovial Agroman Laing

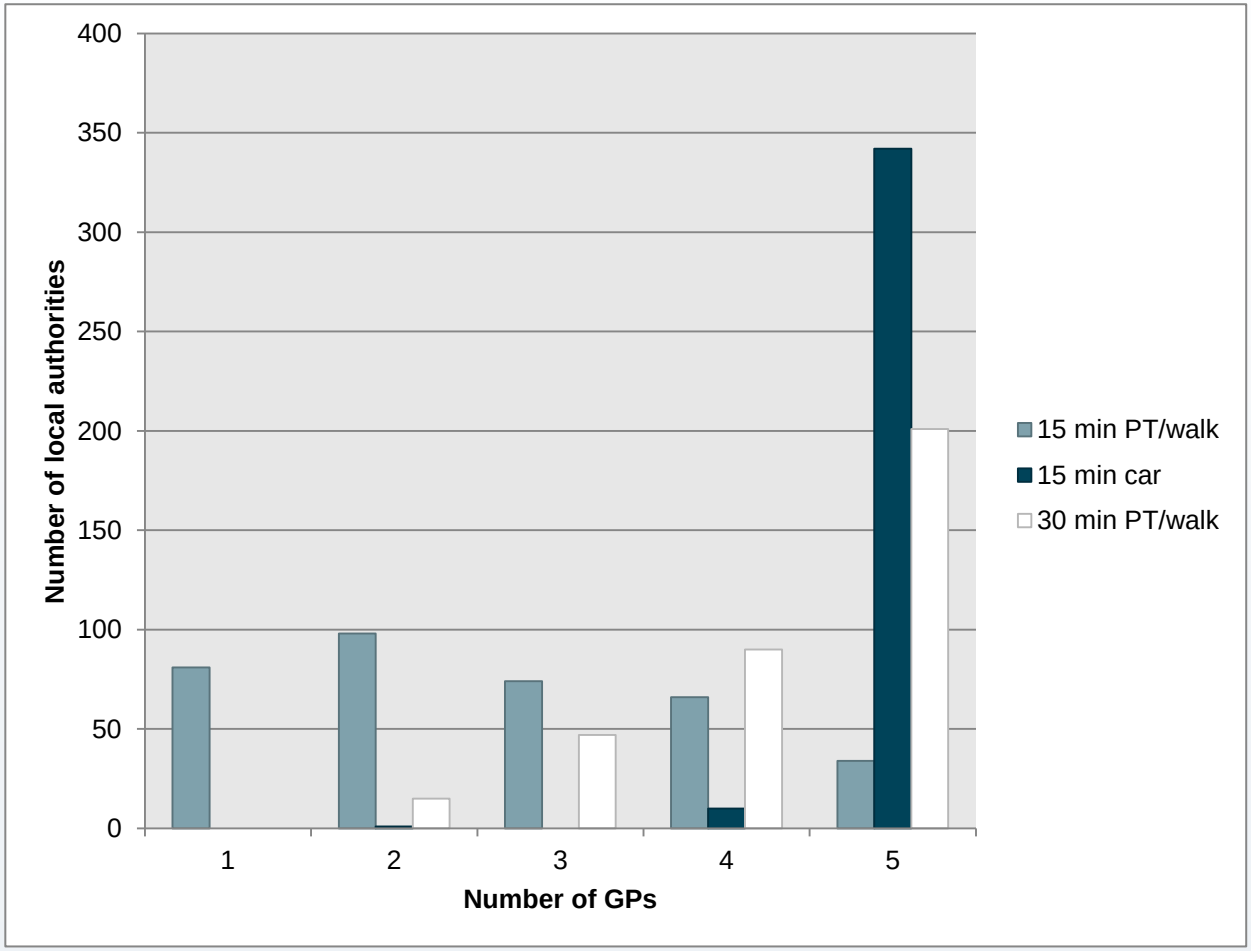
Average distance travelled by car (miles)

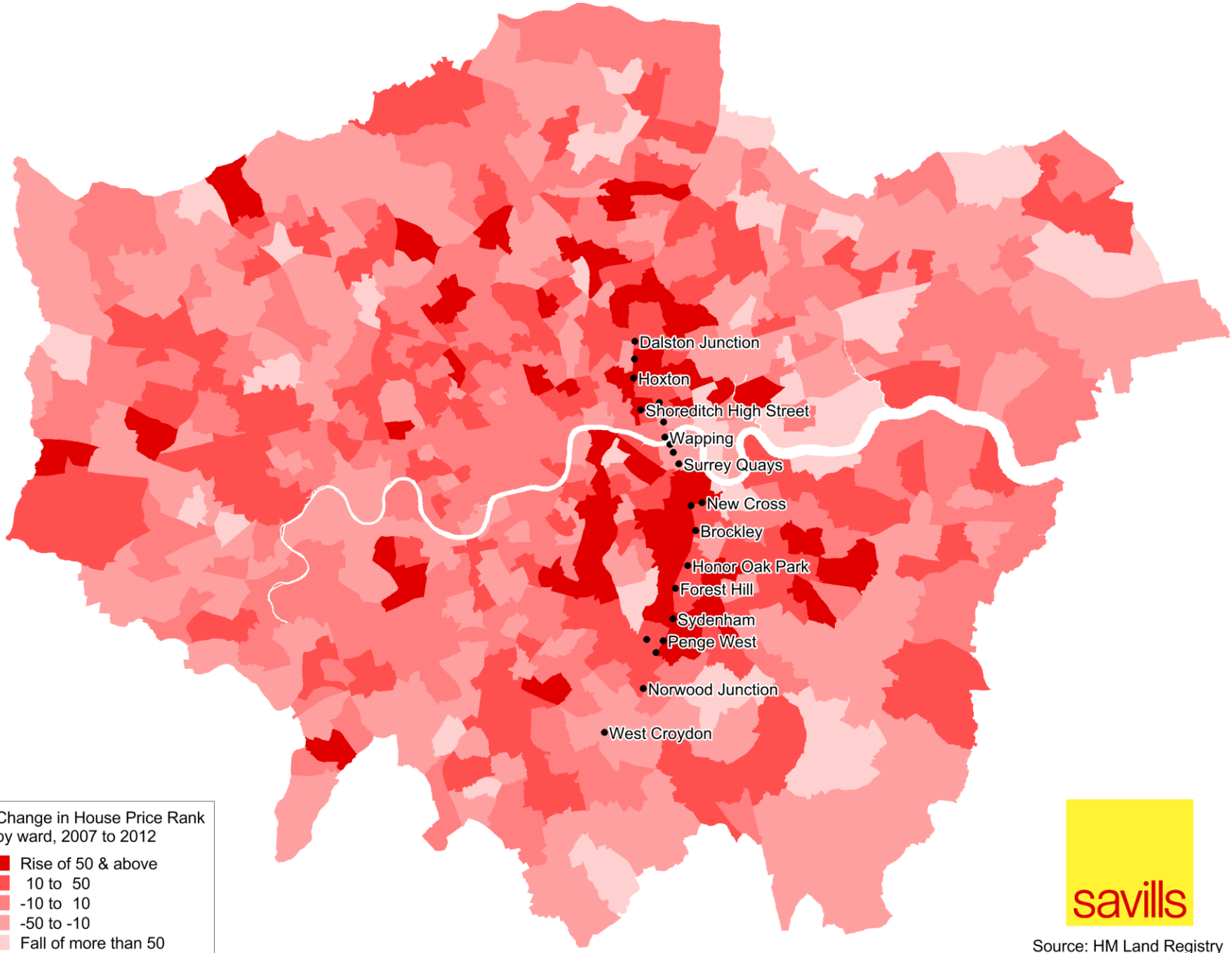


Why has per capita travel growth ceased?

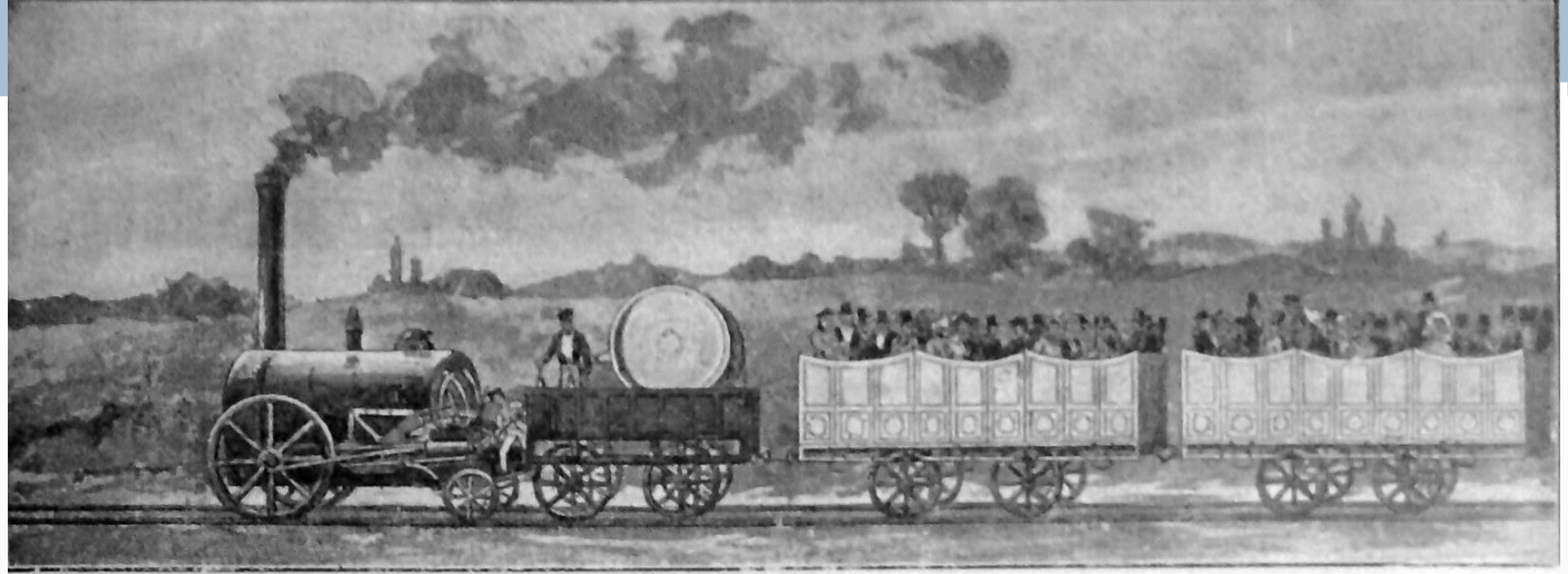
- Urbanisation
- Younger people less interested in cars
- Changes in company car taxation in UK
- Demand saturation
- Technological constraints

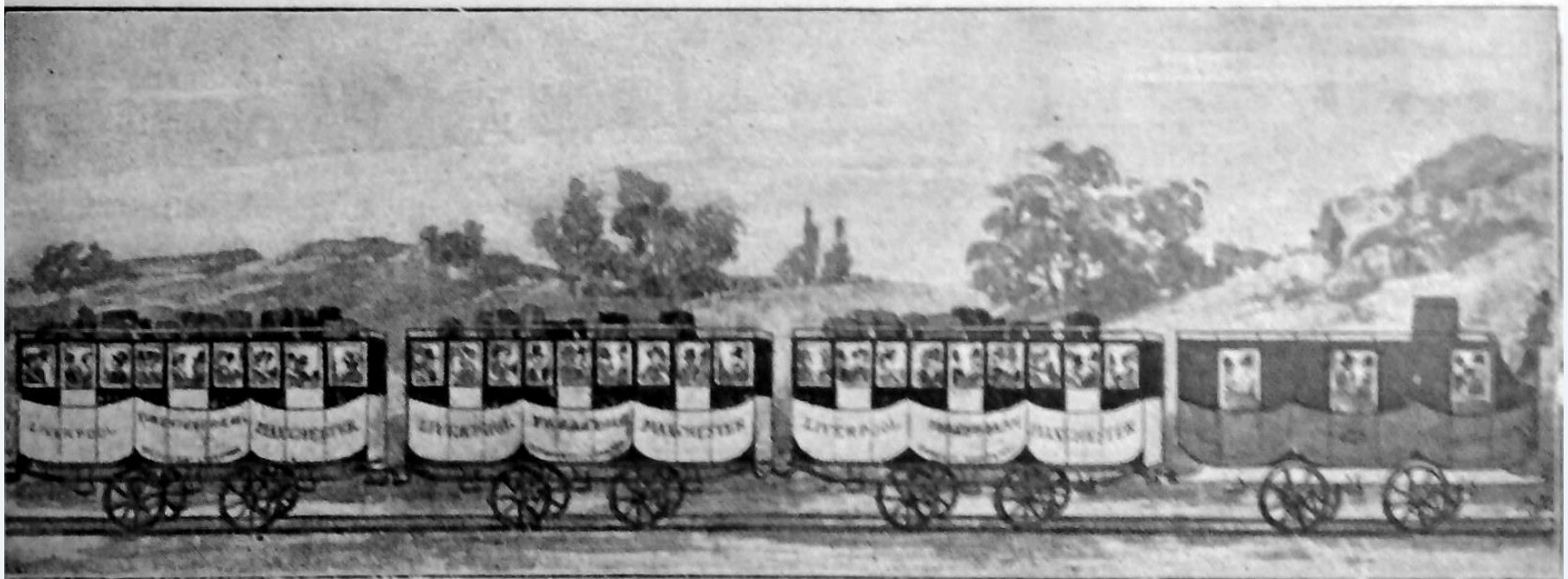
Access to GPs



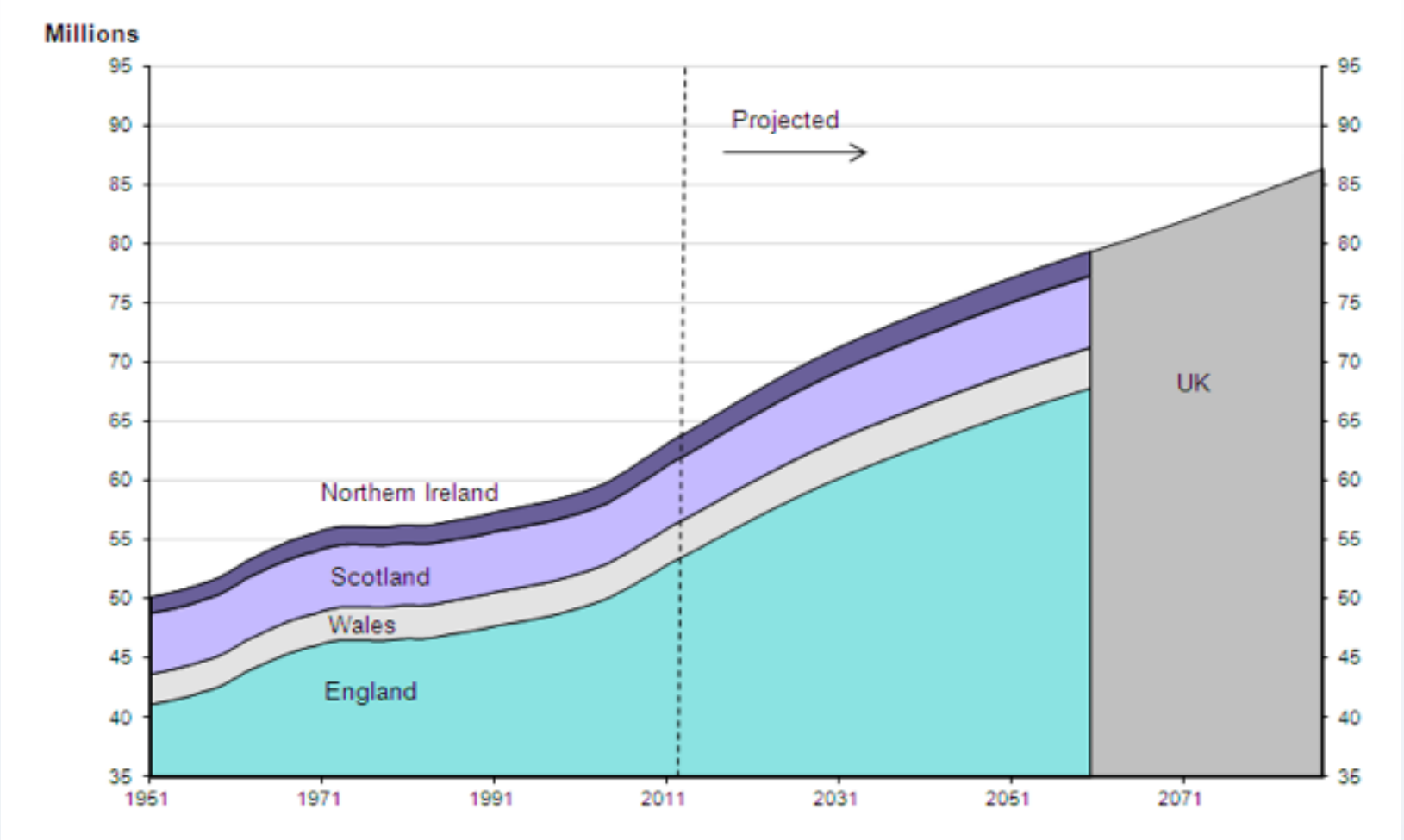


Source: HM Land Registry

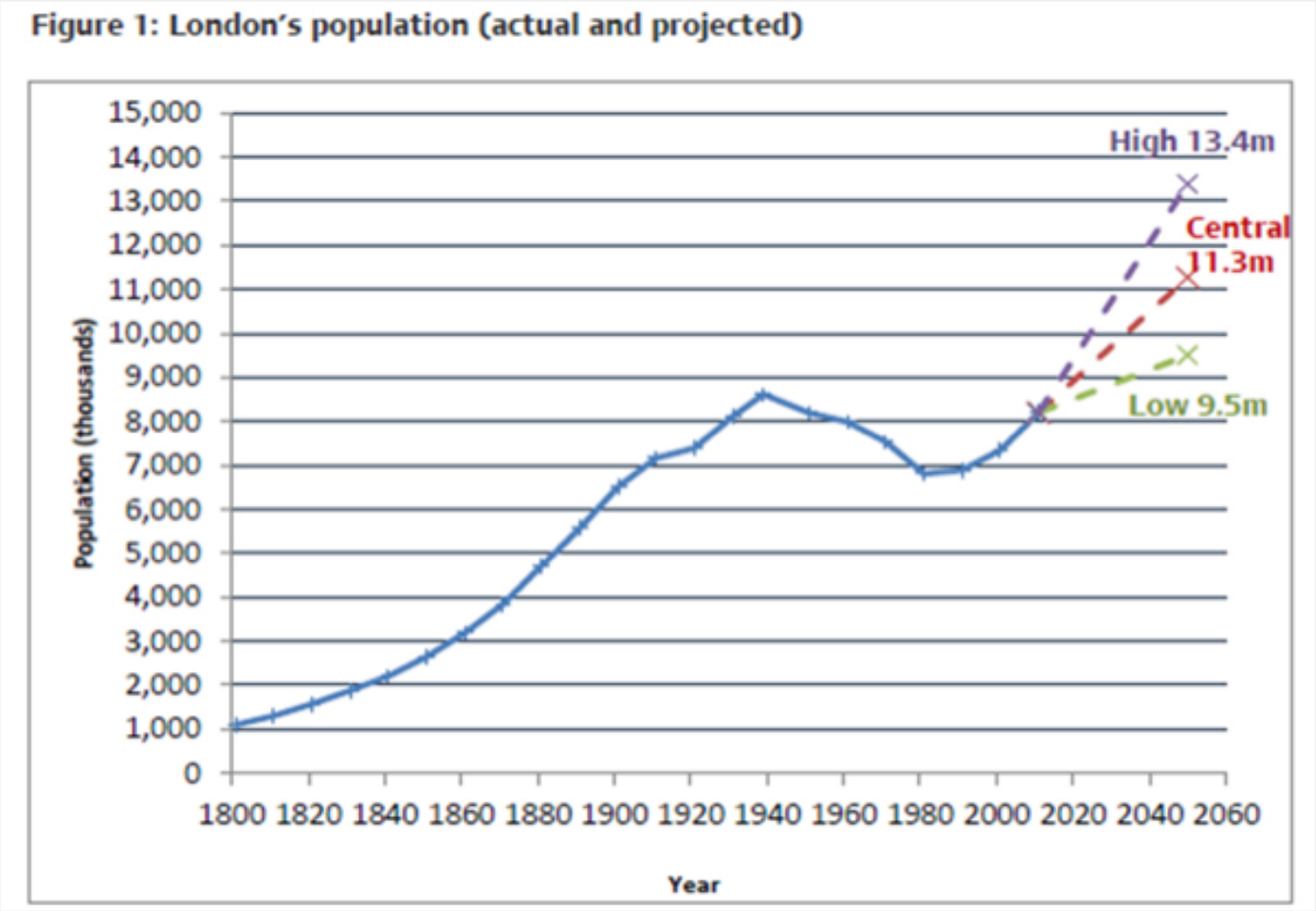




Population growth

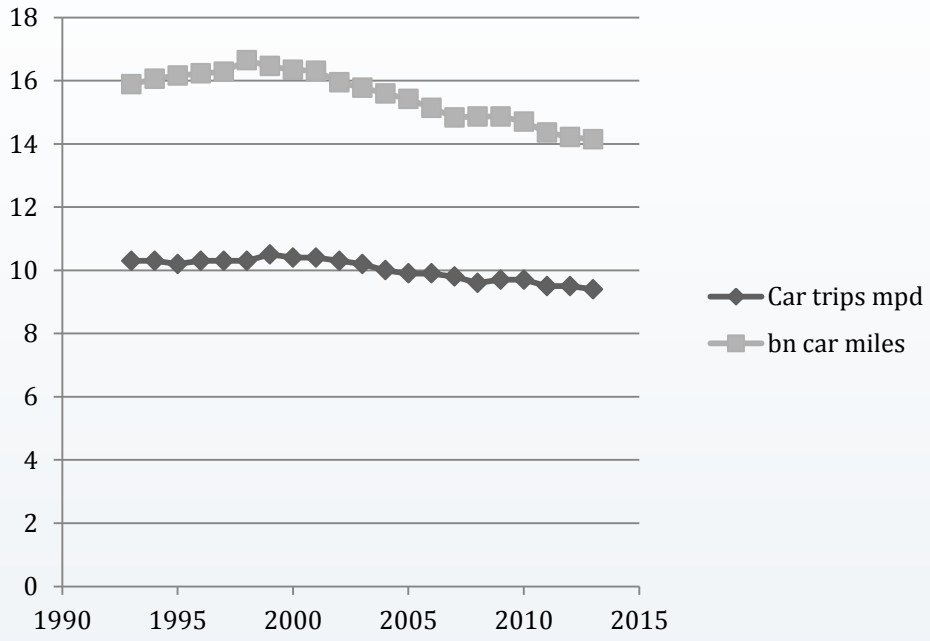


London population growth

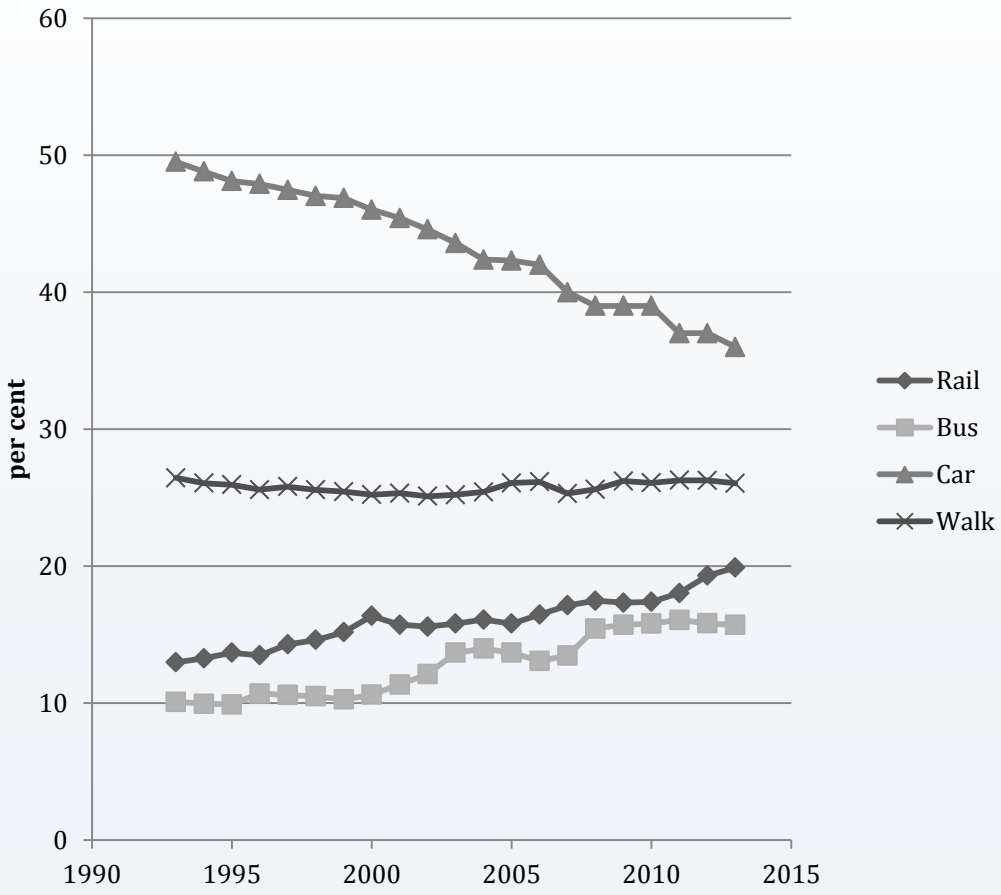


Population growth trends for London, real and projected.

Car traffic and use in London

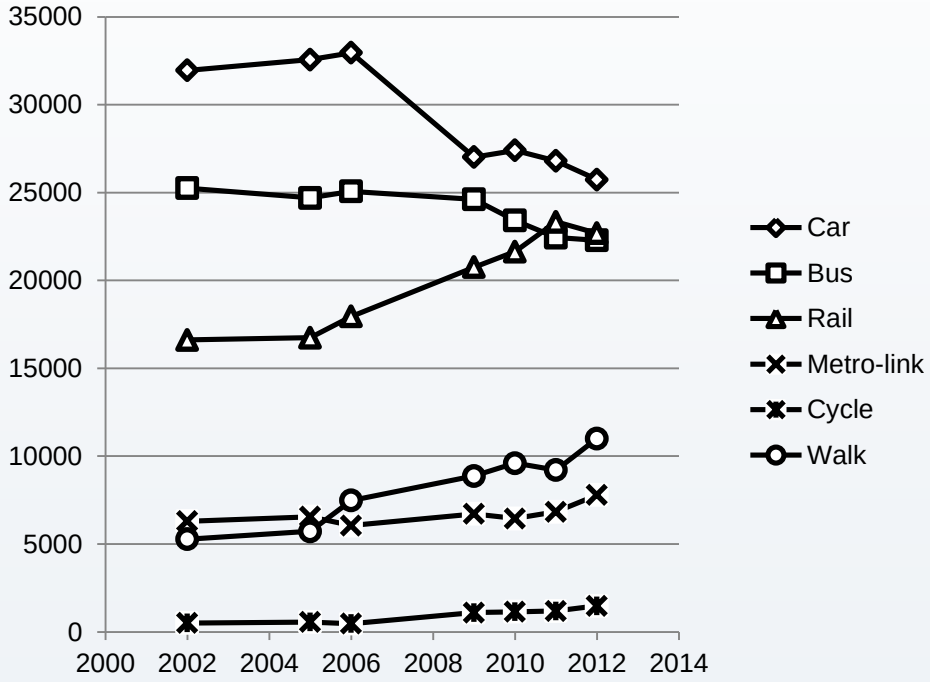


London share of trips




Share of journeys by car in London 1950-2050
per cent
60
50
40
30
20
10
0
1940
1960
1980
2000
2020
2040
2060

Manchester city centre inbound trips per day 0730-0930




Think in minutes
not miles

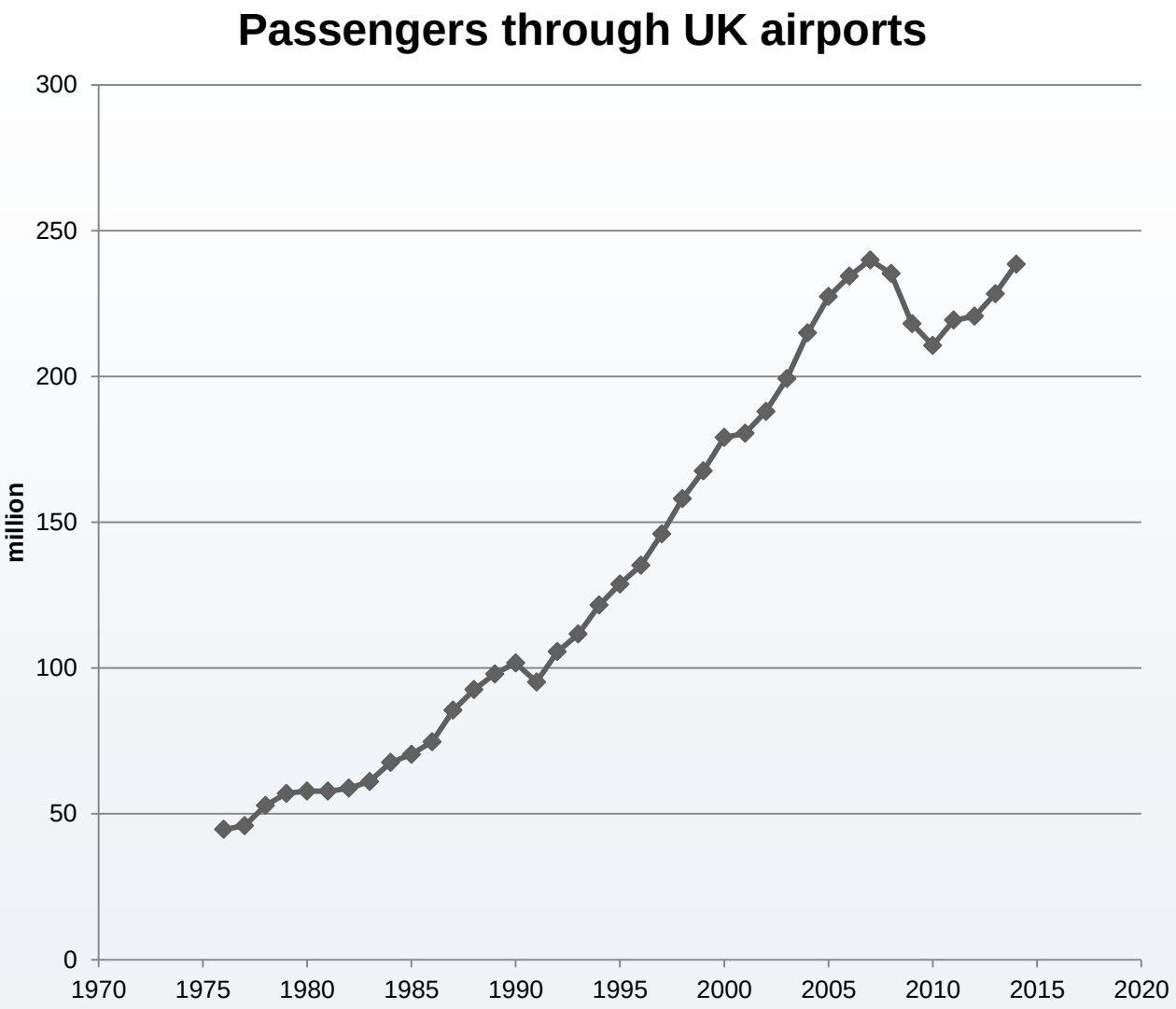
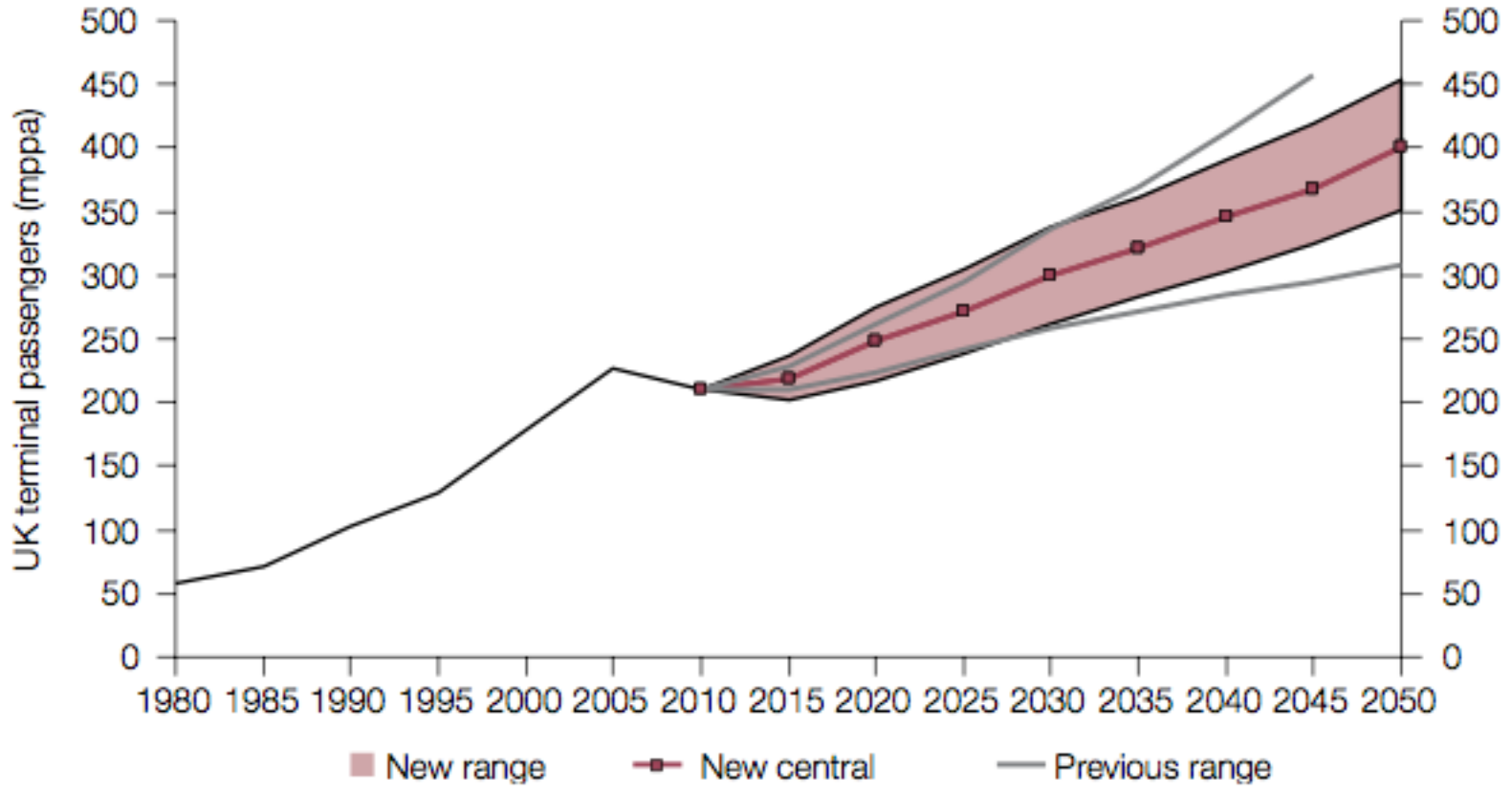
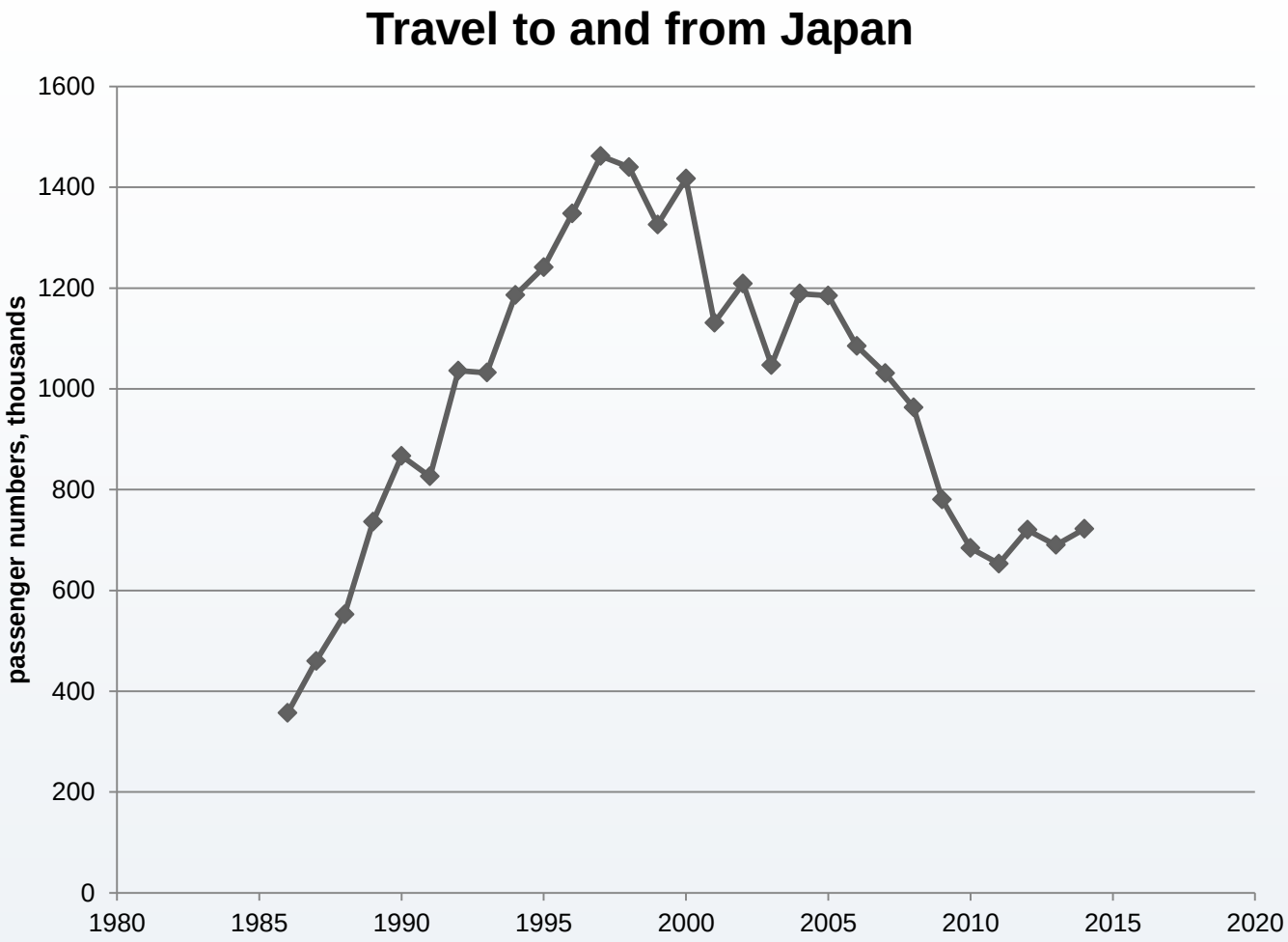
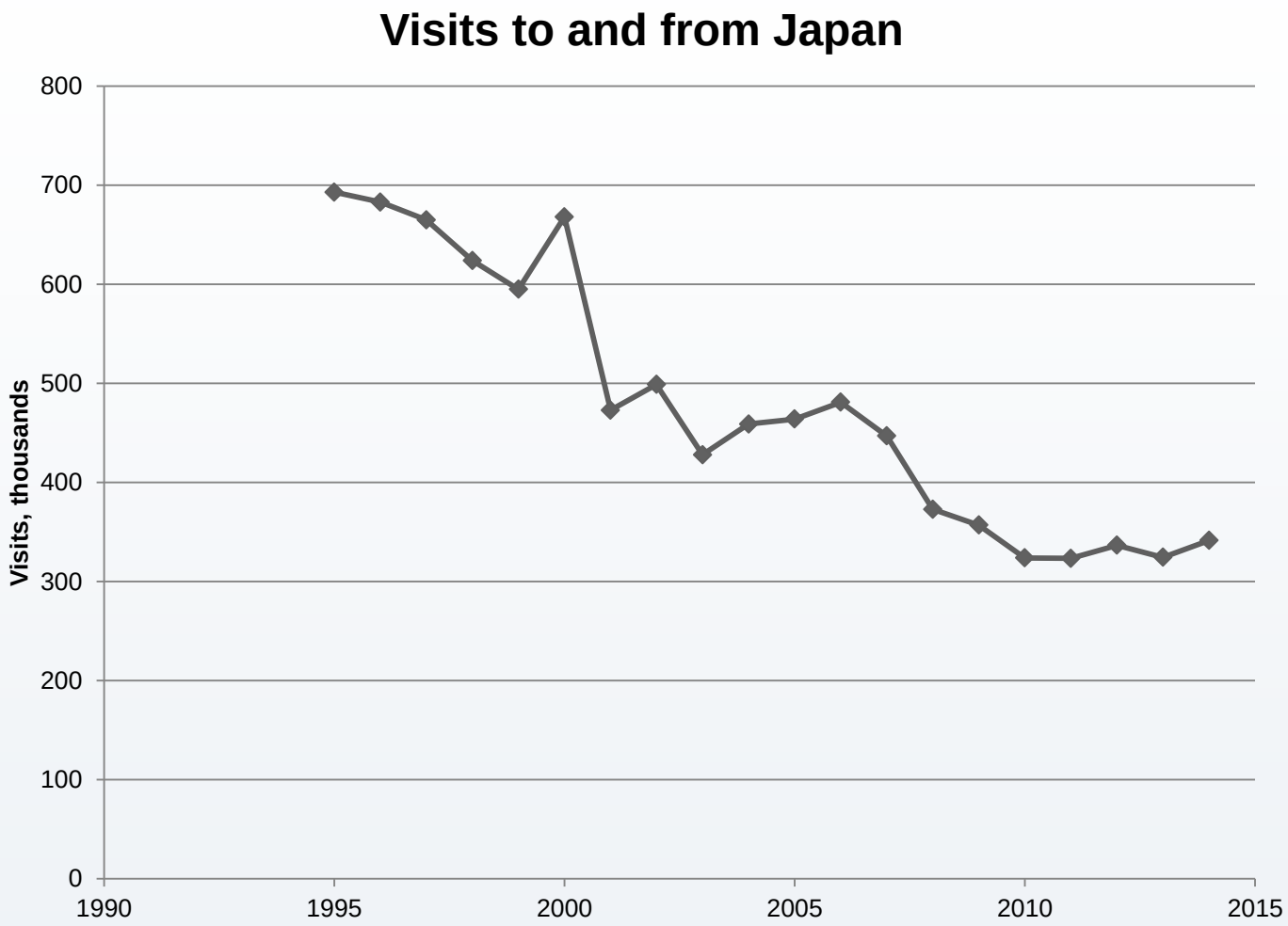

Passengers through UK airports
million
300
250
200
150
100
50
0
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020

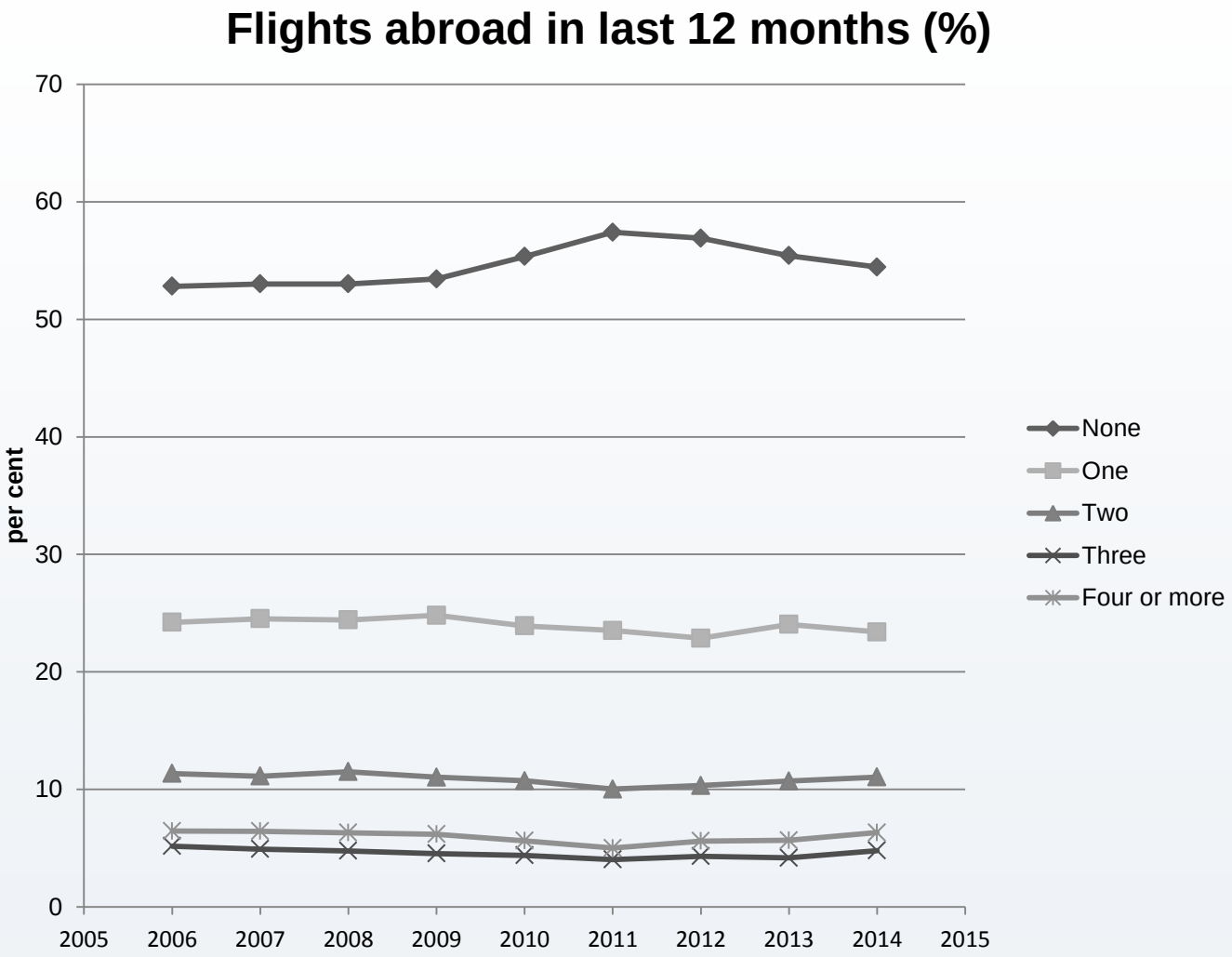
Figure 3.4: Comparison of new uncertainty forecasts with previous DfT low-high range forecasts

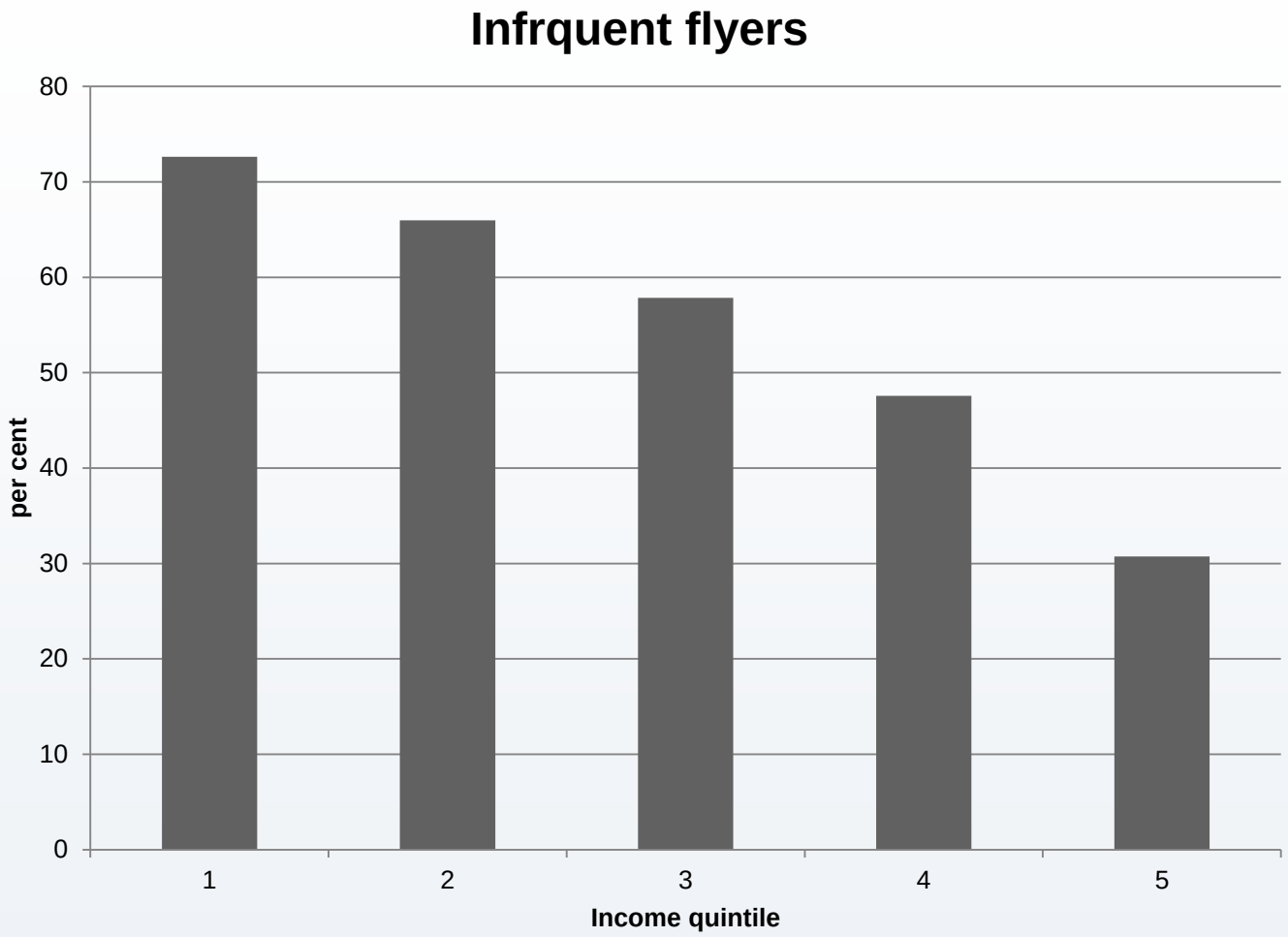



Travel to and from USA
passenger numbers, thousans
25000
20000
15000
10000
5000
0
1980
1985
1990
1995
2000
2005
2010
2015
2020

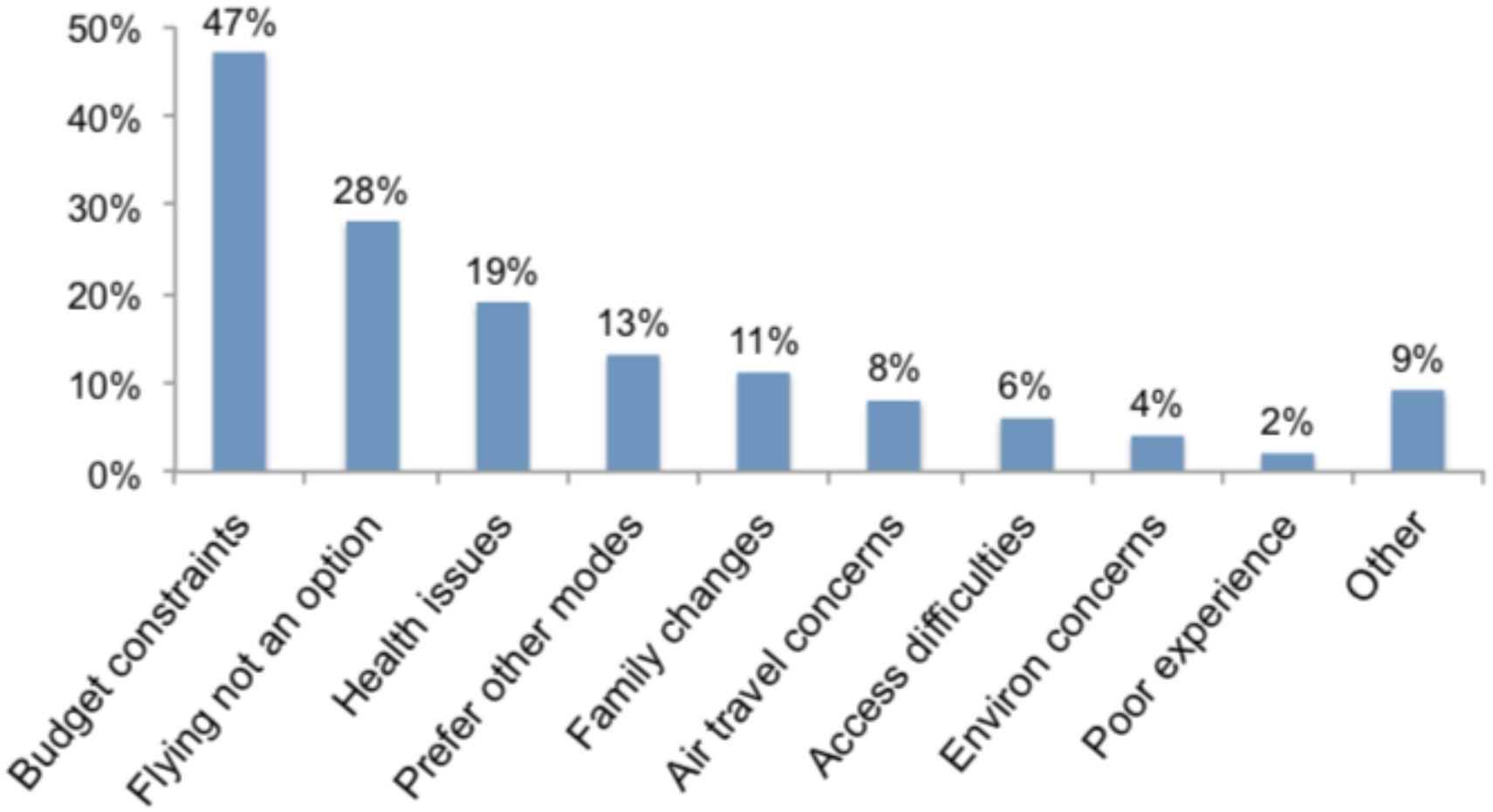

Travel to and from Japan
passenger numbers, thousands
1600
1400
1200
1000
800
600
400
200
0
1980
1985
1990
1995
2000
2005
2010
2015
2020


Visits to and from Japan
Visits, thousands
800
700
600
500
400
300
200
100
0
1990
1995
2000
2005
2010
2015


Flights abroad in last 12 months (%)
per cent
70
60
50
40
30
20
10
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
None
One
Two
Three
Four or more


Infrquent flyers
80
70
60
50
40
30
20
10
0
per cent
1
2
3
4
5
Income quintile

Barriers to flying



Q9 Which of the following were reasons that you have not flown within the last 12 months?
Base: those who have not flown in past 12 months (1,530)

Economic benefits of Heathrow runway

- £69bn NPV gross, £12bn net
- ‘Do-something’ minus ‘Do-minimum’
- Do-minimum: static or dynamic?
- Market response to capacity constraint?
- Case for further runway at Heathrow is to expand business travel, yet 70% passengers are leisure travellers
- Leisure travellers would be displaced elsewhere

Conclusions: air travel

- Evidence of demand plateau (USA) and peak (Japan) –initial indications of market maturity?
- Time constraints likely to operate but not understood – researchable
- Infrequent Flyers – a reservoir of demand?
- Main cost reduction due to Low Cost Carriers now historic
- Future demand – more uncertainty and downside than generally supposed; reconsider model
- Could live with capacity constraint

Conclusions: daily travel

- Evidence from NTS
  - No time savings in long run
  - No increase in travel per capita since mid-1990s
- Analytical framework of conventional appraisal and forecasting inconsistent with NTS and Peak Car evidence. Reconsider framework
- Constrain models to hold travel time constant
- Investment strategies questionable
  - Too little urban rail
  - Too much inter-urban road civil engineering
  - Too little investment in digital technologies

Conclusions: trends

- Long term: invariant daily average travel time
- New trends
  - No growth of daily distance travelled
  - No increase in speed
  - Demand saturation for many daily needs (but not housing)
  - Population growth, not income growth, main driver of demand
  - Peak Car in Big City – helpful for reducing greenhouse gas emissions
- Travel in the twenty-first century unlike twentieth

www.peakcar.org