2050 Infrastructure Plan : Transport Work stream

Update to London Travelwatch Board

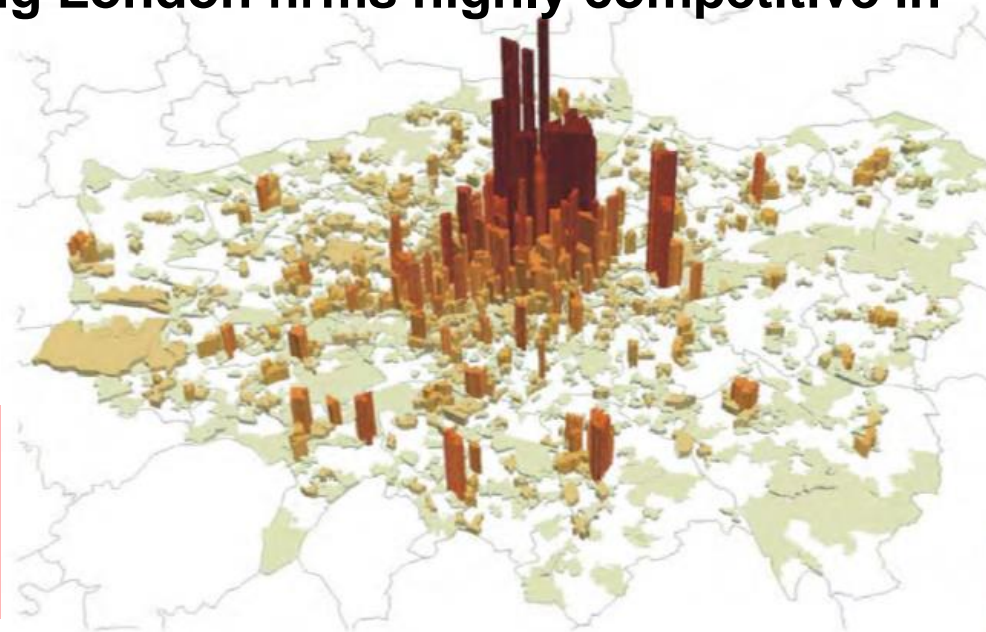**2nd June 2014**

•**The 2050 Infrastructure Investment Plan is being led by the GLA, with the involvement of TfL on the transport work stream. An interim report is due to be published for consultation in July and a final report around the end of 2014.**

• **The consultation will include a summary report across infrastructure sectors and a series of supporting documents covering each sector individually**

•**TfL is undertaking a programme of analysis to develop our understanding of London's emerging transport needs. Key questions being looked at include:**

    o**how many people and jobs do we expect London to have in 2050 and where could / should we accommodate them?**

    o **what changes can we expect in our customers' expectations / requirements of the transport system?**

    o**What technological developments are likely to affect the way transport is 'consumed' over the next 35 years?**

•**There are a number of emerging strands that it would be useful to discuss...**

•the CAZ contains >30% of London's jobs on 2% of the city's land area including most of its world city functions

•London's 1.3m workers are on average 70% more productive than those in the rest of the UK

• the very dense concentration of employment generates agglomeration economies making London firms highly competitive in world markets

•However, the infrastructure costs of supporting the CAZ are very high - there are few 'low hanging fruit' left after current committed investment

Key Q: Does continued investment to support the CAZ provide value for money to the UK?

Densification of existing areas of the CAZ through both redevelopment and accommodating more people in existing buildings
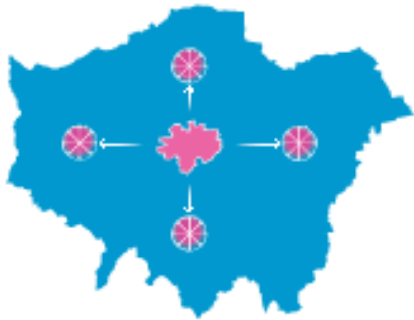
Expanding the CAZ into surrounding areas close to PT hubs, eg King's Cross, London Bridge, VNEB

Creating / expanding a small number of satellites linked to the CAZ and with similar emloyment densities, such as Canary Wharf, Stratford and Old Oak Common
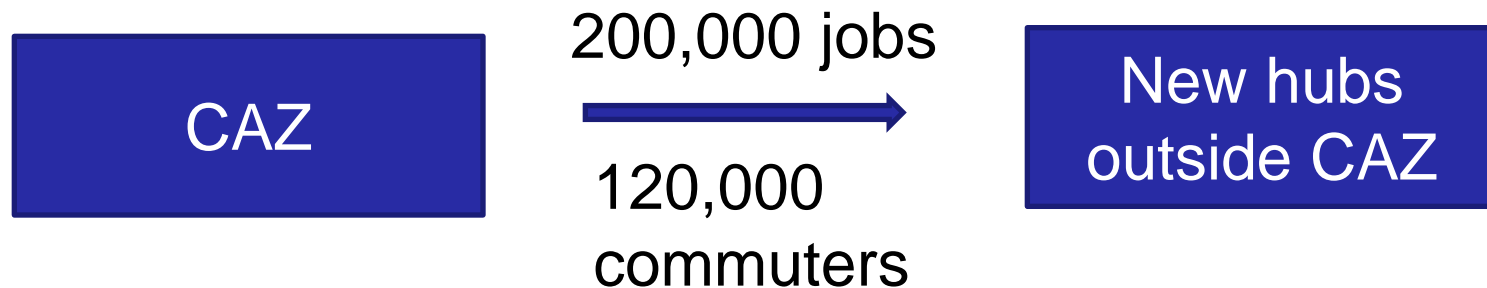
This might involve the creation of a series of employment hubs in outer London, eg Croydon, Brent Cross...

Or a series of hubs outside London

CAZ

200,000 jobs

→

120,000 commuters

New hubs outside CAZ

- We've done some initial testing to examine how pushing 200,000 jobs out of the CAZ to a number of smaller hubs could reduce transport infrastructure costs.

- In broad terms this might reduce growth in AM peak trips into the CAZ by around a quarter to a third on the assumption of no commuting through the CAZ (which is unrealistic)

- But ...

•**There is a positive relationship between employment density and output per worker in London Boroughs**

•**the implication is that decentralising jobs would lead to a move to less productive jobs**

•**reducing output by an estimated £1.5bn to £2.5bn per year by 2050 (2011 prices) - even taking account of agglomeration in the 'mini hubs'**

•**we're undertaking further research to understand whether / at what point the agglomeration model ceases to offer value for money (with Volterra)**

Employment Density and Productivity, by London borough
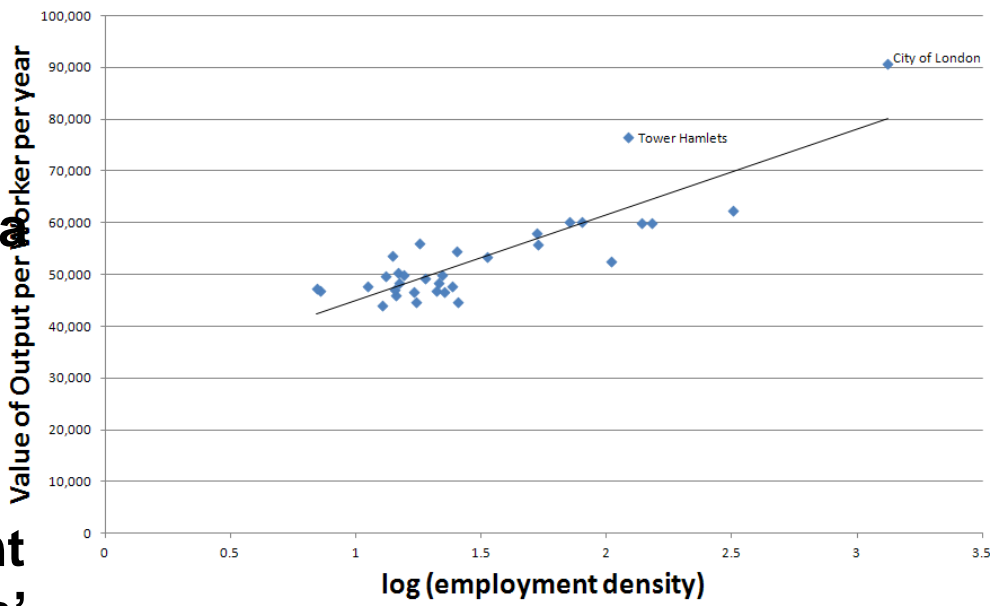
Key Q: as employment density continues to increase at what point (if any) do diminishing returns set in?
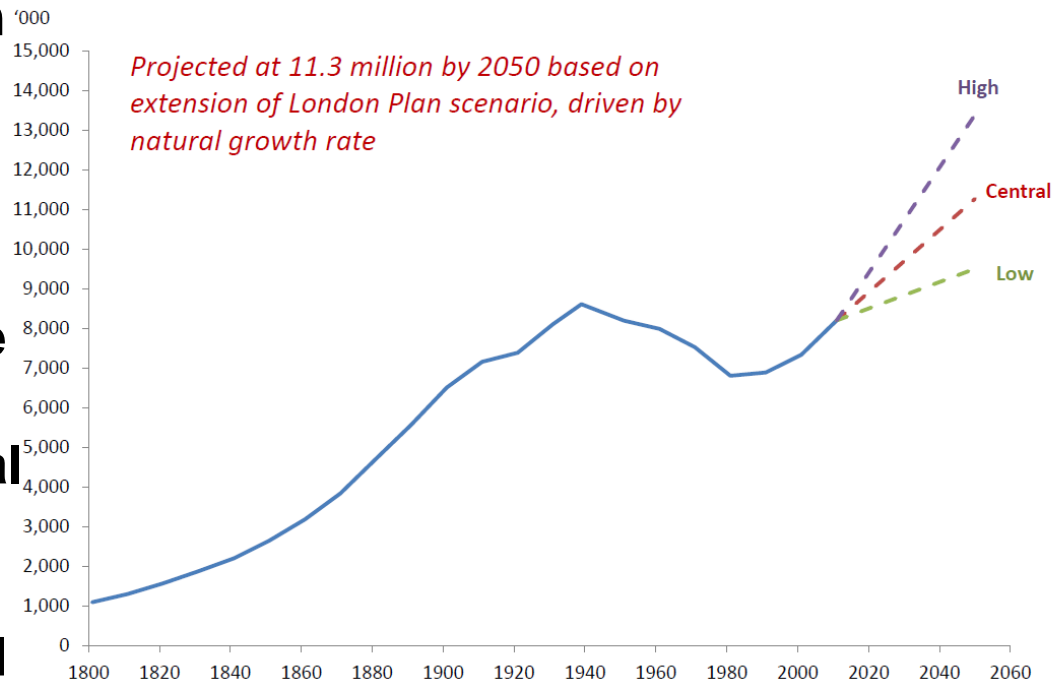
TfL Planning

7

•**We are testing a number of scenarios for accommodating population growth from 8.5m today to 11.3 m in 2050**

•**There is a strong case for accommodating as much of London's growth as possible within London's boundaries but there are likely to political obstacles in some cases**

•**A balance will need to found between continuing densification of London and growth beyond the existing boundary**

'000

Projected at 11.3 million by 2050 based on extension of London Plan scenario, driven by natural growth rate

High

Central

Low

Key Q: How feasible / acceptable are the different options?

- **There are half as many car trips across people of all income bands in inner London despite a slightly higher total trip rate by all modes**

- **The rate of car traffic reduction has been twice as fast in inner London than in outer London over the past 10 years**

- **There are greater levels of active travel in inner London than outer London:**
  - o **Greater increase in cycle mode share in last 5 years**
  - o **More than twice as many cycle trips per person**
  - o **40% more walk trips per person**

- **33% PT share in inner versus 22% in outer (2011/12) - implying that if more areas were like inner London additional PT infrastructure would be justified**

- **Total number of trips per person in inner London has recovered following the recession, while in outer London trip rates remain down 5**
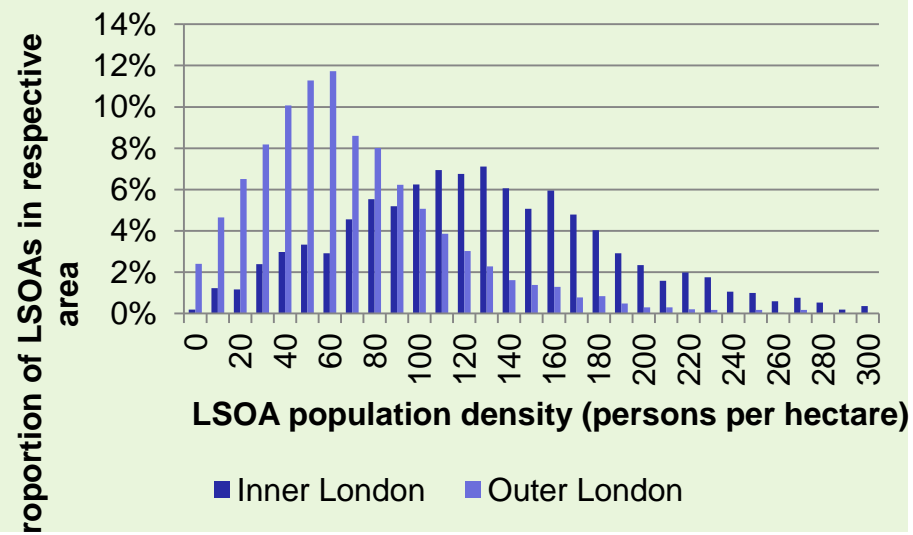
•70 per cent of LSOAs in inner London have population densities greater than 100 persons per hectare (pph)

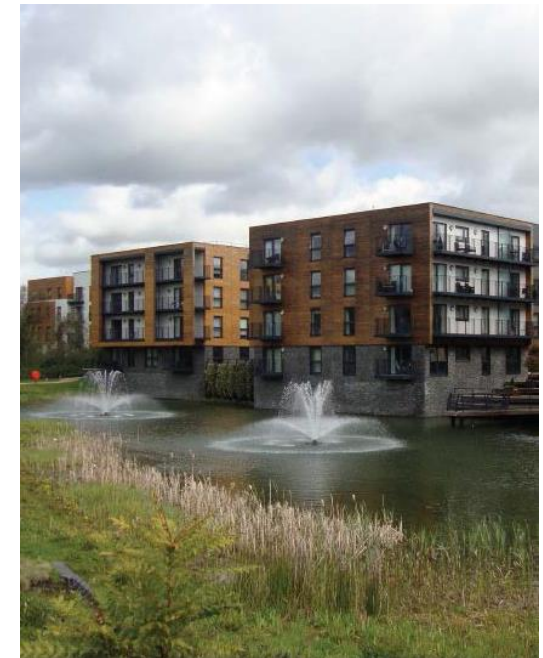**•80 per cent of LSOAs in outer London have densities less than 100 pph**

Aiming to make as many areas as possible like inner London seems desirable on many fronts:

•the economy of these places is more productive and resilient

•a smaller number of large pieces of infrastructure can support their needs (as opposed to requiring a wider spread of less intensive coverage)

•transport outcomes in these places are more sustainable and efficient than in less dense areas if the necessary infrastructure is put in place

•concentrated demand in dense areas justifies infrastructure investment

•concentrated development and/or redevelopment is also likely to offer the greatest opportunities for delivering funding outside public expenditure

**Distribution of Lower Super Output Areas by Density
(Inner and Outer London)**

Proportion of LSOAs in respective area (y-axis, 0%–14%)
LSOA population density (persons per hectare) (x-axis, 0–300)
■ Inner London   ■ Outer London

- **Maximising development in Opportunity Areas including, where appropriate, going beyond max London Plan densities**

- **Redeveloping town centres (responding to changing retail space requirements and helping generate a critical mass of local demand for town centre services)**

- **Redeveloping areas with a high proportion of local authority housing in both inner and outer London with higher density, mixed housing**

- **Redesignating Strategic Industrial Land with high PTAL levels (>3) for housing. This assumes industry can be relocated to SIL with lower PTALS (some road improvements such as new river crossings could encourage industry to**

- **In principle there are a number of ways in which growth could be accommodated outside London:**

    o **Green-belt development**

    o **Urban extension of existing urban areas**

    o **Densification in towns in need of regeneration (i.e. Medway, North Kent, Hastings)**

    o **Densification of 'successful towns' (i.e. Northampton, Guildford, Chelmsford)**

    o **Development of one or more New Towns / Cities**

- **AVs in London could :**

  o **reduce death and injury on the roads - Google have successfully tested vehicles in the suburbs of San Francisco with a 100% record while in automatic mode**

  o **reduce energy use through improved traffic flows and eliminating wasteful user behaviour.**

  o **reduce congestion costs through better utilisation of existing road capacity**

  o **align with Roads Task Force's aspirations of transforming conditions for walking, cycling and public transport by helping deliver better, active and inclusive places and new city destinations while maintaining an efficient road network for movement and access.**

  o **reduce the parking space requirements**

  o **provide an additional revenue stream for TfL, through 'smart measuring' and an opportunity for precisely targeted demand management**

Key Q: Should London aim to be a leader or a follower in the adoption of AV technology?

• **The conversion of the entire vehicle fleet and embedding the technology into road infrastructure will be a long term process**

• **Opportunities for early adoption may exist in defined areas with clear cordons, eg QE Olympic Park, KX / Euston**

•**Some people will resent the direct loss of vehicle control and the enjoyment they derive from it (others will see benefit in being freed from a chore)**

Key Q: Should we consider an AV only Inner Ring Road tunnel?

•**There may be some challenges in shifting the perception of cars as a status symbol rather than a symbol of personal freedom**

•**Where users are not in control, people are less willing to accept risk**

• **Initial policy challenges include verifying the safety and reliability of AVs and creating a legal framework to allow their testing and deployment on public roads.**

• **There are serious issues associated with managing any transition in which AV and non AV traffic co-exist, requiring a carefully designed long term policy and regulatory framework.**

•**There are strategic land use and transport planning issues, eg AVs could reduce PT viability (although high capacity radial links would still be needed) and encourage more dispersed land use patterns**

•**There are data handling / sharing and privacy issues**

•**There are ethical and legal issues around how AVs would respond to danger. For example, how will the technology choose between damage to the car and / or the people in it, or a child on the footpath?**

•**In the absence of human error, new forms of insurance will have to be**

- **The benefits of leadership might include:**
  - **high values of time, limited road capacity and severe congestion / AQ problems might mean the technology generates especially high benefits in London, justifying the costs of early adoption**
  - **London may be able to afford higher up front (fixed) costs to develop an implementable system than a smaller city**
  - **leading the field could be good for London's image as a technologically innovative city**
  - **successful implementation could give UK based technology companies a platform for exports**

- **On the other hand being a 'follower' could:**
  - **allow London to learn from others' mistakes**
  - **be cheaper and less risky - London's road system is more complex and less resilient than most and the costs of a chaotic implementation could be high**