

# PEAK TRAVEL AND ITS IMPLICATIONS FOR CITY POLICY

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## WHY THE FUTURE OF TRAVEL MATTERS

- Energy and environmental impacts
  - Local pollution: Air quality, noise, quality of life
  - Transport is 37% of Swiss energy-related CO<sub>2</sub>
- Planning and policy
  - Local decisions on development and infrastructure
  - How much space do we dedicate to the private car?
  - National and international climate and energy policy



**Trafalgar Square, London**

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**Trafalgar Square, London**

Photos: Streetswiki; Foster & Partners

## CONVENTIONAL VIEW

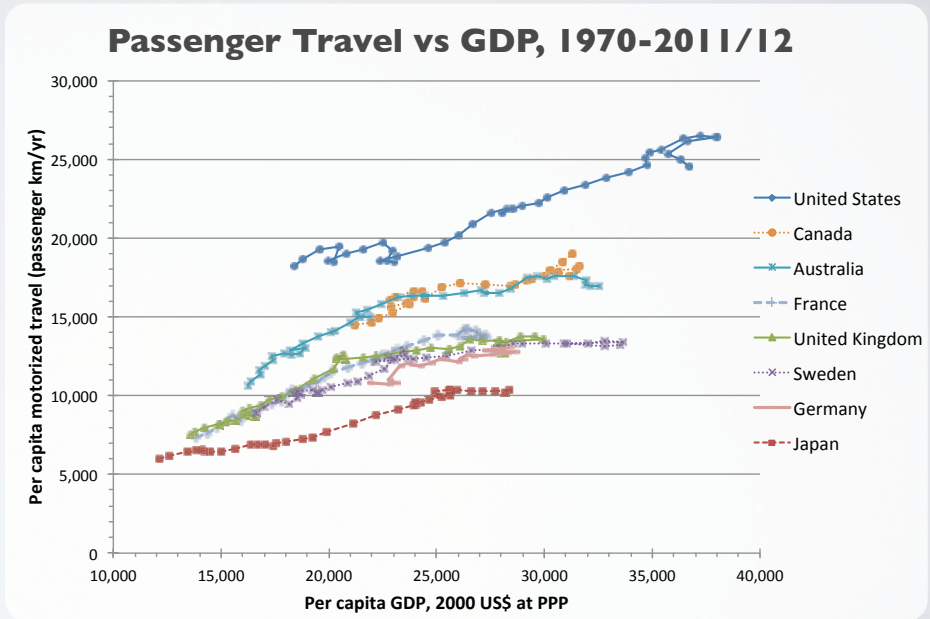
- Traffic, energy demand and CO<sub>2</sub> grow steadily with income
- Build infrastructure based (in part) on demand forecasts
- New infrastructure (road, rail) can:
  - Reduce time spent traveling
  - Increase capacity
  - Bring economic and social gains
  - Infrastructure does not affect the total amount of travel



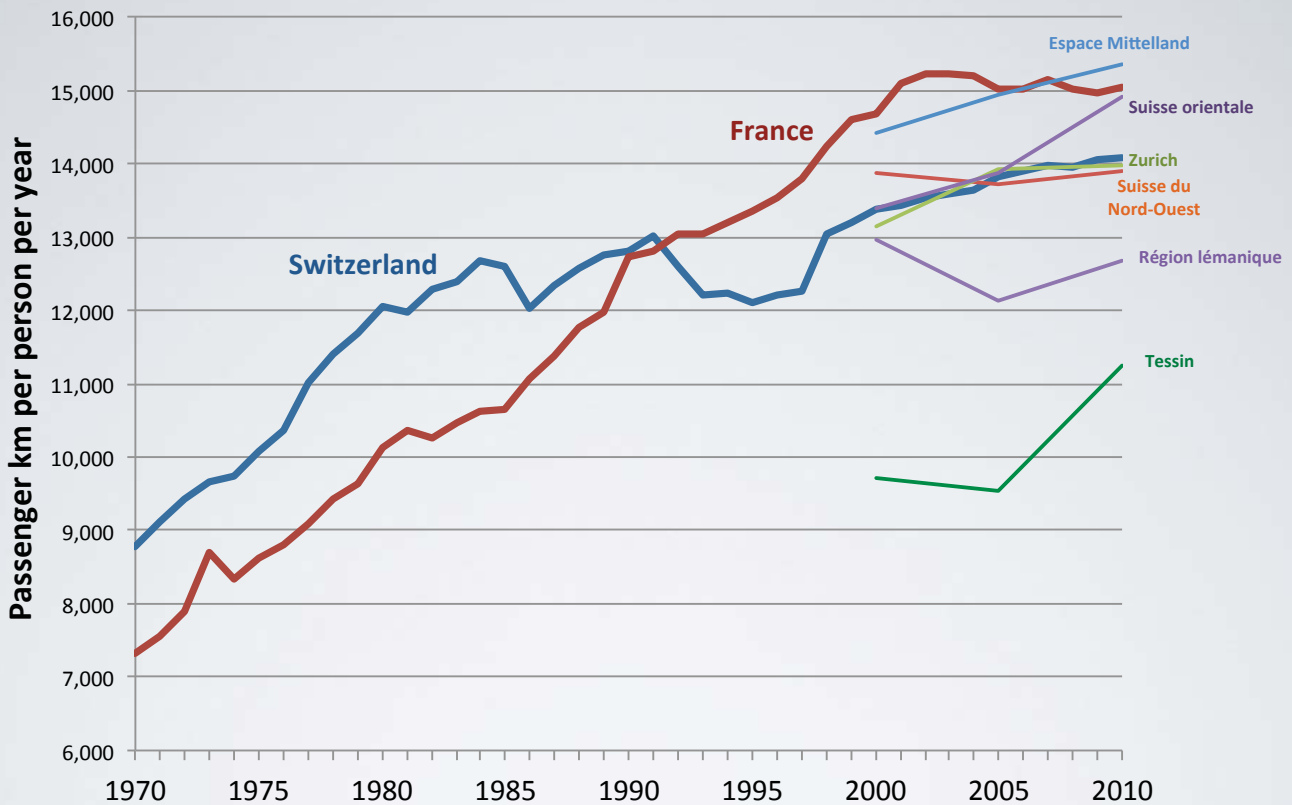
Photos: Fototrenes (Creative Commons), ;The Guardian

# PEAK TRAVEL: THE END OF GROWTH?

- Travel demand levels out at GDP of ~US \$25,000 per capita
- All modes, not just cars
- Started before the economic crisis and high oil prices
- Evident in most industrialized countries

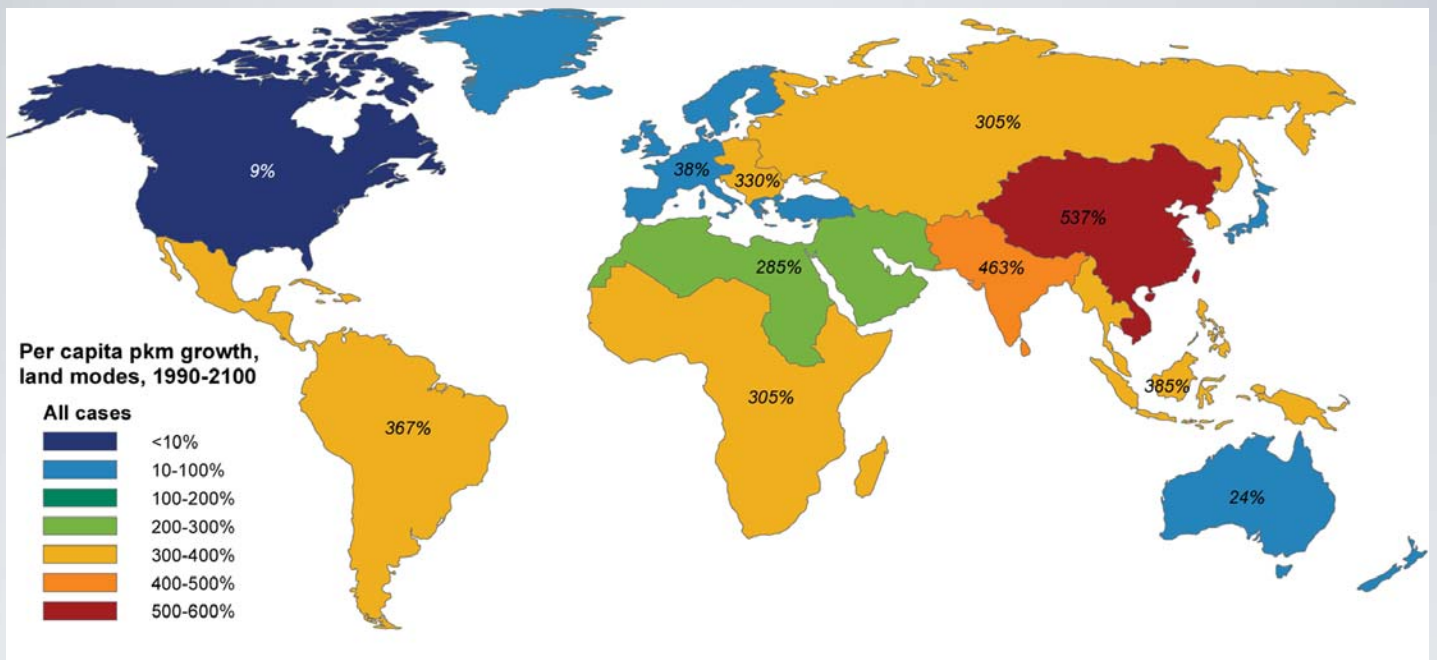


Source: Updated from Millard-Ball & Schipper 2011



SWITZERLAND IS THE EXCEPTION?  
BUT GROWTH RATE IS SLOW

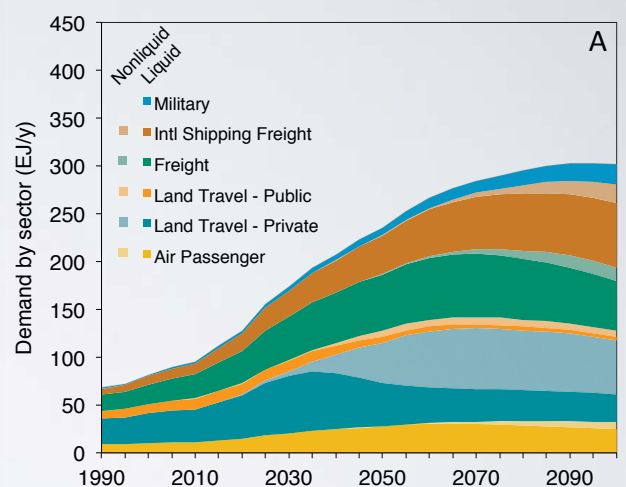
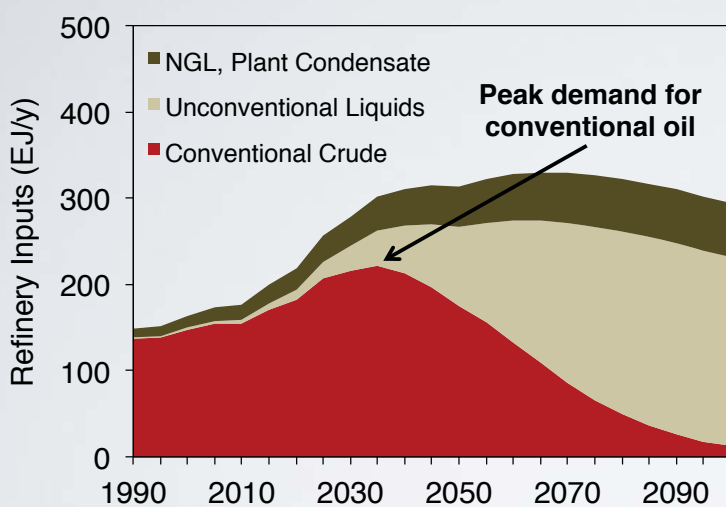
Source: OECD/Office Fédéral de la statistique



Source: Brandt, Millard-Ball et al. 2013

MOST GROWTH WILL BE IN THE DEVELOPING WORLD

## IMPLICATIONS FOR ENERGY



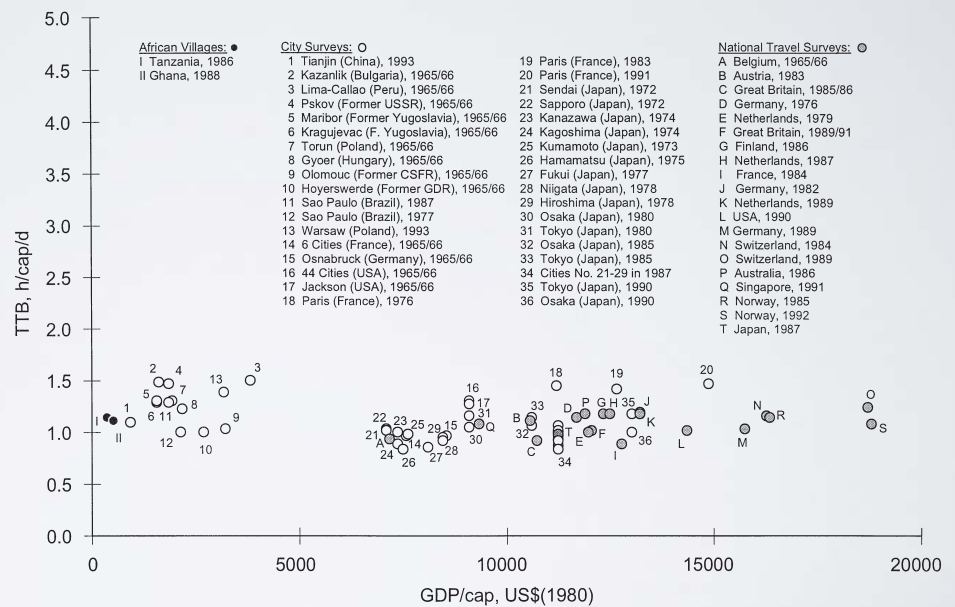
Source: Brandt, Millard-Ball et al. 2013

- Conventional oil scarcity is not the main worry. Climate change is.
- Peak travel, fuel efficiency and alternative liquids substitute for oil
- But substitutes are often more CO<sub>2</sub> intensive



# THEORIES FOR PEAK TRAVEL

- Travel time budget: 1.1 hours/day
  - If speeds don't increase, travel does not either
  - New motorways, high-speed rail are used to travel more, not to spend less time traveling

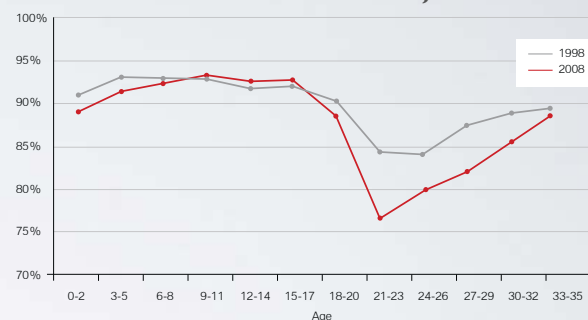


Source: Schafer 1998

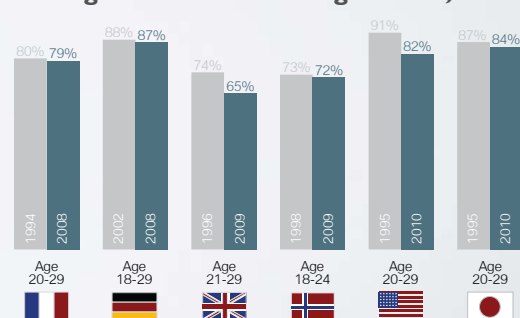
# THEORIES FOR PEAK TRAVEL

- Travel time budget: 1.1 hours/day
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  - New motorways, high-speed rail are used to travel more, not to spend less time traveling
- Demographic and cultural trends
  - Aging population
  - Young people less interested in cars
- Diminishing returns to travel
- Urban development patterns

**Germans with car access, 1998-2008**



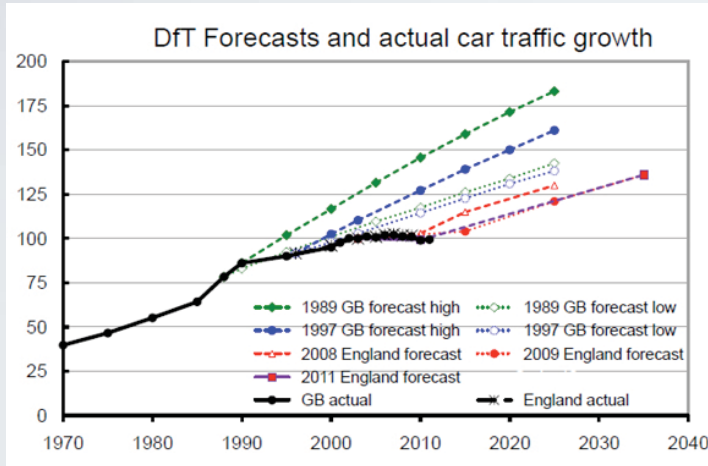
**Young adults with driving licence, 2002-08**



Source: Ifmo 2013

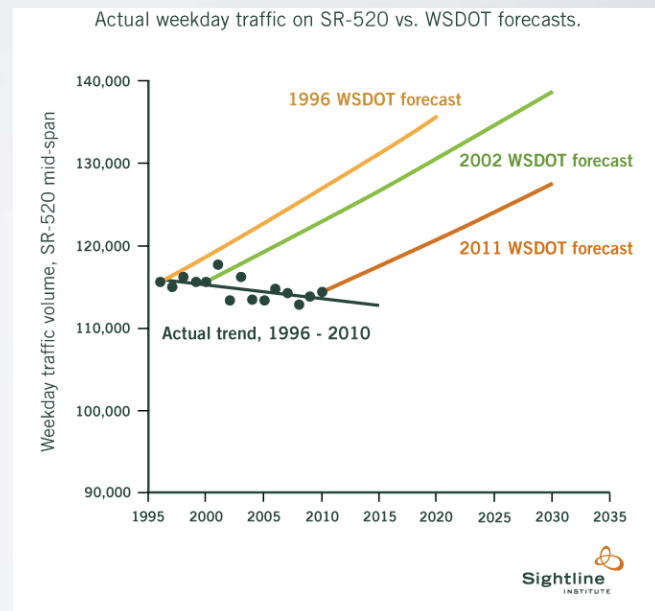
# SOME MODELERS STILL RESIST

## United Kingdom



Source: Goodwin 2012

## Washington State, USA



Source: Sightline Institute

## KEY POLICY LESSONS (I)

- For climate and energy policy
  - Transport not a “difficult” a sector for climate policy
  - Oil shortage is not the concern
- For infrastructure planners
  - “Do nothing” may be the most robust option given uncertainty in demand
  - Little benefit from enhancing capacity in many situations
  - Infrastructure is already extensive

# KEY POLICY LESSONS (II)

- For economists
  - Higher speeds may not bring the intended benefits
  - Economic benefits – housing, employment choices?
  - But people shift activities → no travel time savings
- For urban policy makers
  - Car restraint policies may have been more effective than once thought
  - Peak travel provides the opportunity to take space away from transport
  - Urban amenity, not movement of people, may be the primary goal

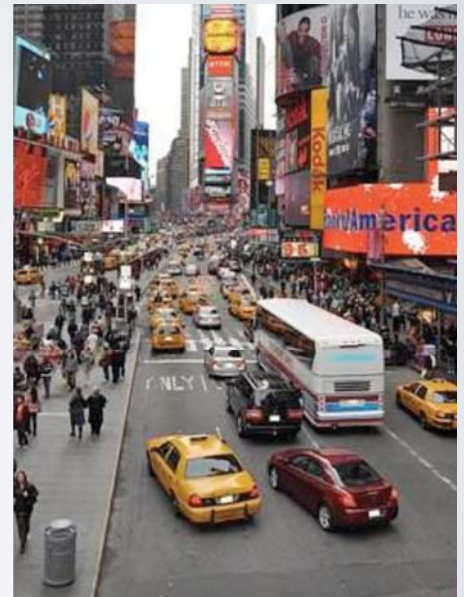


Photo: NYCDOT/Urban Omnibus

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Photo: NYCDOT/Urban Omnibus

# THANK YOU!

## QUESTIONS?

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Woody Carroll/UCSC