Agenda

- Are traffic volumes increasing?
- Will traffic volumes increase in the future?
- Are road congestion costs going to double?
- Is Melbourne’s road congestion getting worse?
- Are petrol prices driving a shift to public transport?
- Are freeways and public transport in competition?
- Is public transport mode share increasing?
- Are car greenhouse emissions still increasing?
- Is car ownership increasing?
Is traffic increasing on our roads?

BITRE report released
15 March 2012
Is traffic increasing on our roads?

Vehicle kilometres travelled per quarter - Australia

Source: BITRE Report 127, table A3
Is traffic increasing on Melbourne roads?

Vehicle kilometres travelled per quarter - Melbourne

Source: BITRE Report 127, table A4
VicRoads data shows much the same trend

Melbourne road traffic volumes

Source: VicRoads Traffic Systems Performance Monitoring Bulletins
Australian per person vehicle travel peaked in September 2003. September 2003 was also the peak for the eight capitals.

Source: BITRE Report 127
BITRE’s regression model fit

Figure 2.7 Components of predicted levels of traffic per person in Australia

Source: BITRE Report 127
Figure 2.4 Australian savings rate and the GFC dummy

Source: BITRE Report 127
BITRE assumptions about the future

- Unemployment declines slightly to 2015
- Petrol prices constant in real terms
- ‘GFC effect’ over by 2020
Forecast for Melbourne traffic

Figure 3.13 Aggregate traffic levels in Melbourne

Source: BITRE Report 127
What if petrol prices rise to $2/litre by 2020?

Source: BITRE Report 127, figure 4.1

Australian Traffic per person
Growth still forecast with high fuel prices

Source: BITRE Report 127, figure 4.2
Different futures..

- What if..
  - Petrol prices rose,
  - Unemployment stayed ‘high’, and
  - The ‘GFC effect’ on the savings rate continued?

- Unfortunately BITRE didn’t test a combined scenario.
- Are such trends likely to be independent?
Car use peaked in 2004

Estimated car passenger kms per capita - Australian cities

Source: BITRE 2011 statistics yearbook
Melbourne traffic – the monitored network

Map of the urban monitored network in 2009/10

Source: VicRoads Traffic Systems Performance Monitoring Bulletins
Melbourne traffic growth in more detail

Change in Melbourne traffic volumes

Source: VicRoads Traffic Systems Performance Monitoring Bulletins
Traffic growth off the freeways

Change in Melbourne traffic volumes (ex freeways)

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Source: VicRoads Traffic Systems Performance Monitoring Bulletins
Is it just Melbourne where traffic growth has stalled?

Growth in vehicle kms since 1989-90

Source: BITRE Report 127
Traffic trends on toll roads

Rolling year on year average daily traffic growth, Australian toll roads

Sources: TransUrban, ConnectEast, Brisbane Motorways
So are congestion costs going to double 2005 to 2020?

Australian major cities: estimate of total annual vehicle kms

Sources: BITRE Working Papers 71 and 127
Time costs are based on deadweight losses for current congestion. That is, social costs refer here to the estimated aggregate costs of delay, trip variability, vehicle operating expenses and motor vehicle emissions—associated with traffic congestion—being above the economic optimum level for the relevant network.

‘Total’ column values refer to weighted averages over all metropolitan travel.
What congestion costs have been avoided by reduced traffic growth?

Forecast social costs of congestion by vkms

Sources: BITRE Working Papers 71 and 127
What assumptions didn’t eventuate?

- Projected no change in urban PT mode share
- Forecast increases in per person travel
- Ongoing strong economic growth
- Less population growth than occurred
Assumptions that didn’t eventuate (2)

Figure A.4  Forecast fuel price trend for BTRE base case demand projections

Note: Crude oil prices are given here in 2004 US dollars (per barrel), based on US Energy Information Administration (EIA) results for their latest ‘Reference’ long-term projection scenario—adjusting the quoted $US RAC values (for calendar year forecasts) to WTI (2004 real) financial year values, averaging the given trends for all crude oils (including light, low sulphur crude oils), and smoothing across the latest EIA short-term forecasts.

Sources: BTRE estimates based on US Energy Information Administration forecasts (Energy Information Administration 2006a).
What is happening to congestion in Melbourne?

Melbourne AM Peak average travel speed

Source: VicRoads Traffic Systems Performance Monitoring Bulletins
What is happening to congestion in Melbourne? (2)

Variability of Travel Time - all monitored roads, Melbourne

AM peak
PM peak
off peak
all day

Source: VicRoads Traffic Systems Performance Monitoring Bulletins
What about public transport?

Estimated mass transit passenger kms per capita

Source: BITRE 2011 statistics yearbook (note: includes private bus travel)
Public transport patronage more recently..

Public transport patronage growth since 2001-02

South East Qld  Perth  Melbourne  Adelaide  Greater Sydney  Canberra  Hobart  Auckland  Wellington  Christchurch

Sources: state agencies
How does public transport growth compare to road traffic growth?

Growth trends in Melbourne transport

- Public transport patronage
- Road traffic volumes

Sources: patronage estimates, BITRE Working paper 127
Are rising petrol prices driving the mode shift to public transport?

Melbourne Public Transport Patronage and real unleaded fuel prices, 1998/99 - 2010/11

Sources: ABS, patronage estimates
Or is it CBD employment?

Melbourne Public Transport Patronage and CBD employment 1991/92 - 2007/08

Sources: City of Melbourne CLUE, patronage estimates
Or city activity in general..

Melbourne Public Transport Patronage 2003/04 - 2009/10
and City of Melbourne estimated weekday daytime
population 2004-2010

Sources: City of Melbourne, patronage estimates
..more recent CBD data on occupied floor space

Melbourne public transport patronage and Melbourne CBD occupied office floor space 1996-2011

NB: Occupied office space grew by 1.3% in calendar 2011

Sources: Property Council of Australia Office Market Report data, patronage estimates
Is there a relationship between radial freeway traffic and train patronage?

**Growth on CityLink and metro trains since 2001**

- CityLink average daily transactions
- Melbourne train patronage

Sources: TransUrban, patronage estimates
Public transport mode share in Australian cities

Estimated mass transit share of passenger kms

- Melbourne
- Sydney
- Brisbane
- Perth
- Adelaide
- Canberra

Source: BITRE Working Paper 124
And in Melbourne more recently..

Melbourne public transport mode share of weekday motorised trips

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</tbody>
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Source: Department of Transport (Vic)
Are transport emissions growing?

Australian annual transport greenhouse gas emissions

Source: Department of Climate Change
Breakdown of transport emissions

Australian transport emissions

- Domestic aviation
- Domestic marine
- Railways
- Motorcycles
- Heavy-Duty Trucks and Buses
- Light Commercial Vehicles
- Cars

Source: Department of Climate Change AGEIS
Trends in road emissions per capita

Road Transport Emissions per capita

NSW
Vic
Qld
WA
SA
Tas
ACT
NT

Source: AGEIS to 2009
Are our cars getting more greenhouse friendly?

Estimated car emissions per km, Australia

Sources: Department of Climate Change AGEIS, BITRE 2011 yearbook
Is it efficiency or less car use reducing emissions?

**Australian car emissions per capita**

- **Red line:** no efficiency improvement post 2004
- **Blue line:** reported
Is car ownership increasing?

Passenger cars per 100 population

Sources: ABS Motor Vehicle Census, population data
More on transport patterns and trends...

ChartingTransport.com