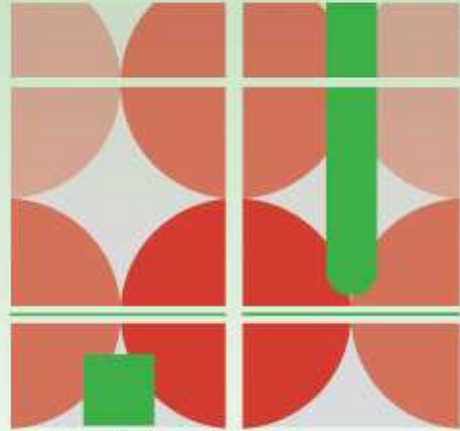


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**Brisbane**

**2008 NATIONAL  
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FOR NEW URBANISM**

6th – 9th February, 2008





# **The Challenges for New Urbanism.**

**By**

**Peter Newman**

**Professor of Sustainability, Curtin University**

**Harry Porter Visiting Professor, University of Virginia.**

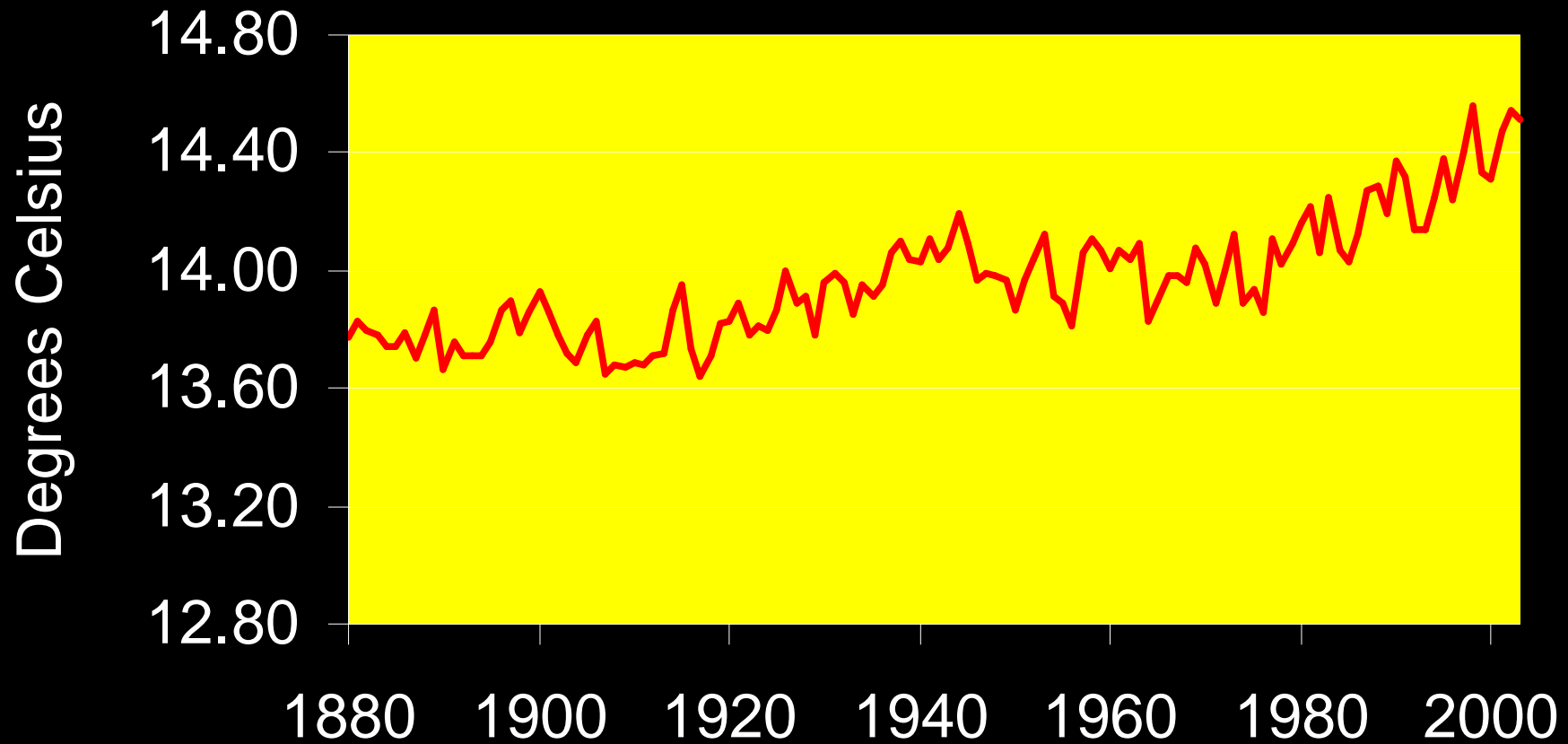
# The challenges for New Urbanism

1. Get serious about carbon and oil
2. Get serious about housing affordability
3. Get serious about ecological regeneration.

# Carbon and Oil – the double whammy

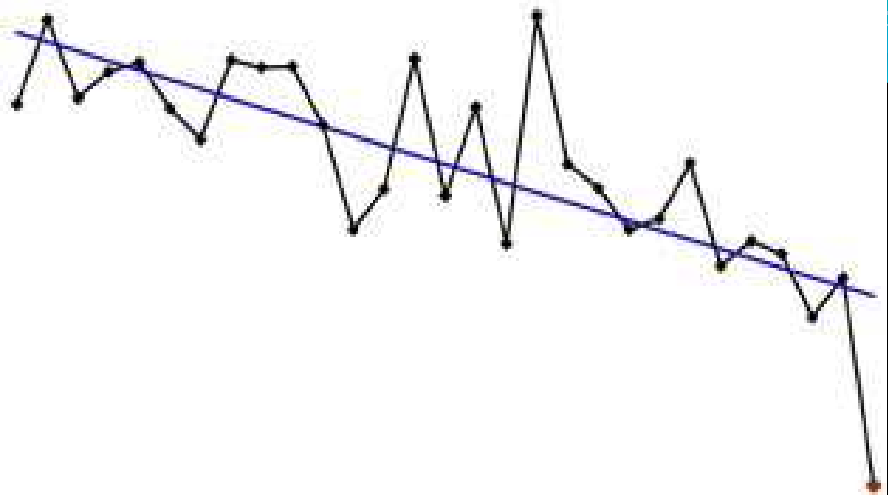
- Global governance is moving to require reductions in all fossil fuels of 50% by 2050.
- Oil production supply limits are being reached so that we must reduce use of oil and natural gas 50% by 2050.
- Both Demand and Supply of oil require new city forms.
- We need to be far more aggressive in demonstrating how to do this.

# Global Average Temperature at Earth's Surface (Land-Ocean Index), 1880-2003

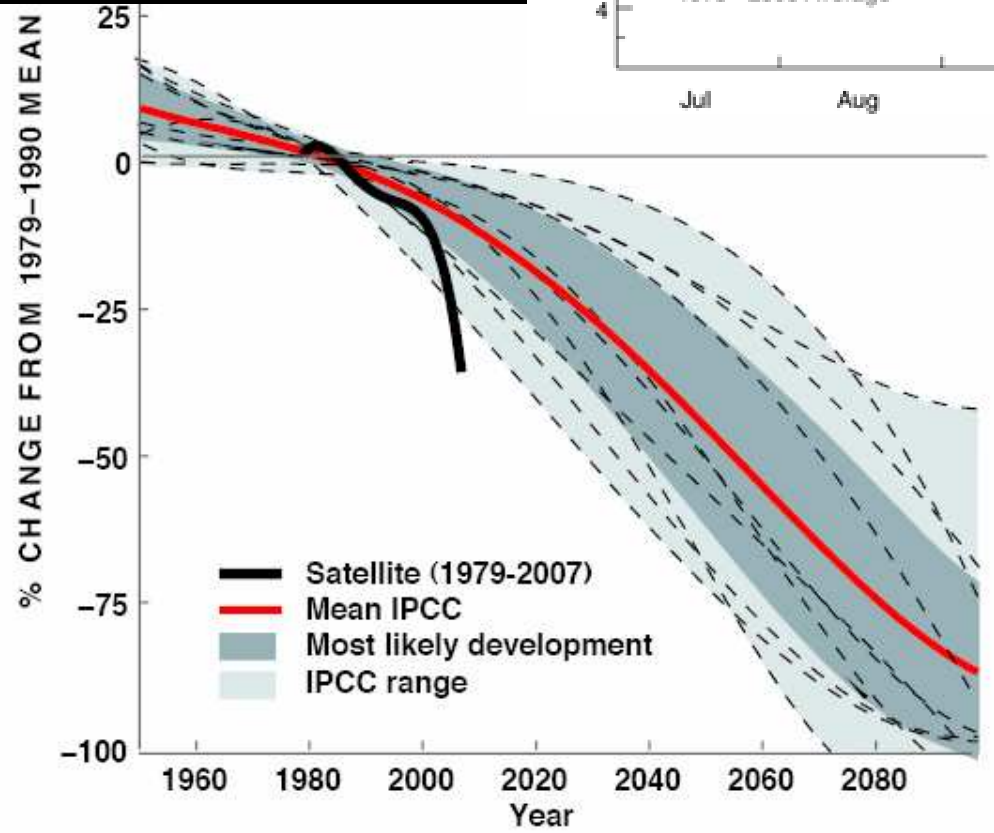
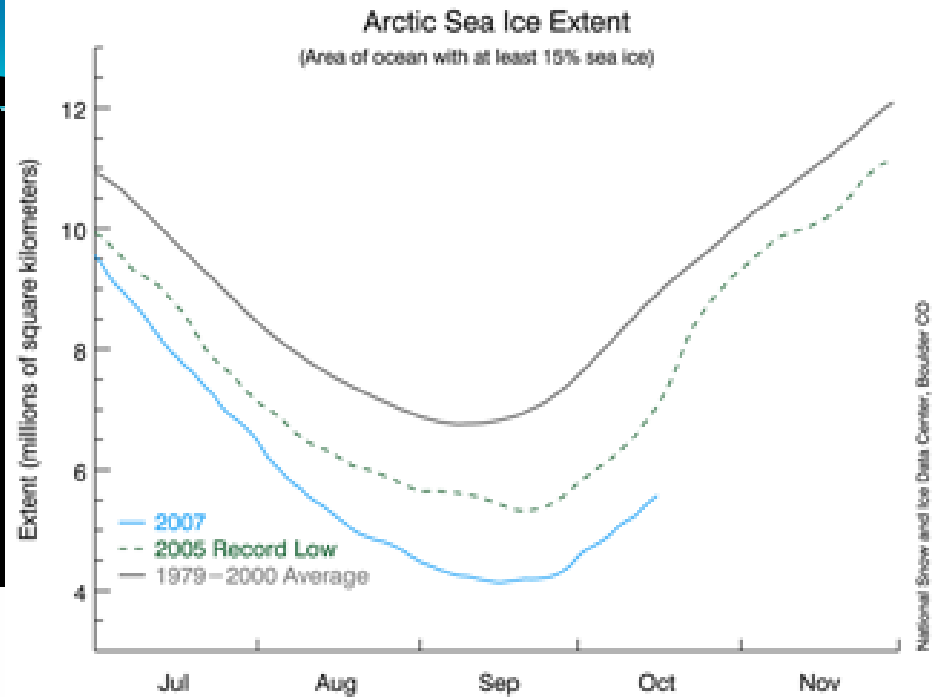


Source: GISS

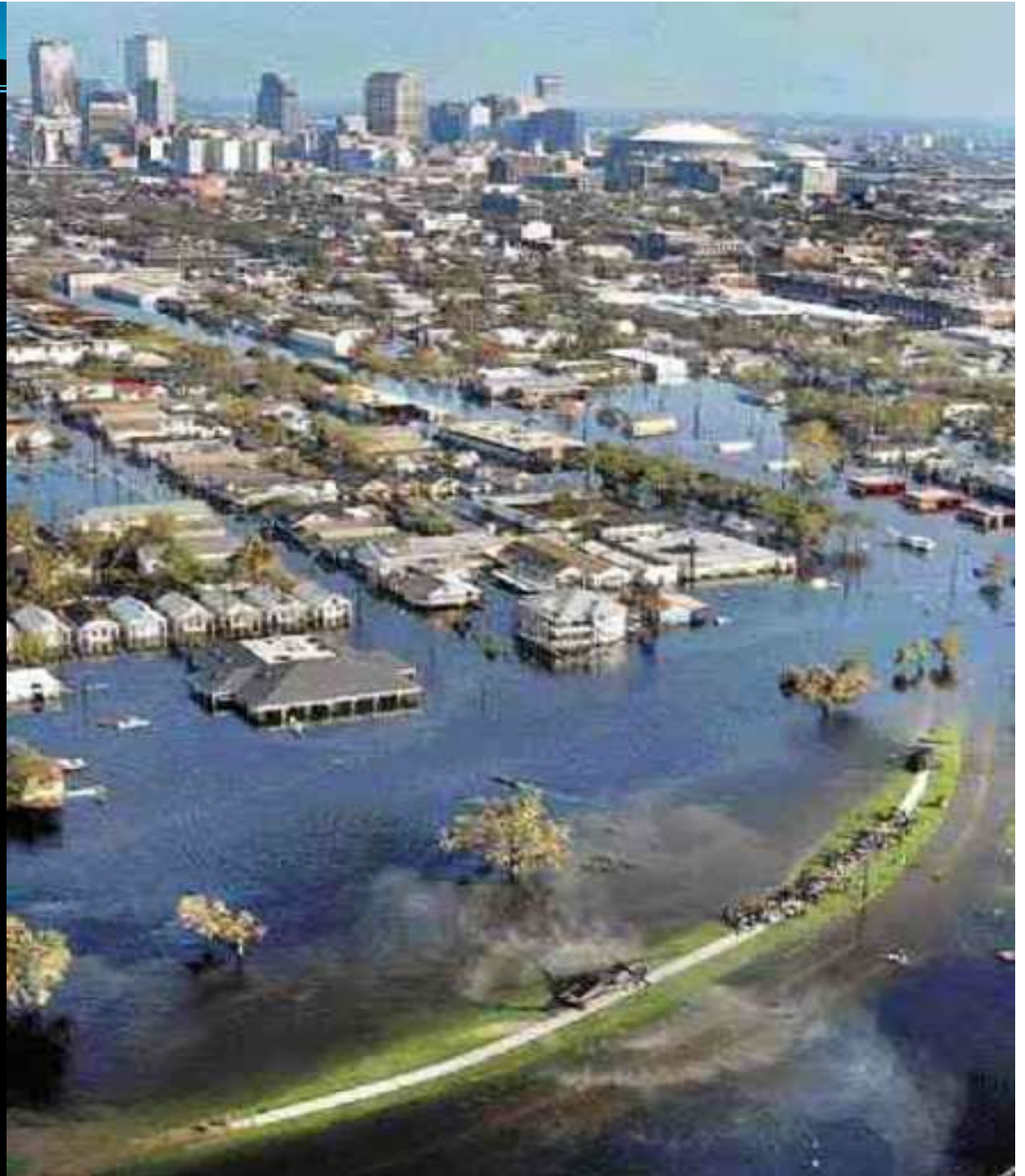
**Arctic sea ice extent 1978-2007**  
in millions of km<sup>2</sup>  
(National Snow and Ice Data Center)



Source: IPCC (2007) p 529



**Climate  
change  
threatens  
cities  
and  
regions**





# Peak oil?

'A growing number of oil-industry chieftains are endorsing an idea long deemed fringe: The world is approaching a practical limit to the number of barrels of crude oil that can be pumped every day.'

Russell Gold and Ann Davis

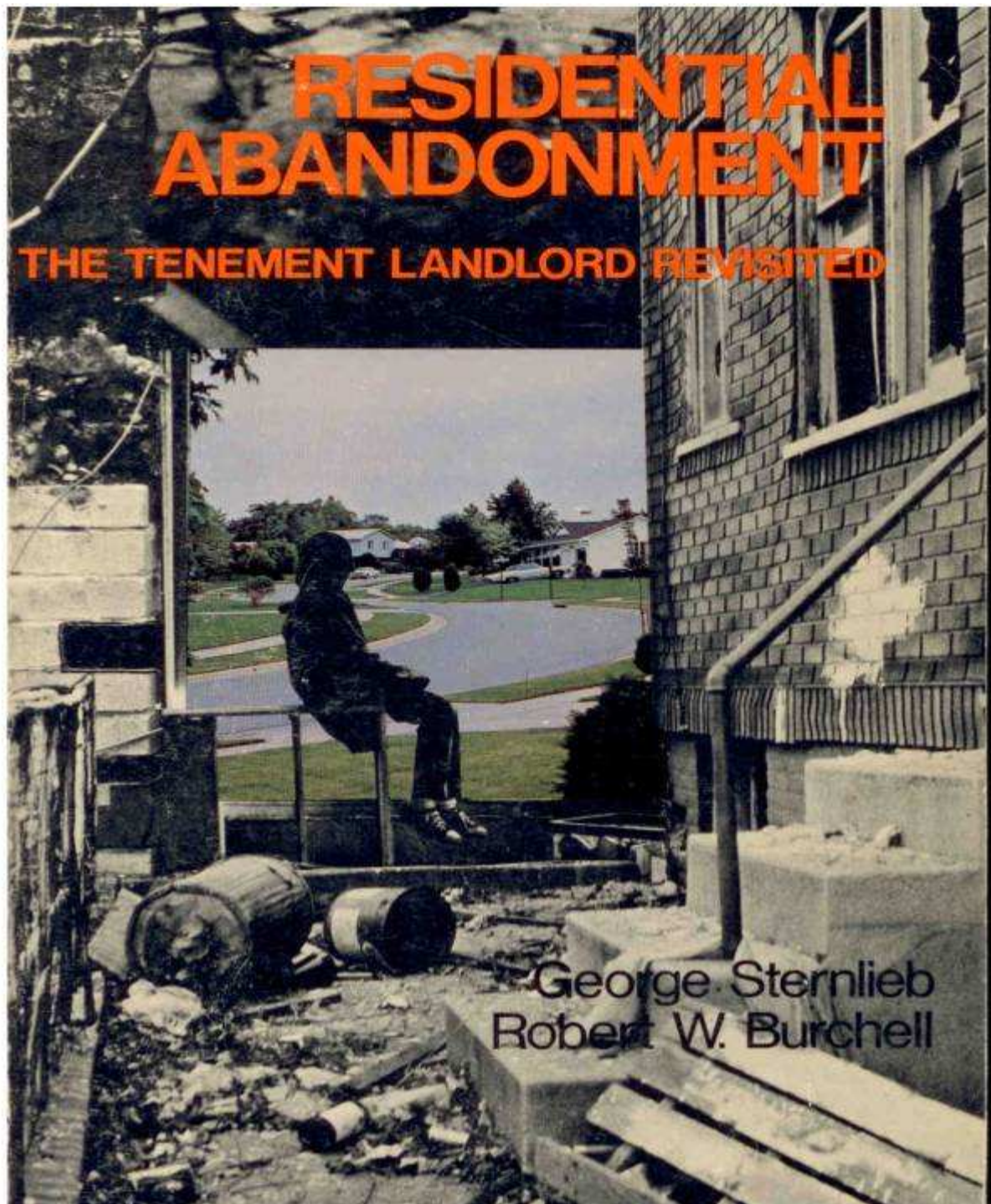
Wall Street Journal, November 19<sup>th</sup>, 2007

**Peak oil has potential to cause immediate damage to cities as they collapse from their car dependence...**

**Especially it can cause severe social damage as it will hurt the poor most.**

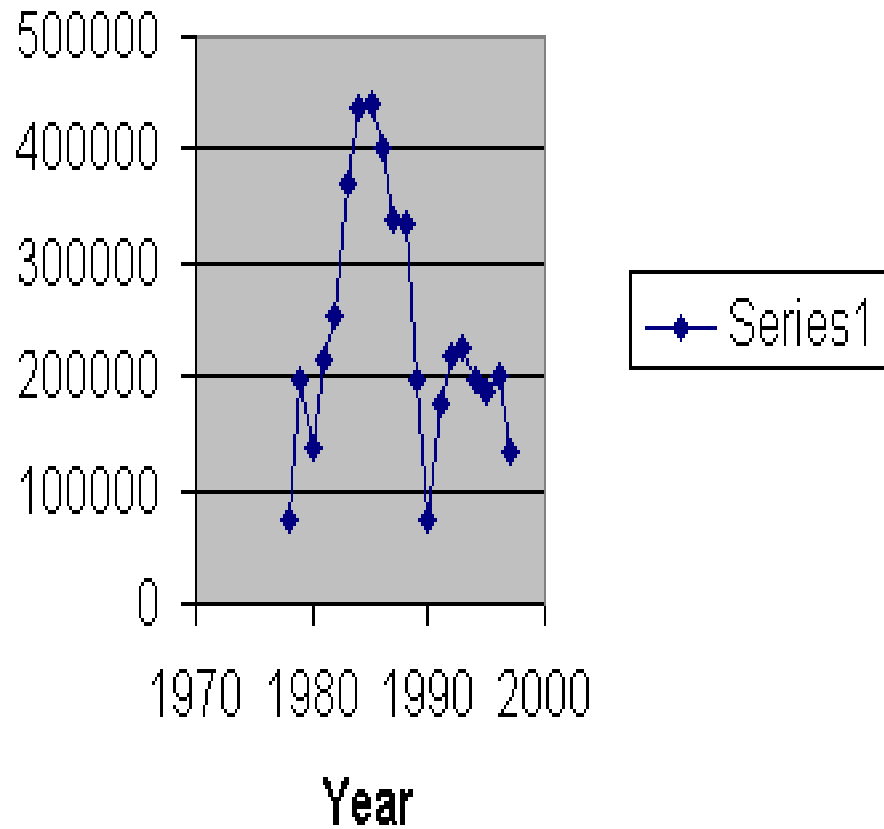
**Sub prime meltdown the first sign of this collapse...**

The new  
areas of  
abandon  
ment are  
on the  
urban  
fringe

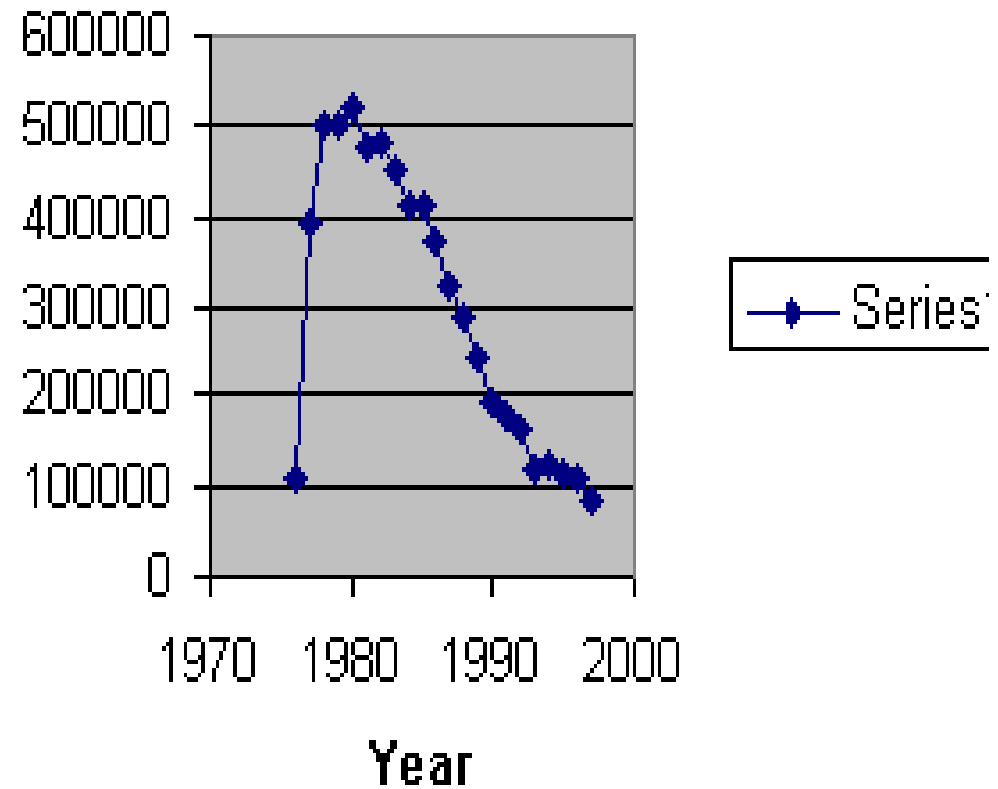


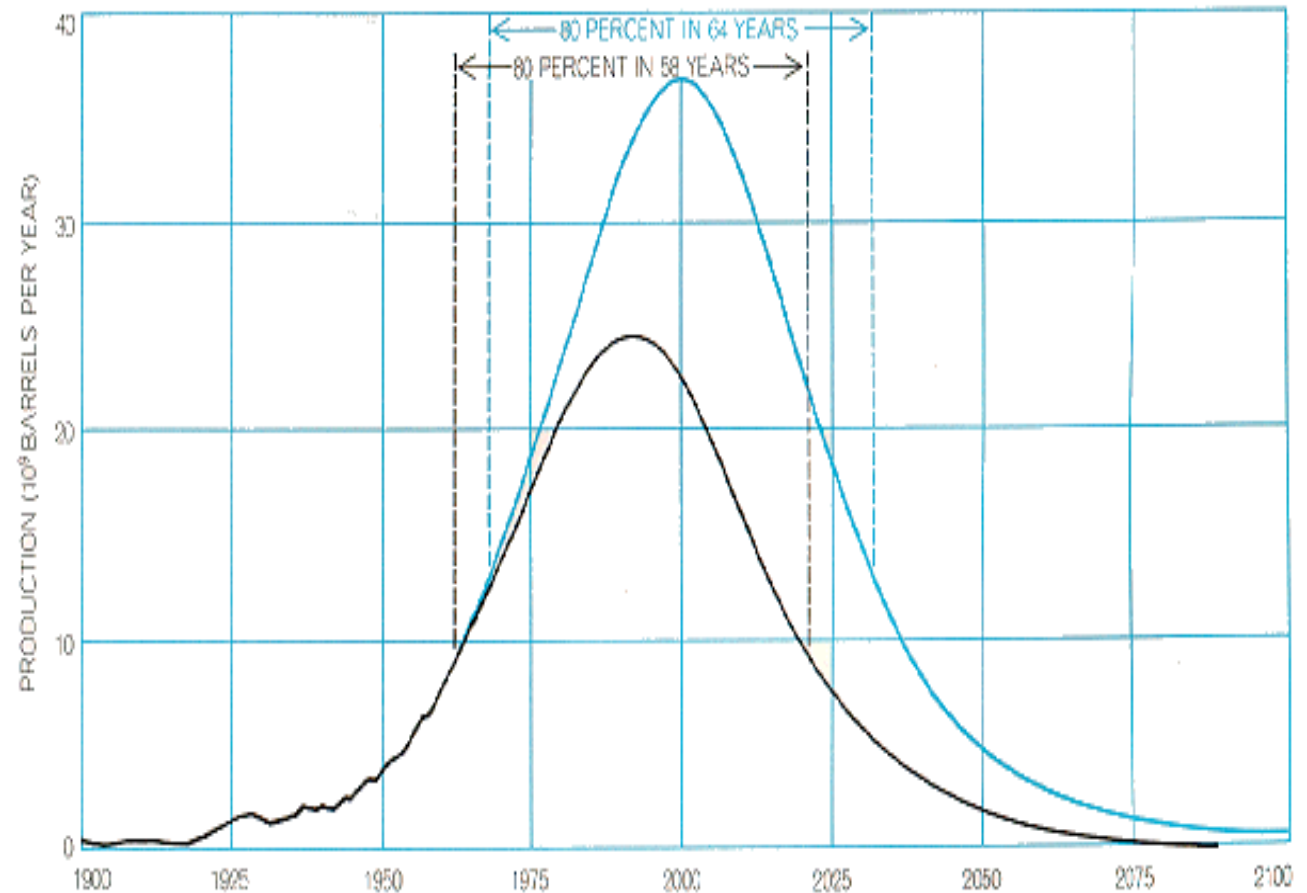
## Production cycle of an oil field

### Brent Field Production



### Forties Field Production





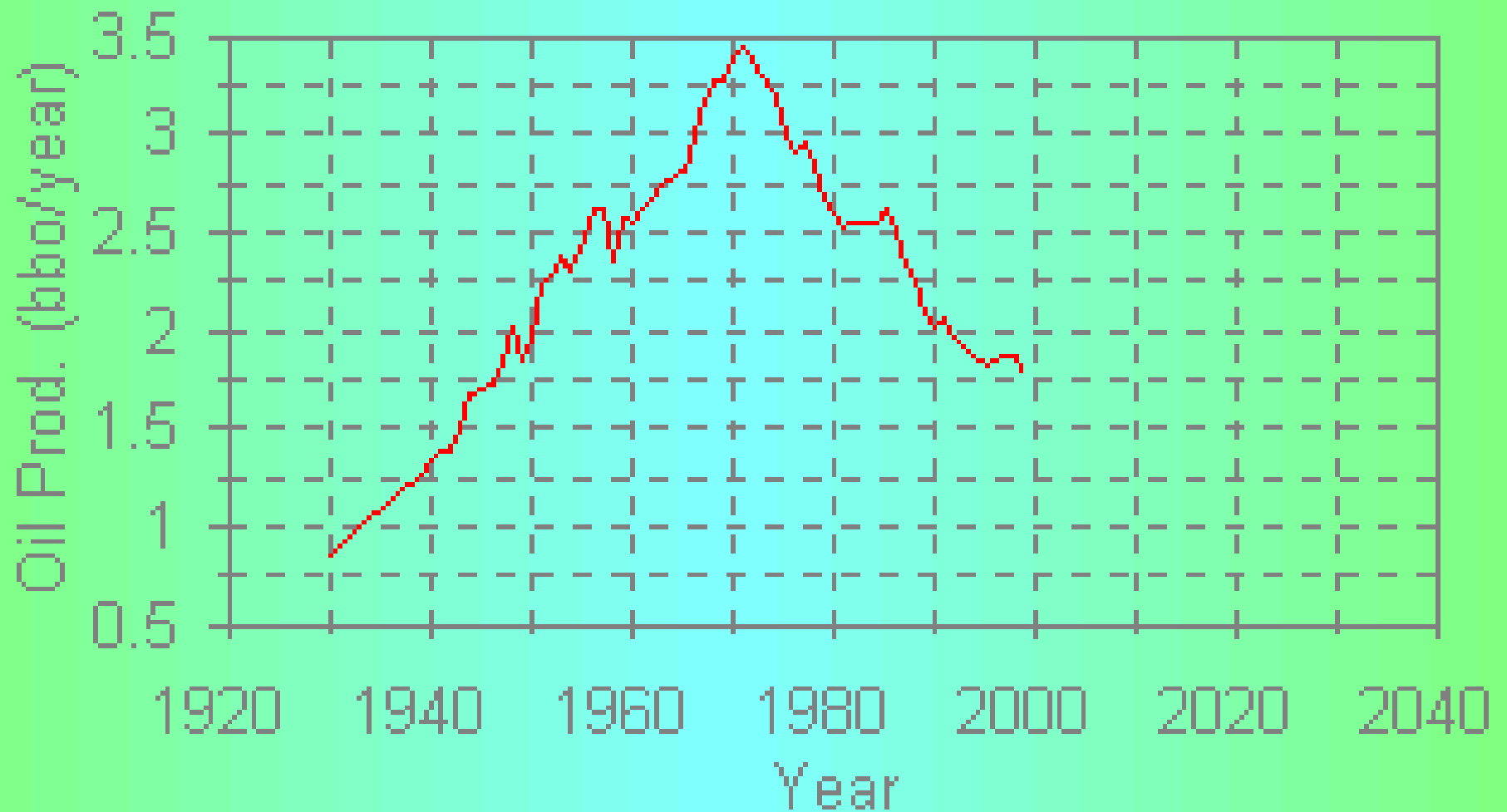
CYCLE OF WORLD OIL PRODUCTION is plotted on the basis of two estimates of the amount of oil that will ultimately be produced.

The colored curve reflects Ryman's estimate of  $2,100 \times 10^9$  barrels and the black curve represents an estimate of  $1,350 \times 10^9$  barrels.

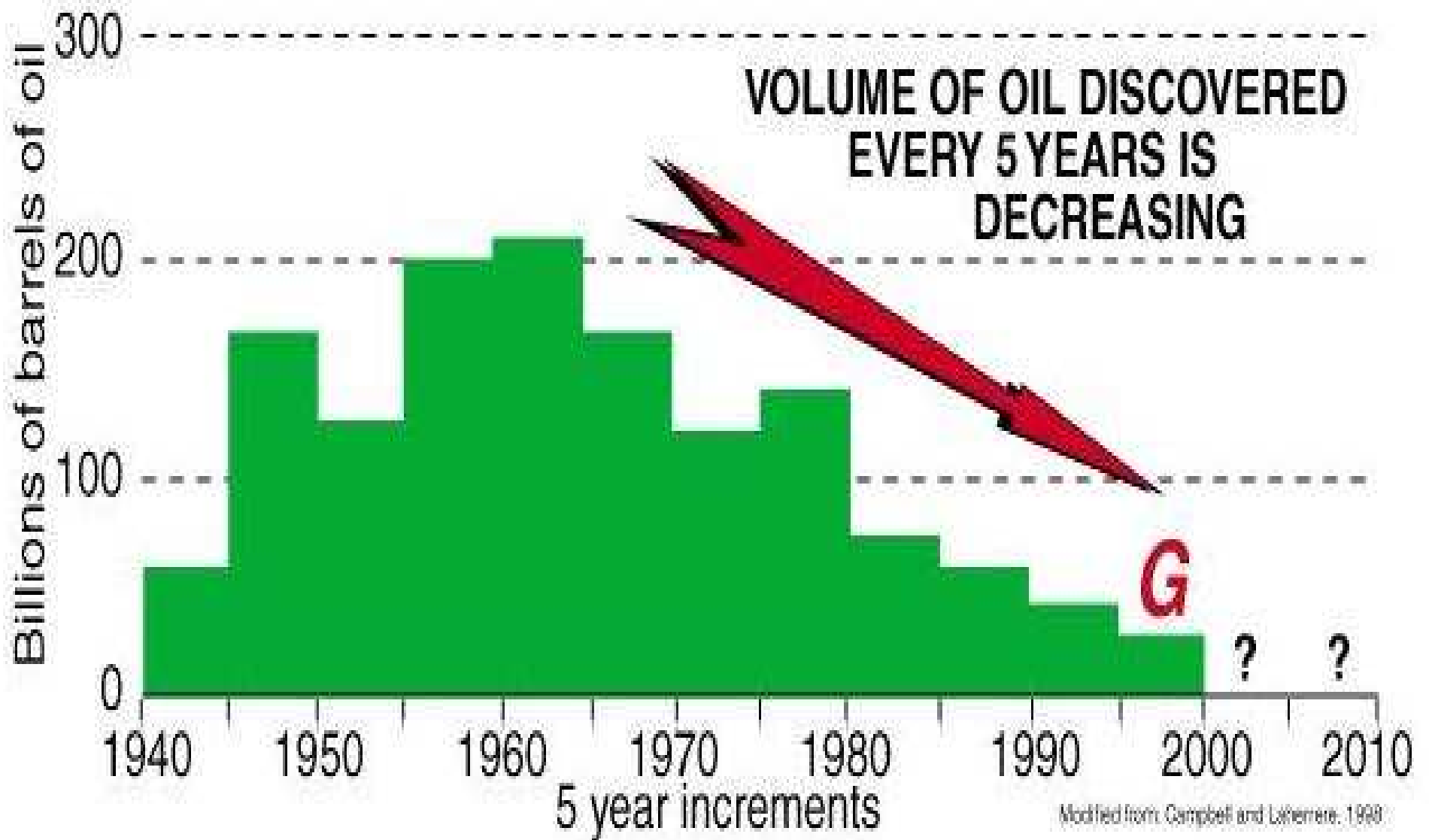
# The Hubbert Peak

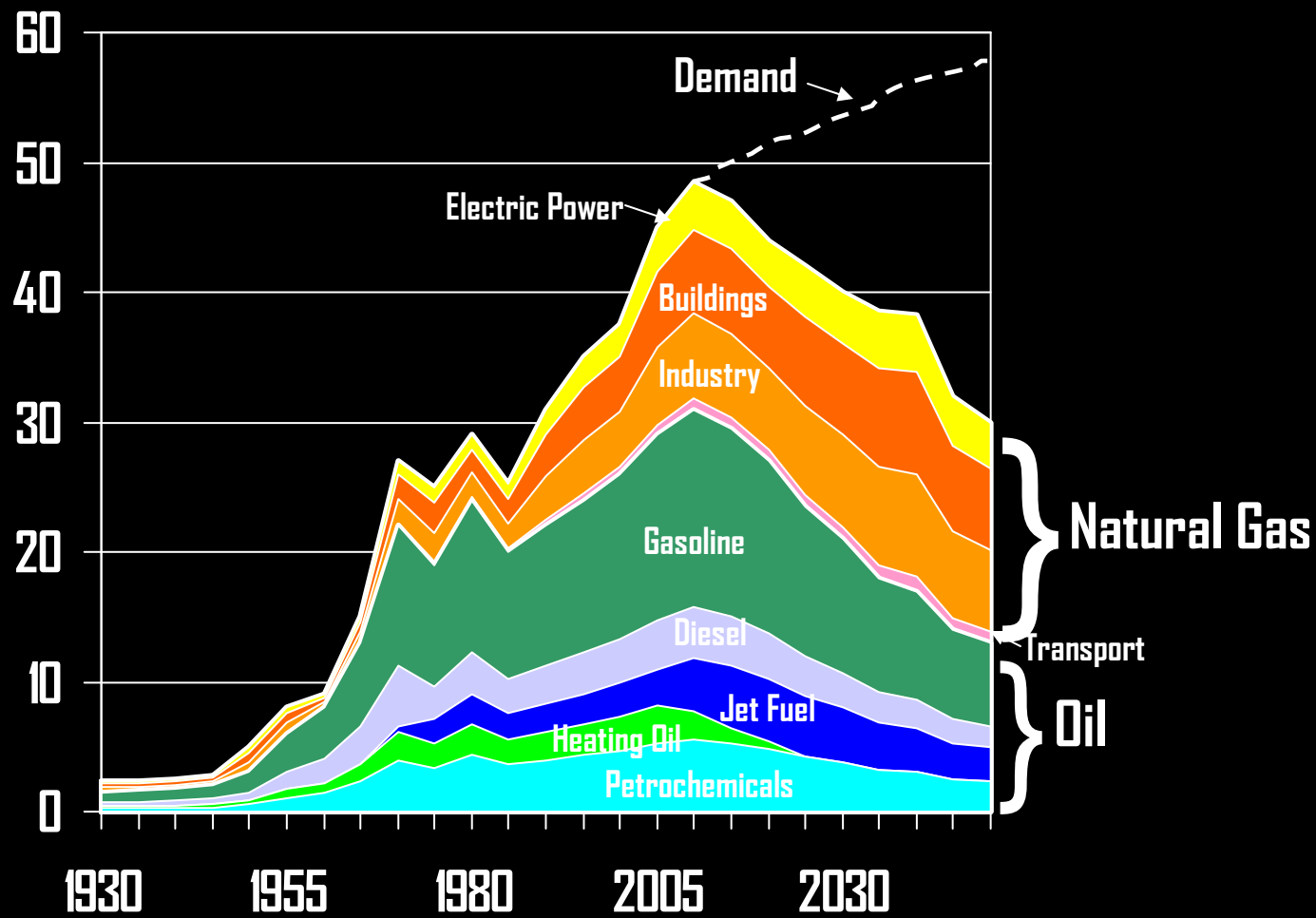
## Sci Amer 1971

# U.S. Lower 48 States



# Figure 4

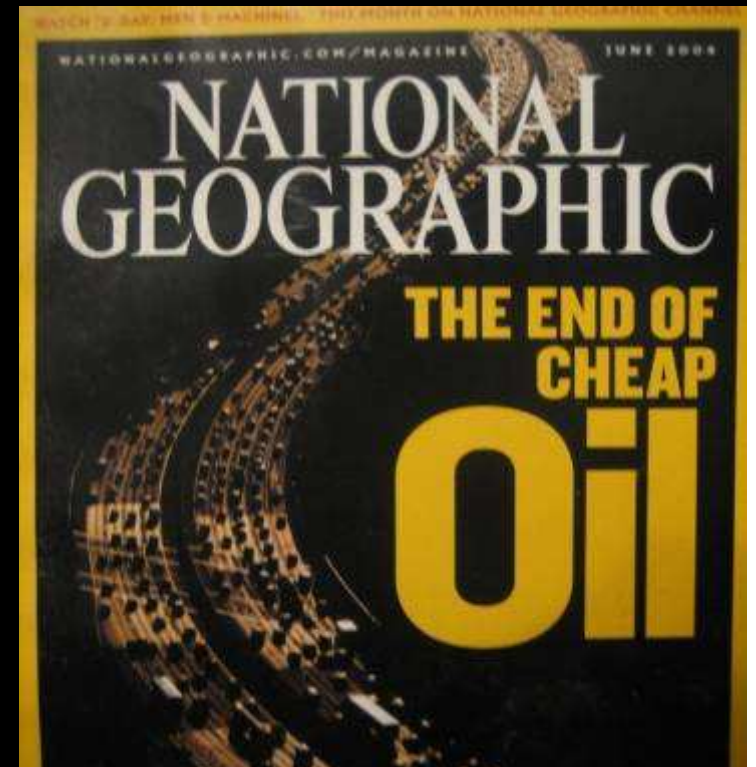




**Fig 2.3 How we use oil and natural gas & how this may change as they peak in production**



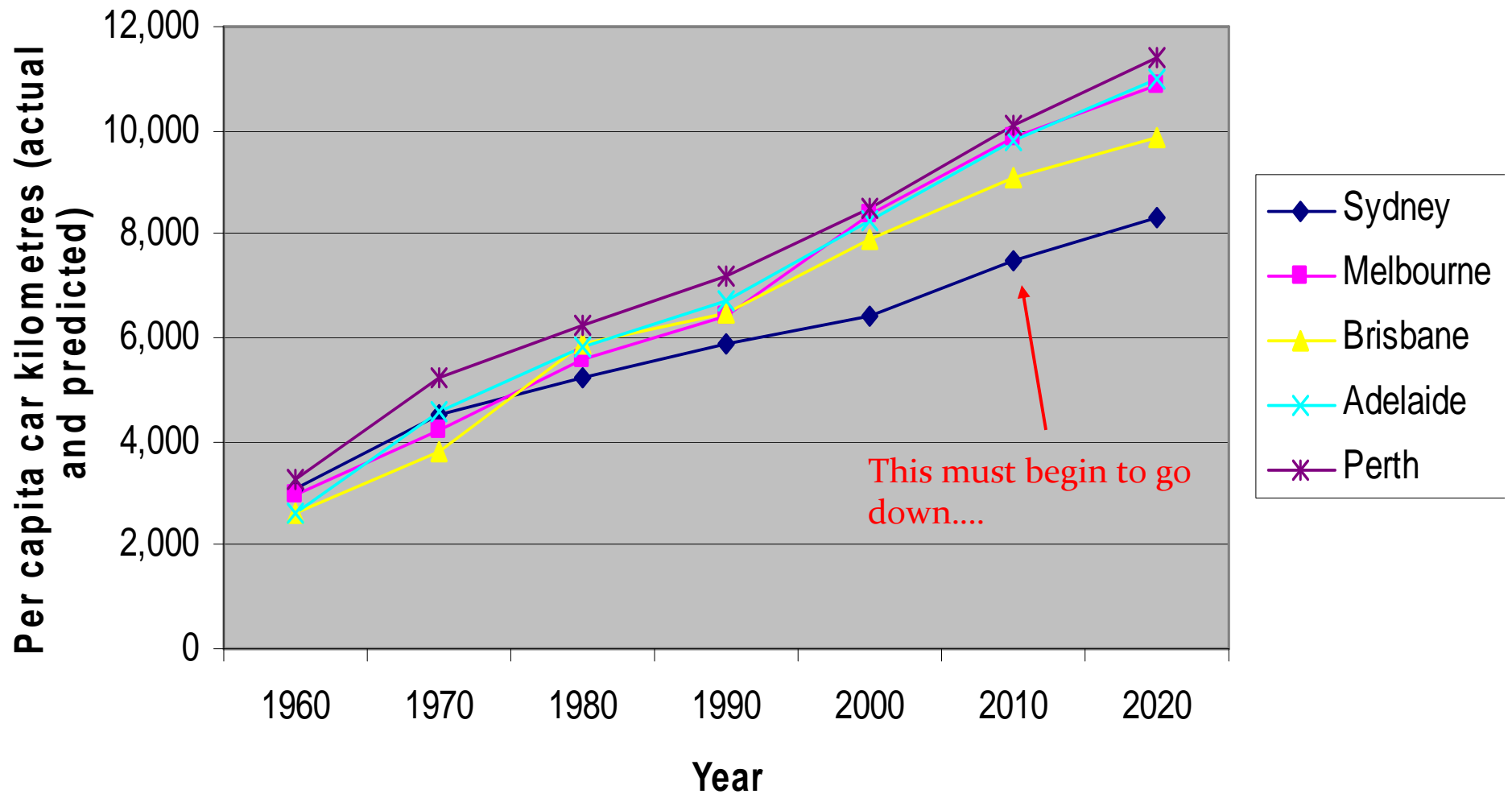
**Can only solve if the  
technological is integrated  
into the design of cities...**



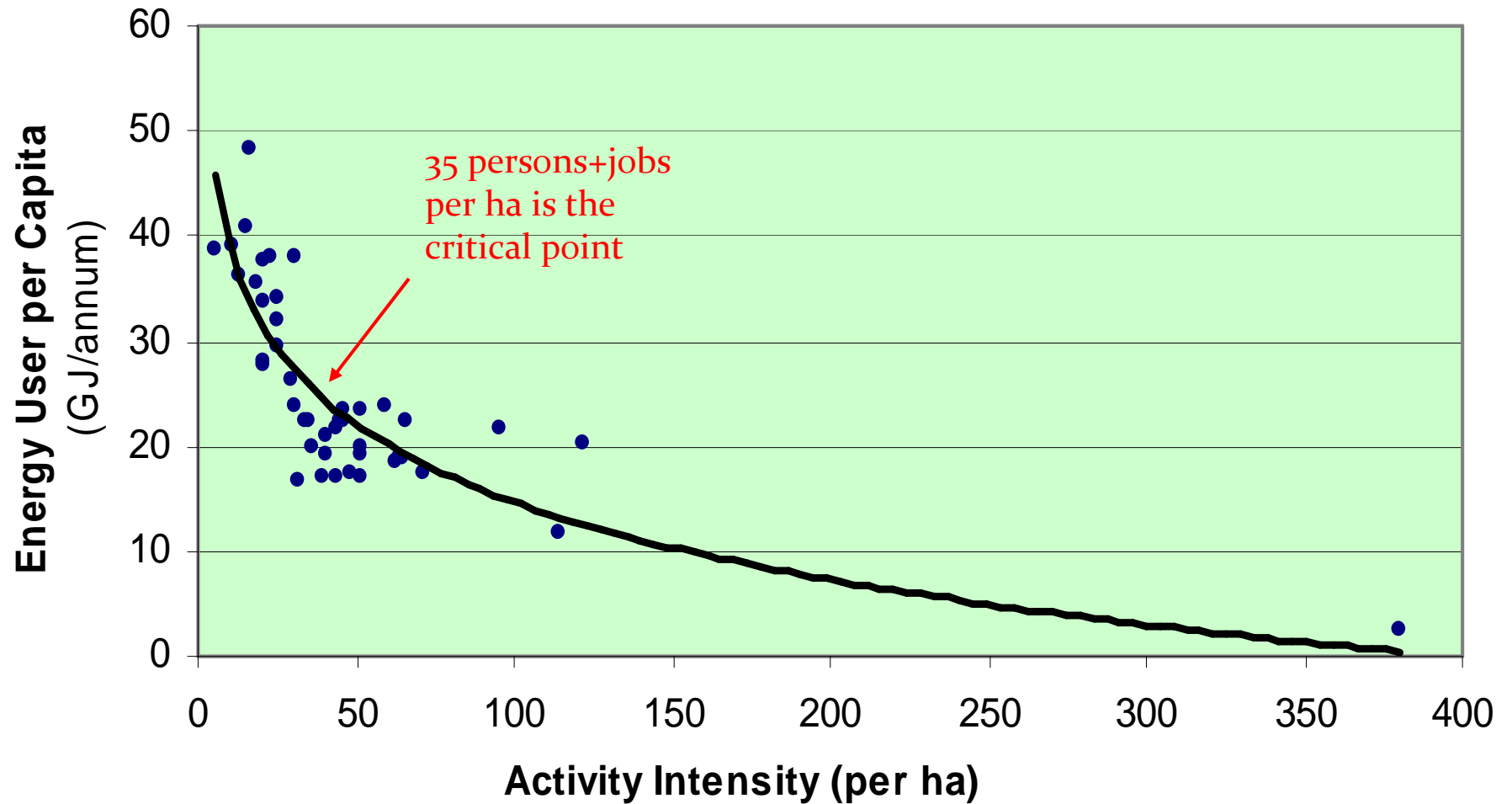
# What does it mean to use 50% less oil in our cities?

- All new development should be carbon neutral.
- Redevelopment closer to the city must be preferred.
- Commercial buildings are showing the way.
- Need demonstrations that substantially reduce fuel use.

# VKT must also peak...



# Activity Intensity and Transport Energy Sydney

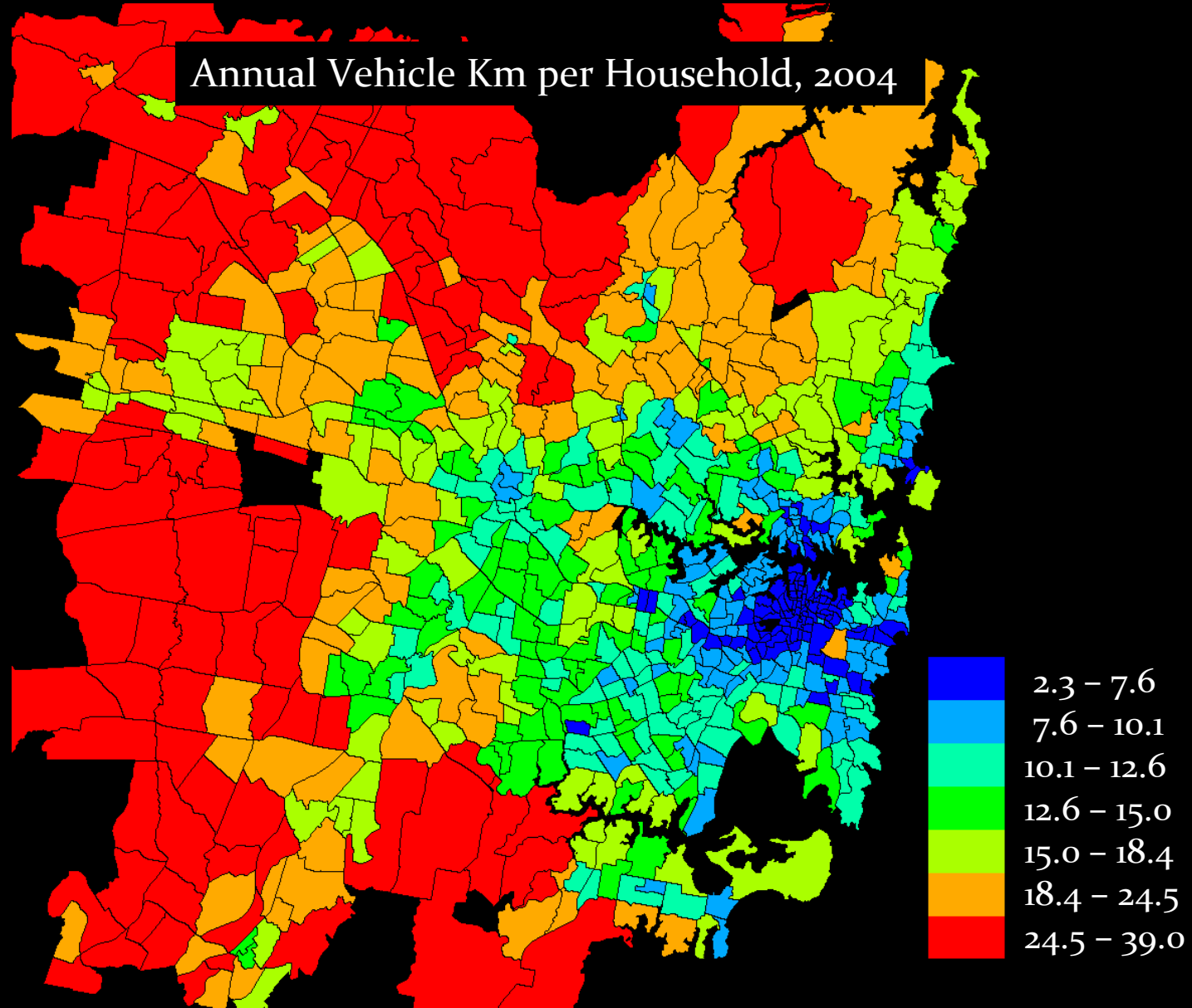


$R^2 = 0.6973$

# Red is danger areas from peak oil and carbon...

Annual Vehicle Km per Household, 2004

Outer suburbs residents, particularly those away from rail lines, drive much more than inner suburbs residents.

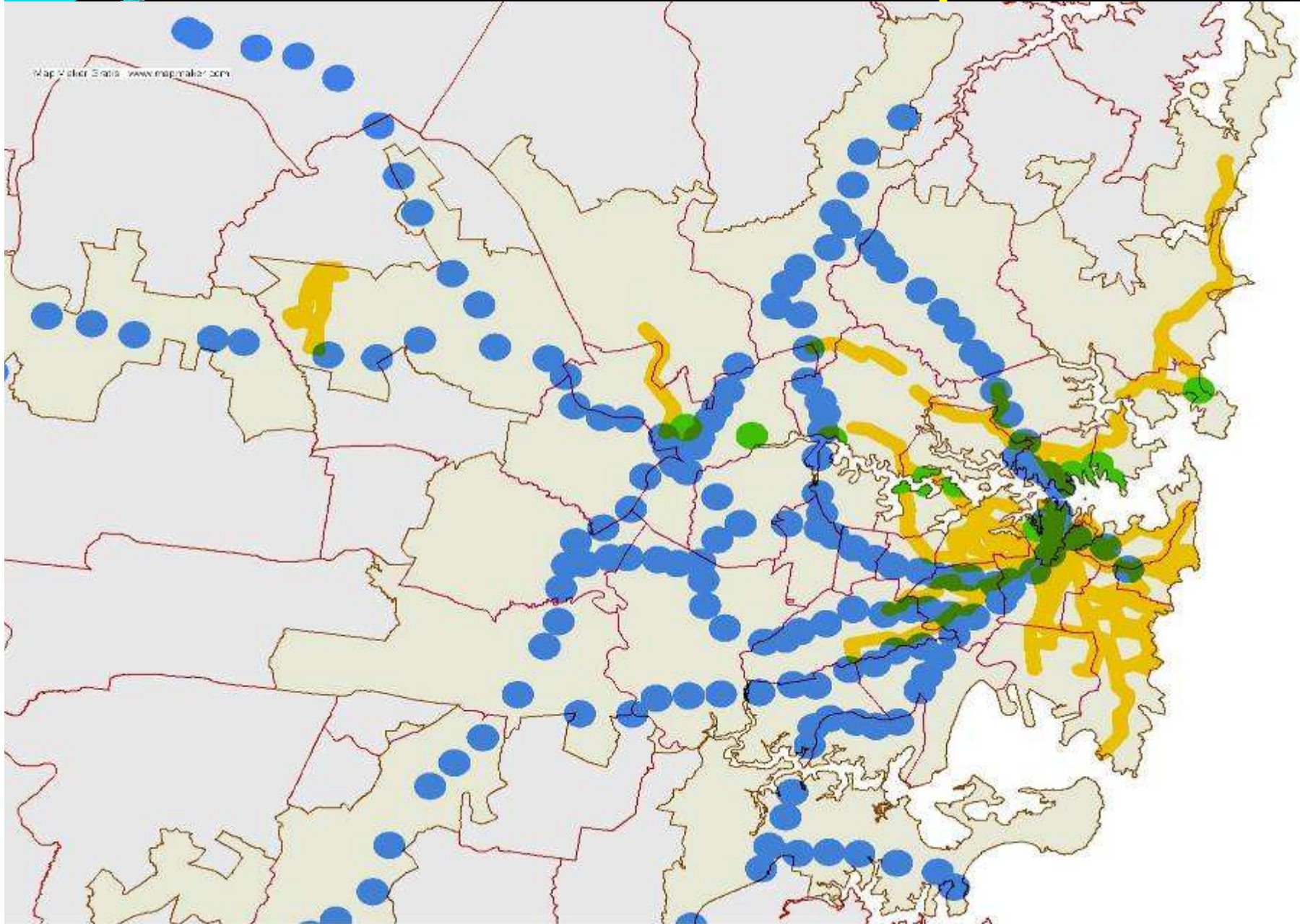


ISTP project to explain transport patterns by local govt area in Melbourne and Sydney:

- ***Distance to CBD explains most 76%<sup>M</sup> and 70%<sup>S</sup>.***  
 $y = x/10 + 3$ , where  $y$  is the transport greenhouse gas in kg of CO<sub>2</sub> per person per day, and  $x$  is the kms from the CBD
- ***Intensity of activity (people and jobs per ha) explains 56%<sup>M</sup> and 71%<sup>S</sup>.***
- ***Access to Transit (% of area with high quality access to public transport) explains 61%<sup>M</sup> and 58%<sup>S</sup>.***
- ***Heavily linked.***

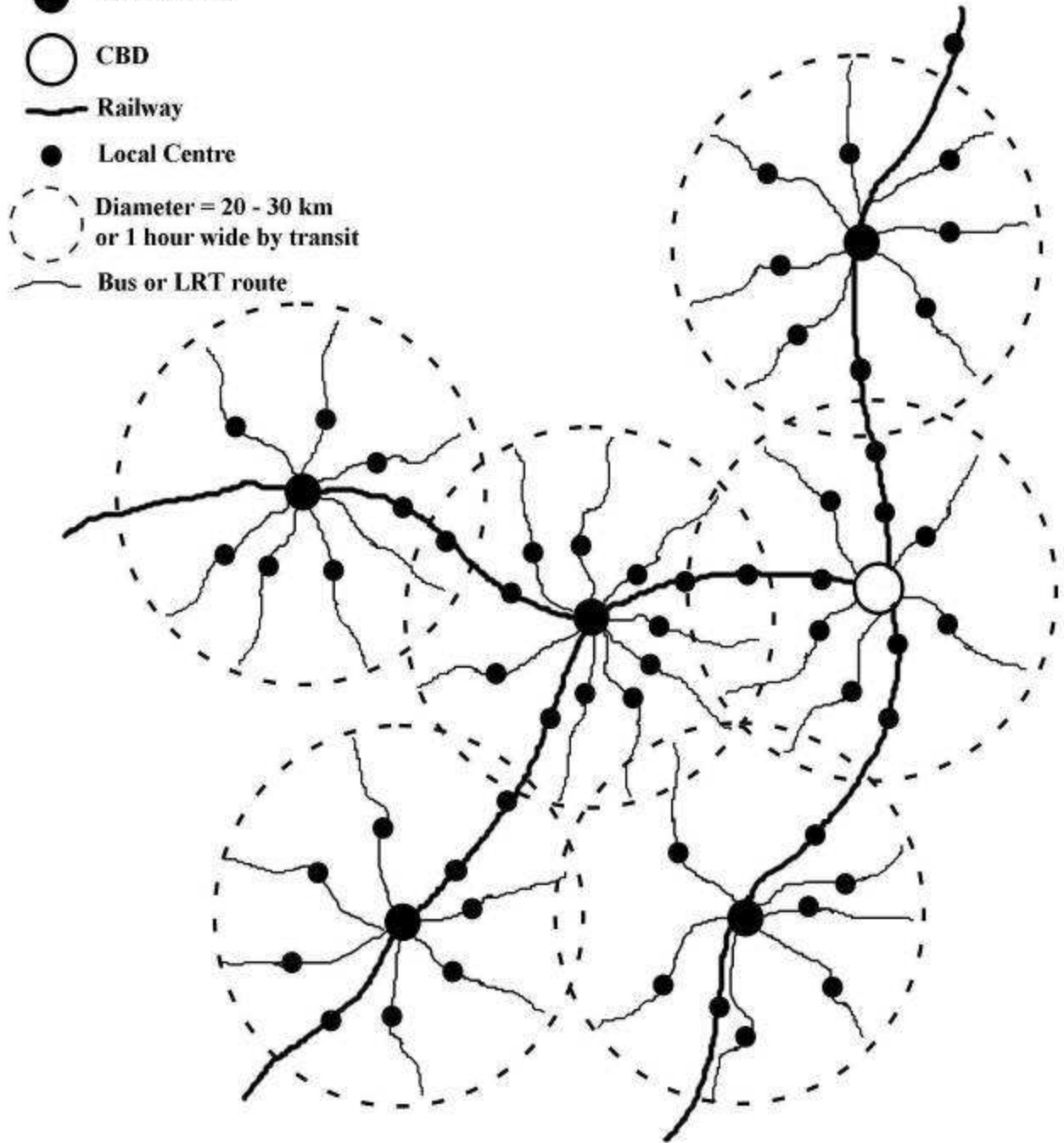
*Australian Planner, 2006, 43(2) 6-7*

# Access to Public Transport



# Rebuilding Auto City

- Town Centre
- CBD
- Railway
- Local Centre
- Diameter = 20 - 30 km  
or 1 hour wide by transit
- Bus or LRT route

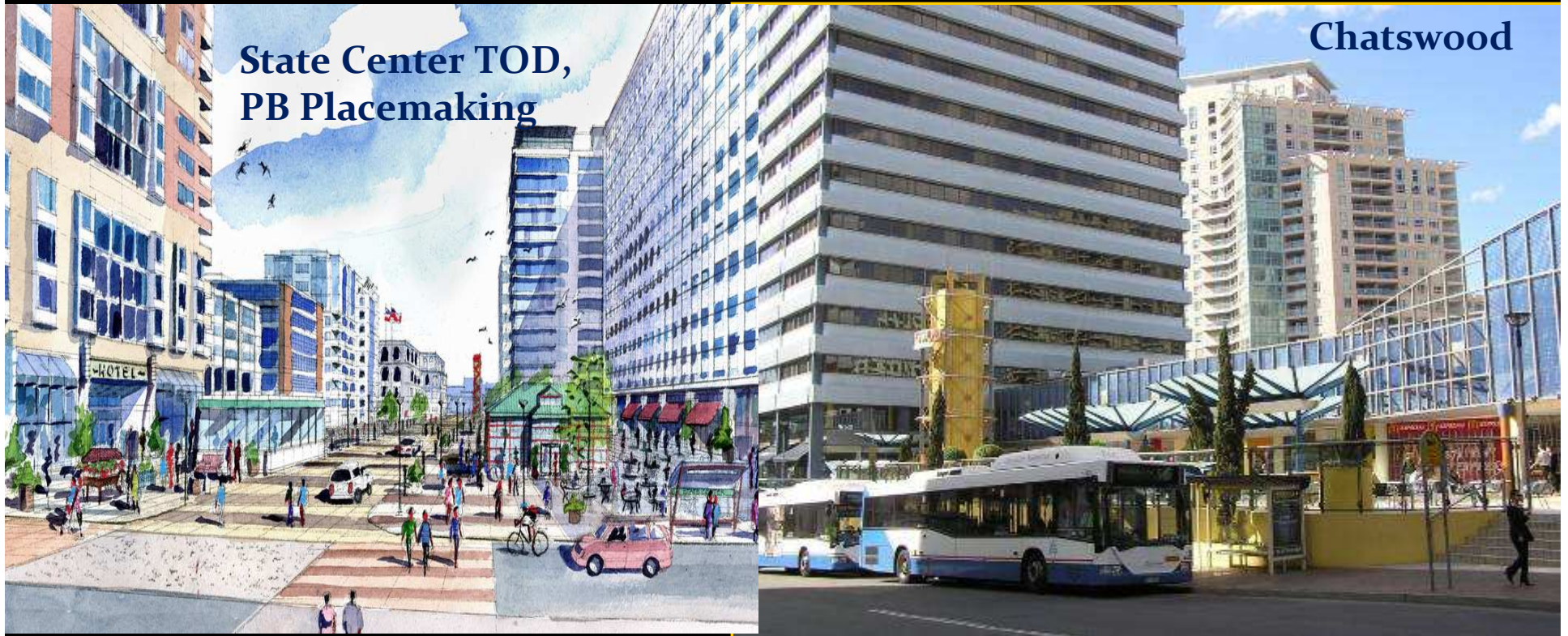




**Each corridor needs a transit option  
faster than traffic**



**With real TOD centres to feed into...**  
35 people and jobs per ha is 10,000 people and jobs in 1km radius... Opolis 2(1):35-52 , 2006



# And walkable urban design...



But we are still only getting pale imitations of TODs even where there is transit.





And even with permeable streets and footpaths, the car remains king.

**Beaumaris**

**Landsdale Gdns**



# New study of 46 Perth neighbourhoods (11 LNs and 35 CNs) by Ryan Falconer from Murdoch...

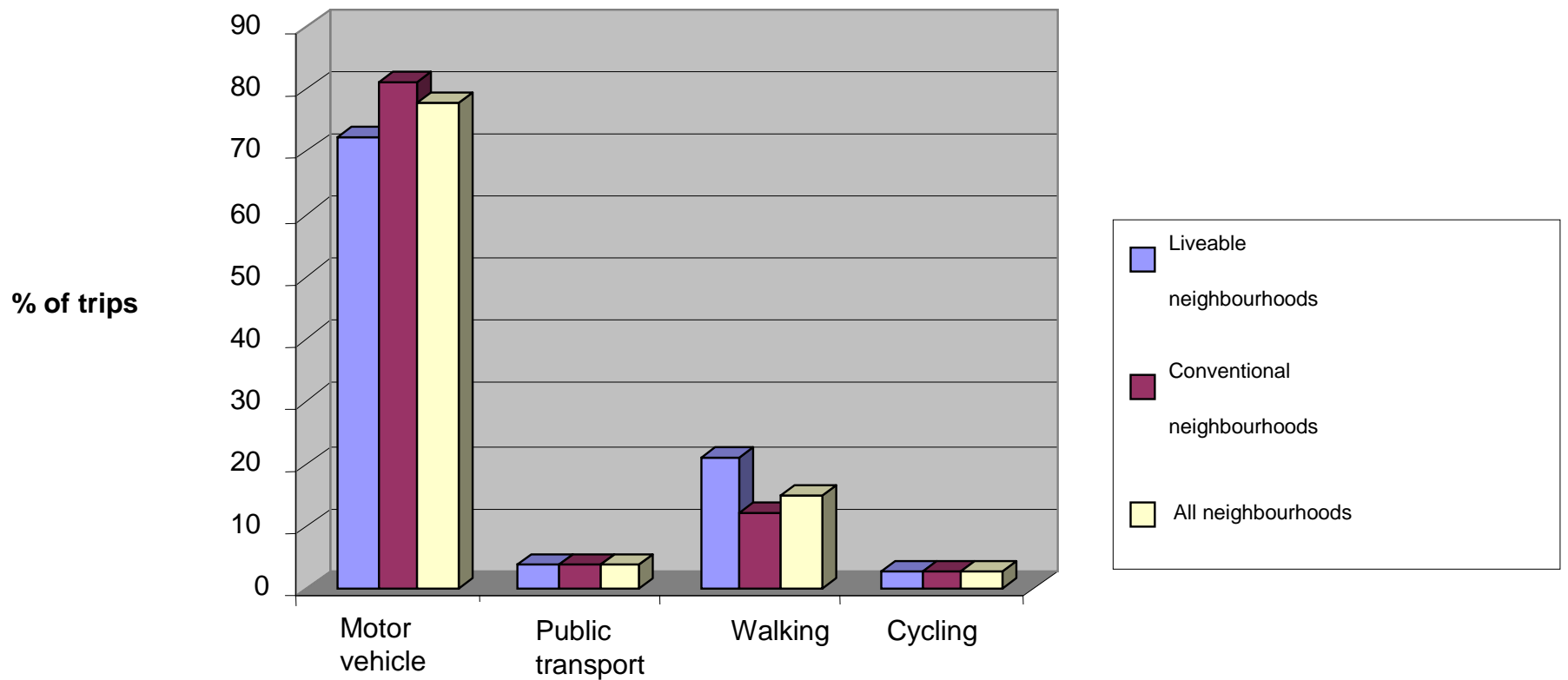
LN's had *9% switch...*

LN's 72% car, CN's 81% car

LN's 21% walk, CN's 12% walk

BUT...No significant difference in transport energy  
use between the neighbourhoods.

**Densities never much above 12 per ha in both.**



## Mode



- Frankland Springs LN
- Brighton LN



# Affordability

- Low oil developments will rapidly become eco-enclaves surrounded by Mad Max suburbs unless we ensure there is room for everyone.
- TOD zones where the only requirements are to optimise density, minimize parking, create walkability and local design styles...and 15% affordable housing.





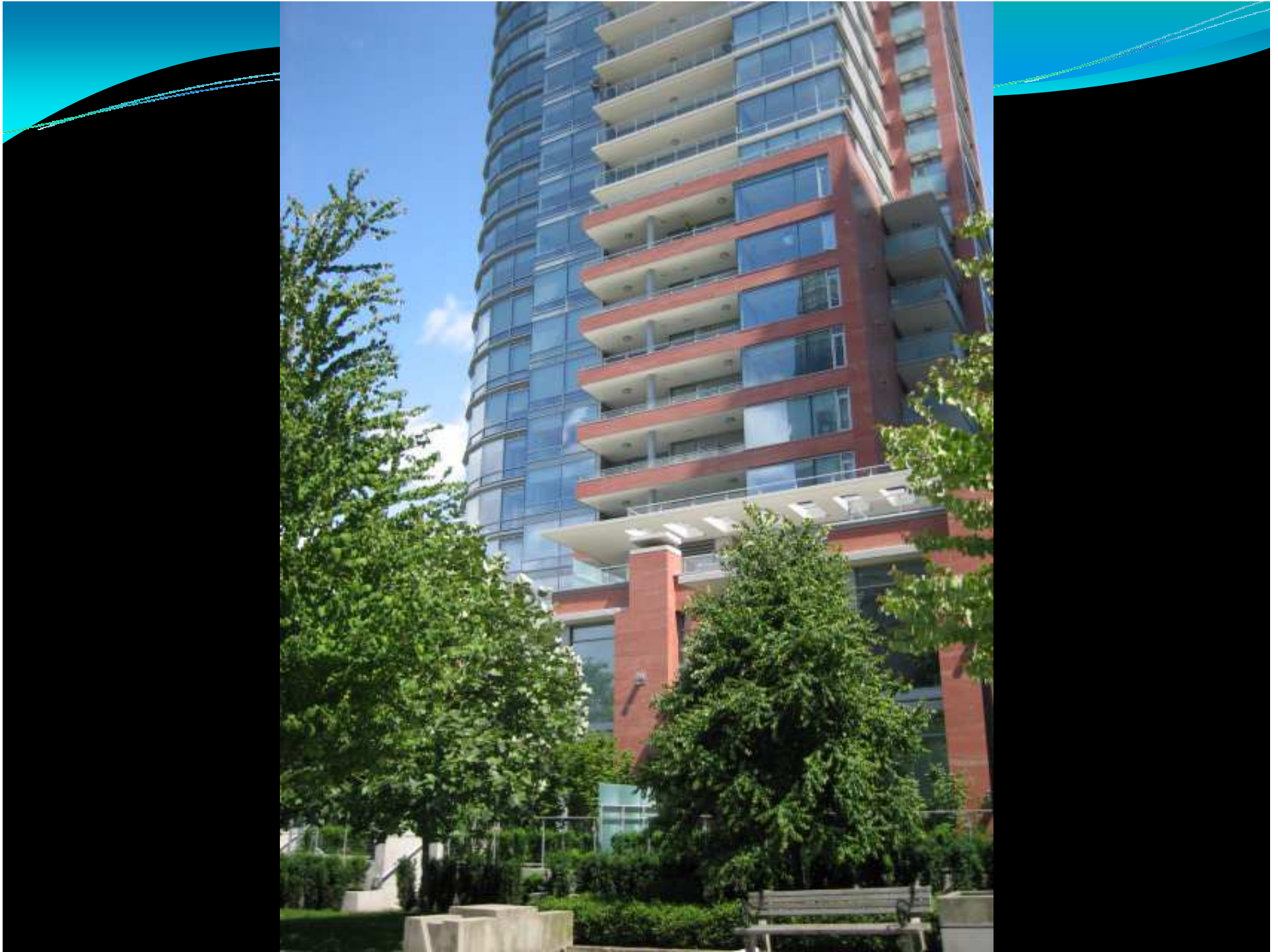




**Joyce-Collingwood Station Precinct: An example of the kind of centres required around transit to reduce car dependence. These are contemporary “walking cities” linked to transit.**

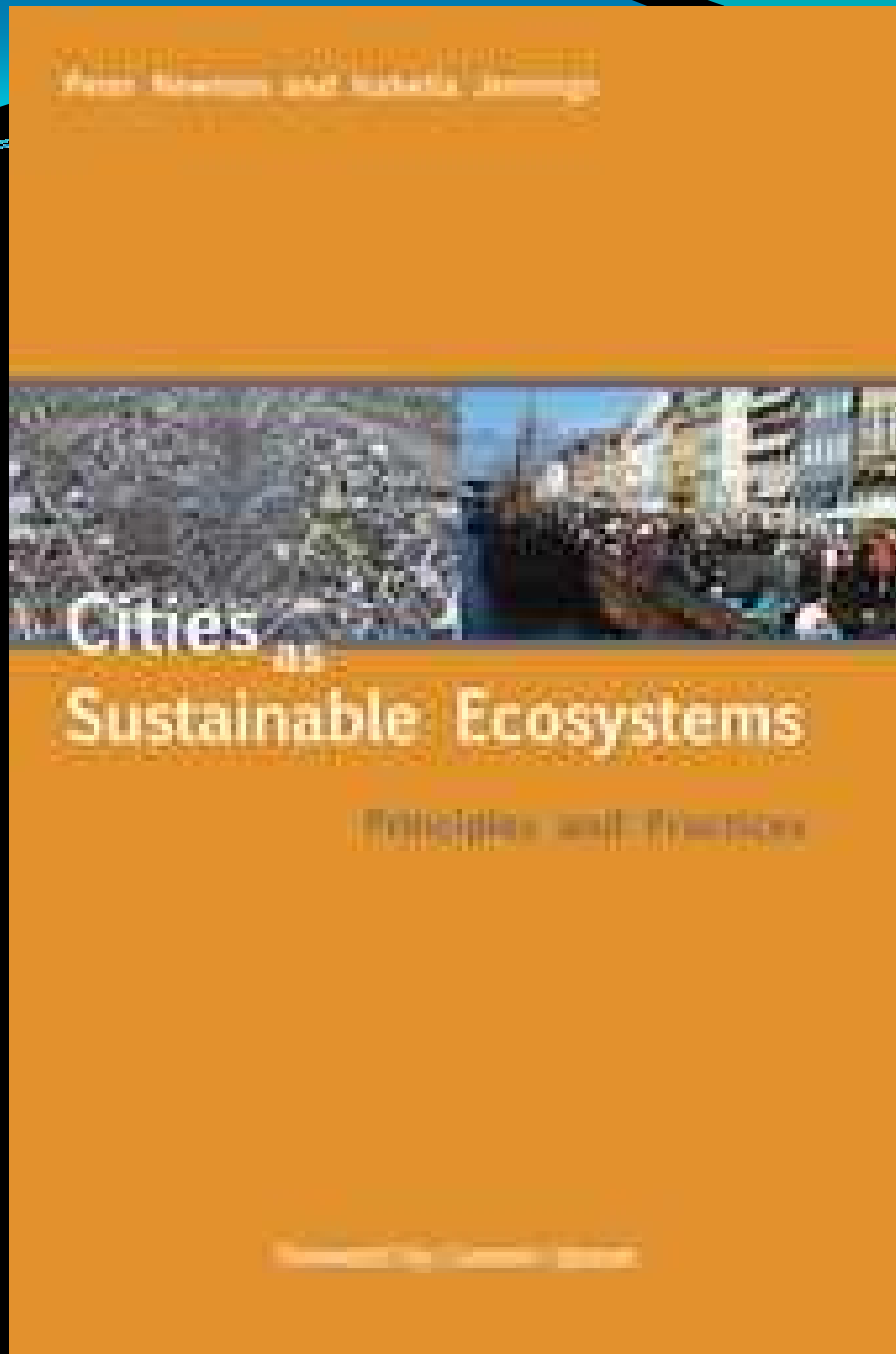






# Ecological regeneration

- Cities need to go beyond minimising impact to regenerating ecologies.
- Examples appearing....



**New book  
based on 10  
Melbourne  
Principles for  
Sustainable  
Cities.**

Woylie: first mammal to be removed from IUCN endangered list.



Western Barred Bandicoot: saved by feral baiting and private 'arks' in the Perth bioregion.

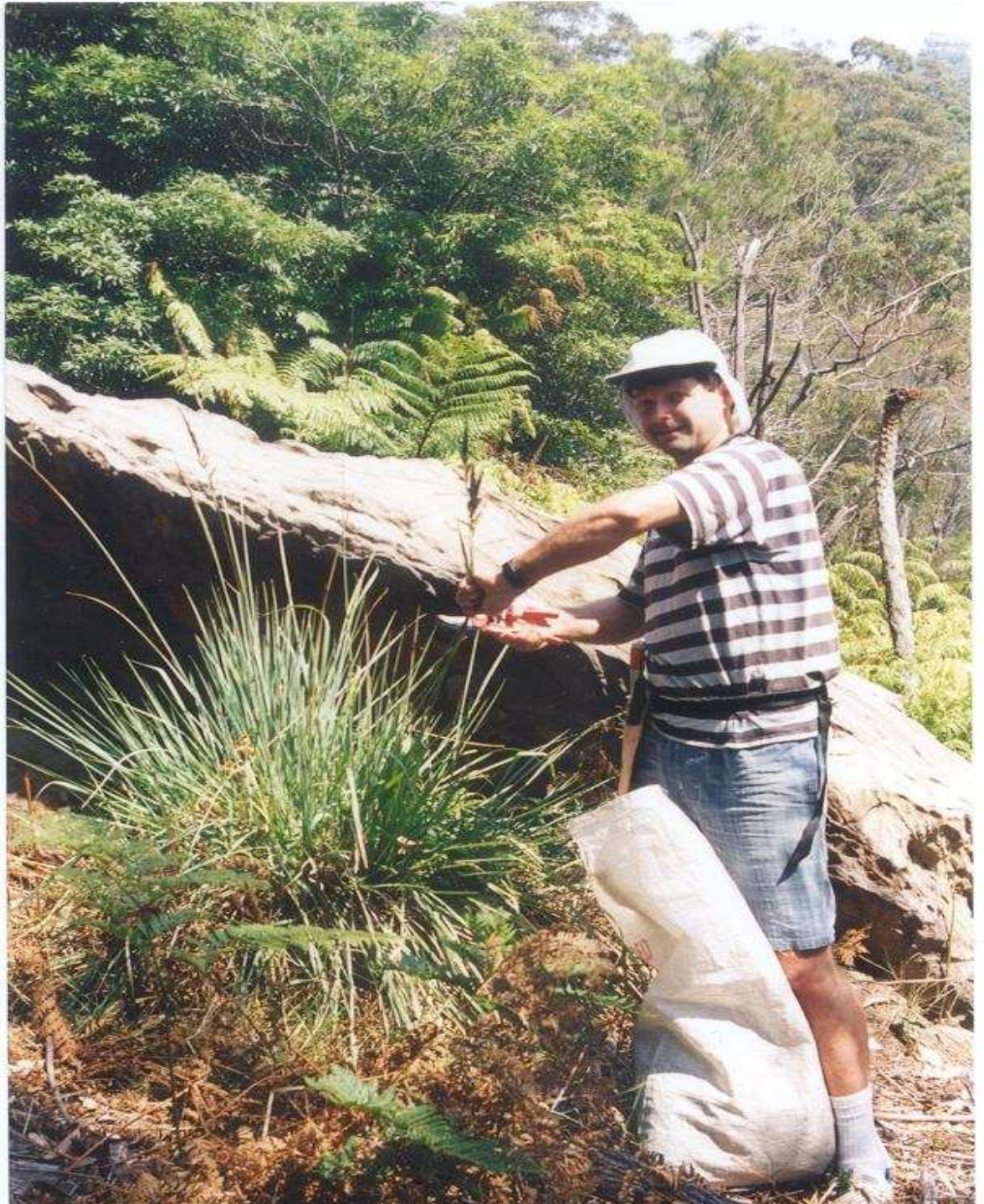


# Perth orchids – using the city as an ark.

Revegetating bushland  
with orchid seeds and  
associated fungi



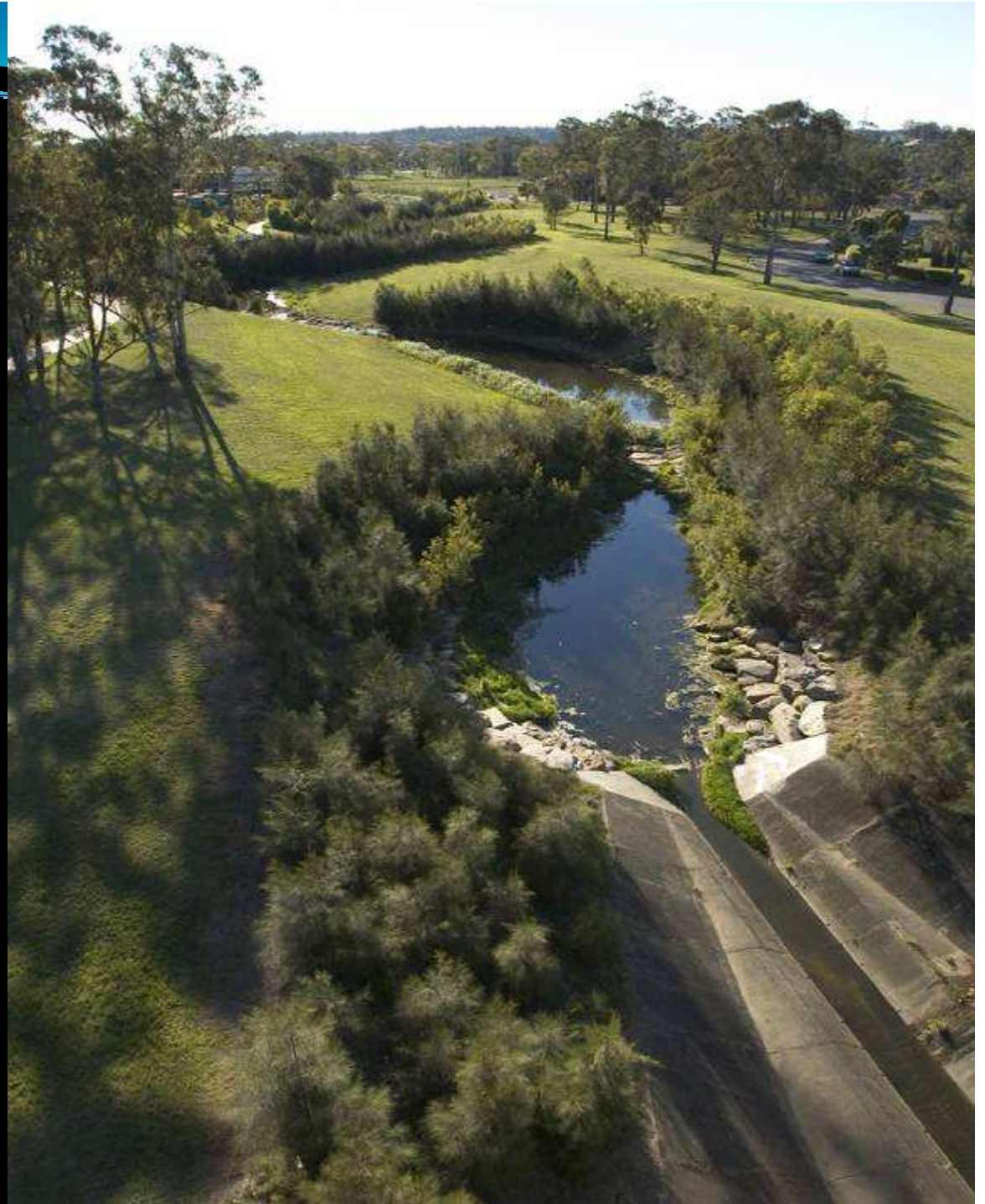
Volunteer  
eradicating  
weeds in  
Hornsby Shire –  
part of the  
Biodiversity  
Conservation  
Strategy and  
Action Plan.



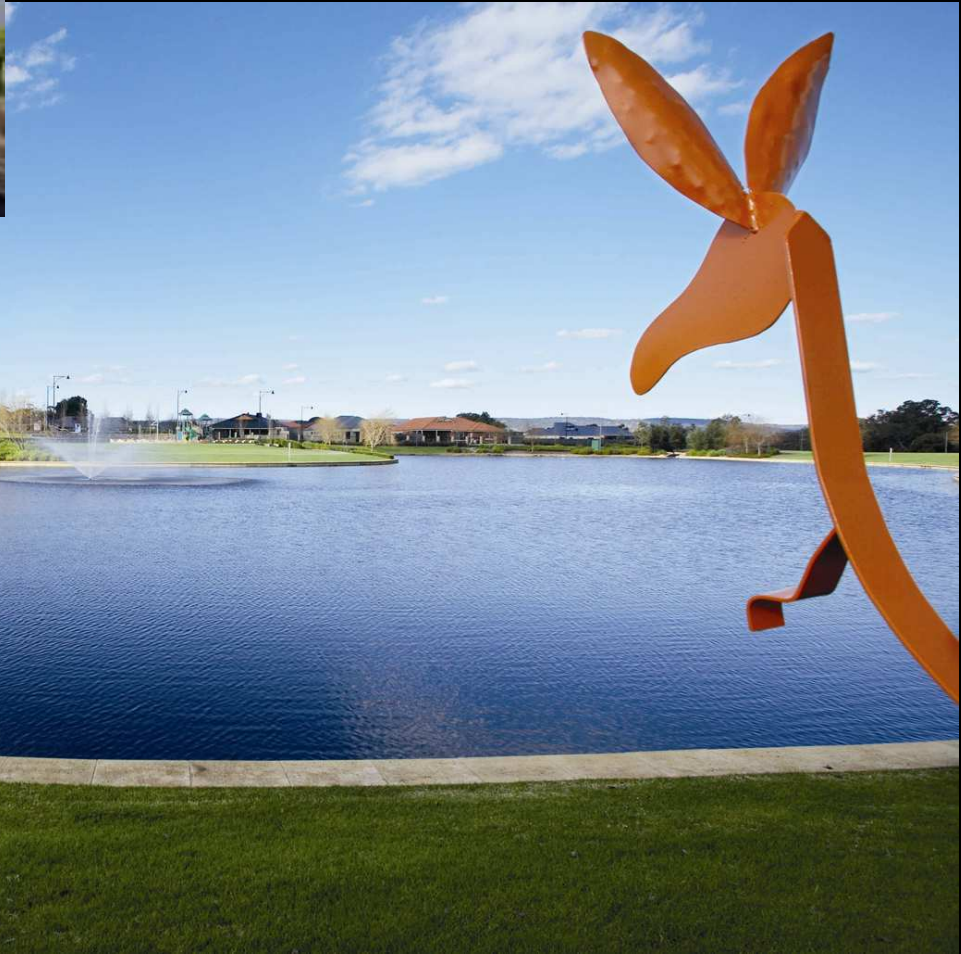
# Clear Paddock Creek, Fairfield, Sydney.



Using  
stormwater  
to  
regenerate  
streams



# Vale – regenerating a landscape



# Recycling materials into landscaping... managing the wetlands with volunteers



# Mulch created from pines that were going to be burnt...



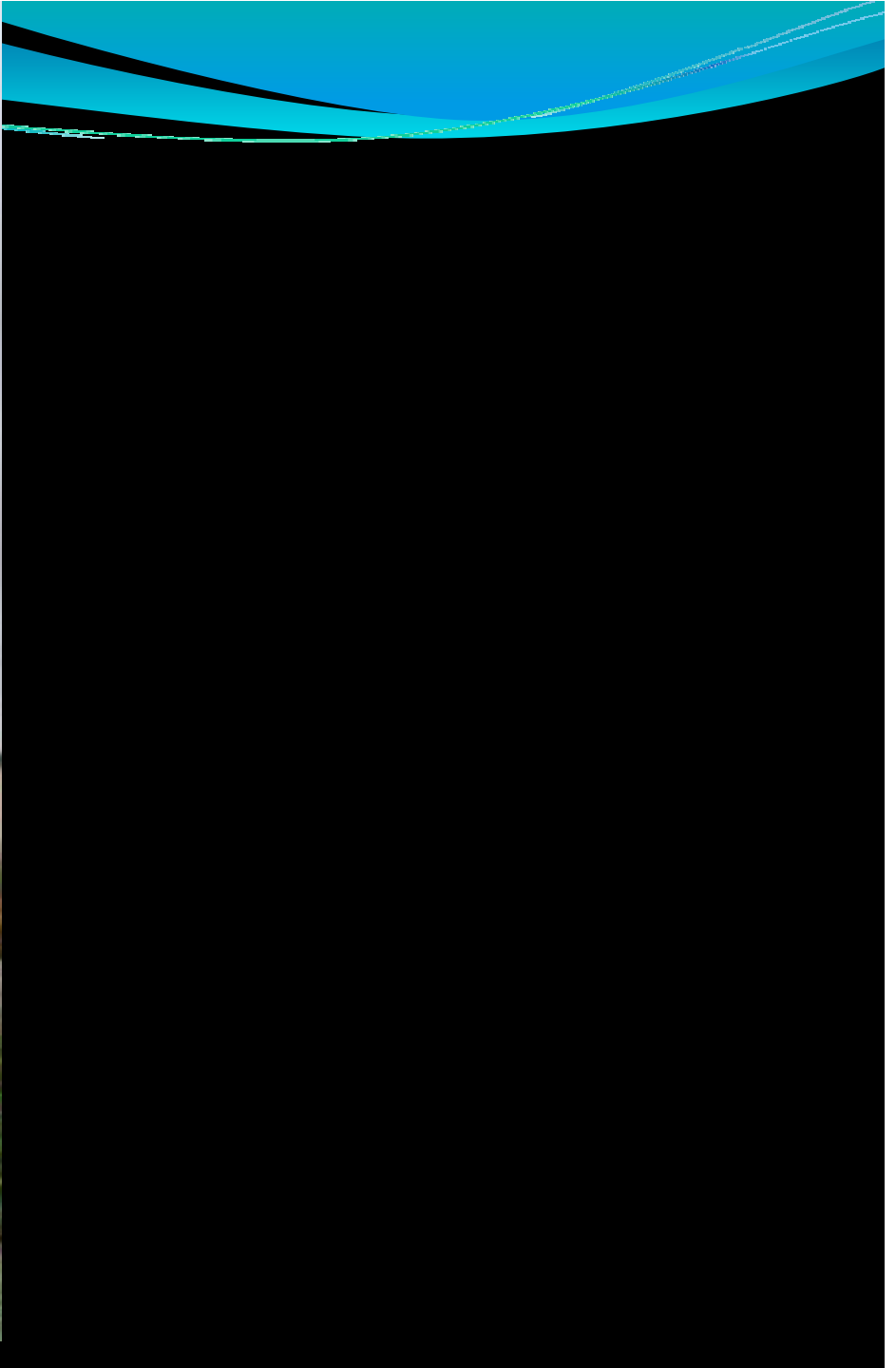
# Sustainable gardening workshops with the TV star...





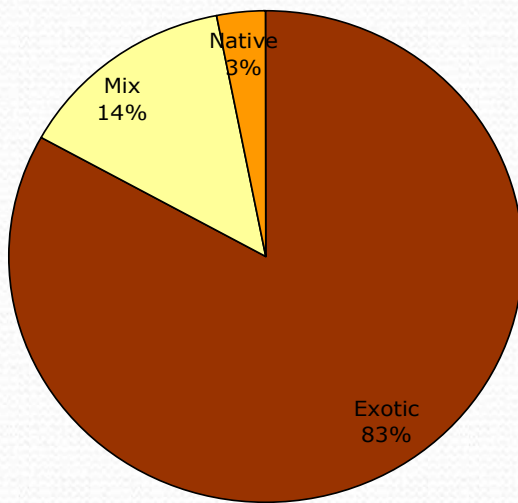
# Frontyard guidelines that include street plans for year long flowering plants....



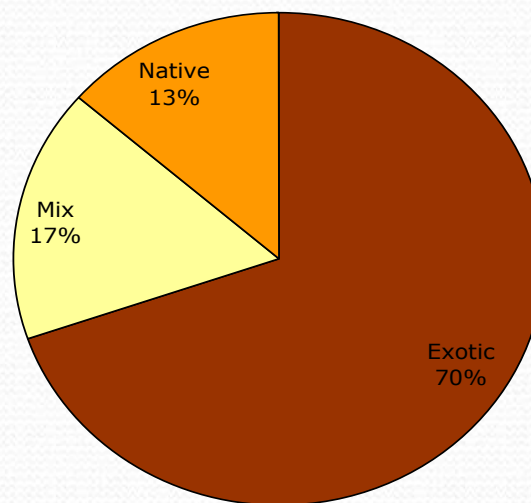


# Progressive adoption of frontyard native planting ...with encouragement

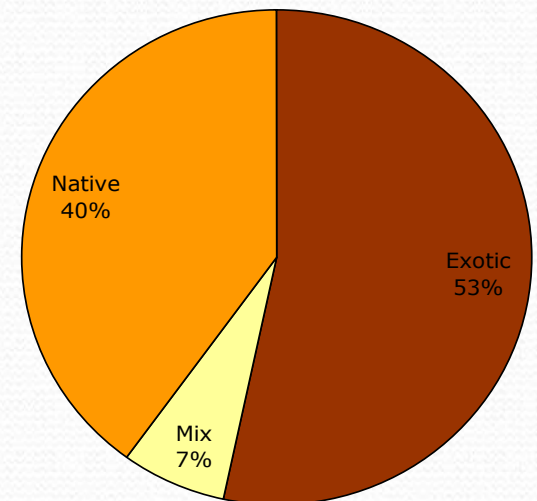
Stage One



Stage Two



Stage Three

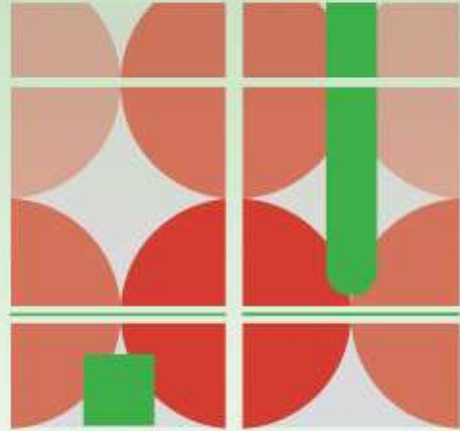


# New urbanism can show the reality of sustainability....by demonstrating:

- Carbon neutral land developments, or at least 50% less.
- Serious amounts of affordable housing, and
- Ecological improvements.

**TOGETHER.**

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