



Healthy Liveable Cities

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General Assembly

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36. Recognize that effective non-communicable disease prevention and control require leadership and multisectoral approaches for health at the government level, including, as appropriate, health in all policies and whole-of-government approaches across such sectors as health, education, energy, agriculture, sports, transport, communication, urban planning, environment, labour, employment, industry and trade, finance and social and economic development;

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Political declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-communicable Diseases

Why?

Up to 80% of cases of coronary heart disease
90% of type 2 diabetes cases, and
one-third of cancers
could be avoided by
increasing physical activity;
eating a healthier diet,
and
stopping smoking

INDIVIDUAL CHOICE?

- Diabetes \$48.3 billion
- Cardiovascular disease \$176 billion
- Cancer \$50.7 billion
- Osteoarthritis \$30.5 billion
- Medibank Private 2008 estimate of cost of **physical inactivity**: \$13.8 billion

Evidence of contribution of natural and built environment on promotion of health and well being



Overall conclusions of evidence reviews

Compared with compact higher density neighborhoods urban sprawl associated with:

- Lower levels of walking
- Fewer people using active modes (walking, cycling and public transport use)
- More vehicle miles driven
- More sedentary behaviour
- Increased levels of obesity

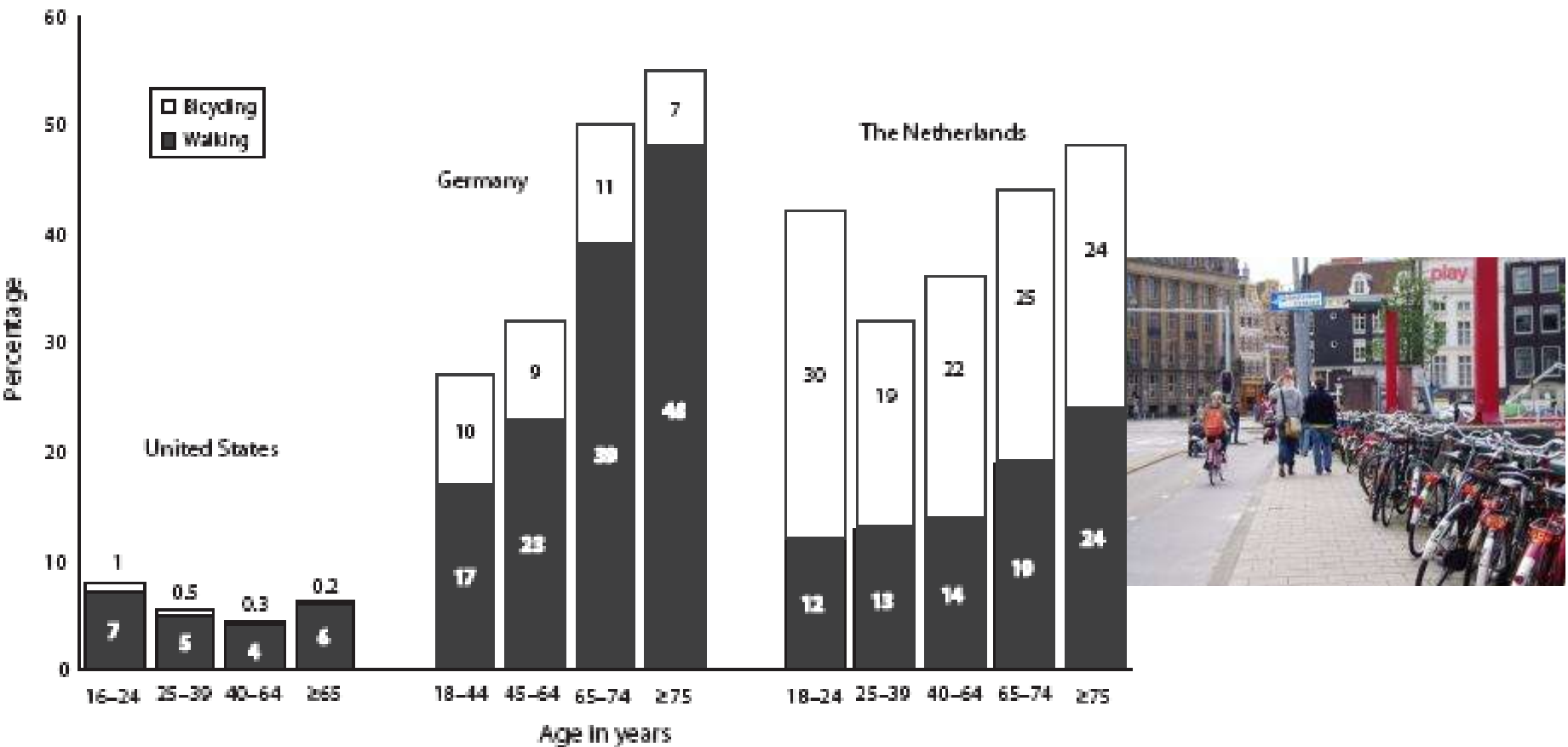
Increased environmental pollution
and green house gas emissions

For activities of daily living - decreased *human energy* expenditure and increased *fossil fuel energy* expenditure

What's required? Increase in higher density – average 35 houses/hectare - mixed use development supported by public transport

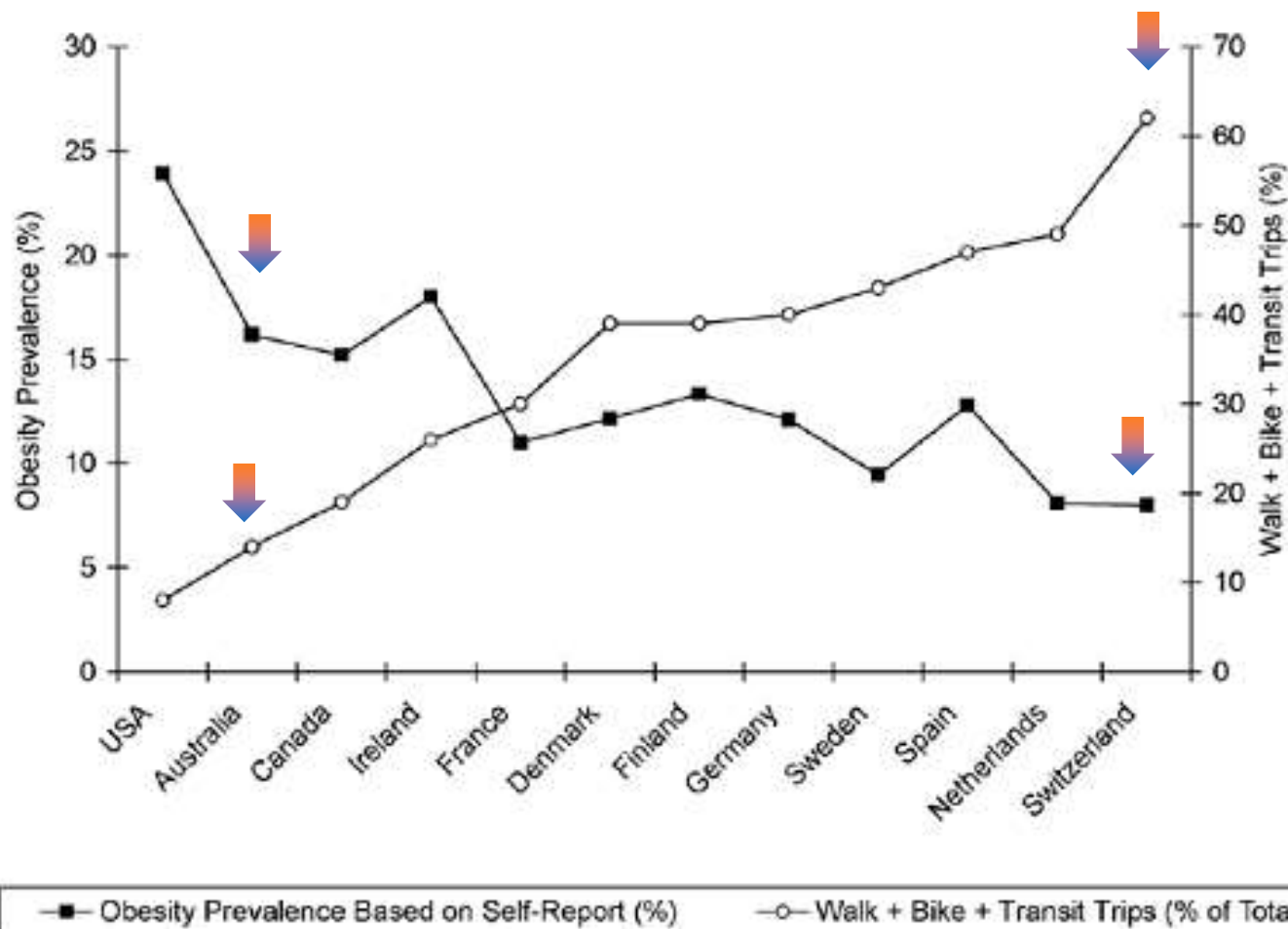


Is motor vehicle dependency inevitable?



Source: Pucher & Dijkstra Am J Pub Health 2003;93:1509-16.

Walking, cycling and public transport trips and obesity

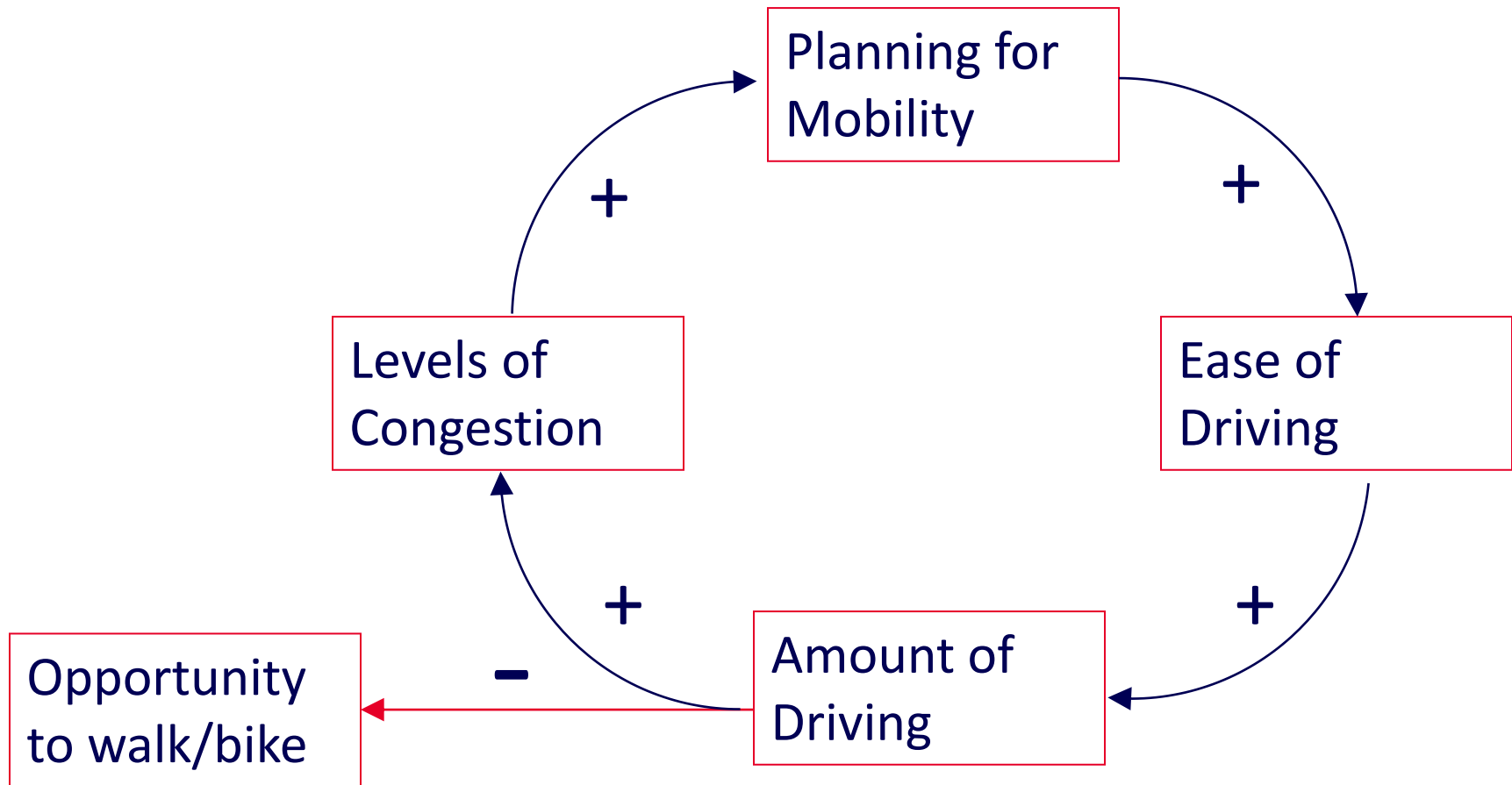


What role for transport professionals?

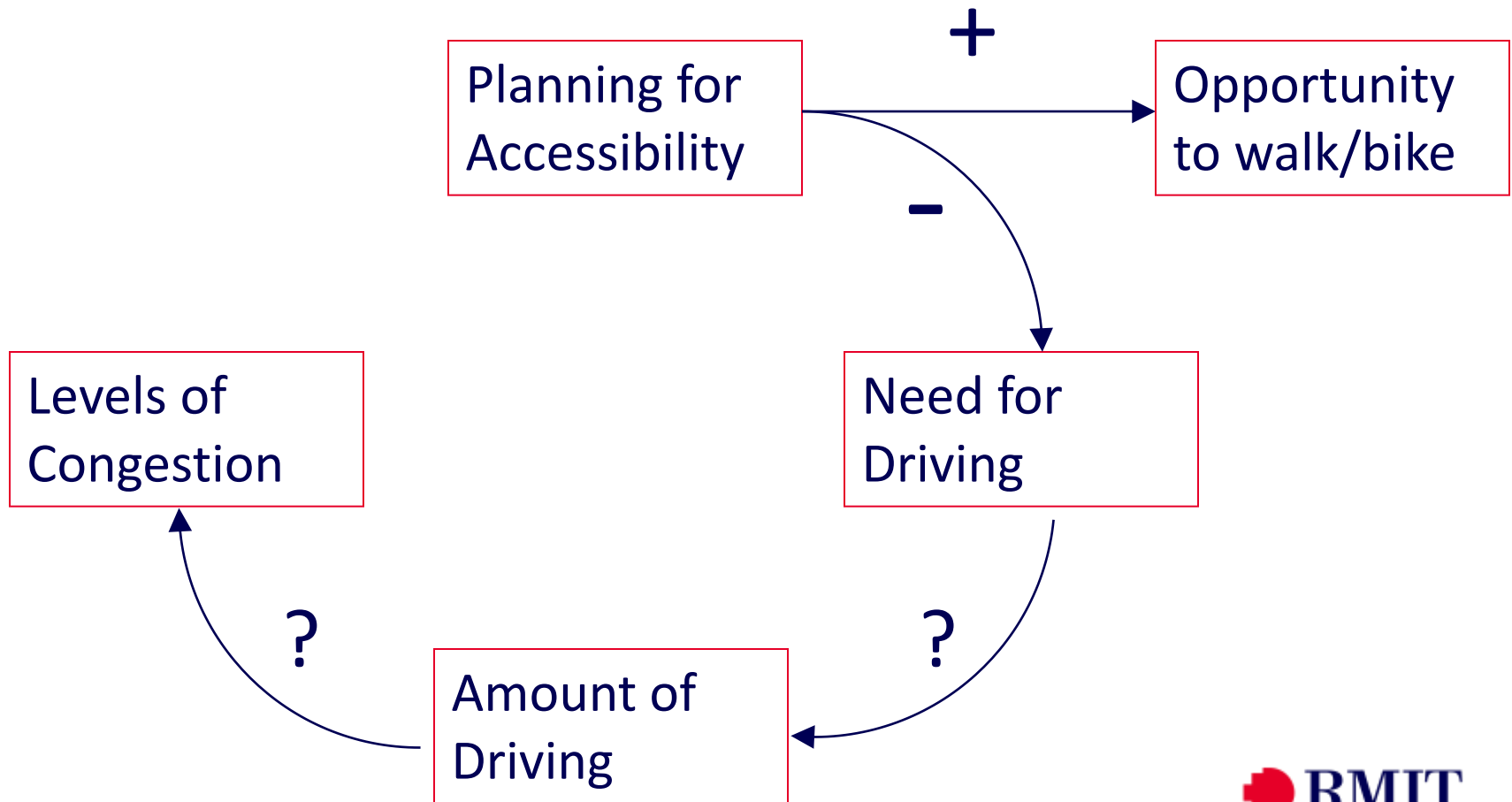
Why are roads so important to the health and wellbeing of residents?

Traditional Approach to Transportation Planning (Source:

Susan Handy, UC Davis)



New Approach to Transportation Planning (Source: Susan Handy, UC Davis)



Road network design (and land use planning) underpins transportation choices



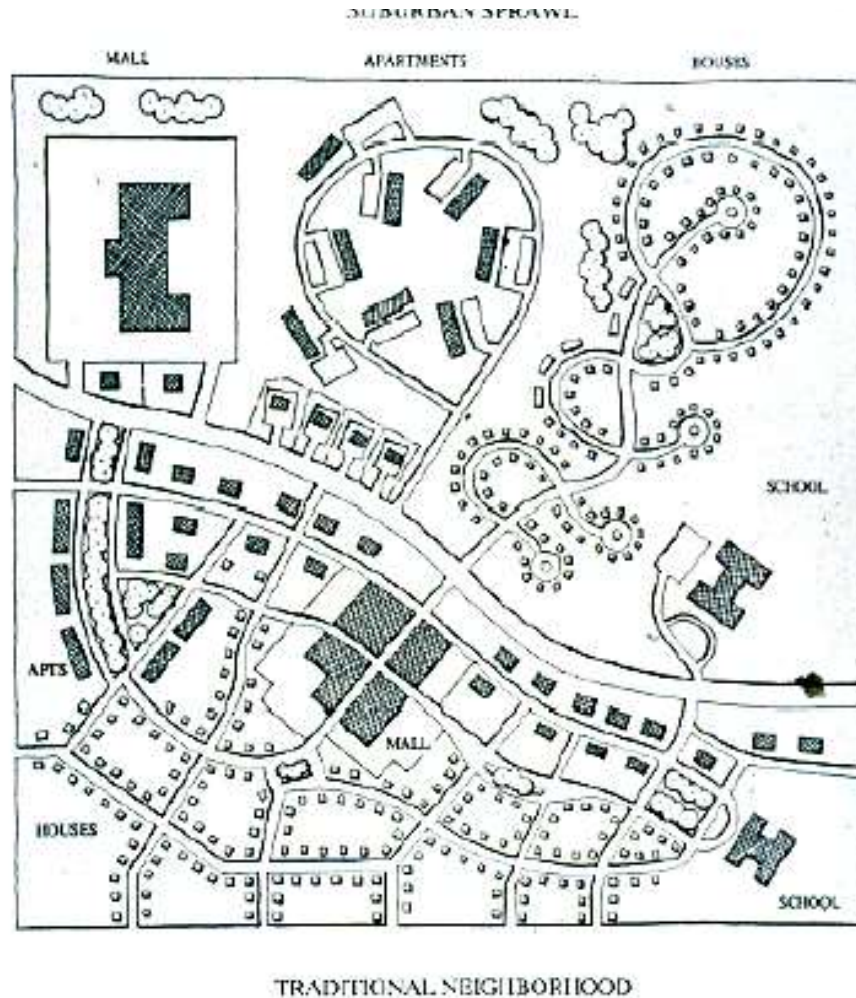
Roads creates the framework for a walkable neighbourhood



CHALLENGES - ACCESSIBILITY

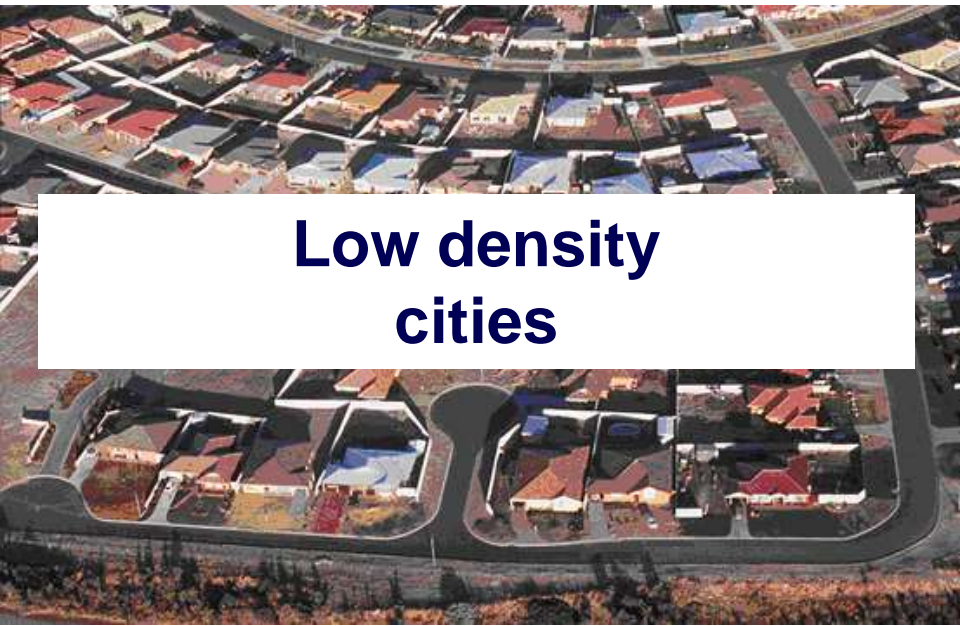


Link between planning and health - Traditional to conventional neighborhood design



Source: Jones E. World Transport Policy & Practice 2001:7(2):38-42

Unintended consequence?



**Low density
cities**



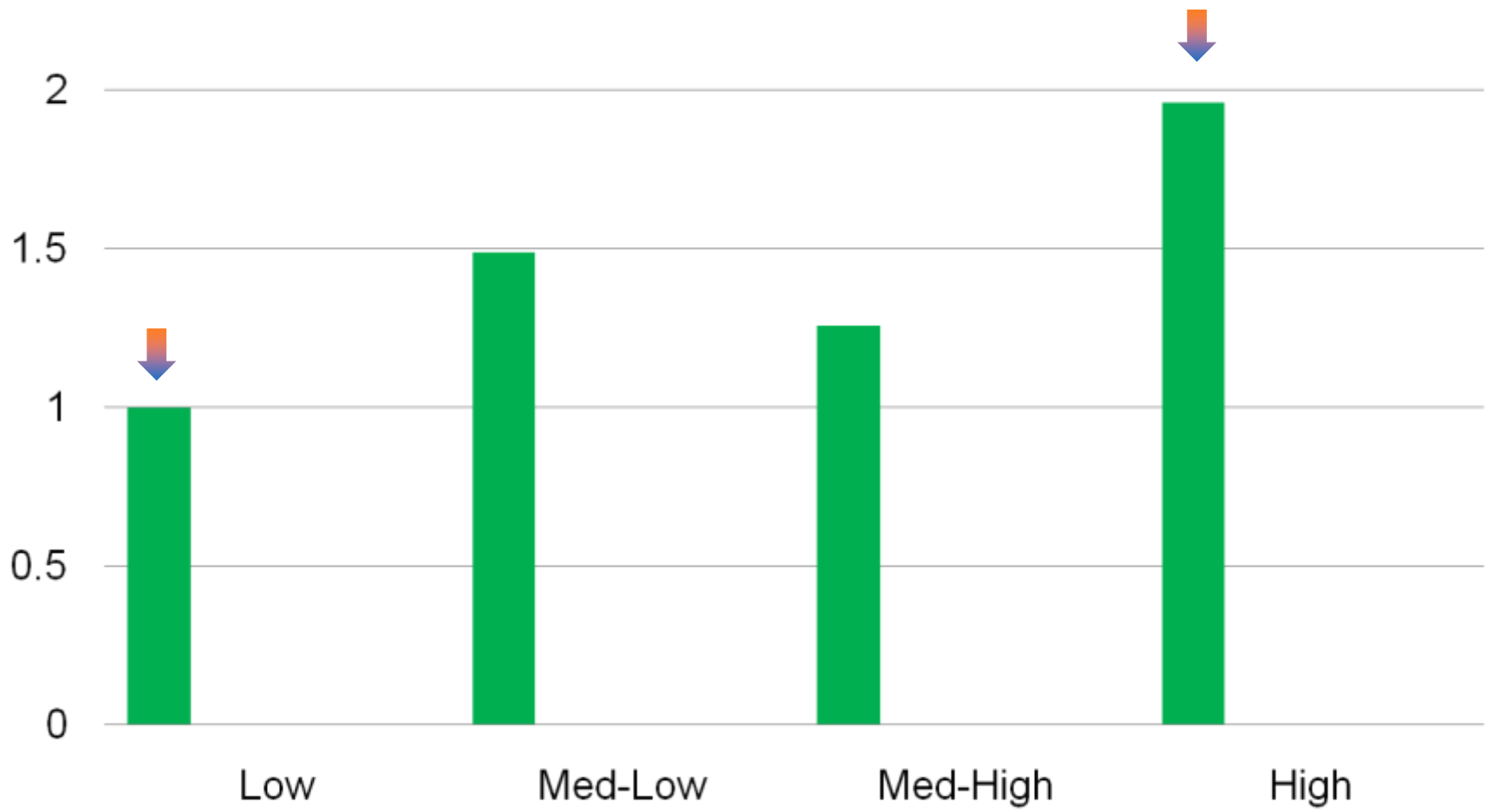
**High levels of car
dependency**

Transport walkability by walking for transport

Adjusted for age, gender, education level, marital status and presence of children at home (Christian et al. In J Beh Nut and Physical Activity 2011:8:55)

2.5

Odds ratio



Walkability
■ Any Walking for Transport ■ >60 minutes Walking for Transport

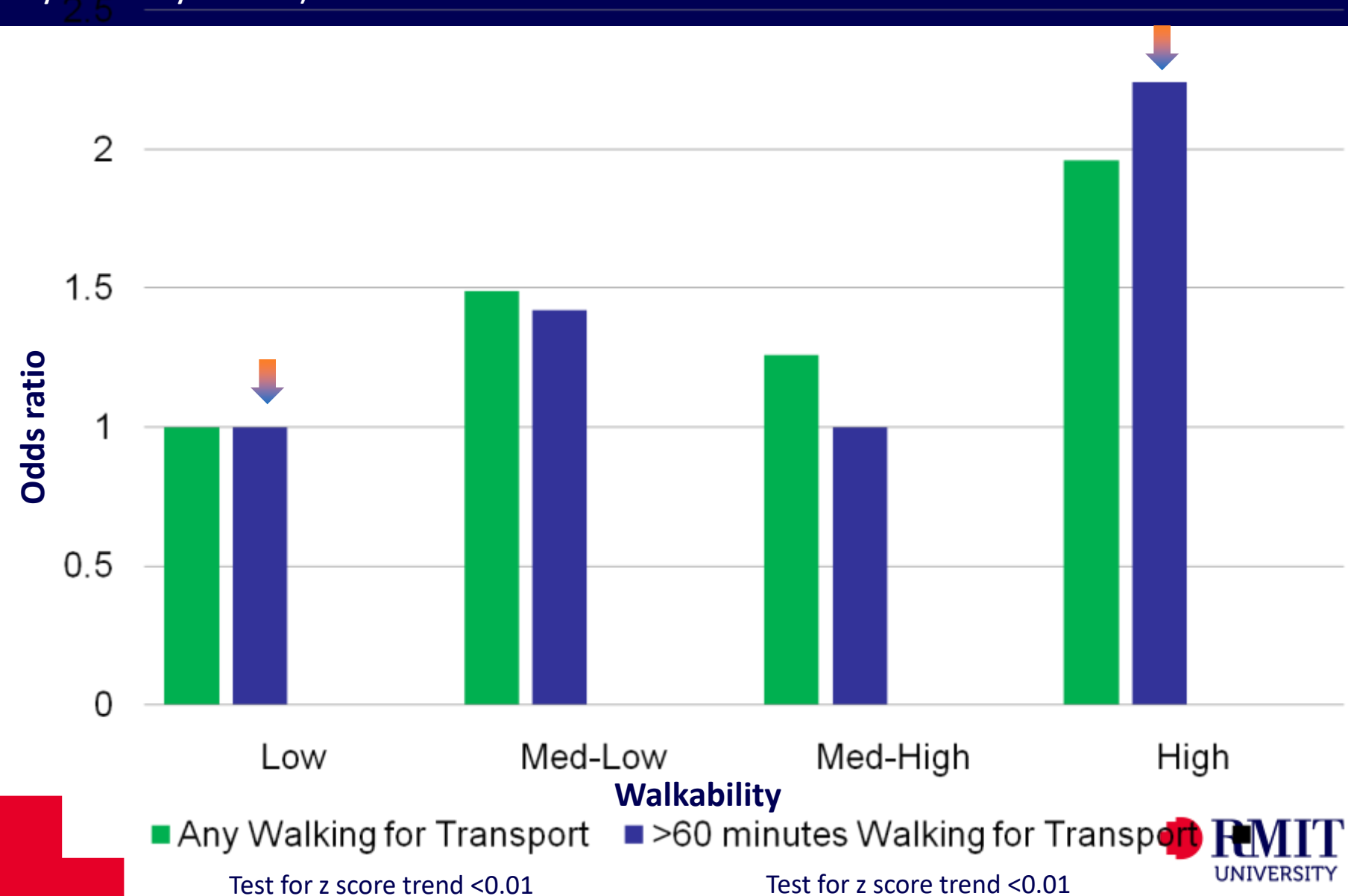
Test for z score trend <0.01

Test for z score trend <0.01



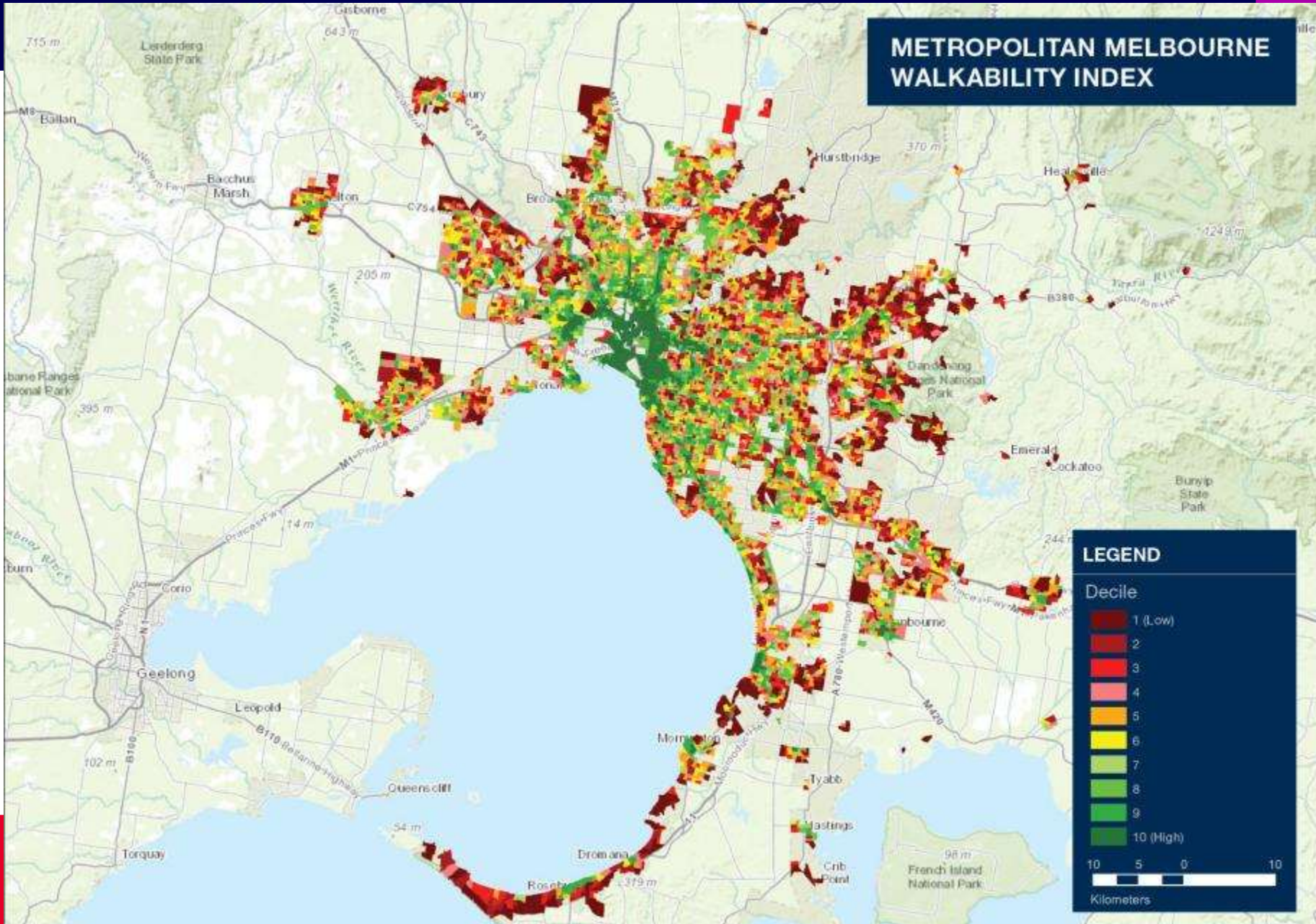
Transport walkability by walking for transport

Adjusted for age, gender, education level, marital status and presence of children at home (Christian et al. In J Beh Nut and Physical Activity 2011:8:55)



'WALKABILITY' SPATIALLY PATTERNED

METROPOLITAN MELBOURNE WALKABILITY INDEX



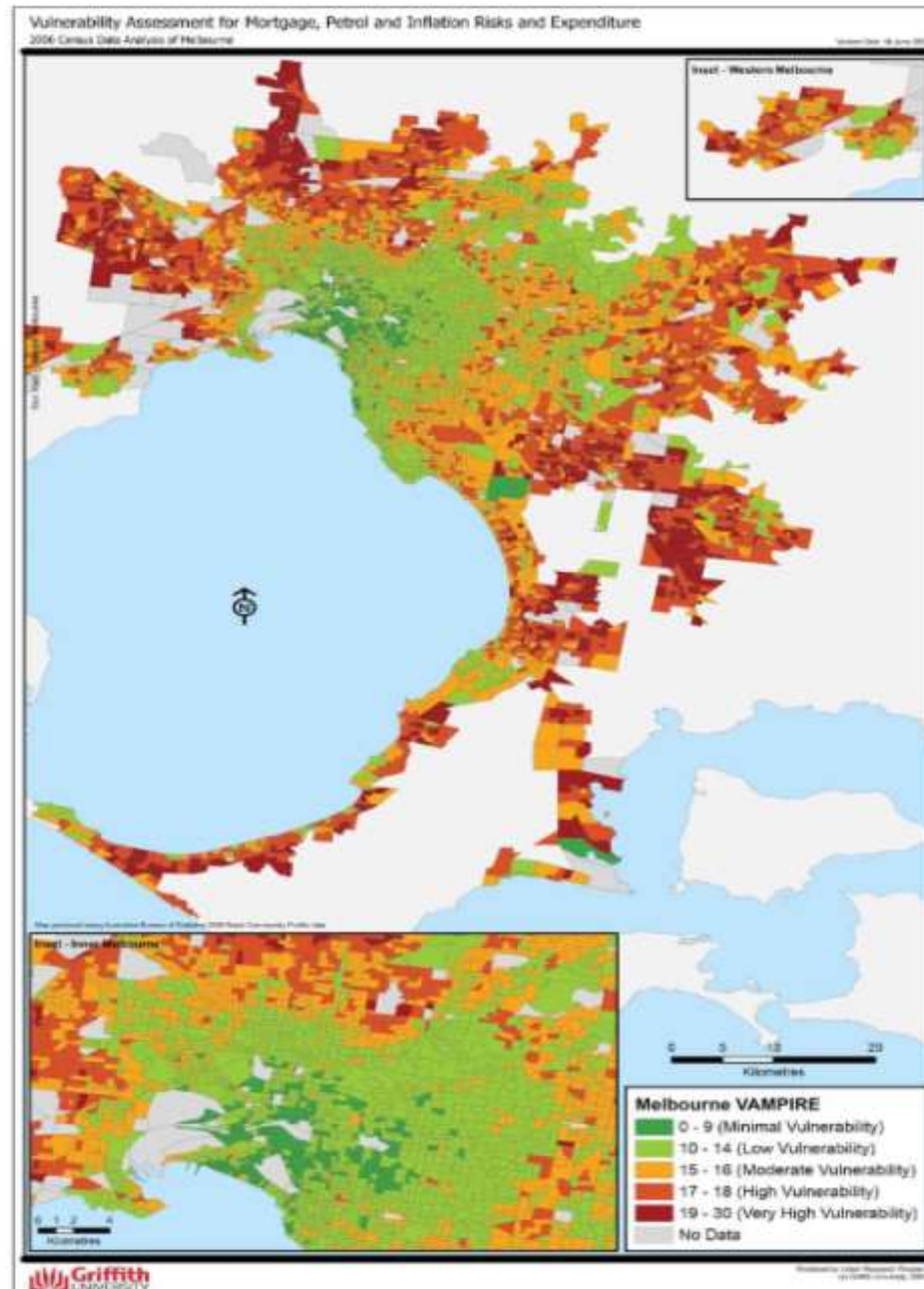
LEGEND

Decile

1 (Low)
2
3
4
5
6
7
8
9
10 (High)

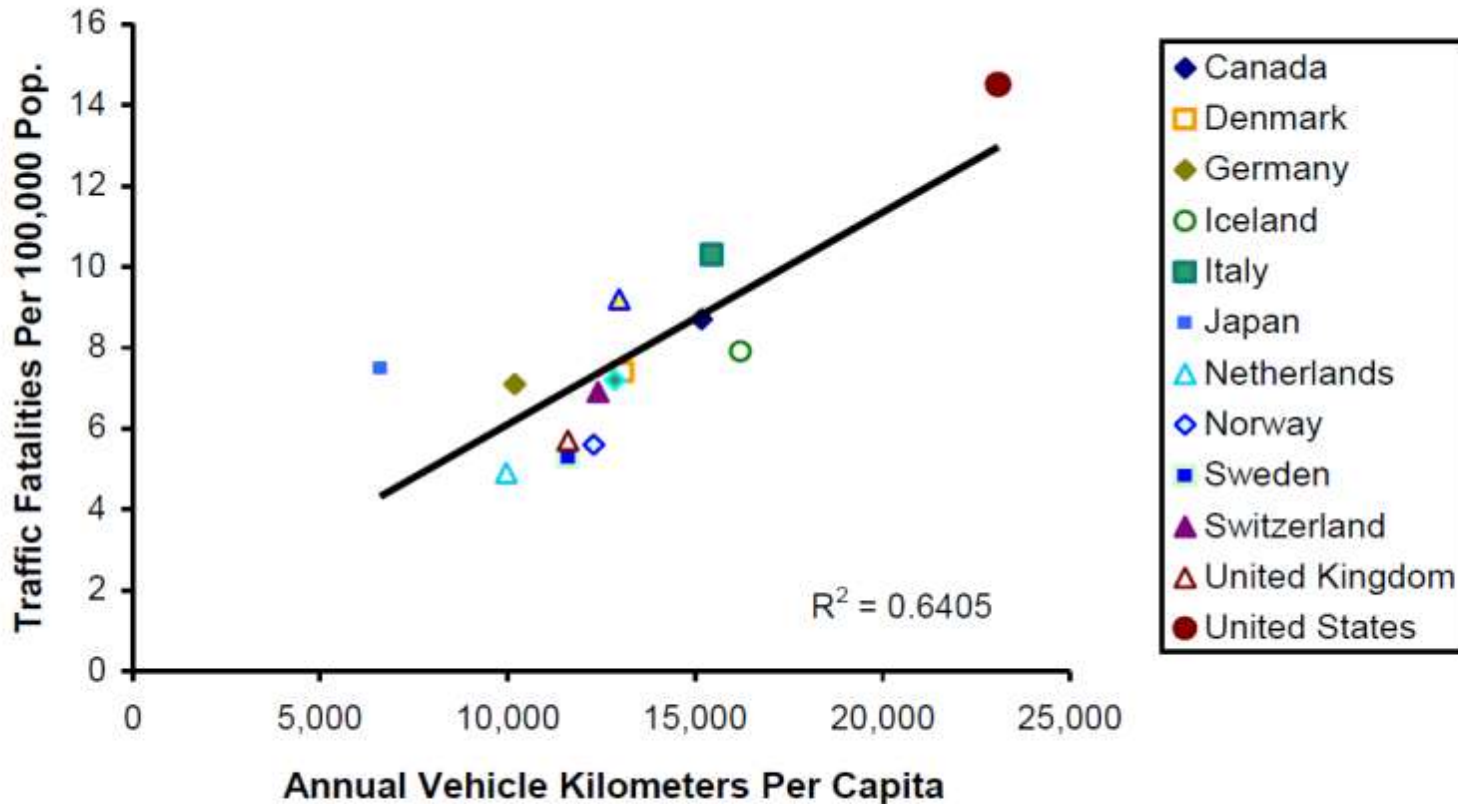
10 5 0 10
Kilometers

TRANSPORT POVERTY SPATIALLY PATTERNED



Vehicle Kilometres Travelled and Traffic Fatalities

Figure 3 Vehicle Travel and Traffic Fatality Rates In OECD Countries (OECD 2006)

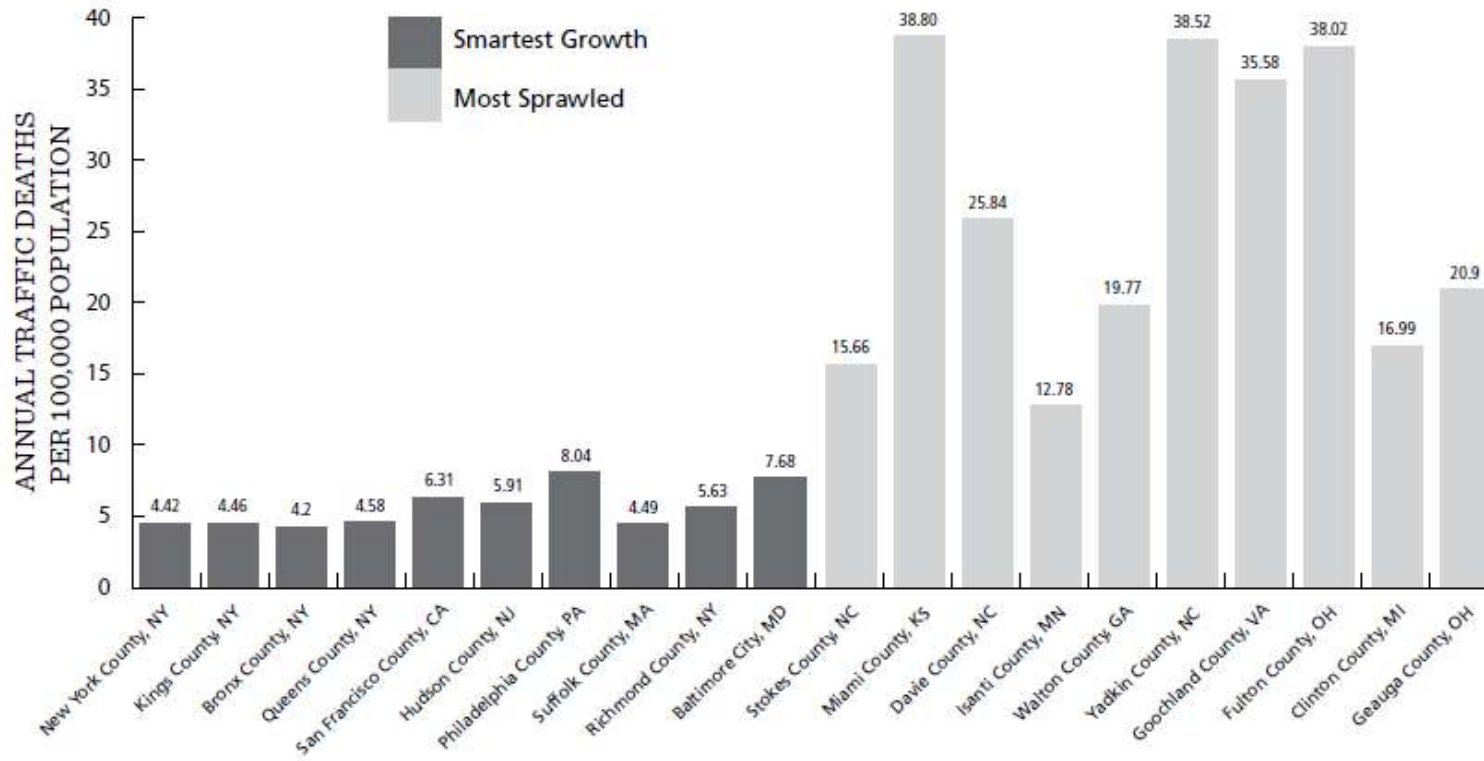


Among developed countries, per capita traffic fatalities increase with per capita vehicle travel.

Source: Litman (2012) If Health Matters. Integrating Public Health Objectives in Transportation Planning

Traffic death rates by sprawl and smart growth cities

Figure 6. *Annual Traffic Death Rates*¹⁵



The smartest growth counties in the United States have one-fifth of the average per capita traffic fatality rate as the most sprawled counties. Source: Healthy, Equitable Transportable Policy 2012 (p47)

Driving and obesity



Time spent in car as passenger or driver

- **Every additional 60 minutes/day in car increases likelihood of obesity by 6%** (OR 1.001; 95% CI 1.0001-1.002) (Frank et al, Am J Prev Med. 2004; 27(2):87–96)

Driving and mental health



Every 10 minutes spent commuting associated with 10% drop in time spent travelling for social purposes

Road network infrastructure determines how safe it is (or feels) to walk and cycle



% CHILDREN/YOUNG PEOPLE USING ACTIVE TRANSPORT

PERCENTAGE OF CHILDREN /YOUNG PEOPLE WHO USE ACTIVE TRANSPORT TO AND/OR FROM SCHOOL

80



Why?

- Parental traffic & personal safety concerns
 - Distances to school
 - Crossing busy roads

Implications for school siting

Time trends in the percentage of children and young people who use active transport to and/or from school.



Location of school sites

- Edge of neighbourhoods
- Edge of two neighbourhoods on *neighbourhood connectors*
- Near *neighbourhood centre* on *neighbourhood connector*

