Transport Inequity & Car Dependency: A Self Reinforcing Relationship

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TASC CONFERENCE: JUNE 2017

Beechdale, Ballycullen

Image source: Google Streetview

Kennedy Place, Navan Town Centre

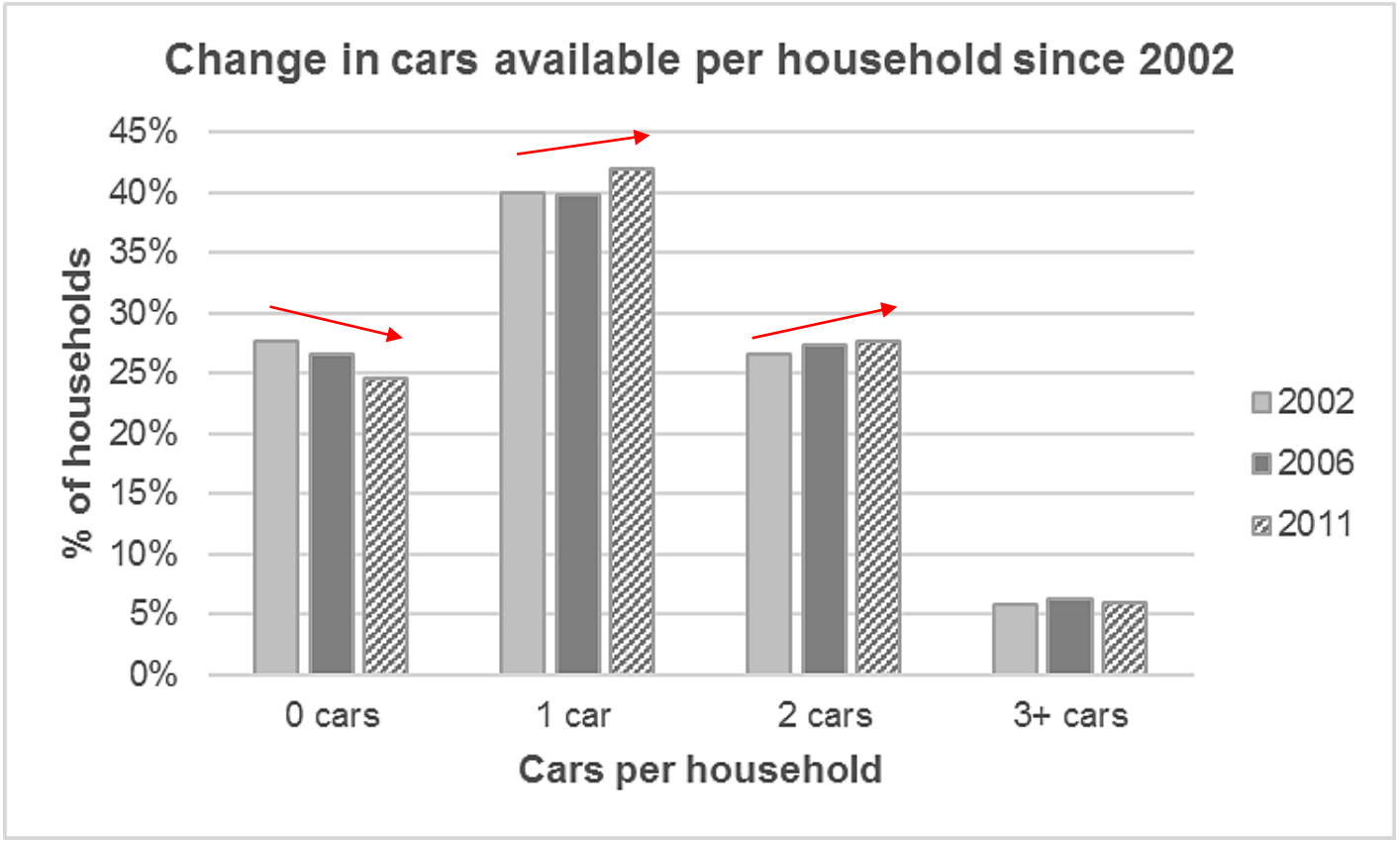
Image Source: S. Rock

Images source: www.pka.ie

Original vision for a shared public space.

Trend towards 2 car households

Dublin data:



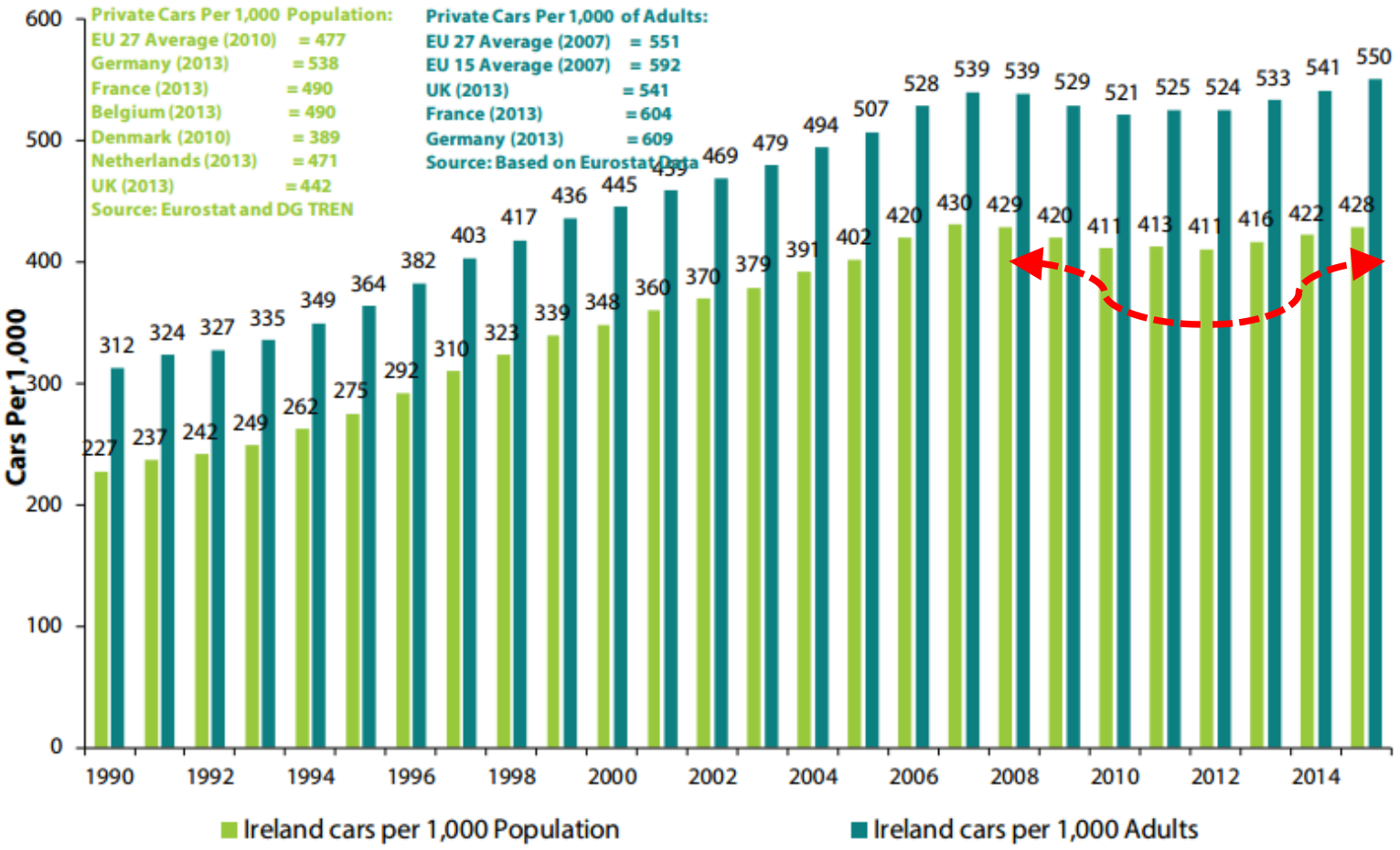
We have **increasing levels** of car ownership now & in Ireland there is a **strong relationship** between **car ownership & use.**

Source: CSO Census of Population data, adapted by S.Rock

We are back buying cars

(Ireland wide data)

Figure 46 *Private Cars per 1,000 of Population*



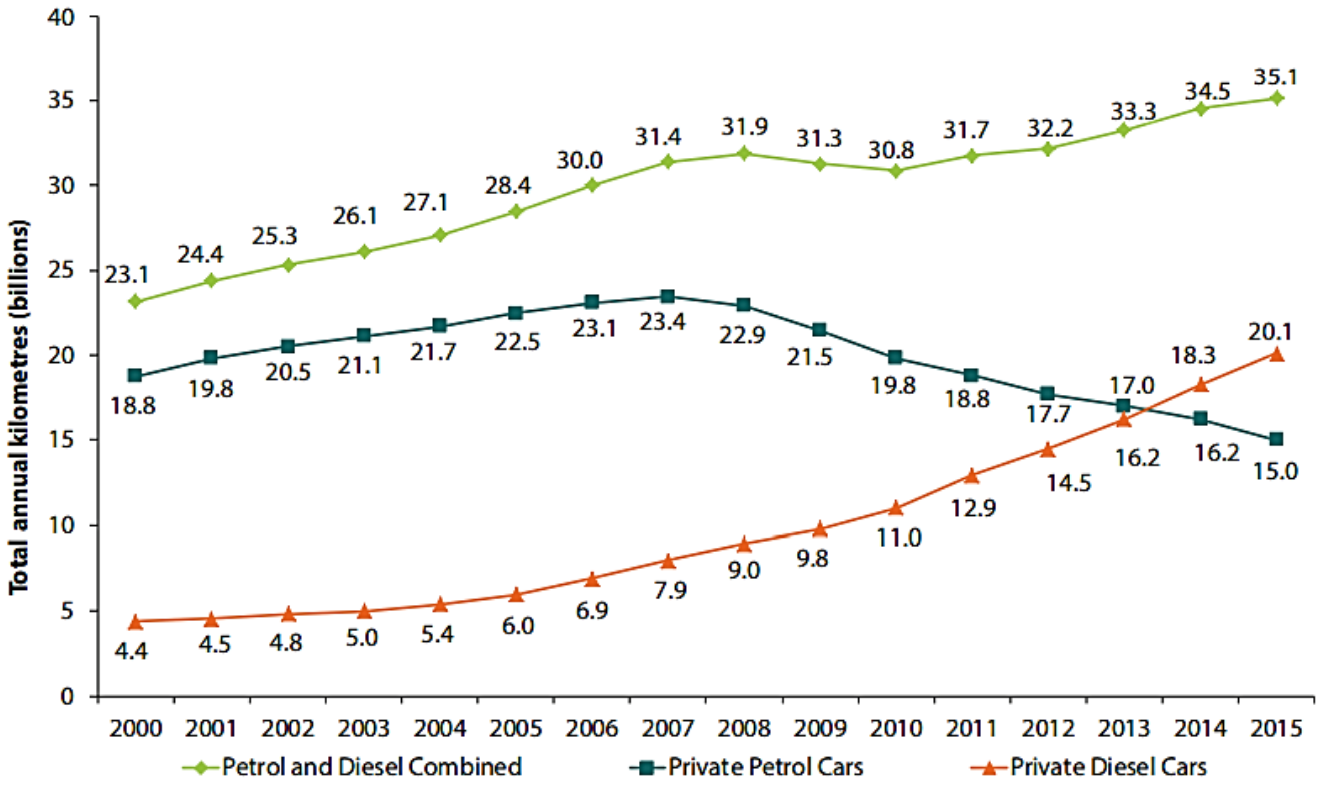
Source: Based on Vehicle Registration Unit and CSO data

Source:SEAI (2016), Energy in Ireland 1990- 2015

We are travelling further by car

(Ireland wide data)

Figure 51 *Total Private Car Annual Mileage 2000 – 2015*

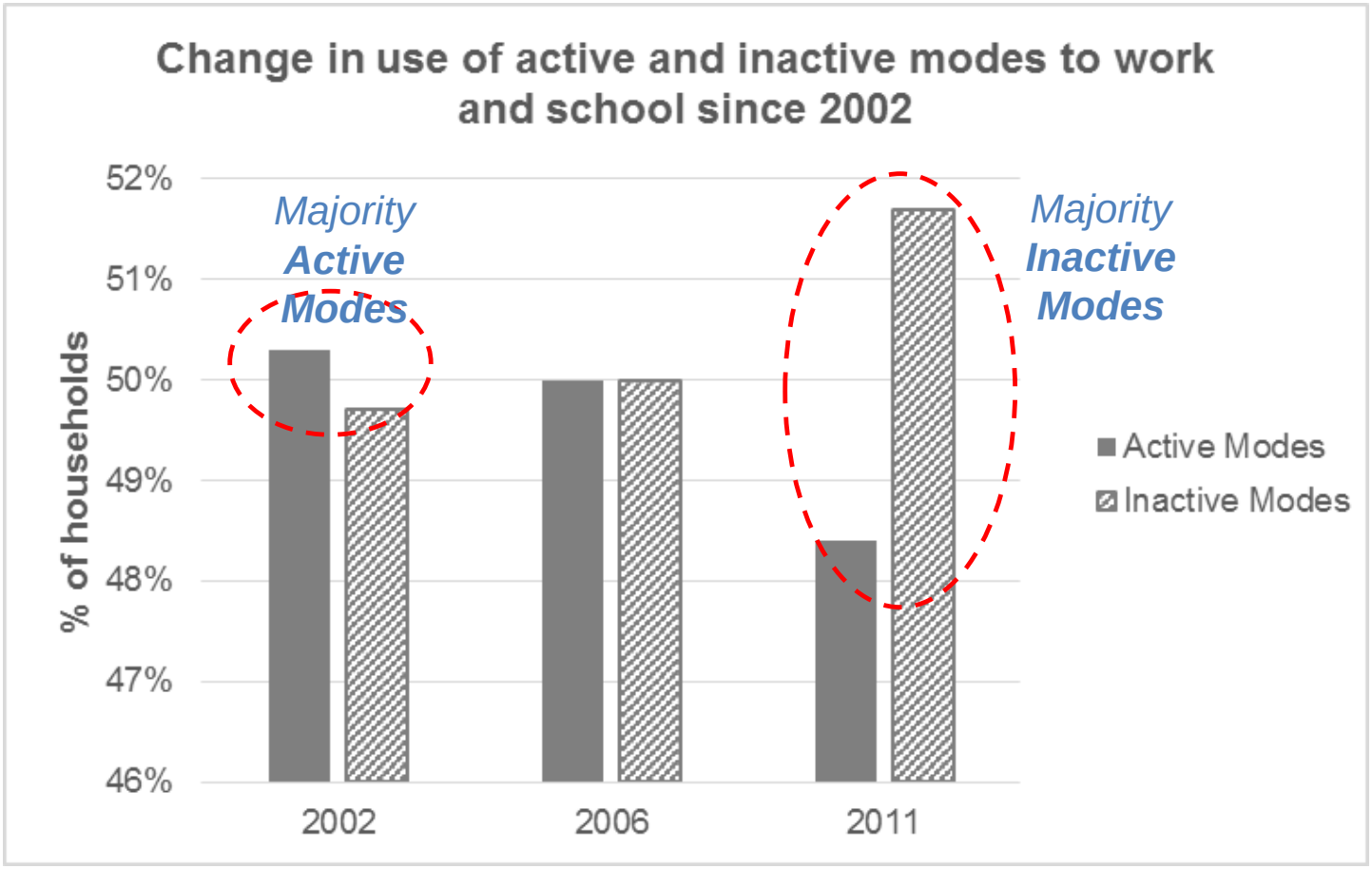


Source: Based on NCT Data

Total mileage by private cars **increased by 52%** over the period 2000 – 2015.

Source:SEAI (2016), Energy in Ireland 1990- 2015

We are travelling less by Active Modes

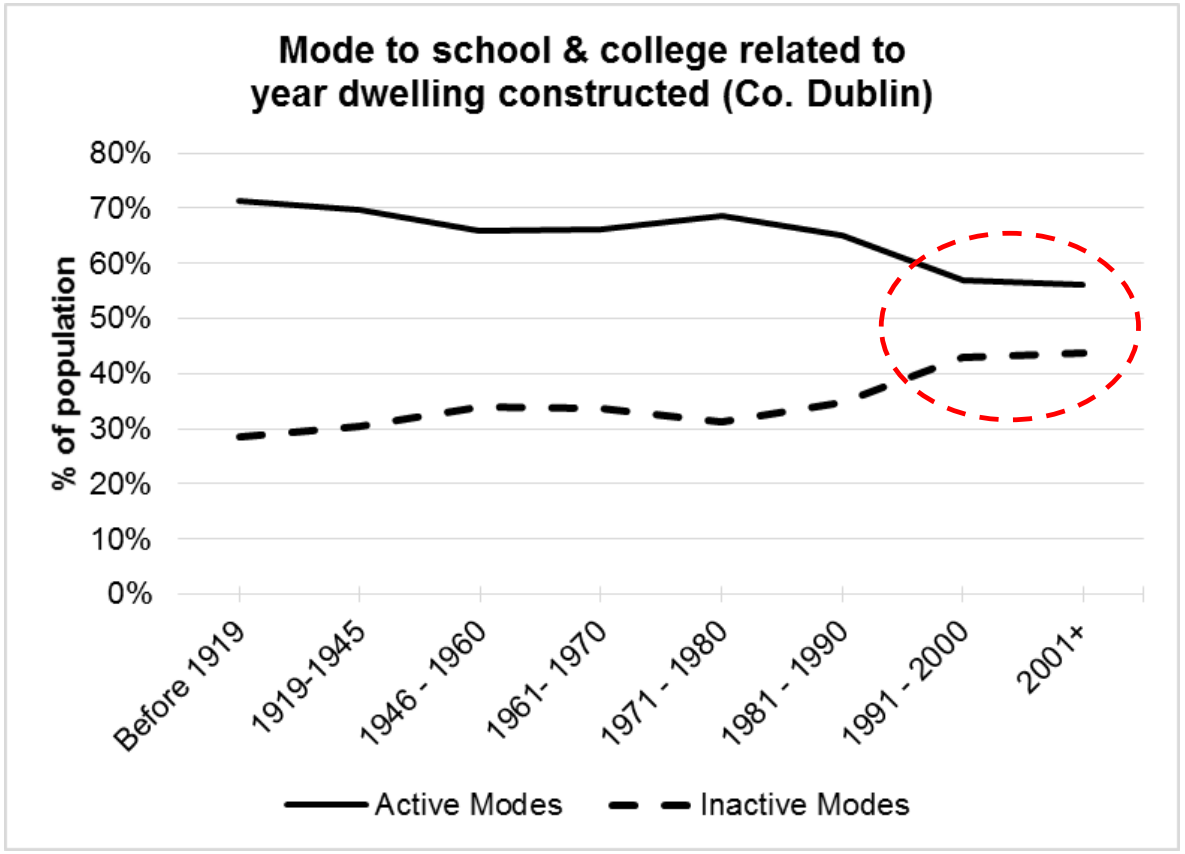


Data relates to Dublin.

We are travelling **more by car** and **less by walking, cycling & public transport.**

Source: S.Rock, based on CSO Census of Population 2011 data

The newer the dwelling, the less sustainable the journey



Particularly for the journey to <u>school:</u>

- Worse in areas developed from1991 onwards.
- **11% fewer children walking** to school in areas built after 2001 than before 2001.

Source: S.Rock, based on CSO Census of Population 2011 data

Primary School

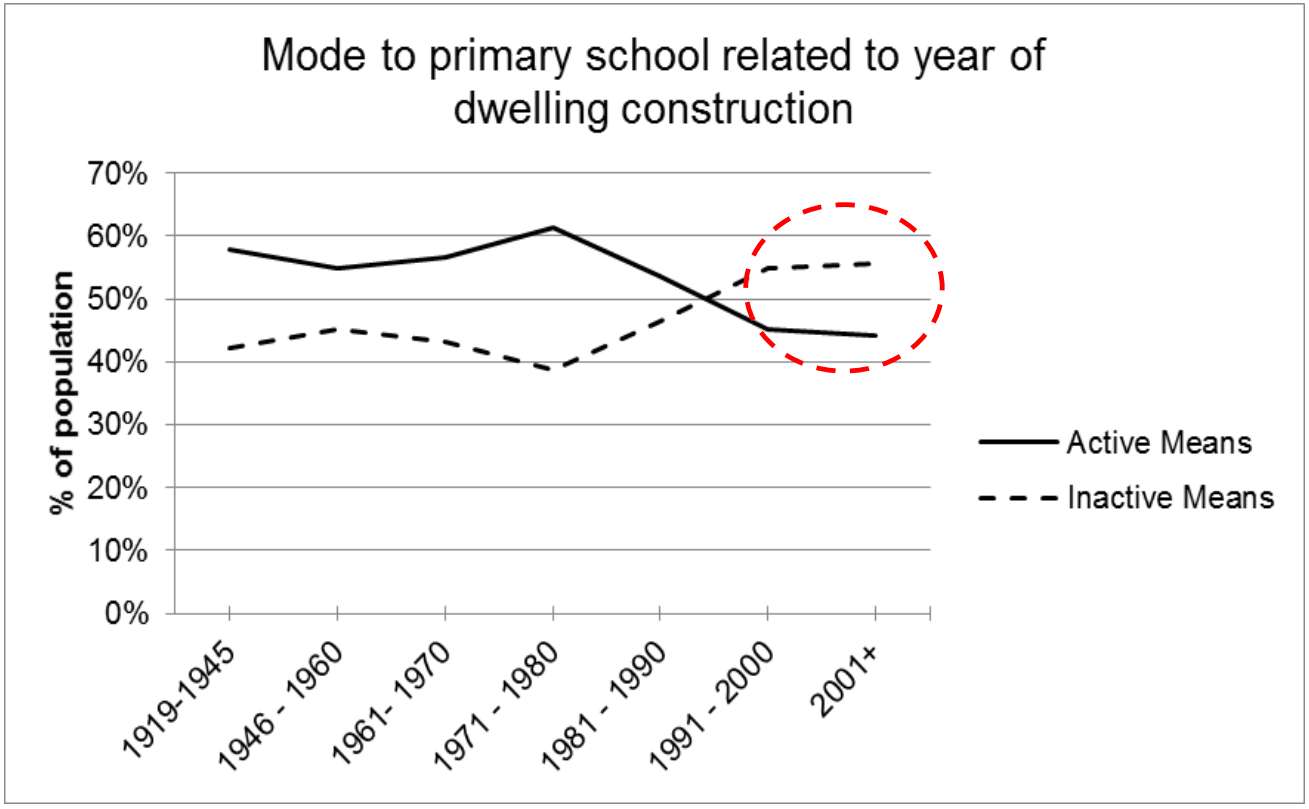
Primary school journey even more unsustainable:

- **Dublin 48.5%** of primary children driven to school; **Ireland: 61.4%;** Celtic Tiger areas within Dublin: 55.6% (CSO, 2012)

- **Finland: 20%***
- **Norway: 22%***
- **Great Britain: 44%^**

*Data sources: *Fyrhi et al., 2011; ^UK Government, 2014*

Primary School



Source: S.Rock, based on CSO Census of Population 2011 data

- **Majority children driven** to primary school in areas developed from 1991 onwards.
- Proxy for local trip making - points to **failure in transport planning and land-use integration** at the local level.

EPOMM Managing mobility for a better future

European

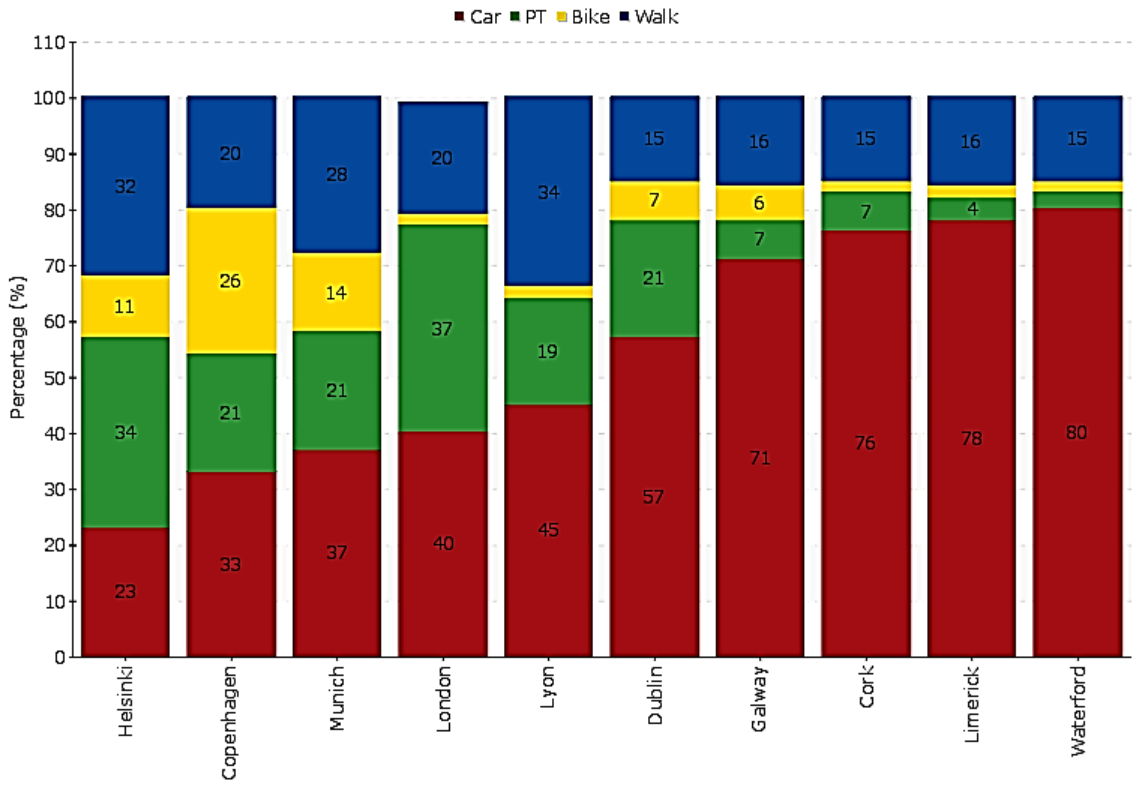
Home | About | Countries | Events | Tools+Service | Downloads | News | Links

Overview | MaxEva | TEMS | Policy Transfer | MaxExplorer | MaxLupo | MaxQ | MaxSumo | SEE MC net

TEMS - The EPOMM Modal Split Tool

10 results found!

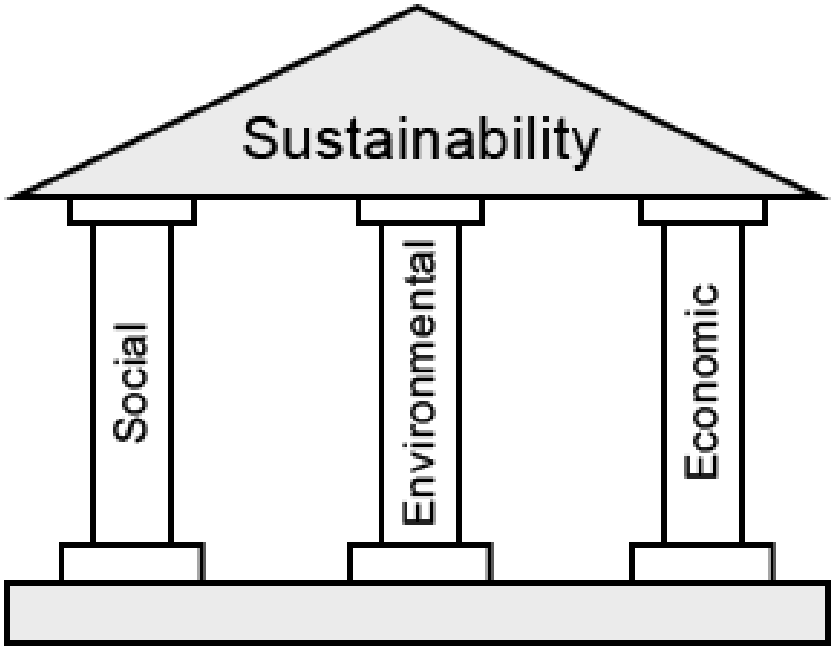
Modal Split Chart



How does Dublin & other Irish cities compare internationally?

http://www.epomm.eu/
European platform on mobility management – all daily trips made (mobility) by what mode.

What's the Problem with all this?



Sustainable Development & Sustainable Mobility - Convergence of **3 pillars** of :

1. **social equity**
2. **environmental** protection
3. **economic** development.

Balanced?

Social Equity: Transport Equity

Transport has **impacts** – positive & negative.

Transport Equity – **fair distribution** of these impacts.

- 'Fair' – value laden, for simplicity it's about '**Comparative Fairness**' *(how people fare relative to each other)*

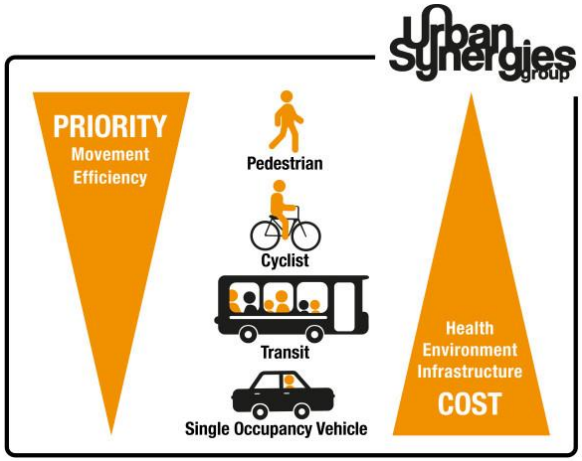
- Key concept: access to **'Equity of Opportunity'** - in an urban environment, does a person without a car have access to comparable job/education/healthcare opportunities as a person with a car?

- **Car** is one part of the transport system, but can be argued as being the **least equitable**, as it has the **most negative social, environmental & economic impacts overall.**

Social Equity: Transport Equity

Most equitable hierarchy overall is the **sustainable transport hierarchy**:

- Pedestrian first, then cyclist and public transport user,
- Then service & commercial vehicles,
- Then all other vehicles.

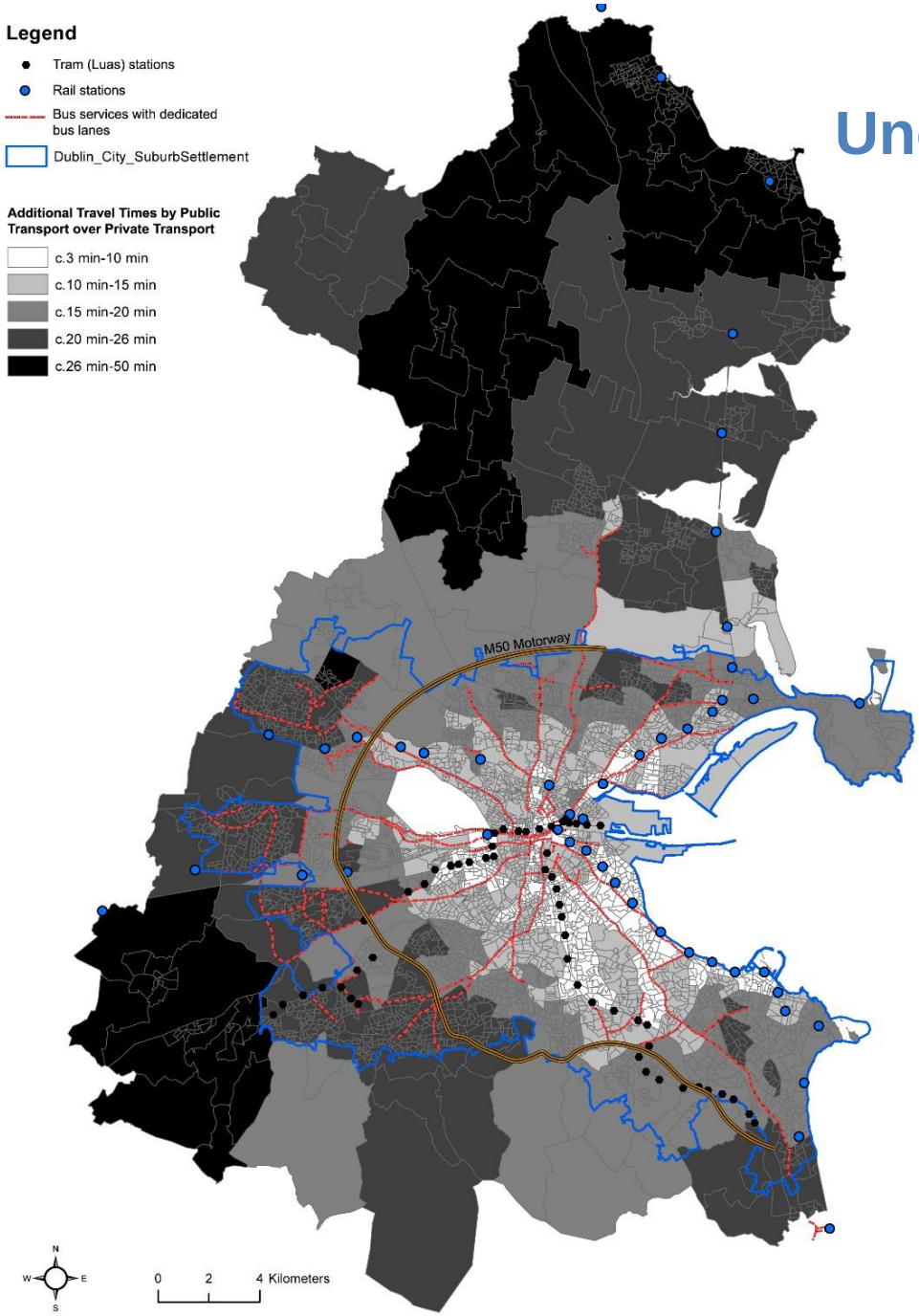


Planning & designing for the car is a **negative self-reinforcing cycle** – the more one caters for travel by car, the more one reduces the ability to effectively travel by other means.

Car dependency is **our increasing over-reliance on the car** (and **increasing exclusion from services** & amenities for those without a car). Dynamic process that usually increases over time.

References: Lucas & Jones, 2009; Goodwin, 1995; Newman & Kenworthy, 1999; Mattioli, 2014

Uncompetitive Public Transport



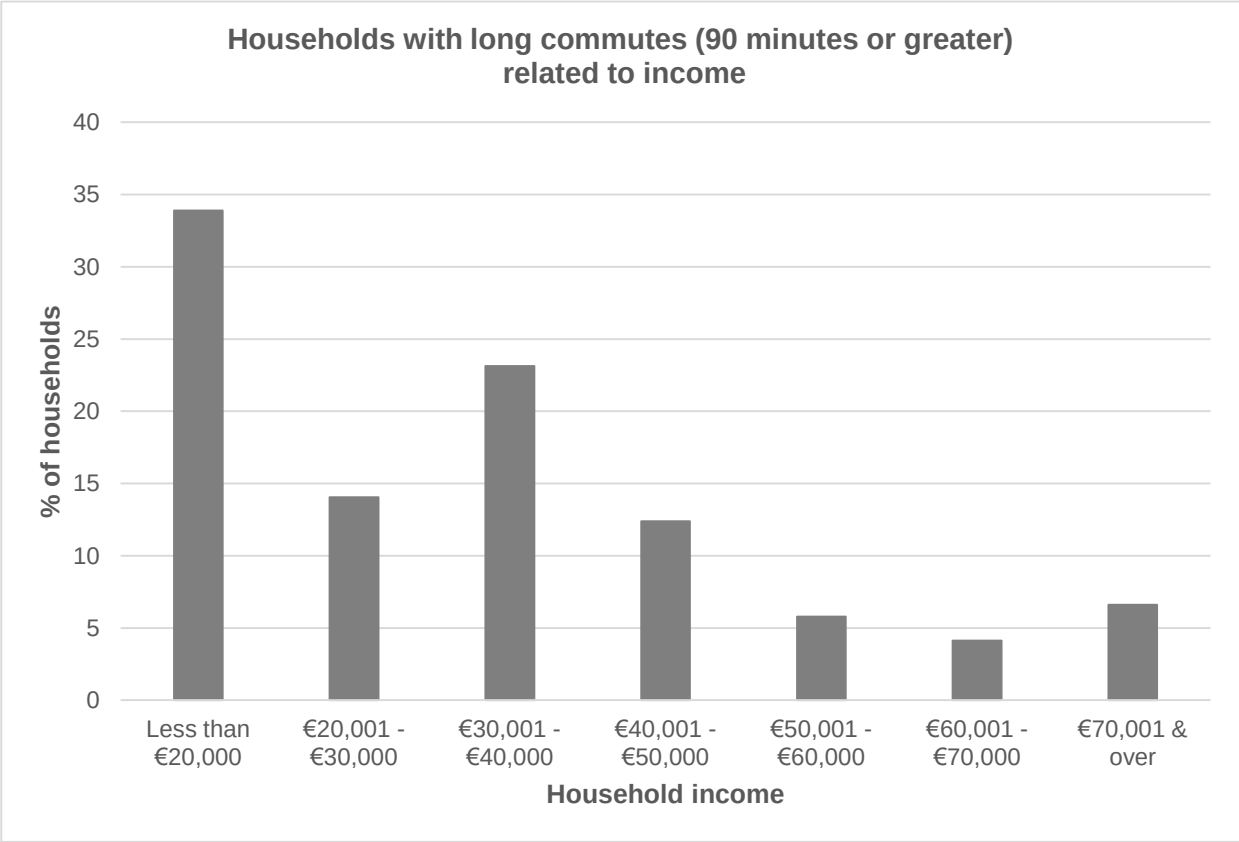
- Map of Dublin showing **additional travel time by public transport** compared to travel by car.

- Impacts on people's lives of additional travel time – who will the **burdens** most likely to fall upon?

Additional Travel Times by Public Transport over Private Transport

- c.3 min-10 min
- c.10 min-15 min
- c.15 min-20 min
- c.20 min-26 min
- c.26 min-50 min

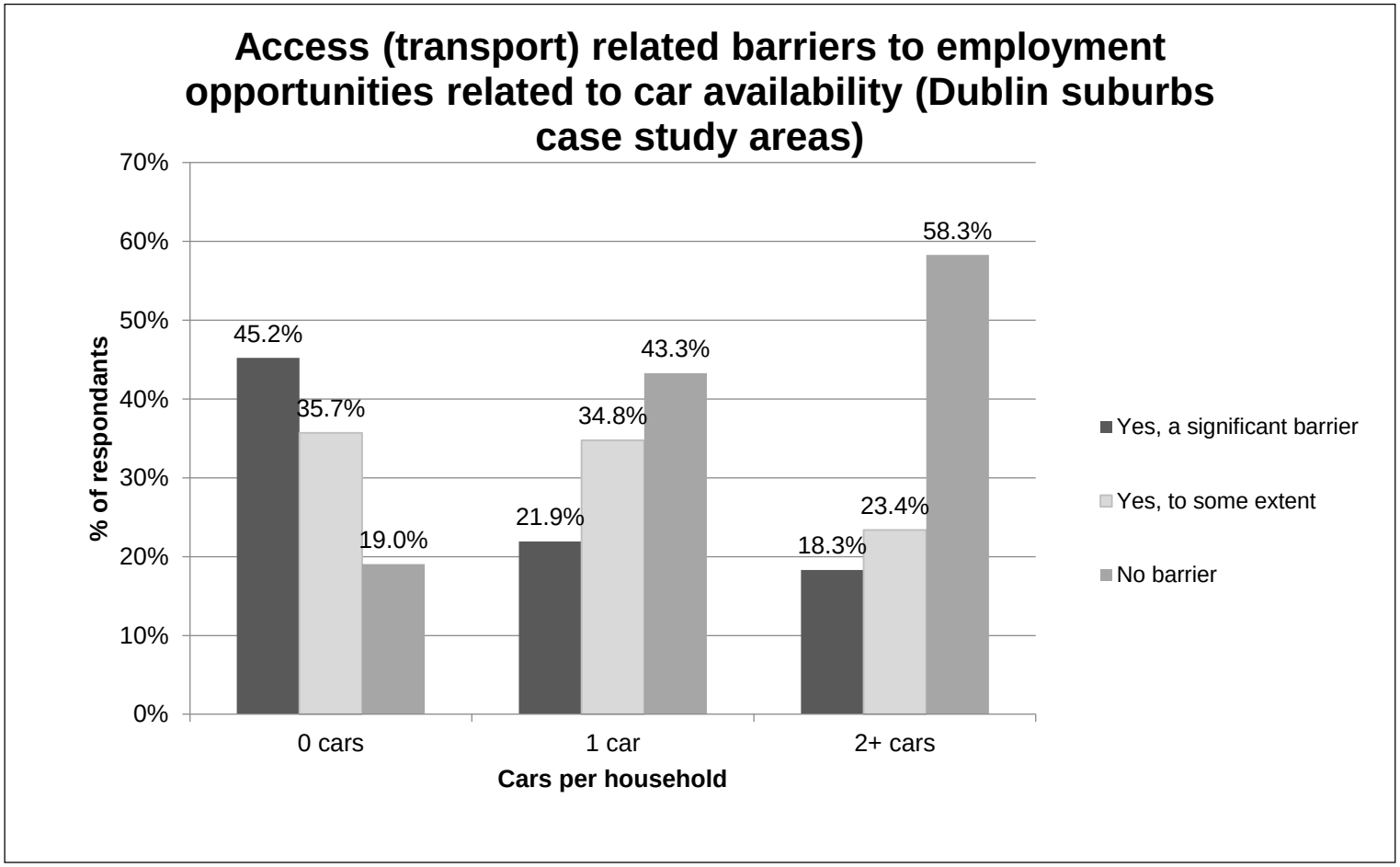
Percentage of households with **long commutes** (90min+) to work related to **household income** (data from suburban case study areas, Dublin)



Low & middle income households that are experiencing the longest commutes.

Source: S. Rock, 2015 – Income refers to after-tax income

Access to Opportunities



Pearson Chi-Square (54.99; df 4) ≤.000
Gamma = .330 (p≤.000)

Those without cars felt they experienced significant barriers to employment opportunities compared to those with cars.

Impacts: Obesity

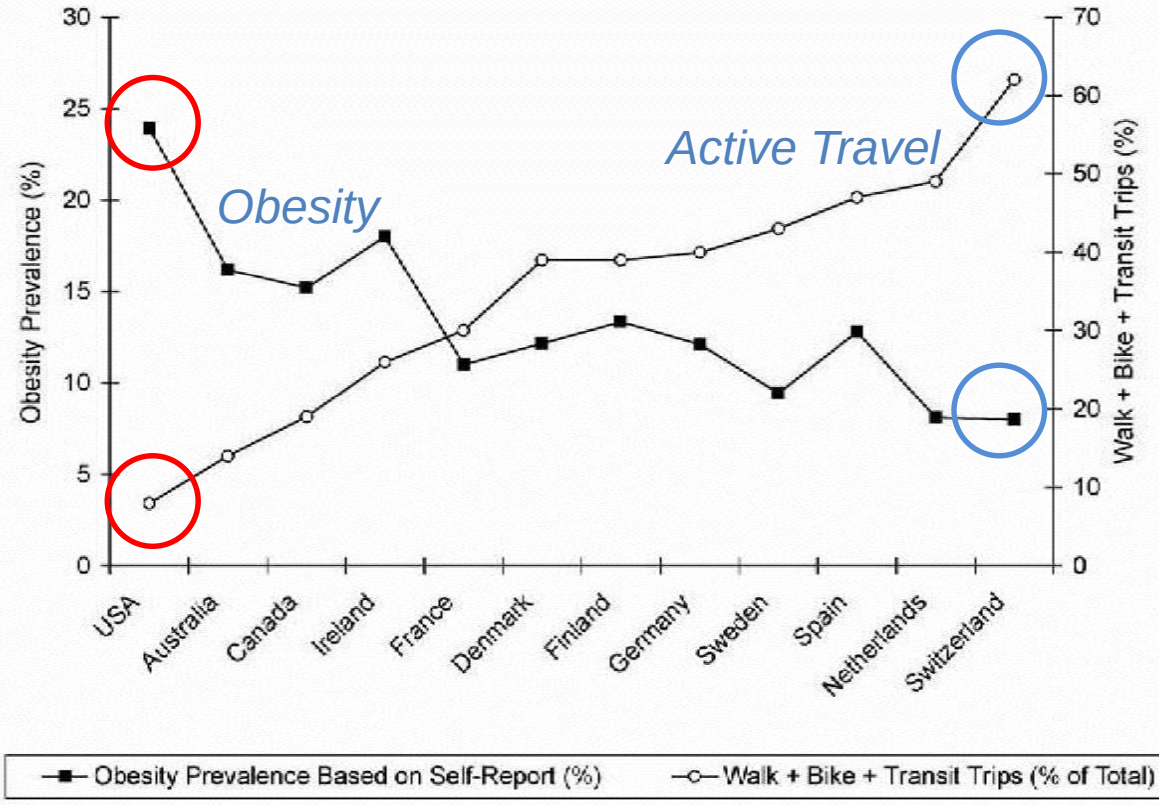


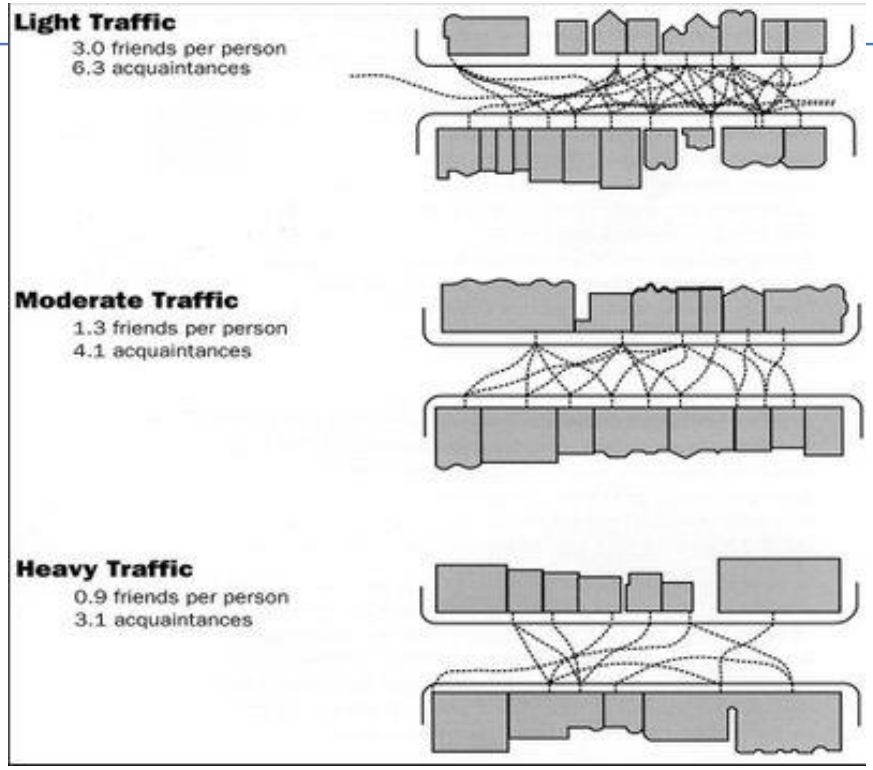
Figure 2 — Obesity (BMI ≥ 30 kg · m^{-2}) prevalence and rates of active transportation (defined as the combined percentage of trips taken by walking, bicycling, and public transit) in countries of Europe, North America, and Australia. BMI was computed from self-reported height and weight. Data were obtained from national surveys of travel behavior and health indicators conducted between 1994 and 2006 (see text for details).

805

Clear **correlation** between lack of active travel & obesity

Source: Bassett et Al, 2008, 'Walking, Cycling & Obesity Rates in Europe, North America & Australia', Journal of Physical Activity & Health, 5, 795-814

Community Severance



2000 vehicles per day

8000 vehicles per day

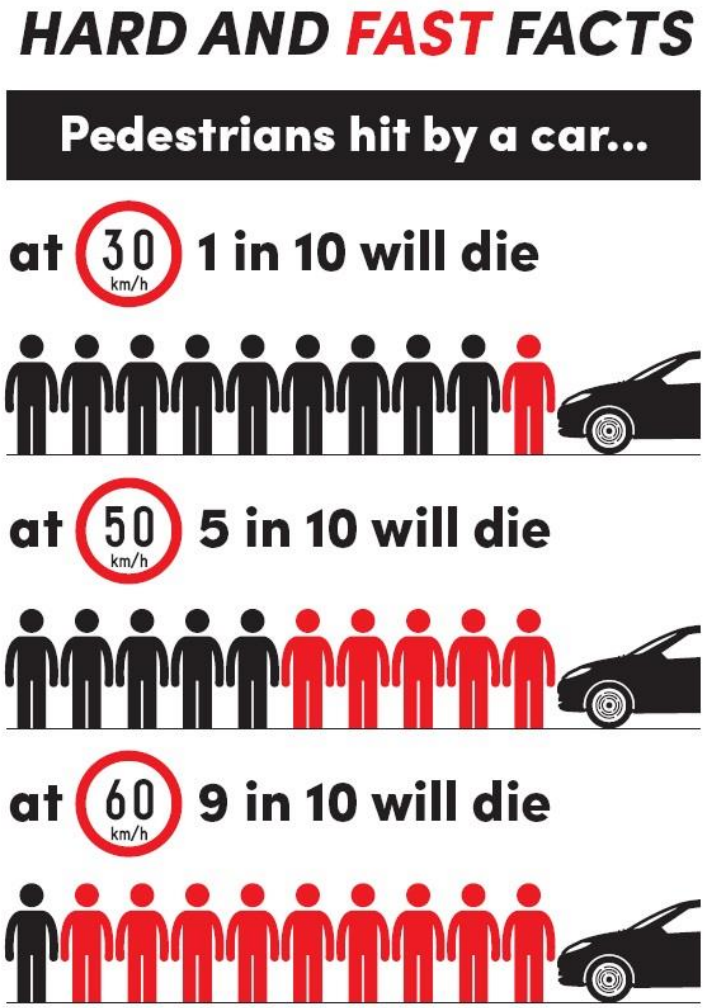
16000 vehicles per day

Social interaction & traffic volumes

In the late **1960s Appleyard** conducted a renowned **study** on livable streets, comparing **three residential streets in San Francisco** which on the surface did not differ on much else but their **levels of traffic**.

His research showed that residents of Light Street had three times more friends and twice as many acquaintances as the people on Heavy Street. (www.pps.org)

Impacts: Accidents, Injuries & Fatalities



Source: Road Safety Authority & Irish Times

Cyclists:
March 2017 – 5 deaths
June 2017 – 8 deaths

Cyclist death toll for 2017 now half of total for last year

Five cyclists killed in road collisions so far this year in Counties Dublin, Kildare, Clare

Tue, Mar 28, 2017, 17:53 | Updated: Tue, Mar 28, 2017, 17:56

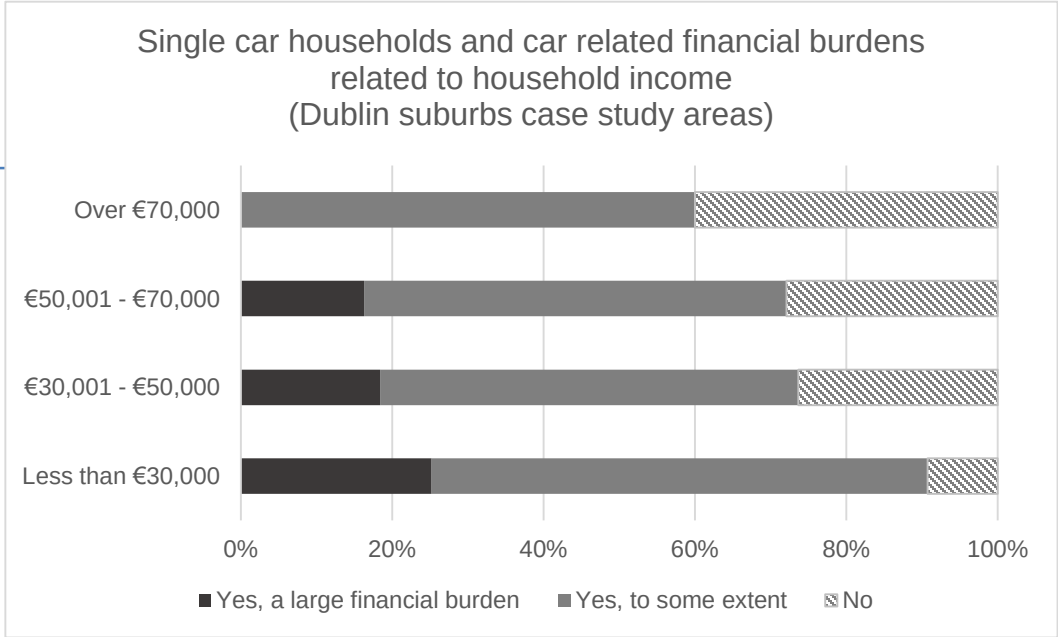
Rachel Flaherty, Pat Flynn

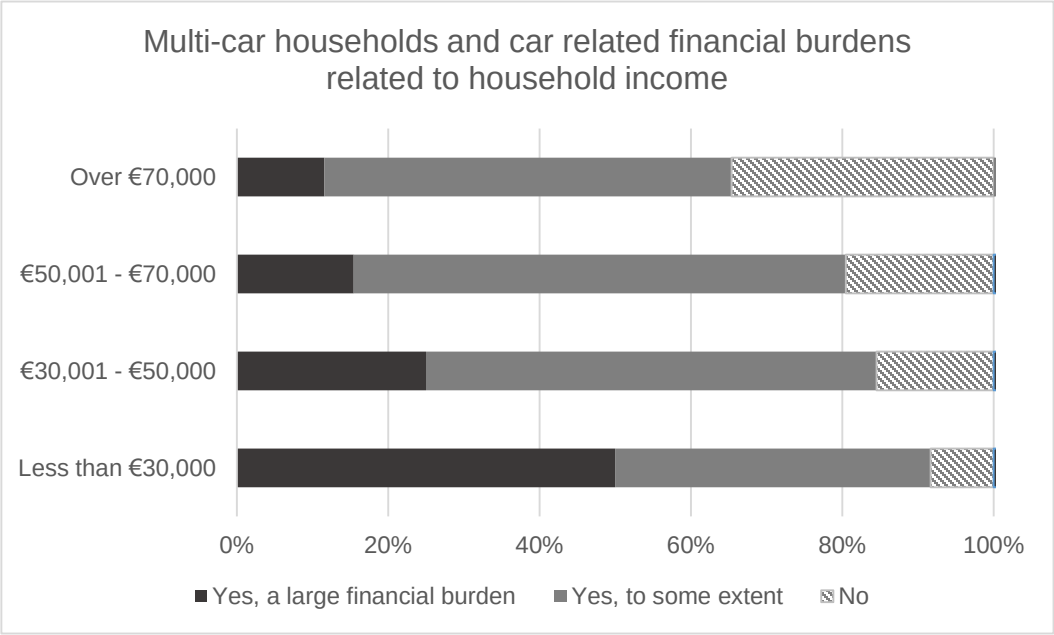
Cyclist Des Butler was fatally injured in a collision with a camper van in Co Clare on March 26th. File photograph: Facebook

The number of cyclists killed this year has already reached half of last year's total of 10 deaths, just three months into 2017.

Garda figures show 10 cyclists died in road incidents in 2016. Five cyclists

‘Forced’ Car Ownership



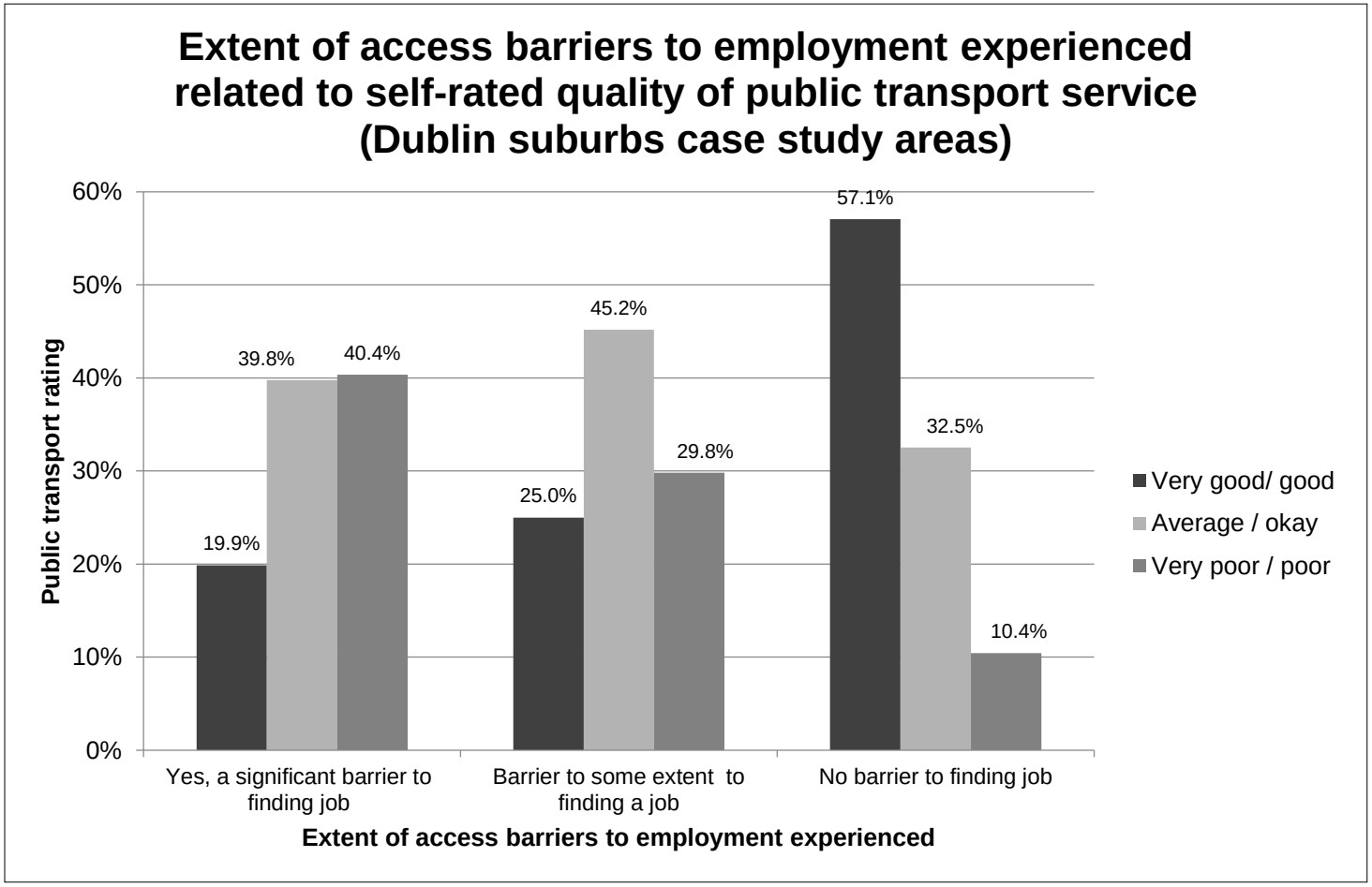


Survey response to question regarding whether **owning a car** was seen as a **necessity** where they lived:

- **Yes, definitely: 79.5%**
- Yes, to some extent: 18.5%
- No: 2%

But, car ownership is causing **significant financial burdens** on many households.

Good Public Transport Helps



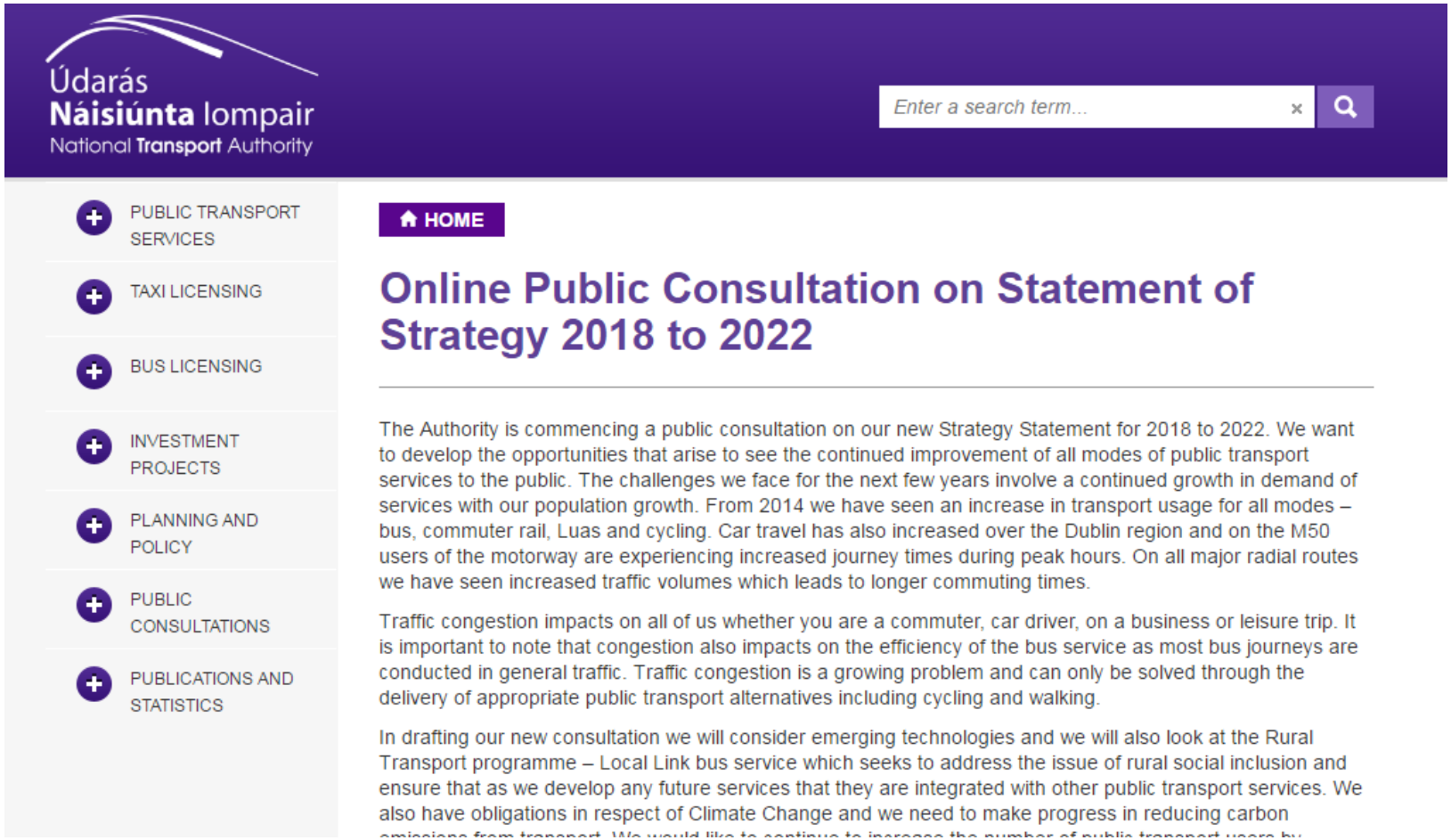
Pearson Chi-Square (106.92; df 4) ≤.000
Gamma = -.504 (p≤.000)

Good public transport reduces access barriers to employment opportunities.

Transport Equity Principles to Guide Future Development

1. Transport should **not be a barrier to equity of opportunity** to key life chances.
2. **Groups vulnerable to transport disadvantage** should be given special consideration in plans & projects (e.g. lower income; children; elderly; lone parents; mobility & sensory impaired).
3. People are **entitled to use walking, cycling and public transport** as an **effective, safe** and efficient mode of transport
4. People should be able to have zero-car ownership in urban areas, and be able to **reach key local and strategic destinations** (at least) by effective walking, cycling or public transport.

Opportunity to Help Shape Future Policy



Public consultation will close on **Wednesday 21st June 2017 at 12pm** to all submissions.

Our Vision

National Transport Authority Statement of Strategy 2015-2017

"Greater share of high quality, accessible sustainable transport being used by all"

Our Mission

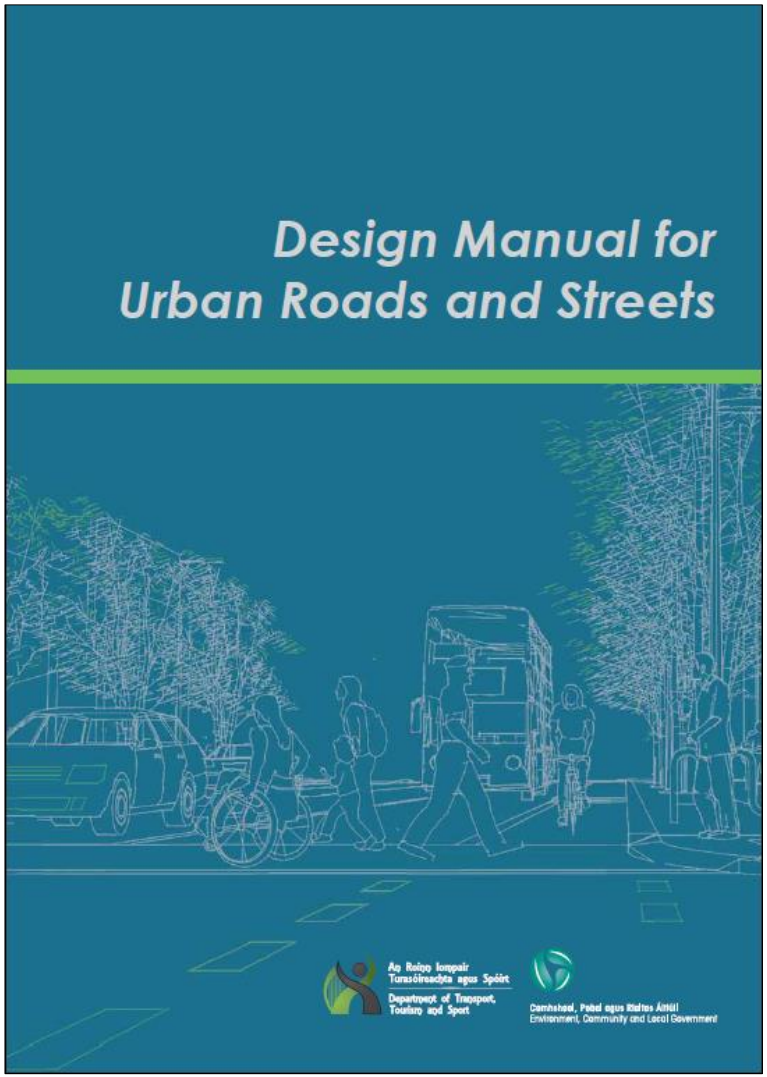
Our Mission is to increase the share of travel by sustainable transport across the country by

1. Regulating and procuring attractive, high quality and safe public transport services,
2. Securing the development and implementation of an accessible and integrated transport system,
3. Contributing to the effective integration of transport and land use planning policy and investment, and
4. Enhancing the perception and raising awareness of public transport

in a manner that supports Government policies and priorities and contributes to economic development, environmental sustainability and social cohesion in the State.

- **Bolder vision needed?**
- The link between car dependency and social inequity needs recognition.
- Greater **focus on walking and cycling** needed – as safe, effective & equity modes of transport.

DMURS: Sustainable Transport Hierarchy



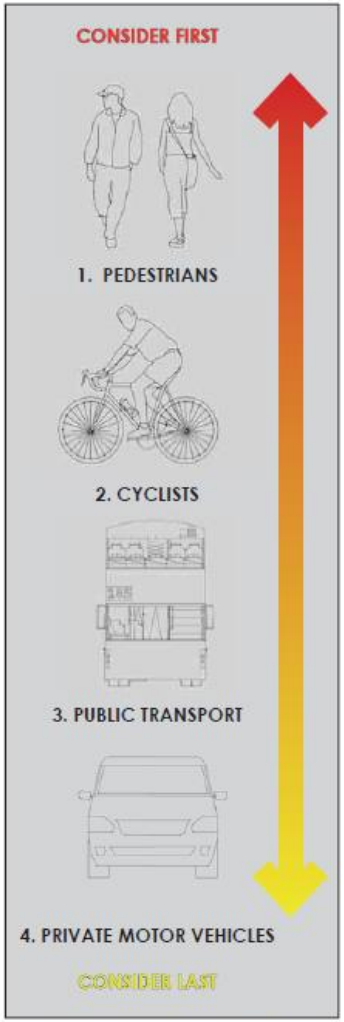


Table 2.21: User hierarchy that promotes and prioritises sustainable forms of transportation

Dept. of Transport, Tourism & Sport, 2013

Figure 8: Long Term - Comprehensive Regional Rail Network

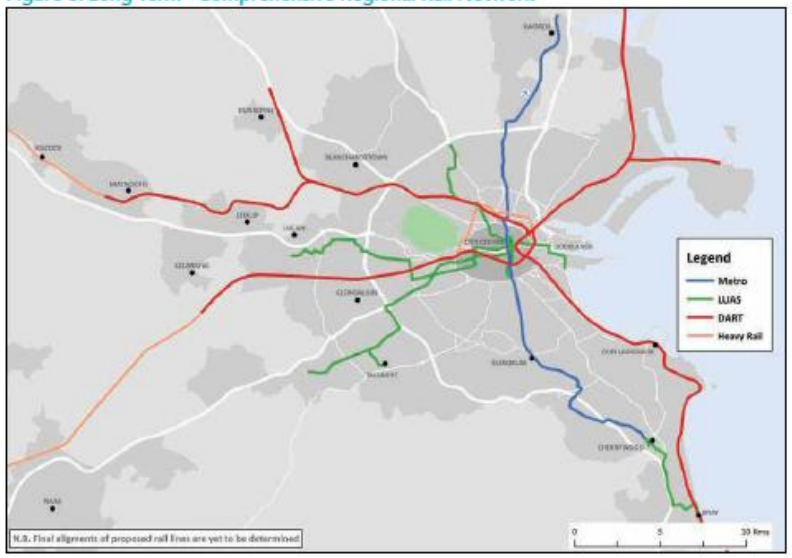


Figure 9: Medium Term - Bus Rapid Transit Corridors

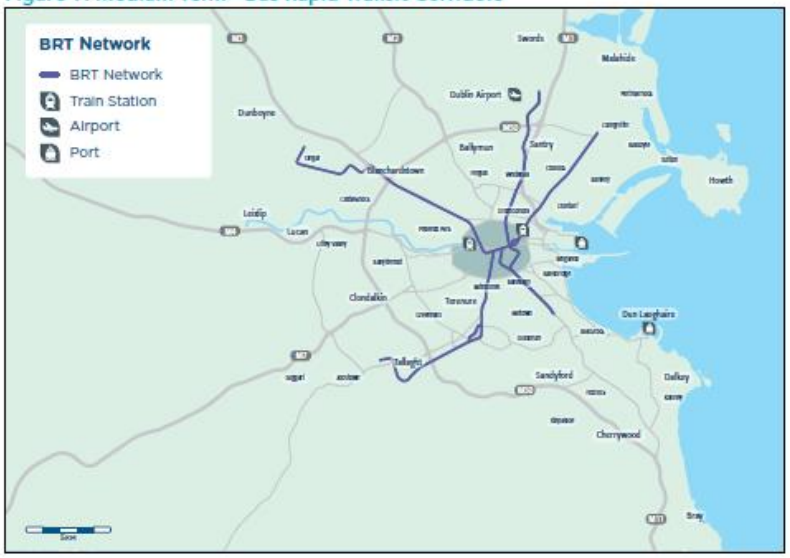


Figure 10: Medium-Term - Core Radial Bus Corridors

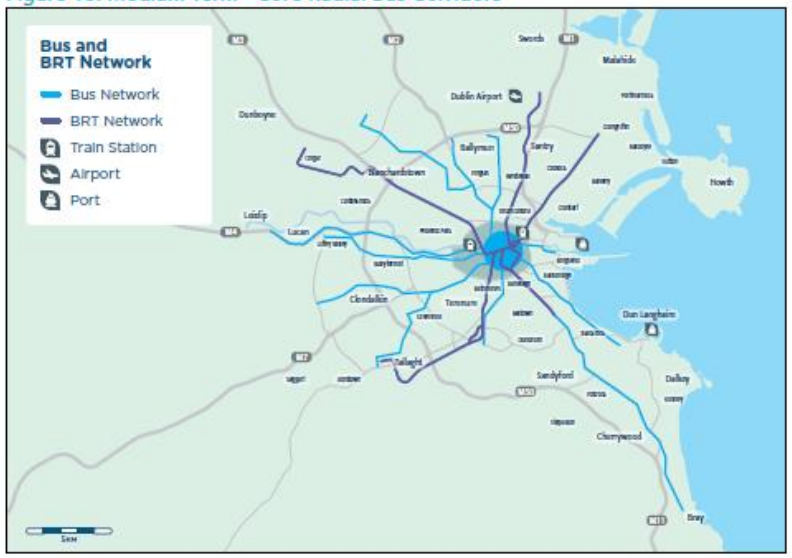


Figure 11: Medium Term - Core Orbital Bus Corridors

Images source: www.pka.ie

Image Source: S. Rock

Proposed Navan Town Centre Public Transport Hub

Part 8 Public Consultation currently underway by Meath County Council for series of **public realm and sustainable transport improvements** around Navan Town.

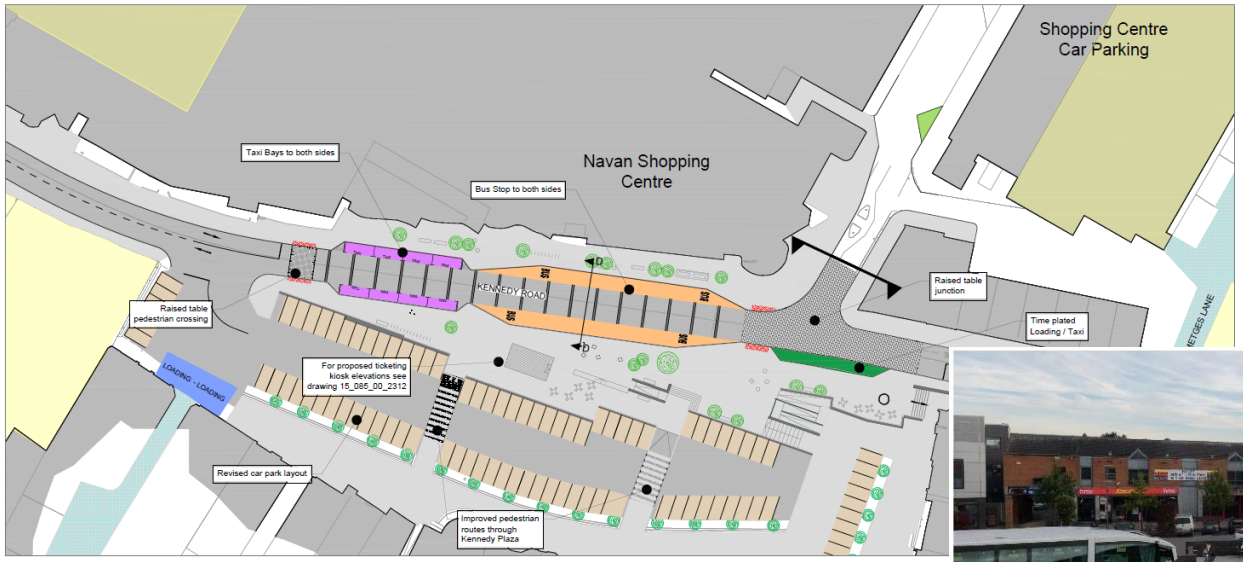
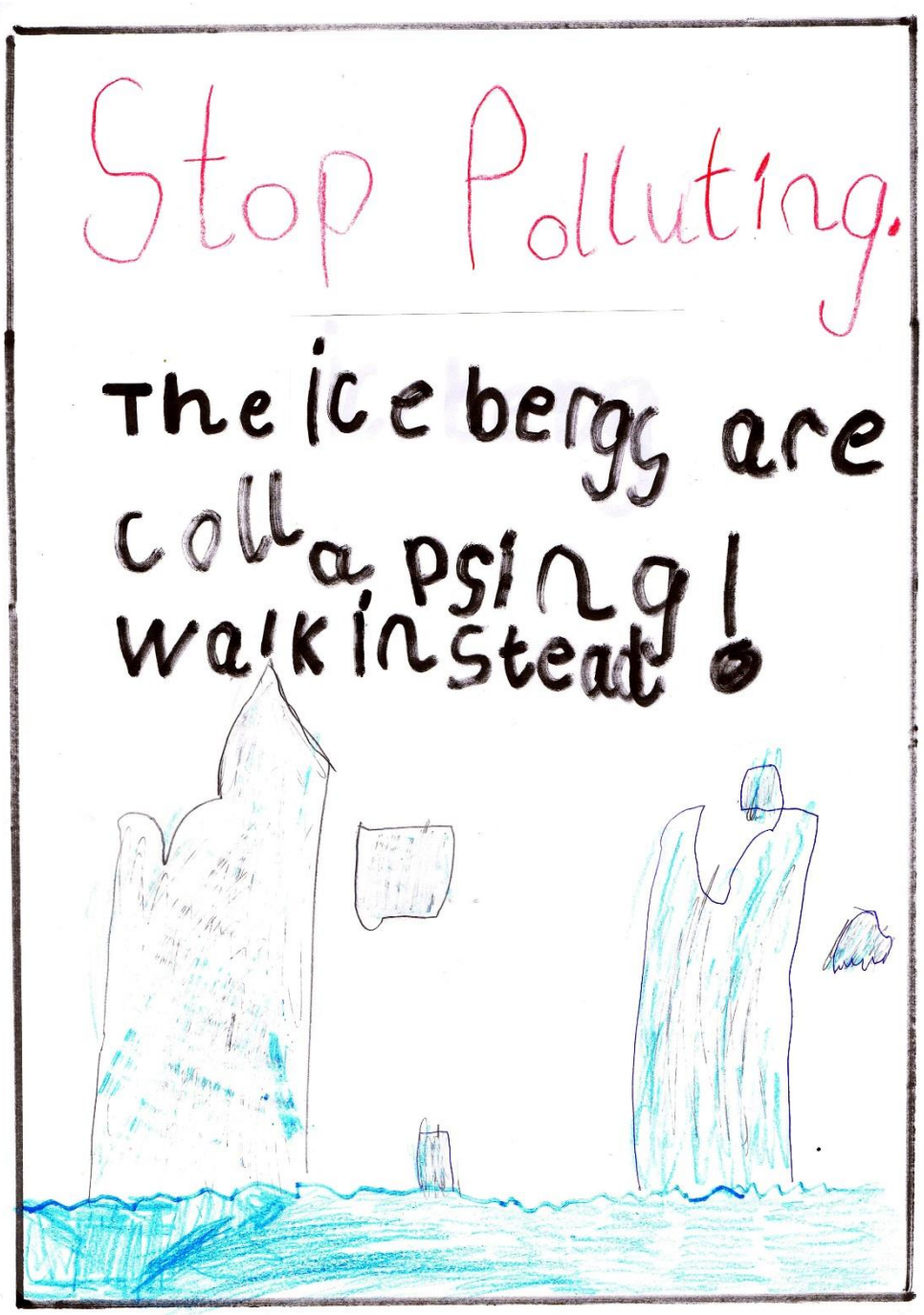


Figure 10: Kennedy Road, incorporating set back bus stops and taxi ranks, increased pedestrian space and potential for a new ticketing/information facility.

Source: http://www.meath.ie/CountyCouncil/MajorProjects/Navan2030Plan/


Stop Polluting.
The icebergs are collapsing!
Walk instead!