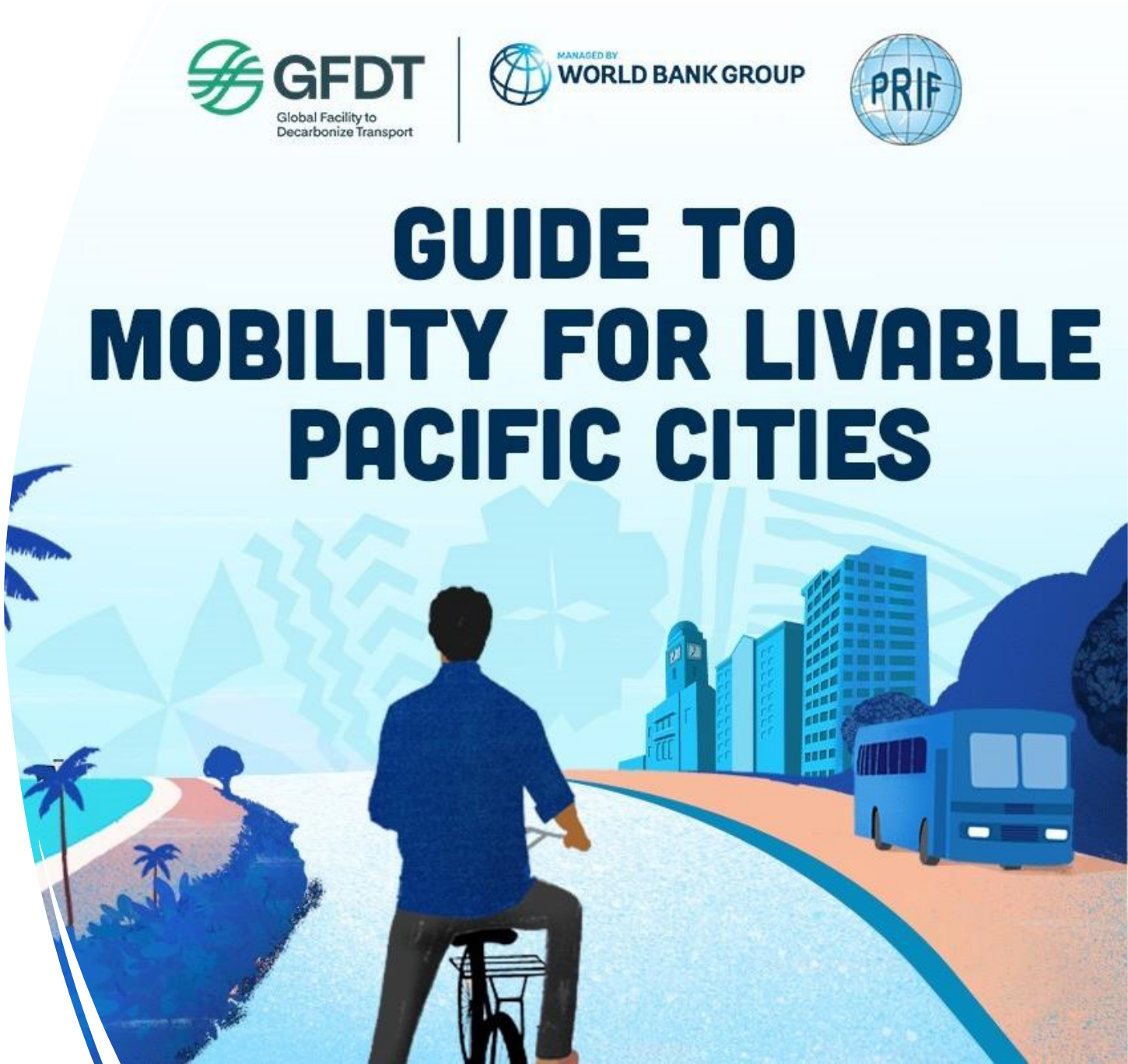
Guide to Mobility for Livable Pacific Cities Webinar Series

Webinar 1: Ensuring Safe Urban Speeds

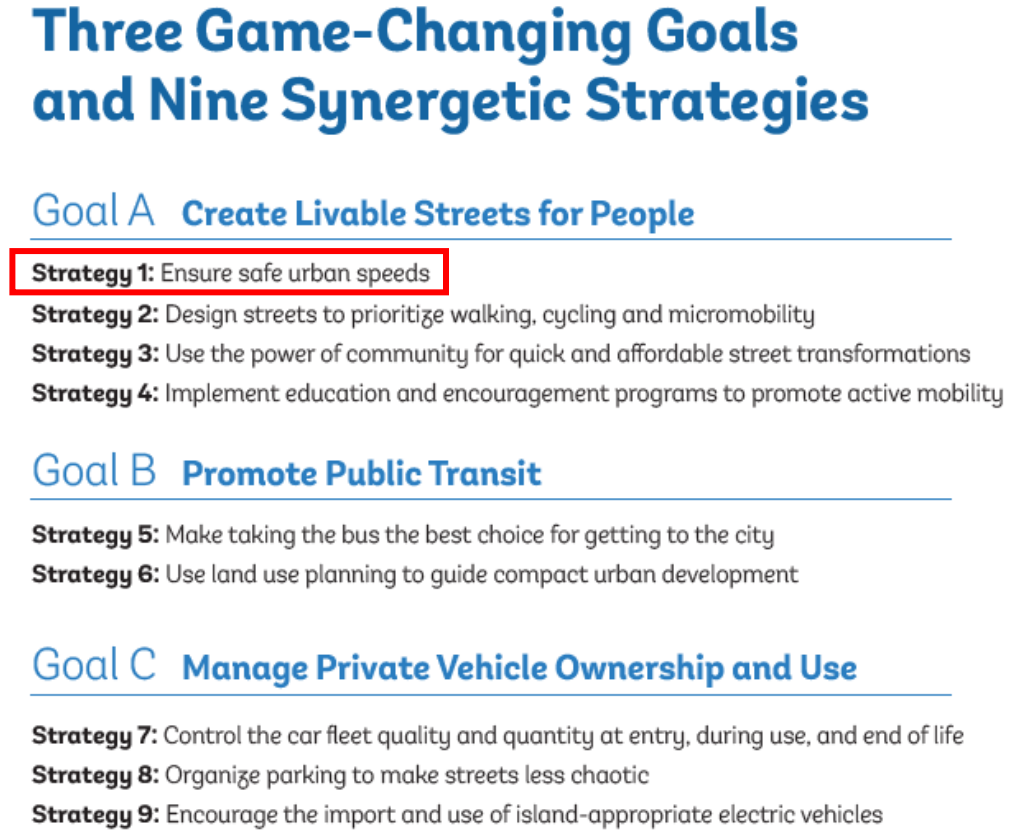
Dr Blair Turner



Presentation purpose

To highlight the link between speed management / road safety and mobility for Livable Pacific Cities

- Create Livable Streets for People – one of our three ‘Game Changing’ Goals for creating mobility for liveable cities
- Providing a safe environment helps encourage walking and cycling, and greater use of public transport (modal shift from cars)
- We must provide Safe Mobility as part of any project development, especially when promoting active modes of travel
- Speed management plays a critical part in improving safety outcomes, as well as providing more pleasant street environments.



Presentation overview

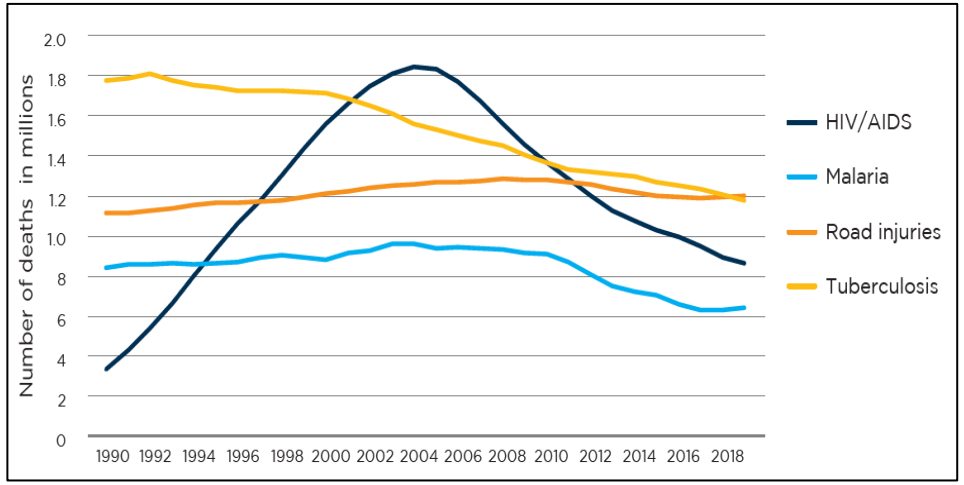
1. Road safety overview
2. The importance of speed
3. Solutions to support safe speeds on urban areas
4. Final comments

1. Road safety overview

Global road safety

- 1.19 million deaths and 50 million people seriously injured every year
- Leading cause of death for children and young adults 5–29 years of age
- More than half of the fatalities are vulnerable road users: pedestrians, cyclists, and motorcyclists
- 92% of traffic fatalities occur in LMICs
- High cost to health systems and economies - over 6.5 percent of GDP every year in LMICs.
- Missed opportunity for economic growth and ending poverty

Source: WHO, 2023; GRSF, 2020



Source: data from Institute for Health Metrics and Evaluation.

1. Road safety overview

Road safety in the Pacific

WHO estimate of fatalities in example Pacific Island Countries

Average: 13.4 (per 100,000 population)
Samoa: 9.6
PNG: 14.9
Tonga: 8.5
Australia: 5
Europe: <3

High burden on vulnerable road users, especially pedestrians: up to a third of deaths, but as high as 45%

High economic impact: equivalent of up to 5% of GDP

Source: GRSF, 2020

1. Road safety overview: Safe System approach

What is the Safe System Approach?

- Recommended global approach to improving road safety

- People make mistakes
- Shouldn't die because of these mistakes
- Should have a vision of a road system that protects road users when things go wrong
- Don't accept death and injury as a byproduct of mobility
- Shared responsibility

Source: NSW government

1. Road safety overview: Safe System approach

Shared responsibility

- Paint a warning line?
- Put up a warning sign?
- Teach people not to cross the line
  - Sensitization programs?
  - School education programs?
- Or …..

Source: NZTA / Waka Kotahi

2. The importance of speed

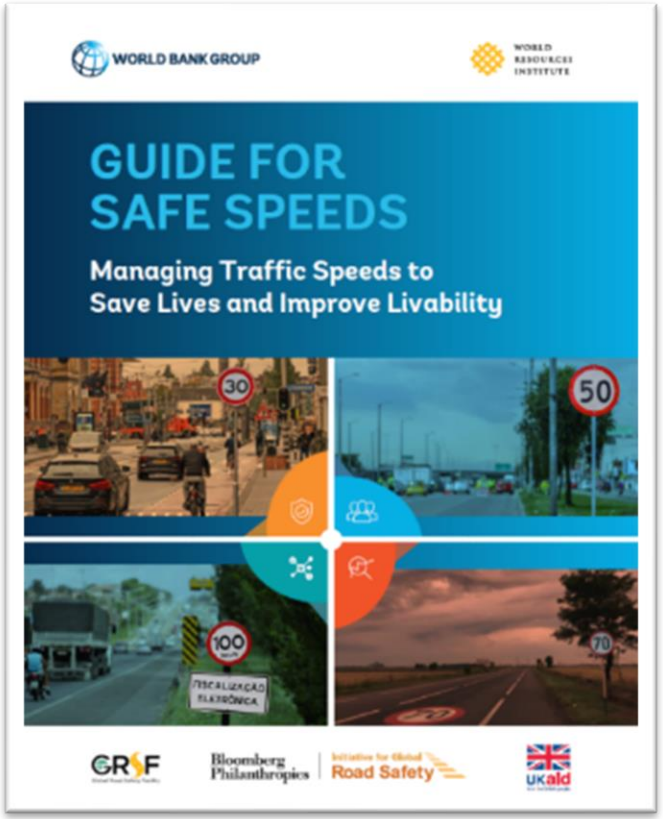
Speed is the single biggest contribution to road deaths and serious injury

More than 50% of deaths are caused by excess speed (above the speed limit or too fast for the conditions)

Reducing speed can bring significant benefits

The changes required can be highly cost-beneficial

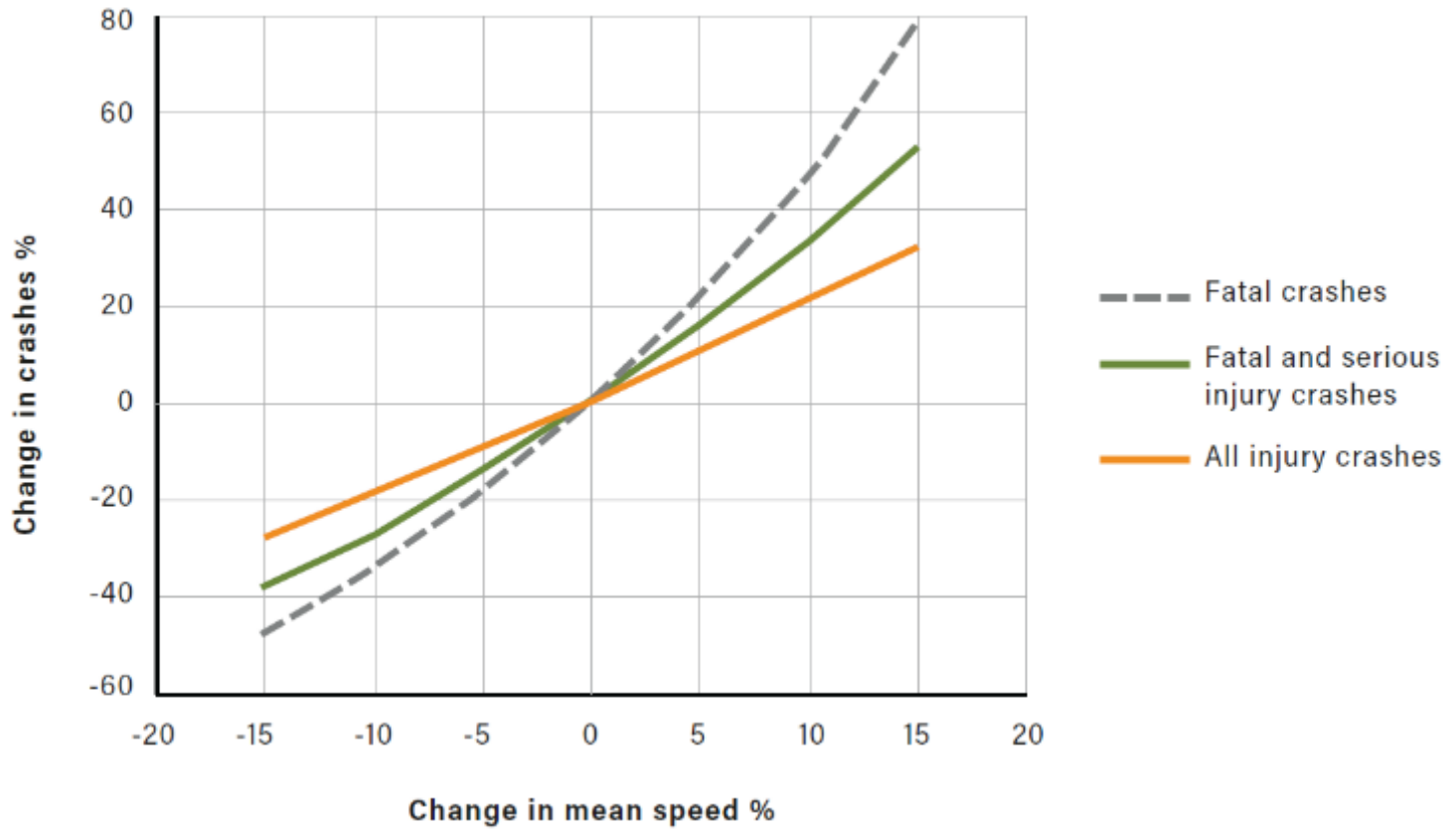
Speed = travelling above the speed limit OR travelling too fast for the conditions



www.roadsafetyfacility.org/publications/guide-safe-speeds-managing-traffic-speeds-save-lives-and-improve-livability

2. The importance of speed

Speed and crash risk

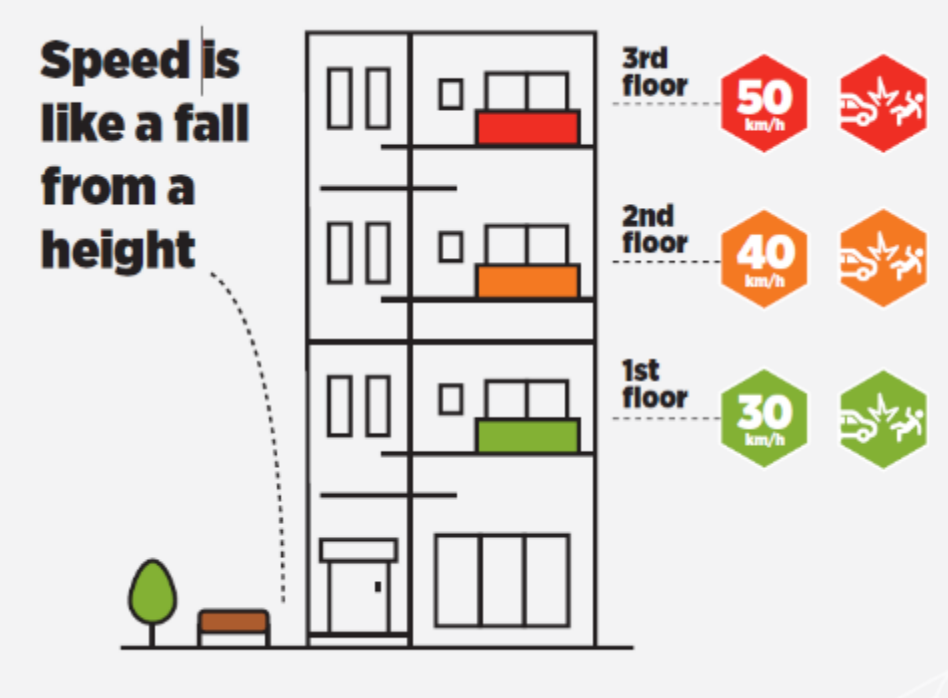


Source: Derived from Elvik et al, 2004

2. The importance of speed

Speed and crash risk

Limited human tolerance to crash forces



20% survival

70% survival

90% survival

Source: Auckland Transport

2. The importance of speed

Broader benefits of speed management

- Road safety improvements
- Decarbonization
- Vehicle operating costs reduced (reduced fuel costs; wear and tear on tyres, brakes)
- Smoother traffic flow and less congestion
- Mode shift to walking and cycling with subsequent health and environmental benefits
- Noise reduction
- Increased social interaction / social capital

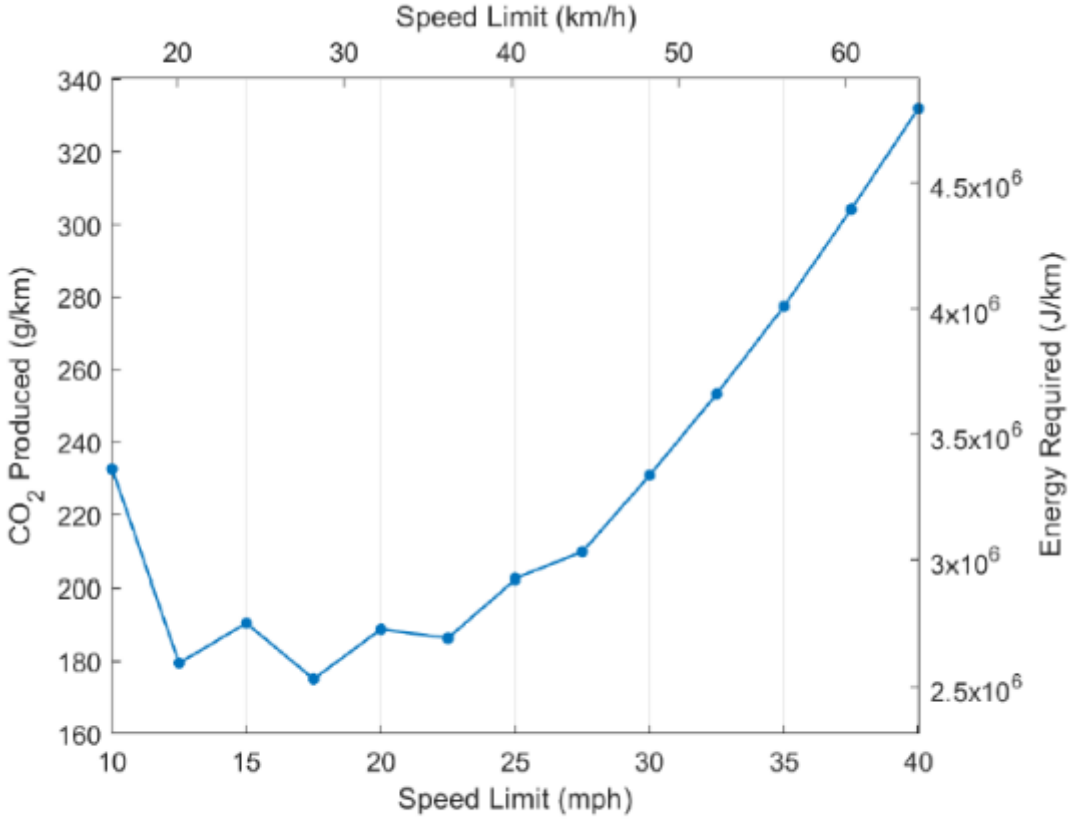


Fig. CO_2 emissions and energy required for the simulated Ford Focus EcoBoost.

Source: https://futuretransport.info/urban-traffic-research/

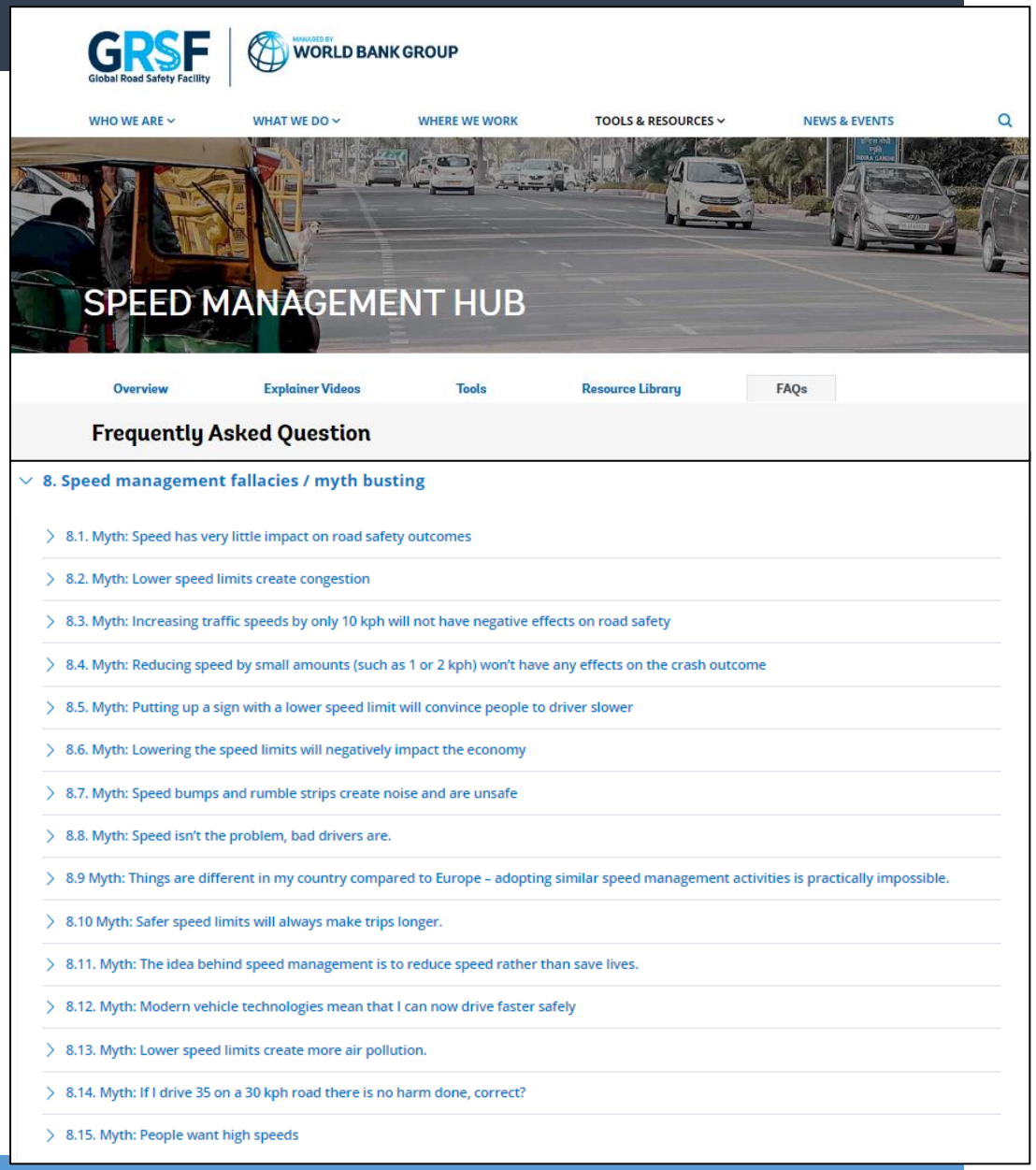
2. The importance of speed

There are implementation barriers to change ….

Use evidence to dispel the myths:

- Speed is the biggest cause of crash risk, and it does have other negative outcomes
- Speed limit reduction will have minimal impact on journey times, especially in urban areas
- The public understand the need for slower speeds, especially at risk locations, and are supportive
- Even small changes matter
- Speed reduction usually brings about net economic benefits

https://www.globalroadsafetyfacility.org/speed-management-hub



3. Methods for improving speed and road safety

Interventions

- Speed management strategy (see GRSF, 2024 report)
- Speed limit change (legislative review; revise speed limit defaults; signs)
- Speed limit change will often need to be supported with:
    - Infrastructure
    - Enforcement
    - Vehicle technology
    - Campaigns

3. Speed solutions for urban roads

Infrastructure: Match road design to desired speed environment

Source: Chris Jurewicz

3. Speed solutions for urban roads

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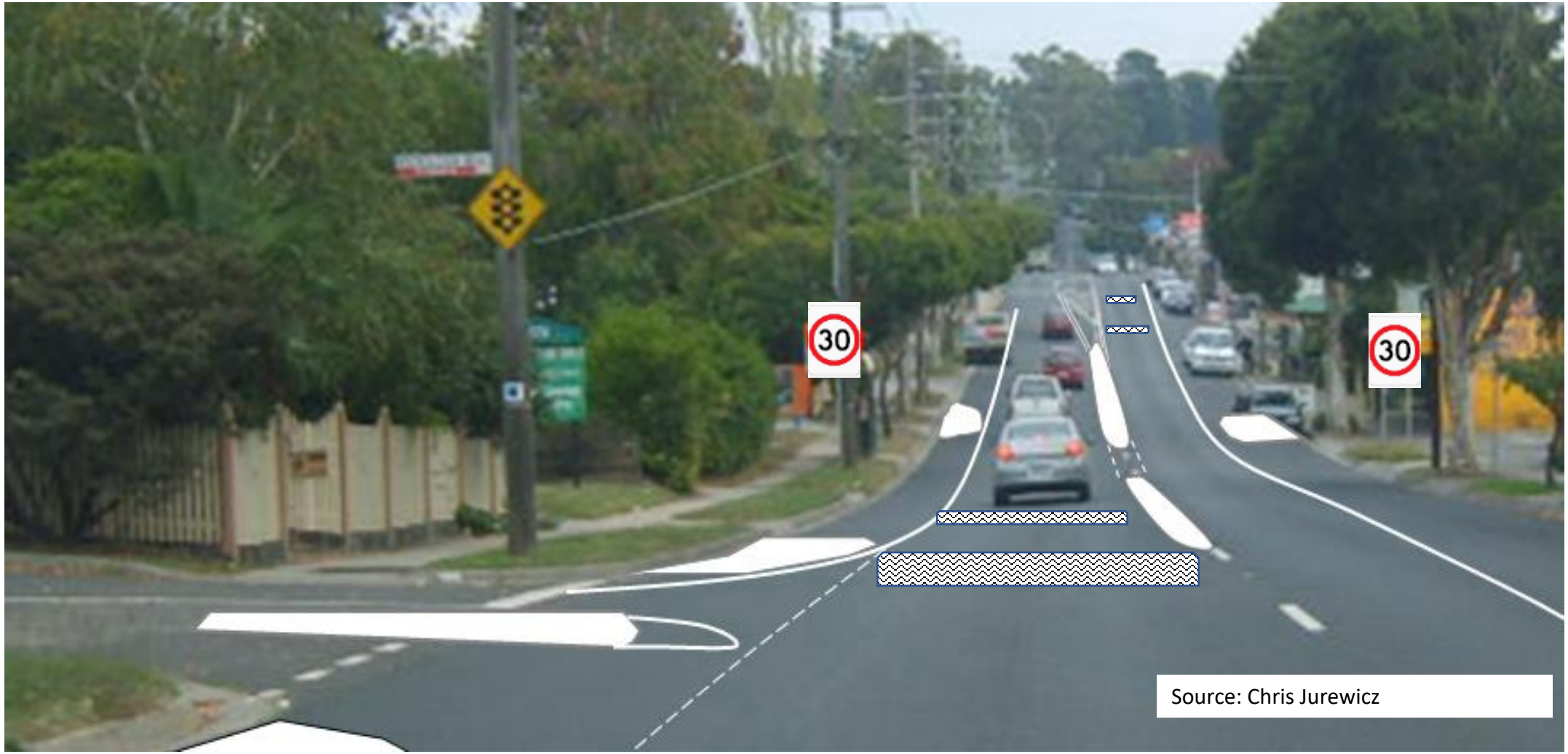
3. Speed solutions for urban roads

Infrastructure: Match road design to desired speed environment

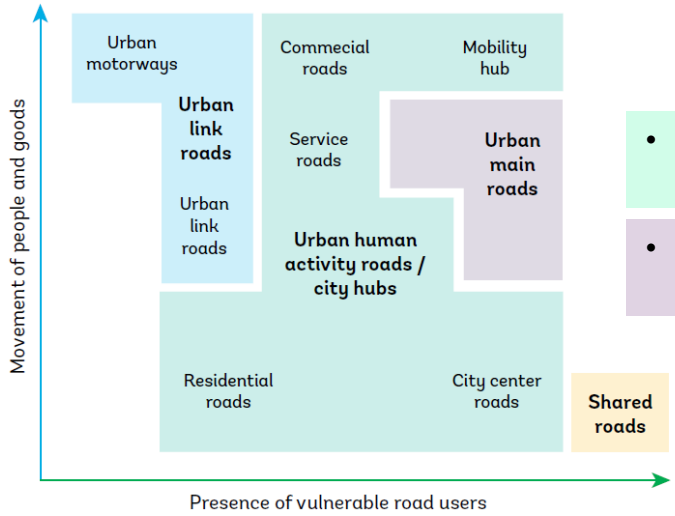


3. Speed solutions for urban roads

Speed limits - a good place to start…..

Action 1.1: 30 km/h for built up areas where there is human activity
Action 1.2: 50 km/h for main roads in other urban areas where there is no human activity
Action 1.3: Install signs to make motorists aware of speed limit

- Evidence of greatest benefit when supported by engineering treatments or enforcement program



- 30 km/h in Urban human activity areas
- 50 km/h on Urban main roads (with provision for vulnerable road users)

3. Speed solutions for urban roads

Action 1.4: Increase enforcement through the use of speed measurement devices and cameras

Source: GRSF

3. Speed solutions for urban roads

Action 1.5: Install raised pedestrian crossings

- Priority to pedestrians whilst reducing vehicle speeds
- Much better performance than normal pedestrian crossing
- Good speed reduction
- Good evidence of crash reduction (40-60% for pedestrians)

3. Speed solutions for urban roads

Start around schools - some of our most vulnerable road users

Source: Bram van Ooijen

3. Speed solutions for urban roads

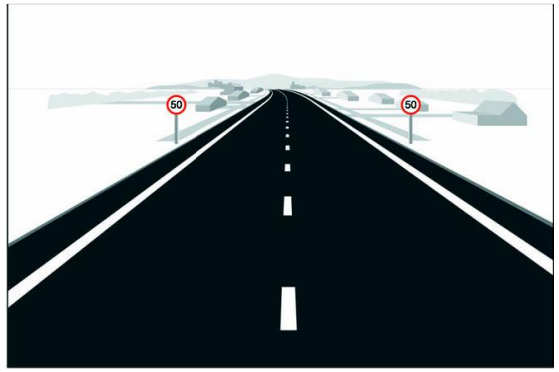
Start around schools - some of our most vulnerable road users

Source: Bram van Ooijen

3. Speed solutions for urban roads

Action 1.6 – Install gateway treatments

- Used to mark transition between high & lower speed environment
- Highly effective between rural and urban (35% reduction in casualty crashes when a pinch point is used; 25% reduction in speed)
- Also used in urban areas to mark change in speed



Source: NZTA

Auckland City. Source: TES

Kiribati. Source: World Bank

3. Speed solutions for urban roads

Urban solutions – Gateway Treatment

Source: Bram van Ooijen

3. Speed solutions for urban roads

Urban solutions – Gateway Treatment

Source: Bram van Ooijen

3. Speed solutions for urban roads

Action 1.7: Install calming (humps) on residential streets and other high risk locations

- Most commonly used tool
- Speed reductions on approach and between
- Good speed reduction and safety improvement
- Use in a coordinated way

3. Speed solutions for urban roads

Action 1.8: Narrow oversized intersections

- e.g. Kerb build-out, painted islands
- Potential for lower speed through narrowing
- Shorter crossing distance for pedestrians

Source: Government of Japan

Source: GDCI

3. Speed solutions for urban roads

Action 1.9: Narrow travel lanes except in exceptional circumstances

- Painted or constructed from concrete
- Combine with pedestrian facilities to help crossing

Image source: WRI

Image source: iRAP

3. Speed solutions for urban roads

Provide training

Action 1.10: Provide training on why and how to achieve safe speeds

- Government – decision makers and technical staff
- Road design and construction industry
- Media
- Public

Source: GRSF

Source: Youtube

Final Comments

- Speed management:
  - is a very effective way to address road safety – especially for vulnerable road users
  - will assist with modal shift
  - links to other agendas (e.g. liveability, decarbonization) with other benefits

- To maximise impact:
  - Work towards a strategy
  - Communicate on importance of speed and the need for change
  - Start with agreement on speed limit selection
  - 30 km/h for urban centers, higher speeds for main roads - if supporting infrastructure is provided
  - Support with other measures, especially infrastructure
  - Prioritize at highest risk locations
  - Consider tactical urbanism to get started

Thank You

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