

Does speed greatly affect travel time?

Glen Koorey
ViaStrada

2020 Transportation Conference

Titles with questions...

Betteridge's law of headlines:

- *"Any headline that ends in a question mark can be answered by the word **no**"*



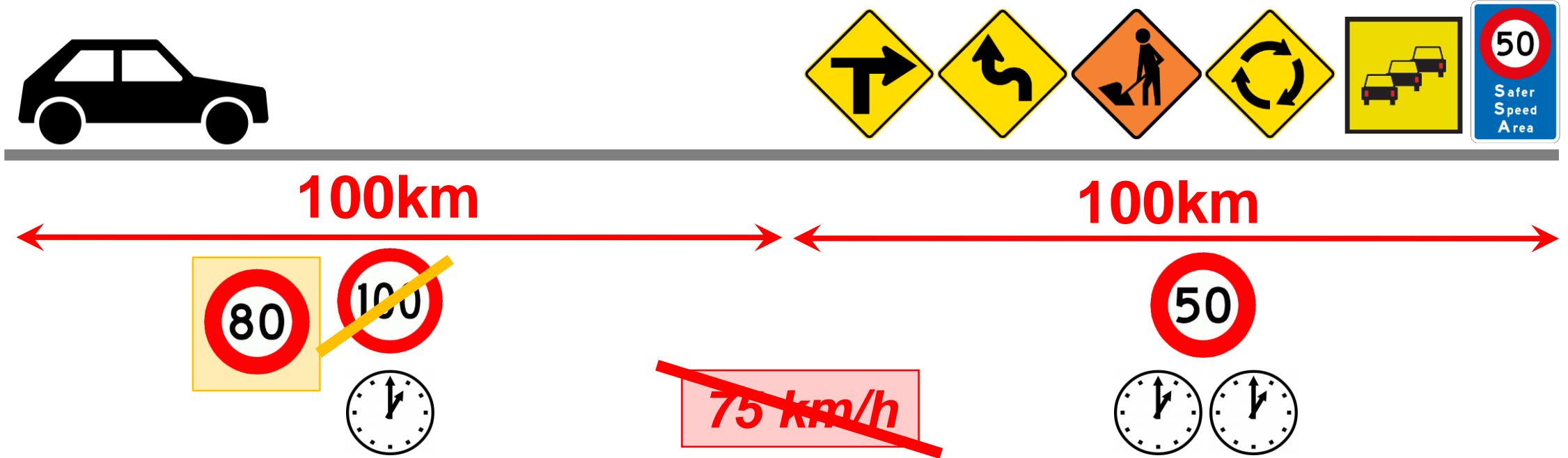
How does speed affect travel time?

1. Overall travel time is based on **average** speed
2. Average speed is weighted by **time**, not distance
3. You can't usually travel **all** of the time at maximum speed
 - Due to other traffic, intersections, curves, incidents, etc
4. The **slower** sections of travel will be weighted more
 - Changing the maximum speed will have **less** effect overall



Travel time savings/gains are over-estimated

- What's the average speed?

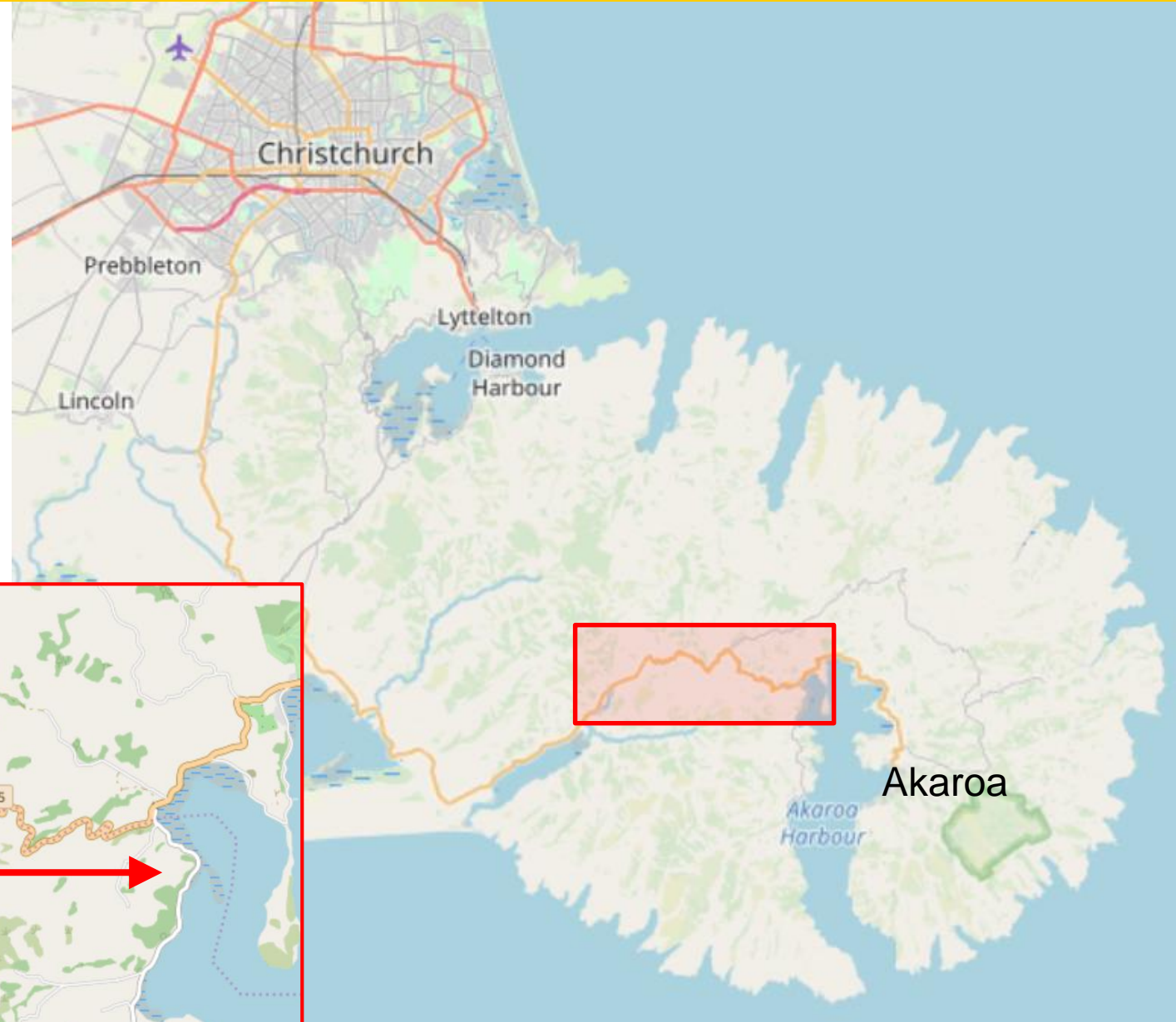


Total: 200 km over 3:00 hrs = ~~66.7~~ km/h average speed

3:15 hrs = 61.6 km/h (8.3% more time)

Example: Akaroa SH75 Hilltop section

- Steep, winding summit
- ~16km section



Example: Akaroa SH75 Hilltop section

- Calculated Travel Speeds:

- Travel Times:

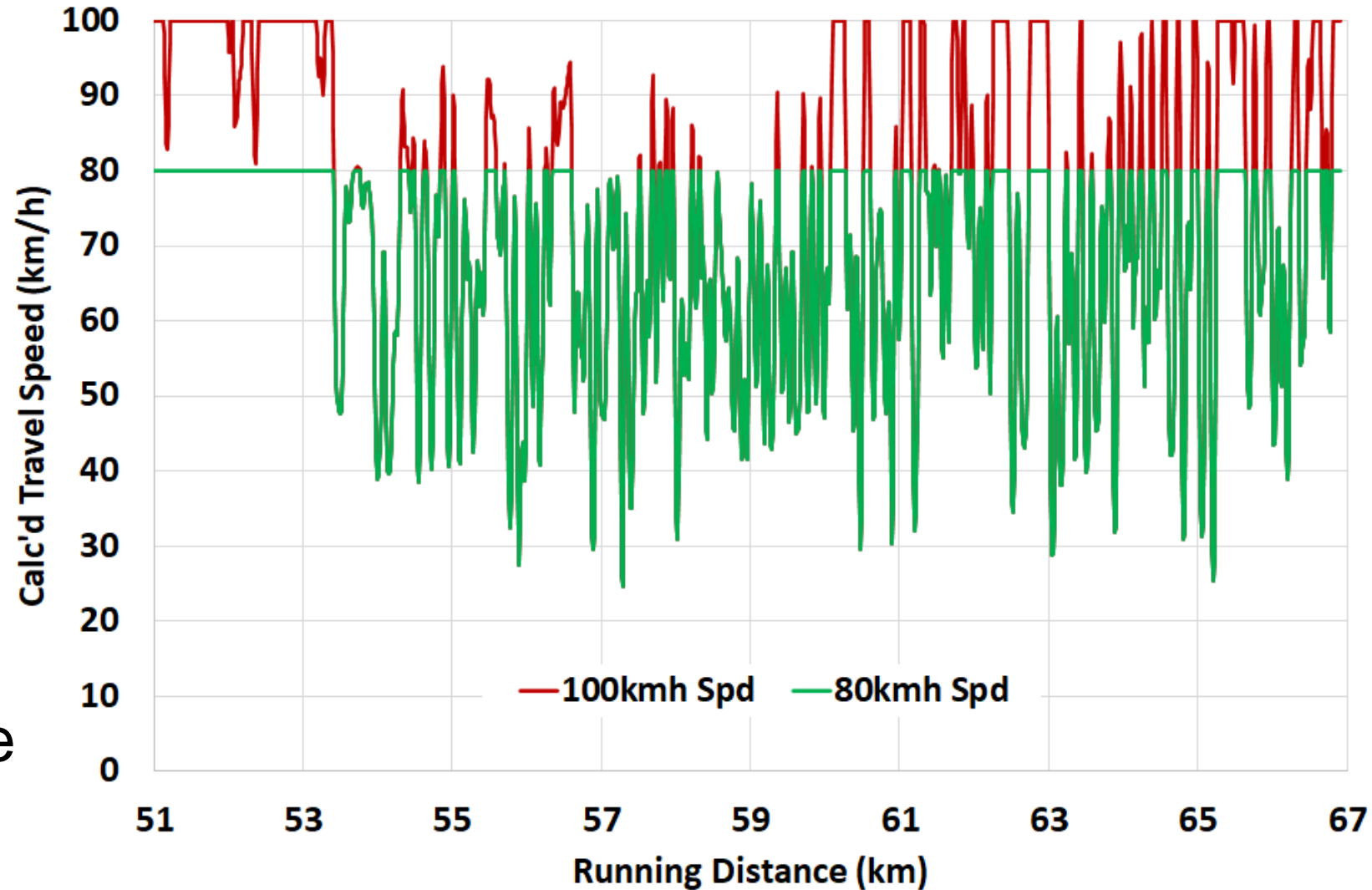
- @ 100kmh: 860s

- @ 80kmh: 905s

= **5.3%** difference

- Assumes no traffic

- Even less difference



Are we even asking the right question??

Are travel times the only “efficiency” benefits?

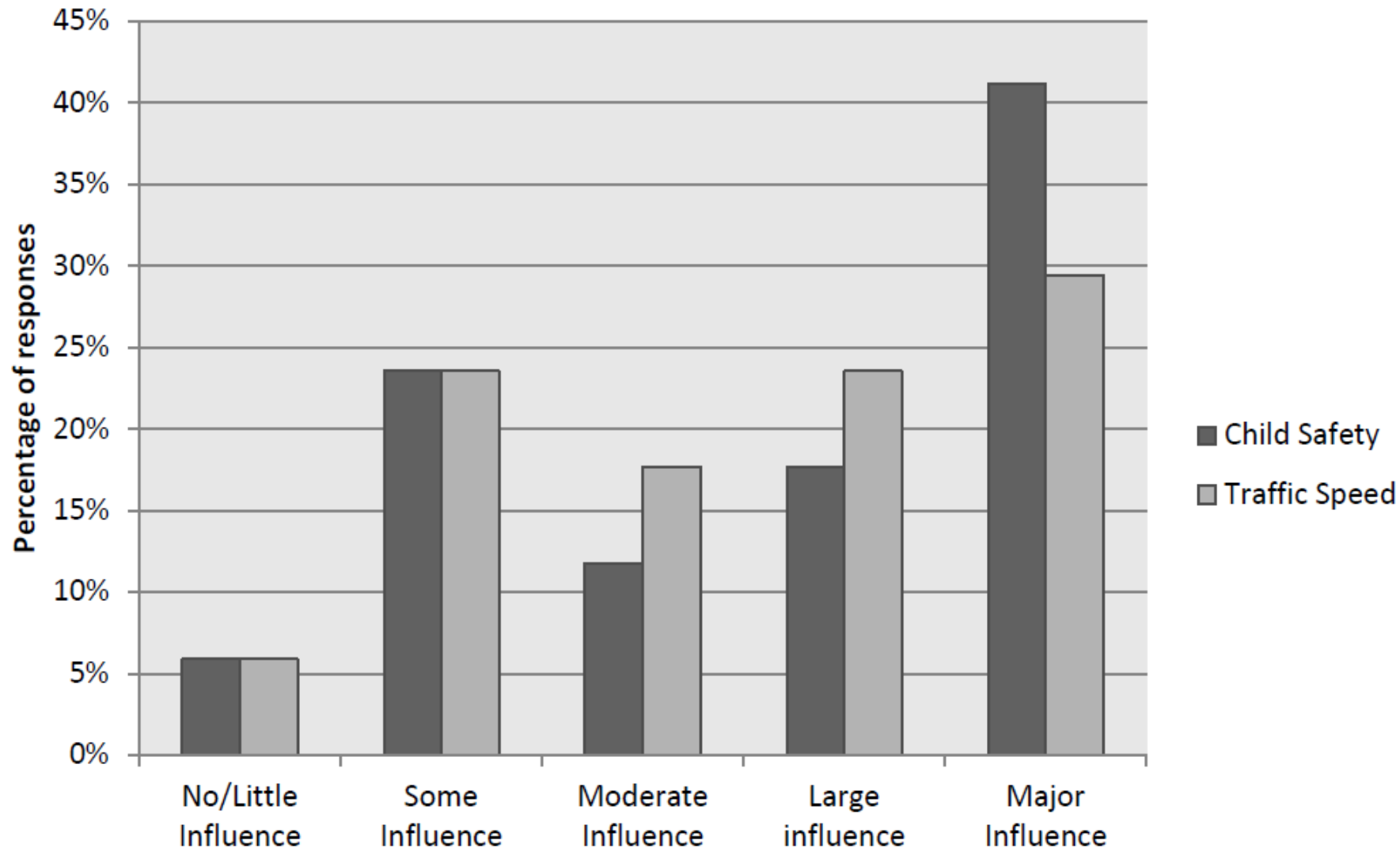
There are numerous other reasons for lowering speed:

- Road safety savings to society
- Encouraging active modes
- Health/environmental benefits
- Amenity to local residents
- Economic benefits to local businesses
- Etc...



Likelihood to walk or other active modes

Influence of traffic speed on a resident's decision to allow their child to walk:



— *Trumper (2013)*

Noise effects...

- Freiburg, Germany
 - *Lärmschutz* = noise prevention
 - Also reduced speeds on some motorways



Climate Change effects...

- Netherlands open road speed limit
 - Reduced from 130km/h to 100km/h
 - Daytime only (between 6am-7pm)
 - Would otherwise breach EU law on nitrogen oxide emissions



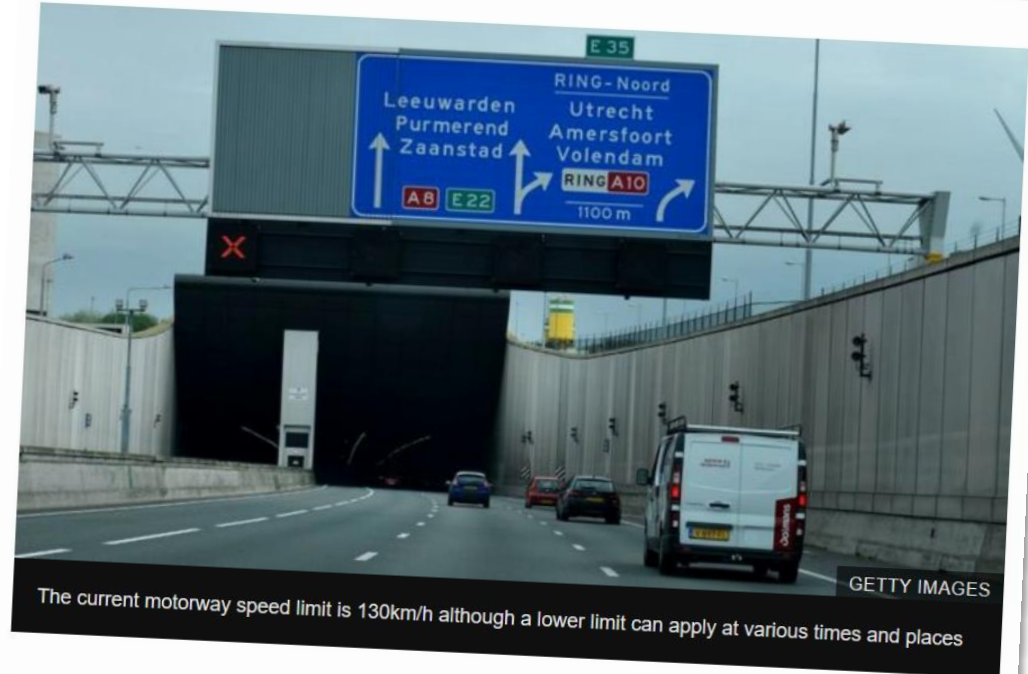
I'm incredibly disappointed, it's terrible. But otherwise people would have lost their jobs by Christmas. And I would not have been able to look at myself in the mirror

Mark Rutte

Dutch prime minister

Netherlands forced to slash speed limit to reduce emissions

13 November 2019



The current motorway speed limit is 130km/h although a lower limit can apply at various times and places

The daytime speed limit on Dutch roads is to be cut to 100km/h (62mph) in a bid to tackle a nitrogen oxide pollution crisis, according to cabinet sources widely quoted by Dutch media.

Prime Minister Mark Rutte said it was a "rotten measure" but necessary. The existing limit of up to 130km/h will still be permitted at night.

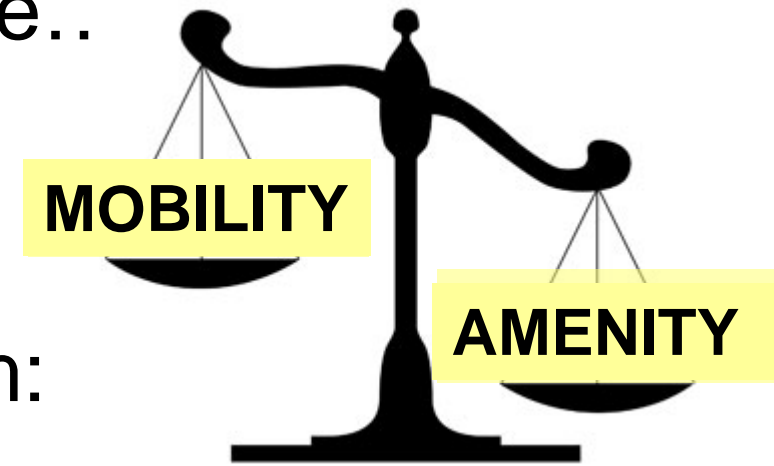
The new limit is set to come in next year along with several other measures.

Ministers have been grappling with ways of responding to the emissions problem.

"No-one likes this," Mr Rutte told a news conference. "But there's really something bigger at stake. We have to stop the Netherlands from coming to a halt and jobs being lost unnecessarily."

Summary: “Will lowering speed limits greatly increase Travel Times?”

- **Maybe a little**, but most traffic delay is due..
 - Other **traffic** (local towns, intersections)
 - **Site** restrictions (curves, roadworks)
- You will gain more economic benefits from:
 - **Safety** benefits of reduced speeds
 - **Health** benefits of encouraging more active trpt, less noise, etc
 - **Retail** benefits from encouraging passing trade
 - **Property Value** benefits due to more liveability



*Trading a little less mobility for vastly improved **amenity***

THANK YOU!



glen@viastrada.nz

 @GKoorey