



Does speed greatly affect travel time?

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2020 Transportation Conference

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Titles with questions...

Betteridge's law of headlines:

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




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How does speed affect travel time?

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



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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)

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Example: Akaroa SH75 Hilltop section

- Steep, winding summit
- ~16km section

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Example: Akaroa SH75 Hilltop section

- Calculated Travel Speeds:
- Travel Times:
 - @100kmh: 860s
 - @80kmh: 905s
 = 5.3% difference
- Assumes no traffic
 - Even less difference

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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...

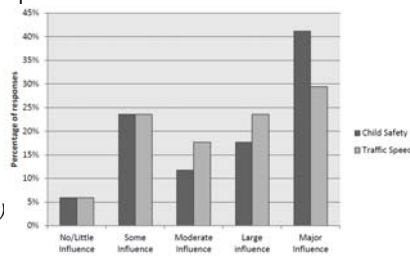


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Likelihood to walk or other active modes

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



Influence Level	Child Safety (%)	Traffic Speed (%)
No/Little Influence	~5%	~5%
Some Influence	~25%	~25%
Moderate Influence	~15%	~18%
Large Influence	~18%	~25%
Major Influence	~42%	~30%

— Trumper (2013)

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Noise effects...

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






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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



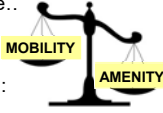
“I'm incredibly disappointed, it's terrible. But otherwise people would have lost their jobs by Christmas. And I would not have been able to look at myself in the mirror”

Mark Rutte
Dutch prime minister

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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***

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THANK YOU!



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