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Vehicle Emissions and the Development of Transport Policy

The Auckland Regional Land Transport Strategy

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background

- Auckland Regional Land Transport Strategy (ARLTS)
  - reviewed 1996 to1998 -> draft
  - final 1999

- Auckland transport study (1996 - 1998):
  - provided technical input into ARLTS
  - used Auckland Regional Transport (ART) and Auckland Strategic Planning (ASP) models:
    - designed for developing regional policy
    - horizon year 2021
  - considered packages of projects (scenarios)
  - coordinated with development of Auckland Regional Growth Strategy

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the Auckland transport study process

extreme ‘cartoon’ scenarios:

roading, PT, congestion pricing

↓

revised scenarios

↓

final scenarios

↓

recommended network

↓

draft ARLTS

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performance indicators

➔ based on goal & objectives of the ARLTS

➔ not weighted or ranked

ARLTS objectives	Indicators
accessibility	travel speeds, costs; access to employment
efficiency / cost	costs & benefit / cost ratios
safety	annual injury accidents
environmental	community effects fuel use & vehicle emissions

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emissions estimates

- emissions estimated using the ARC emissions factors and outputs from the regional transport model
- factors included assumptions on future technology improvements
- higher level analysis: region and sector, not route or intersection
- primarily concerned with relativities between transport scenarios

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cartoon scenarios

- ➔ three cartoon scenarios:
  - roading investment only
  - passenger transport investment only
  - marginal congestion pricing (MCP) only
- ➔ not realistic possible alternatives
- ➔ designed to show range of impacts

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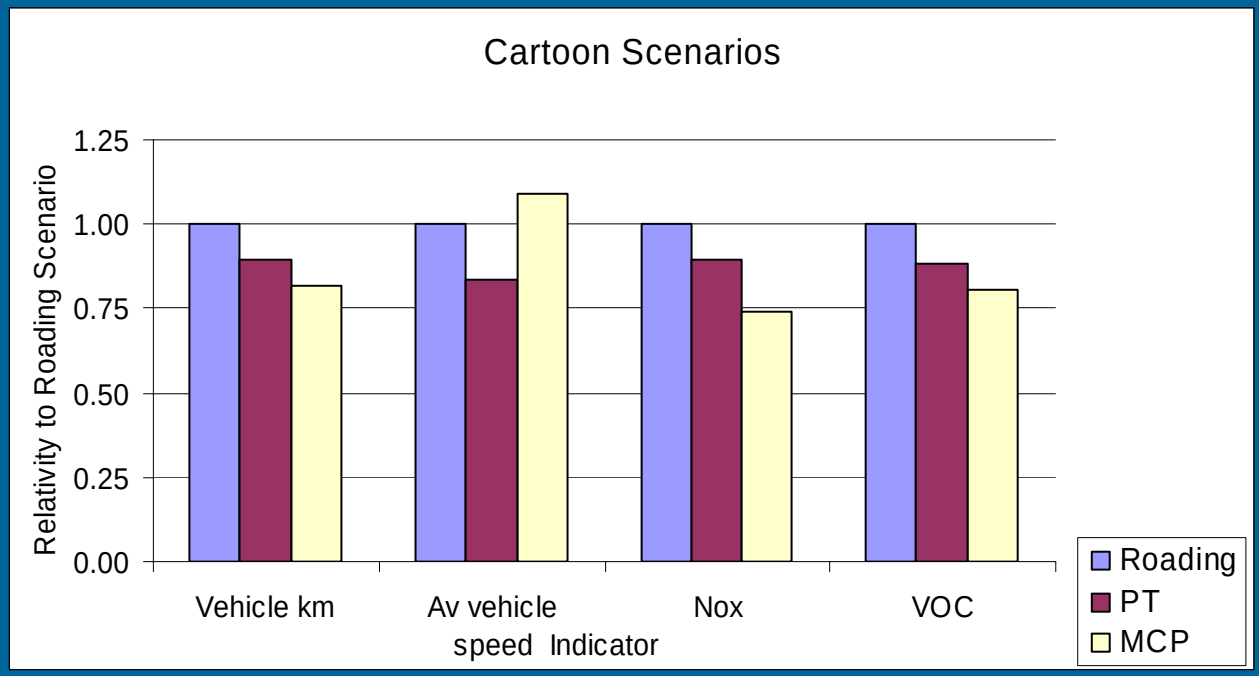
cartoon scenarios



➔ definite order with respect to emissions:

MCP ⟶ PT ⟶ roading

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revised scenarios

- four variations of transport network
- differing emphases on PT and roading investment
- with and without marginal congestion pricing, except PT emphasis only with

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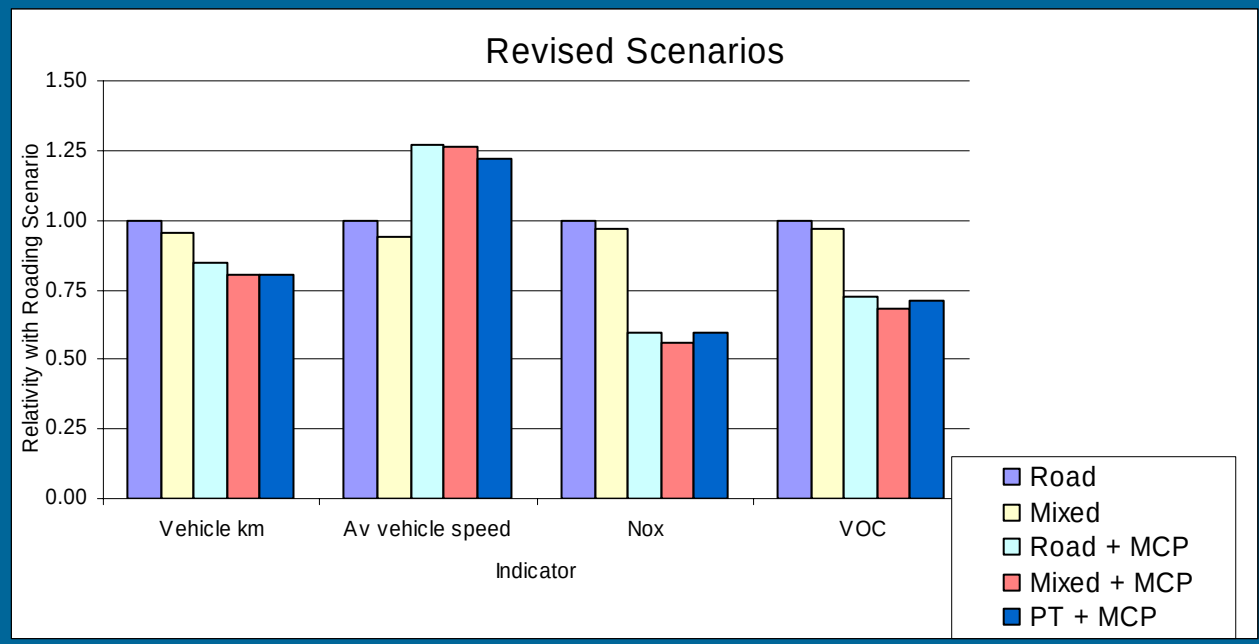
revised scenarios



➔ without road pricing the emissions are similar, applying pricing gave substantial reductions

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final scenarios

- ➔ modifications of the revised scenarios
- ➔ based around combining different levels of PT and roading investment:
  - a middle level of both PT and roading
  - a higher level of roading and a lower level of PT
  - higher level of PT and a lower level of roading
- ➔ possible alternative transport futures
- ➔ all but do minimum modelled without and with a tolling system

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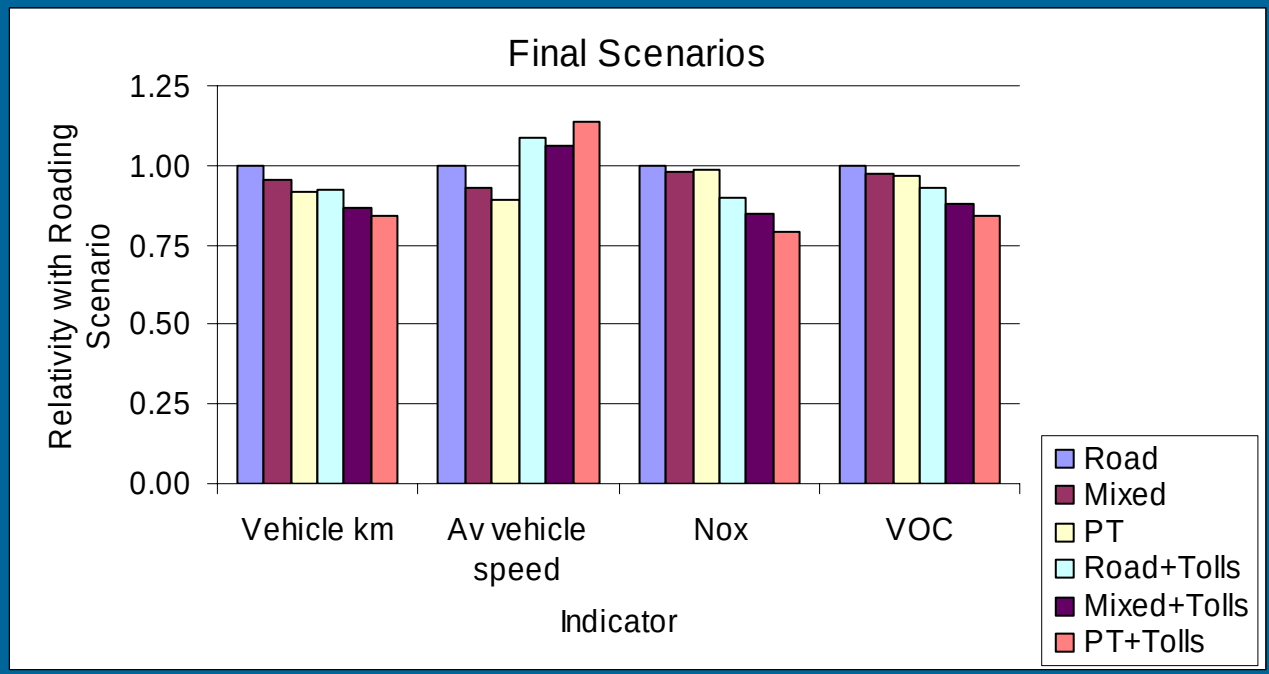
final scenarios



➔ tolls have more effect on vehicle emissions than the differences in infrastructure

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recommended network & ARLTS policies

- ➔ developed following the analysis of the final scenarios
- ➔ based on the middle level of road and PT investment
- ➔ pricing can be effective in achieving all objectives, but many issues to be resolved
  - part of the longer term strategy
- ➔ input into specific corridor policies in ARLTS related to future transport investment

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conclusions with respect to vehicle emissions

Vehicle emissions at a regional level vary between transport scenarios when:

➔ the differences in the transport networks are extreme (unrealistic)

or

➔ a pricing regime is applied which has a significant effect on travel behaviour