

# Performance Based Standards - New Zealand

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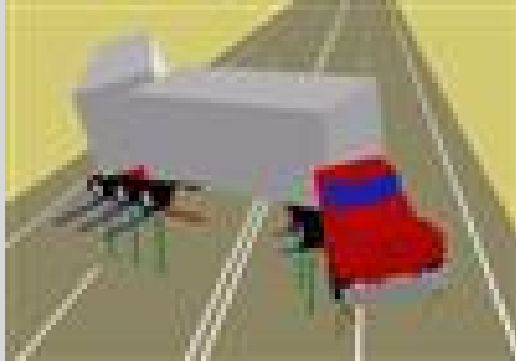
*for IRTENZ  
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# Content

- **Context**
  - mainly performance associated with vehicle size and weight
- **“History”**
- **Performance..... what**
- **A “Strategic Toolbox”**
  - (Ministry perspective much broader than size and weight)

## Performance Based Standards: specifying required outcomes rather than the system requirements to achieve that outcome



## Key Points

- Suspect “PBS” has been widely misunderstood in the “road / freight / vehicle” transport engineering area
  - as a means to an end
- Respect its usefulness as a powerful tool but understand its:
  - application
  - risks (as a stand alone system)
  - contribution as a regulatory management tool



## History

- since 1950's: prescriptive size and weight regime
  - “crudely but effectively” managed vehicle handling characteristics (road fit and stability)
- circa early 90s
  - UMTRI et al identified vehicle behavioural characteristics deemed useful to managing on-road safety performance
  - f(dimensions, weight, axle config, suspension)
  - Mathematical/computer modelling of vehicle handling characteristics (SRT, RA, DLTR, LSO, HSO, YDR)

# History

- mid to late 90s
  - increased awareness of the classical vehicle safety performance suite
  - early literature debating the name and the differences between measures, standards levels
  - identified as “alternative regime” to vehicle size and mass prescriptive regulation
  - watching brief on NTC (formerly NRTC) progress

# History

- **More recently**
  - **VDM 2002 Rule: (SRT, OD swept path templates)**
    - **Red draft PBS proposal not well supported**
    - **confirmed prescriptive limits as “defacto PBS limits” (change to rear overhang etc)**
  - **Load security**
  - **HV Braking**
  - **Noise (ONT)**
- **Similar philosophical approach in other areas**
  - **Driver licensing: eyesight test, driving competency**
  - **Occupancy protection (Frontal Impact and ANCAP)**
  - **ORS: f(CoF; roadside defects; Infringements; crashes)**



## Observations: Performance Measures/Indicators

- “Blurry boundaries” between Perf Indicator vs Perf Measure. Outcomes vs outputs; symptom vs problem. Debatable whether they are critical to manage the operation of vehicle although regardless they may be equally useful to achieving outcomes
- Performance indicators/measures used in many areas at many levels
- Respect its usefulness as a powerful tool but understand its:
  - application
  - risks (as a stand alone system)
  - contribution as a regulatory management tool
- Can ultimately be controlled by “prescriptive limits”

## Observations: Performance Measures

- Risks of relying on PBS
  - Large amount of development outstanding
  - Costs and practicalities associated with validation of modelling
  - Living and evolving standards as technology improves
  - Establishing link to adverse risk (eg SRT and rollover crashes)
  - Challenge to develop robust “universal language” across the factors. This may not be necessary but it would help in obtaining a balance/trade-off

# New Zealand Transport Strategy

- Economic development
  - Health
  - Safety & Security
  - Environment
  - Access & Services
- 
- Must take a balanced approach otherwise risk net perverse outcomes
  - Trade-offs: inter and intra

## The complex equation: a few hypothetical starters

freight (t.km) = f  
task

crashes .....

time .....

CO<sub>2</sub> .....

No<sub>x</sub> .....

dBa .....

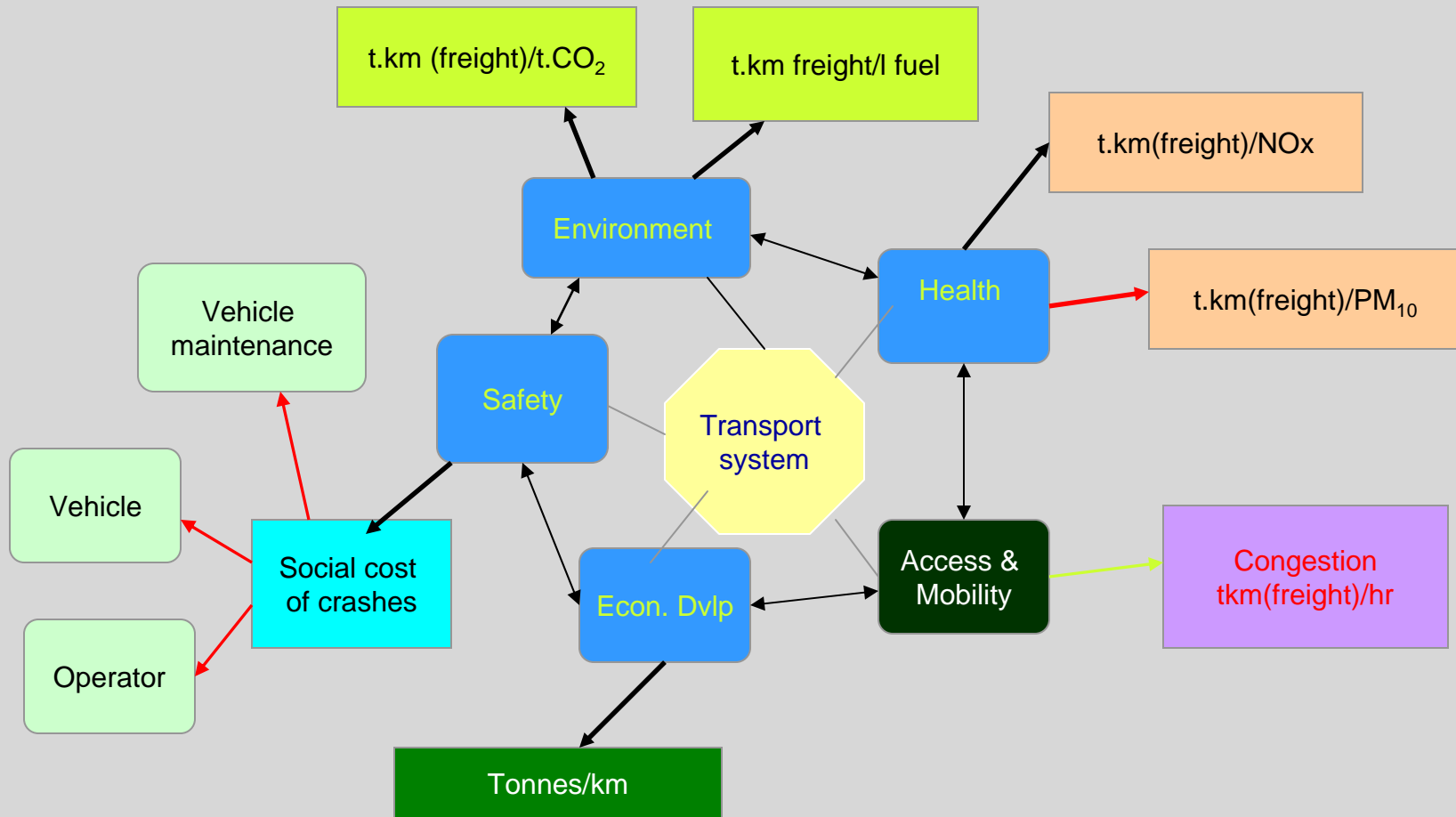
Hz

waste (scrappage).....

litres fuel .....

\$ pavement maintenance .....

# Hypothetical model



## Ministry of Transport Work

- No decision or agreement yet reached on indicators but work underway to use indicators as one basis for measuring the progress of the sector towards achieving the NZTS vision
- Working with agencies to develop transport indicators
  - Develop an integrated monitoring framework
    - Hierarchy of cross-modal useful, understandable, measurable indicators
- Review of transport related indicators developed and used by other departments, local government and overseas

## Conclusion

- **PBS “Alive and well”**
  - Not in the strictest sense
  - The Ministry is not investigating or developing any specific PB standards, however it is developing indicators.
  - Ministry indicators are for tracking progress rather than for setting in service criteria
- Performance measures is a tool that can be used in many different ways (design, tracking, a regulatory framework); at many different levels.
- A lack of a “PBS” regulatory framework is not an inhibition to progress, rather a PBS regime could hinder progress





