MVR and VFEM

July 2017 | Iain McGlinchy
The Motor Vehicle Register (MVR) records information about all vehicles used on New Zealand roads and the persons responsible for their use.

Reliable data goes back to 2000, but some data goes back much further.

Fleet data is archived so can get records of what the fleet looked like in past years.

Few countries have access to this level of data about their own fleets.

Some MVR data has recently been made publicly available through "New Zealand vehicle fleet open data sets" now online at http://www.nzta.govt.nz/resources/new-zeland-motor-vehicle-register-statistics/new-zeland-vehicle-fleet-open-data-sets/
140 individual fields recorded but 'interesting' ones are:

- VEHICLE_MAKE
- VEHICLE_MODEL
- VEHICLE_SUB_MODEL
- MOTIVE_POWER
- BODY_TYPE
- CAB_TYPE
- CC_RATING
- NUMBER_OF_AXLES
- TARE
- GROSS_VEHICLE_MASS
- TRANSMISSION_TYPE
- VEHICLE_YEAR
- YEAR_FIRST_REGISTERED
- FIRST_NZ_REGISTRATION_DATE
- ORIGINAL_COUNTRY
- TEST_REGIME
- FC_EXTRA_URBAN
- FC_URBAN
- IMPORT_STATUS
- ODOMETER (as at last WOF/COF)
The MVR is the raw data for Ministry of Transport’s various vehicle fleet statistics

- Monthly vehicle registrations
- Quarterly vehicle fleet statistics
- Annual vehicle fleet statistics
Acronym: MVR
Full name: Motor Vehicle register
Owner/s or Funder/s: NZ Transport Agency
Contact for access: www.NZTA.govt.nz
Brief description: Database of all registered vehicles in NZ
Years covered: 2000 onwards (Some data goes back much further)
Applicability: Used for government policy as well as enforcement and other tasks
Gaps/limitations:
• Some individual data is incorrect and hard to correct
• Privacy concerns limit access to some data
VFEM – Vehicle Fleet Emissions Model

- VFEM is a traffic situation model in which twelve traffic situations are defined based on four road types (central urban, suburban, motorway and rural) and three levels of service (congested traffic, interrupted flow and free flow).

- Originally developed in the late 1990s by an external consultant but extensively revised and updated by MOT since 2010.

- The emission rates from the original VFEM were also packaged in a program called “NZ-TER” (Transport emissions rate). In the absence of any other publicly available data, NZ-TER was widely deployed by NZ users until the late 2000s in a range of transport modelling situations.

- There are three sub-models in the VFEM: a fleet model, a traffic activity model and an emission factor model.
VFEM – Vehicle Fleet Emissions Model

• MOT has worked to update the fleet and traffic parts of the VFEM and these sub-models are now generally considered to be acceptable.

• Since deployment of VEPM (developed separately by then ARC) VFEM is now only used by Ministry of Transport to project CO$_2$ emissions.
  - Factors and calculations for harmful emissions have not been updated since early 2000s.

• The fleet data (both historic and future) from VFEM is provided to VEPM.
Summary

Acronym: VFEM
Full name: Vehicle Fleet Emissions Model
Owner/s or Funder/s: Ministry of Transport
Contact for access: Not publicly available
Brief description: Traffic situation model based on four traffic types: urban roads, rural roads, and motorways and three traffic speeds. Now only used for calculating CO$_2$ and fuel consumption
Years covered: 2001-2030 (actual fleet data used up to 2016)
Applicability: Used for government CO$_2$ emissions modelling and energy forecasting
Gaps/limitations:
• Under reports diesel fuel use for heavy vehicles due to difficulty in modelling freight volumes
• Predictions for rates of vehicle scrappage known to be wrong
For further details see www.transport.govt.nz

Thank you