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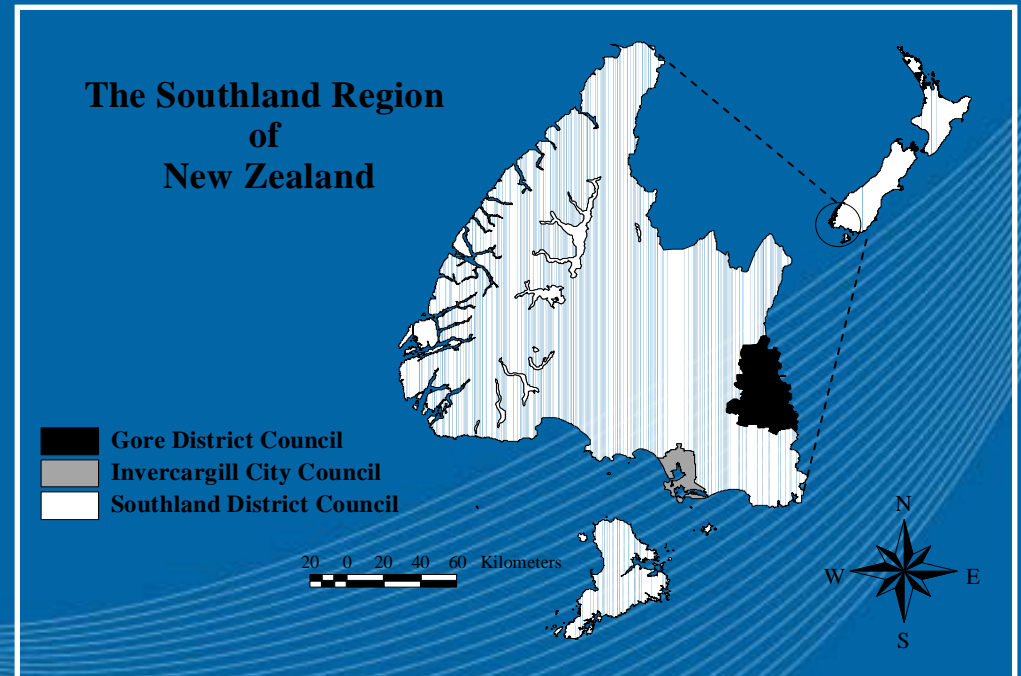
Effects Based Transport Costs – Differential Rating Explained

Les Dowdle

Steve Abley

Background

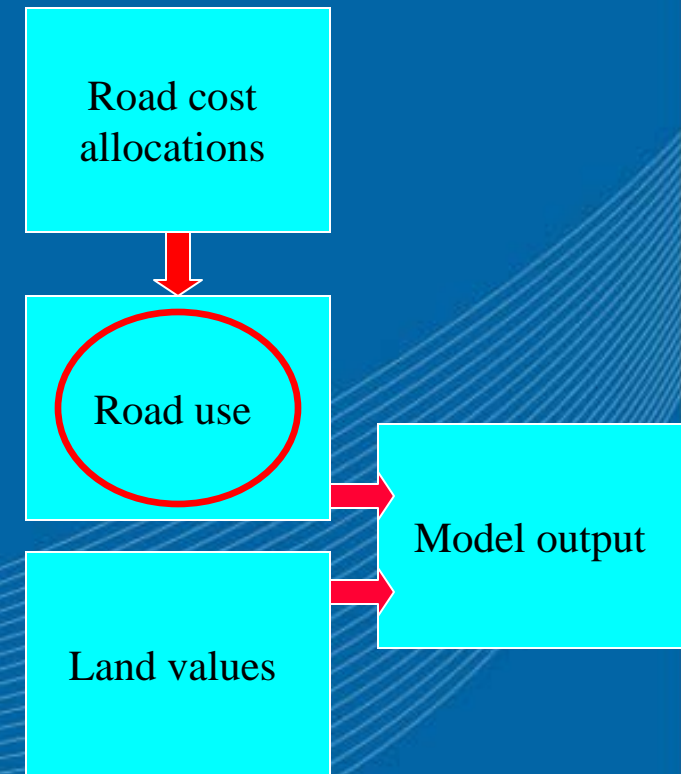
- TLAs have the power to target rates against land uses
- In 2004, targeted rating model developed for SDC
- Six land use sectors evaluated in the original model : dairy, forestry, farming (non-dairy), industrial, commercial and residential



Targeted rating model

- Model found to be technically sound and credible, however road-use data specific to Southland is relatively scarce
- Outputs of the model sensitive to input data
- Investigate the quality of input data and its relevance to Southland conditions
- Refinement only focused on trip length and trip generation
- Overriding multiplier adjustment factor for forestry and dairying

Simplified model structure





Analysis

Original Model	Revised Model	Examples
Dairy	Dairy	
Pastoral Farming	Pastoral Farming	
Forestry	Forestry	
Industrial - all	Industrial - High	Service industrial, warehousing
	Industrial - Low	Heavy manufacturing, light manufacturing, noxious/dangerous industrial use, other
	Industrial - Ultra Low	Freezing works
	Mining - High	Rock
	Mining - Low	Coal, lignite, Other
Commercial - all	Commercial - High	Cinemas, theatres, public halls, liquor store, taverns, retail shops, petrol stations
	Commercial - Low	Hotels, motels, rest homes, car yards, offices, tourist attractions
Residential	Residential	
	Lifestyle	
	Other	Sports fields, churches, libraries





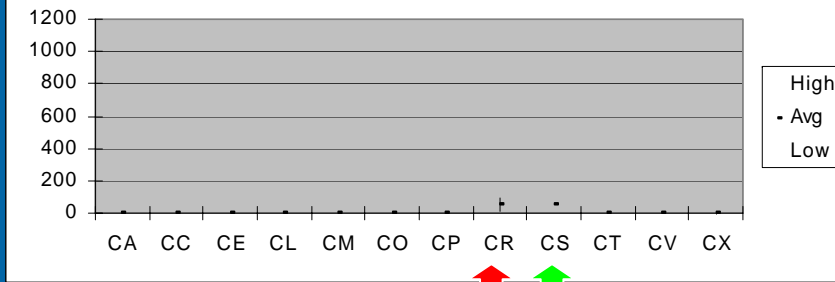
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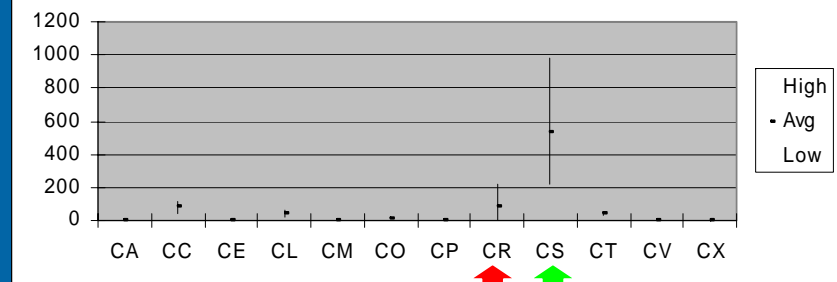
steve abley
chartered transportation engineering

Southland data vs. NZTPDB

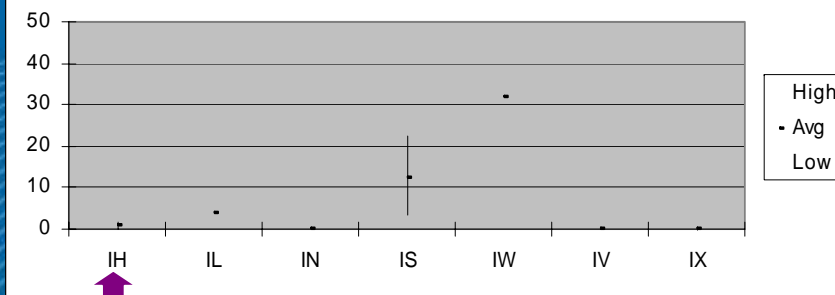
Southland Commercial Data



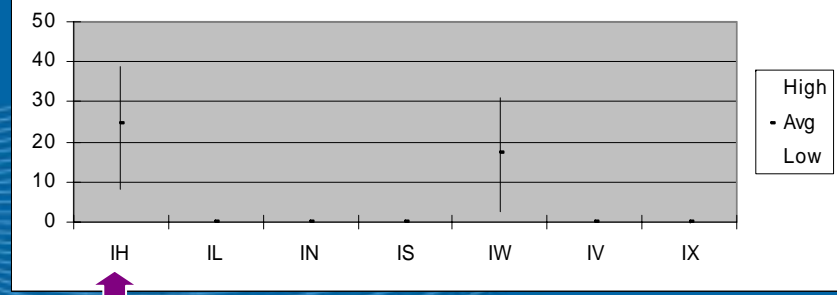
NZTPDB Commercial Data



Southland Industrial Data



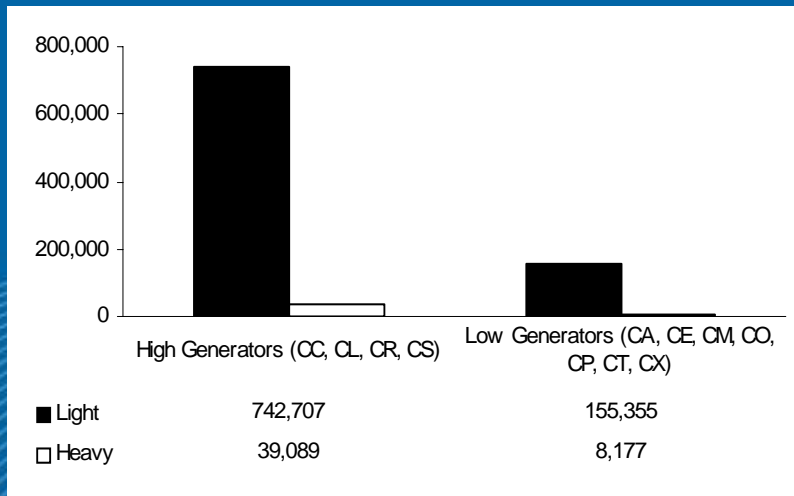
NZTPDB Industrial Data



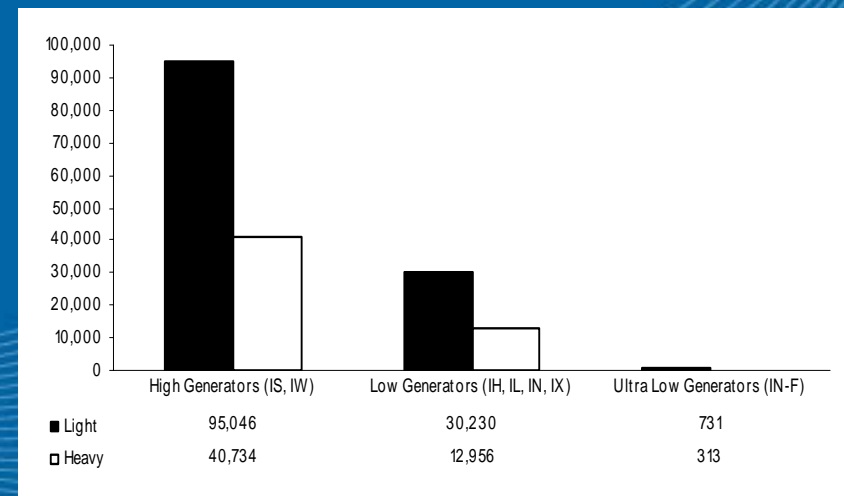


Results

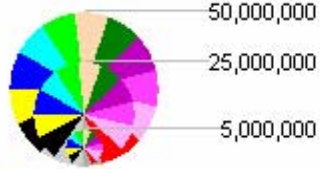
Total annual commercial trips per hectare as per high and low generators and type of vehicle



Total annual industrial trips per hectare as per high, low and ultra low generators and type of vehicle

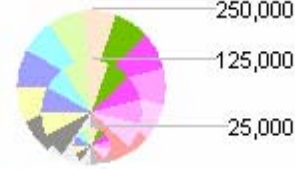


Southland District
Vehicle trips per year



- Commercial - High
- Commercial - Low
- Dairy farming
- Exotic Forestry
- Farming (Non dairy)
- Industrial - High
- Industrial - Low
- Industrial - Ultra Low
- Lifestyle
- Mining - High
- Mining - Low
- Other
- Residential

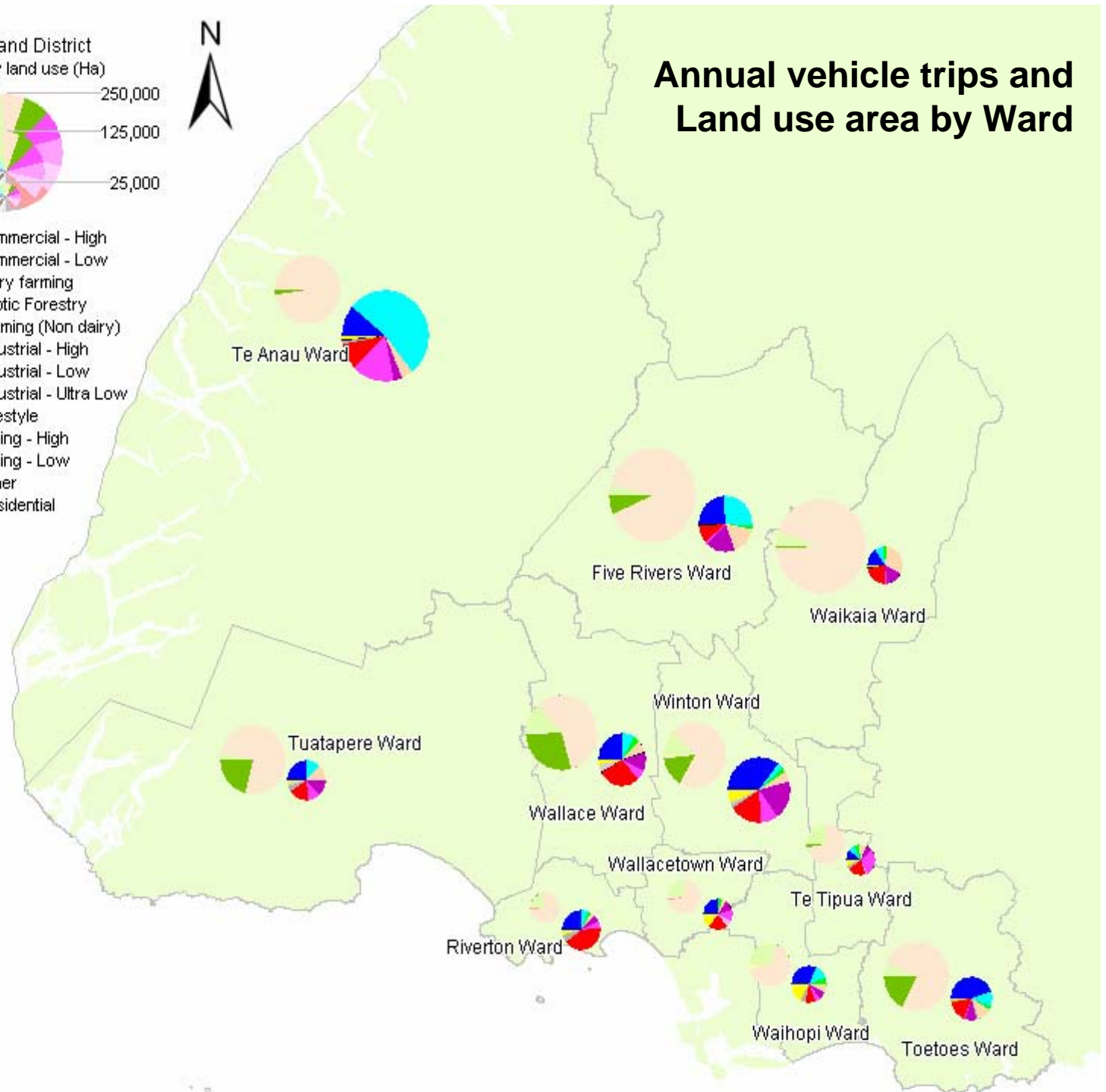
Southland District
Area by land use (Ha)



- Commercial - High
- Commercial - Low
- Dairy farming
- Exotic Forestry
- Farming (Non dairy)
- Industrial - High
- Industrial - Low
- Industrial - Ultra Low
- Lifestyle
- Mining - High
- Mining - Low
- Other
- Residential



Annual vehicle trips and Land use area by Ward

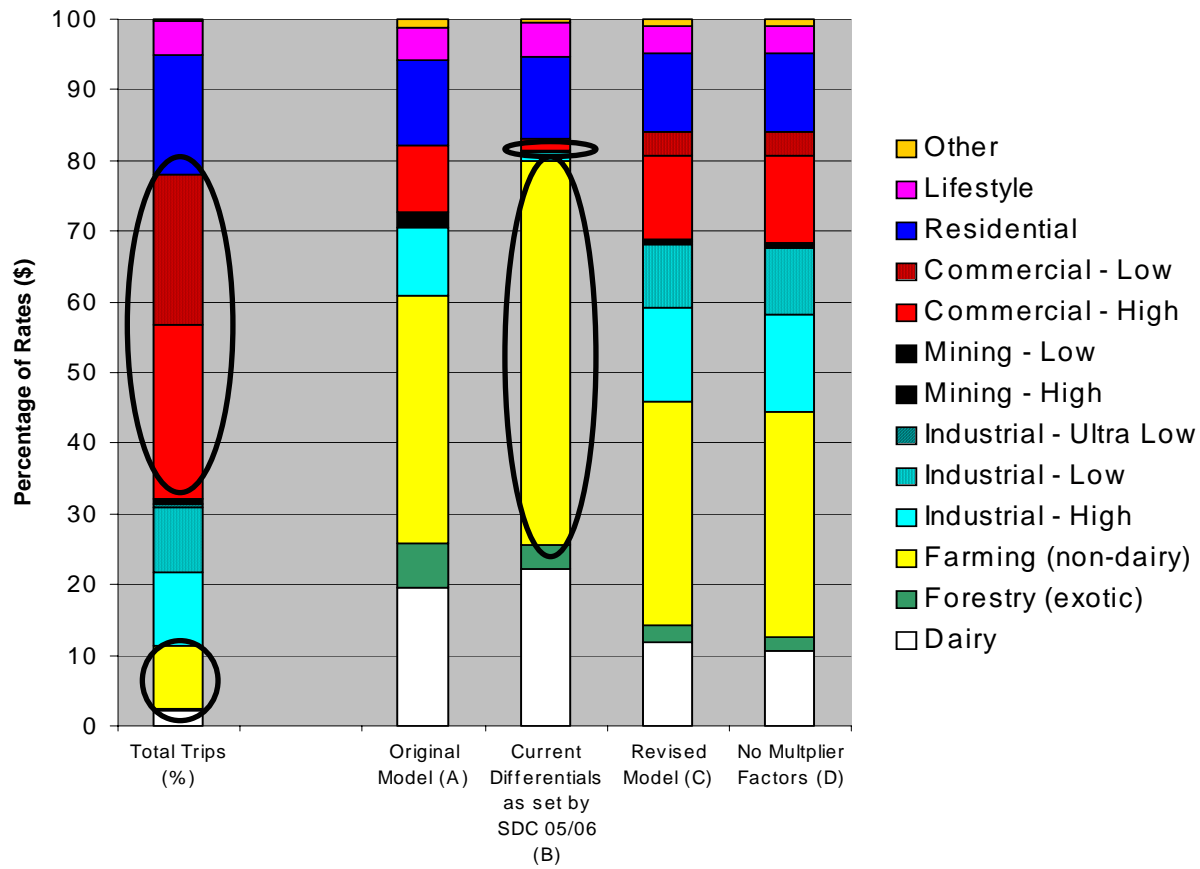




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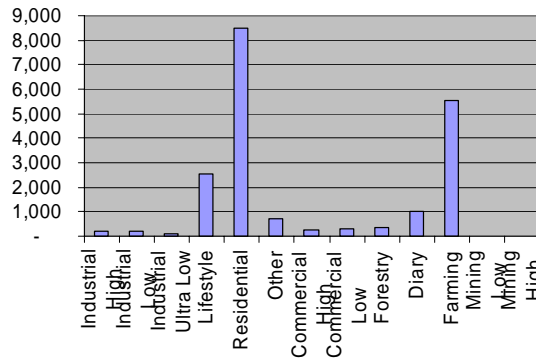


steve abley
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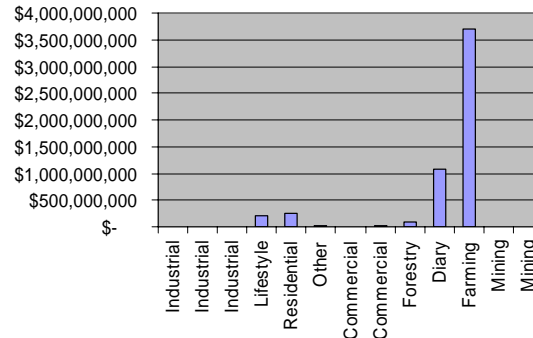




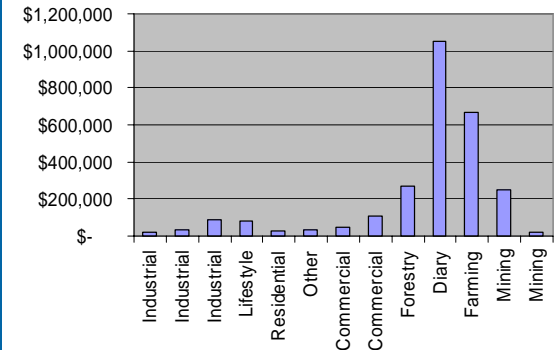
of Assessments



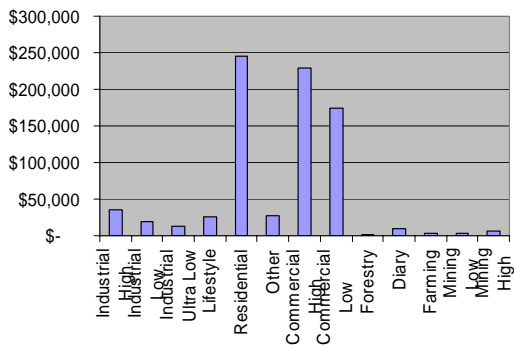
Sum Land Value



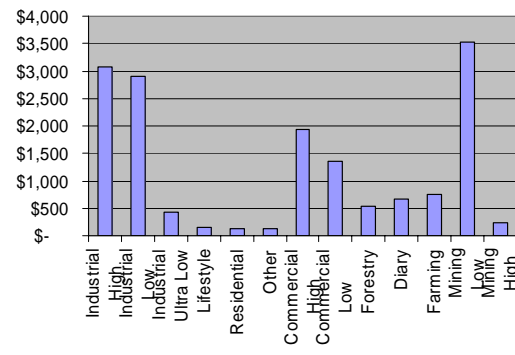
Average Land Value



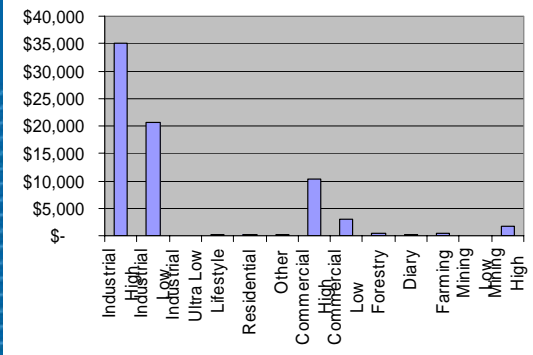
Average Land Value per Ha



Average rates per assessment



\$250,000





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Effects Based Transport Costs ?



An example...

- Industrial High should be allocated 9.9% of total roading cost
- Total allocated roading cost for Industrial High is \$681,006
- This is \$22,110 uniform annual charge and \$658,896 targeted
- The average Industrial High Roding Rate charge is \$3,388
- The average land value for Industrial High is \$21,167 per unit
- The average land value for Industrial High is \$36,055 per Ha
- One assessment has a land value of \$390,000 so pays \$54,540
- 80 Town Centre, Te Anau is only 1,938m²
- This equals \$2,012,384 per Ha
- Equivalence should be 56Ha or valued at about \$7k



Conclusions...

- Overall approach is impartial
- Original methodology is very good
- GHD/Steve Abley have made methodology better, but...
- Land values change with market fluctuations
- Land values do not care about transport effects
- Application against land values has some problems

Where to...

- Potential roll out to other local authorities
- Better final application variable or good sensitivity tests

