Acronyms and modelling in Greater Christchurch

MoT Knowledge Hub, 23rd May 2019
Outline

• A few acronyms
• An analytical framework
• Inputs
• Requirements
• Some disclaimers
Acronyms

• WDC, SDC, CCC, ECan: Waimakariri District Council, Selwyn District Council and Christchurch City Councils, Environment Canterbury (Regional Council)
• GCP, MMG, LUMMG: Greater Christchurch Partnership, Transport Model Management Group, Land Use Monitoring and Modelling Group
• CTM, CAST, SATURN, LUTI: Christchurch Transportation Model, Christchurch Assignment and Simulation Traffic Model, Simulation and Assignment of Traffic to Urban Road Networks, Land Use and Transport Interaction models
The black box
Analytic framework

Regional Model (CTM)
- Land-uses
- Network Description
- PT Description
- Coarse Zone Structure

CTM Christchurch

Coarse Network Operation

Refined Network & Intersection Operation Info.
- Refined Travel Demands

Refined Network & Intersection Operation Info.
- Detailed Network Description
- Micro-Simulation Models or Intersection Models

Detailed Network and Intersection Operation Information

Micro-Simulation Models

Design Tool
- Micro-Simulation Models
- Intersection Models

Input

Model

Output

Key
Modelling process

- Travel Modes include:
  - Private Vehicle Trips
  - PT (Bus) Person Trips
  - Freight (HCV) trips
  - Indicative Bicycle demands

Steps:

1. Step 1: How many?
2. Step 2: How?
3. Step 3: Where?
4. Step 4: Which way?

Feedback Loop

Inputs:

- Demographic inputs
- Network inputs
- Econometric inputs
- Calibrated base model parameters
Challenges: timing

• 5 yearly census
  – ~1 year to process
  – ~1 year to put through transport model
  – 2013 models available in 2016
  – 2018 models available in...

• Forecast updates
Changing requirements

• Capturing the important stuff
  – Large changes to inputs
  – Model responses, all modes
  – Consistency of approach
  – Simplicity rather than false accuracy
Land use - StatsNZ

- Land use – transport interaction (LUTI)
Options
Still just a model!
How far can we predict?

Growth of Mobility in France
Distance Travelled per Day per Capita (Grubler, 1990)
Summary

• “Traditional” analytical tools
• Decision makers’ requirements changing
• Future uncertain, a range of desirable and also plausible futures
• Analytical tools just help
Questions?