

Passenger Transport Use and Urban Form in NZ

Stakeholder briefing

Kel Sanderson
17 August 2010

Passenger Transport Use and Urban Form

Agenda:

- Context
- Objectives
- Methodology
- Findings
- Application

Context for study

- In 2004 Kel Sanderson of BERL and Kevin Brewer of *architectBrewerDavidson* created scenarios to analyse impacts- wider economic benefits (now WEBs) of transformational transport projects
- Integrated urban developments
- Eastern Transport Corridor (Akl)



Example at Glen Innes / Panmure

Take a Road reserve
with separation

Create a Town
Centre

Changes behaviours

Lifts land values

Lifts rates \$s



Empirically observed range of regional behaviours

- Business behaviour - profile of industries, and land use, values
- Residents' location behaviour - urban form, density
- Work behaviour –participation rate
- Transport / services behaviour



Residents: sustainable behaviour

Suburbia



More dense Remuera



Dwellings/ha:	13	23
Travel to work:		
Active, PT, At home	8%	23%
Private vehicle	91%	77%

Business: employment density

Heavy industry East Tamaki



Commercial Remuera



Employment/ha: 50 people

177 people

GDP per hectare: \$3.9 million

\$12.4 million

Objectives of BERL component

- To find defensible relationships and coefficients of determinants of the use of PT in urban NZ
- Explore inter-relationships of importance in urban, spatial development and the economy
- Work with stakeholders to apply findings in transport and urban development



economics

www.berl.co.nz

Methodology

- Economic specification of 'models'
- Statistical analysis across urban areas; and test also for temporal changes in
 - * Demand for PT
 - * Supply characteristics of PT
 - * Land values
- Explore applications



The work reported on now

- Statistical analysis of whether PT uptake in 18 largest urban centres, (in 1,054 CAUs) in New Zealand:
 - * can be explained by socio-economic, and urban form variables in 2006;
 - * has changed 1996 to 2006 with socio-economic, urban form change
 - * Is linked to different socio-economic, urban form variables in different urban centres



Findings: PT uptake 2006

- Urban size plays a major role in PT use, urban density a smaller one
- PT and Active Modes (AM walking, cycling) are negatively related
- Access to motor vehicle reduces PT
- High personal incomes, high PT use
- High share of Asian ethnicity, high PT use



Variables in PT uptake 1996-06

- Little has changed in the variables related to PT uptake between 1996 and 2006.
- For 2006 the model has a more significant intercept (i.e. 'baseline' level of PT use). Implies another strong variable has entered since 1996, perhaps oil price.



Differences in PT uptake 2006

- Four centres: Auckland Wellington, Christchurch, New Plymouth
 - * Most relationships hold for 4 centres: vehicle access, incomes, active modes.
 - * Wellington has high PT use to a greater distance. Accessibility? Speed?
 - * Auckland urban density strong variable: residential +ve : employment -ve; In latter, Active Modes substitute for PT.
 - * New Plymouth results counter to others



Key Findings

- Socio-economic and urban form variables explain much of the uptake of PT in urban NZ
- There are strong links between PT uptake and Active Mode (AM) use
- There are contrary results for New Plymouth

Applications

- We can generate estimates of potential PT uptake by populations
 - * This can inform urban spatial and transport planning & scenarios
- We expect supply of / access to PT will explain more of actual uptake
 - * This would be able to inform PT provision/planning & scenarios
- Strong links between PT and AM
 - * Could inform walk/cycle planning, scen.



Stakeholder's emphasis?

- To be discussed in the Workshop Session after morning tea.
- E.g. Explore possible 'smaller city' effect in New Plymouth?
- Insights from 'Accessibility' mapping and Regional transport models?