One-way or the other?

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Masters Project - Motivation
“A decision making framework for assessing the merits of One-way and Two-way streets”

Research components
• Literature review
• Industry interviews
• Develop preliminary framework
• Test it on a Case Study - Dunedin
• Finalise the framework

Literature review findings

Efficiency
Accessibility

Safety
Placemaking

General Themes

Walkability
 e.g Pedestrian friendly environment due to lower speed

Placemaking

Economic climate
 e.g Better for business as more exposure in each direction

TWO WAY TRAFFIC

Walkability
 e.g Pedestrian friendly as easier to cross the street

TWO WAY TRAFFIC

Economic climate
 e.g Better for business as more volume of traffic passing by
**Placemaking - exposure**

**Industry interviews**
- 5 transport planners/engineers
- 5 planner/urban designers/architects

- "High volume one-way streets have a 'bad reputation' as they are generally of poor design" (Urban designer)
- "One-way streets better support the efficient operation of at-grade public transport exchanges due to the less complicated access and exit arrangements." (Transport planner)
- "Two-way streets create a noisier environment with lower air quality due to the stop/start nature of the traffic" (Transport planner)
- "One-way streets are noisier due to the speed and volume of the passing platoons." (Urban Designer)
- "Lower speeds create a sense of heightened activity" (Landscape Architect)

**Literature - Framework**
- Mostly from the US
- Some like this

**My framework**
- Multi-criteria analysis (MCA)
- Four groups (the themes) and 14 criteria
- Each criteria scored and then weighted

**Testing the framework**

- Crawford Street (16,000 vpd) Two lanes northbound
- Cumberland Street (25,000 vpd) Three lanes southbound
The workshop

- The options
  - Option 1 - One-way as per existing
  - Option 2 – One-way with streetscape improvements
  - Option 3 – Two-way with solid medians
  - Option 4 – Two-way with central angle parking

The scoring

- DCC and NZTA staff:
  - Transport Planners
  - Urban designer
  - Heritage planner
  - Traffic engineers

The results without cost

The results with Implementation $

Conclusions

- So, one-way or the other? – It depends!
- Requires consideration of a number of aspects, these were found to be related to four themes;
  - Safety
  - Efficiency
  - Accessibility
  - Placemaking

Conclusions

- US conversions were possible as there are expressways close to the central city.
- No clear link between the direction of traffic flow and improving investment……
- However a number of the advantages of two-way streets are recognised as ingredients that could contribute to creating a 'sense of place'.
Conclusions

• The assessment framework was tested on a local case study and found to be useful to participants for considering the options in a more focused manner.

Recommendations

• Test the framework on further conversion projects.
• Develop a method for also considering economic growth of the area.
• Need to understand better the preferences of pedestrians and emergency services.