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

<table>
<thead>
<tr>
<th>General Themes</th>
<th>Efficiency</th>
<th>Accessibility</th>
<th>Safety</th>
<th>Placemaking</th>
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</thead>
</table>

Walkability
- e.g. Pedestrian friendly environment due to lower speed
- Placemaking
- e.g. Pedestrian friendly as easier to cross the street
- Economic climate
- e.g. Better for business as more exposure in each direction
- Economic climate
- e.g. Better for business as more volume of traffic passing by
### 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

<table>
<thead>
<tr>
<th>Group</th>
<th>Criteria</th>
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<th>Criteria</th>
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<tbody>
<tr>
<td>Safety</td>
<td>Pedestrian safety</td>
<td>Accessibility</td>
<td>Network connectivity</td>
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<td></td>
<td>Cyclist safety</td>
<td>Property access</td>
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<td></td>
<td>Driver safety</td>
<td>Emergency services</td>
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<tr>
<td>Efficiency</td>
<td>Motor vehicle LOS</td>
<td>Economic growth</td>
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<td>Public transport or future PT</td>
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<td></td>
<td>Bicycle route directions</td>
<td>Supports other projects</td>
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<td>On-street parking</td>
<td>Pedestrian environment</td>
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<td>Wider transport network</td>
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### Testing the framework
- **Cumberland Street**
  - Two lanes northbound
- **Crawford Street (16,000 vpd)**
  - Three lanes southbound

- **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.