

# Cycle counting programme in Hamilton

## Why count cyclists?

### Policy Level

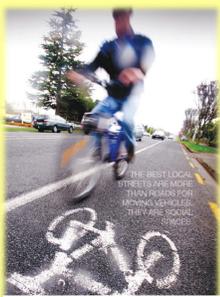
- Providing **transport choices** is an objective of the *Access Hamilton Strategy*:

*Investment in transport corridors looks across and beyond the city to protect and enable flexibility in travel options*

obvious

### Network / project level

- Network element **prioritisation**
- Project **appraisal**
- Inform **design** briefs



Access Hamilton Strategy

## Methods of monitoring cycling levels

### All methods

- National surveys
  - Census, Household Travel Survey
- Local surveys
  - School hands-up, bike shed counts
  - School travel surveys
  - Intercept surveys
- Traffic counts
  - Cordon
  - Screenline
  - **Sample of network sites**

### Counting methods

- Manual counts obtain:
  - Cyclist types
  - Turning volumes
  - Calibration data
- Automatic counts:
  - Larger samples
  - More economic
  - Permanent or short-term



## Programme development

### 1. Determine number of sites

- Population basis
- Network coverage basis
- Ensure a representative sample

Criteria	Hamilton
City population (2009)	141,504
City area (km <sup>2</sup> )	98
Approximate city dimensions (km)	8 x 12
City density (people/km <sup>2</sup> )	1222
Cycle network length (km)	71

### 2. Consider strategic site criteria

- Mix of geographic areas and features
- Mix of facility types
- Mix of cyclist types and trip purposes

Separated cycle path



Shared path underpass



Kerbside cycle lane



### 3. Select counting equipment

- Sensor type – in or above ground, capabilities
- Logger type – input channels, data link
- Site factors – pavement, traffic composition



Detection type	Installation / Duration	Cycle Detection				Pedestrian Detection
		Kerbside cycle lane	Cycle lane adjacent to parking	Mixed traffic	Off-road path	
Infrared	Above-ground	✗	✗	✗	✓	✓
Inductive loops	In-ground	✓	✓	✓	✓	✗
Piezo-electric cables	Short term or permanent	✗	✗	✗	✓	✗
Pneumatic tubes	Above-ground Short term or one-off	✓	✗	✗	✓	✗

### 4. Specify counting durations

- Automatic
  - Permanent – control sites to develop scaling factors
  - Short term – term dependent on flow; statistical considerations including coefficient of variation (CV)
- Manual – peak periods only

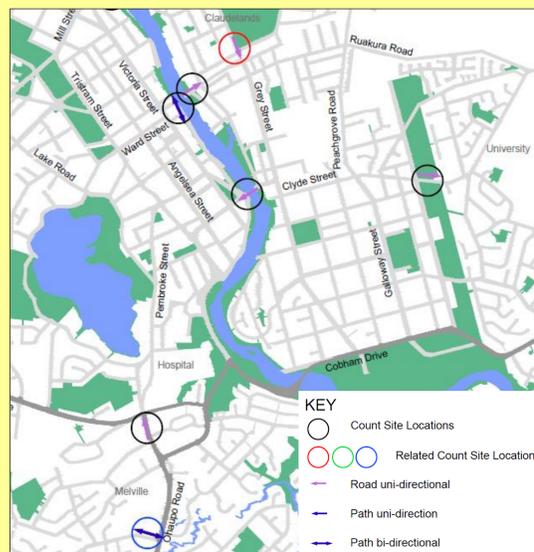
### 5. Determine counting method

- Combine previous steps

Method	Counter	Duration
Permanent	Automatic counter (ZELT or MetroCount piezos)	Year-long
Short-term	Automatic counter (ZELT or MetroCount)	2 weeks
Manual	Manual counter	Peak periods

### 6. Site selection

Location	Area, Direction	Provision	2002	Annual
<b>Permanent count sites</b>				
1. Boundary Rd Bridge	Central (E); Bidirectional	Shldr, path	95	3
2. Waikato River path	Central (N, E); Bidirectional	Path		22
<b>Short term count sites (2 weeks)</b>				
3. Rifle Range / Norton / Lincoln (SH1)	West; TBD	Path	81	B
4. Waikato River path (south of Bridge St)	Central (S); Bidirectional	Path		20
5. Claudelands Bridge	Central (E); Outbound	Cycle lane	23	2
6. Bridge St	Central (E); Outbound	Cycle lane	20,2	1

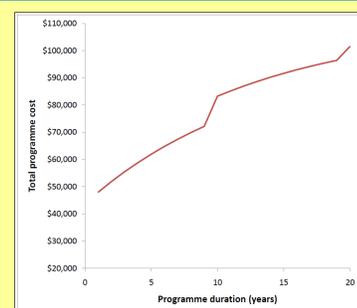
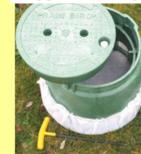


reference to existing count programmes

### 7. Programme costs

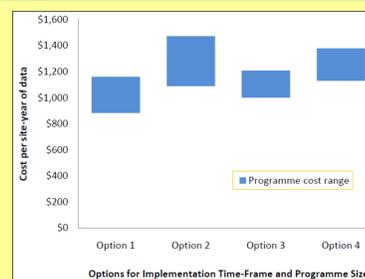
- Equipment capital cost
- Site furniture cost
- Installation cost
- Maintenance costs
- Data collection costs

Logger Housing



### 8. Implementation options

- All sites vs phased rollout
- Full vs partial programme sizes



## Conclusions

### Methodology

- Step by step, iterative approach
- Used in Christchurch, New Plymouth
- Applicable to any transport network

### Opportunities

- Develop locally specific scaling factors
- Improve benchmarking projects and national datasets
- Further develop count duration knowledge base

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