

Continuous Cycle Counting in New Zealand A Trial of Inductive Loop Technology

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Why trial inductive loops?

- We want to count cyclists for a continuous period (1 month or more)
- Rubber tubes are used extensively in NZ for 1-2 week periods
- Need to be durable and vandal proof
- Need to count in mixed traffic (cars & bikes)
- Comparison with current pneumatic tube technology and SCATS (traffic signal detection)



Loop Counters Trialed

- ZELT (France)



- Bicycle Recorder (UK)



Trial Site No. 1

Site	Section of road	Off-road or On-road	Road Type	Speed Limit	Cycle lane	Gradient	Road/Path Surface	Road Environment Comments
1 - Railway Cycleway	between Matai St and Fendalton Rd	Off	NA	NA	NA	Flat	Asphalt	Wide off road path, SCATS loops for comparison
2 - Main Road	causeway at McCormacks Bay	On	Arterial	50	Yes	Flat	Asphalt	Cycle lane, good separation
3 - Riccarton Rd	between Shaven Rd and Mouna Vale Rd	On	Arterial	50	No	Flat	Asphalt	High cycle volumes, limited separation
4 - Sparks Rd	between Hendersons Rd and Halswell Rd	On	Arterial	80	No	Flat	Chipseal	Narrow shoulder, high speed
5 - Dyers Pass Rd	between the Takaha and Kwi signs (both sides)	On	Arterial	50	No	Downhill	Chipseal	Steep gradient and high cycle speeds, narrow shoulder



Trial Site No. 2

Site	Section of road	Off-road or On-road	Road Type	Speed Limit	Cycle lane	Gradient	Road/Path Surface	Road Environment Comments
1 - Railway Cycleway	between Matai St and Fendalton Rd	Off	NA	NA	NA	Flat	Asphalt	Wide off road path, SCATS loops for comparison
2 - Main Road	causeway at McCormacks Bay	On	Arterial	50	Yes	Flat	Asphalt	Cycle lane, good separation
3 - Riccarton Rd	between Shaven Rd and Mouna Vale Rd	On	Arterial	50	No	Flat	Asphalt	High cycle volumes, limited separation
4 - Sparks Rd	between Hendersons Rd and Halswell Rd	On	Arterial	80	No	Flat	Chipseal	Narrow shoulder, high speed
5 - Dyers Pass Rd	between the Takaha and Kwi signs (both sides)	On	Arterial	50	No	Downhill	Chipseal	Steep gradient and high cycle speeds, narrow shoulder



Trial Site No. 3

Site	Section of road	Off-road or On-road	Road Type	Speed Limit	Cycle lane	Gradient	Road/Path Surface	Road Environment Comments
1 - Railway Cycleway	between Matai St and Fendalton Rd	Off	NA	NA	NA	Flat	Asphalt	Wide off road path, SCATS loops for comparison
2 - Main Road	causeway at McCormacks Bay	On	Arterial	50	Yes	Flat	Asphalt	Cycle lane, good separation
3 - Riccarton Rd	between Shaven Rd and Mouna Vale Rd	On	Arterial	50	No	Flat	Asphalt	High cycle volumes, limited separation
4 - Sparks Rd	between Hendersons Rd and Halswell Rd	On	Arterial	80	No	Flat	Chipseal	Narrow shoulder, high speed
5 - Dyers Pass Rd	between the Takaha and Kwi signs (both sides)	On	Arterial	50	No	Downhill	Chipseal	Steep gradient and high cycle speeds, narrow shoulder



Trial Site No. 4

Site	Section of road	Off-road or On-road	Road Type	Speed Limit	Cycle lane	Gradient	Road/Path Surface	Road Environment Comments
1 - Railway Cycleway	between Mata St and Campbell Rd	Off	NA	NA	NA	Flat	Asphalt	Wide off road path, SCATS loops for comparison
2 - Main Road	between Straven Rd and McCormacks Bay	On	Arterial	50	Yes	Flat	Chipseal	Cycle lane, good separation
3 - Riccarton Rd	between Straven Rd and Mona Vale Rd	On	Arterial	50	No	Flat	Asphalt	High cycle volumes, limited separation
4 - Sparks Rd	between Hendersons Rd and Havelock Rd	On	Arterial	80	No	Flat	Chipseal	Narrow shoulder, high speed
5 - Dyers Pass Rd	between the Takaha and Kiwi signs (both sides)	On	Arterial	50	No	Downhill	Emulsion mix	Steep gradient and high cycle speeds, narrow shoulder




Trial Site No. 5



Site	Section of road	Off-road or On-road	Road Type	Speed Limit	Cycle lane	Gradient	Road/Path Surface	Road Environment Comments
1 - Railway Cycleway	between Mata St and Fendalton Rd	Off	NA	NA	NA	Flat	Asphalt	Wide off road path, SCATS loops for comparison
2 - Main Road	between Straven Rd and McCormacks Bay	On	Arterial	50	Yes	Flat	Asphalt	Cycle lane, good separation
3 - Riccarton Rd	between Straven Rd and Mona Vale Rd	On	Arterial	50	No	Flat	Asphalt	High cycle volumes, limited separation
4 - Sparks Rd	between Hendersons Rd and Havelock Rd	On	Arterial	80	No	Flat	Chipseal	Narrow shoulder, high speed
5 - Dyers Pass Rd	between the Takaha and Kiwi signs (both sides)	On	Arterial	50	No	Downhill	Chipseal	Steep gradient and high cycle speeds, narrow shoulder



Off Road Results

- Results of all products 75-94%
- Tubes and SCATS performed similarly to inductive loops
- Bicycle Recorder more consistent than ZELT
 - Cyclists occasionally missed or hit both the ZELT loops





On Road Results

ZELT results **87- 93%**
 (after initial testing problems and product assistance)

Bicycle Recorder results **10 - 50%**
 (product issues unresolved)

On Road Results



- Challenges in mixed traffic can be overcome
- Fast bikes an issue (ZELT adjustments made)
- Thin road surfacing can be an issue for installation
- Differences between NZ and European traffic and pavement conditions
- ZELT more accurate than Bicycle Recorder






Conclusions

- Inductive loop technology can count cycles continuously in mixed traffic
- Accuracy acceptable (>95% - a big ask)
- ZELT generally preferred over Bicycle Recorder
- Full report on the study to be released in October

Thank you

- Questions & discussion please

