IPENZ Transportation Conference 2008

When Flashing is Good
Pedestrian Crossing Warning Light Trial

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MWH
BUILDING A BETTER WORLD

Purpose

- To evaluate pedestrian activated in-ground flashing light warning systems at mid block pedestrian crossings.
- Determine the effectiveness in producing desirable driver and pedestrian behaviour that will improve safety of the crossing;
- Identify operational and maintenance issues to assist in measuring reliability and cost effectiveness of these systems.

Site Selection

Hereford Street
11,000 vpd

Tuam Street
11,300 vpd

Mt Albert
26,700 vpd

System Design

Christchurch

CCC Design	ACC Design
Raised Platform	Level Platform
Photoelectric Detection	Pressure Pad Detection
Single Movement	Double Movement
Midblock Installation	Midblock Installation
Single Lane Approach	Double Lane Approach
Hereford Street Inductive Smartstud (Hardings Signals)	Mt Albert Inductive Smartstud (Hardings Signals)
Tuam Street Hard Wire Flush Astucia (Highways Ltd.)	
Mains Power	Solar Power
Shaded Environment	Open Environment
Straight Roads	Roundabout

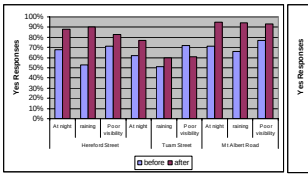
Auckland

Data Collection
Before and After Surveys

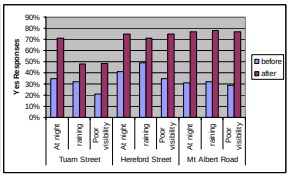
- Methods
  - Video Analysis (>60 hrs of tape)
  - Driver and Pedestrian Surveys (Hard copy and e-survey)
  - Speed Profile (On peak and off peak surveys)
- Issues
  - Clean Video Data;
    - view angles, surrounding use impact, pedestrian use, driver behavior
  - Surveys;
    - Care in formulating questions, survey bias, measurable results
  - Speed Profile;
    - ability to profile, outside influences, adjacent development

Results
Questionnaire Survey – Pedestrians and Drivers

- Approx. 1400 responses overall, 3 sites
- Sample size - 250 respondents per pole,



Driver response to compliance to yield under specified conditions with and without flashing lights.



Pedestrian perception of the crossing safety with and without active flashing lights.

Results Summary

- ✓ – Driver Stopping for pedestrians (up 5% to 21 %)
- ✓ – Driver compliance with limit lines (up 4% to 20 %)
- ✓ – Pedestrian safety perception improved (up 20% to 50%)
- ✓ – Conflicts reduced to near nil
- ✓ – Mean & 85th percentile speed reduction indicated
- ✓ – Operating cost low
- ✓ – Trial monitored by NZTA

? – Activation system – proximity to crossing

! – Installation Cost – high if connecting to old utilities

Outcomes

- Trial has been successful to date
- Safety perception improved
- NZTA approval underway – awaiting Rule change
- Strong use by public
- Good feedback from public in Christchurch
- ACC and CCC looking at additional sites
- Technology being considered for other applications
- Continued monitoring recommended