PEDESTRIAN CHARACTERISTICS AT TRAFFIC SIGNALS

A Masters Degree Research Project studying pedestrian behaviours at four signalized intersections (Invercargill 3) and (Dunedin 1)

KEY STUDY MOTIVATIONS -
PEDESTRIAN RISK, WALKING SPEEDS, PEDESTRIAN DELAYS, CURRENT POLICIES, RULES AND GUIDELINES

RESULTS

CONCLUSIONS

Walking Speeds
- Pedestrians walk significantly faster on wide, undivided crosswalks
- Older pedestrians walk significantly slower than younger pedestrians
- Traffic flow levels have no significant affect on walking speeds
- The current walking speed rate of 1.2 m/sec specified by AUSTROADS (2003) to calculate Pedestrian Clearance Intervals is not valid for many crosswalks

Pedestrian Delay
- Pedestrian delays are significantly larger on wider roads
- Pedestrian age has no significant affect on pedestrian delay

Compliance
- The level of uncompliance increases with decreasing traffic flow
- Compliance is significantly greater on wider roads
- Older pedestrians are significantly more compliant than younger pedestrians

Rule Comprehension
- The Green Man is fully understood
- The solid Red Man symbol is mostly understood
- The flashing Red Man symbol is not fully understood

Green Man Time
- A four second Green Man Time is a more appropriate time setting for the pedestrian volumes measured. (Current setting is 6 seconds)

RECOMMENDATIONS

1) Lower pedestrian clearance interval at crosswalks
   Use a 1.5m/sec and 1.3m/sec walking speed rate to calculate pedestrian clearance intervals on wide and narrow crosswalks respectively.

2) Four second Green Man time
   Use a four second “Green Man” interval at crosswalks where pedestrian volumes are low (only one rank of pedestrians form at the crosswalk curb)

3) Modify pedestrian call facility (“EXTRA TIME OPTION”)
   Modify the pedestrian call facilities to provide 2 “red man flashing” times. One setting would provide the status quo red man flashing time for the slower pedestrians in need. The other setting would provide the reduced Red Man time for the majority of pedestrians. This device could be termed the “EXTRA TIME OPTION”

4) “Red Man Flashing” clearance period education
   More education required for the Red Man flashing phase of the pedestrian walk period

NZTA Traffic Control device trial
   Trial the “Extra Time Option” to ascertain the potential efficiency, safety and environmental benefits.

Timaru call button initiative
   In Timaru the call button is held in for 3 seconds to call the audio tactile facility. This feature could be modified to include the “Extra Time Option”

Estimated benefits from “Extra Time “ option
   Crude estimates to date forecast $30000.00 of annual travel time and CO2 savings per intersection. Cost to install for an average intersection = $6000

INCREASE THE EFFICIENCY OF THE NETWORK WITHOUT COMPROMISING SAFETY
REDUCE DELAYS... REDUCE EMISSIONS... INSTALL THE NEW...
EXTRA TIME OPTION DEVICE!
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Timaru call button initiative
In Timaru the call button is held in for 3 seconds to call the audio tactile facility. This feature could be modified to include the “Extra Time Option”

Estimated benefits from “Extra Time “ option
Crude estimates date forecast $300,000.00 of annual travel time and CO2 savings per intersection. Cost to install for an average intersection = $6000

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