Title: Dilemma Zone Protection & Signal Coordination at Closely-Spaced High-Speed Intersection.

State Job Number: 14673
PID Number: N/A
Research Agency: University of Cincinnati
Researcher(s): Prahlad Pant
Technical Liaison(s): Satya Goyal
Research Manager: Monique Evans
Sponsor(s): Tony Vogel, Dave Holstein
Study Start Date: 3/17/1997
Study Completion Date: 7/31/2001
Study Duration: 53 months
Study Cost: $122,971.00
Study Funding Type: 80 Federal/20 State from ODOT SPR (2)

STATEMENT OF NEED: Assess the feasibility of reducing decision Zone (also call dilemma Zone) through adjustments of signal timing.

RESEARCH OBJECTIVES: Coordination of signal timing on closely-spaced (100-2000 ft.) high speed (/>35mph) signalized - intersections. Also testing and implementation of this study may be useful.

RESEARCH TASKS: Intensive collection and analysis of traffic flow data by installing 6 Cameras and simulating recording of vehicular movements.

RESEARCH DELIVERABLES: Detection of the positions and speeds of all vehicles before green light changes to yellow, Prediction of number of vehicles caught in a dilemma zone and calculations of the optimal green extension.

RESEARCH RECOMMENDATIONS: The technique developed in this study can be implemented if the speeds and positions of all vehicles can be recorded at small intervals.

PROJECT PANEL COMMENTS: Excellent Study and will require further testing.
IMPLEMENTATION STEPS & TIME FRAME: This project has been continued as project # 14754 concluded in May, 2005.

EXPECTED BENEFITS: May review for possible implementation when project #14754 is completed

EXPECTED RISKS, OBSTACLES, & STRATEGIES TO OVERCOME THEM: Project # 14754 may show that field implementation of the dilemma zone protection system is not practical.

OTHER ODOT OFFICES AFFECTED BY THE CHANGE: All Districts if this study implemented.

PROGRESS REPORTING & TIME FRAME: Research is continued on for field implementation with Project # 14754, there is no need for progress reporting.

TECHNOLOGY TRANSFER METHODS TO BE USED: The final report has posted on the ODOT Office of Research & Development website and the hard copy of this report was distributed to other national libraries.

IMPLEMENTATION COST & SOURCE OF FUNDING: The cost for Project # 14754 is $159,094.00 which comes from Research SPR II funds.

Approved By: (attached additional sheets if necessary)

Office Administrator(s):  
Signature: Dave Holstein  Office: Traffic Engineering  Date: 6/2/2006

Division Deputy Director(s):  
Signature: Tony Vogel  Division: Highway Operations  Date: 6/2/2006