

**OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC ENGINEERING
RESEARCH IMPLEMENTATION PLAN**



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

State Job Number: 14754
PID Number: 76072
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: 6/12/2000
Study Completion Date: 5/30/2005
Study Duration: 60 months
Study Cost: \$171,094.00
Study Funding Type: 80 Federal/20 State from ODOT SPR (2)

STATEMENT OF NEED:

The Area closed to a Signalized intersection called the Dilemma Zone Poses a high accident potential for the Driver in stopping safely. The uncertain situation in a dilemma zone can potentially lead to rear-end or right angle collisions. We recommend this method for reducing dilemma zone problems.

RESEARCH OBJECTIVES:

To field Test and implementation a dilemma Zone protection technique Signalized – intersections. Also install, test and implement of this study for a city at Middletown, Ohio.

RESEARCH TASKS:

Intensive collection and analysis of traffic flow data 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 is very useful and workable.

PROJECT PANEL COMMENTS: Excellent Study and provided the solution in closed spaced intersection.

IMPLEMENTATION STEPS & TIME FRAME: This project has been successful and proved to be working at the present site.

EXPECTED BENEFITS: This project is completed and useful for close intersections. This technique can be used is simple to implement.

EXPECTED RISKS, OBSTACLES, & STRATEGIES TO OVERCOME THEM: N/A, field implementation was proven successful.

OTHER ODOT OFFICES AFFECTED BY THE CHANGE: N/A

PROGRESS REPORTING & TIME FRAME: N/A

TECHNOLOGY TRANSFER METHODS TO BE USED: The final report has been 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: None, the cameras and equipment installed in the field were turned over to the City of Middletown, Ohio.

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