Evaluating the Effectiveness of Various 'Slower Traffic Keep Right' Countermeasures

Statement of Problem

There has been increasing concerns regarding slower traffic using the left lane of freeway routes. A work group consisting of senior level Traffic Engineering personnel has been charged with developing measures to address this issue. Four countermeasures have been identified by the group and will be evaluated under this project. The common goal of these countermeasures is to encourage slower drivers to stay out of the left lane by using various messages to influence their lane choice.

Project Scope

Countermeasures to be Evaluated:

- 'Slower Traffic Keep Right' Signs
- 'Slower Traffic Keep Right' Signs and 'Pass Lane Only' Pavement Markings
- 'Keep Right Except to Pass' Signs
- 'Keep Right Except to Pass' Signs and 'Pass Lane Only' Pavement Markings
- Do Nothing Section

Project Goals

The goals of this project are as follows:

(1) Determine if sign messages have an effect on encouraging slower drivers to use the right lane.

(2) Determine if pavement markings in addition to the signs have an effect on encouraging slower drivers to use the right lane.

Measures of Effectiveness (MOEs) and Data Collection Method

- Speed Distribution by lane
  - A Lidar gun will be used to collect speed data at each site. At least 100 speed samples will be collected at each site on at least two different visits.**
  - One would expect speeds to be higher in the left lane even before the countermeasures are installed due to conventional "rules of the road" that most drivers follow. The MOE will be the average speed in the left lane after the countermeasure is installed. One would expect the average speed in the left lane to increase as slower moving drivers are encouraged to use the right lane.
- Traffic volume by lane
  - Traffic volumes will be recorded by lane for at least two hours at each site on at least two different visits.**
  - One would expect the traffic volume in the left lane to be lower in the after period as slower drivers are encouraged to use the right lane.

- Conflicts – a vehicle impeded by a slower vehicle in the left lane
  - Conflicts (platoons) will be recorded for at least two hours at each site on at least two different visits.**
  - One would expect there to be fewer conflicts in the left lane after the countermeasures are installed as the slower moving traffic is encouraged to use the right lane.
- Vehicle maneuvers just after a sign or pavement marking
  - Vehicle maneuvers around the signs will be observed and recorded.

- All data collection will be done in off peak hours when it is likely that right lanes are accessible to slower drivers in the left lane.
- All attempts will be made to collect data from an overpass or other inconspicuous spot. Pulling the vehicle off to the shoulder when collecting data may influence drivers to shy away from certain lanes to avoid the parked car.
- Data will not be collected near interchanges as there will be some lane changes occurring to accommodate merging traffic.

** *Data collection time periods may vary*

Countermeasure Sites:

- A minimum of 5 sites will be selected for this project with at least one control site
- All sites will be freeway facilities with a minimum speed limit of 65 mph
- Possibly one site will be an urban freeway
- Sites with rough driving right lanes will be avoided as this may encourage drivers to use the left lane for a smoother ride
- Sites in or near construction zones will not be picked as this may influence the lane choice of the drivers
- Sites with Truck Lane Restrictions will be avoided if possible as this will influence lane choice of some drivers
- Sites with left entrances or exits will be avoided as this will influence lane choice of drivers

Project Tasks

		Percent of Total Work Est. Completion Date
Task I	Project Management	**10%**
	• Develop detailed project Work Plan	8/03
	• Update quarterly with progress reports	8/03 – 8/04
	• Conduct brief literature review to look for similar studies	9/03
Task II	Identify Sites	**10%**
	• Compile list of candidate sites	8/03 – 9/03
	• Meet with work group to identify at least 5 sites from candidate list	9/03
Task III	Collect 'Before Period' Data	**30%**
	• Collect data on each MOE at each site	9/03 – 12/03
Task IV	Install Treatment	**0%**
	• Countermeasure implementation at all sites	1/04 - 4/04
Task V	Collect 'After Period' Data	**30%**
	• Collect data on each MOE at each site	3/04- 6/04
Task VI	Data Analysis	**10%**
	• Compile data and analyze for statistical significance	6/04 – 7/04
Task VII	Document Findings and Recommendations	**10%**
	• Prepare report	7/04 – 8/04
	• Present final results and recommendations	8/04