

April 9, 2008

To the attention of: Citizen's Advisory Committee
National Capital Region Transportation Planning Board
777 North Capitol Street
Washington, DC 20002

A rewarding project for CAC:

**INITIATE ACTION THAT CAN ELIMINATE THE SAFETY HAZARD
THAT CAUSES OVER 6 ACCIDENTS PER DAY ON THE BELTWAY**

Enclosed find memo: HOW TO ELIMINATE THE SAFETY HAZARD THAT CAUSES MORE THAN 6 COLLISIONS/DAY ON THE BELTWAY. On the back are two references, one recording the 2 year 1993 & 1994 record of 4,447 collisions reported on the Capital Beltway which the second reference reveals, according to traffic experts, most occur within 1,000 ft of entrance ramps due to speed differentials and right of way problems.

That memo provides a simple way to eliminate both the speed differentials and right of way problems faulted by experts for that unconcionable traffic control safety hazard.

The National Highway Traffic Safety Administration lists on the web: "Our Mission, Save lives, prevent injuries, reduce vehicle related crashes". This traffic control reform falls squarely within that mission and in the 7th important issue Mr. Martin asked CAC members at the February meeting for their input on that the committee might like to address this year.

Enclosed also is page 1A-4, Section 1A-10, of the Manual of Uniform Traffic Control Devices entitled: "Interpretations, Experimentations, Changes and Interim Approvals." I have underlined mid page the following: "A request for permission to experiment will be considered only when submitted by the public agency or private toll facility responsible for the operation of the road or street on which the experiment is to take place.

By eliminating the speed differential hazard and the unconcionable record of accidents, not only will this reform significantly improve traffic flow, but there is no funding required and the ideal site is an active work site making numerous temporary changed traffic patterns during extensive construction activity. The Wilson Bridge, before the second bridge opens, because it has the only 3 lanes between Virginia and Maryland south of central Washington, probably has the greatest peak input per lane with lane increase and major exit downstream to absorb without restriction the increased flow rate possible per lane with that demonstration.

Surely this Citizen's Advisory Committee, armed with this information, should be able to make a far reaching contribution to upgrading the quality of life of commuters nationwide by championing this clearly revealing demonstration of how to eliminate the unconcionable record of accidents reported on the Beltway. Transportation authorities top priority is safety, and this is a safety issue with abundant other benefits.

If this Committee succeeds in the challenge to champion the scheduling of the proposed demonstration of the elimination of a safety hazard that results in abundant other benefits to the driving public without taking any of their tax money to get those benefits, commuters nation wide will be most highly indebted to you.

Section 1A.10 Interpretations, Experimentations, Changes, and Interim Approvals

Standard:

Design, application, and placement of traffic control devices other than those adopted in this Manual shall be prohibited unless the provisions of this Section are followed.

Support:

Continuing advances in technology will produce changes in the highway, vehicle, and road user proficiency; therefore, portions of the system of traffic control devices in this Manual will require updating. In addition, unique situations often arise for device applications that might require interpretation or clarification of this Manual. It is important to have a procedure for recognizing these developments and for introducing new ideas and modifications into the system.

Standard:

Requests for any interpretation, permission to experiment, interim approval, or change shall be sent to the Federal Highway Administration (FHWA), Office of Transportation Operations, 400 Seventh Street, SW, HOTO, Washington, DC 20590.

Support:

An interpretation includes a consideration of the application and operation of standard traffic control devices, official meanings of standard traffic control devices, or the variations from standard device designs.

Guidance:

Requests for an interpretation of this Manual should contain the following information:

- A. A concise statement of the interpretation being sought;
- B. A description of the condition that provoked the need for an interpretation;
- C. Any illustration that would be helpful to understand the request; and
- D. Any supporting research data that is pertinent to the item to be interpreted.

Support:

Requests to experiment include consideration of field deployment for the purpose of testing or evaluating a new traffic control device, its application or manner of use, or a provision not specifically described in this Manual.

A request for permission to experiment will be considered only when submitted by the public agency or private toll facility responsible for the operation of the road or street on which the experiment is to take place.

A diagram indicating the process for experimenting with traffic control devices is shown in Figure 1A-1.

Guidance:

The request for permission to experiment should contain the following:

- A. A statement indicating the nature of the problem.
- B. A description of the proposed change to the traffic control device or application of the traffic control device, how it was developed, the manner in which it deviates from the standard, and how it is expected to be an improvement over existing standards.
- C. Any illustration that would be helpful to understand the traffic control device or use of the traffic control device.
- D. Any supporting data explaining how the traffic control device was developed, if it has been tried, in what ways it was found to be adequate or inadequate, and how this choice of device or application was derived.
- E. A legally binding statement certifying that the concept of the traffic control device is not protected by a patent or copyright. (An example of a traffic control device concept would be countdown pedestrian signals in general. Ordinarily an entire general concept would not be patented or copyrighted, but if it were it would not be acceptable for experimentation unless the patent or copyright owner signs a waiver of rights acceptable to the FHWA. An example of a patented or copyrighted specific device within the general concept of countdown pedestrian signals would be a manufacturer's design for its specific brand of countdown signal, including the design details of the housing or electronics that are unique to that manufacturer's product. As long as the general concept is not patented or copyrighted, it is acceptable for experimentation to incorporate the use of one or more patented devices of one or several manufacturers.)
- F. The time period and location(s) of the experiment.
- G. A detailed research or evaluation plan that must provide for close monitoring of the experimentation, especially in the early stages of its field implementation. The evaluation plan should include before and after studies as well as quantitative data describing the performance of the experimental device.

HOW TO ELIMINATE THE SAFETY HAZARD THAT CAUSES MORE THAN 6 REPORTED COLLISION EVENTS PER DAY ON THE CAPITAL BELTWAY

There is no denying of the following 5 facts of nature:

1. That the impact energy of a 50mph vehicle striking a stopped one is 100 times greater than the energy of a vehicle striking another one traveling 5mph slower.

2. That drivers at a 5mph speed difference have 10 times more time to mentally consider and complete the necessary evasive action than drivers at a 50mph speed difference.

3. That at a 5mph speed difference the minor speed adjustment to weave in behind a driver just yielded to like lane changing along the highway with 10 times as much time to do it in, is vastly less stressful, hazardous, mentally and physically demanding, and free of the motivation and opportunity for either misjudgement or misbehavior by drivers making the choice between and accomplishing a sudden dart in merge or a sudden stop.

4. That it is far easier and safer to form a judgement on weaving into a controlled gap seen AHEAD that is moving at a 5mph speed difference than seeing a far faster moving gap that others may choose to occupy BEHIND through one's blind spot side mirror at several times that speed difference in 1/10 the time.

5. That at some level of traffic density, which most always is much less than the free flowing lane capacity, incoming drivers for both safety and legal reasons approaching their ending lane, will stop, requiring all others behind that first one to stop, resulting in all lanes of the through traffic slowing down about 70% in a stop and go mode per a VDOT Research Council FREYSIM analysis. Recorded observations show 5-10mph stop & go.

There is a very simple way to eliminate that safety hazard that causes 6 accidents per day on the Beltway, transforming the combining of those two lanes of traffic into one with a more than 100 times more safe unstressful weaving or lane changing deal as normally accomplished by drivers all along the highway between interchanges.

To change from a 50+mph speed differential between stopped entering drivers and prevailing speed drivers to a 5+mph speed difference, incoming drivers must know by on site observation that they have a continuous lane with undisputed right of way, not an ending lane, and that they are free to accelerate smartly up to prevailing speed.

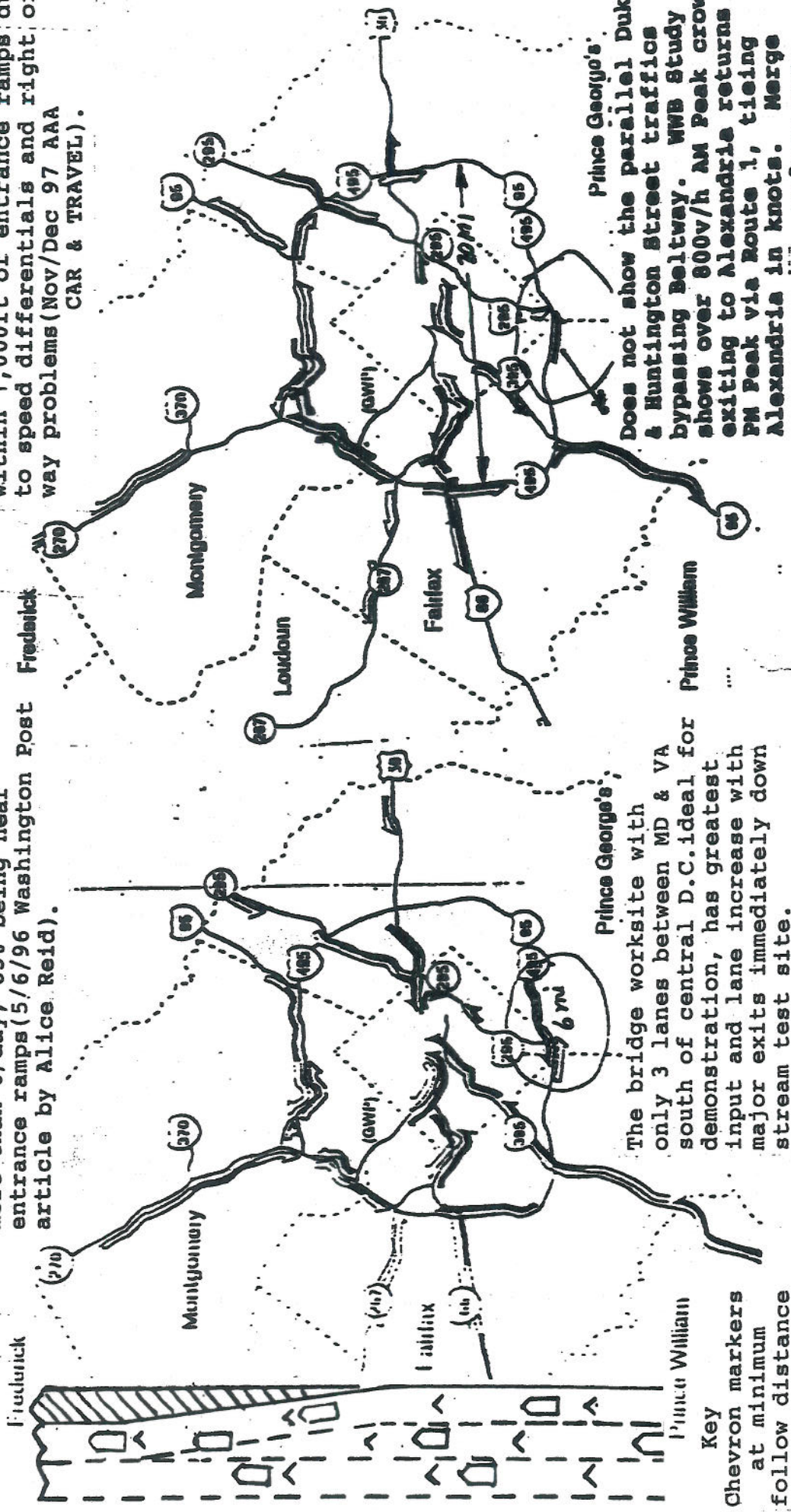
The above conditions are readily met by continuing the lane line between the traffics through the now contestive taper parallel to the outer solid lane line transferring the merge from incoming drivers to a yield weave in either direction by prevailing speed drivers.

The process can be further embellished by large chevron minimum follow distance pavement markers approaching the taper providing gaps for the two traffics to mesh like meshing of gears with all motivation and opportunity for deviant driver behavior gone.

Fig4-9, computer modeling of the WWB Improvement Study, shows that when the project is completed, 2 miles of backed up congestion will still persist. If the demonstration preceeds the opening of the second bridge at that super bottleneck site the outcome of the major project will not be as disappointing as predicted by the computer modeling. Will the

Ref: 4,447 accidents on the Capital Beltway were reported in 1993 & 1994, more than 6/day, 85% being near entrance ramps (5/6/96 Washington Post article by Alice Reid).

Ref: According to traffic experts, most collisions on freeways occur within 1,000ft of entrance ramps due to speed differentials and right-of-way problems (Nov/Dec 97 AAA CAR & TRAVEL).



BIRD'S EYE VIEW OF FREEWAY CONGESTION IN GREAT'R WASHINGTON

MORNING (Spring 2002)
 This map shows congested locations observed during the morning survey period

EVENING (Spring 2002)
 This map shows congested locations observed during the evening survey period

FREEWAY TRAFFIC QUALITY
 Congested flow at average speeds of 20-50 mph
 Congested flow involving varying degrees of stop-and-go (average speeds < 30 mph)