



## TRANSPORTATION CABINET

Frankfort, Kentucky 40622  
www.transportation.ky.gov/

**Steven L. Beshear**  
Governor

**Michael W. Hancock, P.E.**  
Acting Secretary

July 16, 2010

Federal Highway Administration (FHWA)  
Office of Transportation Operations, MUTCD Team  
HOTO-1  
1200 New Jersey Avenue, SE  
Washington, D.C. 20590

To Whom It May Concern:

As part of the Evaluations of Low Cost Safety Improvements Pooled Fund Study (ELCSI-PFS), the FHWA Office of Safety Research and Development is investigating the effectiveness of various low cost treatments at reducing collisions. An in-lane, advance curve marking was selected by the pooled fund's advisory committee members as one of the preferred treatments to research. It is the Kentucky Transportation Cabinet's desire to install such a marking at several curves with significant crash histories to support this research effort. Since it is not included in the MUTCD, we are requesting approval from your office to experiment with this marking.

While a specific list of candidate locations has not been developed at this time, this marking (if approved) will be utilized at several curves in Kentucky that have been identified as high crash locations. In most cases, selected sites will already have the full complement of standard, curve warning signs. The in-lane, advance curve marking will be used as a supplement to the signing to emphasize the change in the horizontal alignment.

An example of the type of situation where this treatment will be applied is KY 420 in Franklin County (see Figure 1). This curve has a posted speed limit of 35 mph with an advisory speed of 15 mph. The existing signing includes advance horizontal alignment signs, chevrons, and a large arrow sign. Even with the existing warning signs, the site has been identified as a high crash site (20 related crashes in 5 years).

The proposed marking (see Figures 2-4) is composed of two transverse bars, a "SLOW" legend, and arrow indicating the direction of the upcoming curve. All markings will be white. The placement of the marking in relation to the location of the curve will be as shown in Figure 5.

This marking was developed by the Pennsylvania DOT and has been used in Ohio, Iowa, and other locations. The treatment is listed as a strategy in *Low-Cost Treatments for Horizontal Curve Safety* (McGee and Hanscom, 2006), where it was shown to reduce overall speeds by 6 to 7% with slight reductions in the percentage of high speed vehicles. No other studies were found which reported speed or crash impacts. We are not aware of any copyrights or patents for the device.



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The treatment will be installed sometime between August and October of 2010. Candidate locations will be selected from a list of curves with significant crash histories. The pavement marking treatment will be evaluated over a three-year time period.

Semi-annual progress reports will be provided during the duration of the experiment. A final evaluation of the marking will be conducted by the FHWA Office of Safety Research and Development as part of the Evaluations of Low Cost Safety Improvements Pooled Fund Study (ELCSI-PFS). Before-after crash data will be the primary evaluation variable. The results of the research (final report and/or tech brief format) will be submitted to the FHWA's Office of Transportation Operations.

The Kentucky Transportation Cabinet agrees to restore the sites to a state of compliance within three months of the completion of the experiment, subject to any rulemaking action to include this device in the MUTCD. In addition, we agree to terminate the experiment if it is determined that the experimentation is directly or indirectly related to a significant safety hazard.

We appreciate your timely consideration of this request. If you have any questions, please contact Tracy Lovell, Division of Traffic Operations, at 502-564-3020.

Sincerely,



Steve Waddle, P.E.

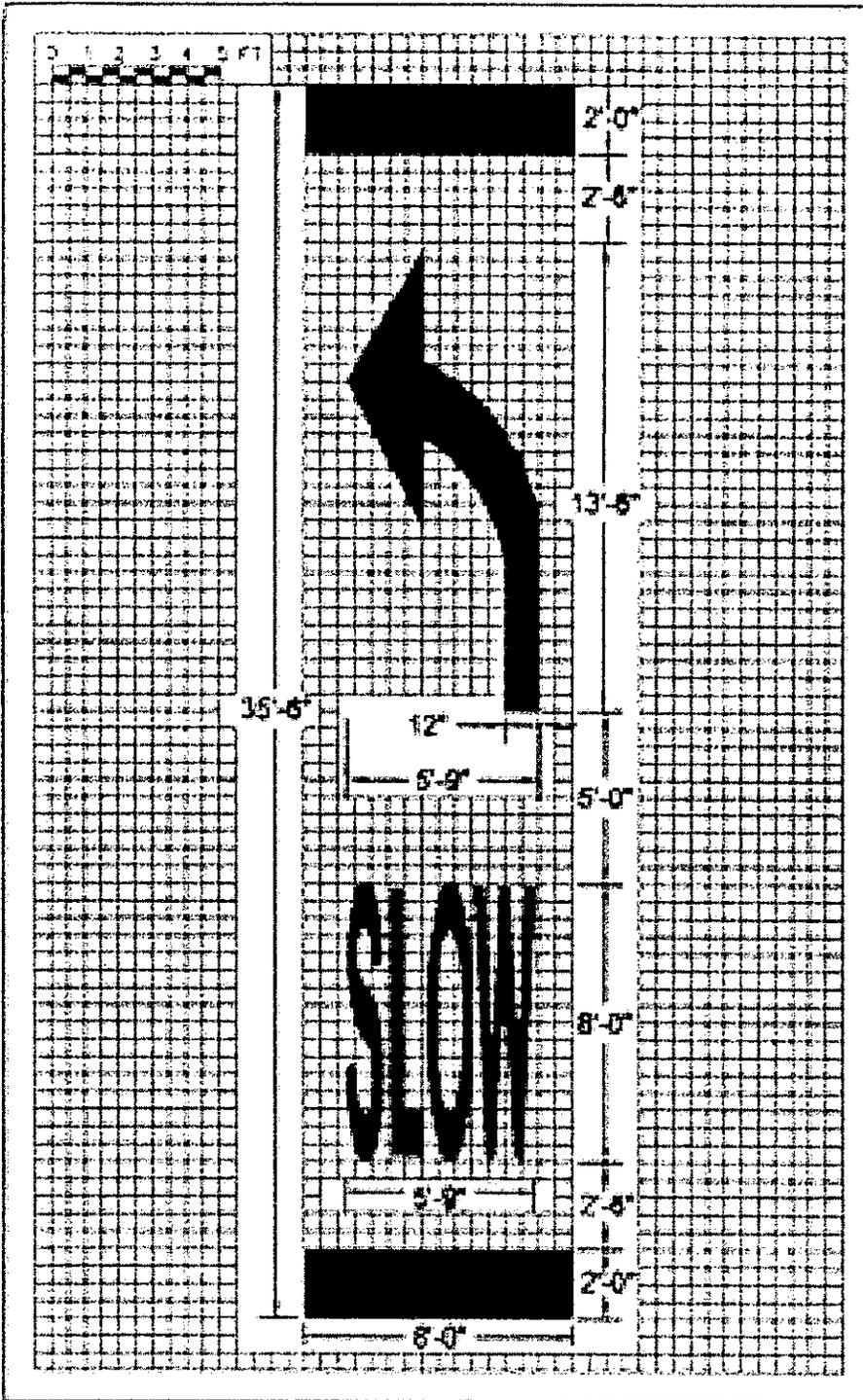
Acting State Highway Engineer

#### Attachments

c: Jose Sepulveda, FHWA  
Jeff Wolfe, Division of Traffic Operations



**Figure 1: Example of site location for experimental treatment**



**PAVEMENT LEGEND**

Figure 2: Schematic of Low-Speed Treatment (Image source: Penn DOT, [http://safety.fhwa.dot.gov/roadway\\_dept/horcurves/fhwasa07002/ch7.cfm](http://safety.fhwa.dot.gov/roadway_dept/horcurves/fhwasa07002/ch7.cfm))

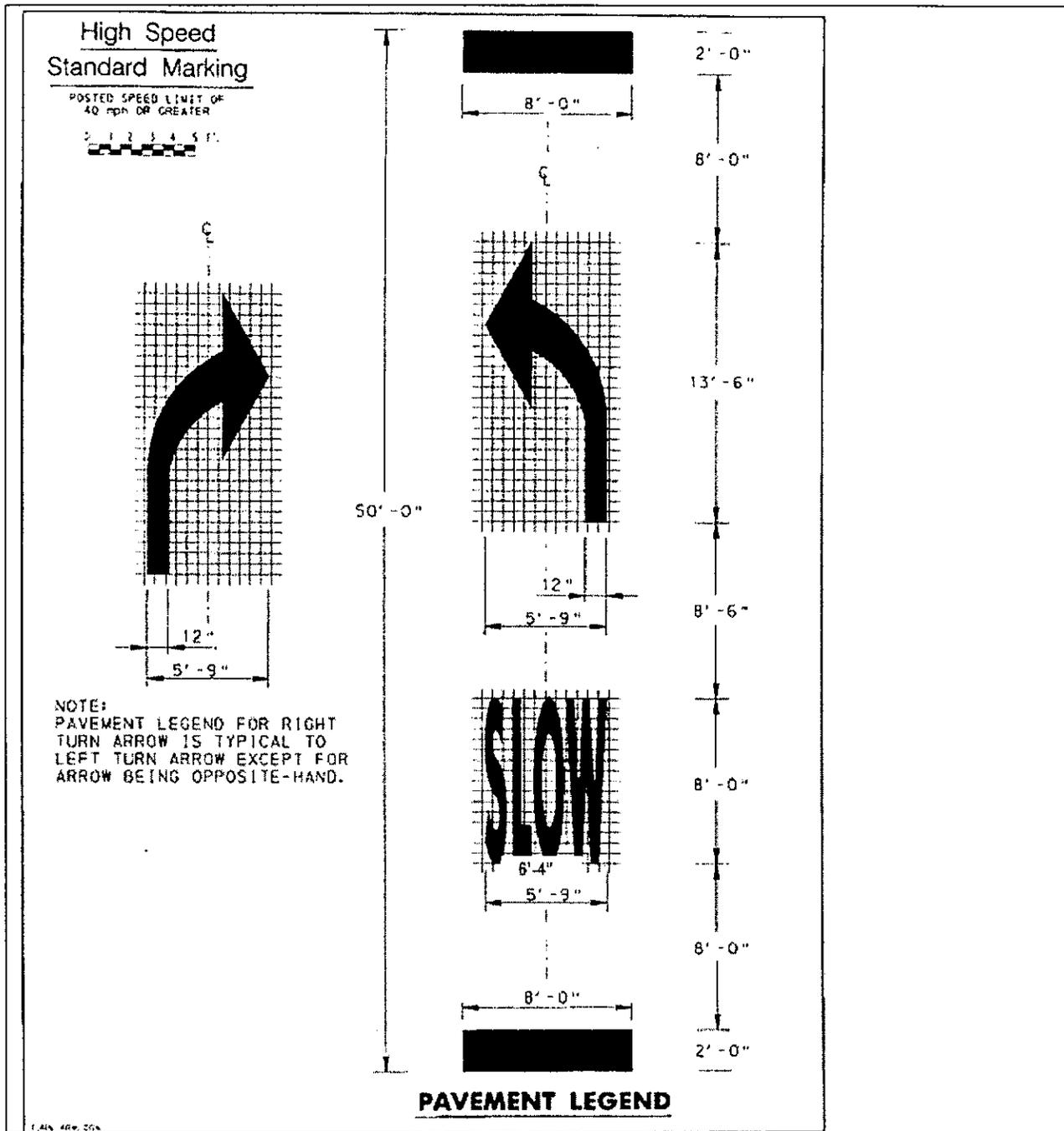
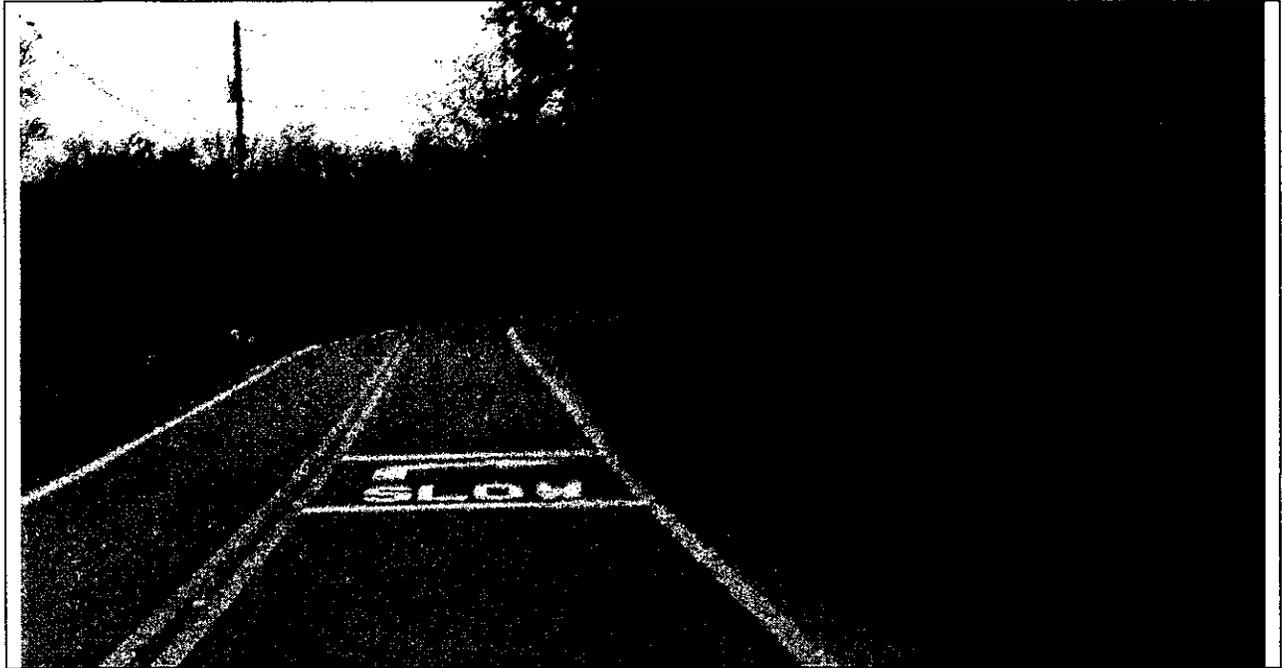
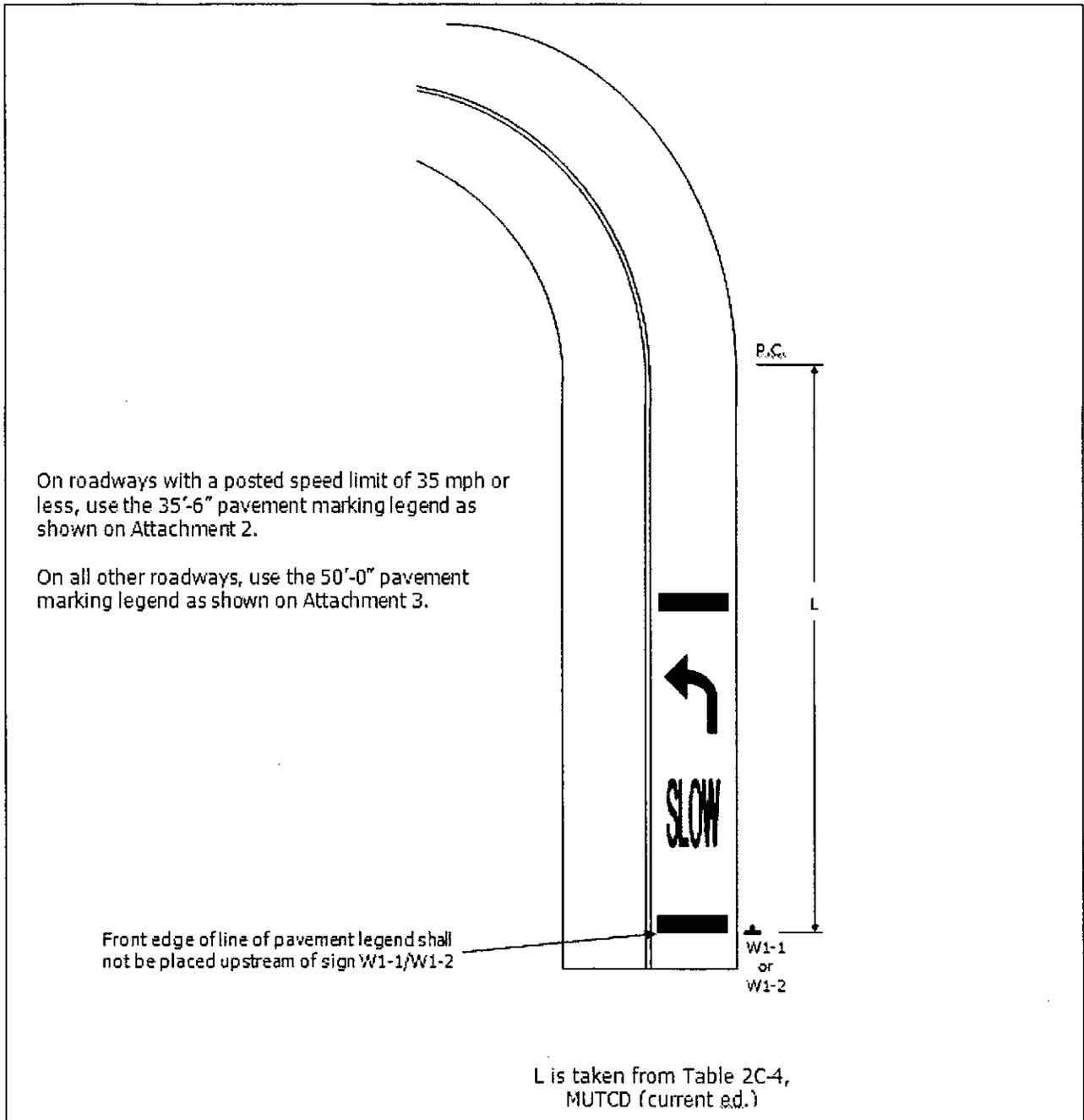


Figure 3: Schematic of High-Speed Treatment (Image source: Penn DOT)



**Figure 4: Use of the on-pavement advance curve marking in Ohio**



**Figure 5: Placement guidelines modified from Penn DOT**

**References**

McGee, Hugh and Fred R. Hanscom. *Low-Cost Treatments for Horizontal Curve Safety*. FHWA-SA-08-002. Dec 2006.