



U.S. Department of Transportation  
**Federal Highway Administration**

**February 3, 2005**

Mr. Robert Greer  
Director  
Office of Design  
Florida Department of Transportation 605 Suwanee Street  
Tallahassee, FL 32399-0450

Dear Mr. Greer:

400 Seventh St., S.W. Washington, D.C. 20590

Refer to: HOTO-1

Thank you for your letter of September 17, 2004, requesting an interpretation on the use and design of merging tapers for lane closures on multi-lane non-access highways. First let me apologize for the lengthy delay in our response. Mr. Pete Rusch of our MUTCD Team felt that his e-mail of September 15, 2004, to Mr. Christopher Richter of the Federal Highway Administration Florida Division Office had addressed the matter.

It is our understanding from your letter and conversations with the Florida Division Office, that you are interested only in a specific temporary traffic control situation that involves short duration utility operations and a lane closure on a multi-lane, non-access highway.

The following interpretation is provided:

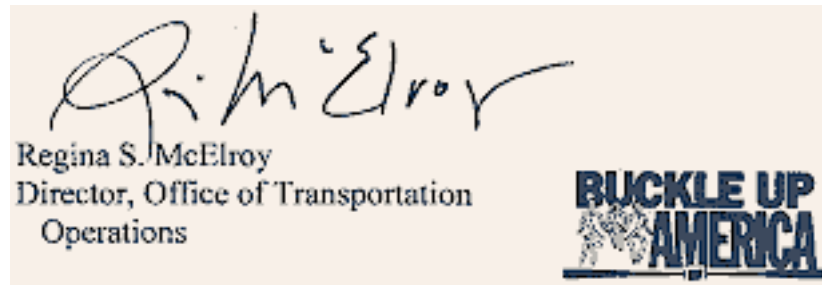
Section 6G.12 of the Manual on Uniform Traffic Control Devices is very specific on this matter. A merging taper is required when work takes place within the traveled way of multi-lane, non-access controlled highways. The only exception noted is for mobile operations.

Section 6C.08 provides 2 tables for determining taper lengths: Table 6C-3 "Taper Length Criteria for Temporary Traffic Control Zones and Table 6C-4 "Formulas for Determining Taper Lengths." Both of these tables are appropriate for use when making decisions concerning taper lengths for temporary traffic. Keep in mind that the length of the merging taper may vary depending on the speed of the facility on which the closure takes place.

We have numbered and titled this official ruling request, "6-203(I)-Interpretation on the Use and Design of Merging Tapers for Lane Closures on Multi-Lane Non-Access Highways." Please refer to this request should you have future questions. We appreciate the opportunity to provide this information.

cc:

Sincerely yours,



Mr. Roger Wentz, ATSSA



***Florida Department of Transportation***

JEB BUSH  
GOVERNOR

605 Suwannee Street  
Tallahassee, FL 32399-0450

Mail Station 32

September 17, 2004

Ms. Regina S. McElroy, Director  
Office of Transportation Operations (CHOTO) Federal Highway Administration  
400 Seventh Street SW  
Washington, DC 20590

Subject: MUTCD 6G.12 -FHW A Interpretation

JOSE ABREU  
SECRETARY

The Florida Department of Transportation (FDOT) is requesting the Federal Highway Administration's (FHWA) interpretation regarding The Manual on Uniform Traffic Control Devices (MUTCD) Part 6 Temporary Traffic Control, Section 60.12, Work Within the Traveled Way of Multi-lane, Nonaccess Controlled Highways, specifically the Standard: "When a lane is closed on a multi-lane road for other than a mobile operation, a transition area containing a merging taper shall be used."

The FDOT has a series of standard work zone setups contained in the FDOT Design Standards that are used for construction, maintenance and utility work on the State Highway System in Florida. These standard work zone setups are consistent with MUTCD requirements and are somewhat similar to the Typical Applications provided in MUTCD Section 6H, but specific to Florida. Note, the State Highway System in Florida consists primarily of higher volume, higher speed, arterial and Interstate routes and does not include low volume local roads. Given this important factor, many of FDOT's temporary traffic control requirements exceed the minimum requirements of the MUTCD.

The utility industry in Florida has questioned the length of the merging taper for work periods 45 minutes or less currently called for in FDOT's Design Standard Index 612. Index 612 provides standard work zone setups for Multilane, Divided and Undivided Rural, Operations One Daylight Period or Less. The length of merging taper in Index 612 is based on the taper equations provided in MUTCD 6C.08. It is FDOT's position that the length of taper called for is appropriate and necessary to meet minimum MUTCD requirements. The utility industry believes the length of the merging taper may be reduced to a very short taper approximately 100' long when the work zone consists of work vehicles with high intensity rotating, flashing, oscillating or strobe lights. The utility industry contends this is in accordance with the Guidance, Option, and Support provided in MUTCD 6G.02 for short duration work.

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We note that MUTCD 6G.12 is specific in that it requires not just a taper, but a "merging" taper. While the use of the taper length equations in MUTCD 6C.08 are not mandated, there is no other discussion, guidance or support in the MUTCD whatsoever on alternate methods of computing the length of tapers, except for "observation of driver performance after TTC plans are put into effect." Given no other documented support for computing tapers, FDOT believes the intent is to provide the merging taper length computed in accordance with 6C.08. Any taper length less than a merging taper length would not meet 6G.12.

The utility industry cites MUTCD 6G.02 Options that state " Appropriately colored or marked vehicles with high-intensity rotating, flashing, oscillating, or strobe lights may be used in place of signs and channelizing devices for short-duration or mobile operations." and "Considering these factors, simplified control procedures may be warranted for short-duration work. A reduction in the number of devices may be offset by the use of other more dominant devices such as high intensity rotating, flashing, oscillating, or strobe lights on work vehicles." However, we note that 6G.12 is written very specifically to require the merging taper with the only exception being for moving operations. It is clear that there is no exception for short duration work. For this reason, it is FDOT's position that the use of high intensity lights on work vehicles is not intended to be used in lieu of providing a merging taper for work periods 45 minutes or less. Further, 6G.02 Guidance states "Safety in short duration or mobile operations should not be compromised by using fewer devices simply because the operation will frequently change its location."

The FDOT does not disagree there may be occasions where it may be acceptable to use a shorter taper, depending on the location and traffic conditions, and the MUTCD provides sufficient flexibility to allow for this when using an appropriate level of engineering study and engineering judgment. However, establishing a "Standard" to allow shorter tapers that would be used in all scenarios on Florida's State Highway System would not be appropriate and would not meet the requirements and the intent of the MUTCD.

Attached is a copy of FDOT's Index 612 as well as a letter and drawing from the utility industry which details their position regarding this issue. Your prompt response to this request will be appreciated.

cc:

Sincerely,

Robert Greer, P .E. Director, Office of Design

Ken Wiley, Florida Electric Power Coordinating Group  
Freddie Simmons, FDOT State Highway Engineer  
Chris Richter, FWHA Florida Division  
Brian Blanchard, FDOT State Roadway Design Engineer

Attachments

[www.dot.state.fl.us](http://www.dot.state.fl.us)

**FLORIDA ELECTRIC POWER COORDINATING GROUP, INC. (FCG)**

1408 N. WESTSHORE BLVD., SUITE 1002 .(813) 289-5644 .FAX (813) 289-5646 TAMPA, FLORIDA 33607-4512

**September** 13, 2004

Mr. Ken Flechler  
Vice President  
Safety and Compliance Comcast Corporation  
2001 Pennsylvania Avenue, NW Suite 500  
Washington DC 20006

Dear Ken



The Florida Electric Power Coordinating Group (FCG) represents 29 electric utilities in the State of Florida. We have been working with the Florida Department of Transportation (FOOT) to update their Utility Accommodation Manual which regulates the utility usage of the state right-of-ways.

One of the items we have been discussing is the Maintenance of Traffic (MOT) requirements for a multi-lane, divided or

undivided highway where the utility work would last for a period of 15 minutes or less. The applicable FOOT MOT Index for this activity is #612 and is attached. In the upper left hand corner under "Conditions", is the specific item under discussion. The FOOT has agreed to change this condition such that it is for a period of "45 minutes or less" in lieu of the existing requirement of "15 minutes or less".

Also, on that diagram you will notice that the existing requirement calls for spacing up to 500 feet for signage and tapers. The FOOT has agreed to change this requirement to a requirement that meets the MUTCO standard. As you can see from Index 612, the existing FOOT standard far exceeds the MUTCO requirements.

The electric utility industry, through the FCG, has proposed the following as a substitute for the existing requirement. This is shown on the attachment labeled "MUTCD Alternative". This "MUTCD Alternative" was arrived at by the following logic:

**MUTCD 6G.12** requires a merging taper. It does not specify length

**MUTCD 6C.08** provides "Guidance" (recommended but not mandatory) that the appropriate taper length "should" be determined using the criteria shown in Tables 6C-3 and 6C-4.