

MUTCD – The Role of Engineering Judgement/Study

The Delaware Manual on Uniform Traffic Control Devices ([MUTCD](#)) is a highly prescriptive document with a dizzying range of things we must do, can do, and may consider with respect to signs, pavement markings, signals, and other devices. But while the, “Manual describes the application of traffic control devices,” it goes on to say that it, “shall not be a legal requirement for their installation.”¹

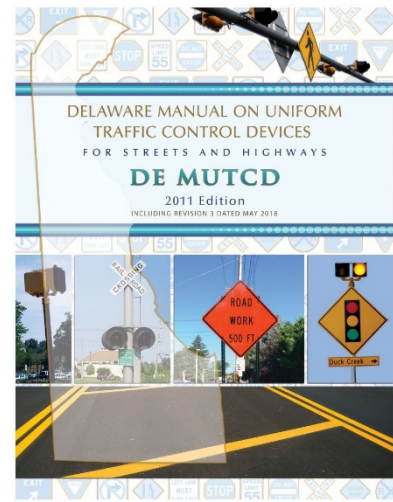
In other words, “the decision to use a particular device at a particular location should be made on the basis of either an engineering study or the application of engineering judgment. Thus, while this Manual provides Standards, Guidance, and Options for design and application of traffic control devices, this Manual should not be considered a substitute for engineering judgment. Engineering judgment should be exercised in the selection and application of traffic control devices, as well as in the location and design of roads and streets that the devices complement.”²

You might say the Manual is saying, “you figure out where they’re needed and we’ll tell you most of the rest.” For example, Section 2A.03 Standardization of Application tells us that, “results from traffic engineering studies of physical and traffic factors should indicate the locations where signs are deemed necessary or desirable.”³ After we determine where the sign should be located, the next hundred pages or so will tell us what it should say, how big it should be, how high it should be mounted, how far off the roadway it should be, and so on. But the first step is squarely on us, using engineering judgement.

That may be the first time engineering judgement is discussed, but as we proceed into the MUTCD, it will appear in many cases, as will engineering study. For example, when determining whether an intersection should be uncontrolled, controlled one or more legs with yield signs, or one or more legs with stop signs, the MUTCD tells us that, “engineering judgment should be used to establish intersection control.”⁴ However, in determining speed limits, we learn that, “speed zones (other than statutory speed limits) shall only be established on the basis of an engineering study that has been performed in accordance with traffic engineering practices.”⁵

Being the very intentionally specific document that it is, we can be sure the MUTCD is not “mixing and matching” these terms, so what is the difference?

Engineering Judgment is, “the evaluation of available pertinent information, and the application of appropriate principles, provisions, and practices as contained in this Manual and other sources, for the purpose of deciding upon the applicability, design, operation, or



¹ Delaware MUTCD, Section 1A.09, ¶102

² Delaware MUTCD, Section 1A.09, ¶103

³ Delaware MUTCD, Section 2A.03, ¶103

⁴ Delaware MUTCD, Section 2B.04, ¶102

⁵ Delaware MUTCD, Section 2B.13, ¶101

installation of a traffic control device. Engineering judgment shall be exercised by an engineer, or by an individual working under the supervision of an engineer, through the application of procedures and criteria established by the engineer. Documentation of engineering judgment is not required.”⁶

Engineering Study is, “the comprehensive analysis and evaluation of available pertinent information, and the application of appropriate principles, provisions, and practices as contained in this Manual and other sources, for the purpose of deciding upon the applicability, design, operation, or installation of a traffic control device. An engineering study shall be performed by an engineer, or by an individual working under the supervision of an engineer, through the application of procedures and criteria established by the engineer. An engineering study shall be documented.”⁷

These are similar efforts in some respects, but clearly when an engineering study is called for, a comprehensive and documented exercise must be made.

Engineering judgement or an engineering study must be carried out by or under the supervision of a Professional Engineer licensed in the State of Delaware. Delaware Title 24, [Chapter 28](#) defines these requirements and excerpted definitions are shown in the box below.

The MUTCD recognizes that some roadway agencies don’t have engineers on staff or engineers with sufficient experience and training with respect to roadway design or traffic control devices, and, “as part of the Federal-aid Program, each State is required to have a Local Technical Assistance Program

(LTAP) and to provide technical assistance to local highway agencies. Requisite technical training in the application of the principles of the MUTCD is available from the State’s Local Technical Assistance Program for needed engineering guidance and assistance.”⁸

The Delaware T²/LTAP Center’s Municipal Engineering Circuit Rider is intended to provide technical assistance and training to local agencies and so if you have MUTCD questions or other transportation issues, contact Matt Carter at matheu@udel.edu or (302) 831-7236.

Professional Engineers in Delaware

(25) ‘Practice of engineering’ or ‘to practice engineering’ includes any professional service performed for the general public such as consultation, investigation, evaluation, planning, design, or responsible supervision of construction or operation in connection with any public or private buildings, structures, utilities, machines, equipment, processes, works, or projects wherein the public welfare or the safeguarding of life, health or property is concerned or involved when such professional service requires the application of engineering principles and data, but it does not include the work ordinarily performed by persons who operate or maintain machinery or equipment, neither does it include engineering services performed by an employee of a firm or corporation that does not offer professional engineering services to the general public.

(26) ‘Professional engineer’ shall mean a person who has been duly licensed as a professional engineer by the Council.

Delaware Title 24, Chapter 28

⁶ Delaware MUTCD, Section 1A.13, ¶103, #64

⁷ Delaware MUTCD, Section 1A.13, ¶103, #65

⁸ Delaware MUTCD, Section 1A.09, ¶106