What Level of Detail Should be in the MUTCD?

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The MUTCD\(^1\) was first published in 1935 and there have been a total of 10 editions\(^2\). As indicated in the chart below, the MUTCD grew at a fairly consistent rate between 1935 and 1988. Since then, the amount of information in the MUTCD has increased at a much greater rate. And the decrease in the number of pages from the 2000 MUTCD to the 2003 edition does not indicate a reduction in content as it was achieved by using a smaller font, reducing line spacing, and eliminating white space.

The increase in content in the 2000, 2003, and 2009 editions can be attributed to many different factors, including the following:

- The reformatting of the MUTCD with four headings (standards, guidance, options, and support).

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\(^1\) Within the context of the MUTCD, this white paper uses the MUTCD as it currently exists. If the current MUTCD document were to be split into multiple documents, it would be necessary to define the level of detail needed for each document.

\(^2\) For more information on the history of the MUTCD, see [http://mutcd.fhwa.dot.gov/kno-history.htm](http://mutcd.fhwa.dot.gov/kno-history.htm) and [https://ceprofs.civil.tamu.edu/ghawkins/MUTCD-History.htm](https://ceprofs.civil.tamu.edu/ghawkins/MUTCD-History.htm).
• A focus on being more specific in conveying the intent of the language in order to avoid uncertainty that was believed to increase tort liability risks.
• An expansion of the number of devices included in the MUTCD.
• An effort to provide information that could be used by individuals that did not have an extensive background in traffic engineering.

As the size of the MUTCD increased, the ability to use the information in the MUTCD became more challenging. Furthermore, the increase level of specificity created a need for even more detailed information in order to address the various situations that could exist. The increasing level of detail has made it more difficult to use engineering judgment to optimize the traffic control device (TCD) decision for a particular situation or location.

One of the complicated aspects of the size of the MUTCD is the number of pages. In a modern world, the concept of a document being distributed only in a printed format is outdated. The issue with the size of the MUTCD is not the number of pages, but the amount of information and the user’s ability to find the needed information. If the amount of information/level of detail in the MUTCD is so great that the user cannot access the applicable TCD principles, then it becomes too cumbersome.

The level of detail that should be provided in the MUTCD is one of the more critical questions to be addressed as part of developing a long-range vision and strategic plan for the document. There are good reasons why there should be a high level of detail and good reasons why there should not be. The issue can be framed as the use of the MUTCD for performing discretionary acts versus ministerial acts.

• **Discretionary acts**: Those acts involving the power to make choices among valid alternatives and to exercise independent judgment in choosing a course of action.
• **Ministerial acts**: Those acts involving obedience to clearly defined orders to the extent that the governmental employee or officer is left no choice of his own.

The classification of an action into one of these categories has significant impact on tort liability issues. Discretionary acts involving TCDs generally require decisions by individuals with traffic engineering experience and expertise, and typically by a professional engineer. On the other hand, ministerial acts involving TCDs can be performed by individuals that do not have the same of experience, expertise, and credentials. However, for TCD actions to be categorized as ministerial acts, there must be specific and detailed instruction with no variation. Increasing the level of detail is of greater value to agencies that do not have staff with traffic engineering expertise. This is not unusual in many counties and smaller cities that have small public works staff. In this situation, a detailed MUTCD would be used as an instructional document.

One of the many challenges associated with TCD decisions is that there is a great deal of variability from one site to another, even though the basic need and application may be the same. Differences in roadway geometry, background visual clutter, vehicle or road user mix, environment, pavement, and other factors may require the use of engineering judgment to make the optimal decision regarding TCDs application and use. It is not realistic to view the MUTCD as an instructional book that places TCD decisions within the context of ministerial acts.
Given the information described above, for the purposes of the MUTCD strategic planning effort, the level of detail to be provided in the MUTCD is described below.

Assuming that the MUTCD is an engineering document and that the target audience is a professional engineer with the appropriate level of expertise and experience (see white paper #2), the MUTCD should provide the amount of information needed to make such engineering decisions. It should not provide so much detail that it becomes difficult to adapt the engineering decision making process to site-specific conditions.