

Application of Steady Signal Indications for Left Turns, and the definitions are not completely consistent with practice in some areas of the country. The FHWA disagrees with these comments and adopts the language because different jurisdictions do have their own accepted definitions for these terms that are not necessarily consistent with the MUTCD, thus it is important to have the MUTCD definitions for these terms stated at the beginning of this part to avoid misunderstanding.

170. In Section 4B.02 Basis of Installation or Removal of Traffic Control Signals, the FHWA received one comment from Caltrans regarding the proposal to remove the maximum time limit of one year for signal poles and cables to remain in place after removal of the signal heads from item E of the OPTION statement. The commenter requested deleting this OPTION and not allowing poles to remain in place after removal of a signal, because the commenter believes that this practice could result in a potential safety hazard and maintenance responsibilities. The FHWA adopts the wording proposed in the NPA, because leaving the poles in place is only an option, and agencies can remove poles if they believe them to constitute a significant safety problem and/or if they are reasonably certain that the signal would never be placed back into service.

171. In Section 4B.03 Advantages and Disadvantages of Traffic Control Signals, the FHWA received four comments from the NCUTCD, local DOTs, and a private citizen regarding the proposal to revise item B of the second paragraph of the SUPPORT statement to suggest that signal timing review and updating be conducted if needed and that every two years is just one of several possible frequencies of review. The private citizen suggested that the timeframe reference be lengthened to "at least every five years" and strengthened to a STANDARD in order to encourage jurisdictions to maintain traffic signal timings. The NCUTCD and the cities of Tucson, Arizona, and Plano, Texas, opposed a reference to any specific time frame, and suggested that the timeframe be determined by engineering judgment. The FHWA agrees with the concept of these comments and revises the sentence to delete the timeframe reference and to include engineering judgment and significant traffic flow and/or land use changes in determining the frequency of the review of signal timing.

172. In Chapter 4C Traffic Control Signal Needs and Studies, the FHWA received one general comment from a traffic engineering consultant that

public transit interests be incorporated when determining the need for installing a traffic control signal. The commenter suggested that either a ninth warrant be added to recognize the special needs associated with bus operations, or one of the current eight warrants be modified to recognize public transit needs. This goes beyond the scope of this rulemaking. Research has just started regarding this issue,³⁴ and this topic may be suitable for a future rulemaking action.

173. In Section 4C.01 Studies and Factors for Justifying Traffic Control Signals, the FHWA received two comments from Caltrans and the Minnesota DOT opposed to the recommendation in the GUIDANCE statement, which states that a traffic control signal installed under projected conditions should be studied again within one year after placing it in stop-and-go operation to determine if it is still justified and, if it is not justified, it should be taken out of stop-and-go operation or removed. Both commenters stated that conducting these follow-up studies would take additional manpower and could be politically sensitive. Additionally, the Minnesota DOT suggested that Section 4B.02 Basis of Installation or Removal of Traffic Control Signals already contains information related to removing traffic control signals. The Minnesota DOT also noted that the one-year requirement would conflict with Warrant 8, which states that one can use projected volumes five years out. The FHWA revises the language to add, "Except for locations where the engineering study uses the satisfaction of Warrant 8 to justify a signal" at the beginning of the second sentence, in order to correct the stated conflict of the proposed language with Warrant 8. In terms of the additional manpower that could potentially be required to conduct studies, the FHWA believes that the number of follow-up studies that would need to be conducted would be few and that, in many cases, the jurisdiction could require the studies to be completed by the developer's traffic engineer. The FHWA adopts the language as proposed in the NPA with the above-mentioned modification to avoid conflict with Warrant 8.

³⁴ "Improving Pedestrian Safety at Unsignalized Roadway Crossings" is a research study that is currently in progress. This is a joint effort between the National Cooperative Highway Research Program (NCHRP) and the Transportation Cooperative Research Program (TCRP). The study is numbered NCHRP Project 3-71 and TCRP D-08. Information is available at the following URL: <http://rip.trb.org>.

The FHWA received one comment from Caltrans opposed to the proposal to allow the OPTION of using the left-turn volume on the major-street as the minor-street volume and the corresponding single direction of opposing traffic as the major street volume. The commenter felt that this would allow signals to be installed at non-intersection locations. The FHWA disagrees with the commenter because this is an OPTION statement and need not be applied. There are many locations, such as left turns onto freeway ramps, where the left turn versus opposing through movement conflict creates the need for a signal. The FHWA adopts the language as proposed in the NPA.

The FHWA received four comments from Caltrans, the Kansas DOT, the Association of Pedestrian and Bicycle Professionals, and a traffic engineering consultant in general agreement with adding item H to the OPTION statement, which indicates that bicyclists may be counted as either vehicles or pedestrians when studying the need for a traffic control signal. To add clarity and consistency for how this is applied, as suggested by the Kansas DOT, the FHWA revises this section and includes this information as a new paragraph within the OPTION and adds a new SUPPORT statement indicating that bicyclists are usually considered as vehicles when they are riding in the street, and as pedestrians when they are clearly using pedestrian facilities.

174. In Section 4C.02 Warrant 1, Eight-Hour Vehicular Volume, the FHWA received several comments regarding the proposal to add a new OPTION statement to explain the use of 56 percent traffic volumes under certain conditions and modify Table 4C-1 to include additional criteria for a combination of Conditions A and B as reflected in the text. Three commenters, including the NCUTCD, the Ohio DOT, and the City of Tucson, Arizona, agreed with the use of the 56 percent traffic volumes. However, six commenters, including Caltrans, the Kansas and North Carolina DOTs, the City of Kennewick, Washington, and a private citizen, were opposed to the use of the 56 percent volumes, stating that the reduced volume allows signals to be installed at locations with low volumes. The FHWA believes that the use of the 56 percent volumes has been successfully applied in the past by many jurisdictions and should be allowed. Because it is an OPTION, jurisdictions have the ability to decide whether or not this option will be used. The FHWA adopts the 56 percent column in the table as proposed.