

CURRENT PRACTICES IN SHOULDER DESIGN,
CONSTRUCTION, MAINTENANCE AND OPERATIONS

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Much unreported, in-house State research and development work has been done on shoulder maintenance methods, equipment and requirements, construction equipment and methods, design requirements, traffic control regulations, markings and warrants, and cost effectiveness. This research and development work cuts across many of the disciplines represented in the two HRB committees, "Operational Effects of Geometrics" and "Shoulder Design." There is some concern that variables of greatest concern to each of these individual committees may be improperly appreciated or controlled in the research and development work fostered by the other HRB committees concerned with construction, operations and maintenance. Accordingly, what follows is 1) a survey on shoulder design and operation practices, 2) desirable criteria for the geometric design and operation of shoulders, 3) shoulder structural design and construction considerations, 4) shoulder maintenance considerations and 5) shoulder practices and performance in two States.

SURVEY ON SHOULDER DESIGN AND OPERATION PRACTICES

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In an attempt to determine the extent of technological advances employed in current practices, the Highway Research Board Subcommittee on Primary Stopping and Recovery Area of the Operational Effects of Geometrics Committee, A3E02, conducted a questionnaire survey of the design and operation considerations of highway shoulders. The questions were selected in order to obtain comparable data on shoulder design characteristics relating to warrants and guidelines, natural contrast, use of edgelines, shoulder widths, and structural quality of shoulders as compared with that of the main lanes. From the questionnaire sent to the 50 States and the District of Columbia, 47 responses were received.

Several factors concerning shoulder design criteria and operation practices become evident from this survey and the research background. First, the survey results indicated general agreement on the basic need for good shoulders. In addition, a majority of respondents expressed agreement regarding shoulder criteria for the Interstate Highway System; however, this may simply be due to an adherence to imposed standards.

In other areas of design criteria, dissenting opinions appeared. For example, 13 percent of the respondents indicated that they did not have any design criteria. The reasoning for such lack of warrants requires further study.

The survey also revealed that four States permit slower traffic to use the shoulder area to facilitate a passing maneuver. The reasons for allowing this maneuver should be analyzed, and a basis for allowing or forbidding this maneuver established.