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The purpose of this paper is to briefly examine the importance of National Cooperative Highway Research Program (NCHRP) Report 350 and its implementation schedule upon you in maintenance operations. NCHRP Report 350 was published in 1993 and establishes the latest testing standards for highway safety hardware, i.e., crash cushions, longitudinal barriers, end terminals and truck mounted attenuators (TMAs), etc. This document has been accepted by FHWA and they have published an implementation schedule which is currently in its transition stage and will be in full effect for all safety hardware in August 1998. However, many states are specifying the use of "350" hardware now and will beat the FHWA implementation mandate.

The NCHRP Report 350 document introduces the use of different test or service levels intended to match their performance levels to the various levels of highways, i.e., Interstate, primary, rural, construction zones, heavy industrial roads. Thus, NCHRP Report 350 provides the user with an opportunity to specify an economic level of hardware crashworthiness matching the service level of the roadway. It provides you, the user, a means to compare crashworthy performance between competing systems by testing to *same* standard conditions. A word of caution here is that these are lab *test conditions* and are not necessarily referenced or related to "real world" or actual situations found in the field. They are, in fact, worst case extreme conditions designed to test the extremes of the hardware.

The tests vehicles do, however, attempt to represent the extremes of the current vehicle fleet by testing with both the low center of gravity, light car (820C) to the higher (by 13") center of gravity sports utility, van and pick-ups (2000P).

Energy Absorption Systems has committed to have systems meeting these "350" standards in all crash management market segments by the 1998 date. This approximately five year program represents \$6 to 8 million investment.

TMA, specifically, is a life-saving device to make the working environment for highway crews safer. NCHRP Report 350 has specific standard tests for the first time at both the 70-kph (approx. old 45-mph level) and the 100kph (approx. 60-mph) speeds. The decision on which of TMA systems is right for your operation should be based on work zone conditions or site considerations. Conditions such as (1) anticipated traffic speeds through the work zone, (2) number of lanes, (3) length of time crew will be in the work zones, (4) number of lanes, (5) ability and time to deploy other traffic control measures, per the guidance of the Manual on Uniform Traffic Control Devices (MUTCD), etc.

The best document to provide guidance for the user on how and where to use TMAs can be found in a March 1990 University of Tennessee report on the subject. This document was referenced and reprinted several years ago by the AASHTO Highway Subcommittee on Maintenance.

In summary, the importance of a new crash testing document affords you, the users, a method to specify hardware which is crashworthy and economically feasible for your situation. I have given a brief overview of the latest in TMA systems which allows you to enhance safety in your work zones.