Effective: October 1, 1995	51.00 Traffic Safety 51.40 Traffic Control Devices
Supersedes: Initial Policy	51.43 Truck Mounted Attenuators

A. General Policy

A truck mounted attenuator (TMA) is an energy absorption device that can serve as a temporary barrier when placed between live traffic and a work area on highways that must remain open to traffic during repairs or accidents. The TMA may significantly help to minimize injuries or fatalities associated with a collision between a vehicle and a truck used for protecting (blocking) a work area.

A TMA should be used to protect workers, equipment, and/or materials in lane and/or shoulder closures if a county has a TMA supplied by the department or has already purchased one. However, a county may not have a TMA available to use due to budgetary constraints. If this occurs, the use of a blocking vehicle without a TMA is acceptable. It is also possible that a county may not have enough TMAs available for use on all their projects on a particular day. If this occurs, the county should use all of the TMAs available to them first before using vehicles without TMAs for protection.

B. Specifications

All TMAs shall be installed, used, and maintained in accordance with the manufacturer's specifications that are received with each unit. Accordingly, the following weight limits have been established for each of the TMAs list below:

Model/Manufacturer	Gross Vehicle Weight (Pounds)		
	Minimum	Optimum	Range
Alpha 60 MD/Energy Absorption	15,000	25,000	15,000 to 35,000

The use of an Oshkosh or other obtrusively large vehicle should not be allowed to haul the TMA even though the vehicle may be able to meet the required weight specification. TMAs purchased previous to this policy may be mounted on any vehicle provided that vehicle meets the manufacturer’s weight specifications.

The National Transportation Safety Board, the American Association of State Highway Transportation Officals, and the department recommend that beginning January 1, 1997, all trucks used to haul TMAs be equipped with headrests and lap/shoulder restraints.

C. Implementation

Truck Mounted Attenuators should be used to protect people, equipment, and or materials in a work or accident area that is part of a closed traffic lane and/or shoulder while the road remains open to traffic. TMAs can be used for both stationary and moving operations. Diagrams showing the proper use of TMAs can be found in the Manual of Uniform Traffic Control Devices (MUTCD), Part VI. Sample diagrams derived from MUTCD Part VI along with the proper spacing requirements between the TMA and the work area can be found in Guideline 51.20.

If a TMA is damaged or destroyed while being used on or transported to and from a State Trunk Highway (STH), the department will repair or replace the TMA at its own expense. If a TMA is damaged or destroyed by a county's own negligence, the county shall repair or replace the TMA at its own expense.

Counties may use a TMA on their own highways or other local government highways. If a TMA gets damaged or destroyed while being used on or transported to and from roads other than STHs, the county shall repair or replace the TMA at its own expense.

D. Project Priority

There will be situations when there are more projects that could use a TMA than the number of TMAs available. A guide has been developed to aid personnel in assigning available TMA(s) to projects. These are only suggested priorities since project selection may be influenced by factors such as duration, location, complexity, and importance.

Note: The department would like to thank Jack B. Humphreys, T. Darcy Sullivan, and the Transportation Research Board for allowing us to use their research paper: Guidelines for the Use of Truck Mounted Attenuators in Work Zones (1991) from which this section was derived.

Definitions:

- A FORMAL CLOSURE condition (either lane or shoulder) includes a full complement of advance warning devices, a closure taper of channelizing devices, and channelizing devices to define the work area as required.

- A NO FORMAL CLOSURE condition (either lane or shoulder) includes limited, if any, advance warning signs and channelizing devices.

- A SHADOW VEHICLE is a moving vehicle traveling a short distance upstream from a moving operation giving physical protection from approaching traffic.

- A BARRIER VEHICLE is a vehicle parked a short distance upstream from a stationary operation giving protection from approaching traffic.

SUGGESTED PRIORITIES FOR THE APPLICATION OF TMAs

CLOSURE/EXPOSURE CONDITION	RANKING*			
	Freeway	Non-Freeway with Speed Limit		
		□50 mph	40-45 mph	□35 mph
<u>No Formal Lane Closure</u>				
Shadow vehicle for operation involving exposed personnel	1	2	3	4
Shadow vehicle for operation **not** involving exposed personnel	1	2	3	4
<u>No Formal Shoulder Closure</u>				
Shadow vehicle for operation involving exposed personnel	2	3	3	3
Shadow vehicle for operation **not** involving exposed personnel	2	3	4	5
<u>Formal Lane Closure</u>				
Barrier vehicle for operation involving exposed personnel	2	3	4	5
Barrier vehicle for operation **not** involving exposed personnel	2	3	4	5
<u>Formal Shoulder Closure</u>				
Barrier vehicle for operation involving exposed personnel	3	4	5	5
Barrier vehicle for operation **not** involving exposed personnel	3	4	5	5

* The numerical rank indicates the level of priority assigned to the use of a TMA on a assigned shadow/barrier vehicle. The use of a TMA under the defined conditions is:

1 -- very highly recommended
2 -- highly recommended
3 -- recommended
4 -- desirable
5 -- may be justified on the basis of special conditions encountered on an individual project.

E. Payment

TMAs shall be paid for in accordance with the policy established by the Machinery Management Committee as detailed in chapter 5 of this manual.