



MUTCD Guidance

090925

The Mobile Barriers Trailer (MBT-1) is a “temporary traffic barrier” as defined in 6F.81 of the MUTCD, and must be used with an appropriate TL-2 or TL-3 truck-mounted attenuator (TMA) as defined in 6F.82 and required under the FHWA’s Acceptance letter. Additional information is provided below.

Background & Discussion

MBT-1 was crash tested and Accepted by FHWA for use on the National Highway System (NHS) under both NCHRP 350 and the new more challenging MASH criteria. FHWA Accepted MBT-1 for both TL-2 and TL-3 usage depending on the test level of the TMA affixed to the rear.

As noted in the FHWA’s Acceptance letter:

“The Mobile Barriers Trailer (MBT-1) is an integrated, rigid wall, semi-trailer that is used in conjunction with standard semi-tractors to provide mobile, improved, safety, and work environments for personnel at applicable maintenance, construction, and security sites. It is an extended, mobile, longitudinal barrier that provides a physical and visual wall between passing traffic and the maintenance and construction personal. With integrated crash attenuator at the rear, a semi-tractor at the front, and a rigid wall on the side toward passing traffic, the MBT will provide approximately 30.5 m (100 ft) of barrier and protected work area.”

The FHWA’s database of “roadside hardware Accepted for use on the NHS” classifies MBT-1 as a “movable” “longitudinal barrier.” Its FHWA designator is B-178.

Under the MUTCD, the Mobile Barriers Trailer (MBT-1) is a “Temporary Traffic Barrier.” Section 6F.81 of the MUTCD opens by defining “Temporary Traffic Barriers” as follows:

“Temporary traffic barriers are devices designed to help prevent penetration by vehicles while minimizing injuries to vehicle occupants, and are designed to protect workers, bicyclists, and pedestrians.

The four primary functions of Temporary traffic barriers are:

- A. To keep vehicular traffic from entering work areas, such as excavations or material storage sites;
- B. To separate workers, bicyclists, and pedestrians from motor vehicle traffic;
- C. To separate opposing directions of vehicular traffic; and
- D. To separate vehicular traffic, bicyclists, and pedestrians from the work area such as false work for bridges and other exposed objects.”

MBT-1 addresses each of these objectives and functions, including separation of vehicular traffic when used either alone or in tandem for such operations as center lane or median guardrail work. MBT-1 also provides optional benefits such as onboard power, safety and directional lighting, and work lighting designed to reduce glare and distractions, and improve traffic flows.

In order to mitigate the effect of an errant vehicle striking the rear of MBT-1, an appropriate TL-2 or TL-3 TMA must be attached at the rear as per the FHWA’s Acceptance letter and MUTCD Section 6F.82 (“Crash Cushions”). The TMA serves in this context the applicable “crashworthy end treatment” referenced under 6F.81 and is specifically required pursuant to the FHWA’s Acceptance letter.



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Depending on the circumstances, MBT-1 can be used on site for various periods of time. “Temporary” as used under the MUTCD can reference a matter of hours, days, months, or more, depending on the circumstances. This is consistent with various other interpretations and practices where something less than fixed, permanent barriers are appropriate. It might also be noted that the term “temporary” is being phased out in reference to barriers in favor of other terminology which more clearly avoids confusion with misperceptions of temporal limitations. Task Force 13 (TF-13) (the joint AASHTO/ARTBA/AGC committee addressing roadside safety hardware) is substituting “portable” or “movable” for “temporary” when describing applicable barriers. As noted above, the FHWA classifications reference “movable” barriers. The MUTCD should be interpreted consistently.

For most projects, MBT-1 should be used with appropriate taper, lane closure and supplemental shadow vehicles. Cones or barrels can be used to provide appropriate taper, with MBT-1 and associated shadow vehicles located within the lane closure and/or along the shoulder. Mobile projects should involve at least one upstream shadow vehicle with appropriate signage. MBT-1 and the applicable shadow vehicles must be outfitted with appropriate TMAs rated to the TL-2 or TL-3 speeds being encountered, and should carry their own arrow or CMS board directing traffic to move over and/or exercise caution.

Illustrations of a couple common configurations are attached (Fig. 1 & 2 below). Figure 1 is intended to show MBT-1 with upstream signage, cone or barrel taper, lane closure and shoulder protection. Figure 2 adds an upstream shadow vehicle for additional signage and protection, especially where long runs of cones or barrels are used for lane closure. Please note that the illustrations are not drawn to scale and relative positions may vary. Actual cone zones may be miles in length. The upstream shadow vehicle can be located significantly further upstream than shown. The shoulder truck can be located further back to allow work equipment to better access the work area. Caution should be exercised to nevertheless minimize the risk of errant vehicles reaching the work zone. Two trailers can be used together to provide a protected internal work area such as for center lane work and/or to provide protection on both sides of a median where for example guardrail is being replaced. Other configurations can be used, depending on the site, operation and circumstances involved.

As noted, the illustrations are for general demonstrative purposes only. They are not necessarily drawn to scale, and do not reflect all applicable detail. Relative configurations may vary. Site, operation and circumstances may require alternate configurations. Users should exercise appropriate discretion in this regard.

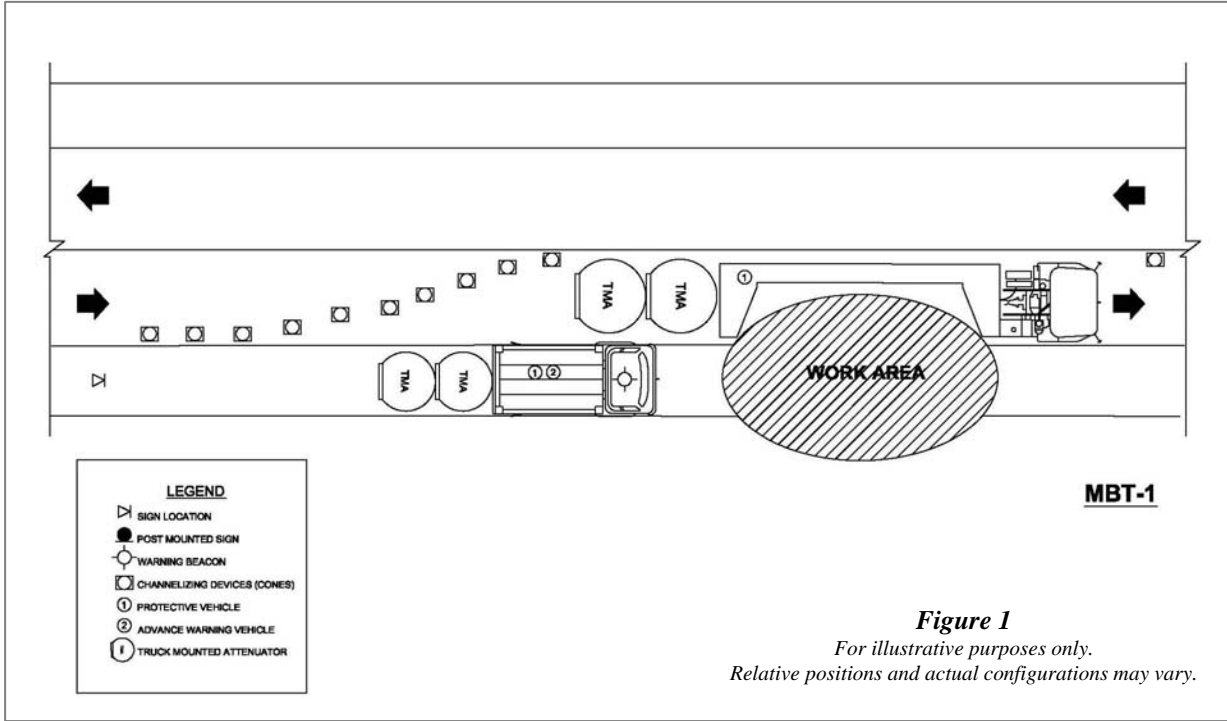


Figure 1
For illustrative purposes only.
Relative positions and actual configurations may vary.

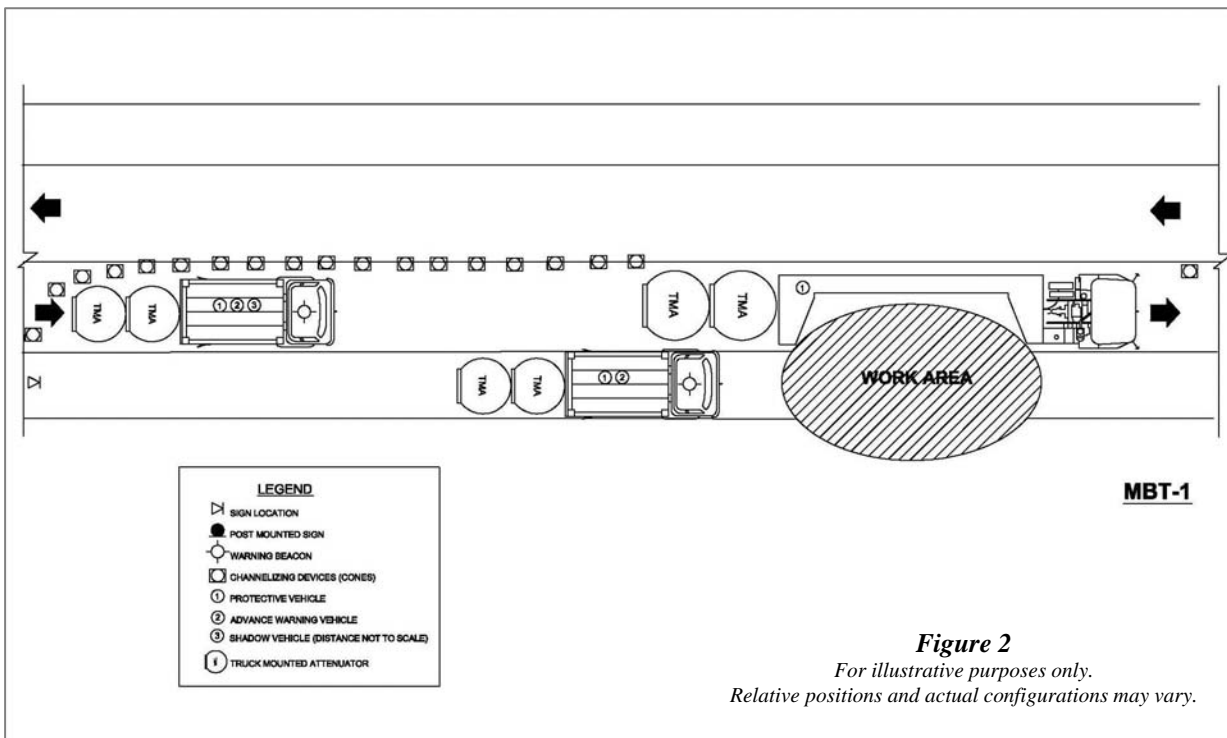


Figure 2
For illustrative purposes only.
Relative positions and actual configurations may vary.