Temporary Traffic Control Device Quality Construction Guidance Revised 4/26/2018

Creation of this guideline is in accordance with and to satisfy the requirements of the Federal Work Zone Regulation Subpart K of 23 CFR part 630. The Montana Department of Transportation, in partnership with the FHWA, shall develop and implement quality guidelines for temporary traffic control devices. The purpose of this guideline is to help maintain the quality and adequacy of the temporary traffic control devices for the duration of the project. This guidance will also define a level of inspection necessary to provide ongoing compliance of the devices.

An effective temporary traffic control device must meet five basic requirements:

- Fulfill a need.
- Command attention.
- Convey a clear and simple meaning.
- Command respect from the road user.
- Give adequate time for a proper response.

Poorly maintained temporary traffic control devices that do not meet these requirements may not provide the intended purpose. Prudent and reasonable road users must be able to navigate a project in a reasonable safe and mobile manner.

Physical maintenance of temporary traffic control devices is necessary to retain the legibility and visibility requirements. Physical maintenance will also ensure the proper functioning of the device. The quality of the work zone devices falls under three categories: acceptable, marginal, and unacceptable.

1. Acceptable: All devices must be new or in like new condition.
    a. Sign faces should be approximately perpendicular to the roadway
    b. Posts should be mounted vertically plumb
    c. Backside should be blank and free of reflective material, small company identification markings are allowed
2. Marginal: Devices reaching the lower end of like new condition. Signs in marginal condition should not be installed. Signs in marginal condition due to wear and tear on the job site should be considered for replacement.
    a. There are many abrasions throughout the sign face. Abrasions within the individual letters are minimal
    b. Color fading may be present however, at night the back-ground color and reflectivity must be present.

3. Unacceptable: Devices not meeting the acceptable or marginal conditions. Removal of these devices from the jobsite will occur within 24 hours of notification.
    a. Letters or background missing
    b. Asphalt / cement splatter or other residue evident on sign face
    c. Message defaced
    d. Noticeable color fading / loss of reflectivity.

Missing or knocked down devices should be replaced or reset in a timely manner
For additional information, refer to the American Traffic Safety Services Association (ATSSA) "Quality Guidelines for Work Zone Traffic Control Devices". Classifications and color pictures with written descriptions are included for each type of device. If you need a copy of this publication, please contact the Construction Traffic Control Engineer.

Functional maintenance of traffic control devices is necessary to determine if the devices are performing satisfactorily, the reflectivity is adequate, they are clean, and if they have been moved, damaged, or otherwise rendered ineffective. All temporary traffic control devices must be in compliance with the approved traffic control plan and with the current editions of the MDT Standard Specifications for Road and Bridge Construction, MDT Detailed Drawings, and the Manual on Uniform Traffic Control Devices. All devices must meet National Cooperative Highway Research Program (NCHRP) Report 350 or MASH crashworthiness.

A comprehensive inspection program will include the following:

- Review of contract documents and preparation for inspection – review the traffic control plan to be familiar with the devices specified, the application, operation, and maintenance of each device specified, and what work will occur during each device setup.

- On-site staging area inspection – Inspection of the devices before placement in the field is necessary to make certain they are appropriate for the traffic control plan and are in acceptable condition. There must also be sufficient devices to meet the needs of the traffic control plan.

- Drive-through inspection – A drive-through inspection enables the inspector to see the traffic control devices and perform the maneuvers required by all drivers. This kind of inspection shall take place for all lanes in both directions and at all entry or exit points within the construction zone. Daytime and nighttime inspections are required to make sure devices are functioning properly, are clean and legible, and are maintaining retro reflectivity.

- Stationary observations - A fixed observation point allows the traffic control inspector to view how drivers are reacting to a particular portion of the work zone. Locations with numerous skid marks and areas with new skid marks may indicate a location where drivers are having problems navigating the work zone.

- Walk-up inspections – Major devices such as crash cushions and portable changeable message boards require walk-up inspections. Inspectors must assure that the assembly and installation of the work zone devices comply with the plans, specifications, and manufacturer's recommendations.

- Nighttime inspections – Work zones must appear on the road at night in the manner that designers and project engineers intended. Therefore, nighttime inspections will occur for both projects with daytime work and those with nighttime work. The significance level of the project will help determine the frequency of inspections. The observed performance of the traffic control plan in meeting MDT's safety and mobility objectives will also contribute to the frequency of inspections.

    1. For projects with only daytime work, nighttime inspections will occur at least twice monthly and when major project alignment changes occur. Along with the concerns previously discussed in this guidance, Inspectors will focus on retro reflectivity of signs and devices, legibility of signs, and verify all steady-burn warning lights are working. The inspector will evaluate ease of navigating the work zone according to the traffic control plan and the devices.

    2. For projects with nighttime work only, inspections will occur each night. Inspectors will focus on the issues previously discussed in this guidance along with the following concerns. Workers and flaggers must wear approved retro reflectorized clothing, flagging stations must be appropriately lighted, work zones are appropriately lighted, and pilot cars must be easily identified. The inspector will evaluate ease of navigating the work zone according to the traffic control plan and the devices.

- Documentation – The primary purpose for documenting traffic control information is to evaluate the effectiveness of the traffic control plan and determine needed changes. A daily project diary shall be kept detailing the project traffic control activities and the information required for input into SiteManager. When the inspection process reveals a condition that requires correction, documentation should include the correction needed and the

corrections made. The time and by whom the corrections were noted and made shall also be documented.

MDT Field, District, and Helena personnel may perform inspection of the temporary traffic control device quality. Field personnel will inspect the devices daily. District and Helena personnel may perform inspections when requested by the Field personnel or when deemed necessary. All inspection duties will comply with the guidelines of the Work Zone Safety and Mobility Policy. All inspectors shall be trained to assure the appropriate level of knowledge, skills, and abilities for responsible parties to manage and evaluate construction zone safety and mobility.