

REGIONAL SIGN
RETROREFLECTIVITY
MAINTENANCE AND
MANAGEMENT PLAN

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1| Purpose

The purpose of the Central Iowa Regional Transportation Planning Alliance (CIRTPA's) Regional Sign Retroreflectivity Maintenance and Management Plan is to establish a regional system for member governments located in the CIRTPA planning area to conduct an inventory, inspect, maintain, and replace (as needed) all regulatory, warning and guide signage which fail to meet the minimum retroreflectivity requirements as established by the Federal Highway Administration (FHWA) in a timely, cost efficient manner.

2| Objectives

The objective of this Plan is to establish a region-wide system applicable and useful to each participating member government in the CIRTPA area. This plan will include a sign inventory, method of retroreflectivity assessment, and guidance for replacing signs below minimum required levels to be in compliance with FHWA regulations. It will be the responsibility of individual jurisdictions to determine phasing and to physically change out their signage.



3| Inventory

Each jurisdiction will conduct a signage inventory as deemed appropriate by the member government. The inventory may include information concerning sign type, sign size, mounting height, GPS coordinates and reason for sign replacement (if applicable), as well as other pertinent information deemed relevant to this inventory by the individual jurisdiction. Each participating member government will be responsible for meeting minimum retroreflectivity standards as found in the most recent edition of the Manual on Uniform Traffic Control Devices (MUTCD).

4| Assessing Methods

There are several methods proposed by the FHWA that could be used to complete the retroreflectivity assessments of roadway signs in the CIRTPA planning area. These include: Visual Nighttime Inspection (Calibration Signs, Comparison Panels, and Consistent Parameters); Measured Retroreflectivity, Expected Sign Life; Blanket Replacement; and Control Signs. Each has its own advantages and disadvantages.

The Visual Nighttime Inspection method has three (3) different options for measuring Retroreflectivity. They are the calibration sign, comparison panels, and consistent parameters methods. Regardless of the option selected each is required to be used at nighttime. By using the calibration sign method, the participating member government would obtain control signs that are at or near the minimum levels. Each night prior to the inspection, the inspector views the control signs from the inspection vehicle to calibrate his eyes to the minimum retroreflectivity standards. The inspector conducts the inspections that night and visually makes a determination of whether the sign is nearing the minimum limit of the control signs viewed prior to beginning visual assessments.

The comparison panel's method requires the participating member government to obtain a sample panel that is at or near the minimum retroreflectivity standards. The inspector conducts his/her inspection and when a sign that is questionable is found, the inspector stops and clips the panel to the sign and compares the real sign to the comparison panel. If the panel appears brighter than the panel, the sign is replaced.

The consistent parameters method requires the participating member government to use a model year 2000 or newer full-size SUV or pickup to complete the assessment. It also requires that an inspector be over 60 years of age. The inspector would ride in the SUV or pickup and use his/her best judgment based on what he/she sees with his/her own eyes.

The next method is the Measured Retroreflectivity Method. This method requires the participating member government to measure the retroreflectivity levels of its signs. This requires the purchase of a retroreflectometer. By using the retroreflectometer, a determination can be made as to which signs are approaching a retro value near the minimum standards established by the FHWA and those signs would

be scheduled for replacement. Though this is a costly option, with the exception of the blanket replacement and expected sign life methods, it is the only alternative that is not subjective and provides hard measurable data.

The Expected Sign Life Method is the ideal method in a perfect world. However, this method requires that member governments already have an accurate inventory and some type of marking on the sign indicating the date when the sign was installed. If the member governments do not have this information currently available, then this method would not be an option. The Expected Sign Life method considers the date the sign was installed and is based on the end of life retroreflectivity value determined by the FHWA. The member governments would establish a system that would certify that signs are replaced on a cycle that would ensure they are replaced prior to no longer meeting the minimum retroreflectivity standards. A part of this method would probably be periodic nighttime inspections to verify that the method is working.

The Blanket Replacement Method is based on expected life of a given sheeting material, similar to the Expected Sign Life Method. For this method, the participating member government determines the expected life of the sheeting being used in its geographical area. The expected life time period could be determined by a participating member government evaluation, or by borrowing the results of research from an area near them. However, with this method, a participating member government does not need to track individual signs. All signs in an area, or along a corridor, are replaced at the same time, based on the expected life. Though this is the best way to ensure all signs meet the minimum retroreflectivity standards, it can also be the most cost prohibitive method. A major pitfall of this method is that the participating member government would be blanket replacing some signs that still meet the minimum standards.

The Control Sign Method uses control signs to determine when to replace a larger set of signs. For example, a participating member government might have a City or County-wide signing project. By using this method the member governments would install a small number of signs in a maintenance yard. The retroreflectivity of those control signs is tracked and all the associated signs are replaced when the retroreflectivity of the control signs approaches the suggested levels.

Additionally, a participating member government could use a small controlled sampling of signs that have recently been installed as the control signs. Those few signs would be monitored to determine when the larger group of signs fail to meet the minimum retroreflectivity standards and are all signs in that controlled group would be replaced.

The CIRTPA supports the use of any of the listed methods. It is up to the member government to determine which method best fits their situation. The participating member government at all times is responsible for making the final decisions concerning implementation of this plan.

5| Maintenance and Management

Each participating member government will maintain and manage all signs located in its respective jurisdiction that are not maintained by the Iowa Department of Transportation. In every instance, the participating member governments must assess the conditions of the traffic sign and rely on judgment and experience to determine the proper action to correct problems with the sign, whether those problems are simply straightening the support, replacing the sign due to damage, theft or its inability to meet the minimum prescribed retroreflectivity requirements or to clear obstructions reducing the visibility of the sign. Factors that may delay completion of sign replacement and/or maintenance include other repair needs, fabrication or procurement of necessary materials, weather conditions including severe cold, limited access, significant winds, limited visibility and other staff and field condition issues. All signs will be installed and maintained to meet all federal standards and guidelines as set forth in the most recent edition of the MUTCD.

Once a sign has been replaced or a new sign has been added along a roadway, the participating member governments should indicate the current month and year the sign was replaced or added along the roadway, on the back of the sign for future maintenance purposes. This makes tracking the expected sign life and projecting future maintenance of each sign more manageable. Newly installed signs will be scheduled for reassessment no later than 10 years from the date of installation.

If the initial assessment of a sign indicates that it still meets minimum retroreflectivity requirements, but is nearing the end of its usefulness for safety, the participating member governments will schedule a sign reassessment date. The reassessment date can range from one year to three years depending on the signs condition. However, every sign determined to be nearing the end of its safety usefulness shall be reassessed at a minimum of every three years until said deficient sign has been replaced.

6| Authority

The CIRTPA may consider purchasing equipment, as needed, to complete the sign retroreflectivity assessments. This equipment will be loaned to participating member governments for a pre-determined length of time, with each participating member government assuming responsibility for damage or loss of the equipment. The CIRTPA may offer inventory assistance to participating member governments upon request.

The responsibilities of the member governments participating in this plan will be to inventory the signage in its own jurisdiction. Additionally, it is the sole responsibility of each participating member government to conduct and complete sign retroreflectivity assessments, and reassessments as needed, for each of its signs. It is the sole responsibility of each participating participating member government to implement the plan, assess, maintain and manage all signage and ensure that all signage found in its individual jurisdiction meets the minimum required retroreflectivity standards as set forth in the most

recent edition of the MUTCD. The CIRTPA shall bear no responsibility for the sign inventory and retroreflectivity assessments conducted by the participating member governments.

The CIRTPA will help provide recommendations to the participating member governments. The CIRTPA makes itself available as a technical resource in aiding the participating member government in completion of this plan and will provide recommendations as needed. However, it is the responsibility of the participating member government to follow up on recommendations provided by the CIRTPA and at all times the participating member government is responsible for making the final decisions whether to use the recommendations or choose another alternative in order to implement and complete this plan and comply with the minimum retroreflectivity standards established by the FHWA.

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