## CHICKASAW COUNTY SIGN MAINTENANCE POLICY

### Resolution #02-22-22-15

(For Minimum Sign Retro-reflectivity Compliance as required by the Manual on Uniform Traffic Control Devices, 2009 Edition)

Visual Inspection Option

This policy describes the evaluation and assessment methods used for maintaining traffic sign retro-reflectivity by the Chickasaw County road department. The method described herein consists of routine daytime reviews for post or sign misalignment, damages or deterioration and a periodic nighttime visual inspection and replacement of necessary signs to assure adequate retro-reflectivity.

Chickasaw County maintains an inventory of traffic control signs using a commercial software product called "Simple Signs", produced by *Rowekamp Associates, Inc. of Bloomington MN.* Utilizing this software allows capture and recording many critical characteristics of each sign and installation, along with any historical maintenance that has been performed. *This software also has provision for both GPS coordinates and retro-reflectivity values to be entered if and when our system can be enhanced and those items are collected.*

Individual operators and maintenance crews travel the Chickasaw County roads to and from specific work assignments each work day in all parts of the county. These staff have been instructed to report any apparent problems (ie. Vision obstructions, vandalism, collision damage or substandard appearing traffic control devices) immediately to office staff, where a maintenance work order for any needed repairs will be initiated. The county sheriff's officers also patrol the rural roads twenty four hours a day and have been asked to report any deficiencies they observe, in addition to reporting collision sign damage. Other county officials and their personnel who travel throughout the county on the rural road system that have been asked to report any observed traffic control deficiencies. These would include the assessor, sanitarian, as well as zoning and conservation personnel. Their reports to our office staff also result in written work orders for the required attention.

To assure continued compliance with retro-reflectivity requirements, Chickasaw County has also adopted a nighttime visual inspection of all required installations every two years, using comparable signs. Based on that evaluation, appropriate follow up replacements and repairs that noted during the inspection are then scheduled. A summary report of the nighttime inspection, showing dates and deficient signs observed is kept and also made a part of the individual sign history in the inventory system.

In order to provide consistency in our inspections, all personnel making the observations will receive training from available materials and programs. When possible, certification of inspector training will further assure that consistency. Inspections will be conducted using Chickasaw County owned full size pickups with factory specified headlamps that have been properly aimed. The inspector (observer) will be a county employee with normal vision within the legal limits of the State of Iowa. Headlamps and the windshield will be cleaned each night before inspections begin. The vehicle should be traveling at or near normal highway speed for this test, so two persons will be used, usually a driver with the second serving as the observer/note keeper.

A set of comparable or "eye calibration" signs, including ones with the colors of red, white, and yellow, (plus green and orange, if street signs or construction signs are included) will be used to provide the observer with a standard of retro-reflectivity before he begins each night's inspections. These signs consist of previously used signs that have been tested with a retro-reflectometer and found to be at (or near) the minimum acceptable level for each color. Following completion of all of the nighttime inspections for this period, the calibration signs should be stored away, inside a shed until the next inspection cycle. Under these conditions, their retro-reflectivity levels will be re-checked and recorded every 5 years, and when needed, signs will be replaced.

At the beginning of the night inspection period, these signs will be mounted in the county yard for the observer to view from his inspection vehicle in the typical positions that they will be encountered during an inspection. Once these signs are observed, the night's inspection will begin. Only the low-beam headlamps of the vehicle will be used as the source of illumination for the signs and the interior light of the vehicle should remain off to the extent feasible. The inspection will be performed at or near highway speeds and from the travel lanes and not from the shoulder. As the vehicle approaches the sign, the sign's overall appearance in terms of brightness and legibility will be assessed. A rating scale should include, at a minimum, three designations: good, fair, and poor. The inspector will record the information for each sign and the rating that it is given. Signs rated as poor will be scheduled for replacement as soon as possible. Signs rated as fair can be noted as requiring attention during the next set of scheduled inspections or could be identified for additional assessment, such as measurement at a later date using a handheld retro-reflectometer.

All information (dates, rating and notes) from the inspection will be recorded in the sign inventory of Chickasaw County, along with any follow up maintenance activities that result from it.

Passed and approved this 22nd day of February, 2022

CHICKASAW COUNTY BOARD OF SUPERVISORS

Chairperson

Attest:

Chickasaw County Auditor

## Modification Notes for Sample Policy

Use Word to change "Sample" to "Your" County name throughout the document

Inventory System: CarteGraph Sign View of Dubuque, Iowa

"a county designed software version..", etc.

If no inventory exists, an inventory of existing signs can be created while conducting the nighttime inspection, but it may not account for missing signs. A nighttime inspection procedure can be performed without a sign inventory.

Review the items carefully and modify as necessary. (ie. Does your county have a sanitarian, a zoning department, etc.)

If you meet with (or send memos) to other departments requesting they report sign problems, save cc with this policy.

If you have a running log of all work orders written, be sure that any sign reports from outside agencies are followed up on and included.

The MUTCD does not set specific intervals, but this program calls for an inspection period not to exceed two years. (You can always do more often if you wish and weather allows or do and alternating half of the county every year.)

Training requirements are intended to provide an understanding of what it is the observer is looking at and supposed to see. Either a commercial training program or a training session by the administrator would be satisfactory. A Certificate of Attendance at a training session for all inspectors would be a great addition to your program file.

Initial sign retro-reflective readings for calibration signs should be made using calibrated equipment (from a neighbor, InTrans, or using your own). Date and actual numbers from testing for these signs should be recorded and preserved with your other program data.

Any documentation you can provide to show you have done what your policy sets out will be very useful from both a FHWA and a liability standpoint.

Approval block could be added for by Board of Supervisors, if they desire.

**Table 4. Headlamp Aiming Procedure.**

**What you will need:**

- A level area with a distance of approximately 7.625 m (25 ft) plus the length of the vehicle from a flat lightly colored wall
- A tape measure
- Masking tape

**Instructions:**

- Park the vehicle so that the headlamps are precisely 7.625 m (25 ft) from a flat lightly colored wall. The vehicle should have at least ½ of a tank of gas and should be loaded as it would be when inspecting signs. This includes the weight of the driver (and passenger present).
- Measure the exact middle of both the windshield and rear window, and mark them with strips of tape, creating vertical centerlines, front and rear.
- Standing behind the car, sight along the centerlines, and have an assist mark the position of the vehicle centerline on the wall with a vertical strip of tape.
- Measure the distance between the vehicle centerline and the headlamp lenses. Mark that distance to the right and left of the centerline on the wall with vertical strips of tape.
- Measure the height of each headlamp from the ground (measuring to the center of the lens). Using those measurements, place horizontal strips of tape on the wall where the vertical strips have been applied. There should now be two crosses on the wall, with centers that correspond to the center of each headlamp lens.
- For headlamps with a left-side cutoff (VOL), mark a horizontal line that is 53.34 mm (2.1 inches) below the headlamp centers with a horizontal strip of tape. For headlamps with a right-side cutoff (VOR), mark a horizontal line that runs through the headlamp centers.
- Turn the vehicle headlamps on low beam. The left edge of the bright spots on the wall should just touch the vertical bars of the crosses. The top edge of the strongest gradient of light should just touch the horizontal line. Adjust the headlamp aim per manufacturer's instructions, if required.

Probably the most important element of the nighttime inspection is documenting the process and results. This can be done with a voice or video recorder, or even with paper and pencil. Whichever method is selected, it is important that inspections are properly documented and archived to provide tort protection.

*Advantages and Disadvantages*

One of the major benefits of using the visual inspection method is that it has the least administrative and fiscal burden of all the methods. Many agencies already perform some type of periodic sign inspection, although not all inspections are performed at night. This method also has a unique feature in that the signs are viewed in their natural surroundings. Thus, the overall appearance of the sign and the ability of the sign to provide information to the driving public can be assessed.

Another advantage of the visual inspection method is that it has the lowest level of sign replacement and sign waste. Only those signs identified as needing to be replaced because of low retro-reflectivity levels are replaced, assuming that the inspection frequency is appropriate. With management methods, it is probable that some signs will be replaced before their full life is achieved. This may imply that the visual inspection method (as compared to the measured retro-reflectivity method) maximizes sign life.

While this method may be more subjective than other methods, research has shown that trained observers can reasonably and repeatedly detect signs with marginal retro-reflectivity. There is some risk involved while doing these inspections, particularly if the driver is also the evaluator and recorder. Ideally, nighttime inspections should be conducted with two people for safety reasons.