

**BROCKWAY TOWNSHIP
COUNTY OF STEARNS
STATE OF MINNESOTA**

ORDINANCE #13

ROAD SIGNS

1. INTRODUCTION

As a road authority, Brockway Township provides roadway signs adequate to protect and inform the public. This ordinance outlines the Brockway Township program for road signs. The following are the source documents for our program:

- a. The Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD) and amendments.
- b. State of Minnesota Department of Transportation Traffic Manuals.
- c. The Federal Highway Administration (FHWA)

2. SIGN INVENTORY

Brockway Township maintains an inventory of all road signs and a GIS map showing sign locations.

3. UNIFORM STANDARDS FOR SIGNS.

FHWA establishes basic standards for signs as found in the Manual on Uniform Traffic Control Devices (MUTCD). The Minnesota Department of Transportation (Mn/DOT) has established their own (MN MUTCD) policy for traffic control on all public streets, roads and highways within the State of Minnesota. Most of the text, figures, and tables are identical to the Federal MUTCD, while others have been modified to meet state laws or to more closely reflect the conditions and policies of Minnesota. The MN MUTCD regulates the different types of signs, such as regulatory, warning and guide signs. This document also establishes standards for temporary traffic controls, traffic signals, and pavement markings. To ensure the safety and efficiency of Township roads, the Township installs and maintains their signs in accordance with the MN MUTCD.

4. SIGN REPLACEMENT PRIORITY (Note: Minnesota Gopher One locate maybe needed)

- a. Priority One: Missing and Illegible Stop, Stop Ahead, Stop Ahead Symbol, Yield, Yield Ahead, and Yield Ahead Symbol signs.
 - i. Stop and Yield signs are replaced as soon as possible (3 days or less) using temporary supports if necessary. Temporary signing is replaced as soon as possible and practical.

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- ii. Stop Ahead, Stop Ahead Symbols, Yield Ahead, and Yield Ahead Symbol signs are installed as soon as possible (7 days or less) without using emergency procedures.
- a. Priority Two: All other missing and illegible regulatory signs are replaced within 14 days.
- b. Priority Three: All missing and illegible warning signs are replaced within 14 days.
- c. Priority Four: All other signs including damaged but illegible and leaning signs are replaced within 21 days.

5. PLACEMENT OF COMMON SIGNS

- a. Stop signs are placed a minimum of 12 feet from the edge of the intersecting road and a maximum of 50 feet in the Township R/W.
- b. At all Stop and Yield conditions, where visibility of the Stop or Yield sign is obstructed within 500 feet, a Stop Ahead Symbol or Yield Ahead Symbol is placed 500 feet preceding the sign. All new signs use symbols.
- c. “T” intersection symbols are placed 750 feet preceding the intersection. In urban areas these signs are not used because of the number of intersections and the distance between intersections.
- d. At locations of reduced speed, a Reduced Speed Ahead Sign is placed 500 feet preceding the revised speed limit.
- e. All advance crossing signs for trail crossings, school crossings, and pedestrian crossings are placed 500 feet preceding the crossing location.
- f. All other warning signs such as curves, turns, bumps, etc. not elsewhere specified in this paragraph are placed 500 feet preceding the condition.
- g. All signs, in rural areas, have a twelve-foot minimum lateral clearance from the edge of the driving lane but no less than 6 feet minimum lateral clearance from edge of shoulder. In urban areas the lateral clearance is two feet from the face of the curb. If no curb is present, then this will be two feet from the break point. The break point is defined as that point where the shoulder and the in slope intersect.
- h. Where for reasons of visibility or physical features, a sign cannot be placed at the distance indicated it will be placed as close as possible; however no nearer than the distance indicated.

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6. POST AND SIGN INSTALLATION

- a. Base posts are 6 to 8 feet long and weigh 3.0 pound per foot with 3/8" or 7/17" holes spaced 1" on center. Posts are placed a minimum of 42 inches into the ground.
- b. Other posts are of sufficient height for signs to meet minimum standards set forth in the MUTCD. Post weight is 2.5 pounds per foot with 3/8" or 7/16" holes spaced 1" on center.
- c. Signs mounted on a single post are secured with two bolts. Signs mounted on multiple posts are mounted with two bolts per post.
- d. Multiple signs installed on two or more posts at the same location have a cross brace so posts act together.
- e. Base and upper posts are lapped a minimum of 8 inches with three bolts securing the posts.

7. SIGN AND SHEETING SELECTION

ASTM D4956 describes the types of retroreflective sheeting materials that can be used on traffic signs. The MUTCD minimum retro reflectivity requirements refer to sheeting types as defined in ASTM D4956. Shheeting types that can be used according to the requirements are:

- All prismatic sheeting materials may be used for all signs.
- High Intensity Beaded (Type III) and Super Engineer Grade (Type II) may be used for all signs except for the white legend on overhead guide signs.
- Engineer Grade (Type I) may be used for all signs except for:
 - the white legend on guide signs,
 - the white legend on street name signs, and
 - all yellow and orange warning signs.

Even though a particular type of sheeting might initially meet the minimum retro reflectivity levels when new, it may quickly degrade to below the minimum retro reflectivity levels.

The use of higher performance sheeting, even though it has a higher initial cost, might provide a better life cycle cost for the agency.

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The FHWA has developed a sheeting ID guide and has posted it at:
www.fhwa.dot.gov/retro.

8. GUIDELINES FOR SPECIFIC INSTANCES

- a. Stop or Yield signs are not added or removed without review by the Township Engineer.
- b. Stop Ahead and Yield Ahead signs are installed if the Stop or Yield sign is obstructed from view between the sign location and 500 feet preceding the sign.
- c. Curve signs are installed on curves with a 1,000 foot or greater straight section of roadway (tangent) leading up to the curve. Speed advisory plaques are installed for curves with a safe driving speed of between 35 and 50 mph. Multiple consecutive curves may be signed with Winding Road signs.
- d. Advisory Speed Plates are installed when the design speed of a curve is less than 55 MPH however greater than 30 MPH. The advisory speed is set at that speed which will cause less than a 10-degree bubble deflection on a ball bank curve meter. For curves with design speed of 30 MPH or less, a turn sign is used in lieu of a curve sign with an advisory speed plate.
- e. Turns are defined as a curve with a 30 mph or less safe traveling speed. Turns are signed when there is greater than a 1,000-foot tangent leading to the turn.
- f. T Intersections are signed with a stop sign for the non-through leg of the intersection, which is the intersection leg that must turn left or right. Stop signs may be supplemented with a Two-Directional Large Arrow where failure to stop results in a conflict with obstructions such as trees, buildings or slopes steeper than 3 to 1.

If a Two-Directional Large Arrow cannot be installed, such as at a county road intersection, then a T Intersection sign may be installed at 500 feet from the intersection in its place.
- g. Dead End signs are required at the entrance of the roadway which terminates in a dead end or cul-de-sac.

9. MINIMIZATION OF SIGNS AND SIGN REMOVAL

Brockway Township is an Equal Opportunity Employer and Provider

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- a. Regulatory and warning signs are used conservatively because these signs, if used in excess, tend to lose their effectiveness.
- b. Warning signs which are not in compliance with this ordinance are removed by the Township in conjunction with the Retro Reflectivity Sign Replacement Program, with the following exception: Existing warning signs which are not required by this ordinance may be left in place until the end of their life expectancy.
- c. All removed or replaced signs are returned to Brockway Township for recycling purposes. Any proceeds from the recycling of used materials are applied toward the Road and Bridge fund.

10. SIGN RETROREFLECTIVITY ASSESSMENT

Retro reflectivity refers to the property of an object to reflect light back to the source. In this case, retroreflective traffic sign sheeting is used to reflect light from a vehicles headlamp back to the driver's eyes, thus increasing the sign visibility at night. Retroreflective traffic sign sheeting is created using tiny glass beads or prismatic reflectors to reflect light.

The FHWA requires all agencies that maintain roadways open to the traveling public adopt a sign maintenance program to maintain traffic sign retro reflectivity at or above specific levels. The Manual of Uniform Traffic Control Devices (MUTCD), revision 2, identifies the minimum retro reflectivity levels.

Brockway Township uses one or more of the following methods to determine retro reflectivity standards:

- a. Hire an engineer to calculate retro reflectivity.
- b. Use the Visual Nighttime Inspection Method.
- c. Use the expected life method.

The following is an outline of the procedure followed by the Township in performing the visual nighttime inspection of the signs.

- a. The assessment is done by a team of two trained inspectors, one driver and one inspector over the age of 60 years old.
- b. The team drives a model year 2000 or newer SUV or pickup truck.
- c. The inspector evaluates the existing retro reflectivity of all signs while traveling at or near the posted speed limit with the headlights on low beam. Signs are rated according to the following:

Fail: Signs with retro reflectivity deemed unacceptable to the inspector.

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Marginal: Signs with retro reflectivity at or slightly above acceptable levels according to the inspector.

Adequate: Signs with retro reflectivity clearly above the levels deemed necessary by the inspector.

- d. Consistency of testing conditions. Inspections are conducted during consistent nighttime conditions whenever possible. More specifically, inspections are conducted on clear nights, when there is no rain or fog. The interior light of the inspection vehicle is off. A pen light is used for recording the results of the inspection.

11. ONGOING REPLACEMENT PLAN

- a. As the Township replaces roadway signs, they will document the year installed and sheeting material used for each sign.
- b. When the installation year and sheeting type of the sign are known, the Township will use the Expected Sign Life method to maintain the minimum retro reflectivity levels. Signs of known age and sheeting type are replaced just before their expected life has expired. The Township will use the following schedule for replacement of signs with known age and sheeting type:

<u>Material Grade</u>	<u>Replacement Interval</u>
Engineer Grade (Type I)	8-year replacement High
Intensity Beaded (Type III)	10-year replacement
Prismatic Sheeting	12-year replacement

- c. If the sign sheeting has a warranty exceeding the above interval, the replacement interval may be extended to the number of years of the warranty. If an engineering study is available showing that the expected life may differ or be extended from the above schedule, the Township may consider revising the above schedule as supported by the engineering study. The Township may only consider engineering studies that have consistent parameters and were performed in a similar geographic area.

12. SIGN REPLACEMENT PLAN

Signs with a rating of "fail" are scheduled for replacement as soon as possible. Regulatory sign replacement takes precedence with regards to funding.

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Signs with retro reflectivity ratings of "marginal" are scheduled for replacement as soon as practical based on budget considerations.

13. SIGN INSTALLATION AND MAINTENANCE

- a. The Township designated sign authority has the discretionary ability to accomplish sign work as the Township sees fit as outlined in this ordinance.
- b. The Township designated sign authority is the responsible agent within Brockway Township on all matters pertaining to signage. If she/he is unable to make a determination, it needs to come to the Township Board for decision.

Adopted by motion this 14th day of March 2018

Attest:

Brockway Township

/s/ Connie Pesta, Clerk

/s/ George Fiedler, Chair