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Signing of Road District & Township Highways

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FOREWORD

This booklet is issued for convenience of road district highway commissioners and others who may be concerned with proper signage on highways under the jurisdiction of Illinois road districts. It provides a ready reference to typical sign details and typical applications; however, it is not meant to replace or supplement the Manual on Uniform Traffic Control Devices (MUTCD) or the Illinois Supplement to the MUTCD (ILMUTCD).

The most recent version on the MUTCD is available from the Federal Highway Administration's (FHWA) website at http://mutcd.fhwa.dot.gov. The ILMUTCD is available from the department's website at www.dot.il.gov/mutcd/utcdmanual.html. Road district highway commissioners should review the MUTCD before installing, replacing, or removing signs. The County Engineer may also be able to assist.

DOCUMENT CONTROL AND REVISION HISTORY

The Signing of Road District and Township Highways guide is reviewed after as needed based on changes to the MUTCD. Changes to this manual are approved by the Bureau of Local Roads & Streets Policy & Technology Unit.

Distribution

This manual is available in the Illinois Technology Transfer Center's library as a Portable Document Format (PDF) on the Center's web site and as a hard copy. Hard copies are also provided to the Illinois Association of County Engineers and the Township Officials of Illinois for highway commissioner training.

Revision History

The Bureau of Local Roads & Streets maintains archived copies of the manual since 2002.

TABLE OF CONTENTS

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CHAPTER 1: INTRODUCTION

Section 1: GENERAL

Highway signing is important because it helps ensure traffic safety by providing for orderly and predictable movement of traffic on all street and highway systems.

The purpose of this publication is to provide guidance to the Highway Commissioner and County Engineer regarding signs and their uses and traffic control devices. Any reference to the "MUTCD" is to the "Manual on Uniform Traffic Control Devices" or the "Illinois Supplement to the National Manual on Uniform Traffic Control Devices".

This publication should not be used as a substitute for engineering judgment. It is intended that the provisions of this publication be used as guidelines and not the final authority on the signing of township highways.

According to 625 ILCS 5/11-301, the Department shall adopt a State manual and specifications for a uniform system of traffic control devices consistent with the Illinois Vehicle Code for use upon highways within this State. The Department adopts the latest edition of the Manual on Uniform Traffic Control Devices by issuing a supplemental manual. Conformance with the latest editions of the "Manual on Uniform Traffic Control Devices" and the "Illinois Supplement to the MUTCD" is required by 625 ILCS 5/11-304. This statue states:

"Local authorities in their respective maintenance jurisdiction shall place and maintain such traffic control devices upon highways under their maintenance jurisdiction as are required to indicate and carry out the provisions of this Chapter, and local traffic ordinances or to regulate, warn, or guide traffic. All such traffic control devices shall conform to the State Manual and Specifications and shall be justified by traffic warrants stated in the Manual. Placement of traffic control devices on township or road district roads also shall be subject to the written approval of the county engineer or superintendent of highways."

Section 2: PURPOSE

The purpose of highway signing on road district and township roads is to help insure safety by providing for the orderly and predictable movement of all traffic, both motorized and non-motorized throughout the local system and to provide regulations, warnings, and guidance as are needed to insure the safe and informed operation of all users of the system.

Highway signing should be used only where justified by engineering judgment or studies. Signs are essential to regulate and guide traffic over established routes and give information concerning direction and destinations. They warn of hazards that are not evident and call attention to special regulations and restrictions. To be effective, a highway sign should meet five basic requirements:

1. Fulfill a need;
2. Command attention;
3. Convey a clear, simple meaning;
4. Command respect of the road users; and
5. Give adequate time for proper response.

Failure to install and maintain proper signing on township highways has resulted in a number of liability suits. These suits have involved county and township employees who are responsible for highways and highway signing.

The primary purpose of this publication is to assist highway commissioners and county engineers in providing highway signing and guidance for persons driving on their roads. The recommended practices in this publication are based on typical conditions.

Section 3: PRINCIPLES

More effective use of highway signing requires an understanding of some principles relating to good operating practices. Included in the basic principles are driver expectancy, positive guidance and consistency.

Driver Expectancy
Driver expectancies are affected by the type of function of road, such as an interstate highway, state highway, county road, or township road. The driver expects to drive each of these with different levels of caution.

What the driver expects on a road is greatly influenced by what he experienced on the previous section of road. The presence or absence of traffic control devices, road surface type, condition and width, or narrow bridges and culverts is what the driver expects for the next one-half to one mile.

Driver expectancy is affected not only by the very recent experience, but also by those things drivers have learned through the past experiences. For example, advance railroad crossing signs are located at railroad grade crossings, stop signs are red, and curve warnings are yellow and diamond shaped. The consistent use and placement of traffic control devices can do a great deal toward assuring that the driver expectancy is correct.

Positive Guidance
Positive guidance is the concept that a driver can be given sufficient information where and when needed and in a form which can be best used to avoid unsafe conditions. Positive guidance can be given the driver through combinations of signs, hazard markers, safe speed advisory signs, and probably most important of all, the view of the road ahead. If drivers could see curves far enough ahead, approaching cars on crossroads, and intersections hidden by the crest of a hill, there would be little need for anything more than an occasional stop or yield sign on low volume roads.

Consistency
Consistency relates to the "sameness" of the nature of the road from one section to another. Inconsistencies are sudden changes in the nature of the road. Inconsistencies are contrary to a driver's expectancy, thus either the road should be made consistent, which is usually impractical, or something should be done to change the driver's expectancy. For example, in the case of a hidden curve in a nearly straight roadway, the use of a curve warning sign, with perhaps an advisory speed plate will correctly change the driver's expectancy. After seeing the curve sign, the driver expects the curve, knows whether the road curves left or right, and knows the speed at which the curve can be safely driven.

Section 4: DEFINITIONS

Average Annual Daily Traffic (AADT). The total volume of traffic passing a point or segment of a highway facility in both directions for one year divided by the number of days in the year. Normally, periodic daily traffic volumes are adjusted for hours of the day counted, days of the week, and seasons of the year to arrive at average annual daily traffic.

Conventional Road. a street or highway other than a low-volume road, expressway, or freeway.

Department. This means the Illinois Department of Transportation including Divisions, Districts, Regions, and Offices.

Engineering Judgment. The evaluation of available pertinent information, and the application of appropriate principles, provisions, and practices as contained in this Manual and other sources, for the purpose of deciding upon the applicability, design, operation, or installation of a traffic control device. Engineering judgment shall be exercised by an engineer, or by an individual working under the supervision of an engineer, through the application of procedures and criteria established by the engineer. Documentation of engineering judgment is not required.

Engineering Study. The comprehensive analysis and evaluation of available pertinent information, and the application of appropriate principles, provisions, and practices as contained in the MUTCD and other sources, for the purpose of deciding upon the applicability, design, operation, or installation of a traffic control device. An engineering study shall be performed by an engineer, or by an individual working under the supervision of an engineer, through the application of procedures and criteria established by the engineer. An engineering study shall be documented.

Highway. Any public way for vehicular travel which has been laid out in pursuance of any law of this State, or of the Territory of Illinois, or which has been established by dedication, or used by the public as a highway for 15 years, or which has been or may be laid out and connect a subdivision or platted land with a public highway and which has been dedicated for the use of the owners of the land included in the subdivision or platted land where there has been an acceptance and use under such dedication by such owners, and which has not been vacated in pursuance of law. The term "highway" includes rights of way, bridges, drainage structures, signs, guard rails, protective structures and all other structures and appurtenances necessary or convenient for vehicular traffic. A highway in a rural area may be called a "road", while a highway in a municipal area may be called a "street".

Local Public Agency (LPA). Any agency that is eligible to receive Motor Fuel Tax (MFT) funds according to 35 ILCS 505/8. These funds are distributed by the Department based on formula.

Low Volume Road. A low volume road:

- shall be a facility lying outside of built up areas of cities, towns, and communities;
- shall have a traffic volume of less than 400 AADT;
- shall not be a freeway, an expressway, and interchange ramp, a freeway service road, a road on a designated State highway system, or a residential street in a neighborhood; and
- shall be classified as either paved or unpaved.

Plaque. a traffic control device intended to communicate specific information to road users through a word, symbol, or arrow legend that is placed immediately adjacent to a sign to supplement the message on the sign. The difference between a plaque and a sign is that a plaque cannot be used alone. The designation for a plaque includes a "P" suffix.

Road District. Roads which are part of the township and district road system are under the several road districts subject to the supervision by the County and the Department as provided in the Illinois Highway Code.

Sign. Any traffic control device that is intended to communicate specific information to road users through a word, symbol, and/or arrow legend. Signs do not include highway traffic signals, pavement markings, delineators, or channelization devices.

CHAPTER 2: SIGN AUTHORIZATION PROCEDURE

Section 1: GENERAL

Placement of traffic control devices and signs authorized by the "Illinois Highway Code" or by the "Illinois Vehicle Code" on township or road district highways shall be subject to the written approval of the County Engineer or Superintendent of Highways. A placement program should be prepared in cooperation with the engineer/superintendent.

In order to establish a signing program, the following is required:

- Designate through highways.
- Determine where stop and/or yield intersections are warranted and the quantity of each sign needed.
- Determine location and type of other regulatory, warning and guide signs and the quantity needed.
- Secure approval of the County Engineer or County Superintendent of Highways. (See Exhibit II-1 for example letter.)
- Acquire signs and sign supports.
- Erect signs in accordance with the current Manual on Uniform Traffic Control Devices.

The following are a few general notes regarding some sign types and their applications. Chapters 4, 5, and 6 provide more detailed guidelines and information about commonly used signs.

A speed limit on road district roads which differs from statutory maximum limits can be established only by the county board of the county in which the road district is situated. The county board can establish an altered limit by ordinance. Guidelines for alterations of speed limits by local authorities is governed by Section 11-604 of the Illinois Vehicle Code (625 ILCS 5/11-604).

The law specifically sets the speed limit through school zones at 20 miles per hour "during school days when children are present." This limit is not applicable unless the appropriate signs are posted.

Similarly, any restriction of weight on highways or structures under township jurisdiction is not effective unless and until the necessary signs are erected and maintained. Before erecting weight limit signs, written approval must be obtained from the County Engineer or County Superintendent of Highways.

The use of warning and guide signs, with the exception of railroad advance warning signs as indicated in Chapter 5, is discretionary with the highway commissioner, as there are no specific warrants which require signing. Signs of this type, therefore, should be placed at locations believed to be potentially unsafe. Once erected, however, it is essential that the warning sign be maintained as long as the potentially unsafe condition exists.

Section 2: EXAMPLE SIGN REQUEST LETTER

Mr. Hank Hill
County Engineer
Austin, IL

Dear Sir,

If accordance with Section 6-201.16 (605 ILCS 5/6-201.16) of the Illinois Highway Code, I request formal approval to place, erect and maintain traffic control devices and signs authorized by the "Illinois Highway Code" and the "Illinois Vehicle Code" on township or road district roads under my jurisdiction, at the following locations:

Type of Device	Location
Stop signs	On Tropicana Rd. at Frontier Rd
Stop signs (4 way)	Dunes Rd. at Sands Dr.
Yield signs	On Thunderbird Rd. at Las Vegas Rd.
School speed limit signs	Sahara Dr. at Oasis School

It is understood that the traffic control devices and signs will conform to the requirements of the current "Manual on Uniform Traffic Control Devices for Streets and Highways and the "Illinois Supplement to the National Manual on Uniform Traffic Control Devices," and that said devices shall be maintained in accordance with the MUTCD.

Very truly yours,

_____
Highway Commissioner

APPROVED

This__day of_____,_____

County Engineer/Superintendent of Highways

CHAPTER 3: GENERAL REQUIREMENTS

The use of signs on road district roads is to provide directions, to inform motorists of hazards that are not readily apparent, and to call attention to regulations, restrictions, and other conditions.

Signs are classified according to use as follows:

REGULATORY SIGNS - Shall be used to provide the driver notice to traffic laws or regulations and indicate the applicability of the legal requirements that apply at a given place or on a given highway. To disregard these signs is punishable as an infraction, violation, or misdemeanor.

WARNING SIGNS - Call attention to unexpected conditions on or adjacent to a highway or a street and to situations that might not be readily apparent to road users. Warning signs alert road users to conditions that might call for a reduction of speed or on an action in the interest of safety and efficient traffic operations.

GUIDE SIGNS - Essential to direct road users along streets and highways, to inform them of intersecting routes, to direct them to destinations, identify nearby streams, parks, forests, and historic sites, and generally to give such information as will help them along their way in the most simple, direct manner possible.

Section 1: SIGN ERECTION AND PLACEMENT

When erecting signs, it is essential that the location be determined which will provide maximum visibility. Positions cannot be standardized as signs must in all cases be placed in the most advantageous positions depending upon the highway design and alignment.

The following are some general rules for locating signs:

- Locate signs on the right-hand side of the roadway where the driver is in a habit of looking for them.
- Locate signs to optimize nighttime visibility and minimize the effects of mud spatter.
- Locate signs so they do not obscure each other or are hidden from view by other roadside objects.
- Locate decision making signs far enough apart to allow sufficient time to make the decision.

Signs are to be installed individually on separate posts or mountings, except where one sign supplements another, or where signs must be grouped.

Signs should be located so that they:

- Are outside the clear zone unless placed on a breakaway or yielding support;
- Optimize nighttime visibility;
- Do not obscure each other; and
- Are not hidden from view.

Care should be taken not to install too many signs. Regulatory and warnings signs should be used conservatively since these signs, if used to excess, tend to lose their effectiveness. However, the frequent use of route markers and directional signs, to keep drivers aware of their location, will not lessen their value.

Mounting Height

Signs erected in rural areas shall be mounted at a height of at least 5 feet above the level of the pavement or roadway edge, measured to the bottom of the sign. In areas where there is parking, pedestrian traffic or obstructions to view, the mounting height shall be at least 7 feet. The height to the bottom of a secondary sign may be 1 foot less that the heights specified above.

Lateral Offset

For ground-mounted signs, the minimum lateral offset should be 12 feet from the edge of the traveled way. If a shoulder wider than 6 feet exists, the minimum lateral offset for ground-mounted signs should be 6 feet from edge of the shoulder.

The minimum lateral offset is intended to keep trucks and cars that use the shoulders from striking the signs or supports.

All supports should be located as far as practical from the edge of the shoulder. Advantage should be taken to place signs behind existing roadside barriers, on over-crossing structures, or other locations that minimize the exposure of the traffic sign supports.

Posting and Posts Mounting

Sign posts and their foundations and sign mountings must be constructed to hold signs in a correct and permanent position, and to resist swaying in the wind or removal by vandalism. A single post may be used for the erection of up to 24 inch diamond shaped signs, signs with a horizontal dimension of 30 inches or less, and individual signs with areas of 6.25 square feet or less.

All posts should be breakaway. The following are acceptable types of sign posts:

- Tubular steel posts;
- Telescoping steel post no greater than 2 ¼ in by 2 ¼ in ;
- U-channel posts;
- 4 in by 4 in wood posts; and
- 4 in by 6 in wood posts with the 6 in side parallel to the roadway with appropriately drilled holes to ensure that the post is breakaway.

Section 2: RETROREFLECTIVITY

Regulatory, warning, and guide signs shall be retroreflective to show the same shape and color both by day and night, unless specifically stated in the MUTCD.

Retroreflectivity may be accomplished by means of:

1. Reflector "buttons" or similar units set into the symbol, message and/or border; or
2. retroreflective sheeting.

Reflector buttons in a highway sign are individual reflecting units arranged in rows or patterns to form letters, symbols, or borders. They are made of glass or transparent plastic with lenses or prisms.

High Intensity Prismatic sheeting meeting Article 1091 of the Standard Specifications shall be used.

Section 3: MINIMUM RETROREFLECTIVITY LEVELS

Most traffic signs shall meet the minimum level of retroreflectivity outlined in the MUTCD. Including these minimum levels in the MUTCD does not imply that a highway agency must measure the retroreflectivity of every sign. Rather, the MUTCD language describes six methods that highway agencies may use to maintain traffic sign retroreflectivity at or above the minimum levels. However, highway agencies should adopt a consistent method.

Furthermore, the new language recognizes that there may be some individual signs that do not meet the minimum retroreflectivity levels at a particular point in time. As long as the highway agency with jurisdiction is maintaining signs in accordance with the MUTCD, the highway agency will be considered to be in compliance.

Assessment or Management Methods

1. Visual Nighttime Inspection – The retroreflectivity of an existing sign is assessed by a trained sign inspector conducting a visual inspection from a moving vehicle during nighttime conditions. Signs that are visually identified by the inspector to have retroreflectivity below the minimum levels should be replaced.
2. Measured Sign Retroreflectivity – Sign retroreflectivity is measured using a retroreflectometer. Signs with retroreflectivity below the minimum levels should be replaced.
3. Expected Sign Life – When signs are installed, the installation date is labeled or recorded so that the age of a sign is known. The age of the sign is compared to the expected sign life. The expected sign life is based on the experience of sign retroreflectivity degradation in a geographic area compared to the minimum levels. Signs older than the expected life should be replaced.
4. Blanket Replacement – All signs in an area/corridor, or of a given type, should be replaced at specified intervals. This eliminates the need to assess retroreflectivity or track the life of individual signs. The replacement interval is based on the expected sign life, compared to the minimum levels, for the shortest-life material used on the affected signs.
5. Control Signs – Replacement of signs in the field is based on the performance of a sample of control signs. The control signs might be a small sample located in a maintenance yard or a sample of signs in the field. The control signs are monitored to determine the end of retroreflective life for the associated signs. All field signs represented by the control sample should be replaced before the retroreflectivity levels of the control sample reach the minimum levels.
6. Other Methods – Other methods developed based on engineering studies can be used.

An agency may choose to use either an assessment method or a management method, or a combination of the two. Agencies may develop other methods as long as they are documented in an engineering study and correspond to the values in the MUTCD.

Exempt Signs

Highway agencies may exclude the following signs from the retroreflectivity maintenance guidelines:

1. Parking, Standing, and Stopping signs (R7 and R8 series);
2. Walking/Hitchhiking/Crossing signs (R9 series, R10-1 through R10-4b);
3. Adopt-A-Highway signs;
4. All signs with blue or brown backgrounds; and
5. Bikeway signs that are intended for exclusive use by bicyclists or pedestrians.

Additional Information

The Illinois Technology Transfer Center conducts a ½ day workshop that provides more detailed information about the regulation and compliance methods. More information is available at www.fhwa.dot.gov/retro.

Section 4: MAINTENANCE AND INSPECTION

All traffic signs should be kept in proper position, clean, legible, and should have adequate reflectivity at all times. Damaged or deteriorated signs should be replaced without delay.

Poorly maintained signs lose their effectiveness in functioning as traffic control devices. Signs which are damaged, defaced, dirty, or missing are ineffective and tend to discredit the agency responsible for the signs.

To assure adequate maintenance, a suitable schedule of inspection (both day and night) should be established. Semi-annual inspections have generally been sufficient. However, the more frequently inspections are done, even on a weekly or monthly basis, the less likely that deficient signing conditions will exist and the potential for legal action to be taken against an agency due to substandard signing, and resultant accidents or injuries will be reduced.

The following areas have been found to often result in court cases for LPAs:

1. Missing, damaged, obstructed, or hidden STOP signs.
2. Stop signs improperly placed at a wrong height, location angle, or not of proper quality (non-retroreflective).
3. Absence of "STOP AHEAD" signs where necessary.
4. Shrubbery or other obstructions restricting view of signs or road conditions.
5. Failure to warn of "T" intersections.
6. Lack of an inspection program to determine various road defects and signing problems.

Situations listed above should be identified and corrected as soon as possible.

Inspections may also be conducted on a daily basis as employees of the LPA drive the township road system. Signs which have been damaged, deteriorated, or obscured should be replaced at the first opportunity.

Nighttime inspections should also be conducted to determine whether all signs are functioning properly at night.

Special care should be taken to ensure that weeds, trees, shrubbery, construction, or snow do not obstruct the face of any sign. If these conditions are found to be present, the obstruction should be cleared as soon as possible.

Section 5: INVENTORY

An inventory should be kept of all signs, inspections, and sign maintenance activities. Crash records should also be kept to help identify possible deficiencies within the road system.

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