

Memo

Project Name: Traffic Issues

Client: City of Sartell

To: Honorable Mayor and City Council

File No: 901-06000

From: Jim Hughes - City of Sartell
Brian C. Johnson - BWK

Date: November 7, 2006

Re: Speeding & Signage Protocols

Speeding & Signage Protocols (Draft)

Protocols for dealing with the ever-increasing number of concerns being raised about speeding vehicles, and requests for traffic control devices are recommended by the Sartell Chief of Police and the City Engineer. Adoption of the following protocols are being requested of the Sartell City Council.

These protocols were developed to ensure that complaints are properly routed, that they are dealt with in a consistent manner that embodies the wishes of the City Council. These protocols have also been developed to allow for a more orderly resolution to these complaints and an overall reduction in staff time by eliminating repetition and ineffective use of resources. These protocols have been laid out in a Flow-Chart format (attached) to help ensure that the proper process is followed in each case.

At the heart of the protocols relative to speed concerns is the "Statistical Level of Compliance", or SLC. The Sartell City Council has established an SLC of 85% for all roadways within the City of Sartell. The SLC is determined by examining the speed limit for that area and taking into account a margin of error. If 85% of the vehicles that travel within a particular area are determined to be traveling at a speed that is contained within the SLC, no additional specific traffic intervention techniques are warranted. If less than 85% of the vehicles are in compliance, additional action will be taken in the form of education, enforcement, and/or engineering.

How is this determined? The police department will use various methods to conduct traffic surveys in areas of concern. Surveys will be conducted on multiple occasions, and during the peak complaint times, to try to make an accurate assessment of the problem in any given area. Once the surveys are completed, the information will be sent to the requesting party. Speed surveys requiring tube placement on roadways will be restricted during winter months when snow plowing may be required.

What about Signs & Signals? There are strict standards and guidelines that govern when signs and/or signals can be installed or changed. If you would like to have an area considered for signage or a change in existing signs, you can submit your request to the police department where it will be reviewed in partnership with the city engineer. Once a request has been made for a sign or a sign change, the area in question will be studied to determine what changes, if any, are warranted and the information will be sent to the requesting party.

Memo

FAQ: Traffic (Draft)

The following information (and links to the Mn/DOT website) may be useful to post on the city's website to help deal with common traffic concerns from residents:

What can I do to get a traffic sign installed?

To get a traffic sign installed, a specific engineering criteria evaluation must be performed. Traffic signs and pavement markings are very specifically detailed as to their installation and regulations as identified in the MUTCD Manual (Manual for Uniform Traffic Control Devices). Details such as the number of cars on the intersecting streets traveling through an intersection, pedestrians crossing, delays to all vehicles, and the history of accidents must all be considered. Once concerns are recognized, the traffic conditions are reviewed through an engineering analysis. If warrants are met, consideration is given to install a traffic sign. Residents can be encouraged to submit requests for installation of traffic signs in the form of a petition detailing the proposal and indicating support of potentially affected adjacent residents.

Why can't stop signs be placed on more residential streets to slow down speeding drivers?

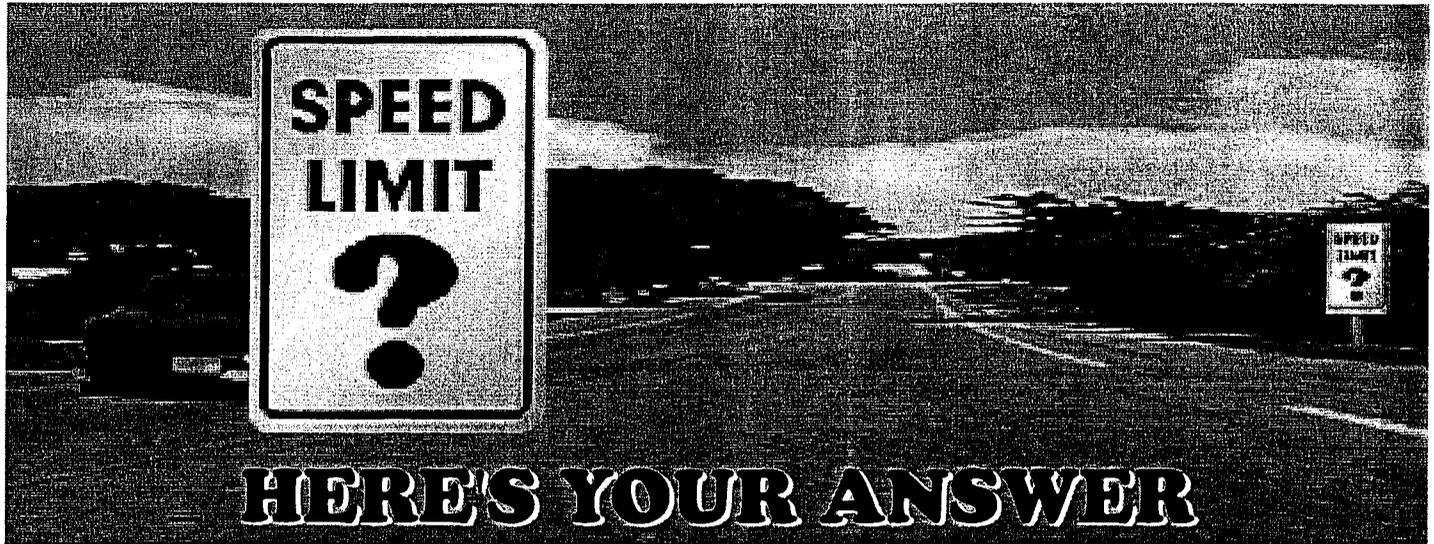
Studies show that drivers can easily distinguish stop signs that are not necessary to provide traffic control at intersections. If a stop sign is placed as a speed control device, drivers tend to be less observant when approaching it and often reduce their speed, but don't stop. In these instances, stop signs may create more of a traffic hazard than they prevent since pedestrians and other drivers expect all cars to stop. It has also been shown through studies that motorists tend to increase their speeds after stopping at a "speed control" stop sign to make up for lost time or will increase speeds through other less direct residential areas to avoid improper stop signs. Essentially, stop signs placed inappropriately can create more safety problems than they solve. Petitions are required for stop sign requests and all requested stop signs are considered only after a careful traffic engineering study.

Can I get a "Children at Play" traffic sign on my street?

A city must place significant importance on the use of all of the street signs within the city. The use of "Children at Play" signs should be limited to areas directly adjacent to schools, parks and playgrounds, where the number of children is typically greatest. It is important that drivers understand they are driving next to a "special" area with the likelihood of children being present. The use of these signs in other areas will lessen the significance of the signs and give a false sense of security to children.

What can be done to address excessive vehicle speeds in residential areas?

Residents are encouraged to contact the Police Department with concerns about excessive vehicle speeds on any city roadways. Sometimes other methods are used to control speeds including educational programs, pavement markings, and many cities are currently exploring "traffic calming" approaches under very specific conditions.



What are the Legal Speed Limits?



MN Statute 169.14

Speed laws are created for the protection of the public and the curbing of unreasonable behavior. To effectively enforce a law, the public must believe that the law is reasonable. Minnesota's speed regulations are based on the same Basic Speed Law that is used in all 50 states: "No person shall drive a vehicle on a highway at a speed greater than is reasonable and prudent under the conditions".

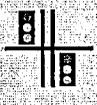
Statutory limits are based on the concept that uniform categories of highways can operate safely at certain preset maximum speeds under ideal conditions. Whether the speed limit is posted or unposted, drivers are required to reduce speed below these values for poor weather conditions, curves or hills and potential hazards such as pedestrians. Drivers must also reduce speed when approaching or passing emergency vehicles with emergency lights flashing.

- These are the most common statutory speeds:
- ⌋ 10 mph in alleys
 - ⌋ 30 mph on streets in urban districts
 - ⌋ 70 mph on rural interstate highways
 - ⌋ 65 mph on urban interstate highways
 - ⌋ 65 mph on expressways
 - ⌋ 55 mph on other roads

Whenever these statutory speed limits are not the correct value for a specific highway, the commissioner of transportation authorizes the posting of other regulatory speed limits.



Interstates are high design multi-lane divided highways that have controlled access interchanges such as cloverleafs or diamond shaped interchanges. Through traffic on the interstate never has to stop or yield. *Examples: I-94 or I-35*



Expressways are multi-lane divided highways but they have entries and intersections, sometimes controlled by traffic signals. Some interchanges may exist but they are not the rule. *Examples: Highway 10 or Highway 52*

How Does Mn/DOT Determine the Regulatory Speed Limit?

The commissioner of transportation sets regulatory speed limits on state and local roads based on a thorough engineering and traffic investigation.

These factors are considered:

- ⌋ road type and condition
- ⌋ location and type of access points (intersections, entrances, etc.)
- ⌋ sufficient length of roadway (1/4 mile minimum)
- ⌋ existing traffic control devices (signs, signals, etc.)
- ⌋ crash history
- ⌋ traffic volume
- ⌋ sight distances (curve, hill, etc.)
- ⌋ test drive results
- ⌋ speed study

The most important part of the traffic investigation is the speed study. When choosing a speed, drivers take many roadway environment factors into consideration. Therefore, the speed that the majority of people consider prudent is an important value. Data is collected by performing radar checks at selected locations on the roadway under ideal driving conditions. A technical analysis is done on the results to determine the 85th percentile. This is the value indicating the speed at which most (85%) drivers are traveling under. Experience has shown that a posted speed limit near this value is the maximum safe and reasonable speed. Studies have shown that traveling much faster or slower than this value can increase your chance of being in a crash.

Engineering judgement is an important tool. The traffic investigator must use knowledge of nationally accepted principles combined with experience to assign the safe speed.



August 2002
 Minnesota Department of Transportation
 Office of Traffic Engineering &
 Intelligent Transportation Systems

www.dot.state.mn.us/trafficeng

What are the Types of Speed Limits?

REGULATORY SPEED LIMIT SIGN



This black and white sign shows the maximum speed that a motorist may travel under ideal conditions. It can be a statutory value or else it must be authorized by the commissioner of transportation.

ADVISORY SPEED SIGN



This black and yellow speed sign is used to advise motorists of a comfortable speed to navigate certain situations. It is used with a warning sign. For instance, when traveling on a winding road, the curve warning sign would be used with an advisory speed sign. This sign may be posted by the local road authority on local roads.



SPEED LIMITS IN SCHOOL ZONES



Local authorities may establish school speed limits on local streets, within a school zone, upon the basis of an engineering and traffic investigation as prescribed by the commissioner of transportation. This regulatory speed limit is in effect whenever children are present, such as before and after school or during recess. The school plate is black and yellow and the other signs are black and white. Optional fluorescent yellow green may be used for the school plate.

SPEED LIMITS IN WORK ZONES



Advisory speed limits are used to identify safe speeds for specific conditions within a work zone. These black and orange signs are always used with warning signs. The local road authority can post these plates in work zones on local roads.



Work zone speed limits are short term regulatory speed limits that are established for worker safety due to traffic in adjacent lanes. These speed limits range from 20 mph to 40 mph on two lane-two way roads and up to 55 mph on divided highways. They can be posted by the local road authority in active work zones on local roads. The FINES DOUBLE plate is black and orange and the speed limit sign is black and white.



Temporary speed limits in construction zones are sometimes needed for long term construction projects or detour routes. These regulatory black and white signs are used when a reduced speed is needed for driver safety. Valid 24 hours a day, 7 days a week, these must be authorized by the commissioner of transportation for any roadway.



See the website: www.dot.state.mn.us/speed for more information on "Work Zone Speed Guidelines"



Safety Notes

- DOUBLE FINES will be imposed for violating any regulatory speed limits in work zones or in school zones. Fines are also double for failing to reduce speed when passing by a stopped emergency vehicle with its lights flashing.
- When an EMERGENCY VEHICLE is approaching you, move to the closest shoulder without crossing the path of the approaching emergency vehicle. You may proceed when the emergency vehicle passes you. If you are approaching a stopped emergency vehicle with its lights flashing, immediately reduce speed and, if it's safe to do so, move over in your lane away from the stopped emergency vehicle. Drivers should actually change lanes if there are two or more lanes in the same direction and there are no vehicles in their path.

Questions & Answers

Will lowering the speed limit reduce speeds?

NO. Studies show that there is little change in the speed pattern after the posting of a speed limit. The driver is much more influenced by the roadway conditions.

Will lowering the speed limit reduce crash frequency?

NO. Although lowering the speed limit is often seen as a cure-all in preventing crashes, this is not the case. Crashes are most often the result of driver inattention and driver error. However, if a posted speed limit is unrealistically low, it creates a greater speed variance (i.e. some drivers follow the speed limit while most drive the reasonable speed). This speed variance can contribute to crashes.

Why do we even have speed limits?

A uniform speed of vehicles in a traffic flow results in the safest operation. The posted speed limits can keep the traffic flowing smoothly provided the majority of drivers find the speed limits reasonable. To best do this, the limits must be consistent throughout the state. The speed limits also give the motorist an idea of a reasonable speed to drive in an unfamiliar location. The speed limits are used by police officials to identify excessive speeds and curb unreasonable behavior.

Who Do I Contact?

If you believe that there is a safety concern or an inappropriate speed limit posted, the person to contact depends on the type of road.

TRUNK HIGHWAYS

For regulatory and advisory speed limits on the trunk highway system, you may contact the district traffic engineer at your Mn/DOT district office.

The trunk highway system includes:

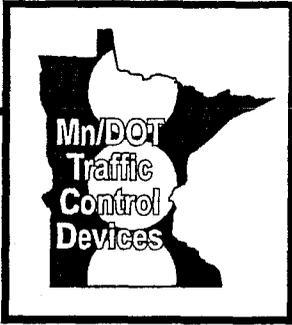
- Interstate Highways,
- U.S. Highways and
- Minnesota State Highways

LOCAL STREETS AND HIGHWAYS

For these roadways, you may contact your local road authority (county, city, or township). For advisory speed limits: The local road authority can determine these advisory speeds and post the plates without authorization from the commissioner of transportation. For regulatory speed limits: The local road authority can pass a resolution requesting an investigation by Mn/DOT. Based upon the results, Mn/DOT may then authorize the local road authority to post new speed limits.

The phone numbers to call for state or local assistance can be found in the phone book under government listings. If you are unable to find the proper phone number, you may call the Mn/DOT Information Center at the following numbers:

1-800-657-3774 Greater Minnesota or
651-296-3000 Twin Cities Metro Area



MANAGING TRAFFIC IN MINNESOTA

A Guide to Pedestrian Crossings, Traffic Signals, Signing and Speed Limits



Pedestrian Crossings

Pedestrian "WALK and DONT WALK" lights at Signalized Intersections



Federal and state standards in the MUTCD regulate the operation of pedestrian signals. Proper timing and placement of pedestrian signals ensure that both driver and pedestrian needs are met.

Pedestrian crossing accommodations usually consist of signals that use words or symbols to indicate "Walk" or "Don't Walk" and pushbuttons that allow pedestrians to trigger the "Walk" signal.

Pedestrian Signal Timing

The "Walk" signal is generally displayed from four to seven seconds. It is intended to give the waiting pedestrian enough time to step off the curb and begin to cross the street.

The flashing "Don't Walk" signal provides the time needed to cross the street. The length of this signal is determined by the distance across the street. The display is held long enough so that a pedestrian who has just stepped off the curb at the end of the "Walk" signal has time to completely cross the street.



Crossing time is generally based on a walking speed of 4 feet per second (2.7 mph). Where demonstrated need exists, at crossings with many elderly persons or children, the timing can be adjusted to accommodate pedestrians with a walking speed.

City Jurisdiction and Signal Timing

Cities with a population greater than 100,000 that have oversight of all signals within their boundaries may designate an intersection as a pedestrian safety crossing. This means that timing can be adjusted to accommodate slower walking speeds. Other pedestrian accommodations may also be made.

Smaller cities require approval by the agency that has jurisdiction over the signal before implementing a pedestrian safety crossing.

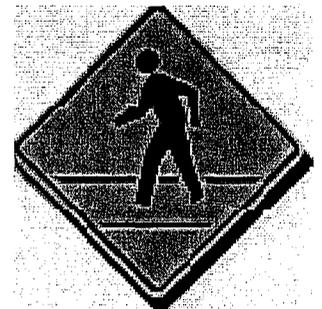
Pedestrian Rights and Responsibilities in Crosswalks

Traffic regulations relating to pedestrians are found in Minnesota Statutes 169.21.

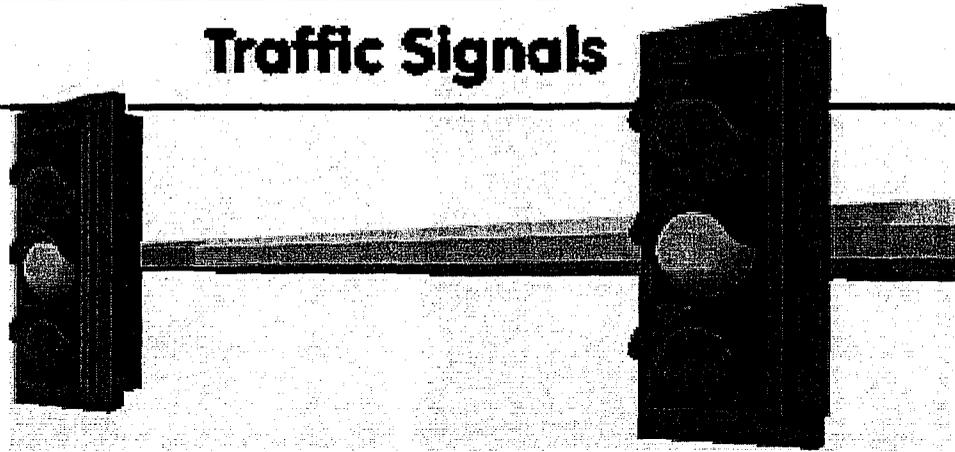
At intersections with traffic control signals, vehicle drivers and pedestrians shall obey the traffic control signal.

Where signals are not in place or operational, the driver of a vehicle shall stop to yield to a pedestrian within a marked crosswalk or at an intersection with no marked crosswalk. The driver must remain stopped until the pedestrian has passed the lane in which the vehicle is stopped.

Pedestrians crossing a roadway at any point other than within a marked crosswalk or within a unmarked crosswalk at an intersection shall yield the right-of-way to all vehicles upon the roadway. No pedestrian shall suddenly leave a curb or other safe place, and walk or run into the path of a vehicle which is so close that it is impossible for the driver to yield.



Traffic Signals



Traffic Signal Installation

A properly installed signal can improve traffic flow and reduce the severity of crashes at an intersection.

A signal that is installed unnecessarily or improperly can reduce traffic flow and increase the number of crashes.

When a signal is requested, Mn/DOT determines whether it meets one or more of the 11 criteria (warrants) listed in the federal Manual on Uniform Traffic Control Devices (MUTCD). Federal funds cannot be spent on unwarranted signals.

These warrants are used by every state to ensure that signals are needed, do not cause new problems, and are consistent across the country. Each warrant addresses a different circumstance that may demonstrate the need for a traffic signal. For example, Warrant 1 covers traffic volumes. If traffic volumes are high, a signal may be justified. The warrant provides technical data and tables to evaluate the intersection. Other warrants address pedestrian traffic, accidents, delays, etc.

For each signal that is requested, a signal justification report (SJR) is prepared that indicates whether any of these warrants are met. Only if a warrant is met, will the intersection be considered eligible for signalization. All eligible intersections are studied for priority and funding availability.

Traffic Signal Installation Costs

When an intersection involves roads that are under more than one jurisdiction, the costs of installing a signal are generally shared between agencies. For example, where a state highway crosses a city street, the two mainline approaches belong to the state and the two side street approaches belong to the city, so the costs would be shared equally. Other parties, that may share costs, often include counties, cities, school districts, developers and Native American tribes, etc.

Signalizing an intersection where a minimum of roadwork is required usually costs from \$120,000 to \$160,000. If design changes are necessary, such as adding turn lanes, the costs can be much higher.

All signals require ongoing expenditures for power, maintenance and operation.

Traffic Signal Timing

Traffic engineers use computer programs to help set the timing for signals at intersections. These programs take many factors into account including:

- ◆ Types of traffic movements that must be accommodated
- ◆ Traffic flow and volume
- ◆ The time it takes for a line of cars to start moving
- ◆ Typical spacing between cars at various speeds
- ◆ Vehicle braking and acceleration capabilities
- ◆ Psychological and physiological characteristics of drivers

Guide and Service Sign Programs

For a complete listing of Mn/DOT Guide & Service Sign Programs, please check this Web site: www.dot.state.mn.us/trafficeng/signing

The Minnesota Department of Transportation (Mn/DOT) has numerous types of signing programs. Some of these programs are based on federal guidelines contained in the federal Manual on Uniform Traffic Control Devices (MUTCD), which is incorporated in the Minnesota MUTCD. Guidelines for these signing program are contained in the MN/DOT Traffic Engineering Manual and administered by Mn/DOT district/division offices. With all Mn/DOT signing programs, signing for a qualifying facility may be permitted only if federal or Mn/DOT sign spacing requirements along the roadway are met.

The following are summaries of nine signing programs that encompass most of the signing on state/trunk highways in Minnesota. Any questions on these signing programs should be directed to the Mn/DOT district/division traffic engineer (see listing and phone numbers with district boundary map on back page).



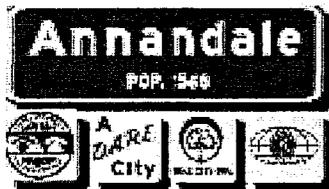
Memorial Highway Signs

- ◆ Installed if authorized by state law
- ◆ May be installed on non-freeway trunk highways
- ◆ May be installed in rest areas located on freeways
- ◆ Paid for by requesting organization or community (MS 160.316)
- ◆ Fabricated, installed and maintained by Mn/DOT



Municipal Identification Entrance Signs

- ◆ Sign program authorized by MS 173.02, subd. 6 (a) and 173.025
- ◆ Criteria contained in Mn/DOT Maintenance Bulletin No. 97-2
- ◆ May be installed on non-freeway trunk highways
- ◆ May be installed on exit ramps at interchanges on freeways
- ◆ Paid for by community
- ◆ Fabricated, installed and maintained by community under Mn/DOT permit process



Community Recognition Sign Panels

- ◆ Total display area of sign panels limited to 12 square feet (6 feet long by 2 feet high)
- ◆ Political or commercial advertising may not be displayed
- ◆ May be installed on existing City Population Sign structures or Star City sign structures
- ◆ May be installed on trunk highways (Interstate freeways excluded) in Greater Minnesota (80 counties)
- ◆ May be installed only on two-lane two-way trunk highways in the Metro area (7 counties)
- ◆ Paid for by community
- ◆ Fabricated, installed and maintained by community under Mn/DOT permit process



Post Secondary Educational Institutions Signing

- ◆ Schools must grant 2 or 4 year degrees with credits transferable to other post secondary schools
- ◆ May be installed on trunk highways
- ◆ Paid for by educational institution
- ◆ Fabricated, installed and maintained by Mn/DOT or under contract



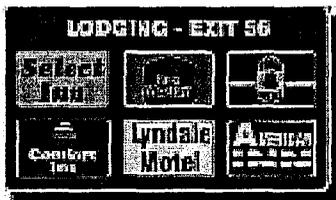
Major Traffic Generator Signing

- ◆ Major regional attractions, events or facilities that generate high volumes of traffic and attract persons or groups from beyond a local area
- ◆ Predominantly retail, business or manufacturing centers not normally eligible for signing
- ◆ May be installed on trunk highways
- ◆ Paid for by traffic generating facility
- ◆ Fabricated, installed and maintained by Mn/DOT or under contract



Minor Traffic Generator Signing

- ◆ Facilities that generate less traffic than major traffic generators and attract persons or groups from beyond a local area
- ◆ Numerous categories of minor traffic generators
- ◆ May be installed at intersections on trunk highways and at interchanges on rural bypasses outside these 7 counties: Ramsey, Hennepin, Washington, Anoka, Carver, Scott and Dakota.
- ◆ Paid for by traffic generating facility
- ◆ Fabricated, installed and maintained by Mn/DOT



Logo Signs

- ◆ Sign franchise program authorized by MS 160.80
- ◆ Eligible types of businesses: gas, food, lodging, camping
- ◆ Business eligibility criteria defined in MS 160.80
- ◆ May be installed on rural interstate freeways and selected urban controlled access freeways
- ◆ Paid for by businesses under lease contract with Minnesota Logos (612-895-8079 or 1-800-769-3197)
- ◆ Fabricated, installed and maintained by Minnesota Logos



Specific Service Signs

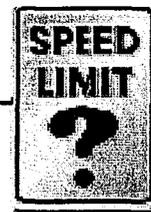
- ◆ Sign program authorized by MS 160.292 - 160.297
- ◆ Eligible types of businesses: resorts, recreational camping areas, motels, restaurants, rural agricultural businesses, places of worship, tourist-oriented businesses and gasoline service station or retail motor fuel business
- ◆ Some types of businesses defined in state law
 - Motel - MS 157.15, subd. 7
 - Resort - MS 157.15, subd. 11
 - Restaurant - MS 157.15, subd. 12
 - Recreational camping area - MS 327.14. Subd. 8
- ◆ May be installed at intersections on trunk highways and at interchanges on rural bypasses outside these 7 counties: Ramsey, Hennepin, Washington, Anoka, Carver, Scott and Dakota.
- ◆ Paid for by business
- ◆ Optional business panel (logo) fabricated and paid for by business; Mn/DOT install business panel (logo) on sign panel at Mn/DOT's expense
- ◆ Sign panel fabricated, installed and maintained by Mn/DOT



Adopt-A-Highway Signs

- ◆ Statewide anti-litter effort coordinated by Mn/DOT Office of Maintenance (651-296-3920)
- ◆ Sign identifies section of highway adopted and displays volunteer group name
- ◆ May be installed on most trunk highways
- ◆ Fabricated, installed and maintained by Mn/DOT

Setting Speed Limits



Speed Limits in Minnesota

Minnesota speed limits are established in Mn Statute 169.14, and apply to all public roads in Minnesota.

To effectively enforce a speed limit law, the driving public must believe that the limit is reasonable and limits must be consistent throughout the state. Statutory limits are based on the concept that different types of highways can manage different maximum speeds of traffic under ideal conditions.

Speed laws are created for the protection of the public and are intended to give motorists an idea of a reasonable speed in an unfamiliar situation.

The most common statutory speed limits are:

- ◆ 10 mph in alleys
- ◆ 30 mph on all streets in urban districts
- ◆ 65 on urban interstate highways
- ◆ 65 mph on all expressways
- ◆ 70 on rural interstate highways
- ◆ 55 on all other roads

Whether the speed limit is posted or unposted, drivers are required to reduce their speed for poor weather conditions, curves or hills and potential hazards.

Setting Speed Limits

When the statutory speed limits are not appropriate for a specific state or local highway, the Commissioner of Transportation may authorize the posting of other regulatory speed limits.

To determine the proper speed limit for a highway, the Department of Transportation conducts an investigation.

The most important part of this investigation is a speed study. Data about the driving speeds are collected using radar checks under ideal driving conditions. This gives engineers the speed that the majority of drivers consider prudent for that roadway. The engineers then calculate the speed that 85 percent of drivers are driving under. Studies have shown that driving much faster or slower than this value can contribute to crashes.

The traffic engineer considers this value with the factors below to determine the speed limit for the roadway.

- ◆ National standards
- ◆ Road type and surface
- ◆ Location and type of access points
- ◆ Length of roadway (must be at least ¼ mile)
- ◆ Existing traffic control devices
- ◆ Crash history
- ◆ Traffic Volume
- ◆ Sight distances
- ◆ Test drive results

Who Do I Contact?

If you believe that there is a safety concern or an inappropriate speed limit posted, the person to contact depends on the type of road.

TRUNK HIGHWAYS



Interstate
Highways



U.S. Highways



Minnesota
Highways

For speed limits on the trunk highway system, you may contact the district traffic engineer at your Mn/DOT district office.

LOCAL STREETS and HIGHWAYS



County
Highways



Municipal or
City Streets



Township
Roads

For these roadways, you may contact your local road authority (county, city, or township).

If you are unable to find the phone number in the phone book, you may call the nearest Mn/DOT District Office as listed on the back of this brochure.

Types of Speed Limits

REGULATORY SPEED LIMIT SIGN



This black and white sign shows the maximum speed that a motorist may travel under ideal conditions. It must be authorized by the Commissioner of Transportation.

ADVISORY SPEED SIGN



This black and yellow speed sign is used to advise motorists of a comfortable speed to navigate certain situations. It is always used in conjunction with a warning sign. For instance, when traveling on a winding road, the curve warning sign would be used with an advisory speed sign. These signs may be posted by the local road authority on local roads.

SPEED LIMITS IN SCHOOL ZONES



- ◆ on trunk highways, the Commissioner of Transportation must perform the study and post the speed limits
- ◆ on local roads after performing an approved study, the speed limits can be posted by the local authority
- ◆ regulatory speed limit is in effect whenever children are present such as before and after school or during recess
- ◆ the sign assembly consists of yellow "SCHOOL" plate and the other signs are black and white
- ◆ fines are doubled for violating school speed limits

SPEED LIMITS IN WORK ZONES

Temporary Construction Speed Limits



- ◆ long-term construction or detour routes where workers are not adjacent to traffic
- ◆ black and white regulatory speed limits to reduce limits on a temporary basis
- ◆ reduced limits are for driver safety on unusual road conditions
- ◆ valid 24 hours a day, 7 days a week, these must be authorized by the Commissioner of Transportation

Work Zone Speed Limits

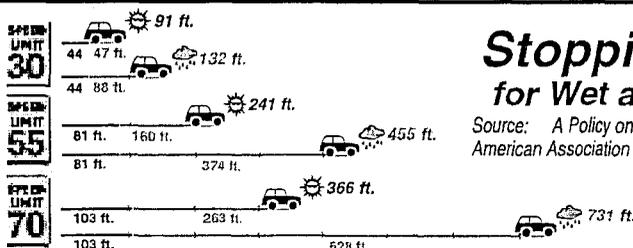


- ◆ short-term enforceable regulatory speed limits for worker safety
- ◆ black and white speed sign with black and orange "FINES DOUBLED" plate
- ◆ reduced limits can be established by the governing local road authority in accordance with MS 169.14 subd 5d.
- ◆ should be covered or removed if no workers present
- ◆ fines are doubled for violating work zone speed limits

Advisory Speed Limits



- ◆ identify safe speeds for a specific hazard or unusual condition within a work zone
- ◆ black and orange signs are always used with another orange warning sign
- ◆ the local road authority can post these plates in any work zone on any local road

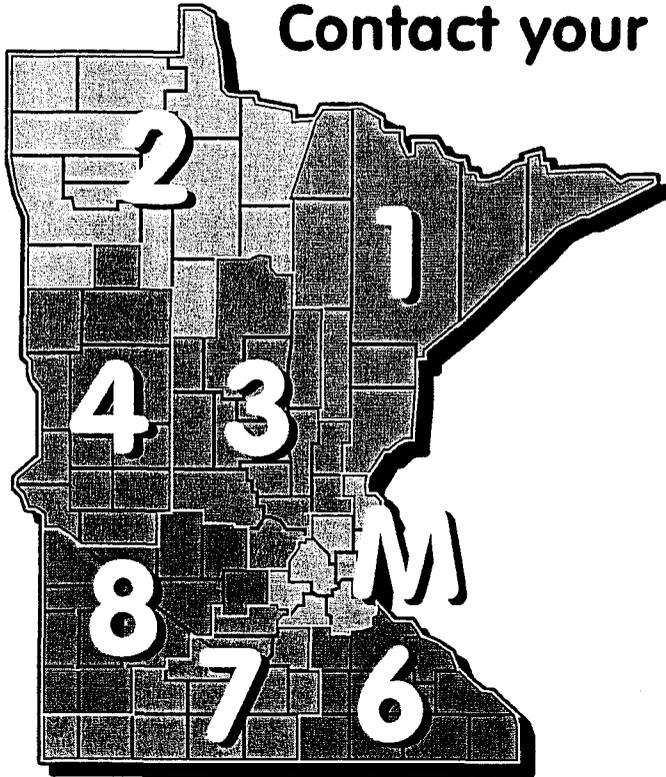


Stopping Distances for Wet and Dry Conditions

Source: A Policy on Geometric Design of Highways and Streets
American Association of State Highway and Transportation Officials

- Dry Conditions
- Wet Conditions
- Driver Reaction (1 sec.)
- Braking Distance
- 000 ft.** Total DRY Stopping Dist.
- 000 ft.** Total WET Stopping Dist.

Contact your nearest Mn/DOT Office



District Traffic Engineers:

- 1 - Duluth 218-723-4960 x 3360
- 2 - Bemidji 218-755-3805
- 3 - Brainerd 218-828-2660
- 4 - Detroit Lakes 218-847-1540
- 6 - Rochester 507-280-5035
- 7 - Mankato 507-389-6874
- 8 - Willmar 320-214-3693

Metro Division 651-582-1343

Central Office 651-284-3500

- Signals 651-284-3434
- Signing 651-284-3440
- Speed Limits 651-284-3463



Minnesota Department of Transportation
Office of Traffic Engineering
MS 725
395 John Ireland Boulevard
St. Paul, MN 55155

Web Site

For more information about Mn/DOT's Traffic Control Devices, including laws, policies, and standards for their design, installation and operation, call 651-284-3500 or visit our Web site: www.dot.state.mn.us/trafficeng



A Guide to Pedestrian Crossings, Traffic Signals, Signing and Speed Limits