



11333 N. Cedarburg Road
Mequon, WI 53092
Phone: 262-242-3500
Fax: 262-242-7655

www.ci.mequon.wi.us

Police and Fire Departments

PUBLIC SAFETY COMMITTEE

Tuesday, July 11, 2023

5:30 PM

Lower Conference Room

Agenda

- 1) Call to Order and Roll Call
- 2) Approve Meeting Minutes
Action requested: review and approve
 - a. Public Safety Committee - Regular Meeting - Jun 13, 2023 5:45 PM
- 3) Discussion
 - a. False Alarm Waiver Request
 - b. Traffic Concerns on Grasslyn Road
- 4) Adjourn

Dated: July 11, 2023

/s/ Gregg Bach, Chair

Notice is hereby given that a quorum of other governmental bodies may be present at this meeting to present, discuss and/or gather information about a subject over which they have decision-making responsibility, although they will not take formal action thereto at this meeting.

Persons with disabilities requiring accommodations for attendance at this meeting should contact the City Clerk's Office at 262-236-2914, twenty-four (24) hours in advance of the meeting.

Any questions regarding this agenda may be directed to the Public Safety Office at 262-242-3500, Monday through Friday, 8:00 AM – 4:30 PM



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Police and Fire Departments

PUBLIC SAFETY COMMITTEE

Tuesday, June 13, 2023

5:45 PM

Lower Conference Room

Minutes

1) Call to Order and Roll Call

Present:

Chair Gregg Bach

Alderman Dale Mayr

Alderman Kelly Tolocko

Also Present: Fire Chief Bialk, City Administrator Jones (arrived 5:46 PM), City Attorney Sajdak, Administrative Coordinator Melina Bowen

2) Approve Meeting Minutes

- a. Public Safety Committee - Regular Meeting - May 9, 2023 6:00 PM

RESULT: Approved by Voice Acclamation [Unanimous]

MOVED BY: Alderman Mayr

SECONDED BY: Alderman Tolocko

AYES: Bach, Mayr, Tolocko

3) Ordinance

1. **ORDINANCE 2023-1652** An Ordinance Amending Chapter 2 of the Mequon Municipal Code, Incorporating Various Changes Resulting from the First Amendment to an Intergovernmental Agreement Establishing the Southern Ozaukee Fire & Emergency Medical Services Department

City Attorney Sajdak discussed the proposed changes to the ordinance which included clarification of the rules pertaining to the Southern Ozaukee Fire Department and the addition of two board members.

RESULT: Approved by Voice Acclamation [Unanimous]

MOVED BY: Alderman Mayr

SECONDED BY: Alderman Tolocko

AYES: Bach, Mayr, Tolocko

4) Adjourn

- a. Motion to adjourn the meeting

Minutes Acceptance: Minutes of Jun 13, 2023 5:45 PM (Approve Meeting Minutes)

RESULT: **Approved by Voice Acclamation [Unanimous]**
MOVED BY: Alderman Tolocko
SECONDED BY: Alderman Bach

AYES: Bach, Mayr, Tolocko

Respectfully Submitted,

Melina Bowen

Minutes Acceptance: Minutes of Jun 13, 2023 5:45 PM (Approve Meeting Minutes)



11333 N. Cedarburg Road
Mequon, WI 53092-1930
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Office of Public Safety Committee

TO: Public Safety Committee
FROM: Patrick Pryor, Chief of Police
DATE: July 6, 2023
SUBJECT: False Alarm Waiver Request

Background

On 02/19/2023, at 9:47AM, Dispatch received a call from an alarm company advising of an alarm at 13820 N. Pine Bluff Road. The alarm was reported to be coming from the "3rd Family Room Door." Officers Brandemuehl and Studinski-Toryfter were dispatched to investigate the alarm. The Officers arrived at the residence at 9:55AM.

The Officers found the exterior of the home to be secure. The Officers reported that they spoke with the homeowner, who was not at home, through the Ring Doorbell. The officer stated the audio was unclear, but they advised the homeowner of the alarm circumstances and then left a contact memo. This was the first alarm for the year, so no alarm fee bill was sent.

On 03/27/2023, at 9:14AM, Dispatch received a call from an alarm company advising of an alarm at 13820 N. Pine Bluff Road. The alarm was reported to be coming from the "3rd Family Room Door, Zone 7." Officers Rudolph and Vasos were dispatched to investigate the alarm. The Officers arrived at the residence at 9:23AM.

The Officers found all doors and windows to be secure. Officers spoke with the homeowner, Maheshwar Gundelly, via phone, who advised he believed the alarm issue had been corrected. Officers left a contact memo, with the alarm fees listed, at the residence.

On 04/04/2023, the notification of a second alarm was sent, advising that was the second alarm in 2023 and the fee involved.

The homeowner, Maheshwar Gundelly, contacted the Police Department and requested the alarm fee to be waived. A copy of this request is attached to this memo.

Analysis

Mequon City Ordinance Section 26-42 defines an 'Alarm System' as any mechanical or electrical equipment designed to signal the occurrence of a fire, burglary or robbery or other crime or emergency, requiring immediate fire or police department notification, including local alarms which are audible or visible upon the exterior of a structure. It further defines a 'false alarm' as an alarm notification summoning the fire or police department to the location of an activation, when the responding personnel find no evidence of a crime, an emergency or fire. 'False alarm' does not include alarms caused by tornadoes or other acts of nature. In 2021 the Police Department responded to 468 False Alarms. 20 of those False Alarms were weather related.

Ordinance Section 26-44 establishes a fee for answering alarms. A false alarm requires response from public safety personnel, creating unnecessary expense to the city, risk of injury to persons or damage to property, and a public nuisance. Any person, business, corporation, or other entity

having an alarm system in accordance with this section shall pay to the City of Mequon a fee for false alarms responded to by the police department or the fire department. The fees shall be established from time to time by the common council. The common council may exempt one or more false alarms in a calendar year from the fee and may provide for increasing fees per occurrence for multiple false alarms in a calendar year.

The current fee schedule established and approved by common council is as follows:

First Alarm -No Fee

Second Alarm -\$200.00

Third Alarm -\$300.00

Forth and Subsequent Alarms -\$400.00.

Fiscal Impact

Second False Alarm \$200.00

Recommendation

There was no indication on the alarms that they were not false alarms. Staff therefore recommends denying the waiver request.

Attachments:

Contact Door Hanger_Rev 2020, 07-07 (PDF)

Waiver Request _13820 N Pine Bluff (PDF)

MEQUON POLICE DEPT.
11300 N. Buntrock Ave., Mequon, WI 53092
PH: 262-242-3500

Date: _____ Time: _____

Call/Case #: _____

An officer was at this location for the following:

☐ Open Door Found ☐ Code or Ordinance Violations

☐ False Alarm Response ☐ Welfare Concern

➤ False Alarm Fees:
 1st = \$0 / No Fee
 2nd = \$200
 3rd = \$300
 4th and subsequent = \$400
 (Fees are per calendar year)

☐ Other:

Officer: _____ Radio #: _____

☐ CALL IMMEDIATELY ☐ NO NEED TO CONTACT

Rev 2020, 07-07

MEQUON POLICE DEPT.
11300 N. Buntrock Ave., Mequon, WI 53092
PH: 262-242-3500

Date: _____ Time: _____

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An officer was at this location for the following:

☐ Open Door Found ☐ Code or Ordinance Violations

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➤ False Alarm Fees:
 1st = \$0 / No Fee
 2nd = \$200
 3rd = \$300
 4th and subsequent = \$400
 (Fees are per calendar year)

☐ Other:

Officer: _____ Radio #: _____

☐ CALL IMMEDIATELY ☐ NO NEED TO CONTACT

Rev 2020, 07-07

Melina Bowen

From: Ashwini Gundelly <ashgundelly@gmail.com>
Sent: Wednesday, May 31, 2023 4:18 PM
To: Melina Bowen; Ashwini Gundelly
Subject: False alarm

Hi Melina

This is Mahesh, I talked to you this afternoon. I would like the opportunity to request to waive \$200 fees charged for a false burglary alarm from my old security system company. I had multiple repairs and reporting to the security system this year. I spent almost \$400 to replace the board in the main panel and also replace two door sensors. One of the door sensors caused a false alarm twice while I was traveling and could not respond to it prior to the police coming to the house.

I am not available June 13th as I am travelling but hope the month of July will work.

Thank you and appreciate your time and help.

Regards
Mahesh

Attachment: Waiver Request_13820 N Pine Bluff (8550 : False Alarm Waiver Request - 13820 N. Pine Bluff Rd.)



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Office of Public Safety Committee

TO: Public Safety Committee
FROM: Patrick Pryor, Chief of Police
DATE: July 6, 2023
SUBJECT: Traffic Concerns on Grasslyn Road

Background

Alderman Schneider advised of resident concerns regarding speeding vehicles on Grasslyn Road, between Fiesta Lane and Donges Bay Road and specifically in the area of Clover Lane.

Analysis

Grasslyn Road runs south from Donges Bay Road to Fiesta Lane, where it turns into Columbia Drive. Columbia Drive then runs south to County Line Road. Area residents are concerned as they have noticed that vehicle speeds are increasing, and drivers may be using Grasslyn Road as a shortcut between County Line Road and Donges Bay Road. This area appears to have an increased traffic count during the I43 and related construction.

The posted speed limit on Grasslyn Road is 25mph. It is a two-lane residential road. In the past residents had suggested a stop sign be installed at the intersection with Clover Lane to assist with speeding in this area.

The City Engineering Department was requested to deploy traffic cables in this area to determine counts and speeds. Their report is included with this memo. The engineering department follows the Manual on Uniform Traffic Control Devices to make determinations on traffic control.

The Police Department also conducted directed enforcement in this area. What this means is that the Patrol Squads have an "electronic" bulletin board in the squad software program with speeding/traffic complaints posted on it for officers to conduct extra enforcement, when they are not on calls for service. This list allows them to focus on areas of complaints in the city. These areas remain on the electronic board for about one month. The department has a lot of roads to cover, but usually this presence will assist in the areas designated.

During the directed enforcement, which mostly took place from Mid-May to Mid-June of this year, squads did not observe any excessive speed violations. It should be noted that there is currently double the amount of directed enforcements in place right now due to all the construction and speed complaints occurring throughout the city.

The Police Department does not have any reported crashes on Grasslyn between Donges Bay Road and Fiesta Lane dating back to January 1, 2018.

Fiscal Impact

N/A

Recommendation

Based on the data, staff recommends no changes in existing signage. The speed limit is set appropriately. Officers will continue to monitor speeds as availability allows.

Attachments:

2023-07-11 Grasslyn Analysis Memo (PDF)



11333 N. Cedarburg Road
Mequon, Wisconsin 53092
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Fax: (262) 242-9819

www.ci.mequon.wi.us

Public Works/Engineering

To: Patrick Pryor, Mequon Police Chief
From: Cole McCraw, P.E. Assistant City Engineer
Date: July 11, 2023
Subject: Grasslyn Road Traffic Counts

Background:

At the request of the Police Chief, Patrick Pryor, the Engineering Department measured the speed and volume of traffic on Grasslyn Road at two locations using traffic counters. Resident concerns have been voiced to the Police Department regarding speeding on the subject roadway. The traffic counters were deployed at the following locations:

- Approximately 400' north of Clover Lane near 10242 Grasslyn Road (North Counter)
- Approximately 400' north of Zedler Lane (South Counter)

The counters were deployed from Friday, June 9th, 2023, through Thursday, June 22nd, 2023. Grasslyn Road currently has a posted speed limit of 25 MPH.

Analysis:

Below is a tabular summary of the results from each traffic counter:

	North Counter	South Counter
Total Vehicles Traveled (Over a 14-day period)	2,428 Vehicles	3,393 Vehicles
Average Daily Vehicles	173 Vehicles	242 Vehicles
Average Speed	28 MPH	28 MPH
85th % Speed	34 MPH	33 MPH
Posted Speed	25 MPH	25 MPH

The Federal Highway Administration's Manual of Uniform Traffic Control Devices (MUTCD) gives guidance on where stop signs should be used at an intersection. Section 2B.07 gives the following criteria to be considered for multi-way stop sign installation:

- A. *Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.*

- B. *Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.*
- C. *Minimum volumes:*
1. *The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and*
 2. *The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but*
 3. *If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.*
- D. *Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.*

The police department does not have record of crashes along this segment of street. The traffic volumes on the street do not meet the minimums needed for multi-way stop sign installation at the intersections. Stop sign installation is not recommended.

Recommendation:

The intent of this memo is not to provide a recommendation regarding a change in speed limit but to provide information regarding the current traffic volumes and speed. General practice requires that a speed is posted within 5 MPH of the 85th percentile speed of free-flowing traffic. Lowering the speed limit below this threshold can promote speeding on this and other roadways and can also promote a false sense of security among residents and pedestrians who may expect that posting lower limits will change driver behavior as explained in the WisDOT Wisconsin Transportation Bulletin No. 21 (attached). Other factors to be considered when determining the posted speed of a roadway are roadway characteristics, pace speed, development, parking practices, and crash history.

In addition to the intersection not meeting any of the evaluated criteria for multi-way stop sign installation, the MUTCD also states that yield or stop signs should not be used for speed control. Several studies indicate that unwarranted stop signs do not control speeds except under very rare conditions. Unintended consequences of installing unwarranted stop signs include poor stop compliance, increased speeding some distance from the intersection, higher operating costs including added travel times, fuel consumption, fuel emissions, and others.



Cole McCraw, P.E.
Assistant City Engineer

Attachments:

Traffic Count Reports
WisDOT Wisconsin Transportation Bulletin No. 21

North Counter

MetroCount Traffic Executive Speed Statistics by Hour

SpeedStatHour-125 -- English (ENU)

Datasets:

Site: [Grasslyn] 10242 Grasslyn
Direction: 7 - North bound A>B, South bound B>A. **Lane:** 0
Survey Duration: 11:57 Friday, June 09, 2023 => 11:09 Thursday, June 22, 2023,
Zone:
File: Grasslyn 0 2023-06-22 1109.EC0 (Plus)
Identifier: DJ07CD2H MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default axle (v4.06)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 12:00 Friday, June 09, 2023 => 11:00 Thursday, June 22, 2023 (12.9583)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 6 - 99 mph.
Direction: North, East, South, West (bound), P = North
Separation: Headway > 0 sec, Span 0 - 328.084 ft
Name: Default Profile
Scheme: Vehicle classification (Scheme F3)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)
In profile: Vehicles = 2428 / 2432 (99.84%)

Speed Statistics by Hour

SpeedStatHour-125

Site: Grasslyn.0.1NS
Description: 10242 Grasslyn
Filter time: 12:00 Friday, June 09, 2023 => 11:00 Thursday, June 22, 2023
Scheme: Vehicle classification (Scheme F3)
Filter: Cls(1 2 3 4 5 6 7 8 9 10 11 12 13) Dir(NESW) Sp(6,99) Headway(>0) Span(0 - 328.084)

Vehicles = 2428

Posted speed limit = 25 mph, Exceeding = 160 (6.59%), Mean Exceeding = 39.59 mph

Maximum = 64.3 mph, Minimum = 9.3 mph, Mean = 29.6 mph

85% Speed = 34.4 mph, 95% Speed = 37.6 mph, Median = 29.5 mph

12 mph Pace = 23 - 36, Number in Pace = 1944 (80.07%)

Variance = 27.35, Standard Deviation = 5.23 mph

Hour Bins (Partial days)

Time	Bin		Min	Max	Mean	Median	85%	95%	>PSL 37 mph	
0000	9	0.4%	18.0	34.5	29.9	30.6	34.4	34.4	0	0.0%
0100	1	0.0%	43.2	43.2	43.2	43.2	43.2	43.2	1	100.0%
0200	3	0.1%	27.2	44.5	36.3	36.9	44.5	44.5	2	66.7%
0300	3	0.1%	21.7	29.5	25.4	24.8	29.5	29.5	0	0.0%
0400	2	0.1%	31.0	32.4	31.7	30.9	32.2	32.2	0	0.0%
0500	13	0.5%	22.6	35.3	29.0	27.3	34.2	34.9	0	0.0%
0600	47	1.9%	19.3	42.6	29.9	29.1	33.8	38.0	5	10.6%
0700	96	4.0%	13.0	43.3	29.3	29.8	34.2	37.1	7	7.3%
0800	129	5.3%	15.6	42.6	30.8	30.6	35.6	39.1	13	10.1%
0900	146	6.0%	15.5	45.2	29.5	29.5	34.9	37.4	11	7.5%
1000	161	6.6%	12.4	52.1	29.0	29.1	34.0	36.7	8	5.0%
1100	177	7.3%	17.5	45.7	29.5	29.1	33.6	38.3	15	8.5%
1200	229	9.4%	12.1	42.8	29.0	29.5	34.0	36.0	6	2.6%
1300	188	7.7%	18.7	64.3	29.6	29.1	33.8	37.1	13	6.9%
1400	217	8.9%	10.0	42.1	29.0	29.1	34.2	36.7	8	3.7%
1500	194	8.0%	9.4	43.6	29.9	30.4	34.9	37.8	14	7.2%
1600	182	7.5%	9.9	46.4	31.0	30.6	35.6	38.9	14	7.7%
1700	197	8.1%	9.3	43.8	29.7	29.3	34.7	37.4	14	7.1%
1800	127	5.2%	18.6	46.1	30.0	29.8	35.3	37.8	12	9.4%
1900	126	5.2%	17.0	43.6	29.6	29.1	34.7	37.6	11	8.7%
2000	79	3.3%	12.1	39.0	27.6	28.2	32.7	36.5	3	3.8%
2100	43	1.8%	14.8	37.8	28.2	28.9	32.7	34.7	1	2.3%
2200	35	1.4%	19.7	40.4	29.5	30.6	34.0	34.2	1	2.9%
2300	24	1.0%	23.7	40.4	31.2	31.8	34.2	36.0	1	4.2%
----	2428	100.0%	9.3	64.3	29.6	29.5	34.4	37.6	160	6.6%

South Counter

MetroCount Traffic Executive Class Speed Matrix

ClassMatrix-128 -- English (ENU)

Datasets:

Site: [Grasslyn] Deer sign by preserve
Attribute:
Direction: 7 - North bound A>B, South bound B>A. **Lane:** 0
Survey Duration: 11:46 Friday, June 09, 2023 => 11:10 Thursday, June 22, 2023,
Zone:
File: Grasslyn 0 2023-06-22 1110.EC0 (Regular)
Identifier: E962A3GE MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default axle (v4.06)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 12:00 Friday, June 09, 2023 => 11:00 Thursday, June 22, 2023 (12.9583)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 6 - 99 mph.
Direction: North, East, South, West (bound), P = North
Separation: Headway > 0 sec, Span 0 - 328.084 ft
Name: Default Profile
Scheme: Vehicle classification (Scheme F3)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)
In profile: Vehicles = 3393 / 3404 (99.68%)

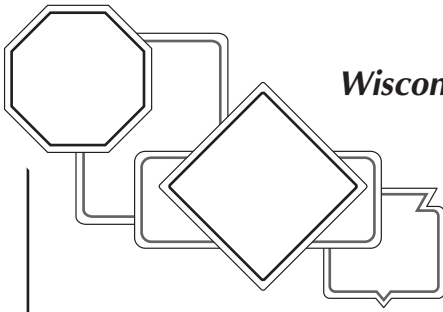
Class Speed Matrix

ClassMatrix-128

Site: Grasslyn.0.1NS
Description: Deer sign by preserve
Filter time: 12:00 Friday, June 09, 2023 => 11:00 Thursday, June 22, 2023
Scheme: Vehicle classification (Scheme F3)
Filter: Cls(1 2 3 4 5 6 7 8 9 10 11 12 13) Dir(NESW) Sp(6,99) Headway(>0) Span(0 - 328.084)

Speed (mph)		Class															Speed	
Totals		CYCLE	PC	2A-4T	BUS	2A-6T	3A-SU	4A-SU	<5A DBL	5A DBL	>6A DBL	<6A MUL	6A MULT	>6A MUL				
		1	2	3	4	5	6	7	8	9	10	11	12	13				
6 - 12		1	7	1	.	2	.	.	.	.	.	.	.	11	0.3%			
12 - 19		4	74	12	1	.	.	.	.	.	.	.	.	92	2.7%			
19 - 25		4	653	140	6	21	2	.	1	.	.	.	.	827	24.4%			
25 - 31		12	1110	374	7	77	2	.	.	.	.	.	.	1582	46.6%			
31 - 37		5	418	272	1	39	.	.	.	.	.	.	.	735	21.7%			
37 - 43		4	62	55	1	8	.	.	.	.	.	.	.	130	3.8%			
43 - 50		1	8	5	.	1	.	.	.	.	.	.	.	15	0.4%			
50 - 56		.	.	1	.	.	.	.	.	.	.	.	.	1	0.0%			
56 - 62		.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%			
62 - 68		.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%			
68 - 75		.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%			
75 - 81		.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%			
81 - 87		.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%			
87 - 93		.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%			
93 - 99		.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%			
Class Totals		31	2332	860	16	147	4	2	0	1	0	0	0	0	3393			
		0.9%	68.7%	25.3%	0.5%	4.3%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				

Attachment: 2023-07-11 Grasslyn Analysis Memo (8551 : Traffic Concerns on Grasslyn Road)



Setting Speed Limits on Local Roads

Speed limits are an important tool for promoting safety on streets and highways. Limits tell drivers what is the reasonable speed for a road section. They also help traffic enforcement by setting standards for what is an unsafe speed.

The state sets speed limits for all roads. However, municipalities can change speed limits for roads under their authority, following guidelines in the *Wisconsin Statutes*. Selecting the appropriate speed limit can be a challenge because people often disagree. Residents frequently seek lower speeds, especially after a serious crash. Drivers tend to choose speeds that seem reasonable for the physical environment and that satisfy their personal needs, like saving time or seeking enjoyment.

Local officials have a key role in setting limits. They must balance the competing concerns and opinions of drivers, residents and law enforcement agencies with statutory requirements and traffic safety.

This booklet is designed to help. It includes background information and research recommendations, summarizes statutory limits, describes the process for changing limits, and discusses signs, enforcement, advisory speeds, and other speed issues on local roads. This edition reflects updates from the *2009 Wisconsin Statewide Speed Management Guidelines*.

Background

Speed-related vehicle accidents in Wisconsin from 2004 to 2008 accounted for 38% of all fatalities, 30% of all injuries and 27% of all crashes.

High speeds contribute to the severity of crashes. For example, 85% of pedestrians struck by vehicles traveling 40 mph are likely to be killed while only 5% are likely to be killed when the speed is 20 mph.

Common sense says that regulating speed is a good way to make streets and highways safer. As a result, citizens may demand lower speeds, especially if there has been a severe crash or a frightening “near miss.”



However, driving behavior is not so easy to manage. A 1997 federal speed study shows that simply lowering speed limits has little effect on actual speeds, usually reducing speeds by only one-to-two miles per hour. The difference in speeds between vehicles traveling on the same road—a common cause of crashes—usually increases when speed limits are unreasonably low, making roadways less safe. Drivers generally choose their speed based on what they think is safe and reasonable for the conditions present. An unreasonable posted speed gets little consideration from drivers.

An alternative for managing vehicle speeds is called “traffic calming.” This emphasizes physical changes to local streets—such as making them appear narrower or more restricted, adding speed bumps or traffic circles—so drivers consistently and voluntarily choose lower speeds that are both safe and comfortable.

Philosophy

Prevailing speed—the one most drivers choose—is a major consideration in setting speed limits. Engineers recommend setting limits at the 85th percentile speed, where 85% of freely flowing traffic travels at or below

that speed under ideal road conditions. The 85th percentile method is considered the best way to represent what is “reasonable” and “proper” as perceived by the motorists. When 85% of drivers voluntarily comply with speed limits, it is possible and reasonable to enforce these limits.

A recent study on Wisconsin roads compared crashes on roads with reasonable speed limits, or those accepted by the majority of drivers, with roads displaying posted speed limits considered unreasonable or irrational. The study showed that roads with reasonable speed limits had four times fewer crashes than roads with unreasonable speed limits. Other studies indicate the lowest risk of being in a crash occurs when a motorist travels at or near the 85th percentile speed. They also show that the 15% of motorists who exceed this limit cause many of the roadway crashes. These motorists are the most effective targets for enforcement.

Research in this area emphasizes considering the road’s design speed in setting speed limits. Design speed is the highest safe speed for which the road was designed. It takes into account road type, road geometry and adjacent land use. Studies show that accident rates go down when speed limits are no less than 10 mph of the design speed. When the speed difference is

greater, motorists choose a wider variety of speeds. This variance in speed between vehicles, more than the speed itself, results in higher crash rates.

However, pedestrians, bicyclists and other road users may find the prevailing speed and design speed hazardous. Modern roads often are over-designed, particularly in residential areas where they emphasize the accommodation of functions like emergency vehicles or street parking. The resulting wide and unobstructed roads can encourage drivers to travel too fast for the safety of other road users. Simply setting lower speed limits is unlikely to produce the desired results, especially without effective enforcement. In these cases, authorities may wish to consider using some traffic calming techniques.

Speeds should be consistent, safe, reasonable and enforceable. When 85% of drivers voluntarily comply with speed limits, it is possible and reasonable to enforce the limits with the 15% who drive too fast. Unreasonably low limits can promote disrespect for and disregard of other reasonable posted limits. They also promote a false sense of security among residents and pedestrians who may expect that posting lower limits will change driver behavior. Unreasonably high limits create unnecessary risks.

Speed limits and authority to change

Fixed Limits – Statute 346.57(4) ^(a)	Local Government Authority ^(b) – Statute 349.11(3) and (7) ^(a)
65 mph Freeway/Expressway	WisDOT only
55 mph State Trunk Highways (STHs)	WisDOT only
55 mph County Trunk Highways (CTHs), town roads	Lower speed limit by 10 mph or less
45 mph Rustic roads	Lower speed limit by 15 mph or less
35 mph Town road (1,000 ft min) with buildings on either side spaced an average of less than 150 ft apart	Lower speed limit by 10 mph or less
25 mph Inside corporate limits of city or village (other than outlying district)	Raise speed limit to 55 mph or less / Lower the speed limit by 10 mph or less
35 mph Outlying district ^(c) within city or village limits	Raise speed limit to 55 mph or less / Lower the speed limit by 10 mph or less
35 mph Semi-urban district ^(d) outside corporate limits of a city or village	Raise speed limit to 55 mph or less / Lower the speed limit by 10 mph or less
15 mph School zone, when conditions are met	Raise speed limit to that of the roadway / Lower speed limit by 10 mph or less
15 mph School crossing, when conditions are met	Raise speed limit to that of adjacent street / Lower speed limit by 10 mph or less
15 mph Pedestrian safety zone with public transit vehicle stopped	No changes permitted
15 mph Alley	Lower by 10 mph or less
15 mph Street or town road adjacent to a public park	Lower by 10 mph or less
Construction or maintenance zones, as appropriate ^(e)	State and local agencies have authority to establish
Notes: (a) Source: Updated 2007-2008 Wisconsin Statutes Database (b) All speed limit changes shall be based on a traffic engineering study, including modifications allowed under State Statute. Local governments can implement speed limit changes on the local road system without WisDOT approval when proposals are within the constraints identified above. (c) Per Statute 346.57(1)(ar) “outlying district” is an area contiguous to any highway within the corporate limits of a city or village where, on each side of the highway within 1,000 feet, buildings are spaced on average more than 200 feet apart. (d) Per Statute 346.57(1)(b) “semiurban district” is an area contiguous to any State or County highway where, on either or both sides of the highway within 1,000 feet, buildings are spaced on average less than 200 feet apart. (e) Guidance on establishing speed limits in work zones is available in http://dotnet/dtid_bho/extranet/manuals/tgm/13/13-05-06.pdf .	

Modified from original published in WisDOT Traffic Guidelines Manual, Chapter 13-5-1, Figure 1, June 2009.



Authority

Power to set speed limits rests with the state. Chapter 346.57 *Speed Restrictions* of the *Wisconsin Statutes* requires drivers to use a speed that is “reasonable and prudent,” to exercise “due care,” [346.57(2)] and to reduce speed under a variety of conditions such as “going around a curve...passing school children, highway construction or maintenance workers...and when special hazard exists...” [346.57(3)].

The *Statutes* give fixed limits for more than a dozen situations depending on the road type, jurisdiction and land use [346.57 (4) (a-k)]. See Table on page 2.

Local or state officials have authority to change these limits within the limitations in Chapter 349.11, as summarized in the Table. They must conduct an engineering and traffic investigation to determine a reasonable and safe speed limit. The limit must then be legally adopted by the local authority and appropriate signs erected. When properly changed, such limits do not create additional liability. In addition, changes beyond those specified in the statutes are possible in consultation with and approval by the Wisconsin Department of Transportation (WisDOT).

All limits, whether set by statute or local authority, are only effective and enforceable when official signs have been erected to give drivers adequate warning.

Speeds also may be temporarily reduced in work zones where highways are being constructed, reconstructed, maintained or repaired [Ch.349.11(10)]. These changes must be properly posted and are not restricted by the other limitations in Chapter 349.11. A Transportation Information Center publication, *Work Zone Safety: Guidelines for Construction, Maintenance and Utility Operations*, describes correct work zone signing and set up.

The local agency that maintains the roadway has jurisdiction for determining the speed limit. In most cases the responsibility is clear. If a roadway segment has joint jurisdiction, such as a road that borders two cities, then both agencies must agree on the speed limit. Obviously, the speed must be the same in both directions. In cases where the county or state maintains a road within the corporate limits of a city or village, the county or state is responsible for setting the speed limit. Coordination with local officials and law enforcement agencies is essential to set effective speed limits.

Required studies

Local authorities are required by the statutes to conduct engineering and traffic speed studies to modify all speed limits on local roads including those shown in the Table on the previous page. Engineering studies should include the following:

- 1) Measure and determine the 85th percentile speed, 50th percentile speed, design speed and pace speed.
- 2) Evaluate crash data for the past three to five years.
- 3) Document roadside development including land use, driveway locations, and school locations.
- 4) Document roadway geometrics including lane widths, shoulder width, sight distance limitations at hills, curves and intersections, plus parking, pedestrian and bicycle activity.
- 5) Determine the functional classification of the roadway and the practical function of the road within the state and local system.
- 6) Document the current speed limit and level of enforcement.

A well-done traffic and engineering speed study requires a comprehensive effort by a trained professional. Look for additional details in the 2009 *Wisconsin Statewide Speed Management Guidelines* report. Contact local law enforcement, County Traffic Safety Commissions, the WisDOT and consultants for assistance in conducting speed studies.

Doing a speed study is time consuming but it is a necessary step for local agencies to legally modify speed limits. The effort also has the advantage of creating consistency in how **enforceable** speed limits are set across the state and increasing safety.

Speed zone recommendations

Local road authorities can initiate action to modify a speed limit and create a new speed zone on a local road. Citizens or other agencies also can request a change. Requests should be in writing and submitted to the local authority. The local agency should prepare a written response to the request describing their action and recommendations.

Speed study recommendations for modifying a speed zone should accomplish the following:

- Reduce the speed differential of vehicles
- Be reasonable so a majority of motorists will comply
- Reflect traffic engineering guidelines

When making speed zone changes, **do not** base the decision on these reasons:

- Noise complaints
- Accommodate specialty vehicles
- Correct spot safety problems
- Future concerns that have not yet occurred

Recommendations from a speed study generally fall within 5 mph of the 85th percentile speed. Factors that can alter this guideline include road function, access density, road geometry, parking, and pedestrian and bicycle activity. Using these secondary factors to

determine a recommended speed may require more law enforcement and result in increased crashes. Consider changing the road's physical environment to lower speeds where possible.

Speed zones should be at least 0.3 miles in length. Limit the number of speed limit changes along a route. Generally, it is advisable to change speed zones outside incorporated limits in 10 mph increments.

Submit speed limit changes that require WisDOT approval to a WisDOT Regional office. Changes outside the limitations outlined in Chapter 349.11 require department approval. Local governments take on liability when they make changes outside the outlined limitations without this approval.

Post speed limit changes as soon as possible using flags or other means to call attention to the change. Monitor speed limit changes once they are made to identify any problems or need for further investigation.

Proper signage



A speed limit is not in effect until the area has been properly signed. Conversely, signs must not be installed until the limit has been approved and officially authorized. The *Manual on Uniform Traffic Control Devices (MUTCD)* governs signs. Two types may be used: one for passenger cars and another for special limits for trucks and buses.

No more than three speed limits should be displayed on any one speed limit sign or assembly. Signs with special limits for trucks or other vehicles should include the word TRUCKS or a similar appropriate message. Display this below the standard message or on a separate plate that refers to SPEED or MPH.

The standard speed limit sign must be 24 by 30 inches. Locate signs at:

- Each point where the speed limit changes
- Beyond major intersections
- Other locations where it is necessary to remind motorists of the limit



REDUCED SPEED AHEAD SIGNS also may be used to give advance warning of a lower speed zone. This sign should be used in rural areas to alert motorists when they need extra time to slow to the posted limit.

Always follow it with a speed limit sign at the beginning of the new zone. Near schools, use the appropriate SPEED LIMIT sign after a school zone rather than the END OF SCHOOL ZONE sign.



Enforcement

Enforcement is critical. Without it, speed limits are not effective. When enforcement is increased considerably, violations and crashes have been reduced.

Local officials should actively involve enforcement personnel in setting speed limits to ensure they are reasonably enforceable. Always inform enforcement agencies when changes are adopted.

Enforcement requires wide public support. A first step is to ensure that the public perceives the speed limits as reasonable and fair because the voluntary cooperation of most drivers is essential. A second step is vigorous public information and education that stresses the safety benefits of enforcement. Make this a cooperative effort between highway and enforcement officials. Any information campaign should target specific aspects of the speeding problem such as young drivers, nighttime, school zones, work zones, or specific roads where potential traffic and pedestrian conflicts are high.

Within law enforcement agencies, traffic enforcement does not compete well with criminal and drug enforcement. That means local highway officials must actively seek adequate agency enforcement. These efforts are most effective when the safety benefits are clear and there is strong support from local elected officials.

Aggressive, targeted enforcement, combined with education, effectively produces better public compliance with traffic laws. The Federal Highway Administration recommends targeting enforcement programs to locations with a high incidence of crashes where speed was a contributing factor and to areas with high traffic volume.

Long-term, low-intensity speed enforcement can produce meaningful results. Studies indicate some amount of the enforcement effort (15% is recommended) be directed to random locations and times. Stationary, marked patrol vehicles are most effective in creating longer-term enforcement benefits.



Minimum speed limits and slow moving vehicles

Except on Interstate highways, there is no specific minimum speed on Wisconsin highways. However, statutes prohibit driving a motor vehicle "at a speed so slow as to impede the normal and reasonable movement of traffic, except when necessary for safe operation or to comply with the law." [Section 346.59 Wis. Stats.]

Vehicles that normally travel slower than 25 mph must display slow moving vehicle emblems. [Section 347.245 Wis. Stats.] In addition, the operator of a vehicle moving so slowly it impedes traffic must yield the roadway to overtaking vehicles, if practicable, when the operator of an overtaking vehicle gives an audible warning. [Section 346.59(2) Wis. Stats.]

Advisory speed signs

Advisory speed signs are used to tell drivers that a lower speed may be necessary at curves, turns, intersections and other localized conditions. These signs add emphasis and specific information to other warning signs, and recommend a comfortable and safe speed to drive in these locations. Do not confuse advisory speeds with enforceable speed limits. Advisory speeds do not imply the maximum operating speed at which skid and rollover occurs.

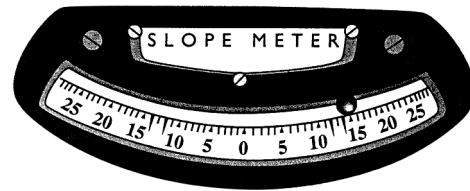


two-lane highways in the study, posted advisory speeds at most curves were well below prevailing traffic speed, and below speeds established using recommended devices and criteria.

The advisory speed must be determined by an accepted traffic engineering procedure but no ordinance is required. Maintenance or sign supervisors can erect the signs. They must be in accordance with guidelines in the *MUTCD*, 2C-35.

As with other traffic signs, advisory speeds should be consistent and reasonable to promote driver respect and compliance. This is not always the case. Research published by the national Transportation Research Board (TRB) found that on the

Advisory speeds are set based on average curve speeds for different angles of deflection. One device widely used for establishing advisory speeds on curves is the ball bank indicator. Relatively inexpensive, this curved level is mounted in an engineer's car. The engineer makes successive trial runs through a curve, taking care to drive parallel to the centerline of the curve, increasing speed by 5 mph each time. The indicator shows the angle of deflection in degrees.



The TRB study reports that the generally accepted criteria, based on tests conducted in the 1930s, produce unrealistically low speeds with modern cars and should be revised upwards. The authors say ball bank readings of 12 degrees above 40 mph, 16 degrees between 30 and 40, and 20 degrees below 30 would better reflect average curve speeds.

Ball bank readings tend to fluctuate rather widely during a trial run and can be affected by loose-surfaced roads and vehicle suspension systems. As a result, setting a recommended speed depends to a significant extent on the judgment and experience of the person making the tests. The recommended speed should feel comfortable for the average driver and be lower than the maximum safe speed. It should also be sensible in comparison with prevailing speeds.

Summary

Establishing and enforcing reasonable and safe speed limits is the responsibility of local officials. This often includes balancing conflicting issues of safety, traffic movement, and community concerns.

Coordination with local law enforcement is vital to effective speed control. Most speed zones should encourage voluntary compliance by using reasonable speed limits. Traffic calming techniques that involve physical and perceptual changes also can help. Consulting enforcement officials when determining effective limits is important and they can help work with the community in difficult areas.

The traffic engineering staff of WisDOT also is a good resource. Since they participate on county Traffic Safety Commissions, this is an easy way to contact them for assistance.

Several sample speed limit ordinances are shown on page 6.

SPEED
LIMIT
50

SPEED
ZONE
AHEAD

REDUCED
SPEED
AHEAD

REDUCED
SPEED
30

"Badger County" traffic ordinance

SPEED LIMITS. (1) The provision of sections 346.57 & 346.59 of the Wisconsin Statutes, relating to the maximum and minimum speed of vehicles, are hereby adopted as part of this section as is fully set forth herein, except as specified by section 2 of this ordinance, pursuant to section 349.11(3)(c) of the Wisconsin Statutes. (2) No vehicle shall exceed noted speed limits on the following county trunk highways:

- (a) County Trunk Highway "A"
 - (1) **Unincorporated Village of Estesville, Town of Terry.** Thirty-five miles per hour from its junction with STH 78, in Estesville, southwesterly 0.35 miles.
 - (2) **City of Covington, Town of York.** Thirty-five miles per hour from its intersection with CTH "N" (Veterans Drive), easterly to a point 0.15 miles east of its intersection with Race Track Road.
- (b) County Trunk Highway "AB"
 - (1) **Town of Finis.** Thirty miles per hour from the bridge over the Yahara River located on a line common to sections 13 and 14, Town of Finis, southwesterly to USH 51.
 - (2) **Chestnut Road, City of Centerton.** Thirty miles per hour from the intersection of USH 51, easterly to Droster Road.

Sample municipal ordinance

Section 3. **SPEED LIMITS.** [Towns, Cities, and Villages]
The _____ [Council or Village Board] hereby determines that the statutory speed limits on the following streets or portions thereof are unreasonable, unsafe and imprudent and modifies such speed limits as follows:

- (1) **SPEED LIMITS INCREASED.** Speed limits are increased as follows upon the following designated streets or portions thereof:
 - (a) **Outlying Districts**
45 miles per hour on _____ Avenue between _____ Street and the _____ [City or Village] limits;
- (2) **SPEED LIMITS DECREASED.** With the approval of the Wisconsin Department of Transportation, the speed limits are decreased as hereinafter set forth upon the following highways or portions thereof:
 - (a) **Semi-Urban Districts**
25 miles per hour on _____ Road between County Trunk _____ and the _____ [City or Village] Limits;
30 miles per hour on _____ Road between County Trunk _____ and the limits

Sample amendment to a speed ordinance

AMENDING CHAPTER 1 OF THE BADGER COUNTY CODE OF ORDINANCES SPEED LIMIT CHANGES

The County Board of Supervisors of the County of Badger does ordain as follows:

ARTICLE 1. Unless otherwise expressly stated herein, all references to section and chapter numbers are to those of the Badger County Code of Ordinances.

ARTICLE 2. Section (2)(b)(2) is created to read as follows:

- 1) Chestnut Road, City of Centerton. Twenty-five miles per hour from its intersection with USH 51 to its intersection with Winona Drive.

Sample speed limit ordinances Local boards of elected officials must adopt speed limits in ordinance form. Here are sample ordinances for county and municipal governments. Local ordinances also may include details on forfeitures and law enforcement authority. The ordinance should be reviewed by the agency's attorney.

References

Wisconsin Statewide Speed Management Guidelines, WisDOT, June 2009

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A Policy on Geometric Design of Highways and Streets, AASHTO, 2004, pp 66-72.

Spot Speed Studies, Ch.3 of Manual of Transportation Engineering Studies, Institute of Transportation Engineers, H. Douglas Robertson, Ed., 2000, pp 33-51.

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