

MEMORANDUM

To: Patty Meroni, Roads & Bridges Chair

From: Daniel J. Strahan, P.E., CFM
Gewalt Hamilton Associates

Date: February 20, 2013

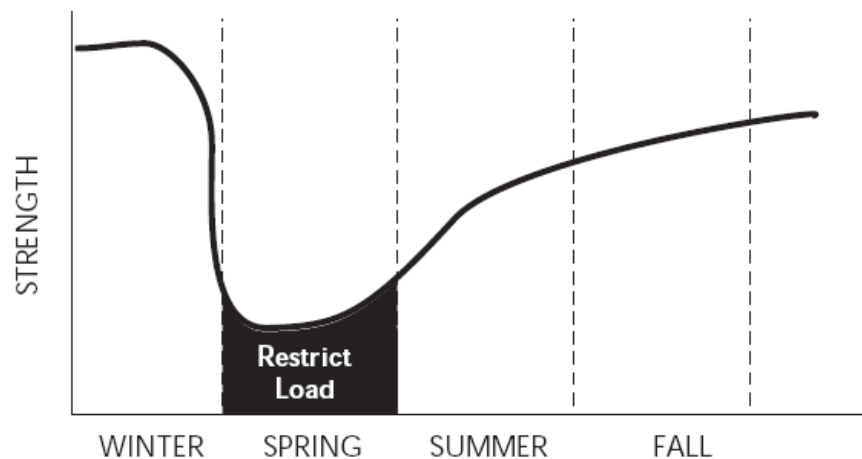
Re: Seasonal Weight Limits on Village Roadways

850 Forest Edge Drive, Vernon Hills, IL 60061
TEL 847.478.9700 ■ FAX 847.478.9701

820 Lakeside Drive, Suite 5, Gurnee, IL 60031
TEL 847.855.1100 ■ FAX 847.855.1115

www.gha-engineers.com

As you know each spring our office monitors the pavement conditions on Village roadways as well as observed and forecast temperatures in anticipation of establishing a seasonal reduction in the weight limits on local roads. The purpose of the reduced load limit is to protect the roadways during the spring thaw, during which subsurface conditions result in a reduced capacity for the road base to support overweight loads. The restrictions are put in place pursuant to 625 ILCS 5/15-316, which allow local agencies to impose such a restriction when roads are likely to be seriously damaged or destroyed by overweight vehicles for reasons of “deterioration, rain, snow, or other climate conditions”.



Variation in pavement strength throughout the year.

Due to an unusually mild winter last year, the area had experienced virtually no frost penetration. Quantitatively this statement was confirmed by measurement of Cumulative Freezing Degree Days (CFDD), a statistical measure established by the Federal Highway Administration. A typical threshold for imposing a seasonal weight restriction due to frost is 400 CFDD, while the maximum level reached during the winter of 2011-2012 was 82 CFDD. As a result no seasonal weight restrictions were enacted.

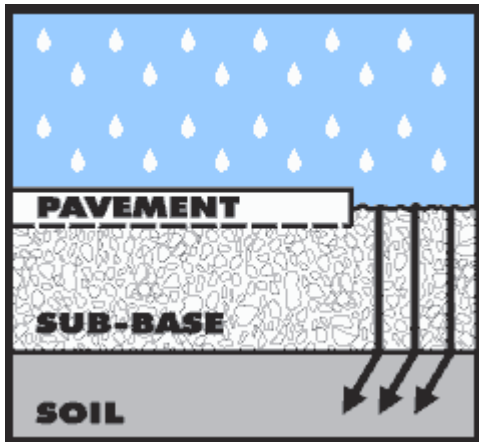
Our office has been tracking this same measure (CFDD) this winter. Through mid-January generally mild temperatures resulted in values that were very similar to those of the previous winter. However, we have witnessed colder weather over the past several weeks and as of February 19, 2013 we are at a level of 406 CFDD and climbing. While this measure is likely to end up below normal for this area (508

based on average monthly temperatures), a seasonal reduction of the weight limits on Village roadways is anticipated this spring. The timing of the closure will be dependent upon weather patterns, but typically the posting is enacted sometime in March and lifted in late April or early May. The table below indicates the range of dates over which this reduction has applied historically.

Year	Weight Limits Posted	Weight Limits Lifted
1986	March 10, 1986	May 12, 1986
1987	February 18, 1987	April 13, 1987
1988	March 7, 1988	May 3, 1988
1989	March 15, 1989	May 3, 1989
1990	February 12, 1990	April 30, 1990
1991	March 1, 1991	May 13, 1991
1992	March 4, 1992	May 4, 1992
1993	March 10, 1993	June 2, 1993
1994	March 14, 1994	May 9, 1994
1995	March 20, 1995	May 26, 1995
1996	March 4, 1996	May 20, 1996
1997	March 10, 1997	May 19, 1997
1998	None	None
1999	February 22, 1999	May 3, 1999
2000	March 6, 2000	May 8, 2000
2001	March 12, 2001	May 7, 2001
2002	March 25, 2002	May 6, 2002
2003	March 24, 2003	May 1, 2003
2004	March 8, 2004	May 3, 2004
2005	March 21, 2005	May 2, 2005
2006	March 13, 2006	May 1, 2006
2007	March 19, 2007	April 30, 2007
2008	March 17, 2008	May 5, 2008
2009	March 16, 2009	May 11, 2009
2010	March 8, 2010	April 26, 2010
2011	March 14, 2011	May 9, 2011
2012	None	None

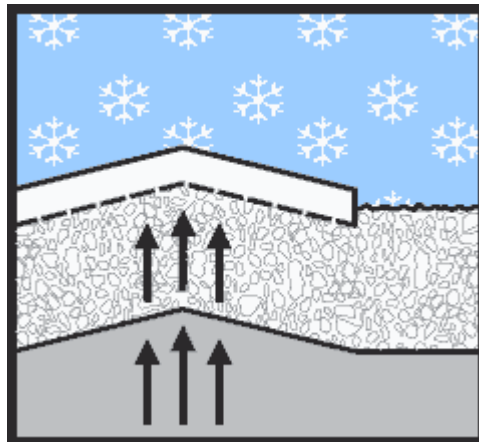
cc: Robert Kosin, VBH

The Birth of a Pothole - Step 1



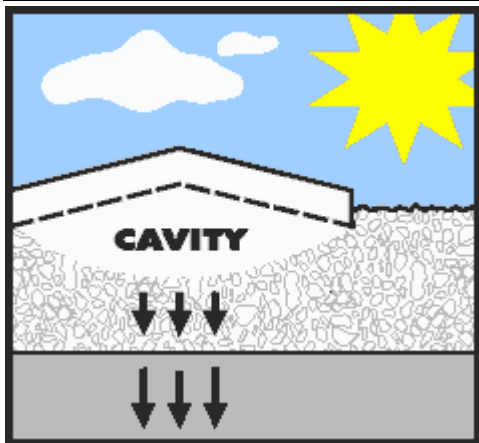
1. Potholes begin after snow or rain seeps into the soil below the road surface.

The Birth of a Pothole - Step 2



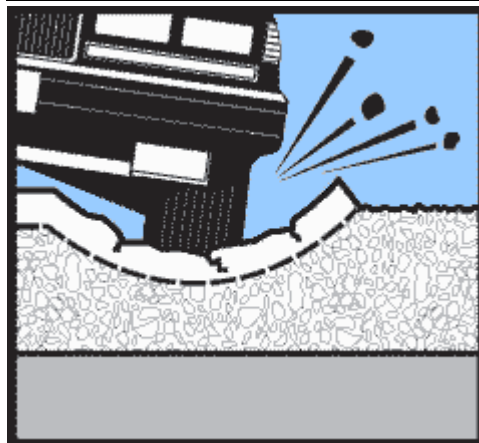
2. The moisture freezes when temperatures drop, causing the ground to expand and push the pavement up.

The Birth of a Pothole - Step 3



3. As the temperatures rise, the ground returns to normal level but the pavement often remains raised. This creates a gap between the pavement and the ground below it.

The Birth of a Pothole - Step 4



4. When vehicles drive over this cavity, the pavement surface cracks and falls into the hollow space leading to the birth of another pothole.