

Study Date: _____

SCHOOL CROSSING ANALYSIS

City of Madison

Department of Transportation

Traffic Engineering Division

School Crestwood Elementary

Crossing Location Old Middleton + Rosa

Elementary School Children Crossing Old Middleton, N Leg

					POINTS	
					a.m.	p.m.
1) Number of elementary students crossing						
	<u>number</u>	<u>points</u>	<u>number</u>	<u>points</u>		
	1 - 5	1	25 - 29	6	4	4
a.m. peak hour (7:45 to 8:45)	<u>16</u>	2	30 - 34	10		
		3	35 - 39	15		
p.m. peak hour (2:55 to 3:55)	<u>15</u>	4	40 - 49	20		
		5	50 - 74	30		
School Schedule 8:30am-3:22pm			75 - 99	35		
2) Gap Availability					36	36
	<u>crossing distance</u>	<u>feet</u>	<u>% safe gap time</u>	<u>points</u>		
	<u>64</u>		80 +	0		
			70 - 79	4		
minimum safe crossing time =	<u>22</u>	seconds	60 - 69	8		
			55 - 59	12		
% safe crossing time =	<u>1</u>	% a.m.	50 - 54	16		
	<u>6</u>	% p.m.				
3) Motor Vehicle Speed					0	0
	<u>mph</u>	<u>points</u>	<u>mph</u>	<u>points</u>		
	< = 20	0	36 - 40	7		
85th percentile speed =	<u>20</u>	mph a.m.	41 - 45	11		
	26 - 30	2	46 +	15		
	<u>20</u>	mph p.m.	31 - 35	4		
4) Sight Distance					15	15
	<u>available sight distance</u> :	<u>feet</u>	<u>design 85th %ile speed</u>	<u>stopping distance feet</u>		
	<u>170</u>	<u>South</u>	<u>bound</u>	< = 25 mph	155	
	<u>280</u>	<u>North</u>	<u>bound</u>	26 - 30 mph	200	
				31 - 35 mph	250	
				36 - 40 mph	305	
				41 - 45 mph	360	
				46 + mph	425	
ratio: available sight distance / design stopping distance	<u>.85</u>	<u>feet</u>	<u>South</u>	<u>bound</u>	<u>ratio</u>	<u>points</u>
					2.1 +	0
					1.5 - 2.0	1
					1.0 - 1.5	5
					< 1.0	15
5) Safety History - Previous Five Years					0	0
	a) Number of reported crashes at study location involving elementary school children going to or coming from school.			<u>crashes</u>	<u>points</u>	
				0	0	
				1	8	
	<u>0</u>	reported crashes			each add'l	20
b) Reported crashed not involving children going to or coming from school, but of types and/or at times that could conflict with school crossing at this location.					5	0
	<u>1</u>	reported crashes. Type: <u>Left Turn Ped</u>		<u>AM</u>	<u>points</u>	
					0 - 5	
					0 - 5	
					0 - 5	
6) Other Factors					5	5
	Foreign traffic route.				0 to +5	
	For each approach in excess of four.				+5	
	For complex signal or crossing design.				+5 to +10	
	For simple signal or crossing design.				-5 to -10	
	Safer crossing one block out of the way.				-10	
	Large percentage of grades K and 1 students (over 40%).				0 to +5	
	An intersection of two arterial streets where total weekday traffic approach volume exceeds 25,000 vehicles.				+4	
	Children crossing multiple crosswalks at an intersection.				0 to +10	
	Stopped buses and/or other obstructions.				0 to +5	
	Volume of turning traffic not reflected in gap availability.				0 to +5	
	Observations of the percent and types of trucks during the times when students are using the crossing					
TOTAL HAZARD RATING					65	60

Interpretation of Hazard Rating

Using the hazard rating as a guide, the following measures are appropriate:

1. **Mark as a school crossing** when the hazard rating is greater than 20 points at a crossing used by at least 25 elementary school students during the peak crossing hour. The Traffic Engineer is authorized to mark such a crossing with appropriate warning signs and special crosswalk markings.
2. **Install flashing beacons** if any one of the following conditions is met:
 - a. The 85th percentile speed is in excess of 40 mph measured at existing school crossing signs which have been in place at least 30 days.
 - b. The street crossed is a U.S. or State Trunk Highway on which a significant percentage of "foreign " drivers can be expected.
 - c. The ratio of sight distance to safe stopping distance is less than 1.5.
 - d. The hazard rating is greater than 30 at an unguarded location where at least 25 elementary students cross and the available safe crossing gaps are less than 50 percent.
3. **Recommend the assignment of an adult school crossing guard** when the hazard rating is greater than 40 points at a crossing used by at least 25 elementary school students during the peak crossing hour.

If the school has only grades K through 2, recommend the assignment of an adult school crossing guard in the hazard rating is greater than 30 points at a crossing used by at least 15 elementary school students during the peak crossing hour.

4. **Recommend the discontinuance of adult school crossing guard protection** at a crossing where the hazard rating falls below 30 points or if the number of elementary school students crossing during the peak hour in less than 15.

At the intersection of two arterial streets where the total weekday entering traffic volume exceed 25,000 vehicles, the total number of students crossing at the intersection will be used to compare to the minimum of 15 students required to retain an adult school crossing guard.

Remarks/Recommendations

- Safe gaps below 6% during peak hours.
- High traffic volume during peak hours.

Recommend maintaining this Adult School Crossing Guard assignment. Number of elementary school students crossing during peak hour is more than 15 and hazard rating is above 30 points.

by Gretchen M. Avilés Piñeiro Date May 11th, 2017