

SCHOOL CROSSING ANALYSIS
City of Madison
Department of Transportation
Traffic Engineering Division

School Olson Elementary School

Crossing Location Red Tail and Redan

Elementary School Children Crossing Red Tail

					POINTS	
					a.m.	p.m.
1) Number of elementary students crossing	<u>number</u>	<u>points</u>	<u>number</u>	<u>points</u>		
	0 - 19	0	50 - 74	20		
a.m. peak hour (8:00 to 8:30) <u>22</u>	20 - 29	4	75 - 99	24	4	
	30 - 34	8	100-124	28		
p.m. peak hour (3:14 to 4:00) <u>28</u>	35 - 39	12	125-149	32		4
	40 - 49	16	150+	36		
2) Gap Availability						
	<u>crossing distance</u> = <u>36</u> feet	<u>% safe</u>	<u>gap time</u>	<u>points</u>		
		80 +	45 - 49	20		
		70 - 79	40 - 44	24		
minimum safe crossing time = <u>12</u> seconds		60 - 69	30 - 39	28		
		55 - 59	20 - 29	32		
		50 - 54	0 - 20	36		
% safe crossing time = pm <u>62.8% 8:15 - 8:30 (11 students); 80.6% 8:00 - 8:15 (11 students)</u>					8	
am <u>69.0% 3:15 - 3:30 (10 students); 78.7% 3:30 - 3:45 (14 students)</u>						8
3) Motor Vehicle Speed	<u>mph</u>	<u>points</u>	<u>mph</u>	<u>points</u>		
85th percentile speed = <u>0 - All-Way Stop</u> mph a.m.	0 - 25	0	36 - 40	6	0	
	26 - 30	2	41 - 45	8		
<u>0 - All-Way Stop</u> mph p.m.	31 - 35	4	46 +	10		0
4) Sight Distance <i>Not an Issue</i>			<u>design stopping distance</u>			
available sight distance: _____ feet _____ bound			<u>85th %ile speed</u>	<u>feet</u>		
			25 - 30 mph	200		
_____ feet _____ bound			31 - 35 mph	240		
			36 - 40 mph	275	0	
ratio: available sight distance / design stopping distance			41 - 45 mph	310		
			46 + mph	350		
			<u>ratio</u>	<u>points</u>		
_____ feet _____ bound			2.1 +	0		0
_____ feet _____ bound			1.5 - 2.0	1		
			1.0 - 1.5	5		
			< 1.0	15		
5) Safety History - Previous Five Years						
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	0		
<u>none</u> reported crashes			1	5		
			each add'l	20		0
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.					0	
_____ reported crashes. Type: _____				<u>points</u>		
				0 - 5		
_____ reported crashes. Type: _____				0 - 5		0
_____ reported crashes. Type: _____				0 - 5		
6) Other Factors				<u>points</u>		
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	2	2
Stopped buses and/or other obstructions.				0 to +5		
Volume of turning traffic not reflected in gap availability.				0 to +5		
TOTAL HAZARD RATING					14	14

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

School starts at 8:30 am and ends at 3:17 pm

9/23/08 AM

- 22 students made 27 crossings (5 students crossed both Redan and Red Tail)
- 9 students were on bicycles, all on the sidewalk
- 7 parents accompanied 10 students
- ASCG had to encourage the 5 students and 3 parents (all students were accompanied) approaching intersection on the north side of Red Tail to cross Redan with her instead of walking up the west side of Redan and crossing Redan later (student patrol at Winter Frost/path to school)
- ASCG noted that she observed about 10 students walking along the north side of Red Tail turn at Stone Briar instead of continuing to Redan and crossing with her.
- Difference in gap availability from 80.6% at 8:00 - 8:15 and 62.8% at 8:15 - 8:30 is parents driving students to school during the later time period+

10/9/08 AM

- 16 students made 25 crossings (8 students crossed both Redan and Red Tail)
- 5 of the students were on bikes, all on the sidewalk.
- 2 groups (with 1 and 3 kids) were accompanied by a parent
- 2 students, not included in the count, walking east turned north at Stonebriar instead of walking to Redan and crossing with the ASCG
- No gap study done

10/7/08 PM

Raining

- Only 8 students crossing with 3 of these having gotten off a school bus from St. Maria Goretti
- Gaps reflect probably the worst possible situation, given how few students walked in the rain.
 - gaps were 64.3% 3:00 - 3:15; 43.6% 3:15 - 3:30; 70.3% 3:30 - 3:45; 86.1% 3:45 - 4:00

10/9/08 PM

- 28 students made 30 crossings (2 students crossed both Red Tail and Redan)
- 6 students crossed Redan only
- 5 students got off a school bus (from St Maria Goretti) and crossed Red Tail
- 4 students were on bicycles, all on the sidewalk
- 7 parents walking with 17 students
- 6 students observed walking down Stonebriar (must have crossed Redan at Winter Frost or Eaglewood)
- 2 students with a parent walked down the west side of Redan (must have crossed at Winter Frost or Eaglewood)
- Gaps were 77.6% 3:00 - 3:15; 69.0% 3:15 - 3:30; 78.7% 3:30 - 3:45; 89.2% 3:45 - 4:00

This a new elementary school in it's first year of operation. The Police Department found funding to assign an Adult School Crossing Guard at this location temporarily through the end of this calendar year (the beginning of winter break). This location does not meet Adult School Crossing Guard criteria with respect to the hazard rating (only 14 points compared to 40 required). The number of students crossing does meet the minimum during good weather, thanks in part to this also being a bus stop for a private school.

Based on the criteria, the recommendation is to discontinue the temporary Adult School Crossing Guard assignment after winter break. An alternative would be to continue the temporary assignment for the remainder of the 2008-2009 school year with a re-evaluation in spring 2009 to determine whether the Adult School Crossing Guard assignment should be continued for the 2009 - 2010 school year.

by: Arthur Ross, Pedestrian-Bicycle Coordinator Date: 10/22/08