

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

School Olson Elementary School

Crossing Location Red Tail Drive at Redan Drive

Elementary School Children Crossing Red Tail (east leg)

					POINTS		
					a.m.	p.m.	
1) Number of elementary students crossing	<u>number</u>	<u>points</u>	<u>number</u>	<u>points</u>			
a.m. peak hour (8:00 to 8:45) <u>9</u>	0 - 19	0	50 - 74	20	0	0	
	20 - 29	4	75 - 99	24			
	30 - 34	8	100-124	28			
p.m. peak hour (3:15 to 4:00) <u>12</u>	35 - 39	12	125-149	32			
	40 - 49	16	150+	36			
2) Gap Availability							
crossing distance = <u>36</u> feet	<u>% safe</u>	<u>gap time</u>	<u>points</u>	<u>% safe</u>	<u>gap time</u>	<u>points</u>	
	80 +	0		45 - 49	20		
	70 - 79	4		40 - 44	24		
minimum safe crossing time = <u>12</u> seconds	60 - 69	8		30 - 39	28		
	55 - 59	12		20 - 29	32		
	50 - 54	16		0 - 20	36		
% safe crossing time = <u>66.1%</u> a.m.	<i>NOTE: Gap study accounted for all vehicles approaching the intersection of Red Tail and Redan</i>					8	8
<u>67.9%</u> p.m.							
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	0	
	26 - 30	2	41 - 45	8			
<u>0 - All Way Stop</u> mph p.m.	31 - 35	4	46 +	10			
4) Sight Distance <i>Not an issue</i>			<u>design stopping distance</u>	<u>85th %ile speed</u>	<u>feet</u>		
available sight distance: _____ feet _____ bound			25 - 30 mph		200	0	
			31 - 35 mph		240		
_____ feet _____ bound			36 - 40 mph		275		
			41 - 45 mph		310		
			46 + mph		350		
ratio: available sight distance / design stopping distance			<u>ratio</u>	<u>points</u>			
_____ feet _____ bound			2.1 +	0			
			1.5 - 2.0	1			
_____ feet _____ bound			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	0	
	1	5					
<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.				<u>points</u>			
<u>0</u> reported crashes. Type: _____				0 - 5	0	0	
<u>0</u> reported crashes. Type: _____				0 - 5			
<u>0</u> 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			
				0 to +5			
TOTAL HAZARD RATING					10	10	

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/Observations

- Olson Elementary is the Madison Metropolitan School District's newest school, having opened Sept. 2008. The intersection of Red Tail and Redan is an all-way stop. There are flat, textured islands on Red Tail on each side of Redan. Olson Elementary School is located two blocks north of this intersection. See attached attendance area map.
- An Adult School Crossing Guard was assigned temporarily at the beginning of the 2008-2009 school year with funding only through December 31, 2008.
- The assignment was reviewed in fall 2008 to see if it should be continued for the rest of the school year as a budget amendment was needed to provide the funding for position in calendar year 2009. The fall 2008 study indicated that the location did not meet the criteria for assignment of an Adult School Crossing Guard. The PBMVC, at its October 2008 meeting, approved continuation of the ASCG assignment on a temporary basis through the end of the 2008 - 2009 school year with a directive that this assignment be re-evaluated in spring 2009. Please see the PBMVC's October 29, 2008 minutes for the discussion at that time and Legistar ID 11708 for the fall 2008 study worksheet, remarks and recommendations.
- Follow-up studies were done on May 14, 2009. Only 10 students were observed crossing in the morning, and 12 in the afternoon. This is half the number observed in fall 2008. The PBVC at their May 2009 meeting approved continuation of the this assignment through December 2009 with a directive that this be re-evaluated in fall 2009. Please see the PBMVC's May 26, 2009 minutes for the discussion at that time and Legistar ID 14772 for the spring 2009 study worksheet.

Recommendations

Recommend discontinuance of the temporary Adult School Crossing Guard. This location does not meet the criteria for assignment of an Adult School Crossing Guard.

by: Arthur Ross, Pedestrian-Bicycle Coordinator

Date: October 20, 2009 .