

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

School Randall & Franklin Elementary Schools

Crossing Location Drake at Randall

Elementary School Children Crossing Drake

					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 (7:00 to 7:45) <u>28</u>	20 - 29	4	75 - 99	24	4	
	30 - 34	8	100-124	28		
p.m. peak hour (2:30 to 3:30) <u>7*</u>	35 - 39	12	125-149	32		4
* another 13 students crossed Randall	40 - 49	16	150+	36		
2) Gap Availability						
	<u>% safe</u>		<u>% safe</u>			
crossing distance = <u>44</u> feet	<u>gap time</u>	<u>points</u>	<u>gap time</u>	<u>points</u>		
	80 +	0	45 - 49	20		
	70 - 79	4	40 - 44	24		
minimum safe crossing time = <u>15</u> seconds	60 - 69	8	30 - 39	28		
	55 - 59	12	20 - 29	32		
% safe crossing time = <u>32</u> % a.m.	50 - 54	16	0 - 20	36	28	
<u>40</u> % p.m.						24
3) Motor Vehicle Speed	<u>mph</u>	<u>points</u>	<u>mph</u>	<u>points</u>		
85th percentile speed = <u>0*</u> mph a.m.	0 - 25	0	36 - 40	6	0	
	26 - 30	2	41 - 45	8		
<u>0*</u> mph p.m.	31 - 35	4	46 +	10		0
Speed = 0 since this is an all way stop						
4) Sight Distance			<u>design</u>	<u>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		
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		
			1.5 - 2.0	1		
_____ feet _____ bound			1.0 - 1.5	5		
			< 1.0	15	0	0
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
<u>0</u> reported crashes			1	5		
			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>1</u> reported crashes. Type: <u>NB Bicycle / WB MV 2:45 pm in 2009 MV cited</u>				0 - 5	0	0
<u>1</u> reported crashes. Type: <u>2 cars stopped WB, 3rd WB driver distracted, rear ended others 2009, 1:51 pm</u>				0 - 5		
<u>0</u> reported crashes. Type: <u>no other reported crashes 2002 to June 2011</u>				0 - 5		
6) Other Factors				<u>points</u>		
Foreign traffic route.				0 to +5	2	2
For each approach in excess of four.				+5		
For complex signal or crossing design.				+5 to +10		
For simple signal or crossing design. (all-way stop)				-5 to -10	-5	-5
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	5	5
Stopped buses and/or other obstructions.				0 to +5		
Volume of turning traffic not reflected in gap availability.				0 to +5		
TOTAL HAZARD RATING					34	30

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

Comments

- The intersection of Randall and Drake is all-way stop controlled.
- Crossing is used by Randall Elementary School students (grades 3 – 5) walking to school, and by Franklin Elementary School students (grades K – 2) going to/from yellow school bus stop.
- Franklin school bus stops in the morning on south side of Drake Street facing eastbound (across the street from Café ZuZu). In the afternoon it stops on Randall facing northbound, next to Café ZuZu.
- All of the Franklin K-2 students were accompanied by an adult.
- In the morning, 28 students were observed crossing.
 - 23 were 3rd – 5th grade walking to Randall.
 - 17 of the Randall students crossed two legs of the intersection in the morning.
 - 5 were K – 2nd grade Franklin students going to the yellow school bus stop. All of these were accompanied by adults.
 - 1 of the Franklin students, with an adult, crossed two legs of the intersection in the morning

Recommendation

Sign as a school crossing, all four approaches

by Arthur Ross, Pedestrian-Bicycle Coordinator

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