

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

School Elvehjem Elementary School

Crossing Location Buckeye at Droster

Elementary School Children Crossing Buckeye

					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 (7:30 to 8:30) <u>10</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 (3:00 to 4:00) <u>11</u>	35 - 39	12	125-149	32		
	40 - 49	16	150+	36		
2) Gap Availability					20	36
crossing distance = <u>20 ft. one side, 52 ft. full length</u>	<u>% safe</u>	<u>points</u>	<u>% safe</u>	<u>points</u>		
	gap time		gap time			
	80 +	0	45 - 49	20		
	70 - 79	4	40 - 44	24		
minimum safe crossing time = <u>7 sec. one side,</u>	60 - 69	8	30 - 39	28		
<u>18 sec. full dist.</u>	55 - 59	12	20 - 29	32		
	50 - 54	16	0 - 20	36		
% safe crossing time = <u>48.2*</u> % a.m.						
	<u>5.9%*</u> % p.m.					
*AM gap measured for inbound half of crossing only. PM gap measured for entire crossing, including island.						
3) Motor Vehicle Speed	<u>mph</u>	<u>points</u>	<u>mph</u>	<u>points</u>		
85th percentile speed = <u>est 35</u> mph a.m.	0 - 25	0	36 - 40	6	4	4
	26 - 30	2	41 - 45	8		
<u>est 35</u> mph p.m.	31 - 35	4	46 +	10		
4) Sight Distance			<u>design 85th %ile speed</u>	<u>stopping distance feet</u>		
available sight distance: _____ feet _____ bound			25 - 30 mph	200		
_____ feet _____ bound			31 - 35 mph	240		
			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	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	0		
<u>None</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>	0	0
<u>None</u> reported crashes. Type: _____				0 - 5		
_____ reported crashes. Type: _____				0 - 5		
_____ reported crashes. Type: _____				0 - 5		
6) Other Factors				<u>points</u>		
Foreign traffic route.				0 to +5	5	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		
TOTAL HAZARD RATING					29	40

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

- The crossing of Buckeye at Droster was initially approved for the assignment of an Adult School Crossing Guard in 1990 on a temporary basis. While the crossing met the hazard rating, there were only a few Elvehjem students observed crossing here when studied. The parents who live south of Buckeye convinced the Pedestrian-Bicycle-Motor Vehicle Commission members that if there was an ASCG they would let their children walk to school and the minimum criteria of 25 students would be met. Although the numbers never rose to the minimum of 25, the PBMVC eventually made this a permanent ASCG assignment.
- The official third Friday in September 2013 school census counted 60 students in the Elvehjem attendance area south of Buckeye who could cross at Droster. An additional 5 students live in the Allis attendance area south of Buckeye attend Elvehjem. There are more than enough students in the neighborhood to support an Adult School Crossing Guard if the parents will allow their children to walk to school, walk to school with their children, or organize walking school buses.
- Pedestrian refuge islands and curb extensions were installed when Buckeye was reconstructed in 2001, making this an easier crossing for pedestrians. Pedestrians have a shorter crossing distance thanks to the curb extensions and only need to cross one half of the road at a time thanks to the pedestrian refuge island.
- There is a continental crosswalk and Rectangular Rapid Flash Beacons with push button activation on the east crossing.
- The crossing at Droster is signed as a School Crossing including Speed Limit 20 mph When Children Present signs. Speed limit on Buckeye is otherwise posted at 30 mph.
- Elvehjem Elementary is a late start school. School starts at 8:30 am and dismisses at 3:22 pm except on Monday's when early dismissal is at 1:50 pm.
- The crossing of Buckeye at Droster is approximately 0.6 miles from the school.

Studies were done October 8 in the afternoon and October 22 in the morning.

Weather on 10/8 was beautiful, 64 degrees at 3:00 pm. This was also International Walk to School Day.

Weather on 10/22 was clear but cold, 28 degrees at 7:30 in the morning.

- The 10 students who crossed in the morning crossed as one group with 4 adults and 1 dog.
- Of the 11 students who crossed in the afternoon, 8 crossed as a group with 2 adults, 3 crossed as a group.

Also observed

5/20/14 in the morning, 11 students in 2 groups (9 and 2), both with adults

5/7 & 8/13 observed 5 students in the morning and 6 in the afternoon

Recommendations

The City's adopted School Crossing Protection Criteria, would recommend discontinuing this Adult School Crossing Guard Assignment since there are not enough students using this crossing. Some parents have been working to increase the number of students crossing in order to retain the ASCG. Recommend giving these parents the rest of this school year to get the numbers up to at least 15 students crossing on a regular basis.

by Arthur Ross

Date October 22, 2014



Overview of the intersection of Buckeye and Droster. Students crossing here live south of Buckeye and east of Paso Roble Way.



Sight line westbound from over a block away.



Below: Sight line eastbound from over a block away.

Elvehjem Elementary

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The Madison School District assumes no legal liability for the accuracy, completeness, or usefulness of any of the information contained on this map.

