

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

School <u>Falk Elementary School</u>					POINTS	
Crossing Location <u>Woodington Way, mid-block crosswalk in front of the school</u>						
Elementary School Children Crossing <u>Woodington Way</u>					a.m.	p.m.
<b>1) Number of elementary students crossing</b>						
	<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 8:00)	<u>26 / 43*</u>	4	75 - 99	24	16	
	30 - 34	8	100-124	28		
p.m. peak hour ( to ) _____	35 - 39	12	125-149	32		
	40 - 49	16	150+	36		
*am = 26 at the crosswalk, 17 other locations						
<b>2) Gap Availability</b>						
	<u>% safe</u>	<u>points</u>	<u>% safe</u>	<u>points</u>		
crossing distance = <u>32</u> feet	<u>gap time</u>		<u>gap time</u>			
	80 +	0	45 - 49	20		
	70 - 79	4	40 - 44	24		
minimum safe crossing time = <u>11</u> seconds	60 - 69	8	30 - 39	28		
	55 - 59	12	20 - 29	32		
	50 - 54	16	0 - 20	36		
% safe crossing time = <u>64.6% // 48.0%*</u> a.m.					20	
_____ % p.m.						
* 64.6% for the same period as the student count above, 7:12 – 8:00 am. 48.9% for the 15 minute period 7:30 – 7:45 am when most students crossed.						
<b>3) Motor Vehicle Speed</b>						
	<u>mph</u>	<u>points</u>	<u>mph</u>	<u>points</u>		
85th percentile speed = <u>25</u> mph a.m.	0 - 25	0	36 - 40	6	0	
	26 - 30	2	41 - 45	8		
<u>23</u> mph p.m.	31 - 35	4	46 +	10		0
<b>4) Sight Distance</b>						
available sight distance: <u>105</u> feet <u>west</u> bound			design stopping distance			
_____ feet _____ bound			<u>85th %ile speed</u>	<u>feet</u>		
			25 - 30 mph	200		
			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>		
<u>105 / 200 = .525</u> <u>west</u> bound			2.1 +	0		
_____ bound			1.5 - 2.0	1		
			1.0 - 1.5	5		
			< 1.0	15	15	15
<b>5) Safety History - Previous Five Years</b>						
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		
No crashes reported on Woodington Way between Winston and Piping Rock 2002 – 2013						
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>0</u> reported crashes. Type: No crashes of any type reported on Woodington Way between Winston and Piping Rock 2002 - 2013			<u>points</u>		0	0
_____ reported crashes. Type: _____			0 - 5			
			0 - 5			
<b>6) Other Factors</b>						
				<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	-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		
Stopped buses and/or other obstructions.*				0 to +5	5	
Volume of turning traffic not reflected in gap availability.				0 to +5		
* am buses stop right at the crosswalk, pm buses pull forward to east end of school building						
<b>TOTAL HAZARD RATING</b>					51	

## 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

### Background

- Falk has 345 students.
- Falk is an early arrival / dismissal school.
- School starts at 7:45 am.
- Falk has a breakfast program that all students can participate in.
- Breakfast starts at 7:30 am for students in grades K – 2, and at 7:40 am for students in grades 3 -5.
- Students are not tardy until 7:50 am.
- Students arriving for breakfast in the past have been directed to enter the school via the cafeteria doors at the back of the school. A new buzzer has been installed at the main entrance at the crosswalk door so that students may also enter the school at this door, but many families are not used to that pattern yet.
- Many students (and their parents) walk up the sidewalk along the driveway at the west end of the school or the fire lane / playground on the east end of the school, depending on where the parents parked or dropped off, to get to the back of the building in the morning.
- There are three yellow school buses that drop students off in front of the school near the crosswalk.
- Students riding the buses enter the building via the main entrance, up the stairs.
- Students being dropped off by para-transit or taxi are dropped off in the parking lot at the accessible entrance. There are about 7 para-transit vehicles.
- In addition to yellow buses and para-transit vehicles, the Boys and Girls Club and La Petite Academy pick children up with large vans/small buses in the afternoon.
- There is a 3-year old program at Falk. These students are also dropped off by their parents at the accessible entrance next to the parking lot. There are three 3-year old program groups. 2 of these groups attend in the morning, and the other 1 in the afternoon. There are 28 students total (approximately 9 in each group).
- There is a bi-lingual 4K program. Most of these students come from the Leopold attendance area. All 4K students are bused to Falk. There are 30 in the morning and 30 in the afternoon.
  
- School dismisses at 2:37 pm Tuesdays through Fridays, and at 1:05 pm on Mondays.
- Students leave the building via whatever door is closest to their classrooms. This could be either side, the main entrance, or the back of the building. Principal Okoli stated that she would prefer to have a more rigorous end-of-day routine to improve children's security.
  
- Woodington Way is 32 feet wide, curb face to curb face.
- Parking is permitted on both sides, except along the school property and bracketing the crosswalk across from the school. These areas are designated no parking on school days between 7:30 am to 4:30 pm. There is a section in front of the school that is "no parking-school bus stop" all the time. This area is about one bus long and has asphalt in the terrace for a loading/unloading pad.

- Parents are allowed to drop-off and pick-up their children in no parking areas, as long as they stay in their vehicles. Once they leave their vehicles they are parked.
- There is a marked crosswalk in front of Falk, at the main entrance sort of in the middle of the building. This entrance is not accessible, it has stairs. The accessible entrance is at the west end of the building, at the end of the walkway along the parking lot.
- There are also a lot of students who arrive from and leave to Hammersley Road behind the school. There is a walkway with stairs that connects the back of the school (playground and fields) to Hammersley.
- There is an adult school crossing guard assigned to the intersection of Hammersley and Theresa Terrace near these stairs.

### **Observations, Arrival**

- AT 7:00 am there were no cars parked on either side of Woodington Way between Piping Rock and at least Winston Dr.
- Staff started arriving and parking on the street at 7:00 am.
- Staff who parked on the street at east end of the building seemed to have their classrooms on that end of the building as they crossed the street mid-block from where they parked and walked up the fire lane to either the east side door or rear doors.
- Staff whose rooms are at the west end of the building assumedly park in the parking lot or on the street to the west.
- The first of three yellow school buses arrived at 7:19 am. This bus pulled up to the pad in the School Bus Stop, but did not let the students off the bus until the other buses arrived at 7:29 am.
- The second and third buses pulled up at 7:29 am and stopped immediately behind the crosswalk, between the crosswalk and the driveway.
- With the stopped buses on the school side of the street and stopped or parked parent cars on the other side of the street, the space between is narrow. This leads to slow traffic. We did not observe any angry, road rage type driving because of the narrowed roadway.
- A staff person came out to monitor the crosswalk, with a hand held stop sign, at 7:29 am.
- A staff person also came out to the driveway entrance with a couple of sandwich board signs to keep unauthorized vehicles out. Para-transit vehicles, taxis, and parents with students in the 3-year old program can use the driveway to pick up students. Parents authorized to use the driveway are given a pink sticker to display on their vehicle.
- Observed a lot of the same drop off behavior we have observed at other schools, including
  - Parents parking in the no parking areas (parents getting of their vehicles and walking with their children into the school).
  - Parents letting their children out of their vehicles on the street side of their vehicles.
  - Parents crossing the street with children mid-block not at the crosswalk, or letting their children cross not at the crosswalk on their own.
  - One parent parked blocking a residential driveway across the street from the school leading to a heated discussion with the property owner when the parent returned.
  - A lot of parents made U-turns (at the various driveways along Woodington near the school) after dropping their children off. I would say a lot more than is typically at other schools.
  - Staff also crossed Woodington mid-block not at the crosswalk after parking.
  - Observed a total of 43 Falk students cross Woodington Way in the vicinity of the school (12/11/2014 am)
    - 26 (60.5%) crossed at the crosswalk
    - 10 (23.3%) crossed to the west of the school (parking lot side)
    - 7 (16.3%) crossed to the east of the school (fire lane side)
- Most, if not all, students crossing Woodington Way were being dropped off in cars. Observers did not discern any students who appeared to be walking to school.

### **Observations, Dismissal**

- Cars were parked on the street close to the school both east and west of the school at 2:15 pm, well before dismissal. Probably staff or others working at or visiting the school.
- 2:16 pm first Badger Bus para-transit vehicle arrived and entered the driveway.
- 2:16 pm the first yellow school bus arrived and stopped ahead of the school bus stop pad.
- 2:17 pm first parents started arriving.
- 2:25 pm second yellow school bus arrived and pulled all the way up to the fire lane at the east end of the building. The first bus then pulled forward to be immediately behind the second bus. Note that the buses stop in a different area in the morning and the afternoon.
- 2:25 pm a staff person came out to the driveway entrance with a couple of sandwich board signs to keep unauthorized vehicles out.
- 2:27 pm parents began to arrive en masse.
- 2:29 pm third yellow school bus arrived and pulled up behind the other two.
- One ADA/para-transit vehicle parked behind the buses on Woodington Way. The driver for La Petite Academy bus expressed confusion to the observer about where she should wait.
- All of the traffic behaviors (driver and pedestrian) indicated above under arrivals were also observed during dismissal.
- 2:48 pm pick-up was basically over, the street was clear of traffic. There were about 5 students still waiting, hanging out near the steps.

- Most, if not all, students crossing Woodington Way were being picked up in cars. Observers did not discern any students who appeared to be walking home from school.

### **Traffic Study Results**

A speed and volume of traffic study was conducted on a weekday mid-week. We counted 743 motor vehicles over a 24 hour period, split pretty evenly eastbound (367 = 49.4%) and westbound (377 = 50.7%) The average speed was 22 mph, and the 85th percentile speed was 26 mph. Less than 5% of drivers were traveling over 30 mph

During school arrival time, 7 – 8 am

We counted 148 motor vehicles. 80 (= 54.1%) were westbound, and 68 (= 45.9%) were eastbound The average speed was 21 mph, and the 85th percentile speed was 25 mph.

During school dismissal time, 2 – 3 pm

We counted 90 motor vehicles. 55 (= 61.1%) were westbound, and 35 (= 38.9%) were eastbound The average speed was 19 mph, and the 85th percentile speed was 23 mph.

### **Recommendations**

Recommend assignment of an Adult School Crossing Guard.

- Criteria are met, mostly due to limited sight distance to the crosswalk for westbound drivers.
- The school Principal, staff and parents need to develop a plan that works towards having all students and parents use the crosswalk. Right now close to 40% of students are not using the crosswalk to cross Woodington.
- Staff met with the PTO in January and they are beginning work on a School Traffic Safety Plan. This work needs to continue.

by Arthur Ross, Pedestrian- Bicycle Coordinator

Date January 21, 2015 .