Winter 1-1-1998

Study addresses safety of children on their way to and from school [January 1998]

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Study addresses safety of children on their way to and from school

During their commute to school, students routinely encounter and have to deal with complex and dangerous traffic situations. School access routes and school bus stops are generally unmarked and invisible to motorists. Children waiting by the side of the roadway for their school bus are generally unsupervised, not readily visible, and completely unprotected. Motorists often disregard speed reductions in school zones and school bus stops. And motorists typically cannot anticipate children's behavior in traffic situations; likewise, children cannot fully anticipate motorist behavior.

While traffic engineering, education, and law enforcement professionals are sincerely concerned about the safety of students during the commute to and from school and school bus stops, comprehensive standards and programs that foster safer school access are not readily available for use.

For example, a traffic engineer can easily locate engineering standards for the placement of utility poles, but safety standards for the location of school bus stops have not been developed and institutionalized.

To compound the problem, responsibility for safe school access is usually divided among school districts, local government traffic engineers, and law enforcement agencies. In most cases, these agencies are usually physically and organizationally separate, such that program coordination is difficult, if not impossible.

Recently, a student in Brevard County, Florida, was fatally injured while walking to her school bus stop on a high-speed rural road. Community reaction to the incident indicated that students are generally perceived to be at great personal risk while bicycling and walking to and from school and school bus stops.

In an effort to identify ways to increase the safety of students during the school commute, the Brevard County Metropolitan Planning Organization (MPO) enlisted CUTR's help. With funding from Section 402 Safety Funds from the Florida DOT's State Safety Office, a study was conducted to identify existing conditions in the county related to the school commute and location of school bus stops.

To meet the study's objective, four primary tasks were developed:

- analyzing crashes involving students;
- reviewing field conditions at the six highest crash intersections;
- developing two safety evaluation worksheets; and
- recommending activities related to education, enforcement, and
community awareness.

Analysis of Crash Data

This task included determining the breadth, location, and nature of student bicyclist and student pedestrian crashes during the school commute by analyzing Florida Traffic Crash Reports (FTCR) for Brevard County between 1992 and 1996. A total of 353 crashes that involved only students commuting to school was analyzed.

The results from the analysis of the crash data indicated that the most prevalent causes for both the student bicyclist and student pedestrian crashes were directly attributable to some type of an action by the students. The most common actions that resulted in accidents were:

- not crossing at a signalized intersection,
- not heeding the "Don't Walk" signal when crossing at a controlled intersection (when one was near by),
- not yielding right-of-way,
- not stopping at intersections,
- standing or playing in the road,
- darting out into traffic between parked cars, and
- riding a bicycle or walking the wrong way against traffic when navigating the journey to or from school/school bus stops.

Review of Field Conditions

Observations were made at six intersections during the school commute periods that were identified from the FTCR as having the highest frequency of student bicyclist and student pedestrian crashes. In addition to recording (in writing) the conditions at the six intersections, each intersection was also videotaped and extensively photographed. During each of the site visits, typical conditions were observed, such as any existing operational and/or physical conditions of the roadways that create obvious hazards to students and normal student pedestrian, student bicyclist, and motorist behavior that creates conflicts and/or hazardous situations at and in close proximity to the intersections. Some of the observations include:

- Physical conditions and operational characteristics were better than expected.
- Very few physical and operational deficiencies (worn out pedestrian signal actuation push buttons, faded pedestrian signal signs, limited motorist sight distances due to shrubbery, utility poles, etc.) were identified.
- Few chronic traffic violations by motorists (excessive speed, failure to yield the right-of-way to students in crosswalks, disregard of traffic control signs) were observed.
- Many students were observed crossing at points (usually just prior to the marked crosswalk) other than controlled crosswalks between queued and moving traffic.
Right-turning traffic often disregarded the painted STOP bars and pulled completely or partially into crosswalks to view oncoming traffic and minimize right turning movement delay.

All high crash locations had an elementary or junior high/middle school within close proximity, usually no more than half a mile.

Some intersections had extensive obstructions (bushes, hedges, utility poles, houses, fences, trees) that restrict the sight distance of both motorists and students.

School Access Safety Evaluation Worksheets

To aid in identifying potential hazards, an intersection/route and school bus stop location safety evaluation worksheet was developed. The worksheet include comprehensive lists of evaluation criteria with accompanying remedies for improving the physical characteristics of intersections/routes/school bus stops and also alternative solutions. A few of the potential solutions recommended to improve safety along school corridors and routes include:

- constructing continuous, detached sidewalks and/or widening sidewalks;
- constructing wide landscape buffers between sidewalks and streets;
- eliminating or restricting on-street parking at certain days and times;
- providing alternate routes for vehicles/students;
- constructing safety islands and pedestrian actuation push buttons at crosswalks;
- implementing measures to reduce vehicle traffic and speed;
- providing proper maintenance of existing vegetation;
- constructing new bicycle lanes;
- strictly enforcing posted speed limit(s);
- prohibiting right-turn-on-red during school commute times;
- providing protective left-turn phasing (green arrow);
- moving STOP lines farther back from crosswalk;
- constructing physical barriers that channel students to the crosswalk;
- educating students about danger of not using controlled crosswalks

Through the consistent application of the candidate physical and other solutions, Brevard County hopes to lessen all future crashes involving students commuting to and from school/school bus stops.

Education/Enforcement

In addition to the existing safety programs already in use by the County, the study considered various other means to promote changes in student and motorist behavior. Consistency in application and expansion of educational materials, programs, and methods for reinforcing "safe" behavior of both students and motorists was found to be a primary need.
in Brevard County. The various means for increasing student safety included:

- developing a county-wide student safety theme and logo;
- developing a series of brief public service announcements and videos;
- coordinating with local utility companies to stuff utility bills with educational materials;
- providing student safety information with rental car contracts and vehicle tag renewal notices;
- using a radar trailer as a speed monitoring device to show motorists how fast they drive in school zones, along school access routes, and at/near/by school bus stops.

Agency Coordination

During the study, it became apparent that at least 30 different local agencies in Brevard County have some jurisdictional control over school access within the county-wide school district. It is clear that improved multi-agency coordination, dialogue, and understanding are necessary to effectively address and improve school access safety.

"Students traveling to and from school need to trust the facilities that are provided for them, and until they have that trust they will continue to behave erratically," said Barbara Meyer, Bicycle/Pedestrian Coordinator for the Brevard MPO.

"Trust can be built through good planning, engineering design, education of motorists, bicyclists, and pedestrians, and enforcement. For this to occur, it is imperative that interagency coordination begin at the planning stage, continue through the construction phase, and through periodic monitoring of the facility once it is in place. Brevard County is dedicated to ensuring that coordination for the safety of our children."

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