

SENATE STAFF ANALYSIS AND ECONOMIC IMPACT STATEMENT

(This document is based only on the provisions contained in the legislation as of the latest date listed below.)

Date: March 11, 1998 Revised: _____

Subject: School Buses/Safety Belts

	<u>Analyst</u>	<u>Staff Director</u>	<u>Reference</u>	<u>Action</u>
1.	<u>Chasteen</u>	<u>O'Farrell</u>	<u>ED</u>	<u>Favorable</u>
2.	_____	_____	<u>TR</u>	_____
3.	_____	_____	<u>WM</u>	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____

I. Summary:

This bill requires that all school buses purchased after December 31, 1999, and used to transport students in grades pre-K through 12 be equipped with safety belts.

This bill creates a new section of the Florida Statutes.

The act would be effective upon becoming a law.

II. Present Situation:

Current State Regulations Regarding School Buses

Section 234.02, F.S., states that maximum regard for safety and adequate protection of health are primary requirements that must be observed by school boards in routing buses, appointing drivers, and providing and operating equipment, in accordance with all requirements of law and regulations of the Commissioner of Education. This section requires that each school board designate and adopt a specific plan for adequate examination, maintenance, and repair of transportation equipment. The examination must be accomplished at least once per month while the bus is in operation. Unsafe buses must be withdrawn from service until repaired. The Florida Department of Education (DOE) is authorized to inspect school buses and can require that buses not meeting specific requirements be withdrawn from service. The routing and scheduling of school buses must be planned to eliminate the need for children to stand while a school bus is in motion. When this provision cannot be met due to temporary emergency circumstances, the bus must be driven at a reduced rate of speed. The Commissioner is authorized to adopt rules to implement this section.

Section 234.03, F.S., specifies that each school board is liable for tort claims arising out of any incident or occurrence involving a school bus, with a limit on liability of \$5,000 times the rated seating capacity, or \$100,000, whichever is greater.

Section 234.051, F.S., defines a “school bus” as a motor vehicle regularly used for the transportation of pre-K through grade 12 public school students to and from school and school activities. Exceptions to the definition are: passenger cars, multipurpose passenger vehicles, and trucks as defined in Title 49, Code of Federal Regulations (CFR), part 571; and motor vehicles subject to the Federal Motor Carrier Safety Regulations in 49 CFR, and not used exclusively for the transportation of public school students. School buses which are rented, leased, purchased, or contracted for must meet applicable federal motor carrier vehicle safety standards and other specifications as may be required by the Commissioner. Students may be transported only in designated seating positions, except as otherwise provided, and must use the occupant crash protection system provided by the manufacturer. The system must meet the requirements of 49 CFR 571 or comply with the Commissioner’s specifications.

Section 234.101, F.S., requires that school bus drivers be of good moral character, good vision and hearing, able-bodied, free from communicable disease, mentally alert, and sufficiently strong physically to handle the bus with ease, and must possess other qualifications prescribed by the Commissioner, including qualifications described in 49 CFR part 391 relating to physical qualifications and examinations, and 49 CFR parts 40 and 382 relating to controlled substance and alcohol use and testing, and must hold a valid driver’s license with a passenger endorsement. The Commissioner must adopt requirements that drivers must meet before being employed by a school district.

Section 316.615, F.S., requires that all motor vehicles with a seating capacity of 24 or more pupils, regularly used to transport pupils to and from school or school activities, comply with the requirements of Chapter 234, Transportation of School Children. The section defines “school” to include all public and private nursery, pre-elementary, elementary, and secondary level schools. The section requires that school bus drivers meet the physical examination requirements established by law and by rule of the Commissioner, and that such drivers pass an annual physical examination and have posted in the vehicle a certificate to drive the vehicle. As in s. 234.03, F.S., school buses must be covered by liability insurance of \$5,000 times the rated seating capacity, or \$100,000, whichever is greater.

National Policy

The National Highway Traffic Safety Administration (NHTSA) is responsible for establishing federal safety standards for motor vehicles, including school buses, which must meet safety standards in excess of those applying to all other passenger vehicles. In its literature, NHTSA states that approximately 394,000 public school buses travel approximately 4.3 billion miles to transport 23.5 million children to and from school and school-related activities and that school bus transportation is one of the safest forms of transportation in the United States. NHTSA reports that since 1984, on average, eleven passengers per year have died in school bus crashes. They

point out that the number of fatalities among school buses is small relative to fatalities in other types of motor vehicle crashes, citing the fact that in 1995, twelve occupants in a school-bus-body type vehicle died in a crash while during the same year, 8,168 children between ages 5 and 20 died as passengers in all other types of motor vehicles.

NHTSA contends that, based on school bus crash data, a federal requirement for safety belts on buses would provide little, if any, added protection in a crash. This conclusion has also been reached by the National Transportation Safety Board (NTSB) and, according to NHTSA, by the National Academy of Sciences (NAS). A 1987 NTSB school bus study concluded that most fatalities and injuries were due to occupant seating positions being in direct line with crash forces, and that safety belts would have done little in terms of prevention. A 1989 NAS study cited by NHTSA concluded that the overall potential benefits of requiring seat belts on large school buses are insufficient to justify a federal mandate for installation, and that funds that would have been used for such installation would be better spent on school bus safety programs and other prevention devices.

NHTSA believes that the concept of “compartmentalization” is the best method for providing crash protection. This concept requires that the interior of large buses provide occupant protection so that children are protected without the need for safety belts. Crash protection is achieved by providing a protective envelope consisting of strong, closely-spaced seats that have energy absorbing backs. NHTSA contends that the effectiveness of compartmentalization has been confirmed in their studies as well as those conducted by NAS. NHTSA states that school buses are heavier, experience less crash forces, and distribute crash forces differently than passenger cars and light trucks. The agency concludes that because the safety record of school buses is outstanding, and because there is no compelling evidence to suggest that seat belts would provide higher levels of occupant protection, there is insufficient reason for a federal mandate for seat belts on large school buses. It should be noted that small buses, those with a gross vehicle weight rating under 10,000 pounds must be equipped with lap or lap/shoulder belts at all designated seating positions, due to the fact that these vehicles are closer in size and weight to passenger cars and trucks where seat belts are believed necessary for occupant protection.

NHTSA reports that pedestrian fatalities account for the highest number of school bus-related fatalities, citing that there are approximately 31 such fatalities per year, about two-thirds of which involve the school bus itself, with the remainder involving motorists illegally passing a stopped school bus. The agency agrees with a 1989 NAS report that states that since children are at greater risk of being killed in a school bus loading zone, a larger share of the school bus safety effort should be directed at improving safety in loading zones. The NAS report also states that if seat belts are to be beneficial, states and local districts that require them on school buses must ensure that not only are they worn, but that they are worn correctly.

NHTSA cites the following concerns:

- Seat belts may result in higher head injuries because the force of hitting the seat in front of the passenger during a front-on collision is concentrated in the head area rather than over the entire body.
- Lap belts are intended to be worn low over the hips and if not worn properly can result in serious abdominal injuries, particularly among children.
- current seats are designed to flex forward in an accident; seat belts would change the crash dynamics, particularly if some children were not wearing belts, thereby creating an accident scenario for which buses weren't designed.

In a document entitled "Traffic Safety Facts 1996 - School Buses", NHTSA states that:

- Between 1986 and 1996, approximately 424,000 fatal traffic crashes have occurred, with just over 0.3 percent (1,305) being classified as school bus-related.
- Between 1986 and 1996, 1,458 people have died in school bus-related crashes - an average of 133 fatalities per year. Sixty-one percent of the fatalities were occupants of other vehicles, 29 percent were non-occupants (pedestrians, bicyclists, etc.) and 10 percent were bus occupants (2 percent were drivers and 8 percent were passengers on the bus)
- Between 1986 and 1996, 283 school-age pedestrians (less than 19 years of age) died in school bus-related crashes. Nearly two-thirds (63 percent) were killed by school buses, 5 percent by vehicles functioning as school buses, and 33 percent by other vehicles involved in the crashes. half of all school-age pedestrians killed in school bus-related crashes were between the ages of five and seven.
- On average, 17 school-age pedestrians are killed by school buses (or vehicles used as school buses) each year, and eight are killed by other vehicles involved in school bus-related crashes.
- More school-age pedestrians are killed in the afternoon than in the morning, with 42 percent of the fatalities occurring in crashes between 3:00PM and 4:00PM.
- Between 1986 and 1996, 95 crashes occurred in which at least one occupant of a school bus or a vehicle functioning as a school bus died. Half of those crashes (49 percent) involved another vehicle. In the 48 single-vehicle crashes, 60 occupants - 13 drivers and 47 passengers - were killed. In the 47 multiple-vehicle crashes, 15 drivers and 67 passengers died.
- In 40 percent of all crashes involving fatalities to occupants of a school bus or vehicle used as a school bus, the principle point of impact was the front of the vehicle.
- Between 1986 and 1996, seven drivers and 48 passengers have died in school buses providing transportation *for purposes other than school or school-related activities*

(*churches, civic organizations, etc.*). In one such multi-vehicle crash, 27 occupants, including the driver, died.

- An average of 35 school-age children die in school bus-related traffic crashes each year - 9 school bus occupants and 26 pedestrians.

NTSB Safety Study

NTSB performed a safety study dated March 18, 1987 where 43 accidents involving large buses were examined. The conclusions reached as a result of this study include:

- Post-standard large school buses are an extremely safe form of transportation compared to other forms.
- Federal school bus safety standards, providing for “compartmentalization” worked well in the crashes studied in all types of accidents; this conclusion is based on the fact that ninety percent of the unrestrained passengers in the accidents studied received only minor or no injuries.
- Intrusion into the bus was responsible for all but two of the thirteen school bus passenger fatalities in the study and for all the bus driver fatalities.
- School bus occupant deaths and serious or worse injuries sustained by survivors in the study were largely attributable to the occupants seating position being in direct line with the crash forces, and would not likely be positively affected by restraints.
- School bus accidents involving collisions with a heavy truck were the most serious injury-producing crashes in the study in terms of school bus passenger outcome; those involving passenger cars were the least injurious.
- Ejection was extremely rare among the unrestrained school bus passengers in the study. Approximately 15 of the 1,119 unrestrained passengers were either partially or totally ejected. The report submits that since the accidents in the study represent the more severe end of the school bus accident scale, and include a disproportionate number of rollovers, it is reasonable to believe that ejection is extremely rare in the overall population of school bus crashes.
- Post-1977 federal school bus standards requiring increased side panel and roof strength appear to have been successful in eliminating the structural failures responsible for many of the ejections which occurred in pre-standard buses.
- Rollover accidents in the study were associated with higher levels of passenger injuries than non-rollovers, but to a much smaller degree than anticipated: nearly 86 percent of all passengers involved in rollover crashes were either uninjured or received only minor injuries.

- The slight increase in the school bus passenger injury severity associated with rollover accidents in the study was due primarily to one type of rollover accident: rollover preceded by collision. The initial impact, not the rollover, was responsible for the higher injury levels.
- Analysis which aggregates rollover accidents, regardless of severity or prior collision may inflate the importance of the rollover itself as the injury-producing event and mask the importance of other events during the accident, i.e., crush from the initial impact, initial impact crash forces, and lateral rotation.
- Lap belt use probably would have made no change in the total number of school bus passengers who died in the crashes investigated for the study (possibly one more death would have resulted).
- Lap belt use probably would have made no change in the number of surviving school bus passengers with severe or worse injuries.
- At best, lap belt use probably would have reduced somewhat the injuries of less than one-third (8) of the 24 surviving school bus passengers with serious injuries in the study and made no change for the majority (12). At worst, it might have increased the injury to almost as many passengers with serious injuries as it improved.
- Lap belt use probably would have worsened the outcome for one-fifth of the 58 school bus passengers with moderate injuries. NTSB could not determine the effect belt use would have had on the remainder of the passengers with moderate injuries.
- NTSB could not estimate the probable net effect of lap belt use on the unrestrained school bus passengers in the study who were uninjured or who received only minor injuries; it is unlikely that it would have reduced minor injuries.
- Almost one-half of the school bus drivers in the study, although required to be restrained, were not wearing their lap belts.
- The lap-belted school bus drivers did not fare better overall than the unrestrained drivers, an outcome probably attributable to the nature and severity of the crashes involving lap-belted drivers.

The Transportation Research Board

In a document entitled “Improving School Bus Safety” (Special Report 222), The Transportation Research Board states that installing seat belts on all large school buses operated in the United States might save one life and prevent several dozen serious injuries each year. On the basis of this estimate, it concluded that the overall potential benefit of requiring seat belts in large school buses is insufficient to justify a federal standard mandating installation. Further, the funds used to

purchase and maintain seat belts in the nation's fleet of school buses, more than \$40 million per year, might better be spent on other school bus safety programs and devices to save more lives and reduce more injuries. Most members of the committee examining this issue did not support encouraging state and local school districts to equip new buses with seat belts. However, some members believe that a uniform occupant-restraint policy for all motor vehicles is important enough that states and local school districts should be encouraged to equip new school buses with seat belts.

State (New York and New Jersey) Safety Restraint Regulations

New York

The state of New York has 712 subdistricts transporting an estimated 2.5 million students per day on approximately 45,000 school buses, of which about one-half are government-owned with the remainder furnished by contractors. Since 1987, school buses must be fitted with seat belts when purchased. In excess of 99 percent of the fleet is now equipped with seat belts. The state law does not require that the seat belts be used - the decision is left to the individual subdistricts, about 43 of which have mandated seat belt use.

New Jersey

The state of New Jersey has required that buses be fitted with seat belts since 1993, and that they be worn since September 1994. New Jersey's decision to require seat belts was based on a study entitled "School Bus Safety Belt Study" dated December 1989, conducted by the New Jersey Institute of Technology, Center for Transportation Studies and Research. The authors of the report acknowledged that school buses are one of the safest modes of transportation and that a greater proportion of fatalities occur outside rather than inside the vehicle. Nevertheless, they stated that the installation of seat belts does improve overall vehicle safety performance. The report states that the overall rate of fatality and injury reduction will be small, but in terms of percentages would amount to 22 percent of fatalities and 27 percent of incapacitating injuries. The report states that seat belts are a cost-effective measure, and recommended that they be installed in all buses. The report further states that seat belts can be effective only when they are used and recommends that seat belt use be mandated in all buses so equipped. Because of technical problems, retrofitting of existing school buses was said to be undesirable, and that seat belts should be introduced as the bus fleet is renewed.

Seat belts are phased in as buses are purchased; approximately one-third of the fleet is so equipped. It is estimated that the cost of adding seat belts to a new bus is \$1500 in New Jersey.

Both states have hold harmless language specifying that the school bus owner, operator, and driver cannot be held liable if a child chooses not to wear a seat belt and is injured in an accident. Both states implemented training programs, the specifics of which are under district control, in order to assure that students are taught how to properly use the seat belt.

Both states have received anecdotal reports from districts which indicate that compliance is excellent among young children who have grown up wearing restraints, but not as good among middle and high school students. These reports indicate that discipline on buses has improved with the advent of restraints, and as a result, driver distractions are probably less, thereby improving safety.

Since there have been no major accidents involving school buses in either state since their respective seat belt laws went into effect, data regarding efficacy in preventing fatalities and serious injuries is unavailable.

Both states report that concerns have been expressed. In New Jersey where not all buses are equipped with seat belts yet, some parents are concerned that their children are riding on unequipped buses. There are also concerns regarding the possibility of serious injury as result of wearing the belt, either abdominal injuries, or head injuries resulting from impacts with the seat in front of the student. In New Jersey, it is believed that higher seat backs will diminish the latter issue.

Institute for Injury Reduction

According to the Institute for Injury Reduction, lap-belt-only restraints in passenger cars are substantially injurious to children in a crash. It contends that lap-only belts concentrate excessive force on the child's lower torso, exposing the child to severe abdominal injuries and spinal cord fractures. The institute further believes that the problem extends to severe injury to the upper torso and head when the upper part of the body "flails" forward and impacts on hard objects or other people in the vehicle.

The CUTR Report

In 1993, the University of Florida, College of Engineering, Center for Urban Transportation Research (CUTR) issued a report entitled "Florida School Bus Occupant Safety". In response to a request by the Legislature, CUTR performed a study of the potential benefits that might be derived from the use of safety restraints in large Florida school buses. The study consisted of a review and evaluation of existing literature and the performance of two original analyses, one a cost-benefit analysis and the other a descriptive analysis of Florida school bus accident data. The report states that the effectiveness of safety restraints in large school buses has not been proven. Among the professional community, however, controversy exists regarding just how effective the provision of safety restraints and mandatory safety belt use laws would be in reducing fatalities and injuries. CUTR acknowledges that the debate is heated, and that both sides of the issue make strong cases in support of their convictions.

According to the report, proponents of safety restraints in large school buses concede that the requirement of "compartmentalization" is effective in reducing fatalities and injuries, but argue that when combined with safety restraint use, fatality and injury rates could be reduced even further. They contend that safety restraints in school buses will reinforce the habit in young

children with regard to wearing restraints in passenger cars. They believe that safety restraint use will improve on-board occupant behavior and decrease driver distractions, translating into possible avoidance of accidents. In terms of cost, proponents estimate the installation of lap belts would cost \$1000 - \$1500 per large school bus.

The report states that opponents of safety restraints in large school buses cite that because of their weight and large size, distinct yellow color, well-known routes, governed operating speed, and unique safety design, school buses are inherently safer than other forms of transportation, and consequently, do not need safety restraints to improve occupant safety. Opponents further contend that in the case of serious accidents, safety restraints may actually increase the likelihood of injury and can imperil occupants in accidents involving fire and rollovers. They contend that the potential “carryover” effect would be lost if drivers do not insist on restraint use resulting in children becoming desensitized to safety restraint use in other types of vehicles. In terms of cost effectiveness, opponents believe funds are better spent on options such as driver training, higher seat backs (“New York” seats), crossing control arms, increased enforcement of laws against passing stopped school buses, and adult school bus monitors.

CUTR reviewed the above referenced NTSB study and a study by the Texas Transportation Institute (TTI). The TTI study involved a case-by-case evaluation of 13 school bus accidents which resulted in 19 fatalities. The analysis suggested that 12 of the 19 fatalities might have been prevented had safety restraints been available to those who were fatally injured and that an additional four deaths might have been prevented had safety restraints been available or proper student disciplinary procedures exercised.

The TTI study also assessed “accident characteristics and/or injury patterns which might be related to the seat belt issue in all injury-producing [Texas] school bus accidents. The analysis suggested that approximately 46 percent of all fatal-injury-causing Texas school bus accidents were accounted for in either side impact or rollover collisions. While rollover accidents represented only six percent of all injury-causing Texas school bus accidents, they accounted for a much higher proportion of all fatal and incapacitating injuries to occupants, 15 percent and 18 percent, respectively. The investigators felt that this was an important point to emphasize because safety restraints generally are considered to improve occupant safety in accidents involving either a side impact or a rollover.

CUTR evaluated a 1984 study performed by Transport Canada in which three different-sized buses were crash tested to evaluate the efficacy of safety restraints. This study concluded that “compartmentalization” affords occupants sufficient protection in frontal collision and that the utilization of lap belts may result in more serious head and neck injuries to restrained occupants. CUTR also looked at a 1967 study by the University of California at Los Angeles (UCLA) where three impact modes, frontal, rear, and side (90 degree), were examined. The UCLA research team concluded that the greatest single contribution to collision safety is the high strength, high back safety seat, and that the second most important element is the use of a three-point belt, lap belt, or other form of effective restraint. A second study conducted by UCLA in 1972 included the examination of different seat configurations (side and rearward facing), in addition to the

conventional seating method. The study involved a head-on and a side impact collision. In this study, the researchers concluded “For buses provided with safety seats having a performance profile comparable to the UCLA design, seat belts [lap belts] will contribute a significant measure of safety, especially during severe upset collision exposures.” The researchers noted that both of the UCLA studies were conducted some years before the issuance of more recent federal motor vehicle safety standards.

CUTR examined a 1985 study by Thomas Built Buses, Inc. where three crash impact tests were conducted: frontal into a fixed barrier, a right-side impact by a moving barrier, and a left-side impact by a moving barrier. Based on their results, the Thomas Built research group concluded that “compartmentalization” performs as it was designed to in frontal and side impacts. In the case of side impact crashes, they found little difference between the restrained and unrestrained anthropomorphic testing devices with regard to the severity of head and chest injuries.

The cost-benefit analysis conducted by CUTR included various safety options: lap-belts, lap/shoulder belts (three-point restraints), lap/dual shoulder belts (multiple-point or four-point restraints), higher seat-backs (“New York” seats), adult school bus monitors, electrically operated crossing control arms, dual stop signal arms, external loud speaker systems, and rearward-facing seats with a lap-belt. The analysis was confined to installation on new buses; it did not address retrofitting existing buses. CUTR concluded that the most cost-effective safety investment option in terms of preventing fatalities and injuries is higher seat backs.

CUTR examined Florida school bus accident data by defining two objectives: (1) determine the frequency and distribution of accidents by four primary impact modes (frontal, rear-end, side, and rollovers); and (2) determine occupant injury severity by the same four impact modes. Based on this analysis, CUTR concluded that the data did not provide convincing evidence that safety restraints are needed in large Florida school buses. The CUTR review revealed that a considerable number of occupants received minor or moderate injuries (44,220) which reiterates the notion that the buses are a safe mode of transportation. It also concluded that the availability of safety restraints would not have made a difference with regard to nine (five occurring in a single accident) fatal injuries reported. In view of the nine fatalities (0.02 percent) and a reported 202 (0.45 percent) incapacitating injuries sustained by the 44,438 Florida school bus occupants involved in 4,732 accidents reported for the interval 1986 through 1991, CUTR contends that serious accidents involving school buses are rare and that the effectiveness of available safety options is substantiated.

In spite of their findings, CUTR stated that the lack of empirical evidence pertaining to the effectiveness of safety restraints in large school buses emphasizes the important need for a comprehensive study to compare the fatality and injury rates among belted and unbelted school bus occupants to decisively determine their safety potential. School districts and states currently requiring safety restraints (lap-belts) provide an opportunity to compile data over the long term, and to compare the severity of injuries sustained by belted and unbelted school bus occupants. CUTR further recommends comprehensive surveys of school districts and states that require safety restraints to acquire data regarding operational experience, including liability, seat belt

use/compliance, maintenance costs, vandalism of belts, influence of safety restraints on student conduct, and other information.

Florida Department of Education Position

In a document entitled “Why Aren’t School Buses Equipped with Seat Belts???” DOE states the following:

- All school buses built since April 1, 1977 have a passive safety feature called “compartmentalization” that provides protection to students equal to or greater than seat belts.
- Recent studies by the National Research Council and the Center for Urban Transportation Research at the University of South Florida have confirmed the high level of safety provided by “compartmentalization” and other safety equipment on school buses.
- School bus crash testing conducted in Canada confirms that students in seat belts could be more likely to suffer severe or fatal head or neck injury than unbelted students.
- During the last 5 years in Florida (through 1995-96), almost one million public school students were transported daily, traveling over one billion miles on 14,000 school buses. During that 5-year period, there have been three students and a teacher tragically killed while riding on Florida’s public school buses. Two of the students and the teacher were killed in one incident when a tire came off a truck and went through the windshield of the bus. Five students also died in the loading zone; four of these children were run over by motorists illegally passing stopped school buses.
- In spite of the excellent statistical safety record of school buses compared to other forms of transportation, nationally about 15 students per year are killed on board school buses, while about 40 die outside the bus in the loading zone, two thirds as a result of being run over by their own bus. Because the loading zone around the bus is the area where fatalities are most likely to occur, Florida has been concentrating its resources on driver training, improved mirror systems, and other strategies to improve loading zone safety.

The Florida PTA

The Florida PTA is an strong advocate of both seat belts and high seat backs. In its literature, it states that The Transportation Research Board predicts that seat belts on school buses will improve safety by 20 percent with 50 percent seat belt usage, and cites predictions in the New Jersey Institute of Technology study of an estimated safety improvement of 25-35 percent based on 75 percent usage. The organization contends that seat belts on school buses would prevent an average of 1.5 deaths and 40.4 incapacitating injuries in Florida each year.

The Florida PTA contends that “compartmentalization” is not perfect when considering that a disproportionate number of fatalities and serious injuries occur in side-impact and rollovers crashes. These are scenarios where seat belts would provide the greatest improvement in safety performance, and will also improve behavior on the bus and help keep small children from slipping off their seats when the bus turns or goes over a bump.

In its literature, the Florida PTA states that seat belts in school buses is a concept endorsed by the American Medical Association, Physicians for Automotive Safety, the American Academy of Pediatrics, the College of Preventative Medicine, the American Association of Oral and Maxillo Facial Surgery, the American Society for Adolescent Medicine, and the American College of Emergency Physicians. It is also stated the American Academy of Pediatrics recommends a 28 inch seat back.

The Florida PTA passed a resolution during its 1997 convention in which it states that it supports legislation requiring any new bus purchased for the purpose of transporting school children in the state of Florida be equipped with 28 inch seat backs and seat belts, and that the seat belt portion of the resolution be forwarded to the National PTA for inclusion in the National Platform.

The American Academy of Pediatrics

In a 1996 policy statement issued by the American Academy of Pediatrics, the following recommendations are made:

- The use of child safety seats and other restraint systems on school buses used to transport pre-kindergarten school children in order to keep the children secure in their seats.
- In agreement with a NTSB study, the Academy recommends that NHTSA revise federal motor vehicle safety standards to require that seat backs be 24 inches above a designated reference point (slightly more than 26 inches from the seat surface).
- The Academy estimates that the use of seat belts on large buses may reduce deaths and injuries by 20 percent, with an assumption that use rates are only 50 percent. An additional benefit is that such use reinforces use in private vehicles. Although the cost effectiveness of seat belts on large buses may remain controversial, the Academy recommends the installation of seat belts on all newly purchased school buses. Further, districts providing seat belts must ensure the appropriate education of administrators, students, teachers, drivers, and parents in their use.
- All school buses should be equipped with the following to prevent pedestrian injury: eight warning and loading lights (two flashing red and two flashing amber lights on both the front and the back of the bus), stop signal arms, and a cross-view mirror system. The Academy supports the use of strobe lights, and an external loud speaker system to enable the driver to communicate with children outside the bus, and loading and backing alarms or pulsating back up horns.

- School buses should be equipped with brake retarder systems, which may be effective in reducing serious injuries and deaths attributable to sudden stops.
- Mandatory school bus inspections.
- Detailed, unexpected, random school bus inspections conducted by an independent agency, in addition to regular annual school bus inspections.
- All school buses, including private, for hire, and for parochial schools, need to be in compliance with all federal regulations, and pre-1977 buses should be retired from use.
- States should adopt standards for the use of wheelchairs on school buses as outlined in the 1995 National Standards for School Buses.

Florida Accident Data

The Florida Department of Highway Safety & Motor Vehicles Accident Data

Year	1991	1992	1993	1994	1995	1996
Number of crashes	723	788	861	916	823	833
Number of school buses involved	742	803	844	939	847	854
Total vehicles involved	1,377	1,683	1,731	1,934	1,570	1,746
Total injuries	1,161	1,229	1,244	1,672	1,617	1,388
Total fatalities	5	6	5	9	9	12
Total Injury Crashes	460	454	509	533	507	495
Total Fatal Crashes	3	6	5	8	8	12
Total Non-Injury Crashes	260	328	317	375	308	326
Bus Driver						
Injuries	119	108	122	121	100	125
Fatalities	0	0	0	0	0	0
Other Vehicle Driver						
Injuries	278	296	315	335	309	306
Fatalities	2	2	3	5	5	10
Bus Passenger Injuries Broken Down By:	623	692	659	1,016	1,027	825
Possible	455	500	476	715	697	695
Non-Incapacitating	121	166	163	247	291	88
Incapacitating	47	26	20	54	39	42
Bus Passenger Fatalities	3	1	0	0	0	1
Other Vehicle Passenger						
Injuries	113	119	118	177	157	110
Fatalities	0	0	0	3	3	1

Year	1991	1992	1993	1994	1995	1996
Pedestrian Injuries	28	14	30	23	24	22
Fatalities	0	3	2	1	1	0

**Florida Department of Education, School Transportation Management Section
 School Transportation-Related Fatalities
 Seven Year Summary (1990-91 through 1996-97)
 (revised 10/21/97)**

School Year	Fatalities on-board school bus	Motorist or passengers killed in other vehicles colliding with bus	Pedestrian students struck by vehicle illegally passing stopped school bus	Pedestrian students struck by school bus in loading zone	Other pedestrians (non-students) struck by school bus	Pedestrian students struck by other vehicles at bus stop (school bus not present)
1990-91	0	4(100%)	0	0	0	0
1991-92	3(60%)	1(20%)	0	0	0	1 (20%)
1992-93	1 (20%)	2 (40%)	0	0	1 (20%)	1 (20%)
1993-94	0	4 (57%)	2 (29%)	1 (14%)	0	0
1994-95	0	6 (67%)	2 (22%)	0	0	1 (11%)
1995-96	0	10 (91%)	0	0	0	1 (9%)
1996-97	1 (10%)	8 (80%)	0	1 (10%)	0	0
Total	5 (10%)	35 (68%)	4 (8%)	2 (4%)	1 (2%)	4 (8%)

III. Effect of Proposed Changes:

This bill requires that all school buses purchased after December 31, 1999, and used to transport students in grades pre-K through 12 be equipped with safety belts sufficient to provide each student a separate belt. The safety belts would have to meet the same standards as those prescribed under the Florida Safety Belt Law as provided in s. 316.614, F.S.

IV. Constitutional Issues:

A. Municipality/County Mandates Restrictions:

None.

B. Public Records/Open Meetings Issues:

None.

C. Trust Funds Restrictions:

None.

V. Economic Impact and Fiscal Note:**A. Tax/Fee Issues:**

None.

B. Private Sector Impact:

Indeterminate. It would depend on how many buses are contracted by school districts and the rate at which the buses are exchanged.

C. Government Sector Impact:

DOE conservatively estimates that it would cost \$1,980 to equip a new 65-passenger bus with three sets of lap belts per seat. Assuming an annual purchase volume of 10 percent of the daily service fleet per year is 1,317 (based on 1995-96 data), it would cost \$2,607,660 annually to phase in seat belts on Florida school buses.

The Florida PTA estimates that a 65 passenger bus meeting Florida specifications can be purchased for an average of \$40,000 and can be equipped with 28" high back seats and seat belts for an additional \$1,600, based on manufacturer quotes.

In its present form, the bill does not contain a provision for holding the school district, bus owner, and the driver harmless in the event a child chooses not to wear a seat belt and is injured in an accident. Without such a provision, liability considerations could be substantial.

VI. Technical Deficiencies:

None.

VII. Related Issues:

None.

VIII. Amendments:

None.