INDIANA TRAFFIC SAFETY FACTS

February 2007

PICKUP TRUCK CRASHES AND RESTRAINT USAGE, 2005

Designing and implementing effective traffic safety policies requires data-driven analysis of traffic accidents. To help in the policy-making process, the Center for Urban Policy and the Environment is collaborating with the Indiana Criminal Justice Institute to analyze data from the Vehicle Crash Reporting System database, maintained by the Indiana State Police. Research findings will be summarized in a series of Fact Sheets on various aspects of traffic accidents, including alcohol-related crashes, light trucks, large trucks, speeding, children, motorcycles, occupant protection, and young drivers. Additional briefs will provide information on county and municipality data. Portions of the content in these reports are based on guidelines provided by the U.S. National Highway Traffic Safety Administration (NHTSA). These Fact Sheets, combined with an annual Indiana Crash Fact Book, serve as the analytical foundation of traffic safety program planning and design in Indiana.

Despite the evidence that safety belts save lives, millions of Americans still do not buckle up when they are in a motor vehicle. The National Highway Traffic Safety Administration (NHTSA) emphasizes enactment and enforcement of strong safety belt laws due to the proven effectiveness of these interventions.[1] Indiana's restraint law exempts pickup trucks and sport utility vehicles (SUVs) that have truck licenses. One hundred and sixty-five people were killed in crashes involving pickup trucks in Indiana in 2005; 110 (66.7 percent) were not wearing their seat belts. This Fact Sheet focuses on restraint usage by pickup truck occupants, both drivers and passengers, and the impacts of primary enforcement restraint laws in Indiana and nationally.

NATIONAL STATISTICS - 2005

- Nationally, there were 31,415 passenger vehicle occupant fatalities; among those where restraint use is known, more than half (55 percent) were unrestrained.
- 21,946 passenger vehicle ***drivers*** were killed in traffic crashes. Among the 20,450 passenger vehicle driver fatalities for which restraint use was known, **68 percent (2,952) of the drivers of pickup trucks killed were unrestrained.** This compares to 62 percent (1,857) for SUVs, 49 percent (528) for vans, and 48 percent (5,789) for passenger cars.

66.7% of pickup truck occupants in Indiana fatal accidents were not wearing their safety belts.

- A total of 9,469 ***occupants*** (non-drivers) of passenger vehicles were killed in traffic crashes. Among the 8,736 passenger vehicle fatalities for which restraint use was known, ***71 percent (944) of the passengers in pickup trucks were unrestrained.*** This compares to 65 percent (1,001) for SUVs, 60 percent (502) for vans, and 51 percent (2,578) for passenger cars.[2]

Two-thirds of pickup truck drivers and almost three-fourths of pickup truck passengers killed in crashes at the national level were not wearing restraints. These figures exceeded the proportion of unrestrained drivers and passengers killed in all other passenger vehicle accidents.

[1]National Highway Traffic Safety Administration, (September 2006). *Primary Enforcement Saves Lives: The Case for Upgrading Secondary Safety Belt Laws.* Washington, DC. DOT HS 810 649.

[2]National Center for Statistics and Analysis, National Highway Traffic Safety Administration, (2006a). *Occupant Protection.* Washington, DC, DOT HS 810 621.

INDIANA CRIMINAL JUSTICE INSTITUTE

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INDIANA STATISTICS - 2005

- In Indiana, there were 711 passenger vehicle occupant fatalities. Of the 630 occupants for which restraint use is known, 334 were unrestrained (53 percent).
- **517 car drivers were killed** in Indiana crashes. Of the 451 car driver fatalities in which restraint use is known, **236 (52 percent) were unrestrained.**
- There were **134 pickup truck drivers** killed in Indiana crashes. Of the 114 drivers in which restraint use was known, **91 (80 percent) were unrestrained**.
- **31 pickup truck passengers** were killed in Indiana crashes. Of the 28 occupants in which restraint use was known, **19 (68 percent) were unrestrained**. [3]

Unrestrained pickup drivers killed in crashes in Indiana (80 percent) exceeded the national level (68 percent), and far exceeded the proportion of unrestrained drivers and passengers who were killed in Indiana in all passenger vehicle accidents (53 percent).

PRIMARY VERSUS SECONDARY ENFORCEMENT

Primary enforcement of a safety belt law allows a law enforcement officer to stop a vehicle and issue a citation when the officer observes an unbelted driver or passenger. Secondary enforcement means that a citation for not wearing a safety belt can only be written after the officer stops the vehicle or cites the offender for another infraction. NHTSA supports the enactment of primary safety belt laws as opposed to secondary enforcement laws.[4] In 2006, the average safety belt use rate in states with primary enforcement laws was 10 percentage points higher than states without primary enforcement laws (85 percent vs. 74 percent).[5]

While increased belt use is the immediate goal of mandatory use laws, enhanced safety is the ultimate desired outcome. Higher use rates under primary enforcement laws translate into greater traffic safety.

Safety belt use laws vary from state to state with some laws covering only front-seat occupants, some providing only secondary safety belt enforcement, and some exempting pickup trucks and vans. As of June 2006, 24 states and the District of Columbia have safety belt use laws that provide for primary enforcement. Twenty-five (25) states have laws that provide for secondary enforcement and one state (New Hampshire) has no adult safety belt use law.[6] Current restraint use laws in 19 states cover *all* seats and *all* ages, with North Carolina increasing to all seats as of July 1, 2007.[7]

Indiana's primary enforcement law covers front-seat occupants only and exempts recreational vehicles, pickup trucks and SUVs that obtain a pickup truck license plate.[8] Indiana's neighboring states, Illinois, Kentucky and Michigan, have primary enforcement laws, while the Ohio law provides for only secondary enforcement. As in Indiana, seat belts are required for only occupants in the front seats of vehicles in Illinois, Michigan, and Ohio, and Kentucky requires seat belts for all occupants. Of these five states, Indiana is the only state exempting pickup trucks from safety belt requirements.[9]

States enact primary laws in order to send a message to motorists that safety belt use is an important safety issue and is considered a priority by legislators and public safety officials.[10] A study by David Houston and Lilliard Richardson, Jr., provided evidence that adult mandatory restraint use and primary enforcement laws are effective tools for enhancing motor vehicle occupant safety. This study looked at states whose enforcement laws changed between 1990 and 2002. The implementation of a secondary enforcement law (from no law) is associated with a reduction in the fatalities per 10 billion vehicle miles traveled (VMT) of 5.2 for drivers and 6.3 for all occupants. The reductions are even greater for implementation of primary enforcement at a rate of 9.9 and 11.9 for drivers and occupants, respectively. The reductions associated with primary enforcement are statistically greater than those achieved under secondary enforcement.[11]

[3] Indiana State Police Vehicle Crash Reporting System

[4] National Center for Statistics and Analysis, National Highway Traffic Safety Administration, (January 2006). *Strengthening Safety Belt Use Laws*. Washington, DC.

[5] National Center for Statistics and Analysis, National Highway Traffic Safety Administration, (November 2006). *Safety Belt Use in 2006 – Overall Results, Traffic Safety Facts Research Note*. Washington, DC.

[6] National Highway Traffic Safety Administration, (November 2006).

[7] National Highway Traffic Safety Administration, (2006b). *Traffic Safety Facts Annual Report 2005: A Compilation of Motor Vehicle Crash Data from the Fatality Analysis Reporting System and the General Estimates System*, Washington, DC. DOT HS 810 631.

[8] Indiana Code 9-19-10-2.

[9] National Highway Traffic Safety Administration, (2006b).

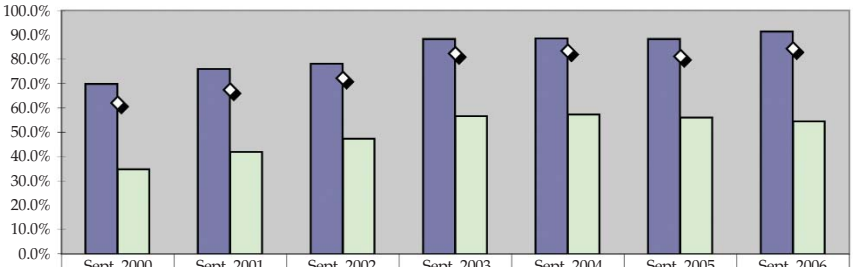
[10] National Highway Traffic Safety Administration, (September 2006).

As trucks have become increasingly popular for passenger transportation, manufacturers have produced vehicles that can accommodate more occupants. A variety of extended cab vehicles are available with additional seating capacity that may include a rear bench seat, side-facing back seats, a full back seat with lap/shoulder belts, and/or a middle front seat position with a lap belt.[12] Research findings indicate that lap/shoulder safety belts, when used, reduce the risk of fatal injury for light truck occupants by 60 percent and moderate-to-critical injury is reduced by 65 percent.[13]

RESTRAINT USAGE

As of January 2006, there were 4.03 million licensed drivers in Indiana and 6.06 million vehicles registered.[14] The Federal Highway Administration (FHWA) reports pickup trucks make up 18.6 percent of the total registered motor vehicles in Indiana.[15]

Figure 1. Indiana Safety Belt Usage Rate by Vehicle Type (2000-2006)



	Sept. 2000 (79 sites)	Sept. 2001 (113 sites)	Sept. 2002 (113 sites)	Sept. 2003 (113 sites)	Sept. 2004 (113 sites)	Sept. 2005 (113 sites)	Sept. 2006 (113 sites)
Cars	69.8%	76.0%	78.2%	88.3%	88.5%	88.4%	91.4%
Pickups	34.8%	41.9%	47.4%	56.6%	57.2%	56.0%	54.4%
All Pass. Veh.	62.1%	67.4%	72.2%	82.3%	83.4%	81.2%	84.3%

Table 1. Indiana Driver and Passenger Fatalities/Injuries by Vehicle Type

		2003		2004		2005	
		Count	%	Count	%	Count	%
Fatalities							
	Passenger Car/Station Wagon	423	65.0	465	65.3	410	57.7
	Pickup Truck	**114**	**17.5**	**117**	**16.4**	**165**	**23.2**
	Van	50	7.7	52	7.3	54	7.6
	Sport Utility Vehicle	64	9.8	78	11.0	82	11.5
	Total	*651*		*712*		*711*	
Incapacitating Injuries							
	Passenger Car/Station Wagon	2,181	64.5	1,946	62.6	1,844	61.6
	Pickup Truck	**556**	**16.4**	**513**	**16.5**	**480**	**16.0**
	Van	287	8.5	295	9.5	265	8.9
	Sport Utility Vehicle	358	10.6	353	11.4	404	13.5
	Total	*3,382*		*3,107*		*2,993*	
Non-Incapacitating Injuries							
	Passenger Car/Station Wagon	27,892	65.9	27,986	64.6	25,683	63.8
	Pickup Truck	**5,783**	**13.7**	**5,983**	**13.8**	**5,567**	**13.8**
	Van	3,928	9.3	4,152	9.6	3,686	9.2
	Sport Utility Vehicle	4,696	11.1	5,216	12.0	5,334	13.2
	Total	*42,299*		*43,337*		*40,270*	

According to the Indiana roadside observational study conducted in June 2006, Indiana's "all passenger vehicle" safety belt usage rate is at an all time high of 84.3 percent. However, while this is higher than the national average of 82 percent, the pickup truck (exempted from the primary law on seat belt usage) safety belt rate runs approximately 30 percentage points below passenger cars and the overall passenger vehicle safety belt usage rate (see Figure 1). Pickup truck safety belt usage increased steadily from 2000 to 2004 and reached a peak in 2004. Since 2004 the usage rate has declined for pickup trucks.[16]

There were 264 pickup trucks involved in fatal crashes in Indiana in 2005. In addition, there were 10,230 pickup trucks involved in personal injury and 35,255 pickup trucks involved in

[11]Houston, D.J., Richardson, Jr., L.E., (2006). Reducing Traffic Fatalities in the American States by Upgrading Seat Belt Use Laws to Primary Enforcement. *Journal of Policy Analysis and Management,* Vol. 25, No.3, 645-659

[12]American Academy of Pediatrics, Committee on Injury and Poison Prevention, (October 2000). Children in Pickup Trucks, *Pediatrics* Vol. 106 No. 4.

[13]National Center for Statistics and Analysis, National Highway Traffic Safety Administration, (2006a).

[14]Indiana Bureau of Motor Vehicles, (2007). Licensed driver, vehicles registered data. Retrieved January 2007. www.in.gov/bmv/statistics/.

[15]Federal Highway Administration website statistics, (2007). Pickup truck vehicles registered. Retrieved January 2007. http://www.fhwa.dot.gov/policy/ohim/hs05/motor_vehicles.htm.

[16]Indiana roadside observational studies conducted by Purdue University's Center for the Advancement of Transportation Safety and the Indiana Criminal Justice Institute 2000-2006.

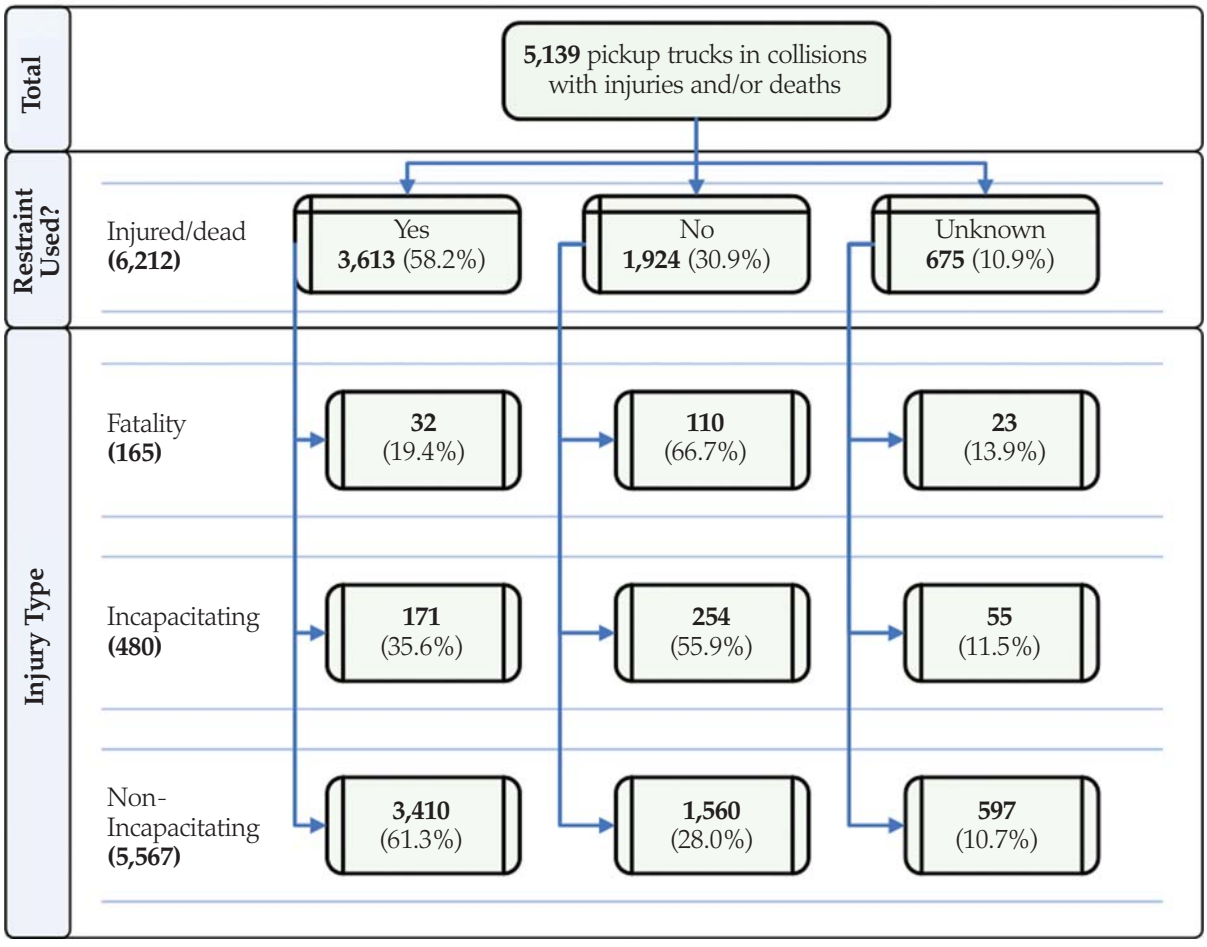
property damage crashes. Pickup trucks represented 15.7 percent of the vehicles involved in total crashes, but represented 20.1 percent of the vehicles involved in total fatal crashes. Also, while 0.3 percent of all Indiana car crashes in 2005 involved fatalities, 0.6 percent of all pickup truck crashes were fatal.

One hundred and sixty-five (165) people were killed in pickup trucks involved in crashes, representing 23.2 percent of the people killed in all passenger type vehicle crashes (see Table 1). In comparison, pickup trucks represent only 18.6% of the total registered motor vehicles in Indiana. Crashes involving injuries of pickup truck occupants decreased and the overall fatalities decreased by one, while the fatalities of pickup truck occupants increased from 114 in 2003 to 165 in 2005, a **45 percent increase** in fatalities.[17]

Restraint use appears to be associated with less severe injuries of pickup truck traffic crashes. Figure 2 depicts collisions involving pickup trucks in which one or more people were either killed or injured and separates severity of injuries according to restraint use. The top box is the total number of pickup trucks involved in crashes with deaths or injuries. The second level shows the restraint usage of those injured or killed. The third level shows the type of injury – fatal, incapacitating, or non-incapacitating. This chart includes all occupants of the pickup truck no matter the seat position. The chart demonstrates that the use of safety belts helps save lives. Unrestrained occupants of a pickup truck are six times more likely to be a fatality than restrained occupants.

Unrestrained occupants of a motor vehicle can also become human projectiles in the event of a crash. Figure 3 reports that in 2005, **63 (38 percent) of the 165 pickup truck occupants killed in Indiana crashes were either totally or partially ejected** from the vehicle. **Forty-seven (75 percent) of those ejected were known to be unrestrained** and five of those

Figure 2. Indiana Fatalities and Injuries in Pickup Truck Collisions — 2005



[17]Indiana State Police Vehicle Crash Reporting System

were pinned under the vehicle. Only two (2) were known to be wearing their seat belts. Eight (8) of those ejected were under the age of 18.[18]

Figure 3. Indiana Pickup Truck Collisions Resulting in Fatalities of Pickup Truck Occupants - 2005

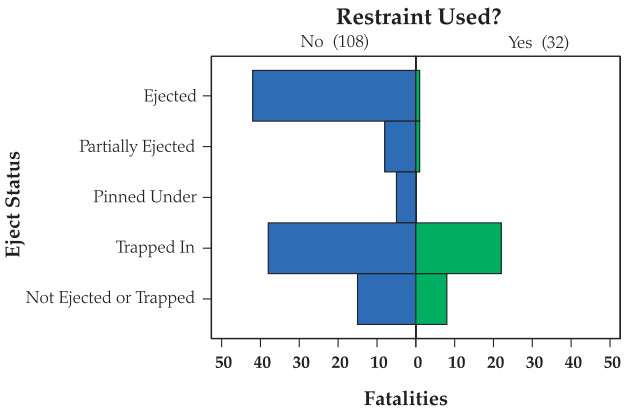
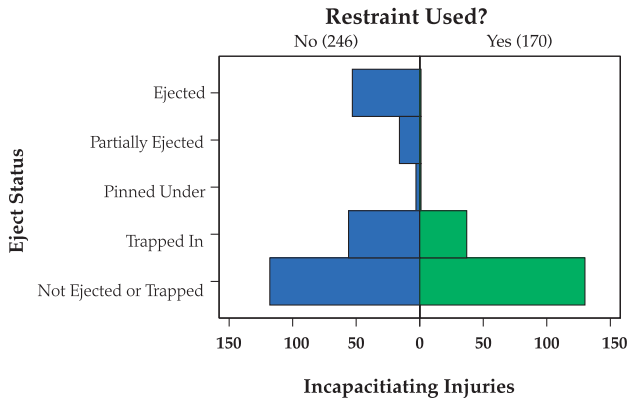


Figure 4. Indiana Pickup Truck Collisions Resulting in Incapacitating Injuries of Pickup Truck Occupants -2005



Restraint use numbers do not correspond to Figure 2 due to unknowns of ejection status.

Figure 4 indicates that of the 480 pickup truck occupants who had incapacitating injuries, **78 (16 percent) were either totally or partially ejected from the vehicle and 64 (82 percent) of those were known to be unrestrained.** Three of those unrestrained were pinned under their vehicle and only three were known to be wearing their seat belts. Sixteen (16) of those ejected were under the age of 18.[19] Virtually no one is ejected when restraints are used.

When a motor vehicle crash occurs, the reaction of the driver is critical. A driver who is jolted away from the controls during an initial impact may be less able to prevent or minimize injuries caused by an accident. Additionally, an unrestrained occupant of a vehicle may injure others inside or out of the vehicle during an accident.[20]

Young or inexperienced drivers are more likely to lose control of a vehicle upon impact than a seasoned driver. New and young drivers generally lack the ability to recognize risks in the environment. Their inexperience means they have the following tendencies:

- They are slower to recognize potentially hazardous features and situations on the road.
- They underestimate the danger of certain risky situations, such as speeding and driving while impaired, while overestimating others.[21]

Younger drivers are frequently victims of Indiana pickup truck crashes. In 2005, there were 134 pickup drivers killed: 30 (22 percent) of those were under the age of 25 and 10 were between the ages of 16 and 19. An additional 76 drivers under the age of 25 suffered incapacitating injuries.

COSTS TO SOCIETY

Unrestrained pickup truck occupants have more serious injuries and society often bears this significant financial burden. The cost of increased deaths and injuries associated with accidents of unbelted individuals is sustained by everyone. For example, in a 1972 Massachusetts case (Simon v. Sargent), the United States Supreme Court affirmed the fact that the cost is sustained by all. The high court wrote,"…From the moment of injury, society picks the person up off the highway; delivers him to a municipal hospital and municipal doctors; provides him with unemployment compensation if, after recovery, he cannot replace his lost job; and I, if the injury causes disability, may assume the responsibility for his and his family's continued subsistence. We do not understand a state of mind that permits

[18]Indiana State Police Vehicle Crash Reporting System

[19]Indiana State Police Vehicle Crash Reporting System

[20]People v. Weber (1985),129 Misc. 2d 993, 996, 494 N.Y.S. 2d 960, 963.

[21]Opiela, K.S., Sant, B.M., Childers, J.A. (September/October 2006). Turning Young Drivers Into Survivors. *Public Roads*, Vol. 70, No2. Federal Highway Administration. Retrieved January 2007. http://www.tfhrc.gov/pubrds/06sep/03.htm.

a plaintiff to think that only he himself is concerned."[22] Even though this case dealt with a motorcycle accident, the same can be said of any traffic accident injury.

According to NHTSA (2000), the cost of motor vehicle crashes exceeds $230 billion annually, an estimated $7,300 per second. Included in the $230 billion figure are $81 billion in lost productivity, $32.6 billion in medical expenses, and $59 billion in property damage. **Each critically injured crash survivor can sustain approximately $1.1 million in crash-related costs over his/her lifetime.**[23] This does not include the tremendous emotional, physical and psychological suffering of the victims and their families.

Safety belt use is the single most effective strategy a person can employ to prevent deaths and injuries and reduce the social and economic costs associated with motor vehicle crashes.[24] NHTSA outlines the elements of a strong seat belt use law in Table 2.

The Uniform Vehicle Code (UVC), as revised by the National Committee on Uniform Traffic Laws and Ordinances in 2000, states that a person is required to use a safety belt when operating a motor vehicle. This applies to vehicles that have seating positions with safety belts. It requires that ALL passengers be secured in a safety belt. The first offense fine is suggested to be not more than $200, and the second offense if within one year is to be not more than $300. Third and subsequent offenses, within one year, require an imprisonment term of not more than 6 months and/or a fine of not more than $500. The UVC has no provision for the effect on civil liability.[25]

CURRENT INDIANA EFFORTS

How does the current Indiana restraint usage law compare to NHTSA's seat belt elements?

- Indiana is currently a primary enforcement state – a vehicle may be stopped to determine compliance with this requirement.
- The penalty for non-compliance of the seatbelt enforcement is a fine of not more than **$25**. Points may not be assessed against a person's driving record for a violation of this requirement.
- **EXCLUDES** pickup trucks and SUVs with truck licenses.
- Covers **ONLY** driver and front seat passenger and child passenger restraint system – excludes back seat occupants.
- Except in product liability situations, a failure to comply may **not be admitted** in a civil action to mitigate damages.

As one of the leading forces behind Indiana's traffic safety efforts, the mission of the Governor's Council on Impaired and Dangerous Driving (Council), a division of the Indiana Criminal Justice Institute (ICJI), is "to reduce death, injury, property damage and economic cost associated with traffic crashes on Indiana's roadways."

Table 2. NHTSA Elements of a Strong Safety Belt Use Law

Law	Elements
Primary enforcement	Provides for primary enforcement for all vehicles and all seats.
Significant penalties	Penalties that serve as a deterrent, e.g., high fines, points on a driver's license.
All vehicle types included	Includes passenger cars and pickup trucks.
All seating positions covered	Covers all seating positions equipped with a safety belt.
Damages reduced for nonuse	Personal injury damages from crashes are reduced in those cases where a safety belt was not worn.

[22]Simon v. Sargent, D.C.Mass.1972, 346 F.Supp. 277, affirmed 93 S.Ct. 463, 409 U.S. 1020, 34 L.Ed.2d 312.

[23]Blincoe, L., Seay, E., Zaloshnja, M.T., Romano, E., Luchter, S., Spicer, R., *The Economic Impact of Motor Vehicle Crashes*, (2000). National Highway Traffic Safety Administration. DOT HS 809 446, May 2002.

[24]National Highway Traffic Safety Administration, (July 2003). *Initiatives to Address Safety Belt Use*. Washington, DC.

[25]National Highway Traffic Safety Administration, (March 2006). *Summary of Vehicle Occupant Protection Laws*. Washington, DC. DOT HS 810 570.

The Council is charged with developing policies, procedures, strategies, and programs to effectively manage and administer Indiana's highway safety program. The Council administers federal funding from the National Highway Traffic Safety Administration through targeted traffic safety grants to state and local organizations. The Council coordinates aggressive public information campaigns designed for implementation at the state and local level and provides materials, grant funding and information to traffic safety advocates. The Council also serves as Indiana's primary source for information and research on traffic safety issues that directly affect public safety and policy.

Each critically injured crash survivor can sustain $1.1 million in crash-related costs over their lifetime.

In federal fiscal year 2005 (October 1 – September 30), ICJI received $22,963,392 for highway safety programs. Of that, $2,937,390 went specifically to deal with safety belt targeted programs.[26] These programs include at the state level the *Click It or Ticket* safety belt campaign and the *Operation Pull Over* program. It also includes the nationally recognized Automotive Safety Program, which consists of training and certifying technicians across the state on how to properly install child and booster seats in automobiles and educating parents and the public on child protection seat belt laws. Counties became eligible for incentive grants based on their ability to target their specific problem, their ability to present new and innovative traffic strategies, and their agencies' effectiveness and reporting. Performance is being measured to assess the effectiveness of funded programs in decreasing fatalities and increasing seat belt usage.

CONCLUSION

Currently in Indiana restraint use is not required in pickup trucks or SUVs with truck licenses. Restraint usage for pickup truck drivers and occupants has consistently been about 30 percentage points below the restraint usage for all passenger vehicles. This correlates with the fact that pickup trucks have a much higher fatality rate than passenger cars. Safety belt use is an effective countermeasure available to passenger vehicle occupants to prevent fatalities and injuries in motor vehicle traffic crashes. Statistics and research findings suggest that upgrading Indiana's restraint law would enhance the effectiveness of the existing state mandatory use law and save lives.

All Indiana data used for this fact sheet is derived from the Indiana State Police Vehicle Crash Reporting System (VCRS) and may not match the National Fatality Analysis Reporting System (FARS) Indiana data due to differing methods of classifying vehicles.

[26]National Center for Statistics and Analysis, National Highway Traffic Safety Administration, (2006). *Traffic Safety Facts, Indiana, 2005*. Washington, DC.

INDIANA TRAFFIC SAFETY FACTS 2007

This publication was prepared on behalf of the Indiana Criminal Justice Institute by the Center for Urban Policy and the Environment. Please direct any questions concerning data in this document to ICJI at 317-232-1233.

This publication is one of a series of Fact Sheets that, along with the annual Indiana Crash Fact Book, form the analytical foundation of traffic safety program planning and design in the state of Indiana. Funding for these publications is provided by the Indiana Criminal Justice Institute and the National Highway Traffic Safety Administration.

An electronic copy of this document can be accessed via the Center website (www.urbancenter.iupui.edu/trafficsafety), the ICJI traffic safety website (www.in.gov/cji/traffic/), or you may contact the Center for Urban Policy and the Environment at 317-261-3000.

The Indiana Criminal Justice Institute (ICJI)

Guided by a Board of Trustees representing all components of Indiana's criminal and juvenile justice systems, the Indiana Criminal Justice Institute serves as the state's planning agency for criminal justice, juvenile justice, traffic safety, and victim services. ICJI develops long-range strategies for the effective administration of Indiana's criminal and juvenile justice systems and administers federal and state funds to carry out these strategies.

The Governor's Council on Impaired & Dangerous Driving

The Governor's Council on Impaired & Dangerous Driving, a division of the Indiana Criminal Justice Institute, serves as the public opinion catalyst and the implementing body for statewide action to reduce death and injury on Indiana roadways. The Council provides grant funding, training, coordination and ongoing support to state and local traffic safety advocates.

The Center for Urban Policy and the Environment

The Center for Urban Policy and the Environment is devoted to supporting economic success for Indiana and a high quality of life for all Hoosiers. An applied research organization, the Center was created by the Indiana University School of Public and Environmental Affairs in 1992. The Center works in partnership with community leaders, business and civic organizations, nonprofits, and government. The Center's work is focused on urban and community development, health policy, and criminal justice research essential to developing strategies to strengthen Indiana's economy and quality of life.

The National Highway Traffic Safety Administration (NHTSA)

NHTSA provides leadership to the motor vehicle and highway safety community through the development of innovative approaches to reducing motor vehicle crashes and injuries. The mission of NHTSA is to save lives, prevent injuries and reduce economic costs due to road traffic crashes, through education, research, safety standards and enforcement activity.

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