

Initiatives to Address Safety Belt Use



National Highway Traffic Safety Administration

July 2003

Table of Contents

I.	Introduction.....	3
II.	Highway Safety Overview.....	4
III.	Integrated Project Team Formation.....	5
IV.	General Problem Identification for Safety Belt Use.....	5
	A) Description of Unbelted Occupants.....	6
	B) Safety Belt Use Trends.....	7
V.	Proposed Initiatives.....	8
	A) Behavioral Strategies.....	9
	1) Upgrade Existing Safety Belt Laws.....	9
	2) High Visibility Enforcement.....	11
	3) National Communications Plan.....	12
	4) Employer Policies and Regulations.....	13
	5) Insurance Industry Collaboration.....	15
	B) Vehicle Strategies.....	16
	1) Safety Belt Reminders, Voluntary Installation of In-Vehicle Devices and Evidence of Safety Belt Use.....	16
	2) Improvements to Safety Belt Comfort and Convenience.....	18
VI.	Conclusion	19
	References.....	20

I. Introduction

The mission of the National Highway Traffic Safety Administration (NHTSA) is to save lives, prevent injuries and reduce traffic-related health care and other economic costs. The agency develops, promotes and implements effective educational, engineering, and enforcement programs aimed at ending preventable tragedies and reducing the economic costs associated with motor vehicle use and highway travel.

As an integral part of the U.S. Department of Transportation (DOT), the agency improves public health and enhances the quality of transportation by helping to make highway travel safer. A multi-disciplinary approach is used that draws upon diverse fields such as epidemiology, engineering, biomechanics, the social sciences, human factors, economics, education, law enforcement and communication science to address one of the most complex and challenging public health problems facing our society.

NHTSA is the national and international leader in collecting and analyzing motor vehicle crash data, and in developing countermeasures relevant to preventing and mitigating vehicle crashes, thereby reducing and preventing resulting fatalities and traumatic injury. The agency regulates motor vehicle and original equipment manufacturers through its safety standards program; provides national and international leadership in understanding and assessing the safety impact of advanced technologies; sponsors critical research; spurs progress in harmonizing international safety standards; and conducts innovative projects to improve traffic and motor vehicle safety. All aspects of engineering, education, enforcement and evaluation are incorporated into programs to address the challenges of crash and injury prevention involving people, vehicles, and the roadway environment.

The following report presents an in-depth look at one of the most significant safety issues impacting highway safety and the success of NHTSA's mission – safety belt use. This document describes the safety problem represented by the failure to use safety belts and provides strategies the agency plans to pursue in increasing safety belt use, thereby saving lives. In addition to the full agenda of highway safety issues, impaired driving, rollover mitigation and vehicle compatibility are the other priority issues set by NHTSA to reduce the occurrence and consequences of motor vehicle fatalities and injuries. Each of the four documents can be found on NHTSA's Web site at: <http://www.nhtsa.dot.gov/people/ipreports.html> and also on DOT's docket management system (DMS) at <http://dms.dot.gov/>. (The impaired driving report is currently in agency review and should be released and posted later this year.) The docket numbers for each of the respective reports are as follows:

- | | |
|-------------------------|------------------------|
| □ Safety Belt Use | NHTSA-2003-14620; |
| □ Impaired Driving | NHTSA-2003-14621; |
| □ Rollover Mitigation | NHTSA-2003-14622; and, |
| □ Vehicle Compatibility | NHTSA-2003-14623. |

II. Highway Safety Overview

Despite significant gains since the enactment of Federal motor vehicle and highway safety legislation in the mid 1960's, the annual toll of traffic crashes remains tragically high. In 2002, 42,815 people were killed on the Nation's highways and an additional 2.93 million people suffered serious injuries. Motor vehicle crashes are the leading cause of death and disability for Americans between the ages of 2 and 33.

Traffic crashes are not only a grave public health problem for our Nation, but also a significant economic burden. Traffic crashes cost our economy approximately \$230 billion in 2000, or 2.3 percent of the U.S. Gross Domestic Product. This translates to an annual average of \$820 for every person living in the United States. Included in this figure are \$81 billion in lost productivity, \$32.6 billion in medical expenses, and \$59 billion in property damage. The average cost for a critically injured survivor of a motor vehicle crash is estimated at \$1.1 million over a lifetime. This figure does not even begin to reflect the physical and psychological suffering of the victims and their families.

Reauthorization of NHTSA Highway Safety Program

NHTSA's current authorizing legislation for behavioral safety, the Transportation Equity Act for the 21st Century (TEA-21), expires on September 30, 2003. The Department of Transportation has proposed a new reauthorization package to Congress requesting significant changes in NHTSA's grant programs and for much needed research into the cause of motor vehicle crashes. TEA-21 created several new grant programs to provide States with funds for highway safety. In the current reauthorization proposal, the Department is proposing to consolidate multiple grants into NHTSA's Section 402 program. The program will have a new performance-based component, in which a State can qualify for additional Federal funds if certain safety criteria are met. The criteria include improvements in motor vehicle crash fatalities, alcohol-related fatalities (\$50 million program targeting problem), and motorcycle, bicycle, and pedestrian crash fatalities. A separate program will provide funding based on safety belt use rate performance (\$100 million incentive program for States passing primary safety belt use legislation).

DOT's new reauthorization package also proposes to designate NHTSA as the lead agency for Emergency Medical Services (EMS). Meanwhile, the amendment of Section 407 would provide NHTSA with funding to establish a State formula grant program to support coordination of EMS systems development, including the implementation of enhanced emergency communications systems or E9-1-1. In addition, the amendment of Section 403 will allow NHTSA to update its previous motor vehicle crash causation study. This research will assist NHTSA in addressing a number of critical safety questions and will aid NHTSA researchers in identifying and creating new initiatives for crash avoidance and countermeasures programs.

III. Integrated Project Team Formation

In September 2002, NHTSA formed four integrated project teams (IPTs) to conduct an in-depth review of four priority areas:

- ❑ Safety Belt Use,
- ❑ Impaired Driving,
- ❑ Rollover Mitigation, and,
- ❑ Vehicle Compatibility.

These teams were chartered to support the agency's strategic planning work by using comprehensive, science and evidence-based analyses to identify innovative solutions and recommend effective strategies in their respective issue areas. The Federal Highway Administration (FHWA), another DOT agency, who has lead responsibility along with State highway agencies for initiatives relating to roadway and roadside hardware improvements, had representatives on the rollover mitigation and vehicle compatibility teams.

Teams were encouraged to be innovative in their thinking and novel in their approaches. The resulting proposals covered a wide range of possible solutions, from what could be accomplished through changing driver behavior, to vehicle modifications and roadway improvements. Recommended strategies were based on science, data and other available evidence. The teams also attempted to estimate the possible benefits and costs associated with implementing various strategies.

Each team began by conducting a problem identification analysis – researching and analyzing crash data in the problem area (e.g., number of injuries and fatalities associated with each issue). The purpose of the problem identification was to accurately describe the safety problem in enough depth to provide structure and underpinning to various potential strategies.

The teams then organized and linked the array of possible strategies to their potential safety impacts. This included estimating the benefits and timeframe for implementation, discussing risks and uncertainties, and identifying constraints.

In February 2003, NHTSA senior management officials evaluated the IPT strategies to determine which strategies the agency should pursue. The recommended strategies presented here are not simply a list of activities but relate in a strategic and interdependent manner and, if implemented effectively, will lead to improved safety performance. Each of the four priorities – safety belt use, impaired driving, rollover mitigation and vehicle compatibility – is addressed in a separate document. This document reflects the agency's plan for safety belt use strategies.

IV. General Problem Identification for Safety Belt Use

Safety belt use is the single most effective strategy a person can employ to prevent deaths and injuries and reduce the costs associated with motor vehicle crashes. Despite over 30 years of efforts and the expenditure of substantial resources, safety belt use in the United States is currently 75 percent.¹

Although safety belt use has risen dramatically and has saved more than 100,000 lives in the past twenty years (13,000 in 2002 alone²), more than 7,000 persons are killed and over 100,000 injured every year due to the failure to wear their safety belts. These occurrences cost society \$20 billion.³

NHTSA and others have instituted a wide variety of activities in an effort to increase safety belt use. However, unless additional measures are taken, safety belt use is projected to grow slowly, reaching only 81 percent by 2005 (see **Table 1**). Several nations and three States (California, Hawaii and Washington) and Puerto Rico have demonstrated that a safety belt use rate over 90 percent is achievable.

**TABLE 1:
Projected Front Safety Belt Use – At Conversion Rate Experienced Between 1994-2001.**

Year	Projected Safety Belt Use*
2003	77.4%
2004	79.3%
2005	81.1%
2006	82.7%
2007	84.2%
2008	85.5%
2009	86.8%
2010	87.9%

*Projections assume that 8.5% of nonusers are converted every year.

Source: National Center for Statistics and Analysis, NHTSA, NOPUS (calculation), 1994-2001.

These projections were obtained from a model that assumes an 8.5 percent annual reduction in nonuse (an 8.5 percent “conversion rate”). Conversion rate is defined as the reduction in nonuse (i.e., the reduction in the number of people who do not buckle up). In the period 1994 – 2001, safety belt use increased by about two percentage points per year. This corresponds to converting an increasing percentage of nonusers each year, and would correspond to an 8.5 percent conversion rate in 2002. Although use has increased about two percentage points per year in recent years, NHTSA does not expect this trend to continue since it would require converting a greater percentage of nonusers each year. That is, as safety belt use rises, each percentage point increase in use becomes increasingly more difficult to achieve. Thus, a conversion model is more appropriate than a linear one for deriving projections. It will even be difficult to maintain an 8.5 percent conversion rate for very long, as hard-core nonusers comprise a growing portion of the “unconverted” in each successive year.

A) Description of Unbelted Occupants

The Motor Vehicle Occupant Safety Survey (MVOSS) is a national telephone survey conducted every two years to monitor the public’s attitudes about safety belts, child restraints, reasons for their use or nonuse, knowledge of safety belt laws, experience with law enforcement, and attitudes about risk perception. The 2000 MVOSS shows the reasons given for safety belt nonuse by “part-time” users. Part-time users are defined as occupants who state they use safety belts all the time, but admit to not using them in the

last month, as well as those who say they use safety belts most of the time, plus those who say they use them some of the time. About 70-75% of the population use safety belts all of the time (full-time users), 20-25% are part-time users and 5-10% are hard-core nonusers. Hard-core nonusers are classified as individuals who use safety belts less frequently (or not at all). The data indicate that part-time use is often associated with short trips.

There are some limitations to the MVOSS data. It does not allow analyses of interaction between different factors (e.g., impact of drinking on safety belt use). The Fatality Analysis Reporting System (FARS), a census of all crashes in which at least one occupant or non-occupant was killed, is the only data source which contains most of the key descriptive factors, including safety belt use information as reported on police reports.

Based on FARS data, many safety belt use characteristics can be ranked according to three measures: 1) safety belt use among fatally-injured occupants, 2) incidence in fatal crashes, and 3) lives lost due to nonuse. For instance, safety belt use by fatally injured males is 35 percent, males comprise 63 percent of the occupants of fatal crashes and approximately 5,700 males die each year who would have survived if they had worn their safety belts.

While the first ranking system (ranking by use) identified above, is commonly investigated in assessing countermeasures, ranking by lives lost is also an important consideration. According to this ranking, most lives are lost among males, followed by vehicle occupants in secondary law States and nighttime occupants. **Table 2** highlights the number of fatalities due to nonuse of safety belts among certain populations or groups that have had relatively high fatality numbers.

TABLE 2: Lives Lost Due to Safety Belt Nonuse

Occupants - Not Using Their Safety Belt	Lives Lost
Males	5,677
Vehicle Occupants Secondary Law States	4,614
Nighttime Occupants	4,517
Young Adults, Ages 16-24	2,500
Intoxicated Drivers, BAC .08 or Higher	2,450
Pickup Truck Occupants	1,948

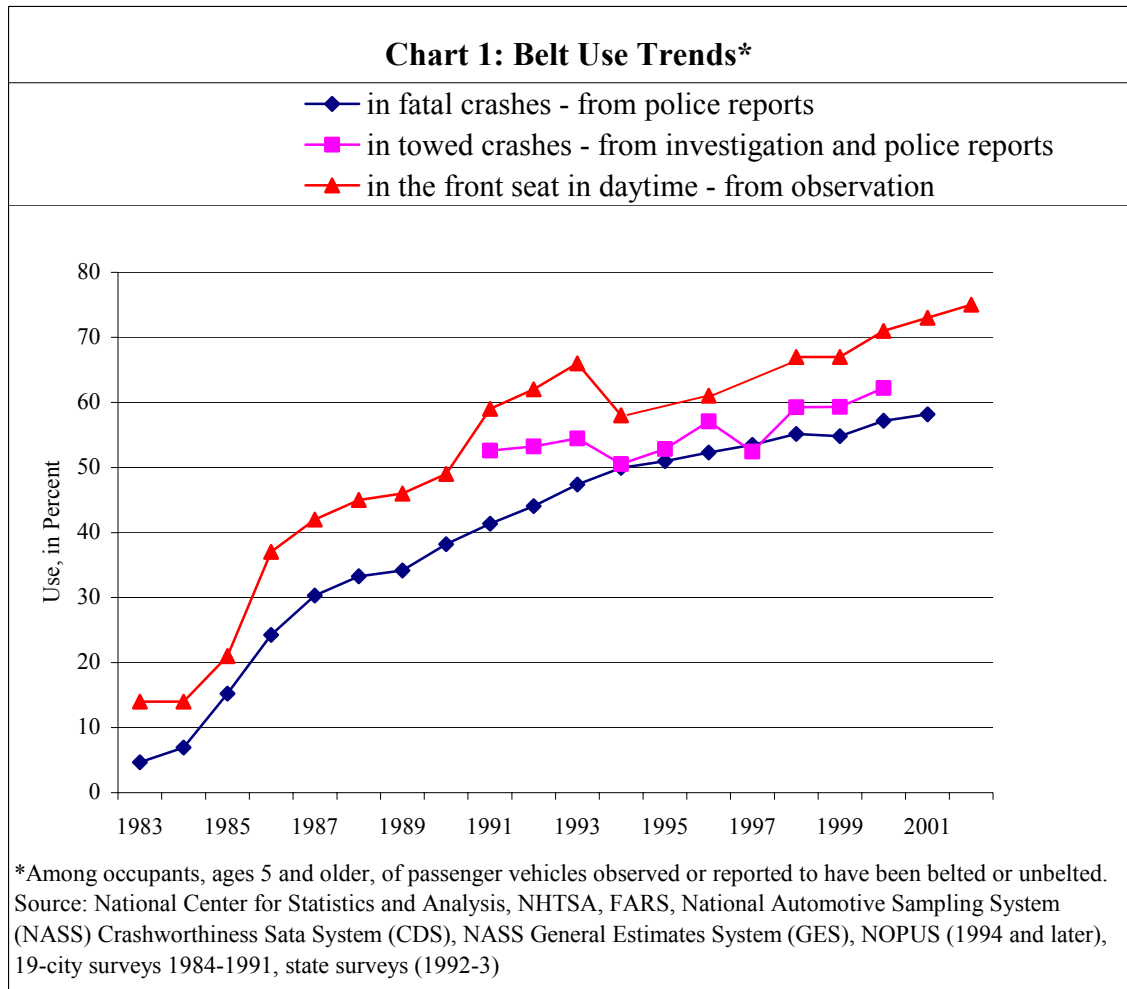
Source: National Center for Statistics and Analysis, NHTSA, FARS.

The analysis was done with FARS data, for which descriptive factors, such as income level or people on short trips, are not available. Other factors, such as race and ethnicity, were included in the analysis, but did not account for as many lives. These categories are not mutually exclusive, and include a large amount of overlap.

B) Safety Belt Use Trends

Safety belt use has increased dramatically over the past twenty years from 14 percent in 1983 to 75 percent in 2002 (for daytime use in the front seat). **Chart 1** shows that the

same patterns of increase are seen both in observational survey data and in crash data of various severities (e.g., fatal crashes and towed crashes).



V. PROPOSED INITIATIVES

Despite the significant increases over the past twenty years, safety belt use in the United States falls short of that in some industrialized nations. The reasons for this shortfall are complex and many. However, a number of countermeasures are available that have great potential to increase safety belt use and to sustain the increase. The challenge is to select the best mix of countermeasures that achieve short-term gains, alter behavior among nonusers, sustain higher use over time and ultimately change the way Americans view safety belt use.

A wide range of initiatives is proposed in this report that have the potential to raise and/or sustain safety belt use rates. The initiatives fall into two categories: behavioral and vehicle-based solutions. Under each, a number of approaches were identified after gaining a better understanding of what in-vehicle devices and behavioral strategies would be appropriate to assist in increasing safety belt use.

A) Behavioral Strategies

1) Upgrade Existing Safety Belt Laws

To date, 20 States, the District of Columbia (D.C.) and Puerto Rico have primary safety belt use laws, 29 States have secondary safety belt use laws, and one State has no adult safety belt use law. Based upon 2002 State reported observational surveys, States with primary laws have safety belt use rates that range from 69 to 93 percent, and States with secondary safety belt laws have rates that range from 51 to 85 percent.⁴

While the research shows that upgrading from a secondary to a primary enforcement law has a strong positive impact on safety belt use rates, all primary laws are not alike, and it is possible that a “weak” primary law may not be as effective as a “strong” secondary law (or at least not as effective as it could be).

Table 3 identifies the elements of a strong safety belt use law.

TABLE 3: Elements of a Strong Safety Belt Use Law

Law	Elements
<i>Primary Enforcement</i>	Provides for primary enforcement in all cases.
<i>Significant Penalties</i>	Penalties that serve as a deterrent, e.g., high fines, points on a driver’s license.
<i>All Vehicle Types Included</i>	Includes passenger cars and pickup trucks.
<i>All Seating Positions Covered</i>	Covers all seating positions equipped with a safety belt.
<i>Damages Reduced for Nonuse</i>	Personal injury damages from crashes are reduced in those cases where a safety belt was not worn.

a) Highlights of Current Program

NHTSA has pursued decades of educational efforts and provided technical assistance directed at the public and to policy/decision-makers and intermediaries on the effectiveness of primary safety belt use laws and/or the strengthening of existing laws. The agency has produced fact sheets and research reports documenting increased safety belt use rates resulting from enactment of primary laws, developed State cost savings estimates to demonstrate the economic benefits of safety belt use, collaborated with partner organizations whose members are concerned about health and safety issues and who are willing to help educate policy/decision-makers about the benefits of enacting such laws, and, when invited, testified at State hearings concerning the importance of primary laws.

b) Proposed Initiatives

The DOT strongly supports programs to enhance safety belt use. Departmental initiatives may include: sponsoring a State Policy Maker Forum of governors, State legislators and State insurance commissioners to highlight the need for States to pass upgraded laws, the economic

benefits that States gain as a result, and strategies States can employ to resolve impediments such as lack of public support; speaking to public and private forums (e.g., the Governors' Highway Safety Association (GHSA) and the National Conference of State Legislatures (NCSL) meetings), about the benefits of strong safety belt use laws, the negative impact of failing to pass such measures, and strategies for obtaining public and political support; and providing each State with a report on the economic impact and benefits resulting from passage of an upgraded safety belt use law.

The Department's reauthorization proposes to amend the Section 402 Grant Program to create significant incentives for States that currently have or pass primary safety belt use laws and/or achieve safety belt use rates of at least 90 percent. As proposed, States that enact a new primary law will receive a grant equal to five times their current 402 formula grant. Any State that receives a safety belt performance grant for enactment of a primary safety belt use law is permitted to use up to 100 percent of those funds for infrastructure investments eligible under the Highway Safety Improvement Program in accordance with the State's strategic highway safety plan. States not possessing primary laws and with use rates below 90 percent would be required to use 10 percent of their highway safety infrastructure funding for behavioral highway safety programs. Additional grant funds would be available to States based on achievement or annual progress in safety belt use rates. These funds would be allocated to safety belt use programs. States would be asked to form or strengthen partnerships with organizations that can aid in efforts to increase safety belt use and the passage of law upgrades. NHTSA would provide technical assistance in the form of research results, cost benefit estimates, program guidance and best practices, and data to aid State efforts.

In addition to the Departmental initiatives, NHTSA is developing a State Safety Belt Use Performance Rating System that evaluates and compares State actions directed at upgrading safety belt use laws. This system is similar to those used in the public health (e.g., effort to reduce incidence of low weight births) and education arenas (e.g., efforts to ensure students pass proficiency tests) that evaluate State efforts to make improvements in those areas. State efforts would be compared against a series of metrics including safety belt use rates; deaths, injuries and costs resulting from the absence of a primary law; actions to persuade the public and key partners to support such laws; and efforts to educate State policy and decision-makers about the benefits of law upgrades. The DOT would conduct an annual event to announce the State ratings.

c) Expected Program Outcomes

NHTSA estimates that upgrading the remaining States' safety belt use laws from secondary enforcement to primary enforcement could increase

safety belt use by 11 percentage points. In 2002, primary enforcement law States had an average use rate of 80 percent compared to 69 percent in secondary law States.¹ Studies have also cited the importance of follow-up actions, including enforcement and publicity, and failure to include such actions can result in loss of half of the gain.⁵

2) High Visibility Enforcement (HVE)

HVE refers to the well-publicized, intensive enforcement of safety belt use laws. It is also referred to as Occupant Protection Selective Traffic Enforcement Program (sSTEP). The *Click It or Ticket (CIOT)* model is an example of a sSTEP. The *CIOT* model uses stepped up enforcement, such as safety checkpoints or other enforcement strategies, in coordination with an earned and/or paid media campaign supporting the enforcement effort. When people in the community understand that law enforcement is serious about enforcing occupant protection laws, and actually witness officers enforcing those laws, they are more likely to buckle up and buckle up their children. Many part-time users and nonusers fear getting a ticket with a fine significantly more than they do being injured or killed due to being unbelted in a crash.

In Canada, where laws are primary, fines are significant, and there is well-publicized enforcement of safety belt use laws, safety belt use averages 90 percent. The U.S., by contrast, had a safety belt use rate of 75 percent in June 2002. An evaluation of ten States that implemented the full *CIOT* model in the spring of 2002 showed that, on average safety belt nonuse was reduced by 26 percent between the time before *CIOT* began and when it reached its peak.⁶

a) Highlights of Current Program

Emphasis on safety belt law enforcement is not new to NHTSA or the States. In the early to mid-1990s, NHTSA and the States conducted a series of enforcement-based efforts designed to reach unbelted adults. In 1996 a public/private partnership involving NHTSA and the Air Bag and Seat Belt Safety Campaign began promoting coordinated nationwide implementation of the *CIOT* model biannually. In 2002, NHTSA built in a requirement for States to closely follow the *CIOT* model in developing proposals for the fiscal year (FY) 2003 Section 157 Innovative Grant Funds.

b) Proposed Initiatives

NHTSA will identify and conduct research on other current innovative traffic law enforcement models to compare their effectiveness and efficiency with the *CIOT* model.

In addition, the agency will urge States to work with State and local law enforcement agencies to convert a percentage of existing enforcement positions to traffic, where additional emphasis would be focused on full-time safety belt and impaired driving enforcement. Pending the research

described above, NHTSA will continue to encourage States to use the *CIOT* model (or another model, if found to be more effective and/or efficient) that has demonstrated an ability to increase safety belt use rates.

c) Expected Program Outcomes

Since 2000, a majority of the States have conducted *CIOT* type campaigns. Evaluations of these campaigns have shown significant increases in perceived enforcement activity and the perceived risk of personally being ticketed for safety belt nonuse. These campaigns enhanced public penetration of the enforcement message above the 20 percent level recorded in the 2000 MVOSS and have resulted in significant safety belt use gains. Based on the results of Canada and States that have aggressively pursued the *CIOT* model, national use could be increased to the 80-85 percent range with this method.

3) National Communications Plan

NHTSA plans to undertake a national communications plan involving a flexible, multi-year approach that utilizes a wide range of communications tactics to convey the safety belt enforcement message. This has been shown to be a more effective motivator to increasing safety belt use among the remaining nonusers than other messages, such as emphasizing health and safety benefits. This approach includes media opportunities to support the safety belt law enforcement mobilizations conducted by the States and to complement State communications tactics.

a) Highlights of Current Program

NHTSA's communications program currently includes a national paid advertising campaign to support the semi-annual safety belt law enforcement mobilizations. These semi-annual campaigns include television and radio advertisements to be aired on programs and networks with the highest likelihood of reaching the target audience. They are designed to complement advertisements placed by States that tend to focus on a select number of media markets and outlets.

NHTSA promotes a central message, such as *CIOT*, for States, partners and the public through its media activities (press releases, press events, occasional participation in television and radio broadcasts). NHTSA collaborates with the Advertising Council to develop and place public service announcements (television, radio, and print in English and Spanish) to inform the public about the benefits of safety belt and child safety seat use.

In addition, the agency implements marketing efforts to develop products directed at the public and highway safety advocate partners. These products include development of print materials for the public; use of popular print publications, popular Internet sites, and news services to

convey messages to the public; development of planners and guides for partners; hosting a partner Web site; and writing a partner quarterly newsletter to keep partners informed of each other's activities.

b) Proposed Initiatives

NHTSA is developing a flexible three-year communications plan to increase public perception about the risk and consequences of receiving a citation for safety belt nonuse. This plan will be reviewed at least annually and revised to reflect changing trends and needs. The plan will include paid and earned media components with emphasis on the strategic use of print and broadcast media.

This approach will employ a wide variety of print media venues including articles for popular print publications read by the target audience or by those who influence them; submission of material to national wire and publication services; submission of op-ed articles, letters to the editor and letters to popular columnists who influence public perception about health and safety issues.

NHTSA will seek out opportunities to participate in broadcast media, such as radio and television talk shows, particularly around the time of the safety belt law enforcement mobilizations. It will forge relationships with advertising and public relations firms to foster support to portray proper safety belt use in advertising, television and film.

c) Expected Program Outcomes

States that implemented the full *CIOT* model achieved an overall safety belt use gain of 8.6 percentage points in May 2002. Important aspects of the model include the paid advertising and earned media components, which, according to NHTSA research,⁶ resulted in heightened perception of enforcement and risk of a safety belt citation. Since this heightened awareness occurred in States that achieved higher safety belt use rates, it is realistic to associate the effect of the paid media with the usage increases. These results suggest that a well-orchestrated national media campaign consisting of paid advertising and earned media would achieve similar results.

4) Employer Policies And Regulations

Employers are a powerful influence over the workforce. They set standards for employee conduct, including those affecting safety. Employer policies requiring on-the-job safety belt use can be essential components of a national safety belt use initiative. Furthermore, employers offer a communications channel to reach working adults who may be difficult to reach via other means with information about safety belt use during personal driving time, enforcement messages, and information for family members.

Data from the 2000 MVOSS shows that among drivers who drive as part of their jobs, the percentage that report wearing safety belts “all the time” (personal and work-related), is higher (86 percent) among those who thought their company had a safety belt use policy than among those who did not (72 percent).

Motor vehicle crashes place an economic burden on employers. Any employer efforts to reduce this burden would cost far less than the employer costs attributable to those crashes.

a) Highlights of Current Program

NHTSA funding was used to initiate the Network of Employers for Traffic Safety (NETS); an employer-led public-private partnership dedicated to improving the safety and health of employees, their families, and members of the communities in which they live and work, by reducing the number and consequences of traffic crashes that occur both on and off the job. Although NETS is now an independent, non-profit organization, NHTSA continues to collaborate with NETS as a member of its Leadership Council and by funding the development and delivery of employer tools and services to raise safety belt use and address other traffic safety problems.

NHTSA is currently developing cost information about the economic losses to employers due to safety belt nonuse among the workforce. In addition, a cost calculator tool is under development that will help employers determine the return on investment they are likely to achieve if they implement traffic safety policies and programs.

In September 2002, NHTSA entered into a cooperative agreement with the Occupational Safety and Health Administration (OSHA) to develop a handbook for employers to reduce traffic safety problems, including safety belt nonuse. NHTSA will continue to provide technical assistance to other Federal agencies, especially towards the implementation of an Executive Order requiring Federal employee on-the-job safety belt use. Likewise, the agency will continue to provide assistance to the Armed Services in their efforts to reduce motor vehicle crashes and increase safety belt use among military personnel.

b) Proposed Initiatives

NHTSA is planning to create a Secretarial workplace traffic safety initiative with the Secretaries of Transportation, Labor and Defense; the White House; other government agencies; and the private sector to challenge public and private sector employers to voluntarily implement policies and programs to raise safety belt use among the nation’s workforce. This effort would be conducted in collaboration with key national private sector groups (e.g., NETS, U.S. Chamber of Commerce, Federation of Independent Businesses) and institutions (e.g., McDonough

School of Business of Georgetown University) and relevant government agencies (e.g., the General Services Administration (GSA) and the Office of Personnel Management (OPM)) to create a new voluntary standard for reducing the nationwide toll of motor vehicle injuries due to nonuse of safety belts among the workforce. For example, NHTSA is currently partnering with the Department of Defense (DOD) in the *CIOT* campaigns. DOD currently has safety belt use policies while on military bases and is committed to reducing fatalities and injuries among military personal while off base.

c) Expected Program Outcomes

Several studies indicate that corporate programs in large companies that include incentives in combination with enforced safety belt use policies averaged a 12 percent long-term increase in safety belt use.⁷ Additional studies found that incentive programs implemented in small, homogeneous groups (e.g., small employers) resulted in better results than in larger, heterogeneous groups (e.g., communities).⁷

5) Insurance Industry Collaboration

The insurance industry has a long history of providing incentives to policyholders (individual and group) for complying with important health and safety standards. In addition, many individual insurers as well as their associations have made a commitment to dedicate resources to education efforts aimed at policyholders and the public about health and safety concerns, including traffic safety. Building upon this history, NHTSA proposes to strengthen its collaboration with the insurance industry to continue and expand efforts to improve the well being of its customers.

a) Highlights of Current Program

NHTSA has collaborated with many property/casualty insurers and their associations to develop programs and materials for consumers and employers and to support important initiatives such as HVE.

b) Proposed Initiatives

NHTSA plans to challenge insurers to educate group purchasers (e.g., employers) and provide economic incentives to those that agree to develop and implement safety belt use policies for employees.

The agency will encourage insurers to provide incentives to individual and group policyholders who purchase vehicles equipped with in-vehicle devices such as enhanced safety belt reminders (**see Vehicle Strategies, Initiative 1, Safety Belt Reminders, Voluntary Installation of In-Vehicle Devices and Evidence of Safety Belt Use**).

In addition, NHTSA will make the argument to State insurance commissioners that primary safety belt use laws increase use rates and

urge them to support HVE mobilizations and actions by insurance companies to offer incentives to group policyholders that develop and implement safety belt use policies.

c) Expected Program Outcomes

Insurers will begin to educate group purchasers and provide them with economic incentives for developing and implementing safety belt use policies. Likewise, they will begin to offer incentives to individual and group holders who purchase vehicles equipped with in-vehicle devices such as enhanced safety belt reminder systems.

B) Vehicle Strategies

1) Safety Belt Reminders, Voluntary Installation Of In- Vehicle Devices And Evidence Of Safety Belt Use

Safety belt reminders are continuous or intermittent electronic visual and/or audible signals that are tied into a safety belt buckle or safety belt extraction detection system that activate unless the safety belt is buckled. Enhanced safety belt reminder systems signal when the driver's safety belt remains unbuckled beyond the four-to-eight-second period required under FMVSS Number 208 (e.g., the Ford BeltMinder™ system is intermittent, illuminating a warning light and sound for 6 seconds, and repeats itself every 30 seconds for 5 minutes or until the driver's safety belt is fastened).

In-vehicle devices such as safety belt interlocks can be useful in increasing safety belt use among certain populations. A safety belt interlock device prevents the driver from either operating the vehicle or operating entertainment systems such as the radio if the front seat (or other) occupants fail to use their safety belts. Vehicles currently are equipped with various interlocks to achieve other safety purposes. For example, clutch interlocks prevent the starter from operating in a manual transmission vehicle unless the clutch pedal is fully depressed; transmission interlocks used in automatic transmission equipped vehicles prevent the starter from operating unless the transmission is in park or neutral; and brake-shift interlocks prevent vehicles equipped with automatic transmissions from being shifted out of park unless the brake pedal is depressed.

Evidence of safety belt use refers to a set of technologies that may be contained within the vehicle. Crash data recorders (CDR) are devices installed in motor vehicles to record technical, vehicle and occupant-based information before, during and after a crash. Tell-tales are contained within the safety belt system and indicate if the safety belt was used during a crash.

a) Highlights of Current Program

Currently, Federal Motor Vehicle Safety Standard (FMVSS) No. 208, Occupant Crash Protection, requires installation of a four-to-eight second long signal immediately following the key being turned to the ignition

position or the start of the engine if the driver's safety belt is not buckled. In 2002 and again in 2003, NHTSA sent a letter to all the major vehicle manufacturers encouraging the installation of enhanced safety belt reminder systems, which repeat beyond the eight-second requirement. NHTSA also requested information on their intentions to install such systems, what type of technologies they intended to use, the approximate time frame for installation and any customer feedback on their systems that they would be willing to share with the agency. The agency also recently took steps to ensure that companies could use the same safety belt reminder systems used for the European markets in the United States.

NHTSA has prepared a detailed report from focus groups and one-on-one in-depth interviews as part of the National Academy of Science's (NAS) study on determining consumer acceptance of different safety belt reminder technologies. NHTSA's report has been delivered to NAS, which is currently preparing its final report.

In addition, the agency recently made clear in response to an interpretation request that manufacturers may voluntarily install vehicle interlocks, even though NHTSA may not base a compliance test on them. The agency understands that public acceptance of such systems is a concern to manufacturers that might consider voluntary installation of interlocks.

b) Proposed Initiatives

NHTSA will continue to encourage manufacturers to voluntarily install enhanced safety belt reminder systems on all vehicles, and will also encourage manufacturers to offer interlock devices as options to consumers who desire these devices. NHTSA will also encourage manufacturers to explore consumer demand for evidence-based devices. In addition, NHTSA will consider providing consumer information on vehicles equipped with safety belt reminder systems as part of the New Car Assessment Program (NCAP), so that consumers can easily identify which vehicles are equipped with these devices.

NHTSA will continue to monitor and assess the effectiveness and acceptability of safety belt reminder systems, as well as any voluntarily installed interlock measures. The agency may wish to pursue a strategy to encourage the insurance industry to offer incentives to individual and group (including fleet) policyholders who purchase interlock-equipped and/or enhanced safety belt reminder-equipped vehicles.

c) Expected Program Outcomes

Automobile manufacturers have responded positively to the agency's encouragement by increasingly incorporating enhanced safety belt reminder systems in their new vehicle models, principally in concert with their implementation of the advanced air bag rule. Preliminary data on

public response to such systems has also been positive. Based on a study conducted by the Insurance Institute for Highway Safety and Ford Motor Company in 2001, safety belt use increased 5 percentage points (equal to a 17 percent conversion rate) among drivers in vehicles equipped with the Ford BeltMinder™ system.

While interlock systems are effective if left intact, public reaction to interlocks in the 1970s included disabling them. Public education in combination with marketing efforts by manufacturers could enhance public acceptability of these devices. In addition, evidence-based systems can provide direct measurement of safety belt use. In addition, they may even increase overall use, since some part-time users are more likely to wear their safety belts if they are aware that in the event of a crash, the status of their safety belt use or nonuse would be known and recorded.

- 2) **Improvements To Safety Belt Comfort And Convenience**
 Safety belt comfort and convenience refers to the design and/or installation of safety belts to ease fit and accessibility for all vehicle occupants. **Table 4** shows that many nonusers state that comfort is a main reason for nonuse.

TABLE 4: Comfort - Reason for Nonuse

	Part-Time Users	Hard-Core Nonusers
Incidence in nonuser population*	75%	25%
Say they don't use safety belts because of comfort	9%	35%

Source: 2000 MVOSS (Calculation)

*Incidence means the nonuser population consists of 75 percent part-time users and 25 percent hard-core nonusers.

a) Highlights of Current Program

The agency has considered comfort and convenience of safety belts in the past. FMVSS No. 208 includes requirements regarding the adjustments to lap and shoulder belts for all seating positions: hooks, tension relieving devices, safety belt contact force, latch plate location and access, and retraction of safety belts when doors are opened.

b) Proposed Initiatives

NHTSA will continue its efforts to encourage vehicle and safety belt manufacturers to develop and install safety belt systems that offer improvements to fit and accessibility for all vehicle occupants; especially those classes of occupants (e.g., short-statured persons) for who fit, use and accessibility tend to be concerns. The agency will encourage vehicle

manufacturers to market improvements in their safety belt system's comfort and convenience.

In addition, NHTSA will explore the development of a rating system that evaluates and compares vehicle safety belt systems on their ease of fit and accessibility for the majority of vehicle occupants.

c) Expected Program Outcomes

The effectiveness of improving comfort and convenience in increasing safety belt use is difficult to estimate. According to the 2000 MVOSS, comfort and convenience was a major issue with nine percent of part-time users.

VI. Conclusion

NHTSA has long been concerned with the consequences of safety belt nonuse. Improving safety belt use is the single most effective strategy the nation can embrace in reducing fatalities and injuries when a motor vehicle crash occurs. However, changing behavior among nonusers is a challenging task. In recognition of this problem, NHTSA has made it one of the agency's highest priorities to increase the use of safety belts and believes the initiatives included in this report will lead to both near-term and longer-term gains in safety belt use.

References

- ¹Glassbrenner, D. Safety Belt and Helmet Use in 2002 – Overall Results, National Highway Traffic Safety Administration Technical Report, DOT HS 809 500, September 2002.
- ² Glassbrenner, D. *Safety Belt Use Rates in 2002 – Use Rates in the States and Territories*, NHTSA Research Note, DOT HS 809 587, Washington, D.C.: National Highway Traffic Safety Administration, May 2003.
- ³ Blincoe, L., Seay, A., Zaloshnja, E., Miller, T., Romano, E., Luchter, S., Spicer, R. *The Economic Impact of Motor Vehicle Crashes, 2000*, (DOT HS 809 446). Washington, D.C.: National Highway Traffic Safety Administration, May 2002.
- ⁴Glassbrenner, D. *Safety Belt Use Rates in 2002 – Use Rates in the States and Territories*, NHTSA Research Note, DOT HS 809 587, Washington, D.C.: National Highway Traffic Safety Administration, May 2003.
- ⁵ Nichols, J. *Methods to Increase Seat Belt Usage: A Review of What Works*, Washington, D.C.: National Highway Traffic Safety Administration, October 2002.
- ⁶Cosgrove, L. *Evaluation of Click It or Ticket Model Programs*, NHTSA Research Report and Traffic Tech, DOT HS 809 498, Washington, D.C.: National Highway Traffic Safety Administration, November 2002.
- ⁷ Nichols, J. *Methods to Increase Seat Belt Usage: A Review of What Works*, Washington, D.C.: National Highway Traffic Safety Administration, October 2002.