2003 National Roadway Safety Awards
From the Administrator

I am pleased to recognize and celebrate the successes, innovation and excellence of these roadway safety projects. The Roadway Safety Foundation and the Federal Highway Administration jointly sponsored this award program to highlight and share the “best safety practices” recognized throughout America.

The death of nearly 43,000 Americans and injury of another three million, annually on America’s streets and highways is unacceptable. At FHWA, we take our safety role very seriously. We support a comprehensive approach to safety that enables local and States agencies to address the “4E’s”—Education, Enforcement, Emergency Medical Services and Engineering—based on a comprehensive, collaborative process and effective analyses of crash data.

I congratulate the award winners showcased in this publication, and each of the nominees from the 130 live saving projects that were submitted. I also urge others throughout the nation to advance similar efforts to save lives and reduce injuries.

The quality of our lives and the productivity of our nation depend on meeting and surpassing our safety goals. Working together, we can save lives.

Mary E. Peters
About the Roadway Safety Foundation

The Roadway Safety Foundation is a 501(c)(3) nonprofit educational and charitable organization solely dedicated to reducing highway deaths and injuries by improving the physical characteristics of America’s roads.

Mission

To build public awareness and support actions to assure that national, and local safety agendas recognize the role of the roadway in reducing highway deaths and injuries. To accomplish this, RSF focuses on improving the physical characteristics of roadways that affect safety, such as design and engineering, operating conditions, removal of roadside hazards, and effective use of safety features.

The Federal Highway Administration (FHWA)

The FHWA, in partnership with the highway and transportation community, is preparing for the future and improving transportation for a strong economy. Our vision is to create the safest and most efficient highway system in the world for the American people—where everyone has access; crashes, delays, and congestion are significantly reduced; freight moves easily and at the lowest cost; ecosystems and the quality of the air are protected; pedestrians and bicyclists are accommodated; and where transportation services are restored immediately after disasters and emergencies.
2003 National Roadway Safety Awards

Jointly sponsored by Federal Highway Administration and Roadway Safety Foundation.

This Best Practices brochure showcases the winning entries of the 2003 National Roadway Safety Awards program. The entries were rated on their innovation, effectiveness, and efficient use of resources. Of the entries received, those noted herein were found to be the outstanding examples of highway safety projects. We congratulate all of the award recipients and are proud to display their projects as models for all agencies to emulate as we strive to maintain the safest transportation system in the world.
Program Categories

Safety Improvements

Physical improvements to the highway or roadside:
- Improved highway design.
- Providing safer roadsides by: obstacle removal, relocation, replacement, or shielding; or regrading of side slopes.
- Intersection improvements: Improved signs, markings, signals and turn lanes.

Colorado ...................... 2
Maryland ..................... 3
Maine ......................... 4
Oklahoma ..................... 5
New York ..................... 6

Operational Improvements

Activities, other than physical improvements, that contribute to the safe operation and maintenance of the highway facility:
- Operational and/or management improvements for work zone safety.
- Innovative use of signs, pavement markings, changeable signs, and new technologies.
- Public information campaigns.
- Multidisciplinary activities, such as road safety audits, to address roadway safety problems.
- New or unique operations and maintenance policies that improve safety.

Arizona ....................... 7
Florida ....................... 8
South Carolina ............. 9
California ................... 10
New York .................... 11

Program Planning, Development and Evaluation

Processes and activities addressing the safety needs of spot locations, corridors, and/or communities:
- Effective use of crash location identification and analysis.
- Effective integration of safety into Metropolitan and State planning processes.
- Utilizing evaluations to produce policies, processes, and practices that improve safety.

Kentucky ..................... 12
Washington .................. 13
Iowa .......................... 14
Project: Boulder County, Colorado Bike Lane/Shoulder Initiative  
Agency: Boulder County Department of Transportation  
Funds Used: State/Local

Boulder is a rapidly growing metropolitan county in the Denver area with a population over 300,000. A large percentage of the population lists bicycling as its favorite pastime. To respond to growing bicycle safety needs, the county started upgrading its roadway system to add bicycle lanes to the rural roadways. But intense competition for Federal funding severely limited the number of miles of lanes that could be added.

Boulder County Commissioners developed a more cost effective and innovative approach to improving roadway safety. They developed and tested a policy of paving three-foot asphalt shoulders whenever asphalt overlay projects were completed. The additional expense was a fraction of the total cost of full reconstruction or widening of a road. Crash statistics support the effectiveness of this approach. Since 1993, there were three pedestrian-bicycle fatalities on the county road system where the shoulders were not paved and no fatalities on roads with paved shoulders. Sideswipe accidents have also been reduced.

The program was so popular that county voters approved a sales tax increase to expand the program. Over the next six years, Boulder County will add paved shoulders to another 74.5 miles of roadway, making county roads even safer for bicyclists and motorists. This locally funded grassroots initiative is one way to address the safety needs of areas that receive a smaller share of limited Federal and State funds than more populous, congested areas.

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Project: Design Standards for Pedestrian and Bicycle-Friendly Environmentally Sensitive Roadways
Agency: Montgomery County Department of Public Works and Transportation
Funds Used: Private Sector

The Montgomery County, Maryland, Department of Public Works and Transportation has developed new design standards for including sidewalks and bike paths on residential and collector roads. The new standards balance the goals of a diverse set of community stakeholders including pedestrians, motorists, bicyclists, public agencies, developers, utility companies, and future residents.

The standards support safe passage for motorists, pedestrians and bicyclists. On higher speed collector roads, the standards emphasize vehicular and bicycle safety by increasing the width of clear zones. On these roads, the standards call for locating sidewalks, off-road bike paths, and trees behind the side ditch. On lower volume roads, the location of street trees may be closer to the roadway based on a balance between environmental sensitivity, safety, and aesthetics. Standards for the dimensions and slope of shoulders, ditches and driveways provide pedestrian facilities in accordance with the Americans for Disabilities Act.

Montgomery County’s design standards show that the goals of diverse constituencies can be addressed without sacrificing roadway safety. They reduce the environmental impacts of storm water runoff; they preserve manageable construction costs and potential development; and they provide pedestrians, bicyclists and handicapped persons a pleasant and safe environment.

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Project: Intersection Collision Avoidance Warning System (ICAWS)
Agency: Maine Department of Transportation
Funds Used: Federal Highway Safety Program (Section 402)

Many of the stop-controlled intersections in Maine lack sufficient sight distance and do not meet the Manual on Uniform Traffic Control Devices recommendations for the installation of a traffic signal. These locations either have a significant crash history or the potential for increased fatalities and injuries. The Maine Department of Transportation (DOT) has developed the Intersection Collision Avoidance Warning System (ICAWS), a low-cost alternative to address this significant safety issue.

ICAWS was modeled after systems implemented in Virginia and Georgia. Maine DOT has adapted these systems to its own unique safety needs. ICAWS focuses on warning drivers on minor roads and streets of oncoming traffic rather than slowing mainline traffic. This approach produces a simpler and less costly system.

The ICAWS design and operational concepts are simple but Maine DOT uses this proven technology in a unique manner. The system consists of loop detectors, a controller, and LED signs to alert drivers on minor roads and streets of the approach and direction of oncoming vehicles. The system is easy for drivers to understand, reliable and virtually maintenance free. It also notifies drivers if it is not functioning properly so they can maintain even greater awareness when they approach intersections.

Due to the success of this experimental project, Maine DOT installed additional signs in 2003. The Department will also issue subsequent findings and recommendations to FHWA that may be useful to other States with similar safety problems.

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Project: Oklahoma Department of Transportation Lake Hefner Parkway Experience  
Agency: Oklahoma Department of Transportation  
Funds Used: Federal aid Highway

The Lake Hefner Parkway is a 7-mile, 6-lane divided freeway with an average daily traffic of over 108,000. The parkway has a grass median, and no barrier separating opposing traffic. Over a 3-year period, 185 collisions were reported, including crossovers resulting in four fatalities. As a result, the Oklahoma Department of Transportation (ODOT) sought median barrier alternatives to correct the problem and improve safety. ODOT chose a British cable barrier to solve the problem.

Since its installation in September 2001, the barrier has been hit over 160 times with no crossovers, no fatalities and only one reported minor injury. After impact, the wire ropes typically stay at or near correct height, allowing the system to remain functional and eliminating what would otherwise be costly emergency replacement. The system is not only cost-effective; it also results in less occupant trauma and vehicle damage. In addition, the barrier doesn’t cause snow drifting and it is an aesthetically pleasing way to save lives by preventing crossovers.

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Project: Latham Traffic Circle Safety Improvements  
Agency: New York State Department of Transportation-Region One  
Funds Used: State/Local

The Latham Traffic Circle in the town of Colonie, New York, was constructed in 1934. A frequent accident site, this old style large traffic circle forms an interchange between two busy state highways. Total reconstruction of the circle would have been prohibitively expensive but the New York Department of Transportation found other ways to improve its safety. They put in new approach signs and pavement markings on all legs of the circle to provide clear paths for negotiating the circle and to minimize driver confusion. The approaches were redesigned with new curbs, aprons, and signage. The improvements also included innovative “spiral striping” to give drivers further visual cues. Wet/night reflective pavement markings were used to maximize the effectiveness of the new markings, even under adverse weather conditions.

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The City of Phoenix’s School Safety Program has led to the most significant improvement to school safety in Arizona since the inception of the 15 mph school zone in 1950. After a tragic accident where a child ran into a busy street, the City Council created a Safety Task Force to examine safety conditions at 400 schools and more than 1700 school-related crosswalks.

The resulting School Safety Program took a comprehensive approach to improving safety by improving the training and monitoring of school crossing guards; strengthening traffic enforcement at schools and crosswalks; encouraging more responsible driver behavior around schools; encouraging more students to walk to school; and encouraging more parent and community participation in school traffic safety. The School Safety Program also employed innovative tools such as Photo Speed (a real-time speed indicator posted beneath the speed limit), developed a School Crossing Guard Safety Audit, and a Spanish version of the crossing guard training program to improve school safety. Its creative, innovative and comprehensive approach to school safety has played a major role in saving the lives of Phoenix’s school children.

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Florida

Project: Operation Hardhat
Agency: Florida Highway Patrol
Funds Used: State/Local

The rapid growth in traffic on Florida's highways has generated a major increase in construction activity to keep pace with the growth. Work zones have proven dangerous to construction workers and motorists, resulting in more than 12,000 injuries and over 130 fatalities due to workers too close to the travel lanes, speeding vehicles, and tailgating.

To counter this problem, the Florida Highway Patrol created “Operation Hardhat” by stationing a State trooper in a work zone. The trooper is dressed as a construction worker, complete with hardhat and reflective vest, using laser equipment or radar to clock vehicles and monitor other violations. When a violation occurs, the work zone trooper calls another officer waiting ahead who then stops the vehicle and takes appropriate enforcement action.

Operation Hardhat is a large factor in the successful reduction of Florida’s work zone fatalities, with a strategy designed to protect both worker and motorist. The program is saving lives and building public awareness of highway safety.

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**Project:** South Carolina Interstate Safety Project  
**Agency:** South Carolina Department of Transportation  
**Funds Used:** State/Local; Federal-aid Highway; Private Sector (SIB) and Federal Highway Safety Program (Section 402)

The South Carolina Department of Transportation (SCDOT) implemented an innovative and cost effective approach to reduce the escalating number of fatalities on its roadways. After reviewing the crash data, South Carolina focused its efforts on the 800-mile Interstate system and the large number of median crossover fatalities. Median crossovers had killed thirteen people in a 3-month period on a 10-mile stretch of highway. DOT management arranged for the installation of nearly 400 miles of median barrier after identifying the most cost efficient type of barrier and adapting it to the state’s needs. Innovative approaches were also taken to secure multi-source financing including the use of the State Infrastructure Bank.

The program, designed for a 5-year implementation, was completed in just over 2 years. DOT management escalated implementation after the data showed early success. Interstate fatalities were reduced two years in a row, by a total of 30 percent. Urban Interstate fatalities are down 54 percent since December, 2000. An estimated 148 lives have been saved on South Carolina’s Interstate system since 2000. The cable median barrier was 99% effective in preventing median crossover fatalities. Fatal Interstate median crossover crashes are down 67 percent. By May 2003, the cable system had been hit over 2500 times with less than 10 crossover fatalities.

Given these results, the cost benefit of South Carolina’s Interstate Safety Improvement program is estimated at almost 20 to 1. This amounts to a savings of approximately $375 million over a 2-year period and immeasurable savings by reducing the lives lost in fatal highway crashes.

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Project: Angeles Crest Highway Traffic Safety Corridor  
Agency: California Department of Transportation (CALTRANS)  
Funds Used: State/Local

Angeles Crest is a mountainous 2-lane route within the Angeles National Forest with steep grades and a number of sharp curves. Commuters, recreational drivers, bicyclists and motorcyclists must all share this two-lane roadway with narrow shoulders.

Because of an increasing number of fatalities and injuries on Route 2, especially involving motorcyclists, Caltrans and the California Highway Patrol (CHP) designated a portion of the 40-mile route as a Traffic Safety Corridor. A task force was established to identify safety deficiencies and develop a safety action plan to reduce collisions and fatalities over a two-year period.

Safety improvements recommended in the task force safety action plan were implemented primarily with existing resources. Some improvements requiring special funding were further developed into individual improvement projects to obtain additional resources. A public information and education campaign was also initiated to increase driver awareness in this hazardous highway corridor.

The Route 2 Traffic Safety Corridor project was very successful in reducing collisions and fatalities. In a one-year period, fatal collisions were reduced by 71% and the number of persons killed decreased by 75%. Working with the task force proved to be a very effective way to identify, prioritize and implement traffic safety improvements.

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**Project:** Short Term Accident Reduction (STAR)  
**Agency:** New York State Department of Transportation–Region One  
**Funds Used:** State/Local

In the Fall of 2000, the NY State Department of Transportation initiated an innovative program to drastically reduce the time necessary for priority safety projects to be completed. Typically, safety projects were programmed, designed and constructed with the same processes and procedures used for more complicated projects. Streamlining the safety project delivery process was needed to quickly respond to newly discovered and rapidly evolving safety problems with simple, focused solutions.

The STAR program has an annual allocation of dedicated funds and a stand-by contractor to quickly construct necessary safety improvements. Projects that would have taken 3 to 6 years under the traditional project delivery process can now be completed in six to 12 months. Safety improvements implemented under STAR have resulted in decreased crashes, injuries and fatalities with a substantial cost savings realized due to expedited timeframes and aggressive schedules for project completion.

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The Kentucky Transportation Cabinet is responsible for providing a safe, efficient, environmentally and fiscally sound transportation system that promotes economic growth and enhances the state’s quality of life. To meet these goals, the Cabinet teamed with the Louisville Metro Public Works to deploy the TRIMARC Intelligent Transportation System, an innovative technology, to meet the needs of the traffic safety engineer.

TRIMARC includes two cameras with directional microphones, a VCR, and a central controller installed on opposite corners of an intersection. The equipment provides frame by frame analysis that enables the engineer to determine the speed and angles of impact that are vital to accident reconstruction. It provides the engineer with the actual sights and sounds just before an accident or near-accident, a video of the actual incident and the results. Engineers are able to use this information to develop quantitative data on which to base effective intersection safety improvements. Though the system is relatively new, it has already shown patterns and similarities among incidents and behaviors that will subsequently result in appropriate changes and countermeasures to improve motorist safety.

**Project:** TRIMARC  
**Agency:** Kentucky Transportation Cabinet  
**Funds Used:** State/Local

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The Bellevue Accident Reduction Program, established in 1990, is a proactive and consistently applied program to reduce accident costs to those living and traveling in Bellevue, Washington. Projects are generally identified through an annual study that determines intersections and corridors with the highest accident rates in the city. Traffic engineers review high crash intersections and corridors to determine countermeasures that could address the safety concerns identified, as well as the next steps for carrying out safety improvements.

Program results have been impressive. Since the beginning of the Accident Reduction Program, 42 projects have been completed, saving approximately $1.4 million annually in traffic accident costs. The city estimates that the total cost savings over the entire 13-year life of the program is $8 million due to a 10 percent reduction in traffic accidents in the City of Bellevue.

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**Project:** National Model for the Statewide Application of Data Collection and Management Technology to Improve Highway Safety  
**Agency:** Iowa Department of Transportation  
**Funds Used:** State/Local; Federal Aid Highway/ITS America and Safety funds

The Iowa National Model is a nationally recognized program for sharing information, resources and technologies to improve highway safety. Its goal is to improve safety data and crash data collection by leveraging proven technology for law enforcement, streamlining communication of safety information to key stakeholders and extending the use of the information for short and long-term safety and law enforcement programs.

The Traffic and Criminal Software (TraCS) serves as the basis for the field data collection by facilitating electronic collection and management of crash, citation, driving under the influence of drugs or alcohol, truck and bus inspection and other related safety data. The information is integrated so that data can be shared across all applications. The software transfers data daily to local and statewide data systems ensuring timely and accurate information. The crash data also interfaces with Geographic Information System (GIS)-based analytical software.

TraCS is available at no cost to any state interested in using it. As of June 2003, 23 states, the US Virgin Islands and two Canadian provinces have been licensed to use the software. States using TraCS can combine their resources and implement software enhancements instead of spending funds on license fees and maintenance agreements. In March 2002, when only 11 states were using TraCS, the cost savings were estimated at between $16 and $20.4 million; the time and manpower resource savings have been immeasurable.

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Left to Right: Diane Steed, Executive Director, Roadway Safety Foundation and President, American Highway Users Alliance; Anthony Giancola, Executive Director, National Association of County Engineers; Barbara Harsha, Executive Director, Governors Highway Safety Association; Ken Kobetsky, Program Director for Engineering, American Association of State and Highway Traffic Offices; Paul Caruso, Deputy Director, Institute of Transportation Engineers.

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