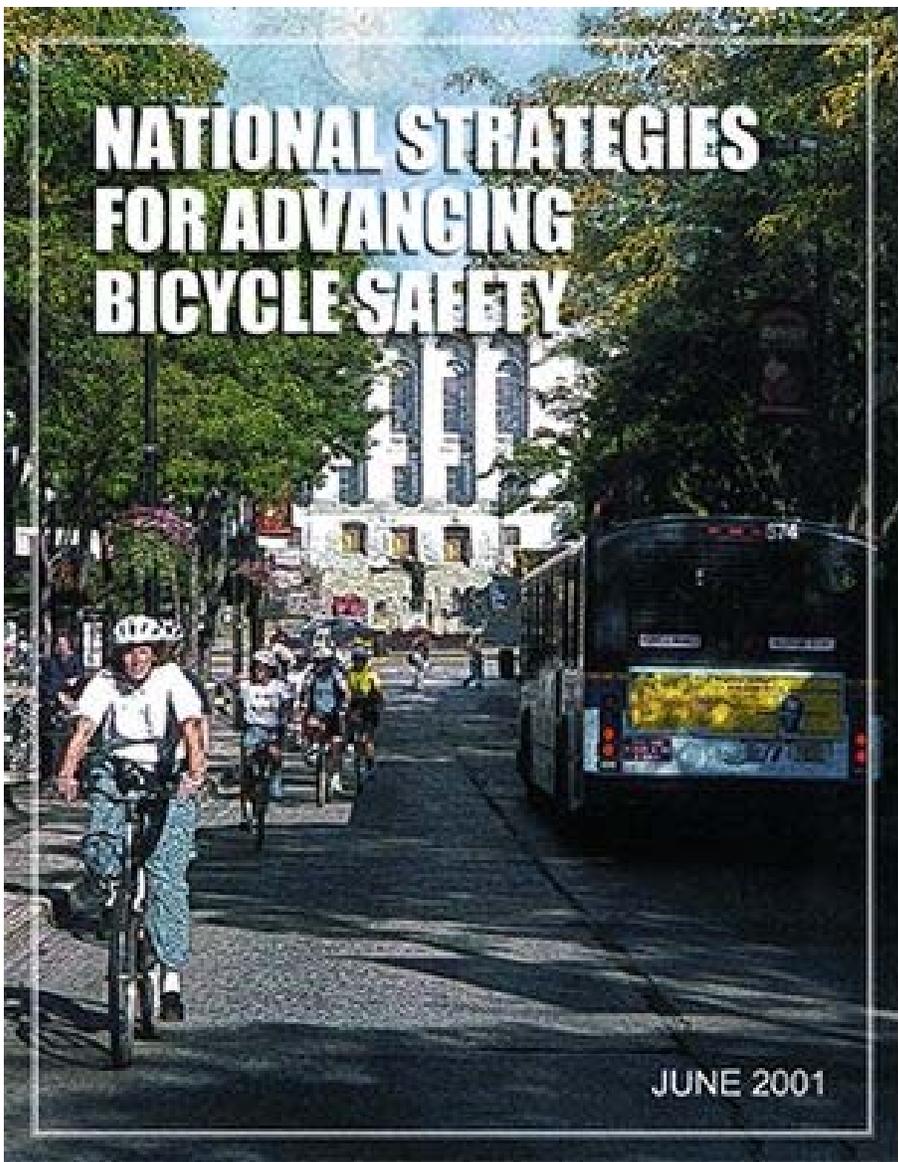


# NATIONAL STRATEGIES FOR ADVANCING BICYCLE SAFETY



JUNE 2001



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**pbic**

Pedestrian and Bicycle  
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# Table of Contents

Acknowledgments .....	3
A Call To action.....	4
Background.....	5
Summary.....	8
Goal	
• Goal #1: Motorists Will Share the Road.....	10
• Goal #2: Bicyclists Will Ride Safely.....	12
• Goal #3: Bicyclists Will Wear Helmets.....	15
• Goal #4: The Legal System Will Support Safe Bicycling.....	17
• Goal #5: Roads and Paths Will Safely Accommodate Bicyclists.....	19
Steering Committee.....	21
Conference Participants.....	23
Endnote.....	30

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### **Maria E. Vegaga, PhD and Richard A. Schieber, MD, MPH Steering Committee Co-Chairs**

Barbara Alberson, MPH	Amy L. Matush, MS
Heather Andersen	Angela D. Mickalide, PhD
Marietta Y. Bowen, MS	Fred Rivara, MD, MPH
Stephanie D. Bryn, MPH	Ellen R. Schmidt, MS
Andy Clarke	Randy Swart
Janet Coleman, MS	Bill Tremblay
Marquita Dudley	Elaine A. Tyrrell, MS
John Fegan, MA	Bill Wilkinson
Michael J. Klasmeier	

### **Disclaimer**

The recommendations presented in this publication were generated during a meeting of diverse public and private organizations and agencies. They do not necessarily represent the official policy of the National Highway Traffic Safety Administration, the National Center for Injury Prevention and Control, or the Federal Highway Administration. Rather, they represent the priorities identified by an expert group convened by these agencies.

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# NATIONAL STRATEGIES FOR ADVANCING Bicycle Safety

## *A Call to Action*

This document is a call to action for the *National Strategies for Advancing Bicycle Safety*. It includes goals, strategies, and short- and long-term actions that can be taken to reduce injury and mortality associated with bicycle-related incidents. It is national in scope, but local in application. The *National Strategies for Advancing Bicycle Safety* was developed by a diverse group of bicycle advocates, injury prevention specialists, and government representatives working together at a conference in July 2000. Although it reflects the thoughts of that group, it is not meant to be a government plan of action.

The *National Strategies for Advancing Bicycle Safety* is the first step in beginning the process of changing the cycling environment in significant ways by addressing five key goals:

- Motorists will share the road
- Bicyclists will ride safely
- Bicyclists will wear helmets
- The legal system will support safe bicycling
- Roads and paths will safely accommodate bicyclists

Under each goal is a series of strategies and initial action steps. These are designed to be a road map for policy makers, safety specialists, educators, and the bicycling community to follow as they undertake national, state, and local efforts to increase safe bicycling. Some of these strategies go well beyond anything attempted in the past to promote a safer cycling environment.

This document will only become a reality if significant resources are focused on implementation. The needed resources include not only adequate funding, but the time, energy, and dedication of a host of individuals and organizations. We hope that you, the reader, will see opportunities for action by you or your organization to help make these national strategies a reality.

The National Bicycle Safety Network (NBSN) -- a public-private coalition of federal and state agencies, professional and non-profit safety groups, and bicycling advocacy organizations dedicated to improving bicycle safety and increasing bicycle use -- has volunteered to facilitate implementation activities for selected portions of the *National Strategies for Advancing Bicycle Safety*. You, or your organization, can participate by taking the lead on implementing one of the strategies, helping with funding or other resources, or joining our efforts toward achieving these critical public safety goals. If you would like to learn more about the progress of the *National Strategies for Advancing Bicycle Safety* or volunteer your time, please contact us through the NBSN web site at

[www.cdc.gov/ncipc/bike/](http://www.cdc.gov/ncipc/bike/).

## **BACKGROUND**

About 85 million adults and children ride their bikes every year.<sup>1</sup> For children and teens, the bicycle is a primary means of transportation when traveling independently. Every morning an estimated half million people bike to work in the United States.<sup>2</sup> However, injuries do occur. Each year, more than 500,000 bicyclists of all ages sustain a cycling injury that requires emergency department care.<sup>3</sup> Of the approximately 800 bicyclists killed annually,<sup>4</sup> about 750 are killed in traffic crashes.<sup>5</sup> Perhaps not surprisingly, more than half of the bicyclists riding in or near traffic report feeling unsafe.<sup>6</sup>

In a nation where traffic is increasing and roadways are becoming more congested, we must, to the best of our collective ability, ensure the safety of all roadway users.

### ***National Bicycle Safety Conference***

A critical step was taken when a group of safety experts and advocates, bicycling enthusiasts, and government agency representatives met in Washington, DC on July 21-22, 2000 to develop a national agenda for bicycling safety. The conference was sponsored by the National Highway Traffic Safety Administration, the Centers for Disease Control and Prevention, the Federal Highway Administration, and the Pedestrian and Bicycle Information Center. No one present at that meeting could recall a time when such a diverse group had been convened or when government representatives had sat down with cycling advocates to plan significant policy and strategies around bicycling and bicycle safety.

The conference format was crafted to focus discussion on five practical issues that, once accomplished, will substantially advance the safety of bicyclists. These topics were:

- sharing the road with motorists
- enhancing bicycle safety education
- increasing bicycle helmet use
- enhancing the role of the legal system in promoting bicycle safety
- using bicycle facilities and community planning for bicycle safety

Topic experts in each of these areas were commissioned to write "white papers" in advance of the conference and present those papers at the onset of the conference. Each paper addressed key issues in that area, described why the topic is important to bicycle safety, and proposed potential solutions to enhance safety. These white papers were provided to conference participants in advance of the conference and will be published in a separate document summarizing the conference proceedings.

The white papers set the tone for conference discussions, which centered first on outlining key strategies for advancing each area and then detailing critical actions needed to implement those strategies. The *National Strategies for Advancing Bicycle Safety* (termed "bicycle safety agenda" or "agenda" in this document) is the product of the conference.

### ***Focus of the National Strategies for Advancing Bicycle Safety***

Bicycling safety, not bicycling use, is the central theme of the *National Strategies for Advancing Bicycle Safety*. Although strategies that increase bicycle use can complement this agenda, the focus here is on safety and public health issues that are not adequately covered in other efforts.

The document, *National Strategies for Advancing Bicycle Safety*, does not stand alone. Rather, it should be viewed as a "next steps" guide to accompany other documents, including:

- Department of Transportation (DOT) documents such as the DOT Strategic Plan for 2000-2005<sup>7</sup> which calls for a 10 percent reduction in bicyclist injuries and fatalities by the year 2005 (using 1999 as the baseline); the National Bicycling and Walking Study developed by the Department of Transportation<sup>8</sup> in 1994 which, in addition, calls for increasing the percentage of total bicycle and pedestrian trips in the United States from 7.9% to 15.8% of all travel trips; and the National Highway Traffic Safety Administration Strategic Plan<sup>9</sup> which identified approaches such as public information, legislation, enforcement, engineering, and outreach to improve the safety of bicyclists; and
- Healthy People 2010,<sup>10</sup> developed by the Department of Health and Human Services, which urges helmet use by bicyclists, and encourages all states to pass mandatory bicycle helmet use laws.

This document supplements these other plans by providing specific strategies for achieving the bicycle-related goals, as well as specific action steps that are needed to accomplish those strategies.

The strategies outlined in this document are considered to be those that can be initiated and largely completed within a three-to-five-year time frame. In addition, these strategies are expected to build strong local support and capacity for efforts to improve safe bicycling. As these approaches are implemented or completed, it is expected that other ideas will take their place in the *National Strategies for Advancing Bicycle Safety*.

### ***Implementation***

Ultimately, the *National Strategies for Advancing Bicycle Safety* is only useful if it leads to commitment and consequent action by a host of groups. In this process, the role of the federal government was to convene interested parties and

encourage their mutual collaboration, rather than dictate a particular approach. Accordingly, the government convened a group of thoughtful, concerned people to help produce a constructive framework for action. However, it was never intended for government agencies to be solely responsible for carrying out these suggested steps, whether through funding or policy changes. Instead, the conference participants produced a constructive framework for action that could help guide the work of individuals and organizations committed to increasing safe bicycling. Accordingly, we invite you to consider these recommendations carefully and add your talents and resources, wherever they may lie, to make bicycling safer for all.

# Summary of The National Strategies For Advancing Bicycle Safety

The *National Strategies for Advancing Bicycle Safety* is a call to action for policy makers, educators, advocates, transportation experts, health and injury professionals, and others with an interest in safe bicycling. The strategies encompassed in the document are those that, over the next three to five years, are capable of enhancing bicycle safety for riders of all ages. The specific goals and strategies are summarized below.

## ***Goal #1 Motorists Will Share the Road***

- Create a coordinated "Share the Road" public education campaign that can be adapted at the state and local levels.
- Amend the motor vehicle code to give precedence to bicyclists in the absence of overriding traffic rules.
- Include components on "safe bicycling" and "sharing the road" in driver education programs.

## ***Goal #2 Bicyclists Will Ride Safely***

- Create a national "Ride Safely" marketing campaign targeting bicycle riders.
- Encourage statewide bicycle safety conferences to promote the National Strategies for Advancing Bicycle Safety.
- Expand school-based and community-based programs that teach bicycle safety to children and adult bicyclists.
- Educate community professionals on effective ways to promote safe bicycling.
- Motivate decision makers at all levels to adopt policies that promote safe bicycling.

## ***Goal #3 Bicyclists Will Wear Helmets***

- Create a national bicycle helmet safety campaign.
- Create tools to promote and increase bicycle helmet use that can be adapted for use at the state and local levels.
- Assist states and communities that decide to address bicycle helmet use through state and local laws and enforcement.

## ***Goal #4 The Legal System Will Support Safe Bicycling***

- Improve the collection and quality of data concerning bicycle crash incidents, including both traffic and non-traffic sites.

- Create tools that help law enforcement officers enforce bicycle-safety traffic laws aimed at bicyclists and motorists.
- Promote the most promising enforcement efforts at those local sites where they are most likely to be effective.
- Encourage the court system to follow through on bicycle safety enforcement by imposing meaningful penalties for both motorist and bicyclist violations.

***Goal #5 Roads and Paths Will Safely Accomodate Bicyclists***

- Document and evaluate the safety and effectiveness of facility design options.
- Improve 100,000 miles of roadways that serve everyday travel by providing striped bicycle lanes and other safe bicycling facilities.
- Train professionals responsible for the planning, design, and operation of the transportation system to better consider and accommodate bicycle travel.

## **Goal #1: Motorists Will Share the Road**

Bicycles are a legitimate form of transportation and bicyclists are legal drivers of vehicles, with laws and regulations established for their use. Yet a major issue is that many bicyclists feel they are not respected by motorists and must fight for their place on the road. Like motorists, cyclists need space to safely operate in traffic. They need to anticipate correctly the actions of drivers and other road users. This requires mutual respect, which can be promoted by public information, motorist education programs, and legal measures.

**Strategy #1** Create a coordinated "Share the Road" public education campaign that can be adapted at the state and local levels.

### **Action Steps**

1. Evaluate the feasibility and potential effectiveness of a campaign emphasizing the importance of sharing the road.
2. Survey successful state and local level programs to guide campaign development.
3. Identify the themes, content, and target audiences for the campaign.
4. Create tools that incorporate multiple forms of media and compelling stories to communicate "Share the Road" messages.
5. Design specific outreach activities to promote bicycle safety for motorists and bicyclists.
6. Encourage local organizations and bicycle advocacy groups to sponsor the campaign in their community.
7. Evaluate the effectiveness of the campaign.

**Strategy #2** Amend the motor vehicle code to give precedence to bicyclists in the absence of overriding traffic rules.

### **Action Steps**

1. Research morbidity, mortality, and cost issues related to existing laws to further policy development.
2. Work with the National Committee on Uniform Traffic Laws and Ordinances to determine needed policy changes.
3. Draft model language for inclusion in the Uniform Vehicle Code.
4. Develop a constituency of bicyclists and motorists to advocate for those code changes needed.
5. Facilitate passage of code-changing bills within state legislatures.

**Strategy #3** Include components on "safe bicycling" and "sharing the road" in driver education programs.

**Action Steps**

1. Survey current programs to determine if and how bicycle safety is incorporated into driver education for beginning drivers and license renewal.
2. Draft model text, graphics, and/or audio-visual material about bicycles, bicyclists, and sharing the road to be included in the driver's license training classes and materials.
3. Draft questions about bicycles, bicyclists, and sharing the road that can be adapted for driver's license testing systems.
4. Encourage states and driver education providers to integrate model program components into existing driver's education programs including, but not limited to, novice driver training, license renewal, taxi cab driver training, professional driver training, bus driver training, commercial driver licensing, traffic (violations) schools, and the 55 Alive Program (offered by the American Association of Retired Persons).

## **Goal #2: Bicyclists Will Ride Safely**

Bicycle safety education is more than just learning how to balance on two wheels. It involves knowledge, skills, and decision-making ability in traffic. It assumes that individuals -- both children and adults -- can learn to make appropriate decisions in a variety of complex traffic situations. Unfortunately, many cyclists and motorists do not place the same value on cyclist education as on driver education, even though they share the same road. By teaching cyclists the necessary knowledge and skills to cycle safely, bicycle safety education can be a useful means of preventing injuries and deaths. Safety instruction is already a component of many such programs. The most effective programs need to be identified and their use encouraged.

**Strategy #1** Create a national "Ride Safely" marketing campaign targeted toward bicycle riders.

### **Action Steps**

1. Evaluate the feasibility and potential effectiveness of the campaign.
2. Identify the themes, content, and target audiences for the campaign.
3. Determine channels of delivery to reach diverse populations (i.e., different ages; ethnicities; genders; lifestyles; disabilities; geographic locations, especially rural populations).
4. Create messages that provide accurate, culturally acceptable, and developmentally appropriate bicycle safety messages through multimedia sources.
5. Develop state press kits and model products that advocate safe bicycling.
6. Encourage bicycle retailers, hospitals, and corporations to sponsor the program and publicize bicycle rules of the road.
7. Evaluate the effectiveness of the campaign.

**Strategy #2** Encourage statewide bicycle safety conferences to promote the *National Strategies for Advancing Bicycle Safety*.

### **Action Steps**

1. Recruit organizations to sponsor statewide conferences focused on implementation of the *National Strategies for Advancing Bicycle Safety*.
2. Bring individuals and organizations together to develop state and local strategies for bicycle safety.
3. Assist interested states in conference planning to encourage compatibility with the *National Strategies for Advancing Bicycle Safety*.

4. Create mechanisms that publicize and allow for coordination of state conferences and bicycle safety efforts.

**Strategy #3** Expand school-based and community-based programs that teach bicycle safety to children and adult bicyclists.

#### **Action Steps**

1. Create a national clearinghouse to compile bicycle safety education resources (e.g., parks and recreation programs, rodeos, after-school programs, health and safety fairs, faith-based programs, workplace safety programs).
2. Develop needed additional educational materials (e.g., model curricula, books, video games, service-learning activities) to address bicycle safety education.
3. Disseminate programs to teachers and community-based educators and encourage them to incorporate bicycle safety content into their classes.
4. Require bicycle and traffic safety in educational and other relevant settings such as English as a Second Language (ESL) classes, HEAD Start programs, and after-school programs.

**Strategy #4** Educate community professionals on effective ways to promote safe bicycling.

#### **Action Steps**

1. Convene a committee to develop and encourage educational programs targeted at local government officials, health professionals, criminal justice professionals (i.e., law enforcement, judges), traffic engineers, and others who can influence safe bicycling.
2. Identify and evaluate existing bicycle safety materials or other community-based programs to determine if they can be adapted for these audiences.
3. Disseminate successful programs in order to foster replication.
4. Identify resources and a process for funding pilot projects focused on community leaders.

**Strategy #5** Motivate decision makers at all levels to adopt policies that promote safe bicycling.

#### **Action Steps**

1. Determine and publicize the economic, health, and community benefits of bicycle safety.
2. Research the content and effectiveness of existing policies and the desired outcomes from new policies or policy changes.

3. Draft model bicycle safety policies that can be adapted by decision makers in government, education, medicine, law enforcement, public health, etc.
4. Create informational materials and an approach to engage policy makers and stakeholders in endorsing safe bicycling policies.

## **Goal #3: Bicyclists Will Wear Helmets**

Bicycle helmets are 88% effective in preventing serious brain injury. Yet fewer than half of the bicycle riders wear one, and teens almost never do. The reported reasons among infrequent and recreational cyclists for not wearing helmets include their lack of social acceptability and their belief that they are uncomfortably hot to wear in the summer. Experienced riders, particularly adults, cite their superior bicycling skill as one reason, among others, for not wearing helmets. Research has shown that comprehensive programs -- those that provide helmets at a discount, teach the importance of their use, and include helmet use laws -- are most likely to result in increased helmet usage.

**Strategy #1** Create a national bicycle helmet safety campaign.

### **Action Steps**

1. Evaluate the feasibility and potential effectiveness of such a campaign.
2. Hire a full-time campaign coordinator and recruit staff support from participating agencies.
3. Recruit a media firm to create a campaign.
4. Develop the themes, content, and target audiences for the campaign and identify channels of delivery.
5. Encourage corporations and bicycle advocacy groups to sponsor the campaign.
6. Monitor campaign effectiveness.

**Strategy #2** Create tools to promote and increase bicycle helmet use that can be adapted for use at the state and local levels.

### **Action Steps**

1. Compile and catalog community-based bicycle helmet safety materials, resources, organizations, and programs.
2. Review and assess materials to ensure that the messages are accurate, culturally sensitive, and developmentally appropriate.
3. Develop additional materials (e.g., model curricula, books, video games) as needed to address bicycle helmet education.
4. Disseminate materials to school-based and community-based educators (via video, the Internet, resource centers, etc.) and encourage them to incorporate bicycle helmet messages into their programs.

5. Monitor implementation of tools and assess the effectiveness of use at the local level.

**Strategy #3** Assist states and communities that decide to address bicycle helmet use through state and local laws and enforcement. Footnote to follow.

#### **Action Steps**

1. Collect existing laws utilized by state and local governments.
2. Draft model laws that can be made available, as requested, for state and local government officials and advocates.
3. Encourage law enforcement agencies to enforce existing bicycle helmet laws.
4. Monitor the effectiveness of helmet laws for changing behavior and reducing injury.

Footnote: Conference participants were not able to arrive at consensus on the inclusion of a strategy targeted at promoting mandatory helmet laws for bicyclists. Proponents argued that the best way to promote helmet use, and thereby reduce mortality and serious injury, is to require bicyclists to wear helmets. Opponents argued that requiring helmet use interferes with personal freedom, exaggerates the dangers of cycling, and reduces rider ship. To promote the broadest possible participation in the *National Strategies for Advancing Bicycle Safety*, it was decided that advocacy for mandatory helmet laws would not be included in this document. However, those states and communities that are looking for assistance in this area will be supported by individuals and organizations who agree that helmet use laws are beneficial. Organizations with an interest in this area will continue to pursue efforts to secure passage of these laws.

## **Goal #4: The Legal System Will Support Safe Bicycling**

The rights and rules of the road apply to both cyclists and motorists. The rights of cyclists must be upheld through the legal system and the laws affecting safe bicycling must be fairly and consistently enforced. *However, some cyclists believe that motorists are not penalized for violating cyclist right-of-way and that, consequentially, data systems assign fault to cyclists in crashes.* Data on high-risk crash locations and public support for enforcement efforts are important for good legislation and for getting law enforcement and the courts to uphold the laws and regulations that discourage unsafe behavior.

**Strategy #1** Improve the collection and quality of data concerning bicycle crash incidents, including both traffic and non-traffic sites.

### **Action Steps**

1. Evaluate the accuracy of currently collected law enforcement and injury data with respect to completeness and recording of elements of the causal chain that led to the crash.
2. Evaluate the federal and state requirements that pertain to how information about bicycle involvement in crashes is recorded on crash report forms.
3. Assess the usefulness of existing data reporting systems in tracking incidents and injuries involving bicycles.
4. Employ community needs assessment and other tools to make recommendations for improvements in data collection procedures.
5. Create model forms, procedures, and tools to implement recommendations.
6. Disseminate findings and encourage jurisdictions to improve their data collection procedures and practices.

**Strategy #2** Create tools that help law enforcement officers enforce bicycle-safety traffic laws aimed at bicyclists and motorists.

### **Action Steps**

1. Draft model crash investigation protocols, daily roll call presentations, and bicycle safety enforcement tools that can be adapted by law enforcement departments.
2. Disseminate models to local police departments and sheriffs' departments and encourage them to incorporate bicycle safety content into standard procedures.

3. Publicize effective enforcement practices and models in law enforcement magazines and trade journals.
4. Identify internal change agents (including law enforcement on bicycles) and support their efforts to influence other officers.
5. Conduct an advocacy campaign for law enforcement executives.

**Strategy #3** Promote the most promising enforcement efforts at those local sites where they are likely to be effective.

#### **Action Steps**

1. Identify and evaluate new and existing efforts to improve bicycle safety enforcement, such as targeting intersections with high incidents of bicycle-motor vehicle conflicts and high-risk bicycle-endangering behaviors (including speeding).
2. Disseminate effective practices to law enforcement agencies and professional organizations.
3. Encourage local law enforcement agencies to implement successful bicycle safety enforcement practices.
4. Promote increased, accurate media coverage of bicycle crashes.
5. Build local coalitions of safe bicycling advocates and law enforcement agencies to promote strategic law enforcement.

**Strategy #4** Encourage the court system to follow through on bicycle safety enforcement by imposing meaningful penalties for both motorist and bicyclist violations.

#### **Action Steps**

1. Investigate how courts are currently adjudicating bicycle-related incidents.
2. Evaluate the availability and adequacy of bicycle-related data and reporting systems used by courts.
3. Disseminate effective practices to court professionals and organizations.
4. Establish a "bicycle court" model that addresses infractions involving bicyclists.

## **Goal #5: Roads and Paths Will Safely Accommodate Bicyclists**

During the 1990s, Federal spending on bicycle and pedestrian facilities (e.g., bicycle paths, lanes, and racks) increased dramatically -- from approximately \$4 million per year to more than \$200 million per year. Improvements for bicyclists have included striped bicycle lanes, off-road trails, bicycle parking racks and lockers, and a variety of planning, safety, and promotional activities. In addition, thousands of miles of paved shoulders have been built or rebuilt as a part of highway projects, providing bicyclists with a safer place to ride. Unfortunately, however, roadway design still often overlooks the needs of bicyclists. Traffic engineers and planners who design and operate the roadway transportation system don't always understand cyclists' rights, responsibilities, needs, and preferences.

**Strategy #1** Document and evaluate the safety and effectiveness of facility design options.

### **Action Steps**

1. Compile data on the design features and implementation of bicycle-safe facilities.
2. Evaluate the use and safety (including exposure) of existing facilities and disseminate findings to transportation professionals and bicycle advocates.
3. Encourage increased allocation of research dollars for bicycle safety research at the national level.
4. Promote implementation and evaluation of promising new bicycle facility designs.

**Strategy #2** Improve 100,000 miles of roadways that serve everyday travel by providing striped bicycle lanes and other safe bicycling facilities.

### **Action Steps**

1. Identify and track existing miles of bicycle lanes as well as plans for striping of additional miles.
2. Involve citizens, bicycle safety organizations, and advocates in community need assessment and local planning efforts.
3. Establish bicycle lane mileage goals for states and metropolitan planning organizations.

4. Develop and issue implementation guidelines for use by transportation professionals.
5. Provide incentives to allocate funds for striping.
6. Disseminate information to help ensure that routine roadway design and operation safely accommodate bicyclists even where no special facilities are present.

**Strategy #3** Train professionals responsible for the planning, design, and operation of the transportation system to better consider and accommodate bicycle travel.

### **Action Steps**

1. Offer the pedestrian/bicycle graduate course, developed by the Federal Highway Administration, to at least one university in every state.
2. Deliver a continuing education course on accommodating bicycle travel to design professionals in every state.
3. Develop a new bicycle facilities course, offered by the Federal Highway Administration's National Highway Institute.
4. Encourage colleges and universities to incorporate bicycle transportation in the undergraduate civil engineering curriculum.
5. Disseminate information to help ensure that routine roadway design and operation safely accommodate bicyclists.

## **Bicycle Safety Conference Steering Committee**

**Barbara Alberson, MPH**

Chief, State and Local Injury Control Section  
California Department of Health Services

**Heather Andersen**

Project Manager  
Washington Area Bicyclist Association

**Marietta Y. Pearson Bowen, MS**

Office of Traffic Injury Control Programs  
National Highway Traffic Safety Administration

**Stephanie D. Bryn, MPH**

Injury and Violence Prevention Programs  
Maternal and Child Health Bureau  
Health Resources and Services Administration

**Andy Clarke**

Executive Director  
Association of Pedestrian and Bicycle Professionals

**Janet Coleman, MS**

Office of Safety  
Federal Highway Administration

**Marquita Dudley**

Manager, Club Programs  
American Automobile Association

**John C. Fegan, MA**

Bicycle and Pedestrian Program Manager  
Federal Highway Administration

**Michael J. Klasmeier**

Program Director  
League of American Bicyclists

**Amy L. Matush, MS**

Office of Traffic Injury Control Programs  
National Highway Traffic Safety Administration

**Angela D. Mickalide, PhD**

Program Director  
National SAFE KIDS® Campaign

**Fred Rivara, MD, MPH**

Harborview Injury Prevention and Research Center

**Richard A. Schieber, MD, MPH (Co-Chair)**  
Childhood Injury Prevention  
National Center for Injury Prevention and Control  
Centers for Disease Control and Prevention

**Ellen R. Schmidt, MS**  
Assistant Director, Children's Safety Network  
Education Development Center

**Randy Swart**  
Director  
Bicycle Helmet Safety Institute

**Bill Tremblay**  
Brain Injury Association, Inc.

**Elaine A. Tyrrell, MS**  
Program and Management Analyst  
U.S. Consumer Product Safety Commission

**Maria E. Vegega, PhD (Co-Chair)**  
Chief, Safety Countermeasures Division  
National Highway Traffic Safety Administration

**Bill Wilkinson**  
Executive Director  
National Center for Bicycling and Walking

# Bicycle Safety Conference Participants



*Organizations listed reflect participants' affiliations at time of the meeting.*

<b>Name and Affiliation</b>	<b>Area(s) of expertise</b>
<b>Barbara Alberson, MPH</b> State and Local Injury Control Section California Department of Health Services	Health Education
<b>John S. Allen</b> Past President, Massachusetts Bicycle Coalition	Bicycle Advocacy
<b>Marilena Amoni, MS</b> Office of Traffic Injury Control Programs National Highway Traffic Safety Administration	Traffic Safety Policy
<b>Heather Andersen</b> Washington Area Bicyclist Association	Bicycle Advocacy
<b>Lisa M. Aultman-Hall, PhD</b> Department of Civil Engineering University of Kentucky	Traffic Engineering Research
<b>Abraham B. Bergman, MD</b> Harborview Medical Center	Pediatrics, Injury Prevention
<b>Richard D. Blomberg</b> Dunlap and Associates, Inc.	Human Factors Research
<b>Leverson S. Boodlal, MS</b> Office of Safety Federal Highway Administration	Traffic Engineering
<b>Marietta Y. Pearson Bowen, MS</b> Office of Traffic Injury Control Programs National Highway Traffic Safety Administration	Injury Prevention, Bicycle Safety
<b>Susan M. Boyle</b> Transportation Alternatives	Bicycle and Pedestrian Advocacy

<b>Christine M. Branche, PhD</b> Division of Unintentional Injury Prevention National Center for Injury Prevention and Control Centers for Disease Control and Prevention	Epidemiology Research
<b>Ruth A. Brenner, MD, MPH</b> Division of Epidemiology, Statistics, & Prevention Research National Institute of Child Health & Human Development	Epidemiology Research
<b>Anita L. Brentley, MEd</b> Cincinnati Children's Hospital Medical Center	Education, Community Outreach
<b>Tamara A. Broyhill, MS</b> Office of Safety Federal Highway Administration	Writer/Editor
<b>Stephanie D. Bryn, MPH</b> Injury and Violence Prevention Programs Maternal and Child Health Bureau Health Resources and Services Administration	Education, Injury Prevention
<b>Gabriel J. Cano</b> Office of Communication and Outreach National Highway Traffic Safety Administration	Community Outreach, Traffic Safety
<b>Peter L. Capper, MBA</b> BVK McDonald	Marketing
<b>Ellen R. Cavanagh</b> Transportation Alternatives	Bicycle and Pedestrian Advocacy
<b>Lois E. Chaplin, MPS</b> Department of Agricultural Engineering Cornell University	Education
<b>Tanya Chin Ross</b> National SAFE KIDS® Campaign	Community Outreach
<b>Nita K. Clark</b> Injury Prevention Service Oklahoma State Department of Health	Injury Prevention
<b>Andy Clarke</b> Association of Pedestrian and Bicycle Professionals	Bicycle and Pedestrian Advocacy
<b>Ludy Comolatti</b>	Education

National Fire Prevention Association

**Steve Davidson**  
Office of Injury Prevention  
Georgia Department of Public Health

State Injury Prevention Program  
Administration

**Robert J. Demichelis II**  
Brain Injury Association, Inc.

Injury Prevention Policy

**Karen J. DeWitt**  
Washington State Patrol

Law Enforcement

**Lewis W. Dijkstra**  
Planning Consultant and Transportation  
Researcher  
Rutgers University

Traffic Engineering Research

**Marquita Dudley**  
American Automobile Association

Education

**John C. Fegan, MA**  
Federal Highway Administration

Psychology, Traffic Engineering  
and Planning

**Laurie L. Flaherty, RN**  
Office of Communication and Outreach  
National Highway Traffic Safety Administration

Nursing

**John Forester, MS**  
Bicycle Advocate

Bicycle Advocacy, Education

**Valodi Foster, MPH**  
Bicycle Head Injury Prevention Program  
California Department of Health Services

Injury Prevention

**Susan S. Gallagher, MPH**  
Children's Safety Network

Health Education/Policy

**Carole S. Guzzetta**  
National Safety Belt Coalition  
National Safety Council

Child Injury Prevention  
Advocacy, Health Education

**Annie M. Hawkins**  
American Automobile Association

Education

**John D. Heeney**  
National Peer Helpers Association

Education

**S. Randal Henry, MPH**  
Epidemiology Analysis

Injury Prevention, Epidemiology

Los Angeles County Department of Health  
Services

**Sarah E. Hunt**  
Office of Traffic Injury Control Programs  
National Highway Traffic Safety Administration

Traffic Safety, Health Education

**Michael E. Jackson**  
Minnesota State Bicycle Coordinator  
Minnesota Department of Transportation

State Bicycle Program  
Administration

**Anthony Kane, PhD**  
Executive Director  
Federal Highway Administration

Policy Development and  
Administration

**Michael J. Klasmeier**  
League of American Bicyclists

Bicycle Education/Advocacy

**Charles Komanoff**  
Right of Way

Bicycle Advocacy

**Mary Anne Lahey, PhD**  
American Institutes for Research

Psychology, Facilitation

**Bryan M. LeMonds**  
BVK McDonald

Marketing

**Marvin M. Levy, PhD**  
Office of Research and Traffic Records  
National Highway Traffic Safety Administration

Psychology, Human Factors  
Research

**Nancy Libby-Fisher**  
Rhode Island Department of Health

Injury Prevention

**Lauren M. Marchetti**  
Highway Safety Research Center  
University of North Carolina

Health Education

**Amy L. Matush, MS**  
Office of Traffic Injury Control Programs  
National Highway Traffic Safety Administration

Traffic Safety, Health Education

**Leigh E. Matusick**  
School Crossing Guard Program  
Florida Department of Highway Safety and  
Motor Vehicles

Crossing Guard Education

**Roberta C. Mayer**  
Office of Communications and Outreach

Traffic Safety Outreach

National Highway Traffic Safety Administration

**Barbara McCann**

Transportation and Quality of Life Campaign  
Surface Transportation Policy Project

Bicycle Advocacy/Policy

**Ray McMurphy**

Safe Moves Bicycle Safety Program

Education

**Rose McMurray, MS**

Traffic Safety Programs  
National Highway Traffic Safety Administration

Traffic Safety Policy

**Angela D. Mickalide, PhD**

National SAFE KIDS<sup>®</sup> Campaign

Child Injury Prevention Policy

**Ted R. Miller, PhD**

Pacific Institute for Research & Evaluation

Economics

**Peter C. Moe**

National Center for Bicycling and Walking

Bicycle Advocacy

**Allen Muchnick**

Washington Area Bicyclist Association

Bicycle Advocacy

**Gary Mueller**

BVK McDonald

Marketing

**Randy Neufeld**

Chicagoland Bicycle Federation

Bicycle Advocacy

**Cheryl S. Neverman, MS**

Office of Communications and Outreach  
National Highway Traffic Safety Administration

Youth Transportation Safety,  
Injury Prevention

**Beverly J. O'Bryant, PhD**

Community Service and Service Learning  
Programs  
District of Columbia Public Schools

Education

**Richard Olken**

Bikes Belong Coalition

Bicycle Advocacy

**Jeff S. Olson, RA**

Millennium Trails Office of the Secretary  
U.S. Department of Transportation

Engineering and Planning

**Scott Osberg, PhD**

AAA Foundation for Traffic Safety

Traffic Safety Research

<b>Theodore A. Petritsch</b> Florida Pedestrian and Bicycle Coordinator Florida Department of Transportation	Engineering and Planning, State Program Administration
<b>Cynthia H. Powell</b> National Center for Injury Prevention and Control Centers for Disease Control and Prevention	Injury Prevention
<b>Richard A. Schieber, MD, MPH</b> Childhood Injury Prevention National Center for Injury Prevention and Control Centers for Disease Control and Prevention	Pediatrics, Epidemiology Research
<b>Ellen R. Schmidt, MS</b> Children's Safety Network Education Development Center	Health Education
<b>Charley R. Seymour, PhD</b> Adopt-a-Bike Program	Community Outreach
<b>Gary A. Smith, MD, DrPH</b> Center for Injury Research and Policy American Academy of Pediatrics Columbus Children's Hospital	Pediatrics
<b>Shelli Stephens-Stidham</b> Injury Control Division Oklahoma Department of Health.	Injury Prevention
<b>Carol Stroebel</b> Coalition Resources, Inc	Injury Prevention, Child Health Policy
<b>Jane C. Stutts, PhD</b> Highway Safety Research Center University of North Carolina	Human Factors Research
<b>Randy Swart</b> Bicycle Helmet Safety Institute	Bicycle Advocacy
<b>Mandy Taft</b> National SAFE KIDS® Campaign	25 Community Outreach
<b>Carol H. Tan Esse</b> Federal Highway Administration	Traffic Engineering Research
<b>Sallie R. Thorson, MS</b>	Injury Prevention

Colorado Department of Public Health and Environment

**Allen Turnbull, PhD**  
BikeWalk Virginia

Education

**Preston Tyree**  
Texas Bicycle Coalition/Education Fund

Education

**Elaine A. Tyrrell, MS**  
U.S. Consumer Product Safety Commission

Consumer Safety

**Maria E. Vegega, PhD**  
Office of Traffic Injury Control Programs  
National Highway Traffic Safety Administration

Psychology, Injury Prevention

**Malcolm Washington, Jr.**  
East Central Health District, Public Health  
Richmond, GA County Health Department

Education

**Katherine F. Watkins**  
City of Cambridge Traffic Calming Project

Traffic Engineering and Planning

**Landon H. Wickman, Jr.**  
Urban Youth Bike Program  
New York Cyclist

Community Outreach

**James B. Wright, MS**  
Office of Traffic Injury Control Programs  
National Highway Traffic Safety Administration

Youth Transportation Safety

**Robert Young**  
Office of Defects Investigation  
National Highway Traffic Safety Administration

Motor Vehicle Safety

**Charles Zeeger, MS**  
Highway Safety Research Center  
University of North Carolina

Traffic Engineering Research

## Endnotes

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