

Welcome to the Bicycle Safety Guide

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NHTSA/FHWA·Bicycle·Safety·Resource·Guide



  **Bicycle Safety**

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 **The E's of cycling**

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-  **Effective cycling**
-  **Ace of cycling**
-  **Bicycle safety**
-  **The professional driver and the bicyclist**
-  **Making streets that work**
-  **Basic bicycle education**
-  **Sharing the road: Bus operator training**
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-  **Be safe on your bike**
-  **Children in traffic, why are they different**
-  **A kid's eye view (Madison, Wisconsin Department of Transportation)**
-  **Bike right. . . The face you save may be your own**
-  **Biking. . . Get the big picture**
-  **Otto the auto on bicycle safety**
-  **The bicycle zone**
-  **The Ride Safe way to fit a bicycle helmet**
-  **Education is the key**
-  **Sharing the road**
-  **Community awareness (part of program: Neighborhood adventures in bicycle safety: Striving**
-  **Get into the helmet habit**
-  **Lou and his friends have something important to tell you**
-  **Two-wheeled survival in a four-wheeled world (HS-227)**

-  **Be a well dressed cyclist--wear a helmet (HS-240)**
-  **Sharing the road: Survival of the smallest (HS-228)**
-  **Kids speak out on bike helmets (Stock #3051)**
-  **Along for the ride (DOT HS 807-832)**
-  **Parents, buying your child a bike? (Stock #3207)**
-  **Stop: Let me tell you how to save a life like yours**
-  **Bicycling is great fun (Stock #3241)**
-  **Bicycles are vehicles: Florida's bicycle laws. . . and safety tips (TS 606)**
-  **A bicycle is not a toy!**
-  **Safe bicycle riding in New Jersey**
-  **Use your head and wear a helmet (Also available in Spanish)**
-  **The helmet habit: get into it!**
-  **Do the right thing (It's a bike thing)**
-  **Life in the cool lane: Traveling by bicycle**
-  **Bicycle helmets for Florida's children--"It's the law!"**
-  **Don't go head over handlebars--drive with your head**
-  **How to ride the intersections**
-  **Seeing and being seen**
-  **City cycling**
-  **Motorists make mistakes too**
-  **Buying a bicycle**
-  **Just where do I belong?**

-  **Picking a route**
-  **How to "talk" to people in cars**
-  **How to ride at night. . . and stay alive!**
-  **Kids and bikes**
-  **Bicycle laws**
-  **Drive your bike safely**
-  **Encouraging safe cycling for a livable Portland**
-  **A consumer's guide to bicycle helmets**
-  **Have you "shared the road" today?**
-  **Must I buy my child a helmet?**
-  **Visibility obstruction information**
-  **Kids & bikes & safety (No. FHWA-SA-96-056)**
-  **Did you know? (DOT HS 808648)**
-  **Do you know Missoula's bicycle laws?**
-  **Your bicycle helmet: "A correct fit" (DOT HS 808 421)**
-  **10 tips for fun and safe biking**
-  **Wheel issues: Road sharing tips for bikes and big trucks**
-  **Uncle Bob's bike-o-rama safety quiz**
-  **Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist**
-  **Wisconsin's saved by the bicycle helmet club**
-  **Heads up helmets on (Stock #3205)**
-  **Bicycle injury fact sheet**

-  **Does your bicycle helmet fit properly?**
-  **Sally says: Bicycle safety is every parent's responsibility!**
-  **About bicycle helmets (HE0075)**
-  **Sally says: Safety starts at home**
-  **Bicycle inspection checklist (Stock #3287)**
-  **The child as a passenger on an adult's bicycle (HE0082)**
-  **Tips for getting your children to wear bicycle helmets (HE0079)**
-  **Share the road**
-  **At night, ride with lights. It's the law!**
-  **Ten commandments of bicycling**
-  **Bike safely first ride every ride**
-  **help kids get the helmet habit**
-  **Bicycles and the new UC Davis cyclist, 1998-99**
-  **The facts**
-  **Prevent bicycle crashes (DOT HS 808-607)**
-  **Safe bicycling starts early (HE0081)**
-  **Choosing the right size bicycle for your child (HE0080)**
-  **Bicycle safety myths and facts (HE0076)**
-  **Sprocket man (009302)**
-  **Bucklebear's rules for cycling**
-  **Helmet safe with Bucklebear**
-  **Biking with Bucklebear**

-  **Bike like the best**
-  **Bicycle safety: What every parent should know (John Williams)**
-  **Oregon bicyclist's manual**
-  **The best bicyclist on earth**
-  **Share the road, share the air (Morris County Bicycle Safety Program)**
-  **So you're going to leave your bike at home today (Morris County Bicycle Safety Program)**
-  **Pocket guide: Safe bicycling in Nevada**
-  **Save a life like yours with Sally and friends: Activity book**
-  **Sam's adventures through Nevada: Safe pedaling in Nevada**
-  **Bicycle safety: A wheely good idea (HS-213)**
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-  **Berton the big wheel (Stock #3208)**
-  **Bike basics: A guide to safe bicycling for ages 10-15 (Stock #3279)**
-  **Herbert gets his glopp: A safe bike riding story (Stock #3278)**
-  **Getting there safely by foot, by bike, by bus, by car**
-  **Team helmet bike safety book**
-  **Badger bicycle tips (HS-215)**
-  **From A to Z by bike**
-  **Florida cycling tips: Staying alive on the roads**
-  **Delaware bicycle driver's manual**
-  **Drive your bicycle safely**
-  **Bicycling: Safe and easy**

-  **Let's learn more about bike driving**
-  **Street smarts: Bicycling's traffic survival guide (John S. Allen)**
-  **Safe bicycling in Chicago (Also available in Polish and Spanish)**
-  **Colorado bicycling manual: A guide for all trail and road users**
-  **Safe kids are no accident**
-  **Sharing the Road Safely: New York State pedestrian, bicycle and in-line skating laws [C-77]**
-  **The University of Montana cyclist's survival guide**
-  **Florida driver's handbook**
-  **North Carolina driver's handbook**
-  **Oregon driver manual**
-  **Illinois bicycle rules**
-  **New York State driver's manual [MV-21 (3/96)]**
-  **New Jersey bicycle manual**
-  **1998 California driver handbook**
-  **The Minnesota peace officer's guide to bicycle traffic management (Kirby Beck)**
-  **Injury-control recommendations: Bicycle helmets (Centers for Disease Control and Preventio**
-  **Injuries to bicyclists: A national perspective (Susan P. Baker, Guohua Li, Carolyn Fowler,**
-  **Wisconsin bicycle planning guidance**
-  **State legislative fact sheet: Bicycle helmet use law**
-  **Use of bicycle stress level to evaluate street compatibility for bicyclists (Alex Sorton)**
-  **Bibliography of helmet documents**
-  **Bicycle helmet campaign guide**

-  **Helmet program toolkit**
-  **Bicycle safety-related research synthesis (FHWA-RD-94-062, A. Clarke and L. Tracy)**
-  **Making streets that work**
-  **Oregon bicycle and pedestrian plan**
-  **Fairfax County Police Department Bike Safety Team**
-  **What needs to be done to prevent alcohol/drug related pedestrian and bicycle crashes?**
-  **Road hazard identification project**
-  **Bicycle facilities planning and design handbook**
-  **Traditional neighborhood development street design guidelines**
-  **Traffic engineering handbook (Institute of Transportation Engineers)**
-  **Manual on uniform traffic control devices for streets and highways (FHWA-SA-89-006)**
-  **Highway safety design and operations guide (ISBN 1-56051-041-2)**
-  **Campus biking: Challenges and Strategies. The Campus Bike-Right Project at Cornell Univers**
-  **Bicycle suitability criteria for state roadways in Texas (Research Report 3988-S)**
-  **Guide for the development of bicycle facilities**
-  **A policy on geometric design of highways and streets**
-  **Traffic calming state-of-the-art (R. Ewing and C. Kooshian)**
-  **Implementing bicycle improvements at the local level (FHWA-RD-98-105), J. Williams, B. Bur**
-  **Traffic Safety Facts 1997: Pedalcyclists**
-  **Access management. . . A key to safety and mobility**
-  **Bicycle and pedestrian provisions of the federal-aid program [FHWA-PD-98-049, HEP-10/8-98 (**
-  **Incorporating consideration of bicyclists and pedestrians into education programs**

-  **The bicycle compatibility index: A level of service concept. Implementation manual.**
-  **Development of the bicycle compatibility index: A level of service concept. Final Report.**
-  **Training programs for bicycle safety**
-  **North Carolina bicycle facilities planning and design guidelines**
-  **Lincoln bicycle routes**
-  **South-east Morris County bicycle suitability map**
-  **Chicago bicycling map: Share the road**
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-  **Sally says: Save a life like yours**
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-  **Bike safely first ride, every ride**
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-  **Official bike safety ID**
-  **Bicycle owner's identification (Stock #3284)**
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-  **10 smart routes to bicycle safety**
-  **Use your head and wear a helmet**
-  **Head Smart® public service announcement (item #1VHSP)**
-  **Davis bike map**
-  **Safety first. . . Always!**

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-  **Conducting community audits (a set of three videos)**
-  **Video on the impaired bicyclist and appropriate police responses**
-  **Video promoting bicycle safety by parents**
-  **Video promoting bicycle safety by community and civic organizations**
-  **Video promoting bicycle safety by elected officials**
-  **Video promoting bicycle safety by traffic court judges**
-  **Video promoting bicycle safety by health care officials**
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-  **Video promoting bicycle safety by pre-school administrators**
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Development of the Guide

The Bicycle Safety Resource Guide was prepared for the bicycle safety professional and others who are proactive in developing programs at the state or community level. It provides a compilation of existing and proposed countermeasures that can be used by a variety of implementers to help solve a wide range of bicycle safety problems.

The guide was prepared for the National Highway Traffic Safety Administration (NHTSA) and Federal Highway Administration (FHWA) under subcontract between Dunlap and Associates, Inc., and the Highway Safety Research Center, University of North Carolina, as part of Task Order 9 of Federal Highway Administration Contract DTFH61-92-C-00138, Development and Test of Bicycle Safety Countermeasures. Primary participants in the development of this guide were:

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Requests for countermeasures were made to literally hundreds of bicycle safety professionals both by telephone and at national conferences. Therefore, the resource guide represents a compilation of countermeasures obtained from numerous bicycle safety professionals throughout the United States. It also contains suggestions for the development of additional countermeasures that specific implementers might use to address specific bicycle safety problems.

Existing countermeasures were received over a period of three years. Therefore, although every effort has been made to be accurate, the current availability of each countermeasure from the indicated source can't be guaranteed. In addition, some countermeasures are specific to a state or other jurisdiction and can't be used intact in other areas. Such countermeasures were included where their coverage was considered generic and easily adaptable to other jurisdictions or where their design could serve as a model.

Forms are included in the guide for the user to provide feedback. NHTSA and FHWA will welcome information on countermeasures not presently included in the guide. Comments on the design, use and contents of the guide will also be welcome.



Organization and Use of the Guide

The resource guide has three major dimensions: problem areas, implementers and countermeasure format/use. The highway safety professional can initiate a search on any one of the three dimensions. In addition, the searcher can use the hyperlinks (text in a different color) to obtain specific information on specific topics.

In developing the resource guide, it was determined that countermeasure implementation will likely be activated by a specific problem or event that occurs in a community and that any one event might represent a variety of problem areas that could be accessed. In all, 40 problem areas were identified. They were organized in the following nine broad categories:

- § [Bicyclist errors](#)
- § [Motorist errors](#)
- § [Impairment](#)
- § [Visibility/conspicuity](#)
- § [Special locations](#)
- § [Geometrics/operations](#)
- § [High injury severity](#)
- § [Target group](#)
- § [Other](#)

For those professionals who are accustomed to working with NHTSA/FHWA crash types, a table showing the relationship between the problem areas and crash types is provided.

It was also determined that countermeasures should be accessed by the agency or group that might implement the countermeasure. The following were identified as potential implementers of countermeasure programs:

- § Engineering/architecture groups
- § Public highway agencies
- § Planning groups
- § Public highway safety groups
- § Private highway safety groups
- § Private/corporate organizations
- § Health care organizations
- § Law enforcement/adjudication agencies
- § School systems
- § Bicycle-related organizations
- § Community and civic groups
- § Elected officials
- § The media
- § Bicycle/equipment manufacturers/sellers
- § Driver regulatory agencies

Finally, it was determined that the countermeasures should be accessed by their format or use. The following eight format/use categories were defined:

- § Bicyclist training
- § Implementer training
- § Videos
- § Brochures
- § Flyers
- § Booklets
- § Reports/guides

§ [Other materials](#)

Problem Area Descriptions

In all, 40 problem areas were identified as being potential triggers for a countermeasure search. The 40 problem areas are briefly described in the following paragraphs.

Bicyclist Errors

- 1. Midblock Rideout.** The bicyclist rides into the street from a driveway (or alley) or enters the street midblock from the sidewalk or curb and presents a short time exposure to the motorist. The bicyclist typically rides into the roadway without stopping and searching adequately for motor vehicles. The motorist typically assumes that any entering traffic will yield and therefore also fails to search. A visual screen, such as a parked car or vegetation, is frequently a contributing factor. The problem occurs at both residential and commercial driveways. Most midblock rideout crashes occur to children under 15 years of age, but any age can be involved. Frequently, the rideout occurs from the bicyclist's own driveway. A play vehicle or "big wheel" is often involved.
- 2. Midblock Turns.** The bicyclist is riding midblock and suddenly turns or swerves left into the path of a motorist overtaking from the rear or approaching from the front. The problem can also occur when a wrong-way bicyclist makes a right turn in front of an overtaking or approaching motorist. The bicyclist sometimes loses control. The crashes tend to involve children. They occur both at junctions in the roadway (for example, at driveways) and where no junction exists. In virtually all cases, the bicyclist fails to search before the turn or provide any overt cues that the turn is about to take place. The motorist sees the bicyclist and could easily avoid a crash but has no idea that a sudden turn is imminent.
- 3. Intersection Rideout/Negotiation.** The bicyclist fails to stop at a stop sign or signal or fails to negotiate an intersection safely. In the latter case, there can be several possible causes. First, the bicyclist fails to clear the intersection before the light turns green for opposing traffic and is therefore trapped in the intersection. Second, the bicyclist enters the intersection in front of a vehicle that has stopped to let the bicyclist pass and then is hit by a vehicle in the next lane whose driver cannot see the bicyclist because of the screening effect of the stopped vehicle (the multiple threat crash). Finally, the bicyclist fails to negotiate an intersection turn, either by cutting the corner or swinging too wide. Most intersection rideout/negotiation crashes occur to children under 15 years of age.
- 4. Wrong-Way Riding.** The bicyclist rides facing traffic due either to lack of knowledge of the rules of the road, the difficulty of crossing the road, or fear of overtaking traffic. A crash frequently occurs at an intersection or driveway when the motorist confronts the bicyclist from an unexpected direction--either

riding in the roadway or on the sidewalk. Crashes also occur when the motorist makes a left turn in front of the bicyclist or makes a right turn, including a right turn on red. Crashes occur when the motorist drives out of a driveway or stops at an intersection stop sign but does not yield. They also occur when the bicyclist rides out from a stop sign.

Motorist Errors

5. Improper Turns. The motorist turns in front of the bicyclist who is traveling either in the same direction as the motor vehicle or in the opposite direction. At an intersection, the turn can be left or right, including a right turn on red. The motorist can also be making a turn midblock to enter or exit a driveway or alley. The motorist may run a stop sign or signal at an intersection while making the turn. A crash may occur because the motorist cuts the corner or swings wide while turning. The critical element is that the motorist workload is heightened by the turning maneuver leaving insufficient attention capacity to deal with a bicycle threat.

6. Failure to Search. The motorist simply fails to search adequately for other roadway users, and that is the major cause of the crash problem. This motorist error is commonly associated with several crash types. It can occur when the motorist is proceeding straight ahead or is turning into or out of an intersection, driveway or alley. The turn can be left or right, including right turn on red. The motorist may cut the corner when making a left turn. The motorist frequently fails to search adequately, particularly for bicycles, when entering or exiting on-street parking, when backing, or when in a non-roadway location (for example, a parking lot). The problem is often generated because the bicyclist is riding the wrong way on the street and therefore is in an unexpected location out of the motorist's normal scan pattern. The motorist may run a sign or signal without searching or, alternatively, the motorist may obey the sign or signal but fail to yield to a bicyclist because the bicyclist is not recognized.

7. Right Turn on Red. The motorist stops at a controlled intersection, searches for traffic approaching from the left and proceeds to make a right turn on a red signal without searching to the right. The motorist then strikes a bicyclist approaching from the right rear and overtaking the car on the right. By not searching in all directions, the motorist may also strike a bicyclist riding the wrong way in the roadway or on the sidewalk.

8. Excessive Speed. The motorist is driving too fast to respond quickly enough to avoid hitting a bicyclist. The bicyclist may be riding in the roadway or may appear suddenly in the roadway. In the latter case, the bicyclist rides out from a driveway, alley or sidewalk midblock, often on a play vehicle. Either the motorist or bicyclist may be traveling in the wrong direction. The motorist may be overtaking the bicyclist and simply may not see the bicyclist or may misjudge the space required to pass the bicyclist. The motorist may lose control of the vehicle.

9. Overtaking, Failure to See. The motorist is overtaking the bicyclist and fails to see the bicyclist until it is too late to take evasive action. This problem accounts for a large number of fatal crashes. Although the problem is more frequent during darkness, it also occurs during daylight. The crashes tend to occur to bicyclists aged 15 and over. Poor bicyclist conspicuity can be a contributing factor as can excess speed and alcohol use on the part of the motorist.

10. Misjudging Passing Space. The motorist strikes the bicyclist because of a misjudgment of the space needed to overtake and pass the bicyclist. The motorist assumes that the motor vehicle can safely pass the bicyclist without changing lanes. The bicyclist is usually struck by the extreme right front portion of the motor vehicle. The crashes tend to occur to bicyclists aged 15 and over.

Impairment

11. Bicyclist Alcohol/Drugs. The bicyclist is impaired by alcohol or drugs and is struck by a motor vehicle after losing control of the bicycle or riding it into an extremely hazardous location. The bicyclist is frequently riding the wrong way or rides out into the street over the shoulder or curb. Crashes also occur to an intoxicated bicyclist when the motorist makes a turn, overtakes a bicyclist, or obeys a stop sign at an intersection but fails to yield to the bicyclist.

12. Motorist Alcohol/Drugs. The motorist is impaired by alcohol or drugs and hits a bicyclist. The motorist may be overtaking the bicyclist and may not detect the bicyclist or may misjudge the space required to pass safely. The motorist may lose control of the vehicle, obey a stop sign but not yield to the bicyclist or make a left turn in front of a bicyclist. The bicyclist may ride out into the roadway from the sidewalk or over the shoulder/curb.

Visibility/Conspicuity

13. Visual Screens. A visual screen is an object that blocks the bicyclist and motorist views of each other. Examples include parked cars, cars in adjacent lanes, sidewalk furniture, fences, vegetation, signs and street clutter. Visual screen problems occur both in roadway and non-roadway situations (for example, parking lots). The views from residential and commercial driveways and alleys are frequently blocked by visual screens. Therefore, bicyclists who ride out from driveways and alleys without searching around visual screens are frequently struck by motorists who simply don't know that they are there. Bicyclists on play vehicles are one component of this problem because these vehicles are typically low to the ground and difficult to detect. Bicyclists riding on sidewalks are often not seen by motorists until they suddenly enter the street because they are screened by a variety of objects. Both wrong-way bicyclists and wrong-way motorists are often screened from each other's view. Views at intersections can also be

blocked.

14. **Daytime Conspicuity.** The bicyclist simply isn't conspicuous enough in the daytime, that is, the bicyclist doesn't stand out enough from the background. As a result, the bicyclist is not noticed by the motorist in time to avoid a crash. These bicyclists are certainly above the visual threshold, but still fail to prompt sufficient detection and recognition from motor vehicle drivers. Motorists often fail to see bicyclists who are riding on play vehicles, probably because they are small, low to the ground and fast-moving. The motorist can fail to see the bicyclist when executing a left turn in front of the bicyclist because the bicyclist is camouflaged against vegetation or hidden in shadows. Daytime conspicuity problems can occur when motorists drive out of driveways or alleys as well as when they obey stop signs at intersections but fail to yield to bicyclists. Motorists also frequently fail to detect bicyclists that they are overtaking.

15. **Nighttime Conspicuity.** The bicyclist is not conspicuous at night often because the bicycle and bicyclist are near or below the visual threshold for detection. Sometimes, parts of the bicycle, particularly the retroreflectors, are visible but do not stand out from among similar competing signals. The motorist can fail to see a bicyclist when the motorist is turning left in front of either an overtaking bicyclist or a bicyclist who is approaching from the front. Nighttime conspicuity can be a problem when the motorist is backing, driving out from a driveway or alley, running a sign or signal at an intersection, and overtaking a bicyclist.

Special Locations

16. **High Risk Locations.** Some bicycle/motor vehicle problems occur because the riding location is inherently risky for a bicycle. The types of high risk locations vary by community. Generic locations that are typically high risk include busy intersections, high speed roads (particularly if they are narrow), sidewalks and residential and commercial driveways. Particular high risk locations can be generated by ongoing road construction, poor road conditions, poor lighting, flawed access management or faulty roadway design.

17. **Rural Roads.** Rural roads have a disproportionately high rate of serious bicyclist crashes--often due to high speeds and poorly designed or maintained conditions. The crash may involve an overtaking motorist who does not detect the bicyclist or who misjudges the space required to pass the bicyclist. Counteractive evasive actions may result or the bicyclist's path may be obstructed. Crashes on rural roads can involve wrong-way bicyclists and bicyclists who are making unexpected turns. Rural road crashes also occur when either a bicyclist or a motorist exits a driveway.

18. **Residential Driveways.** Residential driveways are dangerous places, particularly for young bicyclists.

Crashes that occur largely involve young children who ride into the street from the driveway or sidewalk without first looking for traffic. The children are frequently riding on play vehicles. A visual screen such as a parked car is often involved in these crashes.

19. Commercial Driveways. Crashes occur when a bicyclist or motorist exits a commercial driveway without properly searching for other traffic. The motorist is typically looking for a gap in traffic and doesn't see the bicyclist who may be approaching on the sidewalk--often from the wrong direction. Any motorist search usually fails to include the sidewalk. A visual screen can be a contributing factor.

20. Sidewalks. Many bicyclists travel on the sidewalk either out of fear of roadway traffic or for general convenience. Sidewalk riding may be encouraged, tolerated or prohibited by local ordinances and practices. Children on play vehicles often ride on sidewalks. Bicyclists who travel on the sidewalk sometimes merge into traffic directly from the sidewalk. At other times, they ride across intersections and driveways where motor vehicles are also traveling. Sidewalks are out of the normal search pattern for many motorists, and the bicyclist frequently isn't seen until it is too late. Visual screens are often a contributing factor to this problem area.

21. College Campus. The bicycle can be the primary mode of transportation for many individuals on a college campus. Bicyclists therefore ride at all times of day, including in low light and night conditions, and often without bicycle lights. Nighttime crashes are common. Many crashes occur at controlled intersections with the bicyclist at fault for disobeying the traffic control device. The motorist is frequently at fault by making a left turn into the lane of the oncoming bicyclist. Many bicyclists report losing control as a cause of a crash. Campus bicycle paths are usually shared with pedestrians and may require adequate marking to avoid conflicts.

22. On-Street Facilities. Problems that occur with on-street bicycle facilities (bicycle lanes and paved shoulders) are due to poor roadway facility design, poor maintenance, improper motorist use of bicycle facilities, and unsafe motorist or bicyclist practices. Often, members of the public will lobby for (or against) additional on-street facilities without regard to whether they are warranted or how their design will be executed. High traffic volumes and speeds, inadequate sight triangles at driveways and intersections, excessive turning speeds at intersections and inadequate night lighting can all contribute to reduced bicycle on-street safety.

23. Off-Street Facilities. Off-street collisions with motor vehicles occur at trail/roadway crossings. Inadequate sight distances at these crossings, excessive vehicle turning speeds and inadequate night lighting can contribute to bicycle/motor vehicle problems. Collisions with other bicyclists and falls occur on the trail because of unsafe riding practices, poor trail design or poor maintenance.

24. Bridges and Tunnels. Crashes on bridges and tunnels often result from falls that occur because of unsafe surface conditions, confined walkways, steep grades and environmental conditions (for example, high winds). Open channel steel bridge decking and expansion joints are especially troublesome. Many bridges lack paved shoulders, gather debris and have other design and maintenance problems. Lack of separation of bicyclists and motorists on higher speed bridges contributes to the problem.

Geometrics/Operations

25. Geometrics/Roadway Design Increases in traffic volume and speed have increased the dangers of a bicycle/motor vehicle crash. Roadway designs that encourage excessive motorist speeds (including turning speeds) contribute to this problem as do inadequate sight triangles at intersections and driveways.

26. Operations/Maintenance. Bicyclists ride in the right-most portion of the roadway where conditions are often poorest. Maintenance of roadways frequently lags behind construction. Appropriate bicycle detectors can be lacking where needed. The poor conditions on the roadway due to operations and maintenance problems can create high-risk bicycling.

High Injury Severity

27. Fatal Crashes. Fatal crashes typically generate a significant public outcry and demands for change. Many fatal bicyclist crashes involve overtaking motorists who do not detect the bicyclist. They also include midblock rideouts from residential driveways and sidewalks, bicyclist rideouts from stop signs at intersections, motorist unexpected right turns and wrong-way bicyclists. In fatal crashes involving children, the child typically makes the primary error. In fatal crashes involving adults, the motorist typically makes the primary error. Alcohol use by the bicyclist and/or motorist is often a factor.

28. Nighttime Crashes. Nighttime crashes often become a focal point because of the obvious mismatch between a bicycle and a motor vehicle. In many nighttime crashes, an overtaking motorist fails to detect the bicyclist. Nighttime crashes also involve motorists who are backing, making unexpected left turns in front of bicyclists, obeying stop signs but failing to yield to bicyclists at intersections, and losing control of their vehicles. Wrong-way bicyclists are also involved in nighttime crashes. The night detection problem is most critical on higher speed roadways. Alcohol use by the bicyclist and/or motorist is often a factor.

Target Group

29. **Pre-School Bicyclist.** The pre-school bicyclist is typically involved in crashes very close to home. Pre-school children usually ride play vehicles in driveways or on sidewalks in front of their homes or at nearby commercial establishments. They ride into the street from the driveway or sidewalk without stopping and looking for traffic. Since they are inexperienced bicyclists, they also make unexpected turns/swerves when they are in the roadway.

30. **Elementary School Bicyclist.** Elementary school children are often the focus of safety efforts because they are easy to reach in a school setting. The elementary school bicyclist is typically involved in crashes close to home, at nearby intersections and in nearby non-roadway locations (for example, parking lots). These crashes can involve the bicyclist riding out from a residential or commercial driveway (or over the shoulder/curb), riding out at an intersection controlled by a stop sign, and making an unexpected turn or swerve. The bicyclist also frequently rides facing traffic. The motorist may be backing. When the motorist is overtaking the bicyclist, both may initiate counteractive evasive actions. Both motorist and bicyclist can lose control of their vehicles.

31. **Middle School Bicyclist.** As with elementary school students, middle school pupils can be addressed with school-based programs. Since middle school bicyclists travel farther from home than their younger counterparts, they are exposed to both neighborhood and commercial district threats as well as those that occur in non-roadway locations (for example, parking lots). They therefore can be involved in almost any crash type including both those common to children and those common to adults. These include bicyclist rideouts from driveways and sidewalks, rideouts at intersections controlled by stop signs, bicyclist unexpected turns and swerves and wrong-way riding. They include crashes involving overtaking motorists, motorist turns and merges, motorist failure to yield to the bicyclist and backing motorists. The bicyclist can be trapped in an intersection when the light changes or can proceed past a stopped vehicle and then be hit by a vehicle in the next lane. The bicyclist may strike a slow or stopped vehicle. In addition, both motorist and bicyclist can lose control of their vehicles.

32. **High School Bicyclist.** Bicycling can be the main source of mobility for high school aged children who are too young to drive an automobile. High school bicyclists are exposed to both neighborhood and commercial threats including those that occur in non-roadway locations (for example, parking lots). Although they tend not to be involved in midblock rideout crashes that are common in young children, high school bicyclists can be involved in most other crash types. These include bicyclist unexpected turns and swerves, bicyclist losing control, and wrong-way riding. They include crashes involving overtaking motorists, motorist turns and merges, and motorist failure to yield to the bicyclist. The bicyclist can be trapped in an intersection when the light changes or can proceed past a stopped vehicle and then be hit by a vehicle in the next lane. The bicyclist may strike a slow or stopped vehicle.

33. **College Bicyclist.** College bicyclists frequently use their bicycles as their primary mode of transportation for traveling not only on campus but also in the surrounding community. Bicyclists therefore ride at all times of day, including in low light and night conditions, and often without bicycle

lights. Nighttime crashes are common. Many crashes occur at controlled intersections with the bicyclist at fault for disobeying the traffic control device. Motorists are frequently at fault by making turns in front of the bicyclist. Many bicyclists report losing control as a cause of a crash. Helmet use is low.

34. **Commuter Bicyclist.** Commuter bicyclists are exposed to significant night riding, riding in inclement weather and riding in peak hour traffic. The places and times of travel present high traffic volumes and speed and demand skill and experience on the part of the bicyclist. Commuters need to be proficient bicyclists. Motorist errors are frequently the cause of these crashes.

35. **Senior Bicyclist.** Senior bicyclists (aged 65+) are involved in less than 2% of all bicycle/motor vehicle crashes. The major error that senior bicyclists make is to turn left in front of the motorist. Motorists cause problems with senior bicyclists when they make right turns. Many crashes with seniors involve an overtaking motorist who may not detect the bicyclist. Motorists also cause problems for seniors both when they run signs and signals at intersections and when they obey the signs but fail to yield to bicyclists.

36. **Casual Adult Bicyclist.** Casual adult bicyclists may lack many of the skills needed to ride safely. Infrequent bicycling and complex traffic pose risks to casual adult bicyclists. High traffic speeds and poor sight triangles at intersections and driveways can compromise safety for these riders.

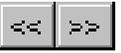
37. **Teenage Motorist.** Teenage motorists lack roadway experience and often overestimate their abilities. Many young drivers operate their vehicles too fast in critical areas, especially around schools and neighborhoods where many young unpredictable children are present. Teenage motorists are involved in crashes in which the bicyclist rides out from a driveway or sidewalk without stopping and searching, where the bicyclist is riding the wrong way, and where the bicyclist proceeds past a stopped vehicle and is struck by the vehicle in the next lane. Teenage motorists cause problems when they make unexpected left turns in front of oncoming bicyclists as well as right turns. When overtaking bicyclists, they are involved in crashes in which the bicyclist's path is obstructed and when both bicyclist and motorist take counteractive evasive actions.

38. **Bicyclist Parents.** Young children don't appreciate roadway dangers, and they make common errors when they ride their bicycles. They ride into the roadway without stopping and searching for traffic, and traffic moves too quickly for motorists to make safe responses and avoid a crash. Lack of parental supervision exacerbates the problem.

Other

39. Awareness. In order to improve bicycle safety, awareness is needed in at least three areas. The first is knowledge of the dangers of bicycling, that is, the bicycle is not a toy and fatalities and serious injuries result from bicycle/motor vehicle crashes. The second is understanding of the state of the art of bicycle facilities and how well-designed facilities can improve safety. The third is knowledge of existing countermeasures that are worth implementing and that will help to correct bicycle safety problems. One implementer group may need to obtain information from another group in order to improve awareness in one or more of these areas. For example, in order to learn about the severity of the bicycle crash problem, the media and other groups can obtain bicycle crash data from police records or from national, state or local highway safety records. In addition, each implementer group will need to ensure that its group members are fully aware of the specific bicycle safety problems that they will address and of effective programs that they can use to counter those problems.

40. Helmet Use. Head injury is the leading cause of death in bicycle crashes and is the most important determinant of bicycle-related death and permanent disability. A bicycle helmet is the single most effective safety device available to reduce head injuries and deaths. As these facts become better known, attempts will increase to get more bicyclists of all ages to wear an approved helmet.



Implementer Descriptions

One of the first activities that must be accomplished by the bicycle safety professional is identification of resources in the community or jurisdiction that can support bicycle safety countermeasure programs. Such support might range from actual implementation of specific programs to provision of financial help, publicity or volunteer labor. In any event, a resource directory indicating the name and address of each potential implementer group and the name and telephone number of the personal contact should be maintained in an up-to-date status.

In all, 15 potential implementers of bicycle safety countermeasures were identified in the development of this resource guide, as follows:

1. Engineering/architecture groups - organizations that deal with roadway design issues, for example, the Institute of Transportation Engineers (ITE) and the American Association of State Highway and Transportation Officials (AASHTO).
2. Public highway agencies - public groups that deal with roadway operations issues, for example, departments of transportation.
3. Planning groups - organizations that deal with city and land use planning, for example, the American Planning Association and municipal planning offices.
4. Public highway safety groups - public organizations focusing primarily or exclusively on highway safety, for example, Governor's Highway Safety Representatives and Community Traffic Safety Programs/Teams (CTSPs/CTSTs).
5. Private highway safety groups - private organizations focusing on highway safety, for example, the National Safety Council, the American Automobile Association (AAA) and the Safe Kids Coalition.
6. Private/corporate organizations - private or business groups that could or do support highway safety activities, for example, fast food franchises and major corporations.

7. Health care organizations - health groups that could or do support highway safety, for example, hospitals, physicians and other health care personnel, pediatric associations, health insurers, emergency medical services and pharmaceutical companies.
8. Law enforcement/adjudication - state/local law enforcement/adjudication personnel or groups, for example, police departments and judges.
9. School systems - state and local education personnel or groups, for example, curriculum specialists, school administrators and Parent Teacher Associations/Organizations (PTAs/PTOs).
10. Bicycle-related organizations - public and private organizations whose major focus is on the bicyclist and bicyclist problems, for example, the League of American Bicyclists, state and local bicycle advocacy organizations and bicycle clubs.
11. Community and civic groups - service organizations, for example, Kiwanis, Rotary and national/state/local 4-H organizations.
12. Elected officials - local, county, state and federal elected officials.
13. Media - mass and localized media capable of imparting information to bicyclists, drivers, and the general public.
14. Bicycle/equipment manufacturers/sellers - manufacturers and sellers of bicycles and related equipment including clothing and retroreflective materials.
15. Driver regulatory agencies - public organizations focusing on driver issues, such as motor vehicle departments.

Coordination among implementers should be ensured both in the development and implementation of countermeasures. For example, if engineers develop a new countermeasure, efforts should be coordinated with educators, enforcers and other implementers so that appropriate behaviors are learned by the public. In addition, engineers should understand how highway design features affect the operation of a bicycle so that facilities are appropriately designed for bicycle use and do not encourage inappropriate actions. All

implementer groups need to be aware of the risks of bicycling, the state of the art of bicycle facilities and existing countermeasures that are worth implementing. Coordination in the development and implementation of countermeasures will increase the likelihood of program effectiveness.



Countermeasure Format/Use Descriptions

The resource guide user can obtain descriptions of the individual countermeasures listed or of all countermeasures in the following eight format/use categories:

- § Bicyclist training--materials and programs where the trainee is the bicyclist, the bicyclist's parents or the motorist

- § Implementer training--materials and programs where the trainee is the implementer of the countermeasure program, that is, a planner, designer, enforcer or instructor of the program

- § Videos--videotapes designed to be shown separately, that is, not those needed as part of training programs

- § Brochures--single sheets of paper folded, typically, into three parts

- § Flyers--single sheets of paper unfolded

- § Booklets--stapled, stitched or otherwise bound materials prepared for the bicyclist, bicyclist's parents or motorist

- § Reports/guides--stapled, stitched or otherwise bound materials prepared for the implementer of bicycle countermeasures, that is, a planner, designer, enforcer or program instructor

- § Other materials-- hang tags, identification cards, maps, posters, public service announcements (PSAs), and other materials that did not fit into the above categories.



Countermeasure

NHTSA and FHWA want to maintain the resource guide in an up-to-date status. Please advise them of existing and proposed countermeasures that should be added to the guide. Click on the “Print” button on the toolbar with the mouse to print a copy of the Countermeasure form.

Status: Existing _____ Proposed _____

If this is a proposed countermeasure, was it one that was recommended in the resource guide? If so, which one?

Title:

Source:

Date:

Summary description:

Major content points and behaviors:

Which of the 40 problem areas does the countermeasure address (list numbers as they appear in the problem descriptions)?

Which of the 15 implementer groups would likely implement this countermeasure (list numbers as they appear in the implementer descriptions)?

Person submitting form: Name:

Address:

Telephone: () Fax: ()

E-mail:

Please send completed form to: Dr. Marvin Levy, National Highway Traffic Safety Administration, Code NTS-31, 400 Seventh Street, SW, Washington, DC, 20590, Fax: (202) 366-7096, e-mail: mlevy@nhtsa.dot.gov



Comments

NHTSA and FHWA are interested in your opinions about the guide. Please provide any comments that you feel may be helpful, for example, ideas for improving the design of the guide or for maintaining it in an up-to-date status. Click on the “Print” button on the toolbar with the mouse to print a copy of the Comments form.

Person submitting form: Name:

Address:

Telephone: () Fax: ()

E-mail:

Please send completed form to: Dr. Marvin Levy, National Highway Traffic Safety Administration, Code NTS-31, 400 Seventh Street, SW, Washington, DC, 20590, Fax: (202) 366-7096, e-mail: mlevy@nhtsa.dot.gov



Introduction to Relationship Tables

Tables are provided that show the problem areas identified in this study and the NHTSA/FHWA crash types that are most prevalent for each problem. The determination was made largely from a study conducted by Cross and Fisher in the 1970's. In that study, a comprehensive analysis of bicycle crashes was made and a system of crash typing was developed. As subsequently revised and improved by NHTSA and FHWA, the system is in use today.

The tables list each of the crash types and each of the problem areas as the two sides of a matrix. An "X" in the table for a given problem area and crash type means that the Cross and Fisher data show a relationship between the problem area and the crash type, that is, that the specified crash type is typically represented in the specified problem area. Where the relationship between the problem area and the crash type is not obvious, footnotes explain the criteria that were used.

For some of the problem areas, there were no applicable Cross and Fisher data. Where possible, data for these problem areas were obtained from other sources. For example, data on colleges were obtained from a study conducted by Chaplin at Cornell University. Additional data on crash types and alcohol were obtained from a study by Hunter et al for FHWA. Selected data were obtained from a study by Cleven and Blomberg for FHWA, and several of the Cross and Fisher relationships were checked against recent General Estimates System (GES) data reported in that study. When other than Cross and Fisher data were used in the table, the X appears in parentheses and the source of the data is footnoted. Where no data were located, the column for that problem area is left blank.

The four references used to create the table follow:

§ Cross, K.D. and Fisher, G. A study of bicycle/motor vehicle accidents: Identification of problem types and countermeasure approaches. U.S. Department of Transportation, National Highway Traffic Safety Administration, Washington, DC, Contract No. DOT-HS-4-00982, Volumes 1 and 2, September 1977.

§ Hunter, W.W., Pein, W.E. and Stutts, J.C. Bicycle crash types: A 1990's informational guide. U.S. Department of Transportation, Federal Highway Administration, Washington, DC, Contract No. DTFH61-92-Y-30048, Publication No. FHWA-RD-96-104, April 1997.

§ Chaplin, L.E. Campus biking: Challenges and strategies. The campus bike-right project at Cornell University, Ithaca, NY. Cornell University, 326 Riley-Robb Hall, Ithaca, NY, 1998.

§ Cleven, A.M. and Blomberg, R.D. Review of the bicycle crash problem. U.S. Department of Transportation, Federal Highway Administration, Contract No. DTF61-92-C-00138, Memorandum Report, September 1996.



Definition Table

Bicyclist Training

Proposed Countermeasure

Bicycle Safety: Computer-based self-instruction program for middle school and Code: P-1
high school students

Summary description: Existing education programs address the crash types that typically involve middle school and high school students. However, classroom instruction on bicycle safety may be even more difficult to implement in middle schools and high schools than in elementary schools. A computer-based self-instruction program may be a more effective way to accomplish bicycle safety education for middle school and high school students. Such a program will be made feasible by teenagers' increasing familiarity with computers and by the availability of computers at home and in school.

Major contents: A comprehensive self-instruction program could be stored on a single CD, with no need for hard copy materials other than a brief one-page document that describes the procedure for installing the disc and activating the program. The self-instruction program that is envisioned will have the following characteristics:

§ One section of the CD will contain dynamic illustrations of each crash type that frequently involves teenage bicyclists along with narration that explains the nature of the crash generation process (including the various causal factors).

§ A second section of the program will be designed to teach bicyclists to recognize, in complex visual scenes, a variety of visual cues that signal the presence of potentially hazardous situations. The visual cues to hazards will be closely tied to the relevant crash types.

§ A third section of the program will focus on the low level of bicycle conspicuity during both daytime and nighttime. The main objectives of this section will be to teach bicyclists that motorists often fail to see bicyclists even when lighting conditions are good and that the lighting equipment required by law does not increase conspicuity enough to ensure that motorists will see bicyclists during darkness.

§ Each section of the self-instruction program will be followed by test items designed to assess students'

understanding of the instructional material presented. Ideally, the computer will be programmed to score the test items and to provide remedial instruction based on the students' responses.

Bicyclist Training

Proposed Countermeasure

Bicycle safety: Insert on bicycle safety for offender school training Code: P-2

Summary description: Many law enforcement agencies conduct traffic schools that are attended by motorists who are cited for traffic violations. However, few of these traffic schools present instruction that is aimed specifically at reducing bicycle/motor-vehicle crashes. These instructional materials on bicycle/motor-vehicle crashes will be designed to be incorporated into the curriculum of existing traffic schools for motorists. In addition, a few law enforcement agencies conduct traffic schools that are attended only by bicyclists who are cited for traffic violations. These training materials will be designed to cover information for both motorists and bicyclists. Thus, the materials will help law enforcement officers develop a traffic school solely for bicyclists.

Major contents: The training materials will educate motorists and bicyclists about common errors and about the undesirable consequences of motorist and bicyclist violations, especially the injuries that bicyclists sustain when they collide with motor vehicles. The following topics will be covered:

- § The magnitude of the bicycle/motor vehicle crash problem
- § Common motorist errors
- § Remedial behaviors for the common motorist errors
- § Common bicyclist errors
- § Remedial behaviors for the common bicyclist errors
- § Common child bicyclist problems
- § Impairment problems--motorist and bicyclist
- § Visibility/conspicuity problems
- § Problems at special locations

Bicyclist Training

Proposed Countermeasure

Alcohol: Module on bicycle safety for trainers of DWI offenders Code: P-3

Summary description: This module will be designed for insertion in state/local programs for DWI offenders. It will explain the dangers of riding a bicycle after drinking and will be designed to discourage offenders who lose their licenses from using their bicycles as a mode of transportation.

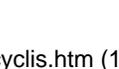
Major contents: The following major topics will be covered:

- § The magnitude of the bicycle alcohol problem
- § The impaired bicyclist's risk
- § The importance of helmets
- § The importance of conspicuity and the need for lights on a bicycle if used at night



Countermeasures

Bicyclist Errors

Implementer Category	Problem Area			
	Bicyclist Errors			
	Midblock Rideout	Midblock Turns	Intersection Rideout/ Negotiation	Wrong-way Riding
Engineering/ Architect Groups				
Public Highway Agencies				
Planning Groups				
Public Highway Safety Groups				
Private Highway Safety Groups				
Private or Corporate Business				
Healthcare Organizations				
Law and Adjudication				
Implementer Category	Bicyclist Errors			
	Midblock Rideout	Midblock Turns	Intersection Rideout/ Negotiation	Wrong-way Riding
				
Schools				
Bike Related Organizations				
Community/Civic Groups				
Elected Officials				
Media				

Bicyclist Errors

Manufacturers and Sellers				
Driver Regulatory Agencies				

Bicyclist Errors (Engineering/Architecture Group)

Bicyclist Errors			
Midblock Rideout	Midblock Turns	Intersection Rideout/ Negotiation ¹	Wrong-way Riding
			
			

Bicyclist Errors (Public Highway Agencies)

Bicyclist Errors

Midblock
Rideout

Midblock
Turns

Intersection
Rideout/
Negotiation¹

Wrong-way
Riding



Bicyclist Errors (Planning Groups)

Bicyclist Errors			
Midblock Rideout	Midblock Turns	Intersection Rideout/ Negotiation ¹	Wrong-way Riding
			
			

Bicyclist Errors (Public Highway Safety Groups)

Bicyclist Errors			
Midblock Rideout	Midblock Turns	Intersection Rideout/Negotiation*	Wrong-way Riding
			
			

Bicyclist Errors (Private Highway Safety Groups)

Bicyclist Errors			
Midblock Rideout	Midblock Turns	Intersection Rideout/Negotiation ¹	Wrong-way Riding
			



Bicyclist Errors (Private or Corporate Business)

Bicyclist Errors			
Midblock Rideout	Midblock Turns	Intersection Rideout/ Negotiation ¹	Wrong-way Riding
			



Bicyclist Errors (Healthcare Organizations)

Bicyclist Errors			
Midblock Rideout	Midblock Turns	Intersection Rideout/ Negotiation ¹	Wrong-way Riding
			
			

Bicyclist Errors (Law and Adjudication)

Bicyclist Errors			
Midblock Rideout	Midblock Turns	Intersection Rideout/ Negotiation ¹	Wrong-way Riding
			
			

Bicyclist Errors (Schools)

Bicyclist Errors			
Midblock Rideout	Midblock Turns	Intersection Rideout/ Negotiation ¹	Wrong-way Riding
			
			

Bicyclist Errors (Bike Related Organizations)

Bicyclist Errors			
Midblock Rideout	Midblock Turns	Intersection Rideout/ Negotiation ¹	Wrong-way Riding
			
			

Bicyclist Errors (Community/Civic Groups)

Bicyclist Errors			
Midblock Rideout	Midblock Turns	Intersection Rideout/ Negotiation ¹	Wrong-way Riding
			



Bicyclist Errors (Elected Officials)

Bicyclist Errors			
Midblock Rideout	Midblock Turns	Intersection Rideout/ Negotiation ¹	Wrong-way Riding
			
			

Bicyclist Errors (Media)

Bicyclist Errors			
Midblock Rideout	Midblock Turns	Intersection Rideout/ Negotiation ¹	Wrong-way Riding
			
			

Bicyclist Errors (Manufacturers and Sellers)

Bicyclist Errors

Midblock
Rideout

Midblock
Turns

Intersection
Rideout/
Negotiation¹

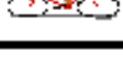
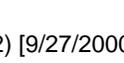
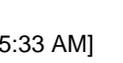
Wrong-way
Riding



Bicyclist Errors (Driver Regulatory Agencies)

Bicyclist Errors			
Midblock Rideout	Midblock Turns	Intersection Rideout/ Negotiation ¹	Wrong-way Riding
			
			

Motorist Errors

Implementer Category	Problem Area					
	Motorist Errors					
	Improper Turns	Failure to Search	Right turn on Red	Excessive Speed	Overtaking, failure to see	Misjudging passing space
Engineering/ Architect Groups						
Public Highway Agencies						
Planning Groups						
Public Highway Safety Groups						
Private Highway Safety Groups						
Private or Corporate Business						
Healthcare Organizations						
Law and Adjudication						
Implementer Category	Motorist Errors					
	Improper Turns	Failure to Search	Right turn on Red	Excessive Speed	Overtaking, failure to see	Misjudging passing space
						
Schools						
Bike Related Organizations						
Community/Civic Groups						
Elected Officials						
Media						
Manufacturers and Sellers						

Driver Regulatory
Agencies



Motorist Errors NHTSA/FHWA Crash Types

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Motorist Errors					
	5. Improper turns	6. Failure to search*	7. Right turn on red	8. Excessive speed**	9. Overtaking, failure to see	10/ Misjudging passing space
Motorist/bicyclist turning error (110)						
Motorist turning error - left turn (111)	X	X				
Motorist turning error - right turn (112)	X					
Motorist turning error - other (113)						
Bicyclist turning error - left turn (114)						
Bicyclist turning error - right turn (115)						
Bicyclist turning error - other (116)						
Bicyclist lost control (120)						
Mechanical problems (121)						
Oversteering, improper braking/speed (122)						
Alcohol/drug impairment (123)						
Surface conditions (124)						
Other/unknown (129)						
Motorist lost control (130)						
Mechanical problems (131)						
Oversteering, improper braking/speed (132)				X		
Alcohol/drug impairment (133)						
Surface conditions (134)						
Other/unknown (139)						
Sign control - intersection (140)						
Motorist drive-out (141)	X	X		X		
Bicyclist ride-out (142)		X		X		
Motorist drive-through (143)		X				
Bicyclist ride-through (144)		X		X		
Other sign control intersection (148)		X		X		
Signal control - intersection (150)						
Motorist drive-out - RTOR (151)	X	X	X			
Motorist drive-out (152)						
Bicyclist ride-out (153)		X		X		
Motorist drive-through (154)		X				

*Either an anticipatory or reactive phase search failure was a factor in at least 30% of Cross and Fisher cases.

**Any mention of motorists going too fast for conditions in Cross and Fisher cases.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Motorist Errors					
	5. Improper turns	6. Failure to search*	7. Right turn on red	8. Excessive speed**	9. Overtaking, failure to see	10. Misjudging passing space
Signal control intersection (150)(continued)						
Bicyclist nde-through (155)		X		X		
Bicyclist failed to clear - trapped (156)		X				
Bicyclist failed to clear - multiple threat (157)		X				
Other signal control intersection (158)		X		X		
Uncontrolled intersection (160)						
Crossing path - intersection other (180)						
Motorist turn/merge (210)						
Motorist left turn - same direction (211)	X	X				
Motorist left turn - opposite direction (212)	X	X				
Motorist right turn - same direction (213)	X	X				
Motorist right turn - opposite direction (214)	X	X				
Motorist drive-in/out - parking (215)		X				
Bus/Delivery vehicle pullover (216)						
Bicyclist turn/merge (220)						
Bicyclist left turn - same direction (221)						
Bicyclist left turn - opposite direction (222)						
Bicyclist right turn - same direction (223)						
Bicyclist right turn - opposite direction (224)						
Bicyclist nde-out - sidewalk (225)		X		X		
Motorist overtaking (230)						
Motorist overtaking - undetected bicyclist (231)				X	X	
Motorist overtaking - misjudged space (232)				X		X
Motorist overtaking - other/unknown (239)		X		X		
Bicyclist overtaking (240)						
Bicyclist overtaking - right side (241)						
Bicyclist overtaking - left side (242)						
Bicyclist overtaking - parked vehicle (243)						
Bicyclist overtaking - extended door (244)						
Bicyclist overtaking - other/unknown (249)						

*Either an anticipatory or reactive phase search failure was a factor in at least 30% of Cross and Fisher cases.

**Any mention of motorists going too fast for conditions in Cross and Fisher cases.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Motorist Errors					
	5. Improper turns	6. Failure to search*	7. Right turn on red	8. Excessive speed**	9. Overtaking, failure to see	10. Misjudging passing space
Head-on (250)						
Parallel path - other (280)						
Residential driveway (311)		X		X		
Commercial driveway/alley (312)		X		X		
Non-intersection - other (318)		X		X		
Non-intersection - unknown (319)						
Motorist drive-out-non-intersection (320)						
Residential driveway (321)	X	X				
Commercial driveway/alley (322)	X	X				
Non-intersection - other (328)						
Non-intersection - unknown (329)						
Crossing path - non-intersection - other (380)						
Bicycle only (400)						
Motorist intentionally caused (510)						
Bicyclist intentionally caused (520)						
Backing vehicle (600)		X				
Play vehicle related (700)		X		X		
Unusual circumstances (800)						
Non-roadway - other (910)		X				
Unknown/insufficient information (990)						

*Either an anticipatory or reactive phase search failure was a factor in at least 30% of Cross and Fisher cases.

**Any mention of motorists going too fast for conditions in Cross and Fisher cases.

Motorist Errors (Engineering/Architecture Groups)

Motorist Errors					
Improper Turns	Failure to Search	Right turn on Red	Excessive Speed	Overtaking, failure to see	Misjudging passing space
					
					

Motorist Errors (Public Highway Agencies)

Motorist Errors					
Improper Turns	Failure to Search	Right turn on Red	Excessive Speed	Overtaking, failure to see	Misjudging passing space
					



Motorist Errors (Planning Groups)

Motorist-Errors					
Improper Turns	Failure to Search	Right turn on Red	Excessive Speed	Overtaking, failure to see	Misjudging passing space
					



Motorist Errors (Public Highway Safety Groups)

Motorist-Errors					
Improper Turns	Failure to Search	Right turn on Red	Excessive Speed	Overtaking, failure to see	Misjudging passing space
					



Motorist Errors (Private Highway Safety Groups)

Motorist Errors					
Improper Turns	Failure to Search	Right turn on Red	Excessive Speed	Overtaking, failure to see	Misjudging passing space
					



Motorist Errors (Private or Corporate Business)

Motorist Errors					
Improper Turns	Failure to Search	Right turn on Red	Excessive Speed	Overtaking, failure to see	Misjudging passing space
					
					

Motorist Errors (Healthcare Organizations)

Motorist Errors					
Improper Turns	Failure to Search	Right turn on Red	Excessive Speed	Overtaking, failure to see	Misjudging passing space
					



Motorist Errors (Law and Adjudication)

Motorist-Errors					
Improper Turns	Failure to Search	Right turn on Red	Excessive Speed	Overtaking, failure to see	Misjudging passing space
					



Motorist Errors (Schools)

Motorist-Errors					
Improper Turns	Failure to Search	Right turn on Red	Excessive Speed	Overtaking, failure to see	Misjudging passing space
					



Motorist Errors (Bike Related Organizations)

Motorist Errors					
Improper Turns	Failure to Search	Right turn on Red	Excessive Speed	Overtaking, failure to see	Misjudging passing space
					



Motorist Errors (Community/Civic Groups)

Motorist Errors					
Improper Turns	Failure to Search	Right turn on Red	Excessive Speed	Overtaking, failure to see	Misjudging passing space
					



Motorist Errors (Elected Officials)

Motorist-Errors					
Improper Turns	Failure to Search	Right turn on Red	Excessive Speed	Overtaking, failure to see	Misjudging passing space
					



Motorist Errors (Media)

Motorist-Errors					
Improper Turns	Failure to Search	Right turn on Red	Excessive Speed	Overtaking, failure to see	Misjudging passing space
					



Motorist Errors (Manufacturers and Sellers)

Motorist Errors					
Improper Turns	Failure to Search	Right turn on Red	Excessive Speed	Overtaking, failure to see	Misjudging passing space
					
					

Motorist Errors (Driver Regulatory Agencies)

Motorist Errors					
Improper Turns	Failure to Search	Right turn on Red	Excessive Speed	Overtaking, failure to see	Misjudging passing space
					



Impairment

Implementer Category	Problem Area	
	Impairment	
	Bicyclist Alcohol & Drugs	Motorist Alcohol & Drugs
Engineering/ Architect Groups		
Public Highway Agencies		
Planning Groups		
Public Highway Safety Groups		
Private Highway Safety Groups		
Private or Corporate Business		
Healthcare Organizations		
Law and Adjudication		
Implementer Category	Impairment	
	Impairment	
	Bicyclist Alcohol & Drugs	Motorist Alcohol & Drugs
Schools		
Bike Related Organizations		
Community/Civic Groups		
Elected Officials		
Media		
Manufacturers and Sellers		

Driver Regulatory
Agencies



Impairment NHTSA/FHWA Crash Types

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Impairment	
	11. Bicyclist alcohol/drugs*	12. Motorist alcohol/drugs*
Motorist/bicyclist turning error (110)		
Motorist turning error - left turn (111)		
Motorist turning error - right turn (112)		
Motorist turning error - other (113)		
Bicyclist turning error - left turn (114)		
Bicyclist turning error - right turn (115)		
Bicyclist turning error - other (116)		
Bicyclist lost control (120)		
Mechanical problems (121)		
Oversteering, improper braking/speed (122)		
Alcohol/drug impairment (123)	(X)	
Surface conditions (124)		
Other/unknown (129)		
Motorist lost control (130)		
Mechanical problems (131)		
Oversteering, improper braking/speed (132)		
Alcohol/drug impairment (133)		X
Surface conditions (134)		
Other/unknown (139)		
Sign control - intersection (140)		
Motorist drive-out (141)	X	X
Bicyclist ride-out (142)		
Motorist drive-through (143)		
Bicyclist ride-through (144)		
Other sign control intersection (148)		
Signal control - intersection (150)		
Motorist drive-out - RTOR (151)		
Motorist drive-out (152)		
Bicyclist ride-out (153)		
Motorist drive-through (154)		

* Alcohol/drugs were listed as a factor in at least 1% of Cross and Fisher cases.

** Problem was listed as a factor in at least 5% of the Cross and Fisher cases.

(X) Of the Hunter et al cases in which the bicyclist lost control, 42% of individuals aged 25+ had been drinking.

Impairment NHTSA/FHWA Crash Types

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Impairment	
	11. Bicyclist alcohol/drugs*	12. Motorist alcohol/drugs*
Signal control intersection (150)(continued)		
Bicyclist ride-through (155)		
Bicyclist failed to clear - trapped (156)		
Bicyclist failed to clear - multiple threat (157)		
Other signal control intersection (158)		
Uncontrolled intersection (160)		
Crossing path - intersection other (180)		
Motorist turn/merge (210)		
Motorist left turn - same direction (211)	X	X
Motorist left turn - opposite direction (212)	X	
Motorist right turn - same direction (213)	X	
Motorist right turn - opposite direction (214)	X	
Motorist drive-in/out - parking (215)		
Bus/delivery vehicle pullover (216)		
Bicyclist turn/merge (220)		
Bicyclist left turn - same direction (221)		
Bicyclist left turn - opposite direction (222)		
Bicyclist right turn - same direction (223)		
Bicyclist right turn - opposite direction (224)		
Bicyclist ride-out - sidewalk (225)		X
Motorist overtaking (230)		
Motorist overtaking - undetected bicyclist (231)		X
Motorist overtaking - misjudged space (232)		X
Motorist overtaking - other/unknown (239)	(X)	
Bicyclist overtaking (240)		
Bicyclist overtaking - right side (241)		
Bicyclist overtaking - left side (242)		
Bicyclist overtaking - parked vehicle (243)		
Bicyclist overtaking - extended door (244)		
Bicyclist overtaking - other/unknown (249)		

* Alcohol/drugs were listed as a factor in at least 1% of Cross and Fisher cases.

** Problem was listed as a factor in at least 5% of the Cross and Fisher cases.

(X) Of the Hunter et al cases involved in other motorist overtaking crashes (which excluded crashes in which there were counteractive evasive actions or the bicyclist's path was obstructed), 16% of individuals aged 25+ had been drinking.

Impairment NHTSA/FHWA Crash Types

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Impairment	
	11. Bicyclist alcohol/drugs*	12. Motorist alcohol/drugs*
Head-on (250)		
Parallel path - other (280)		
Bicyclist ride-out-non-intersection (310)		
Residential driveway (311)		
Commercial driveway/alley (312)		
Non-intersection - other (318)	(X)	X
Non-intersection - unknown (319)		
Motorist drive-out-non-intersection (320)		
Residential driveway (321)		
Commercial driveway/alley (322)		
Non-intersection - other (328)		
Non-intersection - unknown (329)		
Crossing path - non-intersection - other (380)		
Bicycle only (400)		
Motorist intentionally caused (510)		
Bicyclist intentionally caused (520)		
Backing vehicle (600)		
Play vehicle related (700)		
Unusual circumstances (800)		
Non-roadway - other (910)		
Unknown/insufficient information (990)		

* Alcohol/drugs were listed as a factor in at least 1% of Cross and Fisher cases.

** Problem was listed as a factor in at least 5% of the Cross and Fisher cases.

(X) Of the Hunter et al cases in which the bicyclist entered the roadway at a shoulder or curb midblock location, 45% of individuals aged 25+ had been drinking.

Impairment (Engineering/Architecture Groups)

Impairment	
Bicyclist · Alcohol · & Drugs	Motorist · Alcohol · & Drugs
	
	

Impairment (Public Highway Agencies)

Impairment	
Bicyclist· Alcohol·& Drugs	Motorist· Alcohol·& Drugs
	
	

Impairment (Planning Groups)

Impairment	
Bicyclist· Alcohol·& Drugs	Motorist· Alcohol·& Drugs
	
	

Impairment (Public Highway Safety Groups)

Impairment	
Bicyclist · Alcohol · & Drugs	Motorist · Alcohol · & Drugs
	
	

Impairment (Private Highway Safety Groups)

Impairment	
Bicyclist · Alcohol · & Drugs	Motorist · Alcohol · & Drugs
	
	

Impairment (Private or Corporate Business)

Impairment	
Bicyclist · Alcohol · & Drugs	Motorist · Alcohol · & Drugs
	
	

Impairment (Healthcare Organizations)

Impairment	
Bicyclist · Alcohol · & Drugs	Motorist · Alcohol · & Drugs
	
	

Impairment (Law and Adjudication)

Impairment	
Bicyclist · Alcohol & Drugs	Motorist · Alcohol & Drugs
	
	

Impairment (Schools)

Impairment	
Bicyclist · Alcohol · & Drugs	Motorist · Alcohol · & Drugs
	
	

Impairment (Bike Related Organizations)

Impairment	
Bicyclist· Alcohol·& Drugs	Motorist· Alcohol·& Drugs
	
	

Impairment (Community/Civic Groups)

Impairment	
Bicyclist· Alcohol·& Drugs	Motorist· Alcohol·& Drugs
	
	

Impairment (Elected Officials)

Impairment	
Bicyclist · Alcohol · & Drugs	Motorist · Alcohol · & Drugs
	
	

Impairment (Media)

Impairment	
Bicyclist · Alcohol & Drugs	Motorist · Alcohol & Drugs
	
	

Impairment (Manufacturers and Sellers)

Impairment	
Bicyclist· Alcohol·& Drugs	Motorist· Alcohol·& Drugs
	
	

Impairment (Driver Regulatory Agencies)

Impairment	
Bicyclist · Alcohol · & Drugs	Motorist · Alcohol · & Drugs
	
	

Visibility/Conspicuity

Implementer Category	Problem Area		
	Visibility/Conspicuity		
	Visual Screens	Daytime Conspicuity	Nighttime Conspicuity
Engineering/ Architect Groups			
Public Highway Agencies			
Planning Groups			
Public Highway Safety Groups			
Private Highway Safety Groups			
Private or Corporate Business			
Healthcare Organizations			
Law and Adjudication			
Implementer Category	Visibility/Conspicuity		
	Visibility/Conspicuity		
	Visual Screens	Daytime Conspicuity	Nighttime Conspicuity
Schools			
Bike Related Organizations			
Community/Civic Groups			
Elected Officials			
Media			
Manufacturers and Sellers			

Driver Regulatory
Agencies





Visibility/Conspicuity NHTSA/FHWA Crash Types

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Visibility/Conspicuity		
	13. Visual screens**	14. Daytime conspicuity**	15. Nighttime conspicuity**
Motorist/bicyclist turning error (110)			
Motorist turning error - left turn (111)			
Motorist turning error - right turn (112)			
Motorist turning error - other (113)			
Bicyclist turning error - left turn (114)			
Bicyclist turning error - right turn (115)			
Bicyclist turning error - other (116)			
Bicyclist lost control (120)			
Mechanical problems (121)			
Oversteering, improper braking/speed (122)			
Alcohol/drug impairment (123)			
Surface conditions (124)			
Other/unknown (129)			
Motorist lost control (130)			
Mechanical problems (131)			
Oversteering, improper braking/speed (132)			
Alcohol/drug impairment (133)			
Surface conditions (134)			
Other/unknown (139)			
Sign control - intersection (140)			
Motorist drive-out (141)		X	X
Bicyclist ride-out (142)	X		X
Motorist drive-through (143)			
Bicyclist ride-through (144)	X		X
Other sign control intersection (148)			
Signal control - intersection (150)			
Motorist drive-out - RTOR (151)			
Motorist drive-out (152)			
Bicyclist ride-out (153)			
Motorist drive-through (154)			

* Alcohol/drugs were listed as a factor in at least 1% of Cross and Fisher cases.

** Problem was listed as a factor in at least 5% of the Cross and Fisher cases.

(X) Of the Hunter et al cases in which the bicyclist lost control, 42% of individuals aged 25+ had been drinking.

Problem Area by NHTSA/FHWA Crash Type (Continued).

Crash type (and code number)	Visibility/Conspicuity		
	13. Visual screens**	14. Daytime conspicuity**	15. Nighttime conspicuity**
Signal control intersection (150)(continued)			
Bicyclist nde-through (155)			
Bicyclist failed to clear - trapped (156)			X
Bicyclist failed to clear - multiple threat (157)	X		
Other signal control intersection (158)			
Uncontrolled intersection (160)	X		X
Crossing path - intersection other (180)			
Motorist turn/merge (210)			
Motorist left turn - same direction (211)		X	X
Motorist left turn - opposite direction (212)		X	X
Motorist right turn - same direction (213)			
Motorist right turn - opposite direction (214)			
Motorist drive-in/out - parking (215)			
Bus/delivery vehicle pullover (216)			
Bicyclist turn/merge (220)			
Bicyclist left turn - same direction (221)			
Bicyclist left turn - opposite direction (222)			
Bicyclist right turn - same direction (223)	X		
Bicyclist right turn - opposite direction (224)	X		
Bicyclist nde-out - sidewalk (225)	X		
Motorist overtaking (230)			
Motorist overtaking - undetected bicyclist (231)		X	X
Motorist overtaking - misjudged space (232)			
Motorist overtaking - other/unknown (239)			
Bicyclist overtaking (240)			
Bicyclist overtaking - right side (241)			
Bicyclist overtaking - left side (242)			
Bicyclist overtaking - parked vehicle (243)			
Bicyclist overtaking - extended door (244)			
Bicyclist overtaking - other/unknown (249)			

* Alcohol/drugs were listed as a factor in at least 1% of Cross and Fisher cases.

** Problem was listed as a factor in at least 5% of the Cross and Fisher cases.

(X) Of the Hunter et al cases involved in other motorist overtaking crashes (which excluded crashes in which there were counteractive evasive actions bicyclist's path was obstructed), 16% of individuals aged 25+ had been drinking.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Visibility/Conspicuity		
	13. Visual screens**	14. Daytime conspicuity**	15. Nighttime conspicuity**
Head-on (250)			
Parallel path - other (280)			
Bicyclist ride-out-non-intersection (310)			
Residential driveway (311)	X		
Commercial driveway/alley (312)	X		
Non-intersection - other (318)	X		
Non-intersection - unknown (319)			
Motorist drive-out-non-intersection (320)			
Residential driveway (321)	X	X	X
Commercial driveway/alley (322)	X	X	X
Non-intersection - other (328)			
Non-intersection - unknown (329)			
Crossing path - non-intersection - other (380)			
Bicycle only (400)			
Motorist intentionally caused (510)			
Bicyclist intentionally caused (520)			
Backing vehicle (600)	X		X
Play vehicle related (700)	X	X	
Unusual circumstances (800)			
Non-roadway - other (910)	X		
Unknown/insufficient information (990)			

* Alcohol/drugs were listed as a factor in at least 1% of Cross and Fisher cases.

** Problem was listed as a factor in at least 5% of the Cross and Fisher cases.

(X) Of the Hunter et al cases in which the bicyclist entered the roadway at a shoulder or curb midblock location, 45% of individuals aged 25+ had been drinking.

Visibility/Conspicuity (Engineering/Architecture Groups)

Visibility/Conspicuity		
Visual Screens	Daytime Conspicuity	Nighttime Conspicuity
		
		

Visibility/Conspicuity (Public Highway Agencies)

Visibility/Conspicuity		
Visual Screens	Daytime Conspicuity	Nighttime Conspicuity
		
		

Visibility/Conspicuity (Planning Groups)

Visibility/Conspicuity		
Visual Screens	Daytime Conspicuity	Nighttime Conspicuity
		
		

Visibility/Conspicuity (Public Highway Safety Groups)

Visibility/Conspicuity		
Visual Screens	Daytime Conspicuity	Nighttime Conspicuity
		
		

Visibility/Conspicuity (Private Highway Safety Groups)

Visibility/Conspicuity		
Visual Screens	Daytime Conspicuity	Nighttime Conspicuity
		
		

Visibility/Conspicuity (Private or Corporate Business)

Visibility/Conspicuity		
Visual Screens	Daytime Conspicuity	Nighttime Conspicuity
		
		

Visibility/Conspicuity (Healthcare Organizations)

Visibility/Conspicuity		
Visual Screens	Daytime Conspicuity	Nighttime Conspicuity
		
		

Visibility/Conspicuity (Law and Adjudication)

Visibility/Conspicuity		
Visual Screens	Daytime Conspicuity	Nighttime Conspicuity
		
		

Visibility/Conspicuity (Schools)

Visibility/Conspicuity		
Visual Screens	Daytime Conspicuity	Nighttime Conspicuity
		
		

Visibility/Conspicuity (Bike Related Organizations)

Visibility/Conspicuity		
Visual Screens	Daytime Conspicuity	Nighttime Conspicuity
		
		

Visibility/Conspicuity (Community/Civic Groups)

Visibility/Conspicuity		
Visual Screens	Daytime Conspicuity	Nighttime Conspicuity
		
		

Visibility/Conspicuity (Elected Officials)

Visibility/Conspicuity		
Visual Screens	Daytime Conspicuity	Nighttime Conspicuity
		
		

Visibility/Conspicuity (Media)

Visibility/Conspicuity		
Visual Screens	Daytime Conspicuity	Nighttime Conspicuity
		
		

Visibility/Conspicuity (Manufacturers and Sellers)

Visibility/Conspicuity		
Visual Screens	Daytime Conspicuity	Nighttime Conspicuity
		
		

Visibility/Conspicuity (Driver Regulatory Agencies)

Visibility/Conspicuity		
Visual Screens	Daytime Conspicuity	Nighttime Conspicuity
		
		

Special Locations

Implementer Category	Problem Area								
	Special Locations								
	High Risk Locations	Rural Roads	Residential Driveways	Commercial Driveways	Side walks	College Campus	On-street Facilities	Off-street Facilities	Bridges & Tunnels
Engineering/ Architect Groups									
Public Highway Agencies									
Planning Groups									
Public Highway Safety Groups									
Private Highway Safety Groups									
Private or Corporate Business									
Healthcare Organizations									
Law and Adjudication									
Implementer Category	Special Locations								
	High Risk Locations	Rural Roads	Residential Driveways	Commercial Driveways	Side walks	College Campus	On-street Facilities	Off-street Facilities	Bridges & Tunnels
Schools									
Bike Related Organizations									
Community/Civic Groups									
Elected Officials									
Media									
Manufacturers and Sellers									
Driver Regulatory Agencies									

Special Locations NHTSA/FHWA Crash Types

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Special locations				
	16. High risk locations*	17. Rural roads	18. Residential driveways	19. Commercial driveways	20. Sidewalks
Motorist/bicyclist turning error (110)					
Motorist turning error - left turn (111)					
Motorist turning error - right turn (112)					
Motorist turning error - other (113)					
Bicyclist turning error - left turn (114)					
Bicyclist turning error - right turn (115)					
Bicyclist turning error - other (116)					
Bicyclist lost control (120)					
Mechanical problems (121)					
Oversteering, improper braking/speed (122)		X			
Alcohol/drug impairment (123)		X			
Surface conditions (124)		X			
Other/unknown (129)					
Motorist lost control (130)					
Mechanical problems (131)					
Oversteering, improper braking/speed (132)					
Alcohol/drug impairment (133)					
Surface conditions (134)					
Other/unknown (139)					
Sign control - intersection (140)					
Motorist drive-out (141)					
Bicyclist ride-out (142)					
Motorist drive-through (143)					
Bicyclist ride-through (144)					
Other sign control intersection (148)					
Signal control - intersection (150)					
Motorist drive-out - RTOR (151)					
Motorist drive-out (152)					
Bicyclist ride-out (153)					
Motorist drive-through (154)					

*No data were located on which to base a determination.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Special locations				
	16. High risk locations*	17. Rural roads	18. Residential driveways	19. Commercial driveways	20. Sidewalks
Signal control intersection (150) (continued)					
Bicyclist ride-through (155)					
Bicyclist failed to clear - trapped (156)					
Bicyclist failed to clear - multiple threat (157)					
Other signal control intersection (158)					
Uncontrolled intersection (160)		X			
Crossing path - intersection other (180)					
Motorist turn/merge (210)					
Motorist left turn - same direction (211)		X			
Motorist left turn - opposite direction (212)					X
Motorist right turn - same direction (213)					X
Motorist right turn - opposite direction (214)					X
Motorist drive-in/out - parking (215)					
Bus/delivery vehicle pullover (216)					
Bicyclist turn/merge (220)					
Bicyclist left turn - same direction (221)		X			
Bicyclist left turn - opposite direction (222)		X			
Bicyclist right turn - same direction (223)					
Bicyclist right turn - opposite direction (224)					
Bicyclist ride-out - sidewalk (225)			X		X
Motorist overtaking (230)					
Motorist overtaking - undetected bicyclist (231)		X			
Motorist overtaking - misjudged space (232)		X			
Motorist overtaking - other/unknown (239)		X			
Bicyclist overtaking (240)					
Bicyclist overtaking - right side (241)					
Bicyclist overtaking - left side (242)					
Bicyclist overtaking - parked vehicle (243)					
Bicyclist overtaking - extended door (244)					
Bicyclist overtaking - other/unknown (249)					

*No data were located on which to base a determination.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Special locations				
	16. High risk locations*	17. Rural roads	18. Residential driveways	19. Commercial driveways	20. Sidewalks
Head-on (250)					
Parallel path - other (280)					
Bicyclist ride-out - non-intersection (310)					
Residential driveway (311)		X	X		
Commercial driveway/alley (312)				X	
Non-intersection - other (318)		X			X
Non-intersection - unknown (319)					
Motorist drive-out - non-intersection (320)					
Residential driveway (321)		X			X
Commercial driveway/alley (322)		X		X	X
Non-intersection - other (328)					
Non-intersection - unknown (329)					
Crossing path - non-intersection - other (380)					
Bicycle only (400)					
Motorist intentionally caused (510)					
Bicyclist intentionally caused (520)					
Backing vehicle (500)					
Play vehicle related (700)			X		X
Unusual circumstances (800)					
Non-roadway - other (910)					
Unknown/insufficient information (990)					

*No data were located on which to base a determination.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Special locations			
	21. College campus	22. On-street facilities*	23. Off-street facilities*	24. Bridges and tunnels*
Motorist/bicyclist turning error (110)				
Motorist turning error - left turn (111)				
Motorist turning error - right turn (112)				
Motorist turning error - other (113)				
Bicyclist turning error - left turn (114)				
Bicyclist turning error - right turn (115)				
Bicyclist turning error - other (116)				
Bicyclist lost control (120)				
Mechanical problems (121)				
Oversteering, improper braking/speed (122)	(X)			
Alcohol/drug impairment (123)				
Surface conditions (124)				
Other/unknown (129)				
Motorist lost control (130)				
Mechanical problems (131)				
Oversteering, improper braking/speed (132)				
Alcohol/drug impairment (133)				
Surface conditions (134)				
Other/unknown (139)				
Sign control - intersection (140)				
Motorist drive-out (141)				
Bicyclist ride-out (142)	(X)			
Motorist drive-through (143)				
Bicyclist ride-through (144)	(X)			
Other sign control intersection (148)				
Signal control - intersection (150)				
Motorist drive-out - RTOR (151)				
Motorist drive-out (152)				
Bicyclist ride-out (153)	(X)			
Motorist drive-through (154)				

* No data were located on which to base a determination.

(X) From Chaplin's Cornell University data.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Special locations			
	21. College campus	22. On-street facilities*	23. Off-street facilities*	24. Bridges and tunnels*
Signal control intersection (150) (continued)				
Bicyclist ride-through (155)	(X)			
Bicyclist failed to clear - trapped (156)				
Bicyclist failed to clear - multiple threat (157)				
Other signal control intersection (158)				
Uncontrolled intersection (160)				
Crossing path - intersection other (180)				
Motorist turn/merge (210)				
Motorist left turn - same direction (211)				
Motorist left turn - opposite direction (212)	(X)			
Motorist right turn - same direction (213)				
Motorist right turn - opposite direction (214)				
Motorist drive-in/out - parking (215)				
Bus/delivery vehicle pullover (216)				
Bicyclist turn/merge (220)				
Bicyclist left turn - same direction (221)				
Bicyclist left turn - opposite direction (222)				
Bicyclist right turn - same direction (223)				
Bicyclist right turn - opposite direction (224)				
Bicyclist ride-out - sidewalk (225)				
Motorist overtaking (230)				
Motorist overtaking - undetected bicyclist (231)				
Motorist overtaking - misjudged space (232)				
Motorist overtaking - other/unknown (239)				
Bicyclist overtaking (240)				
Bicyclist overtaking - right side (241)				
Bicyclist overtaking - left side (242)				
Bicyclist overtaking - parked vehicle (243)				
Bicyclist overtaking - extended door (244)				
Bicyclist overtaking - other/unknown (249)				

* No data were located on which to base a determination.

(X) From Chaplin's Cornell University data.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Special locations			
	21. College campus	22. On-street facilities*	23. Off-street facilities*	24. Bridges and tunnels*
Head-on (250)				
Parallel path - other (280)				
Bicyclist ride-out non-intersection (310)				
Residential driveway (311)				
Commercial driveway/alley (312)				
Non-intersection - other (318)				
Non-intersection - unknown (319)				
Motorist drive-out non-intersection (320)				
Residential driveway (321)				
Commercial driveway/alley (322)				
Non-intersection - other (328)				
Non-intersection - unknown (329)				
Crossing path - non-intersection - other (380)				
Bicycle only (400)	(X)			
Motorist intentionally caused (510)				
Bicyclist intentionally caused (520)				
Backing vehicle (600)				
Play vehicle related (700)				
Unusual circumstances (800)				
Non-roadway - other (910)				
Unknown/insufficient information (990)				

* No data were located on which to base a determination.

(X) From Chaplin's Cornell University data.

Special Locations (Engineering/Architecture Groups)

Special Locations								
High Risk Locations	Rural Roads	Residential Driveways	Commercial Driveways	Sidewalks	College Campus	On-street Facilities	Off-street Facilities	Bridges & Tunnels
								



Special Locations (Public Highway Agencies)

Special Locations								
High Risk Locations	Rural Roads	Residential Driveways	Commercial Driveways	Sidewalks	College Campus	On-street Facilities	Off-street Facilities	Bridges & Tunnels
								



Special Locations (Planning Groups)

Special Locations								
High Risk Locations	Rural Roads	Residential Driveways	Commercial Driveways	Sidewalks	College Campus	On-street Facilities	Off-street Facilities	Bridges & Tunnels
								



Special Locations (Public Highway Safety Groups)

Special Locations								
High Risk Locations	Rural Roads	Residential Driveways	Commercial Driveways	Sidewalks	College Campus	On-street Facilities	Off-street Facilities	Bridges & Tunnels
								



Special Locations (Private Highway Safety Groups)

Special Locations								
High Risk Locations	Rural Roads	Residential Driveways	Commercial Driveways	Sidewalks	College Campus	On-street Facilities	Off-street Facilities	Bridges & Tunnels
								
								

Special Locations (Private or Corporate Business)

Special Locations								
High Risk Locations	Rural Roads	Residential Driveways	Commercial Driveways	Sidewalks	College Campus	On-street Facilities	Off-street Facilities	Bridges & Tunnels
								



Special Locations (Healthcare Organizations)

Special Locations								
High Risk Locations	Rural Roads	Residential Driveways	Commercial Driveways	Sidewalks	College Campus	On-street Facilities	Off-street Facilities	Bridges & Tunnels
								



Special Locations (Law and Adjudication)

Special Locations								
High Risk Locations	Rural Roads	Residential Driveways	Commercial Driveways	Sidewalks	College Campus	On-street Facilities	Off-street Facilities	Bridges & Tunnels
								
								

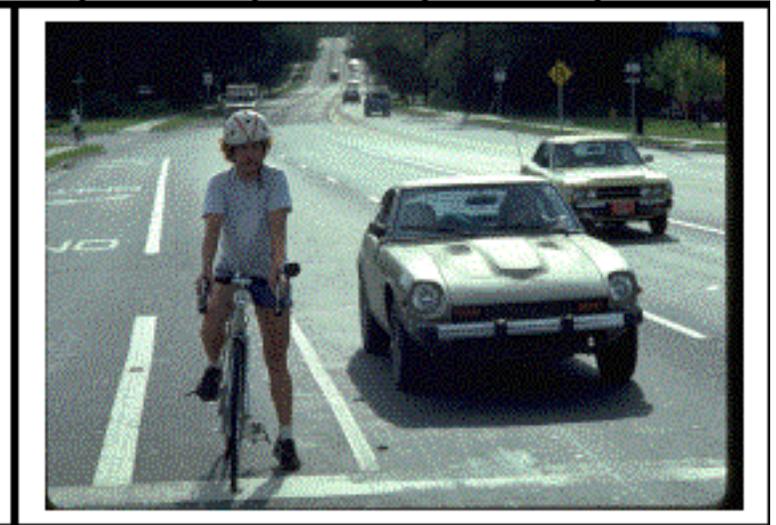
Special Locations (Schools)

Special Locations								
High Risk Locations	Rural Roads	Residential Driveways	Commercial Driveways	Sidewalks	College Campus	On-street Facilities	Off-street Facilities	Bridges & Tunnels
								



Special Locations (Bike Related Organizations)

Special Locations								
High Risk Locations	Rural Roads	Residential Driveways	Commercial Driveways	Sidewalks	College Campus	On-street Facilities	Off-street Facilities	Bridges & Tunnels
								



Special Locations (Community/Civic Groups)

Special Locations								
High Risk Locations	Rural Roads	Residential Driveways	Commercial Driveways	Sidewalks	College Campus	On-street Facilities	Off-street Facilities	Bridges & Tunnels
								



Special Locations (Elected Officials)

Special Locations								
High Risk Locations	Rural Roads	Residential Driveways	Commercial Driveways	Sidewalks	College Campus	On-street Facilities	Off-street Facilities	Bridges & Tunnels
								



Special Locations (Media)

Special Locations								
High Risk Locations	Rural Roads	Residential Driveways	Commercial Driveways	Sidewalks	College Campus	On-street Facilities	Off-street Facilities	Bridges & Tunnels
								



Special Locations (Manufacturers and Sellers)

Special Locations								
High Risk Locations	Rural Roads	Residential Driveways	Commercial Driveways	Sidewalks	College Campus	On-street Facilities	Off-street Facilities	Bridges & Tunnels
								



Special Locations (Driver Regulatory Agencies)

Special Locations								
High Risk Locations	Rural Roads	Residential Driveways	Commercial Driveways	Sidewalks	College Campus	On-street Facilities	Off-street Facilities	Bridges & Tunnels
								



Geometrics/Operations

Implementer Category	Problem Area	
	Geometrics/Operations	
	Geometrics /Roadway Design	Operations/ Maintenance
Engineering/ Architect Groups		
Public Highway Agencies		
Planning Groups		
Public Highway Safety Groups		
Private Highway Safety Groups		
Private or Corporate Business		
Healthcare Organizations		
Law and Adjudication		
Implementer Category	Geometrics/Operations	
	Geometrics/Operations	
	Geometrics /Roadway Design	Operations/ Maintenance
Schools		
Bike Related Organizations		
Community/Civic Groups		
Elected Officials		
Media		
Manufacturers and Sellers		

Driver Regulatory
Agencies



Geometrics/Operations NHTSA/FHWA Crash Types

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Geometrics/oper. 25. Geometrics/ traffic calming*
Motorist/bicyclist turning error (110)	
Motorist turning error - left turn (111)	
Motorist turning error - right turn (112)	
Motorist turning error - other (113)	
Bicyclist turning error - left turn (114)	
Bicyclist turning error - right turn (115)	
Bicyclist turning error - other (116)	
Bicyclist lost control (120)	
Mechanical problems (121)	
Oversteering, improper braking/speed (122)	
Alcohol/drug impairment (123)	
Surface conditions (124)	
Other/unknown (129)	
Motorist lost control (130)	
Mechanical problems (131)	
Oversteering, improper braking/speed (132)	
Alcohol/drug impairment (133)	
Surface conditions (134)	
Other/unknown (139)	
Sign control - intersection (140)	
Motorist drive-out (141)	
Bicyclist ride-out (142)	
Motorist drive-through (143)	
Bicyclist ride-through (144)	
Other sign control intersection (148)	
Signal control - intersection (150)	
Motorist drive-out - RTOR (151)	
Motorist drive-out (152)	
Bicyclist ride-out (153)	
Motorist drive-through (154)	

* No data were located on which to base a determination.

(X) From Chaplin's Cornell University data.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Geometrics/oper 25. Geometrics/ traffic calming*
Signal control intersection (150) (continued)	
Bicyclist ride-through (155)	
Bicyclist failed to clear - trapped (156)	
Bicyclist failed to clear - multiple threat (157)	
Other signal control intersection (158)	
Uncontrolled intersection (160)	
Crossing path - intersection other (180)	
Motorist turn/merge (210)	
Motorist left turn - same direction (211)	
Motorist left turn - opposite direction (212)	
Motorist right turn - same direction (213)	
Motorist right turn - opposite direction (214)	
Motorist drive-in/out - parking (215)	
Bus/delivery vehicle pullover (216)	
Bicyclist turn/merge (220)	
Bicyclist left turn - same direction (221)	
Bicyclist left turn - opposite direction (222)	
Bicyclist right turn - same direction (223)	
Bicyclist right turn - opposite direction (224)	
Bicyclist ride-out - sidewalk (225)	
Motorist overtaking (230)	
Motorist overtaking - undetected bicyclist (231)	
Motorist overtaking - misjudged space (232)	
Motorist overtaking - other/unknown (239)	
Bicyclist overtaking (240)	
Bicyclist overtaking - right side (241)	
Bicyclist overtaking - left side (242)	
Bicyclist overtaking - parked vehicle (243)	
Bicyclist overtaking - extended door (244)	
Bicyclist overtaking - other/unknown (249)	

* No data were located on which to base a determination.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Geometrics/oper
	25. Geometrics/ traffic calming*
Head-on (250)	
Parallel path - other (280)	
Bicyclist ride-out-non-intersection (310)	
Residential driveway (311)	
Commercial driveway/alley (312)	
Non-intersection - other (318)	
Non-intersection - unknown (319)	
Motorist drive-out-non-intersection (320)	
Residential driveway (321)	
Commercial driveway/alley (322)	
Non-intersection - other (328)	
Non-intersection - unknown (329)	
Crossing path - non-intersection - other (380)	
Bicycle only (400)	
Motorist intentionally caused (510)	
Bicyclist intentionally caused (520)	
Backing vehicle (600)	
Play vehicle related (700)	
Unusual circumstances (800)	
Non-roadway - other (910)	
Unknown/insufficient information (990)	

* No data were located on which to base a determination.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Geometrics/oper 26. Operations/ maintenance*
Motorist/bicyclist turning error (110)	
Motorist turning error - left turn (111)	
Motorist turning error - right turn (112)	
Motorist turning error - other (113)	
Bicyclist turning error - left turn (114)	
Bicyclist turning error - right turn (115)	
Bicyclist turning error - other (116)	
Bicyclist lost control (120)	
Mechanical problems (121)	
Oversteering, improper braking/speed (122)	
Alcohol/drug impairment (123)	
Surface conditions (124)	
Other/unknown (129)	
Motorist lost control (130)	
Mechanical problems (131)	
Oversteering, improper braking/speed (132)	
Alcohol/drug impairment (133)	
Surface conditions (134)	
Other/unknown (139)	
Sign control - intersection (140)	
Motorist drive-out (141)	
Bicyclist ride-out (142)	
Motorist drive-through (143)	
Bicyclist ride-through (144)	
Other sign control intersection (148)	
Signal control - intersection (150)	
Motorist drive-out - RTOR (151)	
Motorist drive-out (152)	
Bicyclist ride-out (153)	
Motorist drive-through (154)	

* No data were located on which to base a determination.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Geometrics/oper
	26. Operations/ maintenance*
Signal control intersection (150) (continued)	
Bicyclist ride-through (155)	
Bicyclist failed to clear - trapped (156)	
Bicyclist failed to clear - multiple threat (157)	
Other signal control intersection (158)	
Uncontrolled intersection (160)	
Crossing path - intersection other (180)	
Motorist turn/merge (210)	
Motorist left turn- same direction (211)	
Motorist left turn - opposite direction (212)	
Motorist right turn - same direction (213)	
Motorist right turn - opposite direction (214)	
Motorist drive-in/out - parking (215)	
Bus/delivery vehicle pullover (216)	
Bicyclist turn/merge (220)	
Bicyclist left turn - same direction (221)	
Bicyclist left turn - opposite direction (222)	
Bicyclist right turn - same direction (223)	
Bicyclist right turn - opposite direction (224)	
Bicyclist ride-out - sidewalk (225)	
Motorist overtaking (230)	
Motorist overtaking - undetected bicyclist (231)	
Motorist overtaking - misjudged space (232)	
Motorist overtaking - other/unknown (239)	
Bicyclist overtaking (240)	
Bicyclist overtaking - right side (241)	
Bicyclist overtaking - left side (242)	
Bicyclist overtaking - parked vehicle (243)	
Bicyclist overtaking - extended door (244)	
Bicyclist overtaking - other/unknown (249)	

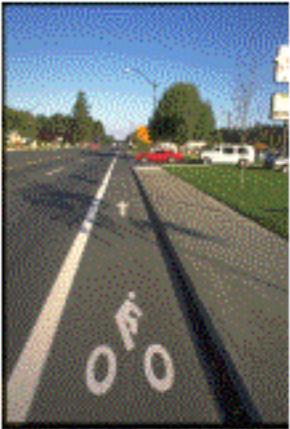
* No data were located on which to base a determination.

Problem Area by NHTSA/FHWA Crash Type (Continued)

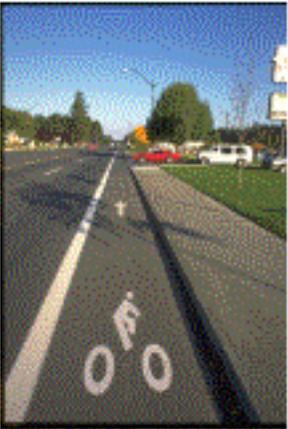
Crash type (and code number)	Geometrics/oper. 26. Operations/ maintenance*
Head-on (250)	
Parallel path - other (280)	
Bicyclist ride-out - non-intersection (310)	
Residential driveway (311)	
Commercial driveway/alley (312)	
Non-intersection - other (318)	
Non-intersection - unknown (319)	
Motorist drive-out - non-intersection (320)	
Residential driveway (321)	
Commercial driveway/alley (322)	
Non-intersection - other (328)	
Non-intersection - unknown (329)	
Crossing path - non-intersection - other (380)	
Bicycle only (400)	
Motorist intentionally caused (510)	
Bicyclist intentionally caused (520)	
Backing vehicle (600)	
Play vehicle related (700)	
Unusual circumstances (800)	
Non-roadway - other (910)	
Unknown/insufficient information (990)	

* -- No data were located on which to base a determination.

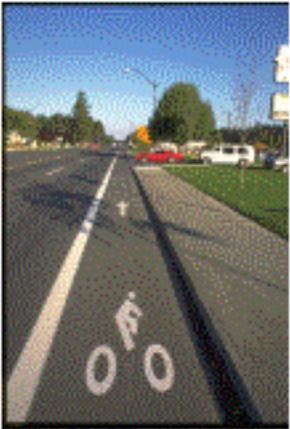
Geometrics/Operations (Engineering/Architecture Groups)

Geometrics/Operations	
Geometrics /Roadway Design	Operations/ Maintenance*
	
	

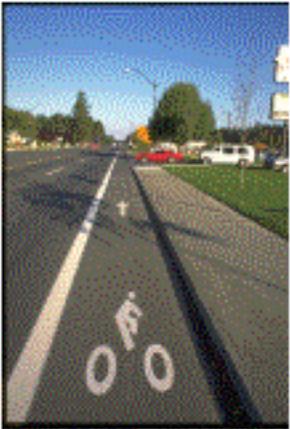
Geometrics/Operations (Public Highway Agencies)

Geometrics/Operations	
Geometrics /Roadway Design	Operations/ Maintenance*
	
	

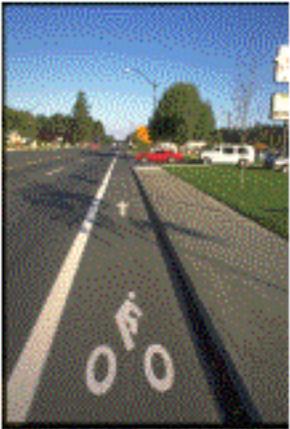
Geometrics/Operations (Planning Groups)

Geometrics/Operations	
Geometrics /Roadway Design	Operations/ Maintenance*
	
	

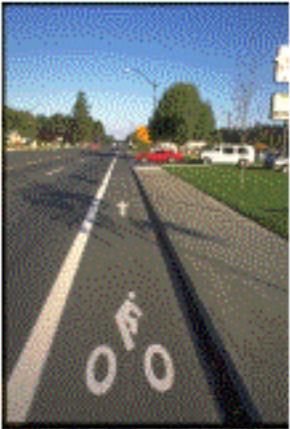
Geometrics/Operations (Public Highway Safety Groups)

Geometrics/Operations	
Geometrics /Roadway Design	Operations/ Maintenance*
	
	

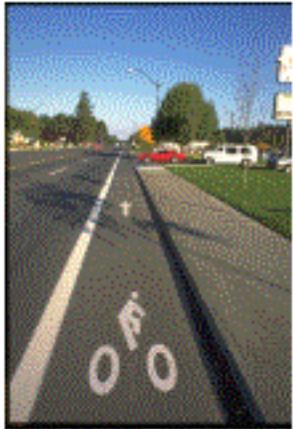
Geometrics/Operations (Private Highway Safety Groups)

Geometrics/Operations	
Geometrics /Roadway Design	Operations/ Maintenance*
	
	

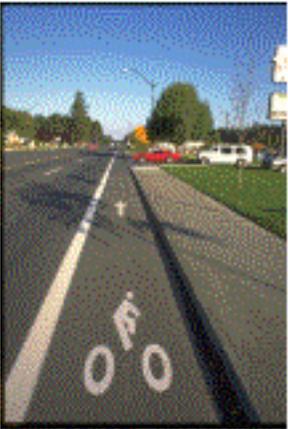
Geometrics/Operations (Private or Corporate Business)

Geometrics/Operations	
Geometrics /Roadway Design	Operations/ Maintenance*
	
	

Geometrics/Operations (Healthcare Organizations)

Geometrics/Operations	
Geometrics /Roadway Design	Operations/ Maintenance*
	
	

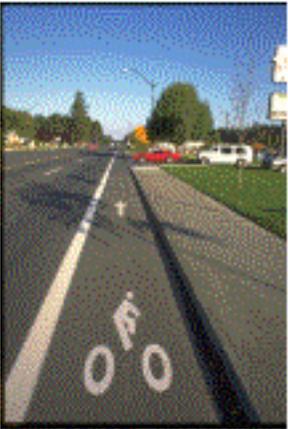
Geometrics/Operations (Law and Adjudication)

Geometrics/Operations	
Geometrics /Roadway Design	Operations/ Maintenance*
	
	

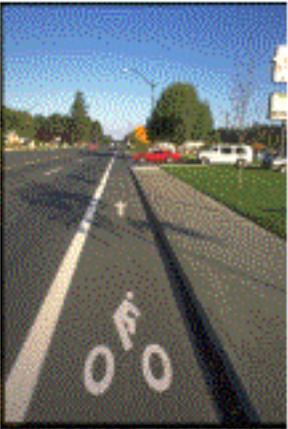
Geometrics/Operations (Schools)

Geometrics/Operations	
Geometrics /Roadway Design	Operations/ Maintenance*
	
	

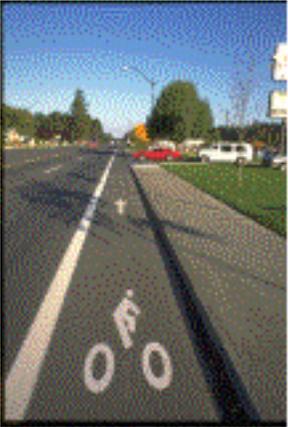
Geometrics/Operations (Bike Related Organizations)

Geometrics/Operations	
Geometrics /Roadway Design	Operations/ Maintenance*
	
	

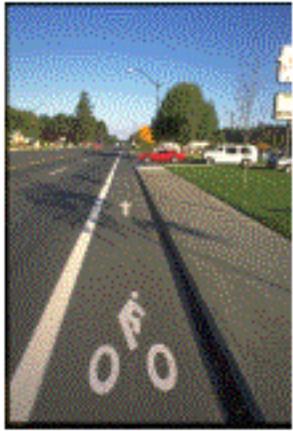
Geometrics/Operations (Community/Civic Groups)

Geometrics/Operations	
Geometrics /Roadway Design	Operations/ Maintenance*
	
	

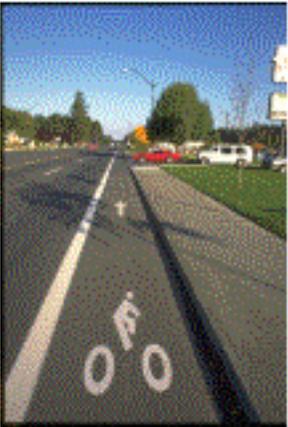
Geometrics/Operations (Elected Officials)

Geometrics/Operations	
Geometrics /Roadway Design	Operations/ Maintenance*
	
	

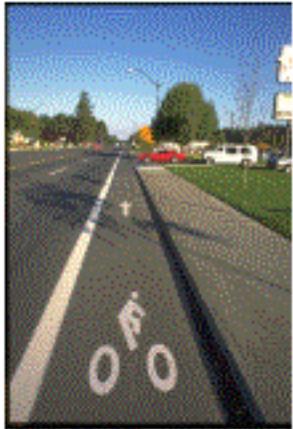
Geometrics/Operations (Media)

Geometrics/Operations	
Geometrics /Roadway Design	Operations/ Maintenance*
	
	

Geometrics/Operations (Manufacturers and Sellers)

Geometrics/Operations	
Geometrics /Roadway Design	Operations/ Maintenance*
	
	

Geometrics/Operations (Driver Regulatory Agencies)

Geometrics/Operations	
Geometrics /Roadway Design	Operations/ Maintenance*
	
	

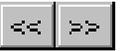
High Injury Severity

Implementer Category	Problem Area	
	High Injury Severity	
	Fatal Crashes	Nighttime Crashes
Engineering/ Architect Groups		
Public Highway Agencies		
Planning Groups		
Public Highway Safety Groups		
Private Highway Safety Groups		
Private or Corporate Business		
Healthcare Organizations		
Law and Adjudication		
Implementer Category	High Injury Severity	
	High Injury Severity	
	Fatal Crashes	Nighttime Crashes
Schools		
Bike Related Organizations		
Community/Civic Groups		
Elected Officials		
Media		
Manufacturers and Sellers		

High Injury Severity

Driver Regulatory
Agencies





High Injury Severity NHTSA/FHWA Crash Types

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	High injury severity	
	27. Fatal crashes**	28. Nighttime crashes***
Motocist/bicyclist turning error (110)		
Motorist turning error - left turn (111)		
Motorist turning error - right turn (112)		
Motorist turning error - other (113)		
Bicyclist turning error - left turn (114)		
Bicyclist turning error - right turn (115)		
Bicyclist turning error - other (116)		
Bicyclist lost control (120)		
Mechanical problems (121)		
Oversteering, improper braking/speed (122)		
Alcohol/drug impairment (123)		
Surface conditions (124)		
Other/unknown (129)		
Motorist lost control (130)		
Mechanical problems (131)		X
Oversteering, improper braking/speed (132)		X
Alcohol/drug impairment (133)		X
Surface conditions (134)		X
Other/unknown (139)		
Sign control-intersection (140)		
Motorist drive-out (141)		X
Bicyclist ride-out (142)	X	
Motorist drive-through (143)		
Bicyclist ride-through (144)	X	
Other sign control intersection (148)		
Signal control-intersection (150)		
Motorist drive-out - RTOR (151)		
Motorist drive-out (152)		
Bicyclist ride-out (153)		
Motorist drive-through (154)		

* * No data were located on which to base a determination.

** Fatalities were at least 5% of the Cross and Fisher cases.

*** At least 20% of the Cross and Fisher cases occurred during darkness.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	High injury severity	
	27. Fatal crashes**	28. Nighttime crashes***
Signal control intersection (150) (continued)		
Bicyclist ride-through (155)		
Bicyclist failed to clear - trapped (156)		
Bicyclist failed to clear - multiple threat (157)		
Other signal control intersection (158)		
Uncontrolled intersection (160)		
Crossing path - intersection other (180)		
Motorist turn/merge (210)		
Motorist left turn - same direction (211)		X
Motorist left turn - opposite direction (212)		
Motorist right turn - same direction (213)	X	
Motorist right turn - opposite direction (214)	X	
Motorist drive-in/out - parking (215)		
Bus/delivery vehicle pullover (216)		
Bicyclist turn/merge (220)		
Bicyclist left turn - same direction (221)	X	
Bicyclist left turn - opposite direction (222)		
Bicyclist right turn - same direction (223)		
Bicyclist right turn - opposite direction (224)		
Bicyclist ride-out - sidewalk (225)	X	
Motorist overtaking (230)		
Motorist overtaking - undetected bicyclist (231)	X	X
Motorist overtaking - misjudged space (232)		
Motorist overtaking - other/unknown (239)		
Bicyclist overtaking (240)		
Bicyclist overtaking - right side (241)		
Bicyclist overtaking - left side (242)		
Bicyclist overtaking - parked vehicle (243)		
Bicyclist overtaking - extended door (244)		
Bicyclist overtaking - other/unknown (249)		

* No data were located on which to base a determination.

** Fatalities were at least 5% of the Cross and Fisher cases.

*** At least 20% of the Cross and Fisher cases occurred during darkness.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	High injury severity	
	27. Fatal crashes**	28. Nighttime crashes***
Head-on (250)		
Parallel path - other (280)		
Bicyclist ride-out-non-intersection (310)		
Residential driveway (311)	X	
Commercial driveway/alley (312)		
Non-intersection - other (318)	X	
Non-intersection - unknown (319)		
Motolist drive-out-non-intersection (320)		
Residential driveway (321)		
Commercial driveway/alley (322)		
Non-intersection - other (328)		
Non-intersection - unknown (329)		
Crossing path - non-intersection - other (380)		
Bicycle only (400)		
Motolist intentionally caused (510)		
Bicyclist intentionally caused (520)		
Backing vehicle (600)		X
Play vehicle related (700)		
Unusual circumstances (800)		
Non-roadway - other (910)		
Unknown/insufficient information (990)		

* No data were located on which to base a determination.

** Fatalities were at least 5% of the Cross and Fisher cases.

*** At least 20% of the Cross and Fisher cases occurred during darkness.

High Injury Severity (Engineering/Architecture Groups)

High-Injury-Severity	
Fatal Crashes	Nighttime Crashes
	
	

High Injury Severity (Public Highway Agencies)

High-Injury-Severity	
Fatal Crashes	Nighttime Crashes
	
	

High Injury Severity (Planning Groups)

High-Injury-Severity	
Fatal Crashes	Nighttime Crashes
	
	

High Injury Severity (Public Highway Safety Groups)

High-Injury-Severity	
Fatal Crashes	Nighttime Crashes
	
	

High Injury Severity (Private Highway Safety Groups)

High-Injury-Severity	
Fatal Crashes	Nighttime Crashes
	
	

High Injury Severity (Private or Corporate Business)

High-Injury-Severity	
Fatal Crashes	Nighttime Crashes
	
	

High Injury Severity (Healthcare Organizations)

High-Injury-Severity	
Fatal Crashes	Nighttime Crashes
	
	

High Injury Severity (Law and Adjudication)

High-Injury-Severity	
Fatal Crashes	Nighttime Crashes
	
	

High Injury Severity (Schools)

High-Injury-Severity	
Fatal Crashes	Nighttime Crashes
	
	

High Injury Severity (Bike Related Organizations)

High-Injury-Severity	
Fatal Crashes	Nighttime Crashes
	
	

High Injury Severity (Community/Civic Groups)

High-Injury-Severity	
Fatal Crashes	Nighttime Crashes
	
	

High Injury Severity (Elected Officials)

High-Injury-Severity	
Fatal Crashes	Nighttime Crashes
	
	

High Injury Severity (Media)

High Injury Severity	
Fatal Crashes	Nighttime Crashes
	
	

High Injury Severity (Manufacturers and Sellers)

High-Injury-Severity	
Fatal Crashes	Nighttime Crashes
	
	

High Injury Severity (Driver Regulatory Agencies)

High-Injury-Severity	
Fatal Crashes	Nighttime Crashes
	
	

Target Group

Implementer Category	Problem Area									
	Target Group									
	Pre-School Bicyclist	Elementary School Bicyclist	Middle School Bicyclist	High School Bicyclist	College Bicyclist	Commuter Bicyclist	Senior Bicyclist	Casual Adult Bicyclist	Teenage Motorist	Bicyclist Parents
Engineering/ Architect Groups										
Public Highway Agencies										
Planning Groups										
Public Highway Safety Groups										
Private Highway Safety Groups										
Private or Corporate Business										
Healthcare Organizations										
Law and Adjudication										
Implementer Category	Target Group									
	Pre-School Bicyclist	Elementary School Bicyclist	Middle School Bicyclist	High School Bicyclist	College Bicyclist	Commuter Bicyclist	Senior Bicyclist	Casual Adult Bicyclist	Teenage Motorist	Bicyclist Parents
	Schools									
Bike Related Organizations										
Community/Civic Groups										
Elected Officials										
Media										
Manufacturers and Sellers										
Driver Regulatory Agencies										

Target Group NHTSA/FHWA Crash Types

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group	
	29. Pre-school bicyclist	30. Elementary school bicyclist
Motorist/bicyclist turning error (110)		
Motorist turning error - left turn (111)		
Motorist turning error - right turn (112)		
Motorist turning error - other (113)		
Bicyclist turning error - left turn (114)		
Bicyclist turning error - right turn (115)		
Bicyclist turning error - other (116)		
Bicyclist lost control (120)		
Mechanical problems (121)		
Oversteering, improper braking/speed (122)		X
Alcohol/drug impairment (123)		
Surface conditions (124)		X
Other/unknown (129)		
Motorist lost control (130)		
Mechanical problems (131)		X
Oversteering, improper braking/speed (132)		X
Alcohol/drug impairment (133)		
Surface conditions (134)		X
Other/unknown (139)		
Sign control-intersection (140)		
Motorist drive-out (141)		
Bicyclist ride-out (142)		X
Motorist drive-through (143)		
Bicyclist ride-through (144)		X
Other sign control intersection (148)		
Signal control-intersection (150)		
Motorist drive-out - RTOR (151)		
Motorist drive-out (152)		
Bicyclist ride-out (153)		
Motorist drive-through (154)		

Target Group NHTSA/FHWA Crash Types

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group	
	29. Pre-school bicyclist	30. Elementary school bicyclist
Signal control intersection (150) (continued)		
Bicyclist ride-through (155)		
Bicyclist failed to clear - trapped (156)		
Bicyclist failed to clear - multiple threat (157)		
Other signal control intersection (158)		
Uncontrolled intersection (160)		X
Crossing path - intersection other (180)		
Motorist turn/merge (210)		
Motorist left turn - same direction (211)		
Motorist left turn - opposite direction (212)		
Motorist right turn - same direction (213)		
Motorist right turn - opposite direction (214)		
Motorist drive-in/out - parking (215)		
Bus/delivery vehicle pullover (216)		
Bicyclist turn/merge (220)		
Bicyclist left turn - same direction (221)	X	X
Bicyclist left turn - opposite direction (222)	X	X
Bicyclist right turn - same direction (223)		
Bicyclist right turn - opposite direction (224)		
Bicyclist ride-out - sidewalk (225)	X	X
Motorist overtaking (230)		
Motorist overtaking - undetected bicyclist (231)		
Motorist overtaking - misjudged space (232)		
Motorist overtaking - other/unknown (239)		X
Bicyclist overtaking (240)		
Bicyclist overtaking - right side (241)		
Bicyclist overtaking - left side (242)		
Bicyclist overtaking - parked vehicle (243)		
Bicyclist overtaking - extended door (244)		
Bicyclist overtaking - other/unknown (249)		

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group	
	29. Pre-school bicyclist	30. Elementary school bicyclist
Head-on (250)		
Parallel path - other (280)		
Bicyclist ride-out-non-intersection (310)		
Residential driveway (311)	X	X
Commercial driveway/alley (312)	X	X
Non-intersection - other (318)	X	X
Non-intersection - unknown (319)		
Motorist drive-out-non-intersection (320)		
Residential driveway (321)		
Commercial driveway/alley (322)		
Non-intersection - other (328)		
Non-intersection - unknown (329)		
Crossing path - non-intersection - other (380)		
Bicycle only (400)		
Motorist intentionally caused (510)		
Bicyclist intentionally caused (520)		
Backing vehicle (600)		X
Play vehicle related (700)	X	
Unusual circumstances (800)		
Non-roadway - other (910)		X
Unknown/insufficient information (990)		

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group				
	31. Middle school bicyclist	32. High school bicyclist	33. College bicyclist	34. Commuter bicyclist*	35. Senior bicyclist
Motorist/bicyclist turning error (110)					
Motorist turning error - left turn (111)					
Motorist turning error - right turn (112)					
Motorist turning error - other (113)					
Bicyclist turning error - left turn (114)					
Bicyclist turning error - right turn (115)					
Bicyclist turning error - other (116)					
Bicyclist lost control (120)					
Mechanical problems (121)					
Oversteering, improper braking/speed (122)	X	X	(X)		
Alcohol/drug impairment (123)					
Surface conditions (124)	X	X			
Other/unknown (129)					
Motorist lost control (130)					
Mechanical problems (131)					
Oversteering, improper braking/speed (132)	X				
Alcohol/drug impairment (133)					
Surface conditions (134)	X				
Other/unknown (139)					
Sign control - intersection (140)					
Motorist drive-out (141)	X	X			((X))
Bicyclist ride-out (142)	X		(X)		
Motorist drive-through (143)	X	X			((X))
Bicyclist ride-through (144)	X		(X)		
Other sign control intersection (148)					
Signal control - intersection (150)					
Motorist drive-out - RTOR (151)					
Motorist drive-out (152)		X			
Bicyclist ride-out (153)			(X)		((X))
Motorist drive-through (154)					((X))

* * * No data were located on which to base a determination.

(X) From Chaplin's Cornell University data.

((X)) Selected if Cleven and Blomberg data (from GES) showed senior bicyclist (age 65+) was involved in 2% or more of the crash type.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group				
	31. Middle school bicyclist	32. High school bicyclist	33. College bicyclist	34. Commuter bicyclist*	35. Senior bicyclist
Signal control intersection (150) (continued)					
Bicyclist ride-through (155)			(X)		
Bicyclist failed to clear - trapped (156)	X	X			
Bicyclist failed to clear - multiple threat (157)	X	X			
Other signal control intersection (158)					
Uncontrolled intersection (160)	X	X			
Crossing path - intersection other (180)					
Motorist turn/merge (210)					
Motorist left turn - same direction (211)	X	X			
Motorist left turn - opposite direction (212)		X	(X)		
Motorist right turn - same direction (213)	X	X			((X))
Motorist right turn - opposite direction (214)	X	X			((X))
Motorist drive-in/out - parking (215)					
Bus/delivery vehicle pull-over (216)					
Bicyclist turn/merge (220)					
Bicyclist left turn - same direction (221)	X	X			((X))
Bicyclist left turn - opposite direction (222)	X	X			
Bicyclist right turn - same direction (223)		X			
Bicyclist right turn - opposite direction (224)		X			
Bicyclist ride-out - sidewalk (225)	X				
Motorist overtaking (230)					
Motorist overtaking - undetected bicyclist (231)	X	X			((X))
Motorist overtaking - misjudged space (232)	X	X			
Motorist overtaking - other/unknown (239)	X	X			((X))
Bicyclist overtaking (240)					
Bicyclist overtaking - right side (241)	X	X			
Bicyclist overtaking - left side (242)	X	X			
Bicyclist overtaking - parked vehicle (243)					
Bicyclist overtaking - extended door (244)					
Bicyclist overtaking - other/unknown (249)					

* No data were located on which to base a determination.

(X) From Cornell University data.

((X)) Selected if Cleveland and Blomberg data (from GES) showed senior bicyclist (age 65+) was involved in 2% or more of the crash type.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group				
	31. Middle school bicyclist	32. High school bicyclist	33. College bicyclist	34. Commuter bicyclist*	35. Senior bicyclist
Head-on (250)					
Parallel path - other (280)					
Bicyclist ride-out - non-intersection (310)					
Residential driveway (311)	X				
Commercial driveway/alley (312)	X				
Non-intersection - other (318)	X				
Non-intersection - unknown (319)					
Motorist drive-out - non-intersection (320)					
Residential driveway (321)	X	X			
Commercial driveway/alley (322)	X	X			
Non-intersection - other (328)					
Non-intersection - unknown (329)					
Crossing path - non-intersection - other (380)					
Bicycle only (400)			(X)		
Motorist intentionally caused (510)					
Bicyclist intentionally caused (520)					
Backing vehicle (600)	X				
Play vehicle related (700)					
Unusual circumstances (800)					
Non-roadway - other (910)	X	X			
Unknown/insufficient information (990)					

* No data were located on which to base a determination.

(X) From Chaplin's Cornell University data.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group		
	36. Casual adult bicyclist*	37. Teenage motorist**	38. Bicyclist parents
Motorist/bicyclist turning error (110)			
Motorist turning error - left turn (111)			
Motorist turning error - right turn (112)			
Motorist turning error - other (113)			
Bicyclist turning error - left turn (114)			
Bicyclist turning error - right turn (115)			
Bicyclist turning error - other (116)			
Bicyclist lost control (120)			
Mechanical problems (121)			
Oversteering, improper braking/speed (122)			
Alcohol/drug impairment (123)			
Surface conditions (124)			
Other/unknown (129)			
Motorist lost control (130)			
Mechanical problems (131)			
Oversteering, improper braking/speed (132)			
Alcohol/drug impairment (133)			
Surface conditions (134)			
Other/unknown (139)			
Sign control-intersection (140)			
Motorist drive-out (141)		X	
Bicyclist ride-out (142)			
Motorist drive-through (143)			
Bicyclist ride-through (144)			
Other sign control intersection (148)			
Signal control-intersection (150)			
Motorist drive-out - RTOR (151)		X	
Motorist drive-out (152)			
Bicyclist ride-out (153)			
Motorist drive-through (154)			

*No data were located on which to base a determination.

** Selected if the 5th percentile in Cross and Fisher was 18 years.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group		
	36. Casual adult bicyclist*	37. Teenage motorist**	38. Bicyclist parents
Signal control intersection (150) (continued)			
Bicyclist ride-through (155)			
Bicyclist failed to clear - trapped (156)			
Bicyclist failed to clear - multiple threat (157)		X	
Other signal control intersection (158)			
Uncontrolled intersection (160)		X	
Crossing path - intersection other (180)			
Motorist turn/merge (210)			
Motorist left turn - same direction (211)			
Motorist left turn - opposite direction (212)		X	
Motorist right turn - same direction (213)		X	
Motorist right turn - opposite direction (214)		X	
Motorist drive-in/out - parking (215)			
Bus/delivery vehicle pull over (216)			
Bicyclist turn/merge (220)			
Bicyclist left turn - same direction (221)		X	
Bicyclist left turn - opposite direction (222)		X	
Bicyclist right turn - same direction (223)			
Bicyclist right turn - opposite direction (224)			
Bicyclist ride-out - sidewalk (225)		X	X
Motorist overtaking (230)			
Motorist overtaking - undetected bicyclist (231)			
Motorist overtaking - misjudged space (232)			
Motorist overtaking - other/unknown (239)		X	
Bicyclist overtaking (240)			
Bicyclist overtaking - right side (241)			
Bicyclist overtaking - left side (242)			
Bicyclist overtaking - parked vehicle (243)			
Bicyclist overtaking - extended door (244)			
Bicyclist overtaking - other/unknown (249)			

*No data were located on which to base a determination.

**Selected if the 5th percentile in Cross and Fisher was 18 years.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group		
	36. Casual adult bicyclist*	37. Teenage motorist**	38. Bicyclist parents
Head-on (250)			
Parallel path - other (280)			
Bicyclist ride-out-non-intersection (310)			
Residential driveway (311)			X
Commercial driveway/alley (312)		X	X
Non-intersection - other (318)		X	X
Non-intersection - unknown (319)			
Motorist drive-out-non-intersection (320)			
Residential driveway (321)		X	
Commercial driveway/alley (322)		X	
Non-intersection - other (328)			
Non-intersection - unknown (329)			
Crossing path - non-intersection - other (380)			
Bicycle only (400)			
Motorist intentionally caused (510)			
Bicyclist intentionally caused (520)			
Backing vehicle (600)			
Play vehicle related (700)			
Unusual circumstances (800)			
Non-roadway - other (910)			
Unknown/insufficient information (990)			

*No data were located on which to base a determination.

**Selected if the 5th percentile in Cross and Fisher was 18 years.

Target Group (Engineering/Architecture Groups)

Target-Group									
Pre-School-Bicyclist	Elementary-School-Bicyclist	Middle-School-Bicyclist	High-School-Bicyclist	College-Bicyclist	Commuter-Bicyclist	Senior-Bicyclist	Casual-Adult-Bicyclist	Teenage-Motorist	Bicyclist-Parents
									



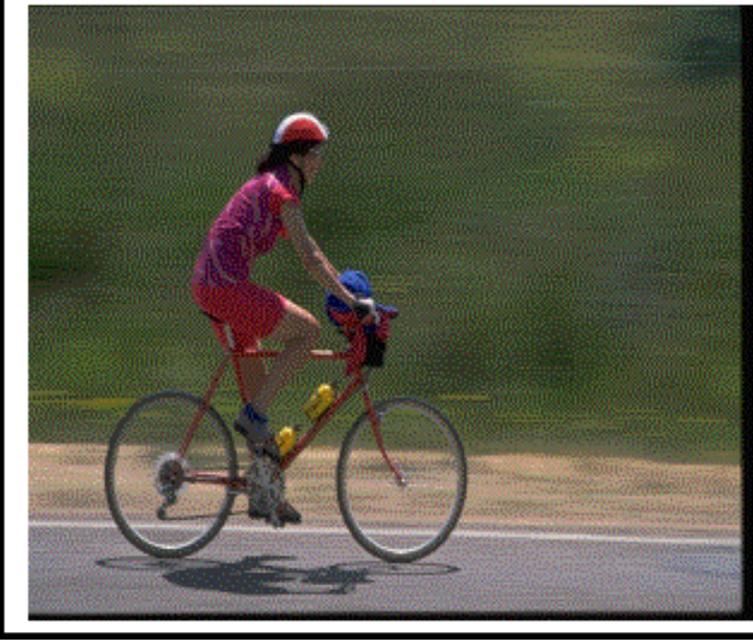
Target Group (Public Highway Agencies)

Target-Group									
Pre-School-Bicyclist	Elementary-School-Bicyclist	Middle-School-Bicyclist	High-School-Bicyclist	College-Bicyclist	Commuter-Bicyclist	Senior-Bicyclist	Casual-Adult-Bicyclist	Teenage-Motorist	Bicyclist-Parents
									



Target Group (Planning Groups)

Target-Group									
Pre-School-Bicyclist	Elementary-School-Bicyclist	Middle-School-Bicyclist	High-School-Bicyclist	College-Bicyclist	Commuter-Bicyclist	Senior-Bicyclist	Casual-Adult-Bicyclist	Teenage-Motorist	Bicyclist-Parents
									



Target Group (Public Highway Safety Groups)

Target-Group									
Pre-School-Bicyclist	Elementary-School-Bicyclist	Middle-School-Bicyclist	High-School-Bicyclist	College-Bicyclist	Commuter-Bicyclist	Senior-Bicyclist	Casual-Adult-Bicyclist	Teenage-Motorist	Bicyclist-Parents
									



Target Group (Private Highway Safety Groups)

Target-Group									
Pre-School-Bicyclist	Elementary-School-Bicyclist	Middle-School-Bicyclist	High-School-Bicyclist	College-Bicyclist	Commuter-Bicyclist	Senior-Bicyclist	Casual-Adult-Bicyclist	Teenage-Motorist	Bicyclist-Parents
									



Target Group (Private or Corporate Business)

Target-Group									
Pre-School-Bicyclist	Elementary-School-Bicyclist	Middle-School-Bicyclist	High-School-Bicyclist	College-Bicyclist	Commuter-Bicyclist	Senior-Bicyclist	Casual-Adult-Bicyclist	Teenage-Motorist	Bicyclist-Parents
									



Target Group (Healthcare Organizations)

Target-Group									
Pre-School-Bicyclist	Elementary-School-Bicyclist	Middle-School-Bicyclist	High-School-Bicyclist	College-Bicyclist	Commuter-Bicyclist	Senior-Bicyclist	Casual-Adult-Bicyclist	Teenage-Motorist	Bicyclist-Parents
									



Target Group (Law and Adjudication)

Target-Group									
Pre-School-Bicyclist	Elementary-School-Bicyclist	Middle-School-Bicyclist	High-School-Bicyclist	College-Bicyclist	Commuter-Bicyclist	Senior-Bicyclist	Casual-Adult-Bicyclist	Teenage-Motorist	Bicyclist-Parents
									



Target Group (Schools)

Target-Group									
Pre-School-Bicyclist	Elementary-School-Bicyclist	Middle-School-Bicyclist	High-School-Bicyclist	College-Bicyclist	Commuter-Bicyclist	Senior-Bicyclist	Casual-Adult-Bicyclist	Teenage-Motorist	Bicyclist-Parents
									



Target Group (Bike Related Organizations)

Target-Group									
Pre-School-Bicyclist	Elementary-School-Bicyclist	Middle-School-Bicyclist	High-School-Bicyclist	College-Bicyclist	Commuter-Bicyclist	Senior-Bicyclist	Casual-Adult-Bicyclist	Teenage-Motorist	Bicyclist-Parents
									



Target Group (Community/Civic Groups)

Target-Group									
Pre-School-Bicyclist	Elementary-School-Bicyclist	Middle-School-Bicyclist	High-School-Bicyclist	College-Bicyclist	Commuter-Bicyclist	Senior-Bicyclist	Casual-Adult-Bicyclist	Teenage-Motorist	Bicyclist-Parents
									



Target Group (Elected Officials)

Target-Group									
Pre-School-Bicyclist	Elementary-School-Bicyclist	Middle-School-Bicyclist	High-School-Bicyclist	College-Bicyclist	Commuter-Bicyclist	Senior-Bicyclist	Casual-Adult-Bicyclist	Teenage-Motorist	Bicyclist-Parents
									



Target Group (Media)

Target-Group									
Pre-School-Bicyclist	Elementary-School-Bicyclist	Middle-School-Bicyclist	High-School-Bicyclist	College-Bicyclist	Commuter-Bicyclist	Senior-Bicyclist	Casual-Adult-Bicyclist	Teenage-Motorist	Bicyclist-Parents
									



Target Group (Manufacturers and Sellers)

Target-Group									
Pre-School-Bicyclist	Elementary-School-Bicyclist	Middle-School-Bicyclist	High-School-Bicyclist	College-Bicyclist	Commuter-Bicyclist	Senior-Bicyclist	Casual-Adult-Bicyclist	Teenage-Motorist	Bicyclist-Parents
									



Target Group (Driver Regulatory Agencies)

Target-Group									
Pre-School-Bicyclist	Elementary-School-Bicyclist	Middle-School-Bicyclist	High-School-Bicyclist	College-Bicyclist	Commuter-Bicyclist	Senior-Bicyclist	Casual-Adult-Bicyclist	Teenage-Motorist	Bicyclist-Parents
									



Other

Implementer Category	Problem Area	
	Other	
	Awareness	Helmet Use
Engineering/Architect Groups		
Public Highway Agencies		
Planning Groups		
Public Highway Safety Groups		
Private Highway Safety Groups		
Private or Corporate Business		
Healthcare Organizations		
Law and Adjudication		
Implementer Category	Other	
	Awareness	Helmet Use
	Schools	
Bike Related Organizations		
Community/Civic Groups		
Elected Officials		
Media		
Manufacturers and Sellers		

Other

Driver Regulatory
Agencies



Other NHTSA/FHWA Crash Types

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Other	
	39. Awareness*	40. Hel met use*
Motorist/bicyclist turning error (110)		
Motorist turning error - left turn (111)		
Motorist turning error - right turn (112)		
Motorist turning error - other (113)		
Bicyclist turning error - left turn (114)		
Bicyclist turning error - right turn (115)		
Bicyclist turning error - other (116)		
Bicyclist lost control (120)		
Mechanical problems (121)		
Oversteering, improper braking/speed (122)		
Alcohol/drug impairment (123)		
Surface conditions (124)		
Other/unknown (129)		
Motorist lost control (130)		
Mechanical problems (131)		
Oversteering, improper braking/speed (132)		
Alcohol/drug impairment (133)		
Surface conditions (134)		
Other/unknown (139)		
Sign control intersection (140)		
Motorist drive-out (141)		
Bicyclist ride-out (142)		
Motorist drive-through (143)		
Bicyclist ride-through (144)		
Other sign control intersection (148)		
Signal control - intersection (150)		
Motorist drive-out - RTOR (151)		
Motorist drive-out (152)		
Bicyclist ride-out (153)		
Motorist drive-through (154)		

*No data were located on which to base a determination.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Other	
	39. Awareness*	40. Helmet use*
Signal control intersection (150) (continued)		
Bicyclist ride-through (155)		
Bicyclist failed to clear - trapped (156)		
Bicyclist failed to clear - multiple threat (157)		
Other signal control intersection (158)		
Uncontrolled intersection (160)		
Crossing path - intersection other (180)		
Motorist turn/merge (210)		
Motorist left turn - same direction (211)		
Motorist left turn - opposite direction (212)		
Motorist right turn - same direction (213)		
Motorist right turn - opposite direction (214)		
Motorist drive-in/out - parking (215)		
Bus/delivery vehicle pullover (216)		
Bicyclist turn/merge (220)		
Bicyclist left turn - same direction (221)		
Bicyclist left turn - opposite direction (222)		
Bicyclist right turn - same direction (223)		
Bicyclist right turn - opposite direction (224)		
Bicyclist ride-out - sidewalk (225)		
Motorist overtaking (230)		
Motorist overtaking - undetected bicyclist (231)		
Motorist overtaking - misjudged space (232)		
Motorist overtaking - other/unknown (239)		
Bicyclist overtaking (240)		
Bicyclist overtaking - right side (241)		
Bicyclist overtaking - left side (242)		
Bicyclist overtaking - parked vehicle (243)		
Bicyclist overtaking - extended door (244)		
Bicyclist overtaking - other/unknown (249)		

*No data were located on which to base a determination.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Other	
	39. Awareness*	40. Hel met use*
Head-on (250)		
Parallel path - other (280)		
Bicyclist ride-out-non-intersection (310)		
Residential driveway (311)		
Commercial driveway/alley (312)		
Non-intersection - other (318)		
Non-intersection - unknown (319)		
Motorist drive-out-non-intersection (320)		
Residential driveway (321)		
Commercial driveway/alley (322)		
Non-intersection - other (328)		
Non-intersection - unknown (329)		
Crossing path - non-intersection - other (380)		
Bicycle only (400)		
Motorist intentionally caused (510)		
Bicyclist intentionally caused (520)		
Backing vehicle (600)		
Play vehicle related (700)		
Unusual circumstances (800)		
Non-roadway - other (910)		
Unknown/insufficient information (990)		

*No data were located on which to base a determination.

Other (Engineering/Architecture Groups)

Other	
Awareness	Helmet Use
	
	

Other (Public Highway Agencies)

Other	
Awareness	Helmet Use
	
	

Other (Planning Groups)

Other	
Awareness	Helmet Use
	
	

Other (Public Highway Safety Groups)

Other	
Awareness	Helmet Use
	
	

Other (Private Highway Safety Groups)

Other	
Awareness	Helmet Use
	



Other (Private or Corporate Business)

Other	
Awareness	Helmet Use
	
	

Other (Healthcare Organizations)

Other	
Awareness	Helmet Use
	
	

Other (Law and Adjudication)

Other	
Awareness	Helmet Use
	



Other (Schools)

Other	
Awareness	Helmet Use
	



Other (Bike Related Organizations)

Other	
Awareness	Helmet Use
	
	

Other (Community/Civic Groups)

Other	
Awareness	Helmet Use
	
	

Other (Elected Officials)

Other	
Awareness	Helmet Use
	
	

Other (Media)

Other	
Awareness	Helmet Use
	
	

Other (Manufacturers and Sellers)

Other	
Awareness	Helmet Use
	
	

Other (Driver Regulatory Agencies)

Other	
Awareness	Helmet Use
	
	



Bicyclist Errors

Problem Area by NHTSA/FHWA Crash Type

Crash type (and code number)	Bicyclist Errors			
	1. Midblock rideout	2. Midblock turns	3. Intersection rideout/negotiate	4. Wrong-way riding
Motorist/bicyclist turning error (110)				
Motorist turning error - left turn (111)				
Motorist turning error - right turn (112)				
Motorist turning error - other (113)				
Bicyclist turning error - left turn (114)			X	
Bicyclist turning error - right turn (115)			X	
Bicyclist turning error - other (116)				
Bicyclist lost control (120)				
Mechanical problems (121)				
Oversteering, improper braking/speed (122)		X		
Alcohol/drug impairment (123)				
Surface conditions (124)		X		
Other/unknown (129)				
Motorist lost control (130)				
Mechanical problems (131)				
Oversteering, improper braking/speed (132)				
Alcohol/drug impairment (133)				
Surface conditions (134)				
Other/unknown (139)				
Sign control-intersection (140)				
Motorist drive-out (141)				X
Bicyclist ride-out (142)			X	X
Motorist drive-through (143)				
Bicyclist ride-through (144)			X	X
Other sign control intersection (148)			X	X
Signal control-intersection (150)				
Motorist drive-out - RTOR (151)				X
Motorist drive-out (152)				
Bicyclist ride-out (153)			X	X
Motorist drive-through (154)				

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Bicyclist Errors			
	1. Midblock rideout	2. Midblock turns	3. Intersection rideout/negotiate	4. Wrong-way riding
Signal control intersection (150) (continued)				
Bicyclist ride-through (155)			X	X
Bicyclist failed to clear - trapped (156)			X	
Bicyclist failed to clear - multiple threat (157)			X	X
Other signal control intersection (158)			X	X
Uncontrolled intersection (160)			X	
Crossing path - intersection other (180)				
Motorist turn/merge (210)				
Motorist left turn - same direction (211)				X
Motorist left turn - opposite direction (212)				
Motorist right turn - same direction (213)				X
Motorist right turn - opposite direction (214)				X
Motorist drive-in/out - parking (215)				
Bus/delivery vehicle pullover (216)				
Bicyclist turn/merge (220)				
Bicyclist left turn - same direction (221)		X		
Bicyclist left turn - opposite direction (222)		X		
Bicyclist right turn - same direction (223)		X		
Bicyclist right turn - opposite direction (224)		X		X
Bicyclist ride-out - sidewalk (225)	X			
Motorist overtaking (230)				
Motorist overtaking - undetected bicyclist (231)				
Motorist overtaking - misjudged space (232)				
Motorist overtaking - other/unknown (239)				
Bicyclist overtaking (240)				
Bicyclist overtaking - right side (241)				
Bicyclist overtaking - left side (242)				
Bicyclist overtaking - parked vehicle (243)		X		
Bicyclist overtaking - extended door (244)		X		
Bicyclist overtaking - other/unknown (249)				

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Bicyclist Errors			
	1. Midblock rideout	2. Midblock turns	3. Intersection rideout/negotiate	4. Wrong-way riding
Head-on (250)				X
Parallel path - other (280)				
Bicyclist ride-out-non-intersection (310)				
Residential driveway (311)	X			
Commercial driveway/alley (312)	X			
Non-intersection - other (318)	X			
Non-intersection - unknown (319)				
Motorist drive-out-non-intersection (320)				
Residential driveway (321)				X
Commercial driveway/alley (322)				X
Non-intersection - other (328)				
Non-intersection - unknown (329)				
Crossing path - non-intersection - other (380)				
Bicycle only (400)				
Motorist intentionally caused (510)				
Bicyclist intentionally caused (520)				
Backing vehicle (600)				
Play vehicle related (700)	X			
Unusual circumstances (800)				
Non-roadway - other (910)				
Unknown/insufficient information (990)				

Motorist Errors

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Motorist Errors					
	5. Improper turns	6. Failure to search*	7. Right turn on red	8. Excessive speed**	9. Overtaking, failure to see	10/ Misjudging passing space
Motorist/bicyclist turning error (110)						
Motorist turning error - left turn (111)	X	X				
Motorist turning error - right turn (112)	X					
Motorist turning error - other (113)						
Bicyclist turning error - left turn (114)						
Bicyclist turning error - right turn (115)						
Bicyclist turning error - other (116)						
Bicyclist lost control (120)						
Mechanical problems (121)						
Oversteering, improper braking/speed (122)						
Alcohol/drug impairment (123)						
Surface conditions (124)						
Other/unknown (129)						
Motorist lost control (130)						
Mechanical problems (131)						
Oversteering, improper braking/speed (132)				X		
Alcohol/drug impairment (133)						
Surface conditions (134)						
Other/unknown (139)						
Sign control - intersection (140)						
Motorist drive-out (141)	X	X		X		
Bicyclist ride-out (142)		X		X		
Motorist drive-through (143)		X				
Bicyclist ride-through (144)		X		X		
Other sign control intersection (148)		X		X		
Signal control - intersection (150)						
Motorist drive-out - RTOR (151)	X	X	X			
Motorist drive-out (152)						
Bicyclist ride-out (153)		X		X		
Motorist drive-through (154)		X				

*Either an anticipatory or reactive phase search failure was a factor in at least 30% of Cross and Fisher cases.

**Any mention of motorists going too fast for conditions in Cross and Fisher cases.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Motorist Errors					
	5. Improper turns	6. Failure to search*	7. Right turn on red	8. Excessive speed**	9. Overtaking, failure to see	10. Misjudging passing space
Signal control intersection (150) (continued)						
Bicyclist ride-through (153)		X		X		
Bicyclist failed to clear - trapped (156)		X				
Bicyclist failed to clear - multiple threat (157)		X				
Other signal control intersection (159)		X		X		
Uncontrolled intersection (160)						
Crossing path - intersection other (180)						
Motorist turn/merge (210)						
Motorist left turn - same direction (211)	X	X				
Motorist left turn - opposite direction (212)	X	X				
Motorist right turn - same direction (213)	X	X				
Motorist right turn - opposite direction (214)	X	X				
Motorist drive-in/out - parking (215)		X				
Bus/delivery vehicle pullover (216)						
Bicyclist turn/merge (220)						
Bicyclist left turn - same direction (221)						
Bicyclist left turn - opposite direction (222)						
Bicyclist right turn - same direction (223)						
Bicyclist right turn - opposite direction (224)						
Bicyclist ride-out - sidewalk (225)		X		X		
Motorist overtaking (230)						
Motorist overtaking - undetected bicyclist (231)				X	X	
Motorist overtaking - misjudged space (232)				X		X
Motorist overtaking - other/unknown (239)		X		X		
Bicyclist overtaking (240)						
Bicyclist overtaking - right side (241)						
Bicyclist overtaking - left side (242)						
Bicyclist overtaking - parked vehicle (243)						
Bicyclist overtaking - extended door (244)						
Bicyclist overtaking - other/unknown (249)						

* Either an anticipatory or reactive phase search failure was a factor in at least 30% of Cross and Fisher cases.

** Any mention of motorists going too fast for conditions in Cross and Fisher cases.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Motorist Errors					
	5. Improper turns	6. Failure to search*	7. Right turn on red	8. Excessive speed**	9. Overtaking, failure to see	10. Misjudging passing space
Head-on (250)						
Parallel path - other (280)						
Residential driveway (311)		X		X		
Commercial driveway/alley (312)		X		X		
Non-intersection - other (318)		X		X		
Non-intersection - unknown (319)						
Motorist drive-out-non-intersection (320)						
Residential driveway (321)	X	X				
Commercial driveway/alley (322)	X	X				
Non-intersection - other (328)						
Non-intersection - unknown (329)						
Crossing path - non-intersection - other (380)						
Bicycle only (400)						
Motorist intentionally caused (510)						
Bicyclist intentionally caused (520)						
Backing vehicle (600)		X				
Play vehicle related (700)		X		X		
Unusual circumstances (800)						
Non-roadway - other (910)		X				
Unknown/insufficient information (990)						

* Either an anticipatory or reactive phase search failure was a factor in at least 30% of Cross and Fisher cases.

** Any mention of motorists going too fast for conditions in Cross and Fisher cases.

Impairment

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Impairment	
	11. Bicyclist alcohol/drugs*	12. Motorist alcohol/drugs*
Motorist/bicyclist turning error (110)		
Motorist turning error - left turn (111)		
Motorist turning error - right turn (112)		
Motorist turning error - other (113)		
Bicyclist turning error - left turn (114)		
Bicyclist turning error - right turn (115)		
Bicyclist turning error - other (116)		
Bicyclist lost control (120)		
Mechanical problems (121)		
Oversteering, improper braking/speed (122)		
Alcohol/drug impairment (123)	(X)	
Surface conditions (124)		
Other/unknown (129)		
Motorist lost control (130)		
Mechanical problems (131)		
Oversteering, improper braking/speed (132)		
Alcohol/drug impairment (133)		X
Surface conditions (134)		
Other/unknown (139)		
Sign control - intersection (140)		
Motorist drive-out (141)	X	X
Bicyclist ride-out (142)		
Motorist drive-through (143)		
Bicyclist ride-through (144)		
Other sign control intersection (148)		
Signal control - intersection (150)		
Motorist drive-out - RTOR (151)		
Motorist drive-out (152)		
Bicyclist ride-out (153)		
Motorist drive-through (154)		

* Alcohol/drugs were listed as a factor in at least 1% of Cross and Fisher cases.

∞ Problem was listed as a factor in at least 5% of the Cross and Fisher cases.

(X) Of the Hunter et al cases in which the bicyclist lost control, 42% of individuals aged 25+ had been drinking.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Impairment	
	11. Bicyclist alcohol/drugs*	12. Motorist alcohol/drugs*
Signal control intersection (150)(continued)		
Bicyclist nde-through (155)		
Bicyclist failed to clear - trapped (156)		
Bicyclist failed to clear - multiple threat (157)		
Other signal control intersection (158)		
Uncontrolled intersection (160)		
Crossing path - intersection other (180)		
Motorist turn/merge (210)		
Motorist left turn - same direction (211)	X	X
Motorist left turn - opposite direction (212)	X	
Motorist right turn - same direction (213)	X	
Motorist right turn - opposite direction (214)	X	
Motorist drive-in/out - parking (215)		
Bus/delivery vehicle pullover (216)		
Bicyclist turn/merge (220)		
Bicyclist left turn - same direction (221)		
Bicyclist left turn - opposite direction (222)		
Bicyclist right turn - same direction (223)		
Bicyclist right turn - opposite direction (224)		
Bicyclist nde-out - sidewalk (225)		X
Motorist overtaking (230)		
Motorist overtaking - undetected bicyclist (231)		X
Motorist overtaking - misjudged space (232)		X
Motorist overtaking - other/unknown (239)	(X)	
Bicyclist overtaking (240)		
Bicyclist overtaking - right side (241)		
Bicyclist overtaking - left side (242)		
Bicyclist overtaking - parked vehicle (243)		
Bicyclist overtaking - extended door (244)		
Bicyclist overtaking - other/unknown (249)		

* Alcohol/drugs were listed as a factor in at least 1% of Cross and Fisher cases.

** Problem was listed as a factor in at least 5% of the Cross and Fisher cases.

(X) Of the Hunter et al cases involved in other motorist overtaking crashes (which excluded crashes in which there were counteractive evasive actions or the bicyclist's path was obstructed), 16% of individuals aged 25+ had been drinking.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Impairment	
	11. Bicyclist alcohol/drugs*	12. Motorist alcohol/drugs*
Head-on (250)		
Parallel path - other (280)		
Bicyclist ride-out-non-intersection (310)		
Residential driveway (311)		
Commercial driveway/alley (312)		
Non-intersection - other (318)	(X)	X
Non-intersection - unknown (319)		
Motorist drive-out-non-intersection (320)		
Residential driveway (321)		
Commercial driveway/alley (322)		
Non-intersection - other (328)		
Non-intersection - unknown (329)		
Crossing path - non-intersection - other (380)		
Bicycle only (400)		
Motorist intentionally caused (510)		
Bicyclist intentionally caused (520)		
Backing vehicle (600)		
Play vehicle related (700)		
Unusual circumstances (800)		
Non-roadway - other (910)		
Unknown/insufficient information (990)		

* Alcohol/drugs were listed as a factor in at least 1% of Cross and Fisher cases.

** Problem was listed as a factor in at least 5% of the Cross and Fisher cases.

(X) Of the Hunter et al cases in which the bicyclist entered the roadway at a shoulder or curb midblock location, 45% of individuals aged 25+ had been drinking.

Visibility/Conspicuity

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Visibility/Conspicuity		
	13. Visual screens**	14. Daytime conspicuity**	15. Nighttime conspicuity**
Motorist/bicyclist turning error (110)			
Motorist turning error - left turn (111)			
Motorist turning error - right turn (112)			
Motorist turning error - other (113)			
Bicyclist turning error - left turn (114)			
Bicyclist turning error - right turn (115)			
Bicyclist turning error - other (116)			
Bicyclist lost control (120)			
Mechanical problems (121)			
Oversteering, improper braking/speed (122)			
Alcohol/drug impairment (123)			
Surface conditions (124)			
Other/unknown (129)			
Motorist lost control (130)			
Mechanical problems (131)			
Oversteering, improper braking/speed (132)			
Alcohol/drug impairment (133)			
Surface conditions (134)			
Other/unknown (139)			
Sign control - intersection (140)			
Motorist drive-out (141)		X	X
Bicyclist ride-out (142)	X		X
Motorist drive-through (143)			
Bicyclist ride-through (144)	X		X
Other sign control intersection (148)			
Signal control - intersection (150)			
Motorist drive-out - RTOR (151)			
Motorist drive-out (152)			
Bicyclist ride-out (153)			
Motorist drive-through (154)			

* Alcohol/drugs were listed as a factor in at least 1% of Cross and Fisher cases.

** Problem was listed as a factor in at least 5% of the Cross and Fisher cases.

(X) Of the Hunter et al cases in which the bicyclist lost control, 42% of individuals aged 25+ had been drinking.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Visibility/Conspicuity		
	13. Visual screens**	14. Daytime conspicuity**	15. Nighttime conspicuity**
Signal control intersection (150)(continued)			
Bicyclist ride-through (155)			
Bicyclist failed to clear - trapped (156)			X
Bicyclist failed to clear - multiple threat (157)	X		
Other signal control intersection (158)			
Uncontrolled intersection (160)	X		X
Crossing path - intersection other (180)			
Motorist turn/merge (210)			
Motorist left turn - same direction (211)		X	X
Motorist left turn - opposite direction (212)		X	X
Motorist right turn - same direction (213)			
Motorist right turn - opposite direction (214)			
Motorist drive-in/out - parking (215)			
Bus/delivery vehicle pullover (216)			
Bicyclist turn/merge (220)			
Bicyclist left turn - same direction (221)			
Bicyclist left turn - opposite direction (222)			
Bicyclist right turn - same direction (223)	X		
Bicyclist right turn - opposite direction (224)	X		
Bicyclist ride-out - sidewalk (225)	X		
Motorist overtaking (230)			
Motorist overtaking - undetected bicyclist (231)		X	X
Motorist overtaking - misjudged space (232)			
Motorist overtaking - other/unknown (239)			
Bicyclist overtaking (240)			
Bicyclist overtaking - right side (241)			
Bicyclist overtaking - left side (242)			
Bicyclist overtaking - parked vehicle (243)			
Bicyclist overtaking - extended door (244)			
Bicyclist overtaking - other/unknown (249)			

* Alcohol/drugs were listed as a factor in at least 1% of Cross and Fisher cases.

** Problem was listed as a factor in at least 5% of the Cross and Fisher cases.

(X) Of the Hunter et al cases involved in other motorist overtaking crashes (which excluded crashes in which there were counteractive evasive actions or the bicyclist's path was obstructed), 16% of individuals aged 25+ had been drinking.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Visibility/Conspicuity		
	13. Visual screens**	14. Daytime conspicuity**	15. Nighttime conspicuity**
Head-on (250)			
Parallel path - other (280)			
Bicyclist ride-out-non-intersection (310)			
Residential driveway (311)	X		
Commercial driveway/alley (312)	X		
Non-intersection - other (318)	X		
Non-intersection - unknown (319)			
Motorist drive-out-non-intersection (320)			
Residential driveway (321)	X	X	X
Commercial driveway/alley (322)	X	X	X
Non-intersection - other (328)			
Non-intersection - unknown (329)			
Crossing path - non-intersection - other (380)			
Bicycle only (400)			
Motorist intentionally caused (510)			
Bicyclist intentionally caused (520)			
Backing vehicle (600)	X		X
Play vehicle related (700)	X	X	
Unusual circumstances (800)			
Non-roadway - other (910)	X		
Unknown/insufficient information (990)			

* Alcohol/drugs were listed as a factor in at least 1% of Cross and Fisher cases.

** Problem was listed as a factor in at least 5% of the Cross and Fisher cases.

(X) Of the Hunter et al cases in which the bicyclist entered the roadway at a shoulder or curb midblock location, 45% of individuals aged 25+ had been drinking.

Special Locations

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Special locations				
	16. High risk locations*	17. Rural roads	18. Residential driveways	19. Commercial driveways	20. Sidewalks
Motorist/bicyclist turning error (110)					
Motorist turning error - left turn (111)					
Motorist turning error - right turn (112)					
Motorist turning error - other (113)					
Bicyclist turning error - left turn (114)					
Bicyclist turning error - right turn (115)					
Bicyclist turning error - other (116)					
Bicyclist lost control (120)					
Mechanical problems (121)					
Oversteering, improper braking/speed (122)		X			
Alcohol/drug impairment (123)		X			
Surface conditions (124)		X			
Other/unknown (129)					
Motorist lost control (130)					
Mechanical problems (131)					
Oversteering, improper braking/speed (132)					
Alcohol/drug impairment (133)					
Surface conditions (134)					
Other/unknown (139)					
Sign control - intersection (140)					
Motorist drive-out (141)					
Bicyclist ride-out (142)					
Motorist drive-through (143)					
Bicyclist ride-through (144)					
Other sign control intersection (148)					
Signal control - intersection (150)					
Motorist drive-out - RTOR (151)					
Motorist drive-out (152)					
Bicyclist ride-out (153)					
Motorist drive-through (154)					

*No data were located on which to base a determination.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Special locations				
	16. High risk locations*	17. Rural roads	18. Residential driveways	19. Commercial driveways	20. Sidewalks
Signal control intersection (150) (continued)					
Bicyclist ride-through (155)					
Bicyclist failed to clear - trapped (156)					
Bicyclist failed to clear - multiple threat (157)					
Other signal control intersection (158)					
Uncontrolled intersection (160)		X			
Crossing path - intersection other (180)					
Motorist turn/merge (210)					
Motorist left turn - same direction (211)		X			
Motorist left turn - opposite direction (212)					X
Motorist right turn - same direction (213)					X
Motorist right turn - opposite direction (214)					X
Motorist drive-in/out - parking (215)					
Bus/delivery vehicle pullover (216)					
Bicyclist turn/merge (220)					
Bicyclist left turn - same direction (221)		X			
Bicyclist left turn - opposite direction (222)		X			
Bicyclist right turn - same direction (223)					
Bicyclist right turn - opposite direction (224)					
Bicyclist ride-out - sidewalk (225)			X		X
Motorist overtaking (230)					
Motorist overtaking - undetected bicyclist (231)		X			
Motorist overtaking - misjudged space (232)		X			
Motorist overtaking - other/unknown (239)		X			
Bicyclist overtaking (240)					
Bicyclist overtaking - right side (241)					
Bicyclist overtaking - left side (242)					
Bicyclist overtaking - parked vehicle (243)					
Bicyclist overtaking - extended door (244)					
Bicyclist overtaking - other/unknown (249)					

*No data were located on which to base a determination.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Special locations				
	16. High risk locations*	17. Rural roads	18. Residential driveways	19. Commercial driveways	20. Sidewalks
Head-on (250)					
Parallel path - other (280)					
Bicyclist ride-out - non-intersection (310)					
Residential driveway/alley (311)		X	X		
Commercial driveway/alley (312)				X	
Non-intersection - other (318)		X			X
Non-intersection - unknown (319)					
Motorist drive-out - non-intersection (320)					
Residential driveway (321)		X			X
Commercial driveway/alley (322)		X		X	X
Non-intersection - other (328)					
Non-intersection - unknown (329)					
Crossing path - non-intersection - other (380)					
Bicycle only (400)					
Motorist intentionally caused (510)					
Bicyclist intentionally caused (520)					
Backing vehicle (600)					
Play vehicle related (700)			X		X
Unusual circumstances (800)					
Non-roadway - other (910)					
Unknown/insufficient information (990)					

*No data were located on which to base a determination.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Special locations			
	21. College campus	22. On-street facilities*	23. Off-street facilities*	24. Bridges and tunnels*
Motorist/bicyclist turning error (110)				
Motorist turning error - left turn (111)				
Motorist turning error - right turn (112)				
Motorist turning error - other (113)				
Bicyclist turning error - left turn (114)				
Bicyclist turning error - right turn (115)				
Bicyclist turning error - other (116)				
Bicyclist lost control (120)				
Mechanical problems (121)				
Oversteering, improper braking/speed (122)	(X)			
Alcohol/drug impairment (123)				
Surface conditions (124)				
Other/unknown (129)				
Motorist lost control (130)				
Mechanical problems (131)				
Oversteering, improper braking/speed (132)				
Alcohol/drug impairment (133)				
Surface conditions (134)				
Other/unknown (139)				
Sign control - intersection (140)				
Motorist drive-out (141)				
Bicyclist ride-out (142)	(X)			
Motorist drive-through (143)				
Bicyclist ride-through (144)	(X)			
Other sign control intersection (148)				
Signal control - intersection (150)				
Motorist drive-out - RTOR (151)				
Motorist drive-out (152)				
Bicyclist ride-out (153)	(X)			
Motorist drive-through (154)				

* No data were located on which to base a determination.

(X) From Chaplin's Cornell University data.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Special locations			
	21. College campus	22. On-street facilities*	23. Off-street facilities*	24. Bridges and tunnels*
Signal control intersection (150) (continued)				
Bicyclist ride-through (155)	(X)			
Bicyclist failed to clear - trapped (156)				
Bicyclist failed to clear - multiple threat (157)				
Other signal control intersection (158)				
Uncontrolled intersection (160)				
Crossing path - intersection other (180)				
Motorist turn/merge (210)				
Motorist left turn - same direction (211)				
Motorist left turn - opposite direction (212)	(X)			
Motorist right turn - same direction (213)				
Motorist right turn - opposite direction (214)				
Motorist drive-in/out - parking (215)				
Bus/delivery vehicle pullover (216)				
Bicyclist turn/merge (220)				
Bicyclist left turn - same direction (221)				
Bicyclist left turn - opposite direction (222)				
Bicyclist right turn - same direction (223)				
Bicyclist right turn - opposite direction (224)				
Bicyclist ride-out - sidewalk (225)				
Motorist overtaking (230)				
Motorist overtaking - undetected bicyclist (231)				
Motorist overtaking - misjudged space (232)				
Motorist overtaking - other/unknown (239)				
Bicyclist overtaking (240)				
Bicyclist overtaking - right side (241)				
Bicyclist overtaking - left side (242)				
Bicyclist overtaking - parked vehicle (243)				
Bicyclist overtaking - extended door (244)				
Bicyclist overtaking - other/unknown (249)				

* No data were located on which to base a determination.

(X) From Chaplin's Cornell University data.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Special locations			
	21. College campus	22. On-street facilities*	23. Off-street facilities*	24. Bridges and tunnels*
Head-on (250)				
Parallel path - other (280)				
Bicyclist ride-out-non-intersection (310)				
Residential driveway (311)				
Commercial driveway/alley (312)				
Non-intersection - other (318)				
Non-intersection - unknown (319)				
Motorist drive-out-non-intersection (320)				
Residential driveway (321)				
Commercial driveway/alley (322)				
Non-intersection - other (328)				
Non-intersection - unknown (329)				
Crossing path - non-intersection - other (380)				
Bicycle only (400)	(X)			
Motorist intentionally caused (510)				
Bicyclist intentionally caused (520)				
Backing vehicle (600)				
Play vehicle related (700)				
Unusual circumstances (800)				
Non-roadway - other (910)				
Unknown/insufficient information (990)				

* No data were located on which to base a determination.

(X) From Chaplin's Cornell University data.

Geometrics/Operations

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Geometrics/oper
	25. Geometrics/ traffic calming*
Motorist/bicyclist turning error (110)	
Motorist turning error - left turn (111)	
Motorist turning error - right turn (112)	
Motorist turning error - other (113)	
Bicyclist turning error - left turn (114)	
Bicyclist turning error - right turn (115)	
Bicyclist turning error - other (116)	
Bicyclist lost control (120)	
Mechanical problems (121)	
Oversteering, improper braking/speed (122)	
Alcohol/drug impairment (123)	
Surface conditions (124)	
Other/unknown (129)	
Motorist lost control (130)	
Mechanical problems (131)	
Oversteering, improper braking/speed (132)	
Alcohol/drug impairment (133)	
Surface conditions (134)	
Other/unknown (139)	
Sign control - intersection (140)	
Motorist drive-out (141)	
Bicyclist ride-out (142)	
Motorist drive-through (143)	
Bicyclist ride-through (144)	
Other sign control intersection (148)	
Signal control - intersection (150)	
Motorist drive-out - RTOR (151)	
Motorist drive-out (152)	
Bicyclist ride-out (153)	
Motorist drive-through (154)	

* No data were located on which to base a determination.

(X) From Chaplin's Cornell University data.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Geometrics/oper 25. Geometrics/ traffic calming*
Signal control intersection (150) (continued)	
Bicyclist ride-through (155)	
Bicyclist failed to clear - trapped (156)	
Bicyclist failed to clear - multiple threat (157)	
Other signal control intersection (158)	
Uncontrolled intersection (160)	
Crossing path - intersection other (180)	
Motonst turn/merge (210)	
Motorist left turn- same direction (211)	
Motorist left turn - opposite direction (212)	
Motorist right turn - same direction (213)	
Motorist right turn - opposite direction (214)	
Motorist drive-in/out - parking (215)	
Bus/delivery vehicle pullover (216)	
Bicyclist turn/merge (220)	
Bicyclist left turn - same direction (221)	
Bicyclist left turn - opposite direction (222)	
Bicyclist right turn - same direction (223)	
Bicyclist right turn - opposite direction (224)	
Bicyclist ride-out - sidewalk (225)	
Motonst overtaking (230)	
Motorist overtaking - undetected bicyclist (231)	
Motorist overtaking - misjudged space (232)	
Motorist overtaking - other/unknown (239)	
Bicyclist overtaking (240)	
Bicyclist overtaking - right side (241)	
Bicyclist overtaking - left side (242)	
Bicyclist overtaking - parked vehicle (243)	
Bicyclist overtaking - extended door (244)	
Bicyclist overtaking - other/unknown (249)	

* No data were located on which to base a determination.

(X) From Chaplin's Cornell University data.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Geometrics/oper 25. Geometrics/ traffic calming*
Head-on (250)	
Parallel path - other (280)	
Bicyclist ride-out-non-intersection (310)	
Residential driveway (311)	
Commercial driveway/alley (312)	
Non-intersection - other (318)	
Non-intersection - unknown (319)	
Motorist drive-out-non-intersection (320)	
Residential driveway (321)	
Commercial driveway/alley (322)	
Non-intersection - other (328)	
Non-intersection - unknown (329)	
Crossing path - non-intersection - other (380)	
Bicycle only (400)	
Motorist intentionally caused (510)	
Bicyclist intentionally caused (520)	
Backing vehicle (600)	
Play vehicle related (700)	
Unusual circumstances (800)	
Non-roadway - other (910)	
Unknown/insufficient information (990)	

* No data were located on which to base a determination.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Geometrics/oper
	26. Operations/ maintenance*
Motorist/bicyclist turning error (110)	
Motorist turning error - left turn (111)	
Motorist turning error - right turn (112)	
Motorist turning error - other (113)	
Bicyclist turning error - left turn (114)	
Bicyclist turning error - right turn (115)	
Bicyclist turning error - other (116)	
Bicyclist lost control (120)	
Mechanical problems (121)	
Oversteering, improper braking/speed (122)	
Alcohol/drug impairment (123)	
Surface conditions (124)	
Other/unknown (129)	
Motorist lost control (130)	
Mechanical problems (131)	
Oversteering, improper braking/speed (132)	
Alcohol/drug impairment (133)	
Surface conditions (134)	
Other/unknown (139)	
Sign control - intersection (140)	
Motorist drive-out (141)	
Bicyclist ride-out (142)	
Motorist drive-through (143)	
Bicyclist ride-through (144)	
Other sign control intersection (148)	
Signal control - intersection (150)	
Motorist drive-out - RTOR (151)	
Motorist drive-out (152)	
Bicyclist ride-out (153)	
Motorist drive-through (154)	

* No data were located on which to base a determination.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Geometrics/oper 26. Operations/ maintenance*
Signal control intersection (150) (continued)	
Bicyclist ride-through (155)	
Bicyclist failed to clear - trapped (156)	
Bicyclist failed to clear - multiple threat (157)	
Other signal control intersection (158)	
Uncontrolled intersection (160)	
Crossing path - intersection other (180)	
Motorist turn/merge (210)	
Motorist left turn- same direction (211)	
Motorist left turn - opposite direction (212)	
Motorist right turn - same direction (213)	
Motorist right turn - opposite direction (214)	
Motorist drive-in/out - parking (215)	
Bus/delivery vehicle pullover (216)	
Bicyclist turn/merge (220)	
Bicyclist left turn - same direction (221)	
Bicyclist left turn - opposite direction (222)	
Bicyclist right turn - same direction (223)	
Bicyclist right turn - opposite direction (224)	
Bicyclist ride-out - sidewalk (225)	
Motorist overtaking (230)	
Motorist overtaking - undetected bicyclist (231)	
Motorist overtaking - misjudged space (232)	
Motorist overtaking - other/unknown (239)	
Bicyclist overtaking (240)	
Bicyclist overtaking - right side (241)	
Bicyclist overtaking - left side (242)	
Bicyclist overtaking - parked vehicle (243)	
Bicyclist overtaking - extended door (244)	
Bicyclist overtaking - other/unknown (249)	

* No data were located on which to base a determination.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Geometrics/oper 26. Operations/ maintenance*
Head-on (250)	
Parallel path - other (280)	
Bicyclist ride-out - non-intersection (310)	
Residential driveway (311)	
Commercial driveway/alley (312)	
Non-intersection - other (318)	
Non-intersection - unknown (319)	
Motorist drive-out - non-intersection (320)	
Residential driveway (321)	
Commercial driveway/alley (322)	
Non-intersection - other (328)	
Non-intersection - unknown (329)	
Crossing path - non-intersection - other (380)	
Bicycle only (400)	
Motorist intentionally caused (510)	
Bicyclist intentionally caused (520)	
Backing vehicle (600)	
Play vehicle related (700)	
Unusual circumstances (800)	
Non-roadway - other (910)	
Unknown/insufficient information (990)	

* No data were located on which to base a determination.

High Injury Severity

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	High injury severity	
	27. Fatal crashes**	28. Nighttime crashes***
Motorist/bicyclist turning error (110)		
Motorist turning error - left turn (111)		
Motorist turning error - right turn (112)		
Motorist turning error - other (113)		
Bicyclist turning error - left turn (114)		
Bicyclist turning error - right turn (115)		
Bicyclist turning error - other (116)		
Bicyclist lost control (120)		
Mechanical problems (121)		
Oversteering, improper braking/speed (122)		
Alcohol/drug impairment (123)		
Surface conditions (124)		
Other/unknown (129)		
Motorist lost control (130)		
Mechanical problems (131)		X
Oversteering, improper braking/speed (132)		X
Alcohol/drug impairment (133)		X
Surface conditions (134)		X
Other/unknown (139)		
Sign control-intersection (140)		
Motorist drive-out (141)		X
Bicyclist ride-out (142)	X	
Motorist drive-through (143)		
Bicyclist ride-through (144)	X	
Other sign control intersection (148)		
Signal control-intersection (150)		
Motorist drive-out - RTOR (151)		
Motorist drive-out (152)		
Bicyclist ride-out (153)		
Motorist drive-through (154)		

* No data were located on which to base a determination.

** Fatalities were at least 5% of the Cross and Fisher cases.

*** At least 20% of the Cross and Fisher cases occurred during darkness.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	High injury severity	
	27. Fatal crashes**	28. Nighttime crashes***
Signal control intersection (150) (continued)		
Bicyclist ride-through (155)		
Bicyclist failed to clear - trapped (156)		
Bicyclist failed to clear - multiple threat (157)		
Other signal control intersection (158)		
Uncontrolled intersection (160)		
Crossing path - intersection other (180)		
Motorist turn/merge (210)		
Motorist left turn - same direction (211)		X
Motorist left turn - opposite direction (212)		
Motorist right turn - same direction (213)	X	
Motorist right turn - opposite direction (214)	X	
Motorist drive-in/out - parking (215)		
Bus/delivery vehicle pullover (216)		
Bicyclist turn/merge (220)		
Bicyclist left turn - same direction (221)	X	
Bicyclist left turn - opposite direction (222)		
Bicyclist right turn - same direction (223)		
Bicyclist right turn - opposite direction (224)		
Bicyclist ride-out - sidewalk (225)	X	
Motorist overtaking (230)		
Motorist overtaking - undetected bicyclist (231)	X	X
Motorist overtaking - misjudged space (232)		
Motorist overtaking - other/unknown (239)		
Bicyclist overtaking (240)		
Bicyclist overtaking - right side (241)		
Bicyclist overtaking - left side (242)		
Bicyclist overtaking - parked vehicle (243)		
Bicyclist overtaking - extended door (244)		
Bicyclist overtaking - other/unknown (249)		

* No data were located on which to base a determination.

** Fatalities were at least 5% of the Cross and Fisher cases.

*** At least 20% of the Cross and Fisher cases occurred during darkness.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	High injury severity	
	27. Fatal crashes**	28. Nighttime crashes***
Head-on (250)		
Parallel path - other (280)		
Bicyclist ride-out-non-intersection (310)		
Residential driveway (311)	X	
Commercial driveway/alley (312)		
Non-intersection - other (318)	X	
Non-intersection - unknown (319)		
Motorist drive-out-non-intersection (320)		
Residential driveway (321)		
Commercial driveway/alley (322)		
Non-intersection - other (328)		
Non-intersection - unknown (329)		
Crossing path - non-intersection - other (380)		
Bicycle only (400)		
Motorist intentionally caused (510)		
Bicyclist intentionally caused (520)		
Backing vehicle (600)		X
Play vehicle related (700)		
Unusual circumstances (800)		
Non-roadway - other (910)		
Unknown/insufficient information (990)		

* No data were located on which to base a determination.

** Fatalities were at least 5% of the Cross and Fisher cases.

*** At least 20% of the Cross and Fisher cases occurred during darkness.

Target Group

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Other	
	39. Awareness*	40. Hel met use*
Motorist/bicyclist turning error (110)		
Motorist turning error - left turn (111)		
Motorist turning error - right turn (112)		
Motorist turning error - other (113)		
Bicyclist turning error - left turn (114)		
Bicyclist turning error - right turn (115)		
Bicyclist turning error - other (116)		
Bicyclist lost control (120)		
Mechanical problems (121)		
Oversteering, improper braking/speed (122)		
Alcohol/drug impairment (123)		
Surface conditions (124)		
Other/unknown (129)		
Motorist lost control (130)		
Mechanical problems (131)		
Oversteering, improper braking/speed (132)		
Alcohol/drug impairment (133)		
Surface conditions (134)		
Other/unknown (139)		
Sign control-intersection (140)		
Motorist drive-out (141)		
Bicyclist ride-out (142)		
Motorist drive-through (143)		
Bicyclist ride-through (144)		
Other sign control intersection (148)		
Signal control - intersection (150)		
Motorist drive-out - RTOR (151)		
Motorist drive-out (152)		
Bicyclist ride-out (153)		
Motorist drive-through (154)		

*No data were located on which to base a determination.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Other	
	39. Awareness*	40. Helmet use*
Signal control intersection (150) (continued)		
Bicyclist ride-through (155)		
Bicyclist failed to clear - trapped (156)		
Bicyclist failed to clear - multiple threat (157)		
Other signal control intersection (158)		
Uncontrolled intersection (160)		
Crossing path - intersection other (180)		
Motorist turn/merge (210)		
Motorist left turn- same direction (211)		
Motorist left turn - opposite direction (212)		
Motorist right turn - same direction (213)		
Motorist right turn - opposite direction (214)		
Motorist drive-in/out - parking (215)		
Bus/delivery vehicle pullover (216)		
Bicyclist turn/merge (220)		
Bicyclist left turn - same direction (221)		
Bicyclist left turn - opposite direction (222)		
Bicyclist right turn - same direction (223)		
Bicyclist right turn - opposite direction (224)		
Bicyclist ride-out - sidewalk (225)		
Motorist overtaking (230)		
Motorist overtaking - undetected bicyclist (231)		
Motorist overtaking - misjudged space (232)		
Motorist overtaking - other/unknown (239)		
Bicyclist overtaking (240)		
Bicyclist overtaking - right side (241)		
Bicyclist overtaking - left side (242)		
Bicyclist overtaking - parked vehicle (243)		
Bicyclist overtaking - extended door (244)		
Bicyclist overtaking - other/unknown (249)		

*No data were located on which to base a determination.

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Other	
	39. Awareness*	40. Hel met use*
Head-on (250)		
Parallel path - other (280)		
Bicyclist ride-out-non-intersection (310)		
Residential driveway (311)		
Commercial driveway/alley (312)		
Non-intersection - other (318)		
Non-intersection - unknown (319)		
Motorist drive-out-non-intersection (320)		
Residential driveway (321)		
Commercial driveway/alley (322)		
Non-intersection - other (328)		
Non-intersection - unknown (329)		
Crossing path - non-intersection - other (380)		
Bicycle only (400)		
Motorist intentionally caused (510)		
Bicyclist intentionally caused (520)		
Backing vehicle (600)		
Play vehicle related (700)		
Unusual circumstances (800)		
Non-roadway - other (910)		
Unknown/insufficient information (990)		

*No data were located on which to base a determination.



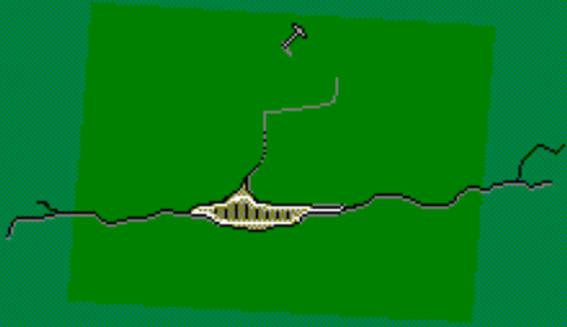
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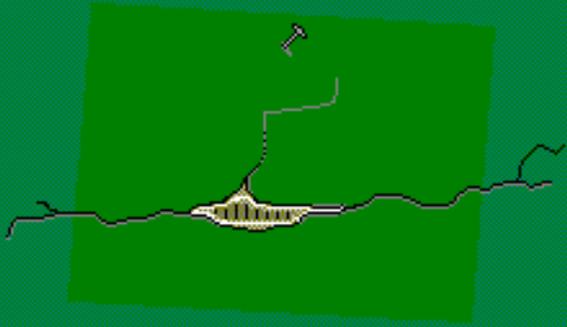
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Other

Problem Area by NHTSA/FHWA Crash Type (Continued)

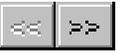
Crash type (and code number)	Target group	
	29. Pre-school bicyclist	30. Elementary school bicyclist
Motorist/bicyclist turning error (110)		
Motorist turning error - left turn (111)		
Motorist turning error - right turn (112)		
Motorist turning error - other (113)		
Bicyclist turning error - left turn (114)		
Bicyclist turning error - right turn (115)		
Bicyclist turning error - other (116)		
Bicyclist lost control (120)		
Mechanical problems (121)		
Oversteering, improper braking/speed (122)		X
Alcohol/drug impairment (123)		
Surface conditions (124)		X
Other/unknown (129)		
Motorist lost control (130)		
Mechanical problems (131)		X
Oversteering, improper braking/speed (132)		X
Alcohol/drug impairment (133)		
Surface conditions (134)		X
Other/unknown (139)		
Sign control-intersection (140)		
Motorist drive-out (141)		
Bicyclist ride-out (142)		X
Motorist drive-through (143)		
Bicyclist ride-through (144)		X
Other sign control intersection (148)		
Signal control-intersection (150)		
Motorist drive-out - RTOR (151)		
Motorist drive-out (152)		
Bicyclist ride-out (153)		
Motorist drive-through (154)		

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group	
	29. Pre-school bicyclist	30. Elementary school bicyclist
Signal control intersection (150) (continued)		
Bicyclist ride-through (155)		
Bicyclist failed to clear - trapped (156)		
Bicyclist failed to clear - multiple threat (157)		
Other signal control intersection (158)		
Uncontrolled intersection (160)		X
Crossing path - intersection other (180)		
Motorist turn/merge (210)		
Motorist left turn - same direction (211)		
Motorist left turn - opposite direction (212)		
Motorist right turn - same direction (213)		
Motorist right turn - opposite direction (214)		
Motorist drive-in/out - parking (215)		
Bus/delivery vehicle pullover (216)		
Bicyclist turn/merge (220)		
Bicyclist left turn - same direction (221)	X	X
Bicyclist left turn - opposite direction (222)	X	X
Bicyclist right turn - same direction (223)		
Bicyclist right turn - opposite direction (224)		
Bicyclist ride-out - sidewalk (225)	X	X
Motorist overtaking (230)		
Motorist overtaking - undetected bicyclist (231)		
Motorist overtaking - misjudged space (232)		
Motorist overtaking - other/unknown (239)		X
Bicyclist overtaking (240)		
Bicyclist overtaking - right side (241)		
Bicyclist overtaking - left side (242)		
Bicyclist overtaking - parked vehicle (243)		
Bicyclist overtaking - extended door (244)		
Bicyclist overtaking - other/unknown (249)		

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group	
	29. Pre-school bicyclist	30. Elementary school bicyclist
Head-on (250)		
Parallel path - other (280)		
Bicyclist ride-out-non-intersection (310)		
Residential driveway (311)	X	X
Commercial driveway/alley (312)	X	X
Non-intersection - other (318)	X	X
Non-intersection - unknown (319)		
Motorist drive-out-non-intersection (320)		
Residential driveway (321)		
Commercial driveway/alley (322)		
Non-intersection - other (328)		
Non-intersection - unknown (329)		
Crossing path - non-intersection - other (380)		
Bicycle only (400)		
Motorist intentionally caused (510)		
Bicyclist intentionally caused (520)		
Backing vehicle (600)		X
Play vehicle related (700)	X	
Unusual circumstances (800)		
Non-roadway - other (910)		X
Unknown/insufficient information (990)		



The guide to bicycle rodeos

Source: Outdoor Empire Publishing Company, Inc., 511 Eastlake Avenue East, Seattle, WA 98109, Telephone: (206) 624-3845.

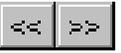
Date: Third edition, 1994

Summary description: This 49-page 8-1/2 x 11 booklet describes how to set up and run a bicycle rodeo for children. Safety information is also provided for parents. It provides advice for finding the leader, finding and directing volunteers, setting the size of the event, choosing a time and place, finding money, obtaining needed supplies, getting the word out, setting up the rodeo stations and running the skills tests.

Major content points and behaviors: The rodeo stations are based on crash research and include the following:

- § Children learn the basics of bicycle sizing and maintenance. In addition, parents are advised that major crashes occur because children ride out into the street from their driveways without looking for traffic and also ride through controlled intersections without stopping and looking for traffic. Parents are advised that children should yield to traffic, ride with traffic, obey traffic controls and never ride at night.
- § Children learn the importance of searching in all directions and of being conspicuous.
- § Children learn the importance of traffic rules.
- § Children learn to stop and look left-right-left before leaving their driveways.
- § Children learn to stop at stop signs and look left-right-left for traffic before proceeding into the roadway.
- § Children learn to look behind them for traffic while riding.
- § Children learn control and balance in dodging an object at the last moment and in going through two close objects without hitting either.
- § Children learn to deal with roadway hazards while being constantly aware of traffic around them.
- § Children find 12 hazards in a cartoon traffic scene.

In addition, extra lessons suggested for older children (11 years and above) include making panic stops and quick turns. Extra lessons for all children include slow riding, making tight turns, practicing figure eights, and running a slalom course.



Safety advice from EMS (SAFE): A guide to injury prevention

Source: U.S. Department of Transportation, National Highway Traffic Safety Administration, NTS-14, 400 Seventh Street, SW, Washington, DC 20590

Date: 1996

Summary description: This training program includes lesson plans, overhead transparencies, handouts and a video on the following 11 highway safety topics: child safety seats, highway safety activities for children, occupant protection for adults, pedestrian safety for children, pedestrian safety for elders, bike safety for children, bike safety for adults, teen driving under the influence, how to host a responsible party, speed shatters life, and yielding to emergency vehicles.

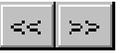
Major content points and behaviors: Two lessons are provided on bicycle safety--one for children and one for adults. The lesson plans for children are designed for kindergarten through second grade and cover the following key messages:

- § Wear an approved bicycle helmet at all times.
- § Make sure helmet fits properly.
- § Replace damaged helmets.
- § Use a light for night riding.
- § If under nine years of age, don't ride in the street.
- § Always stop and look left-right-left before entering the roadway.
- § Ride alert and signal before making lane changes or stops.
- § Ride single file and go with the flow of traffic.
- § Never ride at night or with headphones on.
- § Always keep the bike and safety equipment in good order.

- § Obey traffic laws.
- § Be visible.
- § Control your bicycle.

The lesson plans for adults cover essentially the same key messages with the following additional details:

- § How to buy a helmet--the basic types and the standards
- § How to make a helmet fit.
- § How to get children to wear helmets.
- § Choosing the right bicycle for your child.
- § Common types of bicycle collisions.



Teacher's guide to bicycle safety: Kindergarten-grade 8

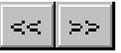
Source: American Automobile Association

Date: 1988

Summary description: This 12 page 8-1/2 x 11 booklet provides teaching activities in the following four major areas that research has shown contribute to bicycle crashes: not stopping and searching for vehicles before exiting a driveway or alley, disobeying traffic signs and signals, swerving into a motorist's path and riding against the traffic flow. Activities are divided into the following three grade groups: kindergarten through grade 3, grades 4 through 6 and grades 7 through 8.

Major content points and behaviors: The following topics are covered:

- § Proper helmet fit.
- § Stopping before entering traffic.
- § Traffic signs and signals.
- § Safe riding behaviors.



Traffic safety teacher's guide (Stock # 3028)

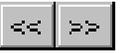
Source: American Automobile Association

Date: 1997

Summary description: This 22-page 8-1/2 x 11 booklet provides teaching activities for the following nine traffic safety areas: helping the school safety patrol, walking facing traffic, buckling the safety belt, wearing a helmet, being seen after dark, crossing carefully at corners, curbing the urge to dash across, looking all ways before crossing and playing away from traffic. Two lessons are on bicycle helmets.

Major content points and behaviors: Major bicycle content points are:

- § Helmets should be the correct size, placed on the head at the correct angle and strapped securely.
- § Helmets should be worn at all times.
- § Bicycles should be the correct size.
- § Bicycles should be equipped with lights and reflectors.
- § Bicycles should be maintained in good repair.



Traffic safety teacher's guide for grades K-3 (Stock # 3027)

Source: American Automobile Association

Date: 1995

Summary description: This 22-page 8-1/2 x 11 booklet provides training activities for the following 10 traffic safety areas: helping the school safety patrol, walking facing traffic, buckling the safety belt, keeping one's hands inside the school bus, being seen after dark, crossing carefully at corners, curbing the urge to dash across, looking all ways before crossing, wearing a helmet and playing away from traffic. One lesson is on bicycle safety focusing largely on helmets.

Major content points and behaviors: Major bicycle content points are:

- § Helmets should be the correct size, placed on the head at the correct angle and strapped securely.
- § Helmets should be worn at all times.
- § Bicycles should be the correct size.
- § Bicycles should be equipped with lights and reflectors.
- § Bicycles should be maintained in good repair.



Someone else

Source: Southeast Wisconsin Safe Kids Coalition and Milwaukee Safety Commission, PO Box 1997, Milwaukee, WI 53201, Telephone: (414) 771-7233)

Date: 1998

Summary description: These training materials include a bicycle safety video (9:40) and activity sheets for intermediate school children. The materials revolve around a young man named Danny who was not wearing a helmet when involved in a bicycle crash. He suffered mobility problems as well as difficulties in talking clearly and finding the right words to say. Several flashbacks to the incident and subsequent care are provided.

Major content points and behaviors: The following points are made:

- § Obey stop signs
- § Wear a properly fitted and positioned helmet
- § Look for traffic before entering the street
- § Use proper hand signals

In addition to the preceding rules, parents are advised to teach their children the following safety rules:

- § Ride with traffic on the right side of the road
- § Obey traffic signs and signals
- § Ride single file
- § Don't carry passengers
- § Watch out for potholes, uneven sidewalks and other obstacles
- § Do not turn or ride out in front of oncoming traffic

§ Ride a properly-sized bike

The program also points out the effect that the crash had on the driver of the vehicle that hit Danny.



Instructor's guide for the bicycle driver's test (How well do you drive your bike?)

Source: Milwaukee Safety Commission, 6680 North Teutonia, Milwaukee, WI 53209, Telephone: (414) 935-7986

Date: Undated

Summary description: These materials consist of a test showing pictures of various bicycle/traffic situations and an instructor's guide depicting the same situations. The test is designed to be completed and then discussed by students one situation at a time. Discussion points are included in the instructor's guide. The objectives are to increase the bicyclist's awareness of traffic rules, regulations and procedures, awareness of potential dangers and development of safe driving habits and techniques.

Major content points and behaviors: The following are covered:

- § Stopping and looking for cars at the end of a driveway
- § Signaling and getting into the appropriate lane for a turn
- § Obeying traffic controls
- § Being attentive while riding
- § Being visible
- § Keeping the bicycle in good condition
- § Being alert to the cues of a motorist's intentions
- § Looking around visual screens
- § Yielding the right of way
- § Watching for opening car doors and other dangers around parked cars



The right way

Source: Southeast Wisconsin Safe Kids Coalition and Milwaukee Safety Commission, PO Box 1997, Milwaukee, WI 53201, Telephone: (414) 771-7233)

Date: 1998

Summary description: These training materials include a bicycle safety video (8:17) and worksheets for primary school children. Included also is a parent information sheet.

Major content points and behaviors: The video and activity sheets show how the lives of Eddie and his friends changed after Eddie was injured in a bicycle crash. It emphasizes the following points:

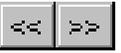
- § Wear a properly-fitted and positioned helmet
- § Dismount and cross the street at the corner
- § Look for vehicles before entering the street
- § Ride a bicycle that is the correct size
- § Warn pedestrians when passing them on the sidewalk
- § Use proper signals
- § Ride on the sidewalk when you are young

In addition to the preceding rules, parents are advised to teach their children the following safety rules:

- § Ride with traffic on the right side of the road
- § Obey traffic signs and signals
- § Ride single file
- § Don't carry passengers

§ Watch out for potholes, uneven sidewalks and other obstacles

§ Do not turn or ride out in front of oncoming traffic



Bicycle traffic safety school...A component of the University of Florida Bicycle Safety Education Program

Source: University of Florida, University Police Department, Community Services Division, PO Box 112150, Gainesville, FL 32612, Telephone: (352) 392-1409

Date: Undated

Summary description: This 42-page document presents a lesson plan for the 90-minute University of Florida offender school training program. Also included is a plan for the University of Florida Bicycle Safety Education Program.

Major content points and behaviors: The offender school training program covers the following topics:

- § The class is only for first time offenders
- § Legal definition of a bicycle
- § Definition of right of way
- § Hand signals
- § Definition of roadway
- § Mandatory safety equipment--white front lamp, rear red lamp, audible device for passing a pedestrian
- § Regulations--keep at least one hand on the handlebar, ride right except when turning left, no more than one person per seat, good brakes, ride no more than two abreast, obey all traffic controls and signals
- § Penalties for violations
- § Criminal violations--e.g., DUI, flee and elude, reckless driving
- § Parking rules
- § Defensive driving techniques

- § Optional safety equipment--reflective and retroreflective clothing, elbow and knee pads, gloves, helmets
- § Crash report analysis
- § Theft prevention
- § Bike registration program
- § Choosing a route

The plan for the University of Florida Bicycle Safety Education Program includes discussions of the following topics:

- § Environmental design--bicycle facilities
- § Rules and regulations for operating and parking bicycles on the university campus
- § Education and encouragement--programs to inform bicyclists, motorists and pedestrians of each other's rights and responsibilities
- § Enforcement
- § Registration



Bicycle skill tests for groups and rodeo events (Stock #3282)

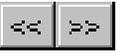
Source: American Automobile Association (and Safe Kids)

Date: Undated

Summary description: This 16-page 6 x 9 booklet is printed in lavender and black on white paper. It focuses on bicycle handling skills and describes skill tests for groups and rodeo events.

Major content points and behaviors: The basic bicycling handling skills covered include balance, signaling, stopping and observance of traffic signs and signals. Test procedures and equipment are described. The following skill tests are diagrammed and explained:

- § Mounting and balance
- § Circling and change in direction
- § Balance at slow speed
- § Straight line and control
- § Maneuvering and weaving
- § Turning around in a limited space
- § Stopping ability
- § Circling and balance
- § Signaling
- § Multiple driver maneuvers
- § Maneuvering in limited space
- § Traffic light and stop sign intersection



Bicycle information test (Stock #3283), Bicycle information test answer sheet and scoring key (Stock #3292)

Source: American Automobile Association (and Safe Kids)

Date: 1993

Summary description: This four-page 8-1/2 x 11 document contains three tests on bicycle safety appropriate for ages 10-16. Also included in the package are a one-page sheet for recording answers and a one-page scoring key sheet.

Major content points and behaviors: The tests cover the following topics:

- § Stopping before entering the street
- § Maintaining a safe bicycle
- § Riding single file
- § Obeying traffic signs and signals
- § Riding near pedestrians
- § Practicing safe skills
- § Using hand signals
- § Being conspicuous
- § Driving at night
- § Carrying passengers
- § Making turns
- § Wearing helmets

- § Having the right-size bicycle
- § Riding with traffic
- § Carrying packages on the bike
- § Preventing theft



Look out! Highway safety topics for elementary students

Source: Allegheny County Health Department, Penn West Office Building, 907 West Street, Pittsburgh, PA 15221, Telephone: (412) 247-7800

Date: 1990

Summary description: This 70 page booklet contains lessons for grades K-3 and 4-6 on pedestrian, bicycle, and school bus and car safety.

Major content points and behaviors: The booklet contains the following lessons:

§ Grades K-3 pedestrian safety

- Crossing the street
- Traffic lights and signs
- Playing in safe places

§ . Grades 4-6 pedestrian safety

- Crossing the street
- Where to play safely
- Mall parking lots

§ Grades K-3 bicycle safety

- Wearing a helmet
- Taking care of your bike
- Riding on the sidewalk

§ Grades 4-6 bicycle safety

- Wearing a helmet
- Bicycle parts and maintenance
- § Grades K-3 school bus and car riding safety
- Getting off the bus--the danger zone
- Wearing a seatbelt and locking the door
- Behavior on the bus
- § Grades 4-6 school bus and car riding safety
- Getting off the bus--the danger zone
- How long does it take for a car to stop?
- Behavior on the bus



Effective cycling: Road I, Road II and Road III

Source: League of American Bicyclists, 1612 K Street, NW, Suite 401, Washington, DC 20006,
Telephone: (202) 822-1333

Date: Undated

Summary description: These Effective cycling courses teach adult cyclists important safety and bike handling skills to ensure safer and more enjoyable rides. They are designed for three adult bicyclist levels: beginners (Road I), intermediate riders (Road II) and advanced riders (Road III).

Major content points and behaviors: The courses cover the following topics:

§ Road I is a course for beginners and novice riders. It covers principles of cycling, bicycle selection and fit, helmet use, essential clothing, basic bike handling skills, bicycle parts, signaling, making left turns, changing lanes, lane position, roadway hazards, traffic rules and responsibilities and minor maintenance skills.

§ Road II is a course for intermediate riders. It enhances bicycle skills and develops proficiency in bicycle maintenance. It reviews many of the topics covered in Road I and adds prevention and avoidance of crashes and injuries, cold and hot weather riding, drinking and eating while riding, gear choices, merging, handling multiple turn lanes, group riding, handling loop detectors and handling curves (including hill curves) on rural roads.

§ Road III is a course for advanced riders who are serious about becoming proficient in the full spectrum of non-racing bicycling skills and maintenance. It reviews many of the topics included in Road I and Road II and adds cycle touring, drafting and pace lines, gearing, hill climbing and descending techniques, night riding, training for endurance and riding in the rain.



Bucklebear gets ready to go kit

Source: Center for Injury Prevention, 5009 Coye Drive, Stevens Point, WI 54481, Telephone: (800) 344-7580

Date: 1991

Summary description: This kit contains a three-part curriculum on pedestrian and bicycle safety for use in day care, Head Start or kindergarten facilities. Part 1 (Presenter's guide) introduces young children 2-1/2 to 4 years of age to the concepts of helmet use and tricycle safety basics and includes a storybook. Part 2 (Bucklebear's block) provides children with opportunities to practice social skills and environmental awareness along with safe walking. Part 3 (Walking with Bucklebear) covers walking safely, socialization and recycling. Each part is packaged separately and provides individual pages in plastic protector sheets.

Major content points and behaviors: The Part 1 Presenter's guide includes six lesson plans, copymasters for activities, Biking with Bucklebear storybook, a mini block and finger puppets, a pattern for a "practice" helmet, a poster set, and information for parents. It provides the following advice:

- § Always wear a properly-fitted and approved bicycle helmet
- § Wear bright colored clothing
- § Wear shoes
- § Ride a cycle that is the appropriate size
- § Keep the bicycle well maintained
- § Ride in a safe place--never in the street
- § Stop at driveways and look for cars when riding on the sidewalk
- § Never ride in the street--walk your bike across
- § Always ride under the supervision of a responsible adult

The eight-page storybook is titled Bucklebear gets ready to go. It measures 8-1/2 x 11 and, except for the cover, is printed in black on white so that it can also serve as a coloring book. It covers wearing bright colored clothes, wearing shoes, wearing a helmet, having a grown-up with you when you ride, and staying out of streets. Parents and caregivers are advised to make sure children have a properly fitted and approved helmet, wear bright colored and reflective clothing, ride in a safe place and always have adult supervision when they ride.



Washington children's bicycle helmet project: Curriculum guide

Source: Washington Children's Bicycle Helmet Project, Department of Health, P.O. Box 47832, Olympia, WA 98504-7832, Telephone: (360) 753-4112

Date: 1996

Summary description: This five-page curriculum guide was prepared to make parents of pre-school children understand the importance of wearing bicycle helmets, be able to identify the correct kind of helmet and be able to adjust the fit for the greatest protection.

Major content points and behaviors: The guide covers the following:

- § Facts on the child bicycle injury problem
- § Effects that bicycle helmets can have on these injuries
- § Sample situations in which children are injured (for discussion)
- § Practice in identifying an approved helmet
- § Practice in fitting the helmet

Parents are advised to replace a helmet if a child has been involved in a crash or when the child outgrows the helmet.



Traffic safety education guide

Source: Florida Traffic and Bicycle Safety Education Program, Department of Urban and Regional Planning, University of Florida, PO Box 115706, Gainesville, FL 32611, Telephone: (352) 392-8192

Date: 1998

Summary description: This 132-page document is bound in a notebook. It contains three sections: an administrator's guide, student activities (which include curriculum outlines for grades K-2 and grades 3-5) and equipment and support materials. Also included are videos for both curriculum grade levels.

Major content points and behaviors: The administrator's guide covers the following topics: why have a traffic safety education program, the benefits to children and the community, what the program should include, some program choices, how to implement the program in the school, what student activities should be included in the program, and what resources are available to assist in developing a program.

The student activities section includes separate curriculum outlines and activities for grades K-2 and for grades 3-5. The grades K-2 curriculum covers pedestrian and school bus safety. The grades 3-5 curriculum covers bicycle safety (classroom and on-bike lessons) and includes the following topics

§ Recognizing and avoiding hazards

§ Importance of helmet use, recognizing an approved helmet, how to fit a helmet, proper helmet positioning

§ Bicycle fit, bicycle safety inspection, parking and locking the bicycle, bicycle registration

§ Seeing and being seen--daytime and nighttime

§ Mapping a safe route

§ Bicycle laws--legal status as a vehicle, bicycle regulations, sidewalk riding, nighttime lighting requirements, roadway position, making left turns, signaling, using headsets, wrong-way riding, safety equipment requirements

§ On-bike skills: traffic mix, bicycle safety check, stopping, rock dodge and scanning, riding right,

turning, signaling, driveways, intersections, visual barriers

The equipment and support materials section lists equipment requirements to conduct the program and resources for equipment and materials.

Two videotapes are packaged in the notebook--one for the grades K-2 program and one for the grades 3-5 program. The grades K-2 tape contains a compendium of pedestrian and school bus safety videos and video segments. The grades 3-5 tape contains the following bicycle safety videos:

- § Education is the key
- § Kid's eye view
- § Be safe on your bike
- § The bicycle zone
- § The Ride Safe way to fit a bicycle helmet



Annual pedal power camp report

Source: Minnesota Community Bicycle Safety Project, University of Minnesota, 340 Coffey Hall, 1420 Eckles Road, St Paul, MN 55108, Telephone: (612) 625-9719

Date: Annual

Summary description: This 8-1/2 x 11 book provides a summary of the pedal power program for the preceding year. The Minnesota pedal power camp is a week-long residential camp to teach bicycle riding and leadership skills to teenagers. Youths are instructed in bicycle maintenance, touring, safe bicycling, traffic laws, and promoting safe bicycling in their communities.

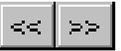
Major content points and behaviors: The document provides the following:

- § Description of the pedal power program
- § The pedal power camp curriculum
- § Locations of the residences of the pedal power campers
- § Pre/post test and evaluation results
- § Community activities conducted in the year
- § The pedal power brochure
- § Camp schedule
- § Camp evaluation

The following key safety messages are included in the program:

- § Take care of yourself
- Drink plenty of water

- Eat good food
- Be rested and alert when riding
- Wear a helmet when riding
- Wear light colored clothing
- Ride often for fitness and transportation
- § Take care of your bike
- Know how to maintain or repair bikes
- Know how to handle your bike in traffic
- Lock your bike when you leave it unattended
- Register your bike for theft recovery/protection
- § Know your laws/rules
- Obey traffic laws
- Ride predictably and defensively
- Plan a safe route
- Know how to ride on various facilities, i.e., roads with traffic, bike trails, bike lanes, etc.



The basics of bicycling

Source: Bicycle Federation of America, Inc., 1506 21st Street NW, Washington, DC 20036, Telephone: (202) 463-6622

Date: 1995

Summary description: This 52-page instructor's manual and video (47:20) are contained in a loose-leaf notebook. The program is designed for upper elementary school students, especially 4th graders. The video includes a 24-minute teacher-training segment. The focus of the program is carefully structured to match the key behaviors, skills and knowledge associated with the typical crash types for the age group. The course covers over-the-shoulder looking, stopping at driveways and for all signs/signals, road sharing, communicating with other road users, hazard avoidance, judgment development, and knowledge and skill development plus encouragement of legal and responsible bicycling.

Major content points and behaviors: The training program consists of seven lessons, two of which are classroom sessions and two are on-bike sessions: 1) Introduction, 2) High risk situations, 3) Getting ready to ride, 4) Bike handling skills, 5) Traffic skills 1, 6) Traffic skills 2, and 7) Summary and evaluation. The major behaviors covered are:

- § Obey traffic signs and lights
- § Ride with traffic
- § Ride at night only with a working headlight and tail light or rear reflector
- § Yield to pedestrians and emergency vehicles
- § Identify key traffic signs and know their meaning
- § Understand the importance of communications among road users
- § Communicate with other road users through eye contact, hand signals and road position
- § Use communication skills to determine who will yield on the roadway
- § Identify high risk situations and respond to them appropriately
- § Ride straight and keep at least one hand on the handlebars

- § Ride straight while looking back over the left shoulder
- § Stop on demand without swerving, falling over, or colliding with anyone or anything
- § Swerve in a controlled manner to avoid a hazard
- § Scan ahead and behind while riding in a straight line and search constantly while riding
- § Ride a properly-sized bicycle
- § Keep the bicycle in good mechanical condition
- § Wear white or bright colors in daylight
- § Don't ride after dark unless you have to and then wear lots of reflective material
- § Wear an approved and properly-fitted helmet
- § Search for vehicles before exiting a driveway
- § Look around visual screens before proceeding

Appendices provide details on the equipment needed, tips for laying out the course, tips for creating the props, sample prop shapes and dimensions, ideas for using videotaping equipment as part of the training program, sources of further information, and optional lessons. A set of masters for student handouts is also included.



The elementary traffic education program

Source: Seidler Productions, 191 Pine Lane, Crawfordville, FL 32327, Telephone: (850) 925-6331

Date: 1993

Summary description: This training program includes separate materials for six elementary grade levels--kindergarten through grade 5. Separate 9 x 6 teacher's manuals and videos are provided for each grade. The videos are designed to be integrated with the lesson plans and stopped at selected points for class discussion. Although the bicycle is introduced as a vehicle in the kindergarten lessons, pedestrian behavior is emphasized in kindergarten through grade 2. Bicycling behavior is introduced in grade 2, but on-bike skills and major bicycling emphasis appear in grades 3 through 5.

Major content points and behaviors: The following key bicycle safety behaviors are covered in the program:

- § Wear a properly fitted and positioned helmet
- § Use a properly-sized, adjusted and fitted bicycle
- § Conduct a bicycle inspection before riding
- § Ride with traffic
- § Stop and look left-right-left before entering the street
- § Stop and look around visual screens
- § Obey traffic signs and signals
- § Signal and look behind before making any turns
- § Get off the bicycle and walk around pedestrians on narrow sidewalks
- § Notify pedestrians that you are passing
- § Be conspicuous both day and night
- § Be alert to roadway hazards and search behind before making any turns/swerves around them

- § Obey local traffic laws and ordinances
- § Be alert for possible roadway dangers at all times
- § Don't ride in the driver's blind spot



Biking with Bucklebear

Source: Center for Injury Prevention, 5009 Coye Drive, Stevens Point, WI 54481, Telephone: (800) 344-7580

Date: 1993

Summary description: This kit contains instructions, scripts, copy masters and audiotapes for two presentations. One audiotape called Bucklebear's helmet (9:30) is for children on tricycles and training wheels. The other called Bucklebear's riding rules (12:58) is for children 3 to 6 years old. The audiotapes are designed to be used with a lap puppet. Included are three storybooks: Helmet safe with Bucklebear, Biking with Bucklebear and Bucklebear's rules for cycling.

Major content points and behaviors: The following points are made in the audiotape called Bucklebear's helmet

- § Wear a helmet every time you ride
- § A helmet will help keep your brain safe

The following points are made in the audiotape called Bucklebear's riding rules:

- § Wear a helmet
- § Wear bright-colored clothing
- § Wear sturdy shoes
- § Ride in a safe place--never in the street
- § Stop, look and listen at driveways and ask a grown-up if it's O.K. to cross
- § Ring the bell to let others know you are there
- § Always go with a grown-up

The package contains three storybooks as follows:

§ **Helmet safe with Bucklebear:** This 16-page 8 x 8 booklet on the importance of helmets is printed in color. Designed for the very young child, it includes hints for adults.

§ **Bucklebear's rules for cycling:** This eight-page 8-1/8 x 10-3/4 booklet is printed in black on white paper and can be used as a coloring book. The cover is printed in color. The storybook contains advice on safe cycling for both very young children and their parents.

§ **Biking with Bucklebear:** This 24-page 8-1/8 x 10-3/4 booklet is printed in black on white paper and can be used as a coloring book. The cover is printed in color. The storybook contains advice on safe cycling for very young children.



Effective cycling: Kids I and Kids II

Source: League of American Bicyclists, 1612 K Street, NW, Suite 401, Washington, DC 20006,
Telephone: (202) 822-1333

Date: Undated

Summary description: These Effective cycling courses are designed for children of different age groups and for parents. Kids I is designed for parents with young children (kindergarten through grade 3). Kids II is designed to be taught directly to children in grades 4 and 5.

Major content points and behaviors: The courses cover the following topics:

§ Kids I (for parents of children in kindergarten through grade 3) covers the benefits of bicycle education for children, what the world looks like to a child, requirements that parents have in helping their children ride safely, and the mistakes children make when bicycling. The following basic skills are covered:

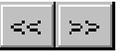
- Riding on the right
- Right of way and yielding
- Scanning and signaling
- Lane position for left turns
- Passing parked cars

§ Kids II (for children in grades 4 through 6) has 10 lessons of which nine are on-bike sessions. The lessons and their topic coverage are as follows:

- Lesson 1: Bicycle sizing and equipment--helmet use, care and fit; bicycle types and fit; bicycle check and maintenance; secure parking for the bicycle

- Lesson 2: Basic skills check--getting on and off the bicycle safely; balancing with control; steering straight
- Lesson 3: Scanning and signaling--looking over the shoulder without wobbling or swerving; hand signals and communication; exiting a driveway and entering the flow of traffic
- Lesson 4: Rules of the road--riding on the right with the flow of traffic; yielding to cross traffic; stop signs; passing parked cars
- Lesson 5: Roadway positioning--lane position--straight through and turns
- Lesson 6: Roadway positioning for turning
- Lesson 7: Hazards and emergency maneuvers--hazards (visual, surface, collision); emergency stop
- Lesson 8: Hazards and emergency maneuvers-- steering around hazards; rock dodge
- Lesson 9: Riding safely: choosing a safe route; written evaluation
- Lesson 10: Riding evaluation

A course called Kids III is being developed. It is designed for children in middle school.



Effective cycling: Bicycle commuting

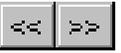
Source: League of American Bicyclists, 1612 K Street, NW, Suite 401, Washington, DC 20006,
Telephone: (202) 822-1333

Date: Undated

Summary description: This three-hour Effective cycling course is designed for graduates of the Road I course who desire more information on how to use their bicycles for utility riding and commuting. The course includes two classroom hours and one hour of nighttime bike riding.

Major content points and behaviors: The course covers the following topics:

- § Equipping the bicycle and cyclist for the ride
- § Being conspicuous
- § Selecting routes
- § Carrying cargo
- § When to ride
- § Parking the bicycle
- § Handling inclement weather
- § Working with employers to provide a positive commuting environment



Bicycle driving course

Source: Minnesota Community Bike Safety Project, 4-H Youth Development, Minnesota Extension Service, University of Minnesota, 340 Coffey Hall, 1420 Eckles Road, St Paul, MN 55108, Telephone: (612)-625-9719

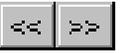
Date: Undated

Summary description: This 28-page booklet contains instructions for conducting a rodeo. It is printed on pink and green paper.

Major content points and behaviors: The booklet includes the following:

- § Pre-event checklist
- § Driving course purpose and layout
- § Station 1--Course layout review/traffic rules/inspection
- § Station 2--Moving in space
- § Station 3--Security, parking and licenses
- § Station 4--Driveway rideout and roadway entry
- § Station 5--Controlled intersection
- § Station 6--Scanning to the rear
- § Station 7--Object in roadway (rock dodge/car door opening)
- § Station 8--Blind driveway (approach/yield signs and hand signals)
- § Station 9--Balance/quick stop

Activity sheets and quizzes are also included.



Bike Ed Hawaii

Source: Hawaii Bicycling League, 3442 Waiialae Avenue, #1, Honolulu, HI 96816-4403, Telephone: (808) 735-6679

Date: 1998

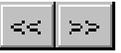
Summary description: This five-day course (five one-hour classes) for fourth-grade students takes place at the child's school and, when appropriate, on neighborhood roads. Included are on-bike instruction, cross-curriculum work, written pre- and post-tests on bicycle safety, homework assignments and an on-bike road test.

Major content points and behaviors: The program teaches children to ride safely in their neighborhoods. It emphasizes the following:

- § Stopping at the end of a driveway and looking left-right-left for cars and proceeding only when it is safe to do so
- § Proper positioning on the roadway for a left turn
- § Making left and right turns at intersections
- § Making U-turns
- § Riding with traffic
- § Procedures to follow at stop signs
- § Getting ready for riding
- Wearing a helmet
- Wearing proper clothing for visibility
- Performing a bicycle safety check

Helmets, bicycles and safety vests are provided.

Parents are advised to try to ride with their children at least once a week--wearing helmets, riding on the right with traffic, obeying stop signs and signal lights, and being visible and predictable.



Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist

Source: Texas Bicycle Coalition, P.O. Box 1121, Austin, TX 78767, Telephone: (512) 476-6655

Date: Undated

Summary description: This program is designed for children in grades 4 and 5. The package of materials includes a 46-page instructor's guide, two videos (English and Spanish), four posters, a brochure and a retroreflective band. One video (15:00) is for students and one (20:00) is for parents.

Major content points and behaviors: The training program includes five classroom lessons and one on-bike lesson: 1) bicycle safety laws, 2) vehicle safety inspection, 3) the SuperCyclist, 4) cycle jeopardy, 5) who else wears helmets? and 6) skills build confidence (on-bike session). The major topics and behaviors covered are:

- § The bicycle is a vehicle and must follow vehicle laws
- § Look left-right-left for vehicles before leaving a driveway
- § There should be only one rider per bicycle
- § Ride near the curb and in the same direction as traffic
- § Keep at least one hand on the handlebars
- § Obey all traffic signs and signals
- § Equip the bike with a light on the front and a red rear reflector
- § Give proper hand and arm signals
- § Ride an appropriately-sized bicycle
- § Have effective brakes and maintain a safe bicycle and
- § Walk your bike through an intersection if it is safer

- § Make sure shoelaces are tied and that laces and pants are tucked in
- § Wear fluorescent clothing during the day
- § Avoid riding at night, but wear something retroreflective if you do
- § Watch for roadway hazards
- § Wear a properly-fitted and positioned helmet at all times
- § Always look over your shoulder before turning
- § Give pedestrians the right-of-way
- § Lock your bike when unattended
- § Ride only one person per bike

The posters (23-1/2 x 17-1/2) show bicycle laws, bicycle safety inspection, cycle hazards and helmet design and use. The child's brochure (14 x 8-1/2 folded to 3-1/2 x 8-1/2) shows bicycle rules, hazards, and helmet use. The retroreflective action band is available in six colors. The child's video (titled Mr. Zamboni) shows children riding their bicycles to accompany Mr. Zamboni on his helicopter ride. The two children who ride properly arrive first and get the helicopter ride. All other children were shown to break bicycle rules. The second video (called Community awareness) provides advice for parents to ensure that their children learn to ride safely.

Currently under development is a curriculum guide on how non-cyclists can teach non-cyclists to be safe bicycle riders. Also under development are a pre- and post-assessment instruments (English and Spanish), and teacher certification procedure and testing materials.



Safe moves for pre-kindergarten through grade 12

Source: Safe Moves, 15500 Erwin Street, Unit #1121, Van Nuys, CA 91411, Telephone: (818) 908-5341

Date: Revised 1998

Summary description: This program provides classroom training on pedestrian, bicycle, motor vehicle, bus, and train safety to children from pre-kindergarten through 12th grade. Included is a guide that describes the curricula topics, method of implementation, effective uses of props and suggested activities to reinforce safe behaviors. Also included is a slide presentation that reflects diverse traffic environments and hazards facing children and teens as bicyclists and pedestrians. A miniature city (1 foot by 8 feet) is used to simulate traffic situations and collisions. The course can be given in 10-, 30- or 45-minute segments to fit diverse school schedules. The course is typically presented in segments throughout the school year. The program includes workshops for the children's parents.

Major content points and behaviors: The following bicycle safety lesson plans are included:

- § Safe places to ride
- § Unsafe places to ride
- § Traffic signs and signals
- § Rights and responsibilities of bicyclists
- § Helmet use--proper fit and maintenance
- § Choosing the right size bike and model
- § Proper bicycling clothing
- § Recognition and avoidance of common bicycle collisions
- § Bicycle maintenance and repair
- § Rules, regulations and ordinances that cover bicyclists

§ Suggested routes to and from school

§ Bicycle facilities--location and use

§ School bicycle policies

The following bicycle crash types are covered:

§ Pre-kindergarten through 2nd grade--riding into the street from driveway or sidewalk, crossing against the light without a grown-up, improper stopping and steering

§ 3rd through 5th grade--wrong way riding, entering the street from a driveway and/or alley, failing to stop at stop signs and red lights, swerving into the path of a vehicle, improper braking and stopping, crossing the street from the sidewalk, crossing against the light, crossing parking lots, vehicle turning into path of cyclist, two riders-one seat

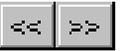
§ 6th through 12th grades-- wrong way riding, entering the street from a driveway and/or alley, failing to stop at stop signs and red lights, swerving into the path of a vehicle, improper braking and stopping, crossing an intersection from the sidewalk, crossing against the light, crossing parking lots, vehicle turning into path of cyclist, failing to yield the right of way

Workshops on the program are conducted for the children's parents.

Assignments to implementer letters and problem area numbers:

Implementers: I, J

Problem areas for each of the above implementers: 1, 2, 3, 4, 5, 14, 15, 16, 22, 23, 29, 30, 31, 32, 38, 40



Safe moves for older adults

Source: Safe Moves, 15500 Erwin Street, Unit #1121, Van Nuys, CA 91411, Telephone: (818) 908-5341

Date: Revised 1998

Summary description: This program provides workshops on pedestrian, bicycle, motor vehicle, bus, and train safety for older adults. Included is a guide that describes the curricula topics, method of implementation, effective uses of props and suggested activities to reinforce safe behaviors. Also included is a slide presentation that reflects diverse traffic environments and hazards facing children and teens as bicyclists and pedestrians. A miniature city (1 foot by 8 feet) is used to simulate traffic situations and collisions. The course can be given in 30- or 45-minute segments to fit diverse school schedules. It is designed to accommodate the diverse needs of the older adult community.

Major content points and behaviors: The following bicycle safety lessons are included:

- § Safe places to ride
- § Unsafe places to ride
- § Traffic signs and signals
- § Rights and responsibilities of bicyclists
- § Helmet use--proper fit and maintenance
- § Choosing the right size bike and model
- § Proper bicycling clothing
- § Recognition and avoidance of common bicycle collisions
- § Bicycle maintenance and repair
- § Rules, regulations and ordinances that cover bicyclists
- § Suggested routes to and from school
- § Bicycle facilities--location and use

The following crash types are covered:

- § Wrong-way riding
- § Swerving into the path of a vehicle
- § Crossing in the middle of the block
- § Crossing against the light
- § Failure to stop at stop signs and red lights
- § Vehicle turning into the path of the cyclist

Assignments to implementer letters and problem area numbers:

Implementers J

Problem areas for each of the above implementers: 1, 2, 3, 4, 5, 14, 15, 16, 22, 23, 35, 40



Safe moves city

Source: Safe Moves, 15500 Erwin Street, Unit #1121, Van Nuys, CA 91411, Telephone: (818) 908-5341

Date: Revised 1998

Summary description: Safe moves city is a portable obstacle course that simulates realistic traffic, sidewalk and street conditions in order to demonstrate the most common crash types among different age groups and skill levels. The program is designed for individuals from age 4 to 84.

Major content points and behaviors: The course training covers the following bicycle handling skills:

- § Proper braking techniques for various situations--steep hill, wet pavement, sand, rain gutters, debris, car doors
- § Proper mounting and dismounting techniques
- § Left and right hand turns
- § Left hand should check (scanning for traffic)
- § Proper turning techniques--avoidance of rocks, sand, cracks, corners, drains, gutters,
- § Road sharing
- § Crossing railroad tracks

The following traffic assessment skills are covered:

- § Crossing at intersections, alleys and driveways
- § Vehicles turning left and right
- § Correct use of bike lanes
- § Safer places to ride and walk

- § Correct way to cross the street
- § Laws and ordinances
- § Right side riding--consequences of wrong-side riding
- § Behaviors of motorists, pedestrians and other cyclists

Assignments to implementer letters and problem area numbers:

Implementers: G, H, J, K

Problem areas for each of the above implementers: 2, 3, 4, 5, 16, 29, 30, 31, 32, 35, 36



Safe moves for service providers

Source: Safe Moves, 15500 Erwin Street, Unit #1121, Van Nuys, CA 91411, Telephone: (818) 908-5341

Date: Revised 1998

Summary description: This program provides workshops on pedestrian, bicycle, motor vehicle, bus, and train safety for individuals from law enforcement agencies, health care providers and community organizations who will teach the Safe moves program. Included is a guide that describes the curricula topics, method of implementation, effective uses of props and suggested activities to reinforce safe behaviors. Also included is a slide presentation that reflects diverse traffic environments and hazards facing children and teens as bicyclists and pedestrians. A miniature city (1 foot by 8 feet) is used to simulate traffic situations and collisions. The course can be given in 30- or 45-minute segments to fit diverse school schedules.

Major content points and behaviors: The course describes how to teach the following bicycle safety lessons:

- § Safe places to ride
- § Unsafe places to ride
- § Traffic signs and signals
- § Rights and responsibilities of bicyclists
- § Helmet use--proper fit and maintenance
- § Choosing the right size bike and model
- § Proper bicycling clothing
- § Recognition and avoidance of common bicycle collisions
- § Bicycle maintenance and repair
- § Rules, regulations and ordinances that cover bicyclists
- § Suggested routes to and from school

§ Bicycle facilities--location and use

Assignments to implementer letters and problem area numbers:

Implementer: J

Problem areas for each of the above implementers: 1, 2, 3, 4, 5, 14, 15, 16, 22, 23, 40



Enforcement for bicycle safety

Source: Wisconsin: Wisconsin Department of Transportation, Bureau of Transportation Safety, Pedestrian/Bicycle Safety Program Manager, 4802 Sheboygan Avenue, Room 809, P.O. Box 7936, Madison, WI 53707-7936, Telephone: (608) 267-3154

Non-Wisconsin: State Pedestrian/Bicycle Coordinator

Date: 1996

Summary description: This 124-page manual serves as the reference for a 16-hour bicycle safety training program for law enforcement officers. It shows how police officers can improve traffic safety by enforcing laws both for bicyclists and motorists. The program was prepared for the state of Wisconsin; however, since the information is appropriate for any law enforcement agency, copies were provided to pedestrian/bicycle coordinators of each state.

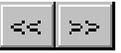
Major content points and behaviors: The course contains information on the following:

- § History and evolution of the bicycle
- § Why and where people bicycle
- § The importance of engineering and types of roadway hazards affecting bicycle safety
- § Typical causes of child and adult bicycle crashes
- § Enforcement goals and strategies
- § Bicycling laws
- § Crash investigation and reporting
- § Bicycle education
- § Bicycle theft
- § Bicycle registration

§ Police bicycle patrols

§ On-bike training

Supporting materials include: bibliography, sample bicycle traffic enforcement guidelines, pre/post test, attitude survey, questionnaire and opinion survey, bicycle statutes, descriptions of the Cross and Fisher crash types and a bicycle crash analysis of the city of Madison, Wisconsin.



Bicycle planning and facility workshop (Alex Sorton)

Source: Northwestern University Traffic Institute, 405 Church Street, PO Box 1409, Evanston, IL 60204,
Telephone: 847-491-5476

Date: Undated

Summary description: The Northwestern University Traffic Institute offers 1-day and 2-1/2-day workshops on bicycle planning and facilities.

Major content points and behaviors: The 8-hour workshop covers the following topics:

- § Overview of bicycling
- § Legal liability and bicycle facilities
- § Analysis of bicycle facility and traffic management strategies--street rating evaluation to determine bicycle compatibility
- § Bicycle facility and traffic management strategies--improvements that can be made to the road environment to promote bicycling
- § Bicycle/rider characteristics
- § Bicycle facility design guidelines

The 20-hour workshop covers the following topics:

- § Overview of bicycling
- § Bicycle problem and needs

- § Bicycle use patterns
- § Bicycle planning principles
- § Bicycle facility and traffic management strategies
- § Legal liability and bicycle facilities
- § Analysis of bicycle facility and traffic management strategies
- § Education/enforcement
- § Bicycle planning problem session
- § Bicycle/rider characteristics
- § Bicycle facility design project



Pedestrian and bicyclist safety and accommodation (FHWA-HI-96-028)

Source: Federal Highway Report Center, Philadelphia Court, Unit Q, Lanham, MD 20706, Telephone: (301) 577-0818

Date: 1996

Summary description: This document serves as the participant's workbook for a course entitled Pedestrian and Bicyclist Safety and Accommodation presented by the National Highway Institute. The course presents a comprehensive approach to integrating bicyclists and pedestrians into the transportation system.

Major content points and behaviors: The document covers the following topics:

- § Relationship of transportation systems to land use
- § Types of pedestrians and bicyclists, including children, older adults and disabled
- § The disabled
- § Pedestrian and bicyclist crashes
- § Risk management, tort liability and techniques for monitoring and evaluating existing facilities and programs
- § Pedestrian and bicyclist laws and ordinances
- § Increasing use of walking and bicycling
- § Roadway design/maintenance to accommodate bicyclists and pedestrians
- § Pedestrian and bicyclist education
- § ISTEA and planning

§ Law enforcement overview

§ Schools--locations, routes, traffic circulation, safety patrols, surveys of use and evaluation of road segments

§ Public involvement techniques and approaches

§ Bicycle helmets

§ Conspicuity

§ Funding



Law enforcement bicycle patrol course

Source: Division of Criminal Justice Services, Bureau of Municipal Police, 4 Tower Place, Albany, NY 12203-3702, Telephone: (518) 457-2667

Date: Undated

Summary description: This training program (35 hours minimum) trains law enforcement personnel in the skills required to do patrol and enforcement activities from the mountain bike in New York State. It includes classroom lecture and riding activities in urban, residential and rural environments.

Major content points and behaviors: The course covers the following topics and activities:

- § History of bicycle patrol
- § Bicycle nomenclature and fit
- § Basics of cycling: Effective cycling, gearing and cadence
- § Basic skills evaluation
- § Training ride
- § Tumbling/falls
- § Advanced skills/training ride
- § Crash analysis--types of crashes and hazards that cause them
- § Health and fitness
- § Bicycle injuries and first aid
- § Legal issues/vehicle and traffic law--laws pertaining to bicycles, in-line skates and skateboards
- § Group riding
- § Tactics and suspect contacts

§ Night riding techniques and night riding exercise--techniques plus visibility (equipment, proper use of lighting system, reflective materials)

§ Firearms

§ Mock scenarios

§ Final exam



Effective cycling: Motorist education

Source: League of American Bicyclists, 1612 K Street, NW, Suite 401, Washington, DC 20006,
Telephone: (202) 822-1333

Date: Undated

Summary description: This Effective cycling course is designed to teach driver education instructors to teach future drivers how to safely coexist on the road with cyclists.

Major content points and behaviors: The course objectives are to:

- § Lessen the danger of car/bike crashes
- § Make motorists aware of the principles of traffic law pertaining to cyclists and the cyclist's rights as drivers of vehicles
- § Acquaint motorists with the fundamental capabilities of the bicycle--what it can and can not do
- § Develop an understanding of what a properly ridden bicycle will do if it follows the principles of Effective cycling
- § Promote a better atmosphere between motorists and cyclists as they learn to share the road
- § Make specific recommendations promoting bicycle safety

The course covers the basic concepts of Effective cycling such as riding on the right, obeying traffic signals, channelizing, making left turns and positioning of the bicycle in the roadway. It covers what can go wrong on sidewalks, bike lanes and bike paths and includes specific safety recommendations for motorists in a bicycle friendly world.



Bike patrol training manual

Source: Minnesota Community Bike Safety Project, University of Minnesota, 340 Coffey Hall, St. Paul, MN 55108, Telephone: (612) 625-9719

Date: Undated

Summary description: This manual contains materials for training summer bike patrols in enforcement techniques, educational principles and safe biking practices. It also contains a bike violator's seminar lesson plan and tests and certificates that can be duplicated.

Major content points and behaviors: The bike patrol officer serves as a representative of the police department and performs functions in three major areas: enforcement, education and record keeping, as follows:

§ Enforcement topics include state laws and regulations, how and where to patrol, ticketing, handling difficult situations, providing positive reinforcement, radio procedures and stolen bicycles. Laws and regulations include the following:

- Ride right
- Obey traffic signs and signals
- Ride single file on busy streets
- Signal before turning or stopping
- Avoid carrying packages that prevent keeping at least one hand on the handlebars and properly operating the brake
- Ride an appropriately-sized bicycle
- Make left turns as motorists do or dismount and cross as pedestrians do
- Yield the right of way when entering the roadway at other than an intersection
- Carry only the number of persons for which the bicycle is designed

- Never hitch a ride on a moving vehicle
- Give an audible signal when overtaking and passing a pedestrian
- Do not ride on the sidewalk unless permitted by local authorities
- Drive after dark only if bike is equipped with headlight, taillight and reflectors required by law

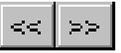
§ Education topics include conducting violator's seminars, bike rodeos and on-street instruction. The violator's seminar includes the following:

- State laws/local ordinances
- Local enforcement program
- Causes of crashes--midblock rideout, running stop signs, wrong-way riding, motorist failure to search, motorist failure to obey stop sign, bicyclist sudden turn without searching, motorist unexpected left turn, motorist right turn into bike path, motorist drive-out from an alley/driveway, motorist overtaking an undetected bicyclist at night, cyclist disobeying traffic signal
- Safe driving techniques
- Theft prevention

§ Record keeping topics include violations, seminars, correspondence and a daily log.

§ Resources

Also included are instructions on conducting a bicycle helmet campaign for children, tips for parents to get children to wear helmets, a bicycle inspection checklist, a knowledge test and quiz and a skills test.



Annual Minnesota bike patrol training

Source: Minnesota Community Bicycle Safety Project, University of Minnesota, 340 Coffey Hall, 1420 Eckles Road, St Paul, MN 55108, Telephone: (612) 625-9719

Date: Annual

Summary description: This 8-1/2 x 11 report summarizes Minnesota's bike patrol training for the most preceding year. Bike patrols are hired by local police departments to enforce traffic laws that apply to bicyclists and to educate citizens about safe bicycle driving behavior.

Major content points and behaviors: The report describes the following:

- § An overview of the training program
- § Evaluation results
- § Bike patrol training brochure
- § Training agenda contents
- Bike patrol responsibilities
- Enforcement--crash facts, elements of offenses, selective enforcement, types of enforcement
- Role as teacher/enforcer
- Educational strategies--violation's seminars, safety presentations, rodeos/bike driving courses, other strategies
- Rodeo presentations
- Record keeping
- Radio procedures
- Stolen bikes

- First aid

The following key safety messages are included in the program:

- § Obey traffic laws
- § Know that bikes have the same rights and responsibilities as cars
- § Ride predictably and defensively
- § Wear a helmet, gloves and conspicuous clothing when riding
- § Be a role model; serve as a public relations arm of the police department
- § Ride often to develop good safe skills



Bicycle and pedestrian traffic safety education

Source: Colorado Department of Transportation Bicycle Program, 4201 East Arkansas Avenue, Suite 212, Denver, CO 80203, Telephone: (303) 757-9982

Date: Undated

Summary description: This document provides the instructor materials for Home to school: Safe travel for the elementary school child K-5 curriculum.

Major content points and behaviors: The document identifies the following crash types as accounting for 90% of bicycle-related crashes involving children: midblock rideouts, intersection rideouts, sudden swerves and wrong way riding. It provides background information and classroom activities on conspicuity. A lesson plan is included on use of helmets. Laws, ordinances and enforcement techniques and issues are discussed. The following topics are covered:

- § Reasons for teaching traffic safety
- § Children as pedestrians
- § Why bicycle crashes happen and what can be done to prevent them
- § Exploring the myth of riding against traffic
- § How to organize bicycle training events
- § Conspicuity
- § Helmets
- § Laws and ordinances
- § Games
- § Resources

The document outlines the contents of both the Colorado K-5 curriculum and Basics of bicycling.



Wisconsin enhanced Effective cycling Road I course

Source: Division of Transportation Investment Management, Wisconsin Department of Transportation, PO Box 7913, Madison, WI 53707, Telephone: (608) 267-7757

Date: 1998

Summary description: This two-day course is designed for traffic engineers and planners. It includes four hours of classroom training and five hours of hands-on and on-road instruction for a total of nine hours. Based on the League of American Bicyclists Effective cycling: Road I course for adult beginner cyclists, it provides transportation professionals with bicycling skills and with knowledge and experience of how specific highway design features affect the operation of a bicycle.

Major content points and behaviors: An outline of the course follows:

§ Purpose of the course

- How bicyclists are taught to ride
- How what engineers, planners and designers do affects how bicyclists operate

§ Principles of traffic law

- Drive right, ride right
- First come, first served
- Yield to crossing traffic (when crossing more important road)
- Yield when changing lanes
- Speed positioning (midblock)
- Intersection positioning (based on destination)

- Know and obey traffic laws
- How do bicyclists fit in?
- § Bicycle laws
 - Bicycle status as a vehicle
 - Positioning of bicycle-midblock, intersection, changing lanes
- § Pre-ride check and ride
 - Gears, cadence, shifting
 - Bicycle and helmet fit and adjustment
 - Quick check and pump up tires
 - Stopping, rear scan, hand signals
- § Bicycle crash statistics
 - Irritating bicyclist behaviors
 - Crash types for different riders
 - Crash prevention
 - Hazard awareness and avoidance
- § Bicycle facilities--what they do and don't do
 - Wide curb lanes, bike lanes, bike paths, routes
- § Roadway suitability rating
- § Ride--emergency skills practice
- § Road test and final examination
- § Optional hands-on lesson--how to fix a flat



Teaching safe bicycling

Source: Department of Transportation, Bureau of Transportation Safety, Pedestrian/Bicycle Safety Program Manager, 4802 Sheboygan Avenue, Room 809, P.O. Box 7936, Madison, WI 53707-7936, Telephone: (608) 267-3154

Date: 1998

Summary description: This one-day course is presented three times annually for instructors of child bicycling safety events.

Major content points and behaviors: The course covers the following topics:

- § Ways in which children are different from adults as bicycle riders and as learners
- § How bicycle crashes happen
- § How to develop and organize a successful child rider training event in the community
- § State-of-the-art skills of bicycle riding and tips on how to teach hazard avoidance
- § How to teach bicycle safety to children--hands-on demonstration
- § Ideas for working with children of different abilities
- § How to work with service organizations, schools, community leaders, media and law enforcement to assure safe riding in the community
- § Bicycle ride--hands-on hazard identification
- § Whom to work with to eliminate or correct hazards

Among other materials, each participant receives a copy of the video A kid's eye view.



Safe moves for service providers

Source: Safe Moves, 15500 Erwin Street, Unit #1121, Van Nuys, CA 91411, Telephone: (818) 908-5341

Date: Revised 1998

Summary description: This program provides workshops on pedestrian, bicycle, motor vehicle, bus, and train safety for individuals from law enforcement agencies, health care providers and community organizations who will teach the Safe moves program. Included is a guide that describes the curricula topics, method of implementation, effective uses of props and suggested activities to reinforce safe behaviors. Also included is a slide presentation that reflects diverse traffic environments and hazards facing children and teens as bicyclists and pedestrians. A miniature city (1 foot by 8 feet) is used to simulate traffic situations and collisions. The course can be given in 30- or 45-minute segments to fit diverse school schedules.

Major content points and behaviors: The course describes how to teach the following bicycle safety lessons:

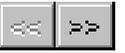
- § Safe places to ride
- § Unsafe places to ride
- § Traffic signs and signals
- § Rights and responsibilities of bicyclists
- § Helmet use--proper fit and maintenance
- § Choosing the right size bike and model
- § Proper bicycling clothing
- § Recognition and avoidance of common bicycle collisions

- § Bicycle maintenance and repair
- § Rules, regulations and ordinances that cover bicyclists
- § Suggested routes to and from school
- § Bicycle facilities--location and use

Assignments to implementer letters and problem area numbers:

Implementer: J

Problem areas for each of the above implementers: 1, 2, 3, 4, 5, 14, 15, 16, 22, 23, 40



Computer-based self-instruction program for middle school and high school students

Summary description: Existing education programs address the crash types that typically involve middle school and high school students. However, classroom instruction on bicycle safety may be even more difficult to implement in middle schools and high schools than in elementary schools. A computer-based self-instruction program may be a more effective way to accomplish bicycle safety education for middle school and high school students. Such a program will be made feasible by teenagers' increasing familiarity with computers and by the availability of computers at home and in school.

Major contents: A comprehensive self-instruction program could be stored on a single CD, with no need for hard copy materials other than a brief one-page document that describes the procedure for installing the disc and activating the program. The self-instruction program that is envisioned will have the following characteristics:

§ One section of the CD will contain dynamic illustrations of each crash type that frequently involves teenage bicyclists along with narration that explains the nature of the crash generation process (including the various causal factors).

§ A second section of the program will be designed to teach bicyclists to recognize, in complex visual scenes, a variety of visual cues that signal the presence of potentially hazardous situations. The visual cues to hazards will be closely tied to the relevant crash types.

§ A third section of the program will focus on the low level of bicycle conspicuity during both daytime and nighttime. The main objectives of this section will be to teach bicyclists that motorists often fail to see bicyclists even when lighting conditions are good and that the lighting equipment required by law does not increase conspicuity enough to ensure that motorists will see bicyclists during darkness.

§ Each section of the self-instruction program will be followed by test items designed to assess students' understanding of the instructional material presented. Ideally, the computer will be programmed to score the test items and to provide remedial instruction based on the students' responses.



Insert on bicycle safety for offender school training

Summary description: Many law enforcement agencies conduct traffic schools that are attended by motorists who are cited for traffic violations. However, few of these traffic schools present instruction that is aimed specifically at reducing bicycle/motor-vehicle crashes. These instructional materials on bicycle/motor-vehicle crashes will be designed to be incorporated into the curriculum of existing traffic schools for motorists. In addition, a few law enforcement agencies conduct traffic schools that are attended only by bicyclists who are cited for traffic violations. These training materials will be designed to cover information for both motorists and bicyclists. Thus, the materials will help law enforcement officers develop a traffic school solely for bicyclists.

Major contents:. The training materials will educate motorists and bicyclists about common errors and about the undesirable consequences of motorist and bicyclist violations, especially the injuries that bicyclists sustain when they collide with motor vehicles. The following topics will be covered:

- § The magnitude of the bicycle/motor vehicle crash problem
- § Common motorist errors
- § Remedial behaviors for the common motorist errors
- § Common bicyclist errors
- § Remedial behaviors for the common bicyclist errors
- § Common child bicyclist problems
- § Impairment problems--motorist and bicyclist
- § Visibility/conspicuity problems
- § Problems at special locations

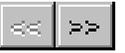


Module on bicycle safety for trainers of DWI offenders

Summary description: This module will be designed for insertion in state/local programs for DWI offenders. It will explain the dangers of riding a bicycle after drinking and will be designed to discourage offenders who lose their licenses from using their bicycles as a mode of transportation.

Major contents: The following major topics will be covered:

- § The magnitude of the bicycle alcohol problem
- § The impaired bicyclist's risk
- § The importance of helmets
- § The importance of conspicuity and the need for lights on a bicycle if used at night



Insert for dram shop seller/server training

Summary description: This program insert will be used to train liquor sellers and servers about the bicycle alcohol problem, to discourage them from serving a potentially impaired customer and to guide them in helping to prevent riding by intoxicated bicyclists.

Major contents: This material will be prepared for insertion in existing dram shop operator training programs that are aimed at the prevention of driving by intoxicated motorists. Although there may be a relatively small number of bars where a significant number of bicyclists congregate, certainly bars located in close proximity to college and university campuses are likely to be frequented by a significant number of bicyclists. The following topics will be covered:

- § Bicycling after drinking is not safe—just because people aren't driving motor vehicles doesn't mean they are not a major crash risk
- § The magnitude of the bicycle alcohol problem
- § The impaired bicyclist's risk
- § Preventing an impaired bicyclist from riding
- § Handling the potentially impaired bicyclist
- § Arranging transportation for the impaired bicyclist



A video for law enforcement roll call and academy training

Summary description: Relatively short instructional segments will be developed that promote active enforcement of the traffic laws that are highly related to bicycle/motor-vehicle crashes. These materials will be provided for police roll call or academy training.

Major contents: A set of brief video segments will be prepared for each crash type or condition (for example, use of alcohol, lack of a helmet, or lack of required nighttime conspicuity equipment) for which a violation is a predisposing factor. Each video segment will present at least the following information:

- § An animation of the crash type or condition along with commentary that explains the crash generation process
- § The key violation(s) committed by the bicyclist or the motorist
- § Criticality of the motor vehicle speed and the bicycle speed
- § The specific enforcement and adjudication measures that are required



Training program for college traffic planners

Summary description: This program will educate campus planners and designers about the types of bicycle-related crashes that occur on or near campuses and design standards and guidelines that will reduce the incidence and consequences of these crashes. It will be directed to planners and designers who are responsible for on-campus facilities and off-campus facilities near the campus boundary.

Research is needed to gain a better understanding of the number and types of crashes that occur on or near campuses. The research should be designed to compile information about car-bike crashes and other types of crashes as well (single bicycle, bike-bike, and bike-pedestrian).

Major contents: The training program will educate planners and designers about:

- § The types and causes of the bicycle-related crashes that occur on or near college campuses.
- § The design standards and guidelines that promise to reduce the frequency or severity of bicycle-related crashes.



Table 1 of 3 (Bicyclist Errors)

Crash type (and code number)	Problem Area by NHTSA/FHWA Crash Type			
	Bicyclist Errors			
	1. Midblock rideout	2. Midblock turns	3. Intersection rideout/negotiate	4. Wrong-way riding
Motorist/bicyclist turning error (110)				
Motorist turning error - left turn (111)				
Motorist turning error - right turn (112)				
Motorist turning error - other (113)				
Bicyclist turning error - left turn (114)			X	
Bicyclist turning error - right turn (115)			X	
Bicyclist turning error - other (116)				
Bicyclist lost control (120)				
Mechanical problems (121)				
Oversteering, improper braking/speed (122)		X		
Alcohol/drug impairment (123)				
Surface conditions (124)		X		
Other/unknown (129)				
Motorist lost control (130)				
Mechanical problems (131)				
Oversteering, improper braking/speed (132)				
Alcohol/drug impairment (133)				
Surface conditions (134)				
Other/unknown (139)				
Sign control-Intersection (140)				
Motorist drive-out (141)				X
Bicyclist ride-out (142)			X	X
Motorist drive-through (143)				
Bicyclist ride-through (144)			X	X
Other sign control intersection (148)			X	X
Signal control-Intersection (150)				
Motorist drive-out - RTOR (151)				X
Motorist drive-out (152)				
Bicyclist ride-out (153)			X	X
Motorist drive-through (154)				



Table 2 of 3 (Bicyclist Errors)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Bicyclist Errors			
	1. Midblock rideout	2. Midblock turns	3. Intersection rideout/negotiate	4. Wrong-way riding
Signal control intersection (150) (continued)				
Bicyclist ride-through (155)			X	X
Bicyclist failed to clear - trapped (156)			X	
Bicyclist failed to clear - multiple threat (157)			X	X
Other signal control intersection (158)			X	X
Uncontrolled intersection (160)			X	
Crossing path - intersection other (180)				
Motorist turn/merge (210)				
Motorist left turn - same direction (211)				X
Motorist left turn - opposite direction (212)				
Motorist right turn - same direction (213)				X
Motorist right turn - opposite direction (214)				X
Motorist drive-in/out - parking (215)				
Bus/delivery vehicle pullover (216)				
Bicyclist turn/merge (220)				
Bicyclist left turn - same direction (221)		X		
Bicyclist left turn - opposite direction (222)		X		
Bicyclist right turn - same direction (223)		X		
Bicyclist right turn - opposite direction (224)		X		X
Bicyclist ride-out - sidewalk (225)	X			
Motorist overtaking (230)				
Motorist overtaking - undetected bicyclist (231)				
Motorist overtaking - misjudged space (232)				
Motorist overtaking - other/unknown (239)				
Bicyclist overtaking (240)				
Bicyclist overtaking - right side (241)				
Bicyclist overtaking - left side (242)				
Bicyclist overtaking - parked vehicle (243)		X		
Bicyclist overtaking - extended door (244)		X		
Bicyclist overtaking - other/unknown (249)				



Table 3 of 3 (Bicyclist Errors)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Bicyclist Errors			
	1. Midblock rideout	2. Midblock turns	3. Intersection rideout/negotiate	4. Wrong-way riding
Head-on (250)				X
Parallel path - other (280)				
Bicyclist ride-out-non-intersection (310)				
Residential driveway (311)	X			
Commercial driveway/alley (312)	X			
Non-intersection - other (318)	X			
Non-intersection - unknown (319)				
Motorist drive-out-non-intersection (320)				
Residential driveway (321)				X
Commercial driveway/alley (322)				X
Non-intersection - other (328)				
Non-intersection - unknown (329)				
Crossing path - non-intersection - other (380)				
Bicycle only (400)				
Motorist intentionally caused (510)				
Bicyclist intentionally caused (520)				
Backing vehicle (600)				
Play vehicle related (700)	X			
Unusual circumstances (800)				
Non-roadway - other (910)				
Unknown/insufficient information (990)				

Table 1 of 3 (Motorist Errors)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Motorist Errors					
	5. Improper turns	6. Failure to search*	7. Right turn on red	8. Excessive speed**	9. Overtaking, failure to see	10/ Misjudging passing space
Motorist/bicyclist turning error (110)						
Motorist turning error - left turn (111)	X	X				
Motorist turning error - right turn (112)	X					
Motorist turning error - other (113)						
Bicyclist turning error - left turn (114)						
Bicyclist turning error - right turn (115)						
Bicyclist turning error - other (116)						
Bicyclist lost control (120)						
Mechanical problems (121)						
Oversteering, improper braking/speed (122)						
Alcohol/drug impairment (123)						
Surface conditions (124)						
Other/unknown (129)						
Motorist lost control (130)						
Mechanical problems (131)						
Oversteering, improper braking/speed (132)				X		
Alcohol/drug impairment (133)						
Surface conditions (134)						
Other/unknown (139)						
Sign control - intersection (140)						
Motorist drive-out (141)	X	X		X		
Bicyclist ride-out (142)		X		X		
Motorist drive-through (143)		X				
Bicyclist ride-through (144)		X		X		
Other sign control intersection (148)		X		X		
Signal control - intersection (150)						
Motorist drive-out - RTOR (151)	X	X	X			
Motorist drive-out (152)						
Bicyclist ride-out (153)		X		X		
Motorist drive-through (154)		X				

*Either an anticipatory or reactive phase search failure was a factor in at least 30% of Cross and Fisher cases.

**Any mention of motorists going too fast for conditions in Cross and Fisher cases.

Table 2 of 3 (Motorist Errors)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Motorist Errors					
	5. Improper turns	6. Failure to search*	7. Right turn on red	8. Excessive speed**	9. Overtaking, failure to see	10. Misjudging passing space
Signal control intersection (150) (continued)						
Bicyclist ride-through (155)		X		X		
Bicyclist failed to clear - trapped (156)		X				
Bicyclist failed to clear - multiple threat (157)		X				
Other signal control intersection (158)		X		X		
Uncontrolled intersection (160)						
Crossing path - intersection other (180)						
Motorist turn/merge (210)						
Motorist left turn - same direction (211)	X	X				
Motorist left turn - opposite direction (212)	X	X				
Motorist right turn - same direction (213)	X	X				
Motorist right turn - opposite direction (214)	X	X				
Motorist drive-in/out - parking (215)		X				
Bus/delivery vehicle pullover (216)						
Bicyclist turn/merge (220)						
Bicyclist left turn - same direction (221)						
Bicyclist left turn - opposite direction (222)						
Bicyclist right turn - same direction (223)						
Bicyclist right turn - opposite direction (224)						
Bicyclist ride-out - sidewalk (225)		X		X		
Motorist overtaking (230)						
Motorist overtaking - undetected bicyclist (231)				X	X	
Motorist overtaking - misjudged space (232)				X		X
Motorist overtaking - other/unknown (239)		X		X		
Bicyclist overtaking (240)						
Bicyclist overtaking - right side (241)						
Bicyclist overtaking - left side (242)						
Bicyclist overtaking - parked vehicle (243)						
Bicyclist overtaking - extended door (244)						
Bicyclist overtaking - other/unknown (249)						

*Either an anticipatory or reactive phase search failure was a factor in at least 30% of Cross and Fisher cases.

**Any mention of motorists going too fast for conditions in Cross and Fisher cases.

Table 3 of 3 (Motorist Errors)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Motorist Errors					
	5. Improper turns	6. Failure to search*	7. Right turn on red	8. Excessive speed**	9. Overtaking, failure to see	10. Misjudging passing space
Head-on (250)						
Parallel path - other (280)						
Residential driveway (311)		X		X		
Commercial driveway/alley (312)		X		X		
Non-intersection - other (318)		X		X		
Non-intersection - unknown (319)						
Motorist drive-out-non-intersection (320)						
Residential driveway (321)	X	X				
Commercial driveway/alley (322)	X	X				
Non-intersection - other (328)						
Non-intersection - unknown (329)						
Crossing path - non-intersection - other (380)						
Bicycle only (400)						
Motorist intentionally caused (510)						
Bicyclist intentionally caused (520)						
Backing vehicle (600)		X				
Play vehicle related (700)		X		X		
Unusual circumstances (800)						
Non-roadway - other (910)		X				
Unknown/insufficient information (990)						

*Either an anticipatory or reactive phase search failure was a factor in at least 30% of Cross and Fisher cases.

**Any mention of motorists going too fast for conditions in Cross and Fisher cases.

Table 1 of 3 (Impairment)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Impairment	
	11. Bicyclist alcohol/drugs*	12. Motorist alcohol/drugs*
Motorist/bicyclist turning error (110)		
Motorist turning error - left turn (111)		
Motorist turning error - right turn (112)		
Motorist turning error - other (113)		
Bicyclist turning error - left turn (114)		
Bicyclist turning error - right turn (115)		
Bicyclist turning error - other (116)		
Bicyclist lost control (120)		
Mechanical problems (121)		
Oversteering, improper braking/speed (122)		
Alcohol/drug impairment (123)	(X)	
Surface conditions (124)		
Other/unknown (129)		
Motorist lost control (130)		
Mechanical problems (131)		
Oversteering, improper braking/speed (132)		
Alcohol/drug impairment (133)		X
Surface conditions (134)		
Other/unknown (139)		
Sign control - intersection (140)		
Motorist drive-out (141)	X	X
Bicyclist ride-out (142)		
Motorist drive-through (143)		
Bicyclist ride-through (144)		
Other sign control intersection (148)		
Signal control - intersection (150)		
Motorist drive-out - RTOR (151)		
Motorist drive-out (152)		
Bicyclist ride-out (153)		
Motorist drive-through (154)		

* Alcohol/drugs were listed as a factor in at least 1% of Cross and Fisher cases.

** Problem was listed as a factor in at least 5% of the Cross and Fisher cases.

(X) Of the Hunter et al cases in which the bicyclist lost control, 42% of individuals aged 25+ had been drinking.

Table 2 of 3 (Impairment)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Impairment	
	11. Bicyclist alcohol/drugs*	12. Motorist alcohol/drugs*
Signal control intersection (150)(continued)		
Bicyclist nde-through (155)		
Bicyclist failed to clear - trapped (156)		
Bicyclist failed to clear - multiple threat (157)		
Other signal control intersection (158)		
Uncontrolled intersection (160)		
Crossing path - intersection other (180)		
Motorist turn/merge (210)		
Motorist left turn - same direction (211)	X	X
Motorist left turn - opposite direction (212)	X	
Motorist right turn - same direction (213)	X	
Motorist right turn - opposite direction (214)	X	
Motorist drive-in/out - parking (215)		
Bus/delivery vehicle pullover (216)		
Bicyclist turn/merge (220)		
Bicyclist left turn - same direction (221)		
Bicyclist left turn - opposite direction (222)		
Bicyclist right turn - same direction (223)		
Bicyclist right turn - opposite direction (224)		
Bicyclist nde-out - sidewalk (225)		X
Motorist overtaking (230)		
Motorist overtaking - undetected bicyclist (231)		X
Motorist overtaking - misjudged space (232)		X
Motorist overtaking - other/unknown (239)	(X)	
Bicyclist overtaking (240)		
Bicyclist overtaking - right side (241)		
Bicyclist overtaking - left side (242)		
Bicyclist overtaking - parked vehicle (243)		
Bicyclist overtaking - extended door (244)		
Bicyclist overtaking - other/unknown (249)		

* Alcohol/drugs were listed as a factor in at least 1% of Cross and Fisher cases.

** Problem was listed as a factor in at least 5% of the Cross and Fisher cases.

(X) Of the Hunter et al cases involved in other motorist overtaking crashes (which excluded crashes in which there were counteractive evasive actions or the bicyclist's path was obstructed), 16% of individuals aged 25+ had been drinking.

Table 3 of 3 (Impairment)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Impairment	
	11. Bicyclist alcohol/drugs*	12. Motorist alcohol/drugs*
Head-on (250)		
Parallel path - other (280)		
Bicyclist ride-out-non-intersection (310)		
Residential driveway (311)		
Commercial driveway/alley (312)		
Non-intersection - other (318)	(X)	X
Non-intersection - unknown (319)		
Motorist drive-out-non-intersection (320)		
Residential driveway (321)		
Commercial driveway/alley (322)		
Non-intersection - other (328)		
Non-intersection - unknown (329)		
Crossing path - non-intersection - other (380)		
Bicycle only (400)		
Motorist intentionally caused (510)		
Bicyclist intentionally caused (520)		
Backing vehicle (600)		
Play vehicle related (700)		
Unusual circumstances (800)		
Non-roadway - other (910)		
Unknown/insufficient information (990)		

* Alcohol/drugs were listed as a factor in at least 1% of Cross and Fisher cases.

** Problem was listed as a factor in at least 5% of the Cross and Fisher cases.

(X) Of the Hunter et al cases in which the bicyclist entered the roadway at a shoulder or curb midblock location, 45% of individuals aged 25+ had been drinking.

Table 1 of 3 (Visibility/Conspicuity)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Visibility/Conspicuity		
	13. Visual screens**	14. Daytime conspicuity**	15. Nighttime conspicuity**
Motorist/bicyclist turning error (110)			
Motorist turning error - left turn (111)			
Motorist turning error - right turn (112)			
Motorist turning error - other (113)			
Bicyclist turning error - left turn (114)			
Bicyclist turning error - right turn (115)			
Bicyclist turning error - other (116)			
Bicyclist lost control (120)			
Mechanical problems (121)			
Oversteering, improper braking/speed (122)			
Alcohol/drug impairment (123)			
Surface conditions (124)			
Other/unknown (129)			
Motorist lost control (130)			
Mechanical problems (131)			
Oversteering, improper braking/speed (132)			
Alcohol/drug impairment (133)			
Surface conditions (134)			
Other/unknown (139)			
Sign control - intersection (140)			
Motorist drive-out (141)		X	X
Bicyclist ride-out (142)	X		X
Motorist drive-through (143)			
Bicyclist ride-through (144)	X		X
Other sign control intersection (148)			
Signal control - intersection (150)			
Motorist drive-out - RTOR (151)			
Motorist drive-out (152)			
Bicyclist ride-out (153)			
Motorist drive-through (154)			

* Alcohol/drugs were listed as a factor in at least 1% of Cross and Fisher cases.

** Problem was listed as a factor in at least 5% of the Cross and Fisher cases.

(X) Of the Hunter et al cases in which the bicyclist lost control, 42% of individuals aged 25+ had been drinking.

Table 2 of 3 (Visibility/Conspicuity)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Visibility/Conspicuity		
	13. Visual screens**	14. Daytime conspicuity**	15. Nighttime conspicuity**
Signal control intersection (150)(continued)			
Bicyclist rde-through (155)			
Bicyclist failed to clear - trapped (156)			X
Bicyclist failed to clear - multiple threat (157)	X		
Other signal control intersection (158)			
Uncontrolled intersection (160)	X		X
Crossing path - intersection other (180)			
Motorist turn/merge (210)			
Motorist left turn- same direction (211)		X	X
Motorist left turn - opposite direction (212)		X	X
Motorist right turn - same direction (213)			
Motorist right turn - opposite direction (214)			
Motorist drive-in/out - parking (215)			
Bus/delivery vehicle pullover (218)			
Bicyclist turn/merge (220)			
Bicyclist left turn - same direction (221)			
Bicyclist left turn - opposite direction (222)			
Bicyclist right turn - same direction (223)	X		
Bicyclist right turn - opposite direction (224)	X		
Bicyclist rde-out - sidewalk (225)	X		
Motorist overtaking (230)			
Motorist overtaking - undetected bicyclist (231)		X	X
Motorist overtaking - misjudged space (232)			
Motorist overtaking - other/unknown (239)			
Bicyclist overtaking (240)			
Bicyclist overtaking - right side (241)			
Bicyclist overtaking - left side (242)			
Bicyclist overtaking - parked vehicle (243)			
Bicyclist overtaking - extended door (244)			
Bicyclist overtaking - other/unknown (249)			

* Alcohol/drugs were listed as a factor in at least 1% of Cross and Fisher cases.

** Problem was listed as a factor in at least 5% of the Cross and Fisher cases.

(X) Of the Hunter et al cases involved in other motorist overtaking crashes (which excluded crashes in which there were counteractive evasive actions or the bicyclist's path was obstructed), 16% of individuals aged 25+ had been drinking.



Table 3 of 3 (Visibility/Conspicuity)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Visibility/Conspicuity		
	13. Visual screens**	14. Daytime conspicuity**	15. Nighttime conspicuity**
Head-on (250)			
Parallel path - other (280)			
Bicyclist ride-out-non-intersection (310)			
Residential driveway (311)	X		
Commercial driveway/alley (312)	X		
Non-intersection - other (318)	X		
Non-intersection - unknown (319)			
Motorist drive-out-non-intersection (320)			
Residential driveway (321)	X	X	X
Commercial driveway/alley (322)	X	X	X
Non-intersection - other (328)			
Non-intersection - unknown (329)			
Crossing path - non-intersection - other (380)			
Bicycle only (400)			
Motorist intentionally caused (510)			
Bicyclist intentionally caused (520)			
Backing vehicle (600)	X		X
Play vehicle related (700)	X	X	
Unusual circumstances (800)			
Non-roadway - other (910)	X		
Unknown/insufficient information (990)			

* Alcohol/drugs were listed as a factor in at least 1% of Cross and Fisher cases.

** Problem was listed as a factor in at least 5% of the Cross and Fisher cases.

(X) Of the Hunter et al cases in which the bicyclist entered the roadway at a shoulder or curb midblock location, 45% of individuals aged 25+ had been drinking.

Table 1 of 6 (Special Locations)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Special locations				
	16. High risk locations*	17. Rural roads	18. Residential driveways	19. Commercial driveways	20. Sidewalks
Motorist/bicyclist turning error (110)					
Motorist turning error - left turn (111)					
Motorist turning error - right turn (112)					
Motorist turning error - other (113)					
Bicyclist turning error - left turn (114)					
Bicyclist turning error - right turn (115)					
Bicyclist turning error - other (116)					
Bicyclist lost control (120)					
Mechanical problems (121)					
Oversteering, improper braking/speed (122)		X			
Alcohol/drug impairment (123)		X			
Surface conditions (124)		X			
Other/unknown (129)					
Motorist lost control (130)					
Mechanical problems (131)					
Oversteering, improper braking/speed (132)					
Alcohol/drug impairment (133)					
Surface conditions (134)					
Other/unknown (139)					
Sign control - intersection (140)					
Motorist drive-out (141)					
Bicyclist ride-out (142)					
Motorist drive-through (143)					
Bicyclist ride-through (144)					
Other sign control intersection (148)					
Signal control - intersection (150)					
Motorist drive-out - RTOR (151)					
Motorist drive-out (152)					
Bicyclist ride-out (153)					
Motorist drive-through (154)					

*No data were located on which to base a determination.

Table 2 of 6 (Special Locations)

Problem Area by NHTSA/FHWA Crash Type (Continued)					
Crash type (and code number)	Special locations				
	16. High risk locations*	17. Rural roads	18. Residential driveways	19. Commercial driveways	20. Sidewalks
Signal control intersection (150) (continued)					
Bicyclist ride-through (155)					
Bicyclist failed to clear - trapped (156)					
Bicyclist failed to clear - multiple threat (157)					
Other signal control intersection (158)					
Uncontrolled intersection (160)		X			
Crossing path - intersection other (180)					
Motorist turn/merge (210)					
Motorist left turn- same direction (211)		X			
Motorist left turn - opposite direction (212)					X
Motorist right turn - same direction (213)					X
Motorist right turn - opposite direction (214)					X
Motorist drive-in/out - parking (215)					
Bus/delivery vehicle pullover (216)					
Bicyclist turn/merge (220)					
Bicyclist left turn - same direction (221)		X			
Bicyclist left turn - opposite direction (222)		X			
Bicyclist right turn - same direction (223)					
Bicyclist right turn - opposite direction (224)					
Bicyclist ride-out - sidewalk (225)			X		X
Motorist overtaking (230)					
Motorist overtaking - undetected bicyclist (231)		X			
Motorist overtaking - misjudged space (232)		X			
Motorist overtaking - other/unknown (239)		X			
Bicyclist overtaking (240)					
Bicyclist overtaking - right side (241)					
Bicyclist overtaking - left side (242)					
Bicyclist overtaking - parked vehicle (243)					
Bicyclist overtaking - extended door (244)					
Bicyclist overtaking - other/unknown (249)					

*No data were located on which to base a determination.

Table 3 of 6 (Special Locations)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Special locations				
	16. High risk locations*	17. Rural roads	18. Residential driveways	19. Commercial driveways	20. Sidewalks
Head-on (250)					
Parallel path - other (280)					
Bicyclist ride-out - non-intersection (310)					
Residential driveway (311)		X	X		
Commercial driveway/alley (312)				X	
Non-intersection - other (318)		X			X
Non-intersection - unknown (319)					
Motorist drive-out - non-intersection (320)					
Residential driveway (321)		X			X
Commercial driveway/alley (322)		X		X	X
Non-intersection - other (328)					
Non-intersection - unknown (329)					
Crossing path - non-intersection - other (380)					
Bicycle only (400)					
Motorist intentionally caused (510)					
Bicyclist intentionally caused (520)					
Backing vehicle (600)					
Play vehicle related (700)			X		X
Unusual circumstances (800)					
Non-roadway - other (910)					
Unknown/insufficient information (990)					

*No data were located on which to base a determination.

Table 4 of 6 (Special Locations)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Special locations			
	21. College campus	22. On-street facilities*	23. Off-street facilities*	24. Bridges and tunnels*
Motorist/bicyclist turning error (110)				
Motorist turning error - left turn (111)				
Motorist turning error - right turn (112)				
Motorist turning error - other (113)				
Bicyclist turning error - left turn (114)				
Bicyclist turning error - right turn (115)				
Bicyclist turning error - other (116)				
Bicyclist lost control (120)				
Mechanical problems (121)				
Oversteering, improper braking/speed (122)	(X)			
Alcohol/drug impairment (123)				
Surface conditions (124)				
Other/unknown (129)				
Motorist lost control (130)				
Mechanical problems (131)				
Oversteering, improper braking/speed (132)				
Alcohol/drug impairment (133)				
Surface conditions (134)				
Other/unknown (139)				
Sign control - intersection (140)				
Motorist drive-out (141)				
Bicyclist ride-out (142)	(X)			
Motorist drive-through (143)				
Bicyclist ride-through (144)	(X)			
Other sign control intersection (148)				
Signal control - intersection (150)				
Motorist drive-out - RTOR (151)				
Motorist drive-out (152)				
Bicyclist ride-out (153)	(X)			
Motorist drive-through (154)				

* No data were located on which to base a determination.

(X) From Chaplin's Cornell University data.

Table 5 of 6 (Special Locations)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Special locations			
	21. College campus	22. On-street facilities*	23. Off-street facilities*	24. Bridges and tunnels*
Signal control intersection (150) (continued)				
Bicyclist ride-through (155)	(X)			
Bicyclist failed to clear - trapped (156)				
Bicyclist failed to clear - multiple threat (157)				
Other signal control intersection (158)				
Uncontrolled intersection (160)				
Crossing path - intersection other (180)				
Motorist turn/merge (210)				
Motorist left turn - same direction (211)				
Motorist left turn - opposite direction (212)	(X)			
Motorist right turn - same direction (213)				
Motorist right turn - opposite direction (214)				
Motorist drive-in/out - parking (215)				
Bus/delivery vehicle pullover (216)				
Bicyclist turn/merge (220)				
Bicyclist left turn - same direction (221)				
Bicyclist left turn - opposite direction (222)				
Bicyclist right turn - same direction (223)				
Bicyclist right turn - opposite direction (224)				
Bicyclist ride-out - sidewalk (225)				
Motorist overtaking (230)				
Motorist overtaking - undetected bicyclist (231)				
Motorist overtaking - misjudged space (232)				
Motorist overtaking - other/unknown (239)				
Bicyclist overtaking (240)				
Bicyclist overtaking - right side (241)				
Bicyclist overtaking - left side (242)				
Bicyclist overtaking - parked vehicle (243)				
Bicyclist overtaking - extended door (244)				
Bicyclist overtaking - other/unknown (249)				

* No data were located on which to base a determination.

(X) From Chaplin's Cornell University data.

Table 6 of 6 (Special Locations)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Special locations			
	21. College campus	22. On-street facilities*	23. Off-street facilities*	24. Bridges and tunnels*
Head-on (250)				
Parallel path - other (280)				
Bicyclist ride-out-non-intersection (310)				
Residential driveway (311)				
Commercial driveway/alley (312)				
Non-intersection - other (318)				
Non-intersection - unknown (319)				
Motorist drive-out-non-intersection (320)				
Residential driveway (321)				
Commercial driveway/alley (322)				
Non-intersection - other (328)				
Non-intersection - unknown (329)				
Crossing path - non-intersection - other (380)				
Bicycle only (400)	(X)			
Motorist intentionally caused (510)				
Bicyclist intentionally caused (520)				
Backing vehicle (600)				
Play vehicle related (700)				
Unusual circumstances (800)				
Non-roadway - other (910)				
Unknown/insufficient information (990)				

* No data were located on which to base a determination.

(X) From Chaplin's Cornell University data.

Table 1 of 6 (Geometrics/Operations)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Geometrics/oper
	25. Geometrics/ traffic calming*
Motorist/bicyclist turning error (110)	
Motorist turning error - left turn (111)	
Motorist turning error - right turn (112)	
Motorist turning error - other (113)	
Bicyclist turning error - left turn (114)	
Bicyclist turning error - right turn (115)	
Bicyclist turning error - other (116)	
Bicyclist lost control (120)	
Mechanical problems (121)	
Oversteering, improper braking/speed (122)	
Alcohol/drug impairment (123)	
Surface conditions (124)	
Other/unknown (129)	
Motorist lost control (130)	
Mechanical problems (131)	
Oversteering, improper braking/speed (132)	
Alcohol/drug impairment (133)	
Surface conditions (134)	
Other/unknown (139)	
Sign control - intersection (140)	
Motorist drive-out (141)	
Bicyclist ride-out (142)	
Motorist drive-through (143)	
Bicyclist ride-through (144)	
Other sign control intersection (148)	
Signal control - intersection (150)	
Motorist drive-out - RTOR (151)	
Motorist drive-out (152)	
Bicyclist ride-out (153)	
Motorist drive-through (154)	

* No data were located on which to base a determination.

(X) From Chaplin's Cornell University data.

Table 2 of 6 (Geometrics/Operations)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Geometrics/oper 25. Geometrics/ traffic calming*
Signal control intersection (150) (continued)	
Bicyclist ride-through (155)	
Bicyclist failed to clear - trapped (156)	
Bicyclist failed to clear - multiple threat (157)	
Other signal control intersection (158)	
Uncontrolled intersection (160)	
Crossing path - intersection other (180)	
Motorst turn/merge (210)	
Motorist left turn- same direction (211)	
Motorist left turn - opposite direction (212)	
Motorist right turn - same direction (213)	
Motorist right turn - opposite direction (214)	
Motorist drive-in/out - parking (215)	
Bus/delivery vehicle pullover (216)	
Bicyclist turn/merge (220)	
Bicyclist left turn - same direction (221)	
Bicyclist left turn - opposite direction (222)	
Bicyclist right turn - same direction (223)	
Bicyclist right turn - opposite direction (224)	
Bicyclist ride-out - sidewalk (225)	
Motorst overtaking (230)	
Motorist overtaking - undetected bicyclist (231)	
Motorist overtaking - misjudged space (232)	
Motorist overtaking - other/unknown (239)	
Bicyclist overtaking (240)	
Bicyclist overtaking - right side (241)	
Bicyclist overtaking - left side (242)	
Bicyclist overtaking - parked vehicle (243)	
Bicyclist overtaking - extended door (244)	
Bicyclist overtaking - other/unknown (249)	

* No data were located on which to base a determination.

(X) From Chaplin's Cornell University data.

Table 3 of 6 (Geometrics/Operations)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Geometrics/oper 25. Geometrics/ traffic calming*
Head-on (250)	
Parallel path - other (280)	
Bicyclist ride-out-non-intersection (310)	
Residential driveway (311)	
Commercial driveway/alley (312)	
Non-intersection - other (318)	
Non-intersection - unknown (319)	
Motorist drive-out-non-intersection (320)	
Residential driveway (321)	
Commercial driveway/alley (322)	
Non-intersection - other (328)	
Non-intersection - unknown (329)	
Crossing path - non-intersection - other (380)	
Bicycle only (400)	
Motorist intentionally caused (510)	
Bicyclist intentionally caused (520)	
Backing vehicle (600)	
Play vehicle related (700)	
Unusual circumstances (800)	
Non-roadway - other (910)	
Unknown/insufficient information (990)	

* No data were located on which to base a determination.

Table 4 of 6 (Geometrics/Operations)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Geometrics/oper 26. Operations/ maintenance*
Motorist/bicyclist turning error (110)	
Motorist turning error - left turn (111)	
Motorist turning error - right turn (112)	
Motorist turning error - other (113)	
Bicyclist turning error - left turn (114)	
Bicyclist turning error - right turn (115)	
Bicyclist turning error - other (116)	
Bicyclist lost control (120)	
Mechanical problems (121)	
Oversteering, improper braking/speed (122)	
Alcohol/drug impairment (123)	
Surface conditions (124)	
Other/unknown (129)	
Motorist lost control (130)	
Mechanical problems (131)	
Oversteering, improper braking/speed (132)	
Alcohol/drug impairment (133)	
Surface conditions (134)	
Other/unknown (139)	
Sign control - intersection (140)	
Motorist drive-out (141)	
Bicyclist ride-out (142)	
Motorist drive-through (143)	
Bicyclist ride-through (144)	
Other sign control intersection (148)	
Signal control - intersection (150)	
Motorist drive-out - RTOR (151)	
Motorist drive-out (152)	
Bicyclist ride-out (153)	
Motorist drive-through (154)	

* No data were located on which to base a determination.

Table 5 of 6 (Geometrics/Operations)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Geometrics/oper
	26. Operations/ maintenance*
Signal control intersection (150) (continued)	
Bicyclist ride-through (155)	
Bicyclist failed to clear - trapped (156)	
Bicyclist failed to clear - multiple threat (157)	
Other signal control intersection (158)	
Uncontrolled intersection (160)	
Crossing path - intersection other (180)	
Motorist turn/merge (210)	
Motorist left turn- same direction (211)	
Motorist left turn - opposite direction (212)	
Motorist right turn - same direction (213)	
Motorist right turn - opposite direction (214)	
Motorist drive-in/out - parking (215)	
Bus/delivery vehicle pullover (216)	
Bicyclist turn/merge (220)	
Bicyclist left turn - same direction (221)	
Bicyclist left turn - opposite direction (222)	
Bicyclist right turn - same direction (223)	
Bicyclist right turn - opposite direction (224)	
Bicyclist ride-out - sidewalk (225)	
Motorist overtaking (230)	
Motorist overtaking - undetected bicyclist (231)	
Motorist overtaking - misjudged space (232)	
Motorist overtaking - other/unknown (239)	
Bicyclist overtaking (240)	
Bicyclist overtaking - right side (241)	
Bicyclist overtaking - left side (242)	
Bicyclist overtaking - parked vehicle (243)	
Bicyclist overtaking - extended door (244)	
Bicyclist overtaking - other/unknown (249)	

* No data were located on which to base a determination.

Table 6 of 6 (Geometrics/Operations)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Geometrics/oper 26. Operations/ maintenance*
Head-on (250)	
Parallel path - other (280)	
Bicyclist ride-out - non-intersection (310)	
Residential driveway (311)	
Commercial driveway/alley (312)	
Non-intersection - other (318)	
Non-intersection - unknown (319)	
Motorist drive-out - non-intersection (320)	
Residential driveway (321)	
Commercial driveway/alley (322)	
Non-intersection - other (328)	
Non-intersection - unknown (329)	
Crossing path - non-intersection - other (380)	
Bicycle only (400)	
Motorist intentionally caused (510)	
Bicyclist intentionally caused (520)	
Backing vehicle (600)	
Play vehicle related (700)	
Unusual circumstances (800)	
Non-roadway - other (910)	
Unknown/insufficient information (990)	

* No data were located on which to base a determination.

Table 1 of 3 (High Injury/Severity)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	High injury severity	
	27. Fatal crashes**	28. Nighttime crashes***
Motorist/bicyclist turning error (110)		
Motorist turning error - left turn (111)		
Motorist turning error - right turn (112)		
Motorist turning error - other (113)		
Bicyclist turning error - left turn (114)		
Bicyclist turning error - right turn (115)		
Bicyclist turning error - other (116)		
Bicyclist lost control (120)		
Mechanical problems (121)		
Oversteering, improper braking/speed (122)		
Alcohol/drug impairment (123)		
Surface conditions (124)		
Other/unknown (129)		
Motorist lost control (130)		
Mechanical problems (131)		X
Oversteering, improper braking/speed (132)		X
Alcohol/drug impairment (133)		X
Surface conditions (134)		X
Other/unknown (139)		
Sign control-intersection (140)		
Motorist drive-out (141)		X
Bicyclist ride-out (142)	X	
Motorist drive-through (143)		
Bicyclist ride-through (144)	X	
Other sign control intersection (148)		
Signal control-intersection (150)		
Motorist drive-out - RTOR (151)		
Motorist drive-out (152)		
Bicyclist ride-out (153)		
Motorist drive-through (154)		

* No data were located on which to base a determination.

** Fatalities were at least 5% of the Cross and Fisher cases.

*** At least 20% of the Cross and Fisher cases occurred during darkness.

Table 2 of 3 (High Injury/Severity)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	High injury severity	
	27. Fatal crashes**	28. Nighttime crashes***
Signal control intersection (150) (continued)		
Bicyclist ride-through (155)		
Bicyclist failed to clear - trapped (156)		
Bicyclist failed to clear - multiple threat (157)		
Other signal control intersection (158)		
Uncontrolled intersection (160)		
Crossing path - intersection other (180)		
Motorist turn/merge (210)		
Motorist left turn- same direction (211)		X
Motorist left turn - opposite direction (212)		
Motorist right turn - same direction (213)	X	
Motorist right turn - opposite direction (214)	X	
Motorist drive-in/out - parking (215)		
Bus/delivery vehicle pullover (216)		
Bicyclist turn/merge (220)		
Bicyclist left turn - same direction (221)	X	
Bicyclist left turn - opposite direction (222)		
Bicyclist right turn - same direction (223)		
Bicyclist right turn - opposite direction (224)		
Bicyclist ride-out - sidewalk (225)	X	
Motorist overtaking (230)		
Motorist overtaking - undetected bicyclist (231)	X	X
Motorist overtaking - misjudged space (232)		
Motorist overtaking - other/unknown (239)		
Bicyclist overtaking (240)		
Bicyclist overtaking - right side (241)		
Bicyclist overtaking - left side (242)		
Bicyclist overtaking - parked vehicle (243)		
Bicyclist overtaking - extended door (244)		
Bicyclist overtaking - other/unknown (249)		

* No data were located on which to base a determination.

** Fatalities were at least 5% of the Cross and Fisher cases.

*** At least 20% of the Cross and Fisher cases occurred during darkness.

Table 3 of 3 (High Injury/Severity)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	High injury severity	
	27. Fatal crashes**	28. Nighttime crashes***
Head-on (250)		
Parallel path - other (280)		
Bicyclist ride-out-non-intersection (310)		
Residential driveway (311)	X	
Commercial driveway/alley (312)		
Non-intersection - other (318)	X	
Non-intersection - unknown (319)		
Motorist drive-out-non-intersection (320)		
Residential driveway (321)		
Commercial driveway/alley (322)		
Non-intersection - other (328)		
Non-intersection - unknown (329)		
Crossing path - non-intersection - other (380)		
Bicycle only (400)		
Motorist intentionally caused (510)		
Bicyclist intentionally caused (520)		
Backing vehicle (600)		X
Play vehicle related (700)		
Unusual circumstances (800)		
Non-roadway - other (910)		
Unknown/insufficient information (990)		

* No data were located on which to base a determination.

** Fatalities were at least 5% of the Cross and Fisher cases.

*** At least 20% of the Cross and Fisher cases occurred during darkness.

Table 1 of 9 (Target Group)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group	
	29. Pre-school bicyclist	30. Elementary school bicyclist
Motorist/bicyclist turning error (110)		
Motorist turning error - left turn (111)		
Motorist turning error - right turn (112)		
Motorist turning error - other (113)		
Bicyclist turning error - left turn (114)		
Bicyclist turning error - right turn (115)		
Bicyclist turning error - other (116)		
Bicyclist lost control (120)		
Mechanical problems (121)		
Oversteering, improper braking/speed (122)		X
Alcohol/drug impairment (123)		
Surface conditions (124)		X
Other/unknown (129)		
Motorist lost control (130)		
Mechanical problems (131)		X
Oversteering, improper braking/speed (132)		X
Alcohol/drug impairment (133)		
Surface conditions (134)		X
Other/unknown (139)		
Sign control-intersection (140)		
Motorist drive-out (141)		
Bicyclist ride-out (142)		X
Motorist drive-through (143)		
Bicyclist ride-through (144)		X
Other sign control intersection (148)		
Signal control-intersection (150)		
Motorist drive-out - RTOR (151)		
Motorist drive-out (152)		
Bicyclist ride-out (153)		
Motorist drive-through (154)		

Table 2 of 9 (Target Group)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group	
	29. Pre-school bicyclist	30. Elementary school bicyclist
Signal control intersection (150) (continued)		
Bicyclist ride-through (155)		
Bicyclist failed to clear - trapped (156)		
Bicyclist failed to clear - multiple threat (157)		
Other signal control intersection (158)		
Uncontrolled intersection (160)		X
Crossing path - intersection other (180)		
Motorist turn/merge (210)		
Motorist left turn - same direction (211)		
Motorist left turn - opposite direction (212)		
Motorist right turn - same direction (213)		
Motorist right turn - opposite direction (214)		
Motorist drive-in/out - parking (215)		
Bus/delivery vehicle pullover (216)		
Bicyclist turn/merge (220)		
Bicyclist left turn - same direction (221)	X	X
Bicyclist left turn - opposite direction (222)	X	X
Bicyclist right turn - same direction (223)		
Bicyclist right turn - opposite direction (224)		
Bicyclist ride-out - sidewalk (225)	X	X
Motorist overtaking (230)		
Motorist overtaking - undetected bicyclist (231)		
Motorist overtaking - misjudged space (232)		
Motorist overtaking - other/unknown (239)		X
Bicyclist overtaking (240)		
Bicyclist overtaking - right side (241)		
Bicyclist overtaking - left side (242)		
Bicyclist overtaking - parked vehicle (243)		
Bicyclist overtaking - extended door (244)		
Bicyclist overtaking - other/unknown (249)		

Table 3 of 9 (Target Group)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group	
	29. Pre-school bicyclist	30. Elementary school bicyclist
Head-on (250)		
Parallel path - other (280)		
Bicyclist ride-out-non-intersection (310)		
Residential driveway (311)	X	X
Commercial driveway/alley (312)	X	X
Non-intersection - other (318)	X	X
Non-intersection - unknown (319)		
Motorist drive-out-non-intersection (320)		
Residential driveway (321)		
Commercial driveway/alley (322)		
Non-intersection - other (328)		
Non-intersection - unknown (329)		
Crossing path - non-intersection - other (380)		
Bicycle only (400)		
Motorist intentionally caused (510)		
Bicyclist intentionally caused (520)		
Backing vehicle (600)		X
Play vehicle related (700)	X	
Unusual circumstances (800)		
Non-roadway - other (910)		X
Unknown/insufficient information (990)		

Table 4 of 9 (Target Group)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group				
	31. Middle school bicyclist	32. High school bicyclist	33. College bicyclist	34. Commuter bicyclist*	35. Senior bicyclist
Motorist/bicyclist turning error (110)					
Motorist turning error - left turn (111)					
Motorist turning error - right turn (112)					
Motorist turning error - other (113)					
Bicyclist turning error - left turn (114)					
Bicyclist turning error - right turn (115)					
Bicyclist turning error - other (116)					
Bicyclist lost control (120)					
Mechanical problems (121)					
Oversteering, improper braking/speed (122)	X	X	(X)		
Alcohol/drug impairment (123)					
Surface conditions (124)	X	X			
Other/unknown (129)					
Motorist lost control (130)					
Mechanical problems (131)	X				
Oversteering, improper braking/speed (132)	X				
Alcohol/drug impairment (133)					
Surface conditions (134)	X				
Other/unknown (139)					
Sign control - intersection (140)					
Motorist drive-out (141)	X	X			(X)
Bicyclist ride-out (142)	X		(X)		
Motorist drive-through (143)	X	X			(X)
Bicyclist ride-through (144)	X		(X)		
Other sign control intersection (148)					
Signal control - intersection (150)					
Motorist drive-out - RTOR (151)		X			
Motorist drive-out (152)					(X)
Bicyclist ride-out (153)			(X)		
Motorist drive-through (154)					(X)

* No data were located on which to base a determination.

(X) From Chaplin's Cornell University data.

(X) Selected if Clevelen and Blomberg data (from GES) showed senior bicyclist (age 65+) was involved in 2% or more of the crash type.

Table 5 of 9 (Target Group)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group				
	31. Middle school bicyclist	32. High school bicyclist	33. College bicyclist	34. Commuter bicyclist*	35. Senior bicyclist
Signal control intersection (150) (continued)					
Bicyclist ride-through (155)			(X)		
Bicyclist failed to clear - trapped (156)	X	X			
Bicyclist failed to clear - multiple threat (157)	X	X			
Other signal control intersection (158)					
Uncontrolled intersection (160)	X	X			
Crossing path - intersection other (180)					
Motorist turn/merge (210)					
Motorist left turn - same direction (211)	X	X			
Motorist left turn - opposite direction (212)		X	(X)		
Motorist right turn - same direction (213)	X	X			((X))
Motorist right turn - opposite direction (214)	X	X			((X))
Motorist drive-in/out - parking (215)					
Bus/delivery vehicle pullover (216)					
Bicyclist turn/merge (220)					
Bicyclist left turn - same direction (221)	X	X			((X))
Bicyclist left turn - opposite direction (222)	X	X			
Bicyclist right turn - same direction (223)		X			
Bicyclist right turn - opposite direction (224)		X			
Bicyclist ride-out - sidewalk (225)	X				
Motorist overtaking (230)					
Motorist overtaking - undetected bicyclist (231)	X	X			((X))
Motorist overtaking - misjudged space (232)	X	X			
Motorist overtaking - other/unknown (239)	X	X			((X))
Bicyclist overtaking (240)					
Bicyclist overtaking - right side (241)	X	X			
Bicyclist overtaking - left side (242)	X	X			
Bicyclist overtaking - parked vehicle (243)					
Bicyclist overtaking - extended door (244)					
Bicyclist overtaking - other/unknown (249)					

* No data were located on which to base a determination.

(X) From Cornell University data.

((X)) Selected if Cleveland and Blomberg data (from GES) showed senior bicyclist (age 65+) was involved in 2% or more of the crash type.

Table 6 of 9 (Target Group)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group				
	31. Middle school bicyclist	32. High school bicyclist	33. College bicyclist	34. Commuter bicyclist*	35. Senior bicyclist
Head-on (250)					
Parallel path - other (280)					
Bicyclist ride-out - non-intersection (310)					
Residential driveway (311)	X				
Commercial driveway/alley (312)	X				
Non-intersection - other (318)	X				
Non-intersection - unknown (319)					
Motorist drive-out - non-intersection (320)					
Residential driveway (321)	X	X			
Commercial driveway/alley (322)	X	X			
Non-intersection - other (328)					
Non-intersection - unknown (329)					
Crossing path - non-intersection - other (380)					
Bicycle only (400)			(X)		
Motorist intentionally caused (510)					
Bicyclist intentionally caused (520)					
Backing vehicle (600)	X				
Play vehicle related (700)					
Unusual circumstances (800)					
Non-roadway - other (910)	X	X			
Unknown/insufficient information (990)					

* No data were located on which to base a determination.

(X) From Chaplin's Cornell University data.

Table 7 of 9 (Target Group)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group		
	36. Casual adult bicyclist*	37. Teenage motorist**	38. Bicyclist parents
Motorist/bicyclist turning error (110)			
Motorist turning error - left turn (111)			
Motorist turning error - right turn (112)			
Motorist turning error - other (113)			
Bicyclist turning error - left turn (114)			
Bicyclist turning error - right turn (115)			
Bicyclist turning error - other (116)			
Bicyclist lost control (120)			
Mechanical problems (121)			
Oversteering, improper braking/speed (122)			
Alcohol/drug impairment (123)			
Surface conditions (124)			
Other/unknown (129)			
Motorist lost control (130)			
Mechanical problems (131)			
Oversteering, improper braking/speed (132)			
Alcohol/drug impairment (133)			
Surface conditions (134)			
Other/unknown (139)			
Sign control-intersection (140)			
Motorist drive-out (141)		X	
Bicyclist ride-out (142)			
Motorist drive-through (143)			
Bicyclist ride-through (144)			
Other sign control intersection (148)			
Signal control-intersection (150)			
Motorist drive-out - RTOR (151)		X	
Motorist drive-out (152)			
Bicyclist ride-out (153)			
Motorist drive-through (154)			

*No data were located on which to base a determination.

**Selected if the 5th percentile in Cross and Fisher was 18 years.

Table 8 of 9 (Target Group)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group		
	36. Casual adult bicyclist*	37. Teenage motorist**	38. Bicyclist parents
Signal control intersection (150) (continued)			
Bicyclist ride-through (155)			
Bicyclist failed to clear - trapped (156)			
Bicyclist failed to clear - multiple threat (157)		X	
Other signal control intersection (158)			
Uncontrolled intersection (160)		X	
Crossing path - intersection other (180)			
Motorist turn/merge (210)			
Motorist left turn- same direction (211)			
Motorist left turn - opposite direction (212)		X	
Motorist right turn - same direction (213)		X	
Motorist right turn - opposite direction (214)		X	
Motorist drive-in/out - parking (215)			
Bus/delivery vehicle pull over (216)			
Bicyclist turn/merge (220)			
Bicyclist left turn - same direction (221)		X	
Bicyclist left turn - opposite direction (222)		X	
Bicyclist right turn - same direction (223)			
Bicyclist right turn - opposite direction (224)			
Bicyclist ride-out- sidewalk (225)		X	X
Motorist overtaking (230)			
Motorist overtaking - undetected bicyclist (231)			
Motorist overtaking - misjudged space (232)			
Motorist overtaking - other/unknown (239)		X	
Bicyclist overtaking (240)			
Bicyclist overtaking - right side (241)			
Bicyclist overtaking - left side (242)			
Bicyclist overtaking - parked vehicle (243)			
Bicyclist overtaking - extended door (244)			
Bicyclist overtaking - other/unknown (249)			

*No data were located on which to base a determination.

**Selected if the 5th percentile in Cross and Fisher was 18 years.

Table 9 of 9 (Target Group)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Target group		
	36. Casual adult bicyclist*	37. Teenage motorist**	38. Bicyclist parents
Head-on (250)			
Parallel path - other (280)			
Bicyclist ride-out-non-intersection (310)			
Residential driveway (311)			X
Commercial driveway/alley (312)		X	X
Non-intersection - other (318)		X	X
Non-intersection - unknown (319)			
Motorist drive-out-non-intersection (320)			
Residential driveway (321)		X	
Commercial driveway/alley (322)		X	
Non-intersection - other (328)			
Non-intersection - unknown (329)			
Crossing path - non-intersection - other (380)			
Bicycle only (400)			
Motorist intentionally caused (510)			
Bicyclist intentionally caused (520)			
Backing vehicle (600)			
Play vehicle related (700)			
Unusual circumstances (800)			
Non-roadway - other (910)			
Unknown/insufficient information (990)			

*No data were located on which to base a determination.

**Selected if the 5th percentile in Cross and Fisher was 18 years.

Table 1 of 3 (Other)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Other	
	39. Awareness*	40. Hel met use*
Motorist/bicyclist turning error (110)		
Motorist turning error - left turn (111)		
Motorist turning error - right turn (112)		
Motorist turning error - other (113)		
Bicyclist turning error - left turn (114)		
Bicyclist turning error - right turn (115)		
Bicyclist turning error - other (116)		
Bicyclist lost control (120)		
Mechanical problems (121)		
Oversteering, improper braking/speed (122)		
Alcohol/drug impairment (123)		
Surface conditions (124)		
Other/unknown (129)		
Motorist lost control (130)		
Mechanical problems (131)		
Oversteering, improper braking/speed (132)		
Alcohol/drug impairment (133)		
Surface conditions (134)		
Other/unknown (139)		
Sign control-intersection (140)		
Motorist drive-out (141)		
Bicyclist ride-out (142)		
Motorist drive-through (143)		
Bicyclist ride-through (144)		
Other sign control intersection (148)		
Signal control - intersection (150)		
Motorist drive-out - RTOR (151)		
Motorist drive-out (152)		
Bicyclist ride-out (153)		
Motorist drive-through (154)		

*No data were located on which to base a determination.

Table 2 of 3 (Other)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Other	
	39. Awareness*	40. Helmet use*
Signal control intersection (150) (continued)		
Bicyclist ride-through (155)		
Bicyclist failed to clear - trapped (156)		
Bicyclist failed to clear - multiple threat (157)		
Other signal control intersection (158)		
Uncontrolled intersection (160)		
Crossing path - intersection other (180)		
Motorist turn/merge (210)		
Motorist left turn- same direction (211)		
Motorist left turn - opposite direction (212)		
Motorist right turn - same direction (213)		
Motorist right turn - opposite direction (214)		
Motorist drive-in/out - parking (215)		
Bus/delivery vehicle pullover (216)		
Bicyclist turn/merge (220)		
Bicyclist left turn - same direction (221)		
Bicyclist left turn - opposite direction (222)		
Bicyclist right turn - same direction (223)		
Bicyclist right turn - opposite direction (224)		
Bicyclist ride-out - sidewalk (225)		
Motorist overtaking (230)		
Motorist overtaking - undetected bicyclist (231)		
Motorist overtaking - misjudged space (232)		
Motorist overtaking - other/unknown (239)		
Bicyclist overtaking (240)		
Bicyclist overtaking - right side (241)		
Bicyclist overtaking - left side (242)		
Bicyclist overtaking - parked vehicle (243)		
Bicyclist overtaking - extended door (244)		
Bicyclist overtaking - other/unknown (249)		

*No data were located on which to base a determination.



Table 3 of 3 (Other)

Problem Area by NHTSA/FHWA Crash Type (Continued)

Crash type (and code number)	Other	
	39. Awareness*	40. Hel met use*
Head-on (250)		
Parallel path - other (280)		
Bicyclist ride-out-non-intersection (310)		
Residential driveway (311)		
Commercial driveway/alley (312)		
Non-intersection - other (318)		
Non-intersection - unknown (319)		
Motorist drive-out-non-intersection (320)		
Residential driveway (321)		
Commercial driveway/alley (322)		
Non-intersection - other (328)		
Non-intersection - unknown (329)		
Crossing path - non-intersection - other (380)		
Bicycle only (400)		
Motorist intentionally caused (510)		
Bicyclist intentionally caused (520)		
Backing vehicle (600)		
Play vehicle related (700)		
Unusual circumstances (800)		
Non-roadway - other (910)		
Unknown/insufficient information (990)		

*No data were located on which to base a determination.



Before the fall

Source: Snell Memorial Foundation, Inc., 3628 Madison Avenue, Suite 11, North Highlands, CA 95660, Telephone: (916) 331-5073

Date: Undated

Summary description: This video (18:34) points out the advantages of wearing bicycle helmets.

Major content points and behaviors: The video points out that there is a killer out there after our children. The killer can be stopped with information, examples and common sense. It should be done “before the fall.” The following points are made:

§ More than 600 children die each year from bike injuries--mostly from head injuries

§ 80% of children aged 5 to 14 use a bike twice a week; less than 2% wear a helmet

§ Pavement is the most important impact problem for children

§ Bike helmets provide one of the most important ways for protection

§ Police say even avid cyclists have an accident every 5,000 miles

§ The following causes of bike crashes are reported:

- 17% = crash with a car

- 17% = crash with another bicycle

- 8% = dogs

- 8% = miscellaneous

- 50% = falls

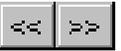
§ There are over 50,000 head injuries per year

§ Helmets can provide visibility, be stylish, protect from tree limbs and branches and present a good image

Before the fall

§ Important information (e.g., medical conditions) can be stored inside the helmet

§ Good helmets are tested--look for the ANSI or Snell label



Pedal smarts

Source: Transit Media Communications, 22-D Hollywood Avenue, Hohokus, NJ 07423, Telephone: (800) 343-5540

Date: 1994

Summary description: This video (18:12) demonstrates safe cycling and safe motoring skills. It uses teen actors in a news-style format.

Major content points and behaviors: In the form of a newscast, the announcer states that the governor of California has decreed a temporary statewide ban on the use of cars. The video notes that there isn't a bike school the way there is driver education; therefore, the bicycle isn't taken seriously even though bicyclists are supposed to follow the same rules as motorists. The following principles are given:

- § Ride right
- § Keep eyes and ears open
- § Be alert at intersections
- § Don't weave
- § Watch for hazards
- § Take the lane when necessary
- § Be courteous
- § At intersections, make eye contact with the driver and be in the lane for straight ahead, to the right for a right turn and to the left for a left turn
- § For turns, look behind, signal, then move when it's safe
- § At night use lights and reflectors and wear light clothing with reflective tape
- § Make sure the helmet fits and has an ANSI or Snell label

A “reenactment of a true story” shows a driver almost hitting a cyclist because he didn’t check behind him for cyclists before making a turn. The driver must wait until it’s safe to pass, watch for bike movement if a parked car door opens and check to the rear before opening the door.

In summary, the cyclist must use safe equipment, pay attention, pick a safe spot to ride and obey the laws. The motorist must look for cyclists, leave room and check before opening doors.



Getting there by bike

Source: Transit Media Communications, 22-D Hollywood Avenue, Hohokus, NJ 07423, Telephone: (800) 343-5540

Date: 1994

Summary description: This video (20:35) interviews a firefighter, newscaster, bicycling activist/instructor and a senior citizen to see how they discovered the joys of commuting by bicycle and how to do it safely. It also demonstrates bicycle-friendly motoring skills.

Major content points and behaviors: The video covers the following points:

- § There are many advantages to bicycling--health, environment, parking spaces not used, money saved, etc.
- § Ride right
- § Follow the rules of the road
- § Watch for and avoid hazards
- § Use bike lane if available
- § Watch for car doors opening
- § On dangerous curves, take the lane so that you are visible
- § Be aware--scan all around
- § At an intersection, make eye contact with the driver, take the lane if making a right turn, or look, signal and move if making a left turn
- § Properly fit and position the helmet
- § Use bright clothing in daytime
- § Use lights, reflectors and reflective clothing at night

Drivers should watch out for cyclists. When making a right turn, they should look for cyclists coming up on the right. They should be careful opening car doors.



The E's of cycling

Source: Cornell Bike Project, Department of Agricultural and Biological Engineering, 326 Riley-Robb Hall, Cornell University, Ithaca, NY 14853, Telephone: (607) 255-2498

Date: 1994

Summary description: This video (15:00) encourages safe cycling on the Cornell University campus through the four E's--education, enforcement, engineering and encouragement.

Major content points and behaviors: The video notes the following:

- § The four major causes of bike accidents on campus are nighttime (no lights/reflectors), bicyclist running a sign or signal, wrong-way riding and motorist making a left turn in front of cyclist.
- § Two bike crashes a week are reported to the health center
- § Bikes on campus must be registered
- § The health center offers low-cost helmets and provides assistance in fitting
- § The campus has bike routes and lanes--some lanes are exclusively for bikes and some are shared; shared lanes may require bicyclists to yield at certain points or to dismount at certain points
- § Parking is provided and there are some lockers
- § Bicyclists are required to obey traffic laws
- § There are police cyclists--training is provided by the International Police Mountain Bike Association
- § There is a judicial administrator
- § Biking is encouraged because the aim is to reduce motorized traffic on campus



Snell: Kidz Vidz

Source: Snell Memorial Foundation, Inc., 3628 Madison Avenue, Suite 11, North Highlands, CA 95660,
Telephone: (916) 331-5073

Date: Undated

Summary description: This video (4:30) encourages children to wear helmets and to wear them properly. It shows children fitting a helmet properly and tests made at the Snell Memorial Foundation.

Major content points and behaviors: The video makes the following points:

- § Bicyclists have more in common with race car drivers than they think because they both wear helmets for safety
- § The helmet should be worn even on the head and low on the forehead
- § Straps should go around the ears and under the chin snugly and comfortably
- § The Snell sticker means it has been tested
- § The Snell Memorial Foundation tests helmets for all kinds of weather as well as various types of impact
- § The Snell Memorial Foundation is named for a race car driver (Pete Snell) who died when his helmet failed



Head smart® bicycling (item #1VHSB)

Source: Brain Injury Association, Inc., 105 North Alfred Street, Alexandria, VA 22314, Telephone: (703) 236-6000

Date: 1996

Summary description: This brief video (2:53) shows the dangers of riding without a helmet.

Major content points and behaviors: The video shows a young man starting out on his bicycle with headphones and no helmet. He rides freely and takes both hands off the handlebars frequently. He runs into an opening car door and sustains brain injuries in the crash. Helmet use is then encouraged.



Effective cycling

Source: Seidler Productions, 191 Pine Lane, Crawfordville, FL 32327, Telephone: (850) 925-6331

Date: 1992

Summary description: This video (41:00) provides effective cycling techniques for the advanced cyclist. It emphasizes the fact that cyclists fare best when they act and are treated as drivers of vehicles.

Major content points and behaviors: The video covers the following topics:

§ Safety equipment--helmet, gloves, brakes, toe clips and straps

§ Bike handling

- Looking over the shoulder before making any turns or lane changes
- Braking hard safely--using both brakes
- Steering fast to make instant turns

§ Road surface--gravel, grates and railroad tracks

§ Traffic safety

- Ride right
- Yield to crossing traffic
- Yield when changing lanes
- Intersection positioning--according to your destination
- Speed positioning--slowest traffic right

§ Bike lanes and bike paths

- Lanes
- Paths--can be dangerous to other path users

§ Riding in the rain

- Keeping dry and keeping clean (fenders)
- Bright yellow clothing can help others see you
- Avoid puddles
- Apply brakes early

§ Riding at night--being detected, recognized, avoided

- Front headlamp
- Rear lamp and reflectors
- Retroreflective clothing

§ Riding hills

- Single file ascending
- Taking the lane descending
- Making turns

§ Group riding

- Ride straight
- Check behind before moving
- Signal turns
- Point out roadway hazards
- Use slow signal when braking



Ace of cycling

Source: Seidler Productions, 191 Pine Lane, Crawfordville, FL 32327, Telephone: (850) 925-6331

Date: 1990

Summary description: This video (28:00) covers bicycle safety issues in a story format of a film-maker motorist who is sentenced to attend violator school and to make a video on bicycle safety for making a left turn in front of a cyclist and failing to yield to the cyclist.

Major content points and behaviors: The video makes the following points:

- § Up to 85% of serious cyclist injuries can be prevented by wearing a helmet.
- § It's safer when both motorists and cyclists obey the same laws.
- § A motorist making a left turn in front of an approaching cyclist is the leading cause of adult cyclist crashes.
- § The leading cause of child crashes is running through stop signs.
- § Streets are for everyone.
- § It recommends that the bicyclist:
 - Ride in a straight line.
 - Learn to make instant (emergency) turns
 - Look behind before changing lanes or making turns
 - Not ride too close to cars
 - Signal plans
 - Have proper lights for riding at night
 - Stop before entering the street



Bicycle safety

Source: Florida Department of Transportation, 605 Suwannee Street, MS82, Tallahassee, FL 32399, Telephone: (904) 487-1200

Date: Undated

Summary description: In this video (14:18), an officer from the county sheriff's department describes how to ride safely in Florida. He is supported by members of Florida's Saved by the Helmet Club.

Major content points and behaviors: The video makes the following points:

- § In Florida, one can bicycle all year; however, the deaths and injuries are high
- § The helmet is the single most important thing to prevent serious injuries and deaths
- § Without a helmet, members of the Saved by the Helmet Club would have sustained severe head injuries
- § The bicyclist should look for the ANSI or Snell label in the helmet
- § Motorists often report that they didn't see a cyclist
- Wear yellow or fluorescent clothing in the daytime
- Don't wear clothing that blends with the environment
- At night wear retroreflective clothing
- At night, make sure the bike has the required lighting equipment
- § Before riding, the cyclist should check the brakes, adjust the seat and handlebar as appropriate, look for bent spokes and low tires and check that head lights and taillights are working
- § The route of travel should match the skill level of the cyclist
- § There should be only one person to a bike
- § The cyclist should ride right as close as practical to the right curb

- § Cyclists may ride two abreast if not impeding traffic
- § On sidewalks, cyclists should yield to pedestrians and watch for cars going in or out of driveways
- § The cyclist should look left-right-left and over the shoulder before entering the street
- § The cyclist should obey all traffic signs and signals
- § The cyclists should watch out for the right-turning motorist
- § The cyclist might want to cross dangerous intersections as a pedestrian



The professional driver and the bicyclist

Source: Seidler Productions, 191 Pine Lane, Crawfordville, FL 32327, Telephone: (850) 925-6331

Date: 1986

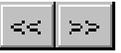
Summary description: This video (24:25) provides suggestions for the professional driver to deal with the bicyclist in the roadway.

Major content points and behaviors: The video covers the following points:

- § Professional drivers note that some bicyclists don't follow the rules of the road, don't signal and take a full lane
- § Bicyclists feel that they try to let drivers know what they are doing, they are entitled to use the road and can get ticketed, and bike paths often aren't appropriate for the skilled cyclist
- § Education is needed as well as enforcement and changes in the environment (appropriately designed roads)
- § The bicycle is lightweight, may need to swerve around roadway hazards, can approach vehicle speeds and has tires that are easily damaged
- § Older roads are too narrow
- § The bicyclist is a broad group:
 - Kids--mostly ride in the daytime in their neighborhoods, run signs, ride out from driveways
 - Teens--some night riding, feeling of invincibility, ride out from stop signs, wrong-way riding, erratic movements
 - Novice--unpredictable, might not recognize dangers
 - Proficient--predictable and responsible, communicative, courteous
 - Lunatic
 - Senior--may have vision or hearing loss, slower reaction time

§ Motorists should:

- Recognize that bicyclists are legitimate road users
- Know that children are unpredictable
- Search for bicyclists particularly when making turns
- Communicate with the bicyclist



Making streets that work

Source: Local Government Commission, 1414 K Street, Suite 250, Sacramento, CA 95814-3929, Telephone: (800) 290-8202

Date: 1996

Summary description: This video (15:00) provides examples of tools used by the city of Seattle, Washington to make its streets more friendly for cars, pedestrians and bicyclists as well as more attractive for city residents.

Major content points and behaviors: In discussing various Seattle streets, the video makes the following points:

- § Streets that work need to be designed for people (pedestrians and bicyclists) as well as cars.
- § Design of a street should consider the street itself as well as the sidewalk, building and parking lot (which should be kept away from the sidewalk).
- § Among others, street design should include places to buy newspapers, places to read newspapers and places to park bikes.
- § Movement of cars needs to be accommodated as well as oversized vehicles (e.g., buses) and the handicapped.
- § Buildings with windows that open to the street provide for interaction between inside and outside.
- § Trees can be planted, lights added and crosswalk signs added.
- § Community input is important.
- § Street signs need to show where you are.
- § Striped crosswalks are simple and effective for pedestrian crossings.
- § Midblock crossings and refuges can be helpful for pedestrian crossings.
- § Traffic can be slowed through use of traffic circles, curb bulbouts and chicanes.



Basic bicycle education

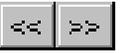
Source: Seidler Productions, 191 Pine Lane, Crawfordville, FL 32327, Telephone: (850) 925-6331

Date: 1987

Summary description: This video (18:00) summarizes main bicycle points.

Major content points and behaviors: The following points are made:

- § Up to 85% serious injuries can be prevented with a helmet
- § There are different bikes for different bicyclists--commuters, touring, racing, mountain bikes (also used in touring), all-terrain
- § Effective cycling course gives five principles:
 - Ride right (never on sidewalk)
 - Yield to crossing traffic
 - Yield to traffic in new lane (when changing lanes)
 - Destination positioning--left for left turn, right for right turn, center for going straight
 - Speed positioning
- § Wear bright clothing; be particularly conspicuous at night
- § Plan the route
- § Obey signals
- § Don't use headphones
- § Be courteous



Sharing the road: Bus operator training

Source: Lane Transit District, P.O. Box 7070, Eugene, OR 97401, Telephone: (541) 741-6100

Date: 1998

Summary description: This 10-minute video was designed to train bus operators to drive their vehicles safely around bicycles. It points out the particular problems that bicyclists encounter on the roadway and precautions that bus operators can take to avoid conflicts.

Major content points and behaviors: The video covers the following topics:

- § There are health, economic and environmental benefits to bicycling
- § There are all levels of bicyclists on the road, some of whom may not act predictably and some may disobey the law--the bus operator may need to compensate for the mistakes of others
- § A collision between a bus and bicyclist would be traumatic for all, especially the bicyclist
- § Bicyclists are vehicles and have a legal right to the roadway
- § Bicyclists have the right of way in the bike lane
- § Bicyclists have special problems on the roadway so give them as much space as possible
- The road condition may be poor particularly at the edge of the road where bicyclists travel
- Some roadways are narrow
- The bicyclist may need to travel over the white line to avoid roadway hazards
- The bicyclist may be intimidated by a bus going by
- Wind draft may affect the bicyclist's stability
- The bicyclist may not hear an approaching bus (since the bus engine is in the rear)
- Using the horn (even a tap) could make the bicyclist lose control
- Bike lanes are narrow and poor gutter conditions make them narrower

§ Advice for the bus driver includes the following

- Give the bicyclist a wide berth when passing
- After passing, don't cut back in front too soon (some bicyclists travel at fairly high speeds)
- Don't turn in front of a bicyclist, let the bicyclist go through the intersection first
- Signal intentions consistently so that the bicyclist knows what you will do
- Look for bicyclists before pulling out from a stop
- Watch out for bicyclists especially when making turns--some travel very fast and can appear out of nowhere
- Stay back--don't tailgate a bicyclist



Sharing the road: Bicycles and buses

Source: Lane Transit District, P.O. Box 7070, Eugene, OR 97401, Telephone: (541) 741-6100

Date: 1998

Summary description: This 5-minute video was designed to educate bicyclists about some of the constraints under which bus drivers operate their vehicles. It points out particular problems involved in bus operation and what the bicyclist can do to ensure safe roadway sharing.

Major content points and behaviors: The video covers the following topics:

§ The following bus operator constraints are noted:

- The bus driver can't give hand signals
- Buses have some blind spots and operators can't see you if you ride too close to the bus
- Buses can't accelerate or stop quickly
- Bus drivers can't leave the bus to help load or unload bicycles from racks
- Buses are very wide and therefore must travel close to the bike lane
- Buses must sometimes enter the bike lane in order to make stops for passengers
- Humidity in wet weather can steam up windows and decrease visibility--lights inside the bus can make this problem worse

§ The following advice is provided for the bicyclist:

- Always ride defensively
- Ride in a straight line
- Signal your intentions
- Stay in the bike lane
- Watch directional indicators on a stopped bus for possible bus moves

- Let the operator know that you will be removing your bike from the rack so that the operator will know you will be in front of the bus
- If your bike is the last one on the rack, fold the rack back up
- Wear reflective clothing and use lights in bad visibility conditions
- Be considerate--considerate drivers appreciate considerate riders



Be safe on your bike

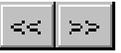
Source: Los Angeles Police Department, 4125 South Crenshaw Boulevard, Los Angeles, CA 90008,
Telephone: (213) 485-7336

Date: Undated

Summary description: This video (13:00) summarizes main bicycle safety points. Rap music is in the background.

Major content points and behaviors: The following points are made:

- § Be predictable--follow the rules of the road
- § Be visible--use lights at night plus reflectors plus retroreflective clothing--wear bright clothing in the daytime
- § Communicate
- § Ride right
- § On the sidewalk, don't interfere with pedestrians and watch for cars in driveways
- § Keep the bike in good working order
- § Watch for drivers opening car doors
- § When making a left turn, look, signal, move, stop (if sign), look and then turn
- § Cross an intersection in two legs if it is more comfortable to do so



Children in traffic, why are they different

Source: AAA Foundation for Traffic Safety, Suite 201, 1440 New York Avenue, NW, Washington, DC 20005, Telephone: (800) 305-7233

Date: 1983

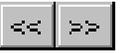
Summary description: This video (13:35) was originally produced as a film in Germany based on the work of Sandels in Sweden. It points out why children are different in traffic and how adults need to watch out for them.

Major content points and behaviors: It covers the following points:

- § Children assume that, if they can see the car, the car can see them
- § Since children are small, they have difficulty seeing and being seen
- § A child's field of vision is one-third narrower than an adult's; therefore, they won't see a passing car as early as an adult will
- § Children can't readily judge the direction of sound
- § Children are easily distracted
- § Children don't develop a sense of danger until they are six to eight years of age
- § Children can't judge speed or distance
- § Small children can't tell the difference between a standing and moving car
- § Children don't know that cars need a stopping distance
- § If one car stops to let them cross, children will continue across in front of other moving cars
- § Children react spontaneously; thus, if their ball goes into the street, they will run after it
- § Children are eager to be in motion
- § After school, children will rush to get home and play

Children in traffic, why are they different

- § Children imitate adult behavior
- § Child bicyclists take chances
- § Children mix fantasy and reality
- § Children can't judge complicated situations



A kid's eye view (Madison, Wisconsin Department of Transportation)

Source: Seidler Productions, 191 Pine Lane, Crawfordville, FL 32327, Telephone: (850) 925-6331

Date: 1994

Summary description: This video (10:30) shows the most common mistakes children make while bicycling and shows parents how to teach children to avoid these common errors.

Major content points and behaviors: The video makes the following points:

- § Children are small overall and therefore can't see well in traffic; they also have a narrower field of vision than adults
- § The bike should be the right size and in good working order
- § Helmets should be level on the head, not loose, and chin straps snug
- § Helmets should have an ANSI or Snell label
- § Helmets should be replaced if they hit a hard surface
- § Bicyclist should stop at the edge of the street (or parked car) and look left-right-left before entering the street
- § Bicyclist should ride right, in a single line, 3 feet from the edge of the street or parked cars
- § Bicyclist should be alert for car door openings
- § Bicyclist should stop at stop signs
- § In making a left turn, bicyclist should look behind, move to left side of lane, look left-right-left, signal, then turn
- § On a sidewalk, the bicyclist should watch out for cars in driveways and be courteous to pedestrians



Bike right. . . The face you save may be your own

Source: Bicycle Program Coordinator, Transportation and Parking Services, University of California at Davis, Davis, CA 95616, Telephone: (916) 752-2453

Date: Undated

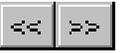
Summary description: This video (19:00) was shot at the University of California at Davis. It points out selected state bicycle laws and local rules and regulations and summarizes the major points in avoiding bicycle crashes and injuries.

Major content points and behaviors: The video makes the following points:

- § Follow the California vehicle code to avoid fines
- § Keep your hands on the handlebars
- § Rider error is the primary cause of all bicycle crashes--one-half of all bicycle accidents are single vehicle events--common causes include getting clothing caught, running off the road, sliding and falling off the bike
- § Ride alert
- § Don't exceed posted speed or safe speed for the conditions (fog, rain, crowds, darkness, etc.)
- § There should be only one person per bike
- § Use hand signals--look first, signal, then turn
- § In a traffic circle, those already in the circle have the right of way; once in the circle, ride left until you approach your exit
- § As with any vehicle, the person arriving first has the right of way; if arriving at the same time, the person on the right has the right of way
- § If you are making a left turn, oncoming through traffic has the right of way

- § Obey yield and stop signs
- § Bike paths are for bicycles, sidewalks are for pedestrians
- § Ride right
- § Park only in spaces provided
- § Be visible at night--a white light and reflectors are required
- § Don't use headphones in both ears
- § Don't ride under the influence of alcohol or drugs
- § To prevent injuries:
 - Have the proper size bike
 - Have working brakes
 - Wear gloves
 - Have good tires
 - Wear a helmet

Note: Although the video notes that 75% of all bicycle-related deaths are due to head injuries, most scenes show students without helmets. Individual students note that they probably should wear helmets, but they find them uncomfortable, inconvenient, expensive, not cool, etc.



Biking. . . Get the big picture

Source: AAA Foundation for Traffic Safety, Suite 201, 1440 New York Avenue, NW, Washington, DC 20005, Telephone: (800) 305-7233

Date: 1994

Summary description: This video (8:09) stresses the visual skills needed to ride a bicycle safely. It provides tips for riding near parked cars, through intersections and making left turns. The spokesman states that he has some 16 months to go before he can get a driver's license, so he gives pointers on driving a bicycle.

Major content points and behaviors: The video makes the following points:

- § Keep your eyes moving--use your line of sight and peripheral vision--and look behind you
- § When passing parked cars, look for a driver in the driver's seat, exhaust smoke, a door open slightly, lights
- § Look behind before turning into the next lane
- § Don't drive too fast--particularly in bad weather
- § Be careful around grates, stones, gravel and potholes
- § At intersections, slow down, look and listen and signal intentions
- § Obey traffic signs and signals
- § When making a left turn, signal, look behind, move left and then turn when safe
- § Wear a helmet



Otto the auto on bicycle safety

Source: AAA Foundation for Traffic Safety, Suite 201, 1440 New York Avenue, NW, Washington, DC 20005, Telephone: (800) 305-7233

Date: 1994

Summary description: This video (16:32) provides bicycle safety advice for children in kindergarten through grade three. It is divided into four sections covering the following topics: basic riding rules, picking the right bike, fitting the helmet and driving the bike like a car.

Major content points and behaviors: The following points are made:

§ Basic riding rules

- Stay on the sidewalk
- Stop and look carefully at intersections and driveways
- Obey traffic signs and signals
- Wear a helmet
- Ride single file
- Ride in a straight line--don't swerve

Ride one person to a bike

§ Picking the right bike--When you sit on the seat, the toes should touch the floor with the knees bent only slightly

§ Fitting the helmet

- Add pads to get a snug and comfortable fit
- Fit straps
- Have one finger between chin and strap

- Have two fingers between eyebrows and helmet

§ Drive the bike like a car

- Put on your helmet

- Watch for an opening in cars before entering the street

- Ride single file

- Watch what's going on

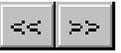
- Signal before stopping

- Obey signs and signals

- Look for cars before proceeding

- At a pedestrian crossing, let pedestrians go first

- Ride right with the flow



The bicycle zone

Source: Transit Media Communications, 22-D Hollywood Avenue, Hohokus, NJ 07423, Telephone: (800) 343-5540

Date: 1994

Summary description: This video (12:00) shows a family (parents and two children) going out for a bicycle ride. The father breaks all the rules, for example, says that helmets are for children only, fails to stop and look at the end of the driveway, rides on the wrong side of the street, doesn't look for traffic and doesn't signal. The children show their parents how to ride safely. In addition, the bike patrol stops the group when the father runs a stop sign. The bike patrol advises parents to buy helmets; which they do.

Major content points and behaviors: The video makes the following points:

- § Make sure your bicycle fits and is in good working order--check the tires, brakes and chain, adjust the seat and handlebars for a proper fit (when you stand over the bicycle, feet should touch the ground)
- § Wear a helmet at all times--make sure it fits and is properly adjusted and positioned
- § Make sure you have the proper equipment for night riding
- § Slow down and look left-right-left for cars before exiting the driveway
- § Young children should ride on the sidewalk--they should watch for cars at driveways and intersections and be courteous to pedestrians
- § Constantly look around you when you ride
- § Obey traffic signs and signals--the same laws apply to bikes as to cars
- § Ride with traffic
- § When making turns, look over your shoulder for traffic, signal, then check for traffic again before turning
- § Make eye contact with drivers
- § At complicated intersections, it may be advisable to cross as a pedestrian



The Ride Safe way to fit a bicycle helmet

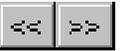
Source: Seidler Productions, 191 Pine Lane, Crawfordville, FL 32327, Telephone: (850) 925-6331

Date: 1993

Summary description: This video (8:00) demonstrates how to purchase, fit and position a bicycle helmet.

Major content points and behaviors: Bicyclists are advised to wear a helmet every time they ride. They are advised to use the following procedures to make sure they get an appropriate helmet fit and position:

- § Measure the head to get the appropriate shell size
- § Place the helmet squarely on the head two finger widths above the eyebrows
- § If the helmet is loose, adjust the size using the pads provided
- § Adjust the front and rear straps to make them level and snug (they should come together under the ears); adjust the chin strap and buckle so that there is one finger between the chin and the strap
- § Shake the head--the helmet should not move
- § Fine tune the size of the helmet as needed with the pads



Education is the key

Source: Seidler Productions, 191 Pine Lane, Crawfordville, FL 32327, Telephone: (850) 925-6331

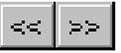
Date: 1990

Summary description: This video (7:00) discusses implementation of the traffic safety program in Florida's schools.

Major content points and behaviors: The video makes the following points:

- § A traffic safety program is now being offered throughout Florida
- § More children are injured in traffic crashes than by any other cause
- § Typically children have been asked to "Watch for cars"--a statement that is too simple for today's complex traffic
- § The speed and volume of traffic has increased and a child may need to cross a busy six-lane road to get to school
- § Skills must be learned and practiced in a controlled environment
- § The program starts with grades K-2 and children work on motor and judgment skills
- § In grade 3, there are classroom and on-bike lessons in a controlled environment
- § Through the program, children have learned to become more predictable in traffic
- § There have been no implementation problems and the program has been widely accepted

Note: In some scenes, some children are wearing their helmets on the backs of their heads.



Sharing the road

Source: AAA Foundation for Traffic Safety, Suite 201, 1440 New York Avenue, NW, Washington, DC 20005, Telephone: (800) 305-7233

Date: 1994

Summary description: This video (7:18) gives drivers hints on sharing the road with pedestrians, bicyclists and motorcyclists, large trucks, emergency vehicles, recreational vehicles, school buses, construction vehicles and oversized vehicles. Drivers are advised to recognize the limitations of other road users, to communicate with them and to anticipate their actions.

Major content points and behaviors: The video makes the following points:

§ Pedestrians

- Scan the roadway and surroundings for pedestrians--sometimes they don't obey traffic laws and don't look for cars
- Watch particularly for children who are unpredictable and may dart or ride into the street from a driveway
- Look for movement beneath parked vehicles
- Give older persons extra time

§ Bicyclists and motorcycles

- They are hard to spot because of their size
- Make them aware of your plans--signal intentions well in advance
- Anticipate cyclist needs--cyclists may need to swerve to avoid storm drains, pot holes, puddles, etc.
- Bicyclists may not always obey traffic signs and signals

§ Large trucks

- Stay out of the blind spot on the truck's right side

- Don't pass on the right
 - Don't follow too closely
 - Allow extra time and space when passing and don't pull back in too soon
 - Use headlights to alert the driver to your presence
 - Be prepared for a gust of wind when the truck passes
-
- § Emergency vehicles--yield to them
 - § Recreational vehicles can be hard to handle
 - § School buses--stop when the red lights are flashing
 - § Construction vehicles--slow down



Community awareness (part of program: Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist)

Source: Texas Bicycle Coalition, P.O. Box 1121, Austin, TX 78767, Telephone: (512) 476-6655

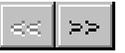
Date: Undated

Summary description: This 20-minute video (available in English and Spanish, closed and open captioned) is designed to help parents help their children become safe bicyclists. It is narrated by a trooper from the Texas Department of Public Safety. The stories of three individuals who were involved in crashes without wearing helmets are told. One was hit by a drunk driver and killed; one fell off the bike and had a stroke, and the third fell due to a rock in the roadway and required nearly \$200,000 worth of medical care. A pediatrician emphasizes the importance of helmet use. The trooper says that biking provides good exercise, is good for the environment and is fun. He recommends many tips for riding safely.

Major content points and behaviors: The video covers the following major points and behaviors:

- § Set a good example for your child
- § Know that the same rules apply to bicycles and motor vehicles
- § Realize that children are learning to drive their first vehicle
- § Wear a helmet at all times--make sure it fits and meets the ANSI or Snell standard
- § Look over the left shoulder frequently and always before swerving
- § Never wear headphones
- § Stop at the driveway and look left-right-left before proceeding into the street
- § Obey stop signs
- § Signal intentions

- § Stop at intersections
- § Ride right
- § Become a pedestrian when necessary
- § Scan ahead for hazards
- § Watch for parked car door openings
- § Watch for pedestrians
- § Never assume a driver sees you
- § Be aware that cars making right turns may not see you
- § Make eye contact with the driver if possible
- § Wear reflective clothing at night or a white shirt over your clothing
- § For night riding, have a head lamp and rear red reflector
- § Don't fool around in the street
- § Keep the bicycle well maintained--good brakes and secure saddle, chain and handlebar
- § Wear sturdy shoes
- § Tie shoe laces and tuck them in your shoes
- § Make sure the bicycle fits the child
- § Make sure the bike tires fit the terrain on which you are riding



Get into the helmet habit

Source: Outdoor Empire Publishing Company, Inc., 511 Eastlake Avenue East, Seattle, WA 98109,
Telephone: (206) 624-3845

Date: 1986

Summary description: This 8-1/2 x 10-3/4 page (both sides) folded to 3-1/2 x 8-1/2 is printed in three colors on white paper. It describes the dangers of head injuries, why helmets should be worn and design features of a good helmet. It also gives selected bicycle safety tips and what parents can do to promote bike safety.

Major content points and behaviors: Only a certified helmet should be worn. Helmets provide the following advantages in addition to preventing head injuries:

- § Visibility--a white or yellow helmet is good in the daytime; retroreflective strips provide advantages at night.
- § Emergency data--telephone numbers and medical data can be taped inside the helmet.
- § Climate protection in inclement weather.
- § Image--a helmet lets motorists know you know what you're doing as a bicyclist.

Some basic rules for safe riding include:

- § Ride with traffic.
- § Look before you ride out of a driveway.
- § Check for traffic before making a turn.
- § Stop at all stop signs and look for traffic before proceeding.

Parents are advised to help their children practice stops, turns and riding with traffic as well as dealing with traffic hazards.



Lou and his friends have something important to tell you

Source: National Safe Kids Campaign, 111 Michigan Avenue, NW, Washington, DC 20010-2970,
Telephone: (202) 884-4993

Date: 1994

Summary description: This 24 x 7 brochure folded to 4 x 7 is printed in blue and black on white. It describes how to select and care for a helmet as well as how to get a child to wear it. It includes photos of children aged 8 through 12 giving the advantages of using helmets. A 23-1/2 inch tape is included to measure the child's head for a proper helmet fit.

Major content points and behaviors: Helmet design is described and procedures for fitting and caring for the helmet are presented. Hints for parents to encourage child helmet use follow:

- § Let the child pick out the helmet
- § Always insist that the child wear a helmet
- § Wear your own helmet when you ride
- § Praise and reward the child each time the helmet is worn
- § Begin the helmet habit with the first bicycle
- § Encourage other parents to buy helmets



Two-wheeled survival in a four-wheeled world (HS-227)

Source: Wisconsin Department of Transportation, Bureau of Transportation Safety, Pedestrian/Bicycle Safety Program Manager, 4802 Sheboygan Avenue, Room 809, P.O. Box 7936, Madison, WI 53707-7936, Telephone: (608) 267-3154

Date: 1993

Summary description: This 15 x 8-1/2 brochure, printed in color, is folded to 3-78 x 8-1/2. It advises bicyclists to be predictable, be visible, ride defensively and wear a helmet.

Major content points and behaviors: The following points are made:

- § Obey traffic laws, signs and signals
- § Ride with traffic on the right side of the street
- § Ride predictably
- § Signal turns
- § Be visible day and night
- § Scan traffic at all times
- § Become adept at checking over the shoulder for traffic
- § Use caution riding over railroad tracks
- § Don't use drugs or alcohol before riding
- § Be courteous
- § Wear a properly fitted helmet
- § Give pedestrians the right of way on sidewalks



Be a well dressed cyclist--wear a helmet (HS-240)

Source: Wisconsin Department of Transportation, Bureau of Transportation Safety, Pedestrian/Bicycle Safety Program Manager, 4802 Sheboygan Avenue, Room 809, P.O. Box 7936, Madison, WI 53707-7936, Telephone: (608) 267-3154

Date: Undated

Summary description: This black and white illustrated 11 x 8-1/2 brochure is folded to 3-5/8 x 8-1/2. It provides information to bicyclists and parents on the importance of wearing a helmet and how to select a helmet.

Major content points and behaviors: The brochure makes the following points:

- § Helmets prevent brain damage
- § The helmet should meet ANSI or Snell standards
- § A bright colored shell with reflective tape will make the cyclist more visible
- § A child's helmet should be adjustable to fit the head as the child grows
- § Helmets should have a hard shell, a crushable liner, a layer of padding, and a strong strap and buckle



Sharing the road: Survival of the smallest (HS-228)

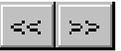
Source: Wisconsin Department of Transportation, Bureau of Transportation Safety, Pedestrian/Bicycle Safety Program Manager, 4802 Sheboygan Avenue, Room 809, P.O. Box 7936, Madison, WI 53707-7936, Telephone: (608) 267-3154

Date: 1993

Summary description: This 11 x 8-1/2 brochure, printed in color, is folded to 3-3/4 x 8-1/2. It provides tips to motorists on how to make sharing the road with bicyclists easier and safer.

Major content points and behaviors: The following tips are provided:

- § Treat bicyclists with respect
- § Check for bicyclists before opening your car door
- § Don't drink or do drugs before driving
- § Leave three to four feet of space when passing a bicyclist and don't merge over until you have completely passed
- § Give cyclists extra room particularly near curbs where there is apt to be debris
- § Always signal your intentions
- § Watch for kids on bikes in neighborhoods, near parks and near schools--they're unpredictable



Kids speak out on bike helmets (Stock #3051)

Source: American Automobile Association (and U.S. Consumer Product Safety Commission)

Date: Undated

Summary description: This 11-3/4 x 9 brochure, printed in color, is folded to 4 x 9. It contains information provided by children ages 8 to 13 from schools in eight states. The following questions were asked: what could happen if you had a bike crash and weren't wearing a helmet, why do you wear a bike helmet, and what would get your best friend to wear a bike helmet more often?

Major content points and behaviors: The brochure presents responses and actual facts as follows:

- § If in a crash and not wearing a helmet, children report that they could be killed, paralyzed or injured
- § Children between ages 5 and 14 have the highest rate of injury in bicycle crashes
- § Children report that they wear helmets for a variety of reasons, including the fact that they have been in a crash before while wearing a helmet and they were fine, they think the helmet looks cool, it is a law and because it will keep them safe.
- § Nationally only about 15% of all kids wear bike helmets
- § To get their best friend to wear a helmet, children report, among other things, that they would make a commercial using a famous person, show pros wearing helmets, put extra padding inside for comfort, make kids eat spinach if they don't wear one and make helmets for girls with ponytails.

Each child is advised to do the following to save lives:

- § Always wear a helmet and make sure brothers and sisters do too

- § Make a deal with your best friend to wear helmets when you ride together
- § Talk to parents or teachers about organizing projects with your school, safety patrol, Scout troop, religious organizations or other groups to encourage kids to wear helmets
- § Ask local businesses to sell bikes only with helmets or set up bike-helmet giveaways or discount coupon programs

The brochure also gives 10 tips for safe riding, as follows:

- § Always wear a helmet
- § Stop and check traffic before riding into the street
- § Don't ride at night
- § Obey traffic signs and signals
- § Ride on the right-hand side of the street
- § Check brakes before riding
- § Give cars and pedestrians the right of way
- § Wear light or bright-colored clothing
- § Be extra careful turning left
- § Avoid broken pavement, loose gravel and leaves

Note: Children's responses and their use of helmets are also given in a seven-page report of the same name produced by the U.S. Consumer Product Safety Commission.



Along for the ride (DOT HS 807-832)

Source: U.S. Department of Transportation, National Highway Traffic Safety Administration and Federal Highway Administration, NTS-15, 400 Seventh Street, SW, Washington, DC 20590

Date: 1992

Summary description: This 16 x 9 three-color brochure is folded to 4 x 9. It contains a message from the U.S. National Cycling team coach on the benefits of cycling and lists major rules of bicycle safety.

Major content points and behaviors: The following rules are listed:

- § Wear a helmet
- § Follow the rules of the road
- § Obey lights, signs, speed limits and lane markings
- § Cycle single file on the right side of the road
- § Signal before making a turn
- § Yield to pedestrians and other vehicles as appropriate
- § Ride a properly-sized and properly-maintained bicycle
- § Never wear headphones
- § Wear bright colored clothing (fluorescent colors are good)
- § At night, wear light clothing with retroreflective patches and wristbands
- § Equip the bicycle with reflectors front and rear
- § Attach reflectors to the pedals and wheels
- § Use a bright white headlight

- § Make eye contact with motorists
- § Anticipate the actions of pedestrians and other vehicles
- § Ride far enough from the curb to avoid the unexpected from parked cars
- § Keep control of the bicycle
- § Check behind before turning
- § Watch for roadway hazards
- § Have books, etc., securely attached or in a backpack
- § Use bells or horns to alert pedestrian and vehicles



Parents, buying your child a bike? (Stock #3207)

Source: American Automobile Association

Date: 1990

Summary description: This 16 x 9 brochure is printed in blue and black on white and folded to 4 x 9. It describes bicycle types and basic safety equipment, provides typical bike sizes for different ages and gives safety tips.

Major content points and behaviors: This brochure covers the following topics:

- § Questions to ask before buying your child a bike
- § Typical bike sizes for the average child at different ages
- § Types of bicycles
- § Basic safety equipment
- § Night riding equipment and clothing
- § Helmet requirements
- § Providing basic instruction
- Stop and check for traffic before entering the roadway
- Ride with traffic
- Ride on the right side of traffic
- Obey signs and signals
- Be cautious around parked cars

Parents, buying your child a bike? (Stock #3207)

- Use hand signals prior to moving
- Follow local vehicle rules and regulations
- Never carry a passenger



Stop: Let me tell you how to save a life like yours

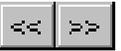
Source: Office of Traffic Safety, Department of Motor Vehicles and Public Safety, 555 Wright Way, Carson City, NV 89711-0999

Date: 1995

Summary description: This three-color 24 x 5 brochure is folded to 8 x 5. It provides advice for motorists and bicyclists on sharing the road.

Major content points and behaviors: The brochure covers the following points:

- § Traffic laws are for drivers and bicyclists
- § Streets are for cars and bicycles
- § Bicycles travel in the same direction as cars
- § Stop means stop for everyone
- § Be seen--use lights after dark
- § Drivers and bicyclists must look before turning
- § Use signals
- § Buckle your safety belt in a car; wear a helmet on a bike



Bicycling is great fun (Stock #3241)

Source: American Automobile Association

Date: 1990

Summary description: This 8 x 9 brochure is folded to 4 x 9 and printed in black, red and gray on white paper. It contains bicycle safety tips for children aged 5 through 13.

Major content points and behaviors: The brochure covers the following topics:

- § Wearing an approved helmet
- § Stopping and checking before entering the street
- § Avoiding riding after dark
- § Obeying signs, signals and markings
- § Riding right
- § Being careful when turning left
- § Handling intersections
- § Giving cars and pedestrians the right of way
- § Avoiding roadway hazards
- § Being visible
- § Watching out for parked cars
- § Riding single file
- § Carrying packages in a carrier or backpack
- § Maintaining the bicycle
- § Being alert



Bicycles are vehicles: Florida's bicycle laws. . . and safety tips (TS 606)

Source: American Automobile Association Auto Club South (see note)

Date: 1996

Summary description: This 14 x 8-1/2 brochure is folded to 4 x 8-1/2. Printed in yellow and black on white paper, it lists Florida's bicycle laws and provides safety tips.

Major content points and behaviors: The bicycle is legally defined as a vehicle. Laws are defined for the following topics:

- § Bicycle regulations
- § Sidewalk riding
- § Lighting
- § Roadway position
- § Left turns
- § Signaling turns
- § Headsets
- § Local ordinances

Safety tips are given on the following topics:

- § Night riding
- § Failure to yield

- § Wrong-way riding
- § Opening car doors/parked cars
- § Overtaking cars
- § Communicating with other trail users
- § Scanning tips
- § Safety equipment--helmets, gloves, mirror, safety vest or flag, rear carrier
- § Emergency maneuvers--rock dodge, emergency turns, panic stops
- § Handling hazards--railroad tracks, potholes, grates, rain, sand, gravel, leaves

Note: Under a slightly revised title (Bicycles are vehicles: Florida's bicycle laws...and some safety tips), this brochure is also available from the Florida Bicycle Program, Department of Transportation, 605 Suzanne Street, MS 82, Tallahassee, FL 32399-0450, Telephone: (850) 487-1200 and from the University of Florida, University Police Department, Community Services Division, PO Box 112150, Gainesville, FL 32612, Telephone: (352) 392-1409. These brochures are 17 x 9-1/2 folded to 4-1/4 x 9-1/2. The Florida Bicycle program brochure is printed in black on yellow and the University of Florida brochure is printed in black on blue. Both brochures list civil penalties for rule violations. The University of Florida brochure lists university parking rules and regulations and related civil penalties. An insert updates traffic fines and notes the availability of a traffic school as an educational alternative to the payment of fines for the first-time offender.



A bicycle is not a toy!

Source: Pennsylvania Chapter, American Academy of Pediatrics, 919 Conestoga Road, Building 2 #307, Rosemont, PA 19010, Telephone: (610) 520-9123

Date: Undated

Summary description: This 14 x 8-1/2 brochure is folded to 3-1/2 x 8-1/2 and printed in blue and black on buff colored paper. It provides hints on how to be a safe cyclist and includes a bicycle driver's test, a parent/child contract and procedures for a child to get a free bicycle driver's license from the American Academy of Pediatrics.

Major content points and behaviors: The brochure covers the following topics:

- § Approved helmets--ANSI, Snell and ASTM
- § How to fit a helmet
- § How to fit a bike
- § Being seen
- § Being predictable
- § Obeying traffic signs and signals
- § Using hand signals

Included is a bicycle driver's test and answers as well as a parent/child contract to ensure safe riding (with places for signatures by both). Included also is a bicycle driver's license to be completed by the child and forwarded to the American Academy of Pediatrics along with the completed test. The reverse of the license lists safe bicycle rules of the road.



Safe bicycle riding in New Jersey

Source: New Jersey Department of Law and Public Safety, Division of Highway Traffic Safety, CN 048, Trenton, NJ 08625

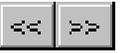
Date: Undated

Summary description: This 11 x 8-1/2 brochure, printed in red and black on white paper, is folded to 3-5/8 x 8-1/2. It provides tips for safe bicycle riding in New Jersey.

Major content points and behaviors: The brochure covers the following topics:

- § A bicycle is a vehicle--not a toy
- § Wear a helmet (ANSI, Snell or ASTM)--it's the law
- § Bicycles should be seen and heard
- § Avoid biking at night
- § Go with the flow, ride on the right with traffic
- § Obey traffic signs and signals
- § Use hand signals
- § Use caution at intersections
- § Keep the bicycle in good working order and adjusted properly

The brochure also invites anyone saved by a helmet to join the New Jersey "Saved by the Helmet Club."



Use your head and wear a helmet (Also available in Spanish)

Source: Snell Memorial Foundation, Inc., 3628 Madison Avenue, Suite 11, North Highlands, CA 95660, Telephone: (916) 331-5073

Date: Undated

Summary description: This 11-3/4 x 8-3/4 three-color brochure is folded to 4 x 8-3/4. It describes the dangers of not wearing a helmet, the elements of a good helmet and how to find a good helmet.

Major content points and behaviors: The brochure quotes the following statistics:

- § Head injuries in bicyclists are noted in 65,000 emergency room cases, 7,700 hospital admissions, 40% of bicyclists admitted to hospitals, and 70% to 80% of fatally injured bicyclists
- § Bicyclists hospitalized with head injuries are 20 times as likely to die as those without
- § Bicyclist injury rates are highest between ages 5 and 15
- § 56% of fatally injured bicyclists are age 20 or older
- § Death rates for male bicyclists ages 20-54 have substantially increased in recent years

The elements of a good helmet are described as well as what to look for when buying a helmet. The following points are made:

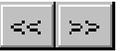
- § Make sure the helmet fits
- § Wear the helmet low on the forehead just above the eyebrows
- § Fasten the chin strap securely
- § Use only manufacturer-approved decorations and cleaners

Use your head and wear a helmet (Also available in Spanish)

§ Replace the helmet if it has been damaged

§ Replace the helmet at least every five years

A description of the Snell organization and its activities is also provided.



The helmet habit: get into it!

Source: Outdoor Empire Publishing Company, Inc., 511 Eastlake Avenue East, Seattle, WA 98109, Telephone: (206) 624-3845.

Date: 1996

Summary description: This 10-5/8 x 8-3/8 brochure is folded to 3-5/8 x 8-3/8 and reproduced in red, yellow, black and green on white paper. It provides information on helmets as well as general bicycle safety tips.

Major content points and behaviors: The brochure covers the following topics:

§ Reasons to wear a helmet--head injury prevention, visibility, storage of emergency data, climate control, image

§ Statistics

§ Proper fit and positioning

§ Certification by Snell or ANSI

§ Purchasing a helmet for a child

§ How to get a child to wear a helmet

- Let the child help pick it out

- Always insist the child wear it

- Wear your own helmet

- Praise and reward the child for wearing it

- Begin the helmet habit with the child's first ride

- Encourage other parents to buy and use helmets

§ Helmet care

The following safe riding tips are included:

- § Wear a helmet
- § Obey signs and signals
- § Ride on the right with traffic
- § Watch for road hazards
- § Use hand signals
- § Lock your bike
- § Children should not ride at night
- § Watch for cars in driveways
- § Use caution in wet weather
- § Be predictable
- § Give your bike regular checkups
- § Be considerate



Do the right thing (It's a bike thing)

Source: Greater Portland Council of Governments, 233 Oxford Street, Portland, ME 04101, Telephone: (207) 774-9891

Date: Undated

Summary description: This 7-1/2 x 14 brochure is folded to 3-5/8 x 7-1/2 and printed in purple and black on white paper. It is a companion document to a video. The brochure and video are part of a program on Kids and transportation designed to provide a forum for teachers, parents and children to learn about transportation choices in Cumberland County, Maine.

Major content points and behaviors: The brochure covers the following major points:

§ Fitting and checking your bike

- Frame size
- Seat height
- Nuts and bolts
- Brakes
- Tires
- Reflectors
- Bell

§ Wearing a helmet

- Adjust the fit with foam pads
- Tighten the strap
- Check for a standard sticker

§ Navigation

Do the right thing (It's a bike thing)

- Ride on the sidewalk up to age 9
- Stop at intersections and look both ways
- Look over your left shoulder before making a left turn
- Use extra caution approaching parked cars

A rap poem summarizes the hints included in the brochure.



Life in the cool lane: Traveling by bicycle

Source: Portland Area Comprehensive Transportation Committee and Greater Portland Council of Governments, 233 Oxford Street, Portland, ME 04101, Telephone: (207) 774-9891

Date: 1997

Summary description: This 11 x 17 brochure is folded to 5-5/8 x 11 and printed in blue on gray paper. It provides a bicycling guide to Portland, Maine.

Major content points and behaviors: Included are the following:

- § A map of Portland showing future bikeway network facility types
- § Tips on commuting by bicycle
- § Rules of the road
- § Rating of roads by age



Bicycle helmets for Florida's children--"It's the law!"

Source: Brain Injury Association of Florida, Inc., North Broward Medical Center, 201 East Sample Road, Pompano Beach, FL 33064, Telephone: (954) 786-2400

Date: Undated

Summary description: This 8-1/2 x 11 brochure is folded to 3-5/8 x 8-1/2 and printed in black on orange paper. It explains proper helmet positioning, Florida bicycle laws, dangers of not wearing a helmet and information about purchasing inexpensive helmets.

Major content points and behaviors: The following information is provided about Florida laws:

- § Children under age 16 must wear a bicycle helmet that is properly fitted, is fastened with a strap and meets safety standards (ANSI, Snell, CPSC)
- § Bicyclists must ride with traffic on the right side of the road and use hand signals
- § Bicyclists must stop for stop signs and red lights
- § Bicyclists can't ride with a headset on
- § Bicyclists must use lights and reflectors at night

The dangers of not wearing a helmet are noted and a source for obtaining inexpensive helmets is provided.



Don't go head over handlebars--drive with your head

Source: The Florida Bicycle Program, Department of Transportation, 605 Suwannee Street, MS 82, Tallahassee, FL 32399-0450, Telephone: (850) 487-1200

Date: Undated

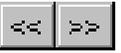
Summary description: This 12 x 9 brochure is folded to 4 x 9 and printed in yellow, blue and black on white paper. It provides bicycle safety rules for riding in Florida.

Major content points and behaviors: The major topics covered follow:

- § The increasing popularity of biking
- § Bicycling deaths and injuries
- § The importance of a properly fitted and approved helmet
- § Positioning the bike in the roadway
 - On the right side of the right-hand lane
 - In the center of the lane if going at the same speed as traffic
 - On the left if making a left turn
- § Rules to follow
 - Obey stop signs and red lights
 - Equip bicycle with white head lights, red tail lights and red rear reflectors for night use
 - Use hand signals
 - Never ride more than two abreast
 - Never wear headphones

Don't go head over handlebars--drive with your head

- Never carry more people than the bike was designed to hold
- Dress to be seen
- Ride where you are comfortable



How to ride the intersections

Source: The Florida Bicycle Program, Department of Transportation, 605 Suwannee Street, MS 19, Tallahassee, FL 32399-0450, Telephone: (850) 487-1200

Date: Undated

Summary description: This 14 x 8-1/2 brochure is folded to 3-1/2 x 8-1/2 and printed in black on orange. It provides tips for adult bicyclists in riding intersections.

Major content points and behaviors: The brochure makes the following points:

§ The logic of placing yourself in traffic depends on where you are going just as a car does

§ To make a left turn:

- Look back for a gap in traffic
- Signal a turn when ready
- If the motorist doesn't react, wait for the next one
- Move when ready

§ To make a demand-actuated traffic light work:

- Stop your bike over the right edge of the square
- If that doesn't work, lay the bike on the edge of the square
- If that doesn't work, complain to the local engineer



Seeing and being seen

Source: The Florida Bicycle Program, Department of Transportation, 605 Suwannee Street, MS 19, Tallahassee, FL 32399-0450, Telephone: (850) 487-1200

Date: Undated

Summary description: This 14 x 8-1/2 brochure is folded to 3-1/2 x 8-1/2 and printed in black on orange. It provides tips for adult bicyclists on seeing and being seen.

Major content points and behaviors: The following recommendations are made for seeing:

- § Keep your eyes moving as you scan the traffic scene
- § Watch for cars coming out of side streets and cars coming toward you that might turn
- § Be extra careful on high-speed roads and stay off them at night
- § Don't use headphones

The following safety tips are provided for being seen:

- § Ride with traffic
- § Stop for stop signs and red lights
- § Signal what you plan to do
- § Ride in a predictable place
- § Use decent lights and reflectors at night
- § Wear "dayglo" colors in the daytime and reflective materials at night



City cycling

Source: The Florida Bicycle Program, Department of Transportation, 605 Suwannee Street, MS 19, Tallahassee, FL 32399-0450, Telephone: (850) 487-1200

Date: Undated

Summary description: This 14 x 8-1/2 brochure is folded to 3-1/2 x 8-1/2 and printed in black on red. It provides tips for adult bicyclists on city cycling.

Major content points and behaviors: The following topics are covered:

§ The right attitude

- Obey street signs
- Ride with traffic
- Ride with lights at night

§ The right skills

- Control of the bike
- Ability to look back and ride with one hand
- Ability to judge speed and distance
- Ability to negotiate with traffic
- Ability to make panic stops
- Ability to make quick turns



Motorists make mistakes too

Source: The Florida Bicycle Program, Department of Transportation, 605 Suwannee Street, MS 19, Tallahassee, FL 32399-0450, Telephone: (850) 487-1200

Date: Undated

Summary description: This 14 x 8-1/2 brochure is folded to 3-1/2 x 8-1/2 and printed in black on purple. It provides tips for adult bicyclists on avoiding accidents caused by motorist mistakes.

Major content points and behaviors: The brochure covers the following topics:

§ Three common motorist mistakes--left turns, right turns and failure to yield

§ Avoiding crashes due to motorist errors

- Use lights and reflectors when riding at night

- Ride farther from the right edge as you approach the speed of traffic

- Be ready to take evasive action or hit the brakes

- Watch the motorists around you carefully

- As you approach intersections, look back to see if anyone is coming who could turn on you and look ahead for cars that might turn left

- Look for cars in side streets and driveways that could pull out in front of you

- Use your arms to signal your intentions or to wave a driver in front of you

- Use your road position to let drivers know what you intend to do

- Look at the motorist to let him know you plan to turn left

The bicyclist is advised to remember the following things about motorists:

Motorists make mistakes too

- § Some of them drink
- § Some can't see very well
- § Some are thinking about other things
- § Cars have blind spots
- § No one can stop a vehicle on a dime
- § Some drivers just don't see bicyclists



Buying a bicycle

Source: The Florida Bicycle Program, Department of Transportation, 605 Suwannee Street, MS 19, Tallahassee, FL 32399-0450, Telephone: (850) 487-1200

Date: Undated

Summary description: This 14 x 8-1/2 brochure is folded to 3-1/2 x 8-1/2 and printed in black on yellow. It provides tips for adult bicyclists on purchasing a first bicycle.

Major content points and behaviors: The brochure covers the following topics:

- § The amount of money you want to spend
- § What you want to do with the bike
- § Essential accessories
 - Helmet
 - Lights and reflectors
 - Gloves
 - Mirror
 - Lock
 - Tools
 - Rear rack
 - Fenders
- § Sizing the bike--basic fit
- § Basic adjustments--saddle height and position, handlebar position



Just where do I belong?

Source: The Florida Bicycle Program, Department of Transportation, 605 Suwannee Street, MS 19, Tallahassee, FL 32399-0450, Telephone: (850) 487-1200

Date: Undated

Summary description: This 14 x 8-1/2 brochure is folded to 3-1/2 x 8-1/2 and printed in black on blue. It provides tips for adult bicyclists on roadway positioning.

Major content points and behaviors: The brochure covers the following topics:

- § Speed of travel--the faster you ride the closer you should be to the traffic
- § Destination--you should be in the appropriate lane for your destination of travel
- § Width of the road--the cyclist can take the roadway on narrow roads
- § Parked cars--the cyclist shouldn't be close enough to be hit by opening car doors
- § High speed right turn lanes--the cyclist may need to pull over and wait for a gap in traffic to get to the through lane
- § Narrow high speed two-lane roads--it may be best for the cyclist to avoid them
- § Sidewalk riding--adult riders who can keep up a good pace don't belong on sidewalks



Picking a route

Source: The Florida Bicycle Program, Department of Transportation, 605 Suwannee Street, MS 19, Tallahassee, FL 32399-0450, Telephone: (850) 487-1200

Date: Undated

Summary description: This 14 x 8-1/2 brochure is folded to 3-1/2 x 8-1/2 and printed in black on bright pink. It provides tips for adult bicyclists on picking a route.

Major content points and behaviors: The brochure covers the following topics to be considered in selecting a route:

- § Your cycling skills and limitations
- § Traffic problems
- § Road problems
- § Time and day
- § The destination
- § What to look for
 - Width
 - Surface
 - Speed
 - Intersections
- § Getting a good map



How to "talk" to people in cars

Source: The Florida Bicycle Program, Department of Transportation, 605 Suwannee Street, MS 82, Tallahassee, FL 32399-0450, Telephone: (850) 487-1200

Date: Undated

Summary description: This 14 x 8-1/2 brochure is folded to 3-1/2 x 8-1/2 and printed in black on green. It provides tips for adult bicyclists on communicating with people in cars.

Major content points and behaviors: The brochure covers the following topics:

- § Using your hands and arms
- § Using your road position
- § Using your eyes
- § Using your voice
- § Using the bell or horn (OK for pedestrians but motorist won't hear it)



How to ride at night. . . and stay alive!

Source: The Florida Bicycle Program, Department of Transportation, 605 Suwannee Street, MS 19, Tallahassee, FL 32399-0450, Telephone: (850) 487-1200

Date: Undated

Summary description: This 14 x 8-1/2 brochure is folded to 3-1/2 x 8-1/2 and printed in black on bright pink. It provides tips for adult bicyclists on riding safely at night.

Major content points and behaviors: The brochure covers the following topics”

§ Basic equipment

- Headlight
- Tail light
- Other lights--Belt beacon TM and leg lights
- Red rear reflector
- Pedal reflectors

§ Reflective clothes

The following riding tips are provided:

- § Don't look directly at headlights
- § Don't count on anyone seeing you
- § Be ready to hit the brakes or pull a quick turn
- § Pay special attention to cars coming toward you and from side streets

How to ride at night. . . and stay alive!

- § On well-lit roads check your mirror now and then
- § On dark roads, watch your shadow--if the car moves left to pass, your shadow will move right
- § Be especially careful riding on dark high-speed roads
- § Remember that some drivers will be under the influence of alcohol or drugs



Kids and bikes

Source: The Florida Bicycle Program, Department of Transportation, 605 Suwannee Street, MS 82, Tallahassee, FL 32399-0450, Telephone: (850) 487-1200

Date: 1993

Summary description: This 8-1/2 x 11 brochure is folded to 4-1/4 x 11 and printed in black on white paper. It provides traffic facts for children and what parents can do to improve their safety.

Major content points and behaviors: The brochure covers the following topics:

- § Bicycling is fun
- § Children aren't small grownups
- § Children are at risk in their own neighborhoods
- § For children age 5-13 serious traffic injuries result from midblock rideouts, intersection dashes and sudden swerves to the left
- § Bicycles helmets reduce injuries
- § What parents can do to help their children learn to ride safely



Bicycle laws

Source: Bicycle/Pedestrian Coordinator, Department of Transportation, PO Box 778, Dover, DE 19903

Date: 1996

Summary description: This 8-1/2 x 11 brochure is folded to 3-5/8 x 8-1/2 and printed in green on buff-colored paper. It describes Delaware bicycle laws and is a good model for developing similar descriptions of bicycle-related laws.

Major content points and behaviors: The brochure covers the following:

- § Responsibilities of riders, parents and guardians
- § Number of persons carried
- § Helmet requirements
- § Attachment of a trailer or semi-trailer
- § Clinging to other vehicles
- § Placement in roadway
- § Riding two abreast
- § Hands on handlebars
- § Left turns
- § Signaling
- § Sidewalk riding
- § Parking
- § Night equipment requirements
- § Brakes

§ Identification number

§ Ear plugs and headsets

§ Exclusions

§ Under the influence of alcohol or drugs

§ Racing



Drive your bike safely

Source: Milwaukee Safety Commission and Milwaukee Police Department, 6680 North Teutonia, Milwaukee, WI 53209, Telephone: (414) 935-7986

Date: 1997

Summary description: This 8-1/2 x 11 brochure is folded to 3-5/8 x 8-1/2 and printed in orange and blue on white paper. It provides bicycle safety advice for children in grades K through 3.

Major content points and behaviors: The following topics are covered:

- § The bike should be the right size
- § The sidewalk is the best place to ride until age 11
- § On the sidewalk, watch out for cars coming from alleys and driveways
- § On the sidewalk, watch out for people
- § Stop at the curb and look both ways before entering the street
- § If allowed to cross the street, walk the bike across
- § Store the bike in a safe place
- § Wear a helmet



Encouraging safe cycling for a livable Portland

Source: City of Portland, Bureau of Traffic Management, 1120 SW Fifth Avenue, Room 730, Portland, OR 97204-1972, Telephone: (503) 823-2925

Date: 1996

Summary description: This 14 x 8-1/2 brochure is folded to 3-1/2 x 8-1/2 and printed in green and black on white paper. It encourages safe biking in Portland.

Major content points and behaviors: The brochure covers the following:

- § Activities of the city's Bicycle Program
- § Upcoming projects
- § Bicycles and the law
- § Advantages of bicycling
- § Resources



A consumer's guide to bicycle helmets

Source: Bicycle Helmet Safety Institute, 4611 Seventh Street South, Arlington, VA 22204, Telephone: (703) 486-0100

Date: 1995

Summary description: This 8-1/2 x 11 brochure is folded to 3-5/8 x 8-1/2 and printed in red and black on white paper. It describes how to buy a bicycle helmet.

Major content points and behaviors: The brochure covers the following topics:

- § Need for a helmet
- § How the helmet works
- § Marketing ploys to avoid
- § Standards--Snell, ASTM, ANSI, CPSC
- § Comfort and fit
- § Special problems
- § Prices and where to buy
- § How to buy
- § When to replace a helmet
- § Children's helmets

In summary, the brochure states:

- § You always need a helmet

§ Laws in your area may require one

§ The helmet must fit

§ Snell-certified helmets are good but so are others

§ Buy a bright color and attach reflective tape

§ Avoid helmets with an extra hard core in the foam liner, inadequate vents, an extreme “aero” shape, dark colors, thin straps, complicated adjustments or a rigid visor.



Have you "shared the road" today?

Source: Bicycle Colorado, PO Box 698, Salida, CO 81201

Date: Undated

Summary description: This 15-3/4 x 6 brochure is folded to 6 x 4 and printed in green and brown on buff-colored paper. It promotes road sharing between motorists and bicyclists.

Major content points and behaviors: The brochure covers the following points:

§ Rules of the road

- Rights and duties
- Signs and signals
- Ride single file
- Ride right

§ Rules of the trail

- Ride on open trails only
- Leave no trace
- Control the bicycle
- Bicyclists always yield
- Never spook animals
- Plan ahead

§ Rules of the path (multi-use trails and paths)

- Ride right
- Ride single file when other users are present

Have you "shared the road" today?

- Bicyclists yield to other users
- Use caution when overtaking other users
- Announce intentions when overtaking other users
- Helmets are recommended



Must I buy my child a helmet?

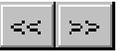
Source: Bicycle Helmet Safety Institute, 4611 Seventh Street South, Arlington, VA 22204, Telephone: (703) 486-0100

Date: 1991

Summary description: This 8-1/2 x 11 brochure is folded to 3-5/8 x 8-1/2 and printed in blue and black on white paper. It explains to parents why and how they should buy helmets for their children.

Major content points and behaviors: The brochure covers the following topics:

- § What a helmet will cost
- § How often it will need to be bought
- § Factors that will make the child wear it (or not wear it)
- § The need for helmets
- § Which one should be bought--look for a standard sticker, vents, good fit
- § Toddler helmet needs
- § When to replace the helmet



Visibility obstruction information

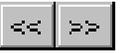
Source: Bicycle/Pedestrian Office, Department of Public Works, 435 Ryman, Missoula, MT 59802,
Telephone: (406) 523-4626

Date: Undated

Summary description: This 15-1/4 x 8-1/2 brochure is folded to 3-3/4 x 8-1/2 and printed in red, yellow and black on white paper. Designed for corner property owners or residents, it explains corner sight triangles needed for clear visibility and reproduces the city ordinance on visual obstructions.

Major content points and behaviors: The brochure covers the following:

- § The dangers of visibility obstructions
- § What a visibility obstruction is
- § Requirements for clear site triangles
- § Who is responsible for maintaining clear sight triangles
- § What the person needs to do
- § Planning ahead when planning a new yard or enhancing present landscaping
- § The City of Missoula visibility obstructions ordinance



Kids & bikes & safety (No. FHWA-SA-96-056)

Source: National Highway Traffic Safety Administration, Traffic Safety Programs, NTS-15, 400 Seventh Street, SW, Washington, DC 20590

Date: 1996

Summary description: This 11 x 8-1/2 brochure is folded to 3-5/8 x 8-1/2 and printed in yellow, green, black and red on white paper. It provides safety tips for safe bike riding.

Major content points and behaviors: The brochure covers the following points:

- § Always wear a helmet
- § Inflate tires properly and check brakes before riding
- § See and be seen
- § Carry books and other items in a carrier or backpack
- § Avoid riding at night
- § If you do ride at night wear something retroreflective and make sure you have reflectors on the front and rear of the bike (lights are required)
- § Ride single file
- § Ride right
- § Obey signs, signals and lane markings
- § Check left-right-left for traffic before entering a street or intersection
- § Stay alert and watch for roadway hazards
- § When making turns, always look behind for a break in traffic, then signal
- § Stay out of drivers' blind spots

§ Ride far enough from the curb to avoid the unexpected (like car doors opening)



Did you know? (DOT HS 808648)

Source: National Highway Traffic Safety Administration, Traffic Safety Programs, NTS-15, 400 Seventh Street, SW, Washington, DC 20590, Telephone: (800) 424-9393

Date: 1998

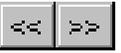
Summary description: This 11 x 8-1/2 brochure is folded to 5-1/2 x 8-1/2 and printed in black on white paper with splashes of color. It provides safety tips for bicycle riding.

Major content points and behaviors: The brochure covers the following points:

- § Always wear a properly fitted helmet.
- § Buy a helmet with a Snell or ANSI label.
- § Inflate tires properly and check brakes before riding
- § Adjust handlebars for proper tightness
- § Wear brightly colored clothing
- § Equip the bicycle with reflectors
- § Carry books and other items in a carrier or backpack
- § Ride single file
- § Ride right
- § Signal moves and be courteous to pedestrians
- § Obey signs, signals and lane markings
- § Check left-right-left for traffic before entering a street or intersection
- § Stay alert and watch for roadway hazards
- § When making turns, always look behind for a break in traffic, then signal

§ Stay out of drivers' blind spots

§ Ride far enough from the curb to avoid the unexpected (like car doors opening)



Do you know Missoula's bicycle laws?

Source: Bicycle/Pedestrian Office, Department of Public Works, 435 Ryman, Missoula, MT 59802,
Telephone: (406) 523-4626

Date: 1998

Summary description: This 8-1/2 x 11 brochure is folded to 5-1/2 x 8-1/2 and printed in black on fuchsia paper. It states the relevant laws in Missoula.

Major content points and behaviors: It describes the following laws:

§ The bicycle is a vehicle, and the bicyclist has all the rights and responsibilities of any vehicle driver, including:

- Stopping for stop signs and red lights
- Riding with traffic
- Using lights at night
- Staying off business district sidewalks (or all sidewalks if older than 15)
- Yielding the right of way when entering the roadway

§ Cyclists who live in Missoula and ride regularly within city limits must purchase a license for their bikes

§ Cyclists are required to ride as close as practicable to the right side of the roadway unless turning, moving at the speed of traffic, or on a narrow roadway

§ There are three legal ways to make left turns: as vehicles do, taking the two crossings as segments, walking the bicycle across like a pedestrian

§ Cyclists may signal turns by simply pointing in the direction they intent to go.

§ In most situations, it is illegal to ride side-by-side

§ Passing a car on the right is generally illegal unless the vehicle is making a left turn

Do you know Missoula's bicycle laws?

§ Headlights are required for night riding

Hints are also provided for riding safely in bad weather, including rain and snow.



Your bicycle helmet: "A correct fit" (DOT HS 808 421)

Source: National Highway Traffic Safety Administration, NTS-15, 400 Seventh Street, SW, Washington, DC 20590 (and Harborview Injury Prevention and Research Center and Snell Memorial Foundation)

Date: 1996

Summary description: This 8-1/2 x 11 brochure is folded to 3-5/8 x 8-1/2 and printed in black on buff-colored paper. It describes procedures for ensuring a correct bicycle helmet fit. It also makes suggestions for purchasing and using a helmet.

Major content points and behaviors: The brochure lists the following procedures for ensuring a proper helmet fit:

- § Put the helmet on your head so that it sits evenly between the ears and rests low on the forehead (one to two finger widths above the eyebrows)
- § Put foam pads inside the helmet so that it feels comfortable but really snug
- § Tighten the chin strap as snugly as possible

Solutions are provided for the following helmet fit problems:

- § Helmet moves back to uncover the forehead
- § Helmet moves forward to cover the eyes
- § Helmet slips from side to side
- § Helmet does not pull down when you open your mouth

§ Helmet does not cover the forehead

The following suggestions are made for buying and using a helmet:

- § Buy a helmet that has been tested and approved by looking for an ASTM, ANSI or Snell sticker
- § Select a helmet that fits well prior to any adjustments
- § Replace any helmet that has been involved in a crash
- § Buy a helmet that fits, not one the rider will grow into

Note: This brochure is currently being revised by NHTSA



10 tips for fun and safe biking

Source: Kansas Department of Transportation, Office of Traffic Safety, 217 SE 4th Street, Topeka, KA 66603, Telephone: (913) 296-3756

Date: Undated

Summary description: This 24 x 7 brochure is folded to 4 x 7. Printed in purple and pink on white paper, it provides tips for safe riding.

Major content points and behaviors: The brochure covers the following points:

- § Wear a good helmet--ANSI, Snell or ASTM approved
- § Wear the helmet properly
- § Wear visible clothing
- § Don't ride at night
- § Watch for roadway hazards
- § Ride on the right side with traffic
- § Watch for traffic around you
- § Use hand signals
- § Obey traffic signs and lights
- § Make sure your bike fits you
- § Check your brakes often



Wheel issues: Road sharing tips for bikes and big trucks

Source: Register's Annual Great Bicycle Ride Across Iowa, The Des Moines Register, PO Box 622, Des Moines, Iowa 50303, Telephone: (800) 474-3342

Date: 1998

Summary description: This 11 x 8-1/2 brochure is folded to 3-3/4 x 8-1/2 and printed in orange and black on white paper. It points out what cyclists and professional drivers need to know about each other.

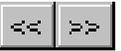
Major content points and behaviors: The following advice is provided for the cyclist:

- § Obey the same traffic rules as motorists
- § When cycling behind a truck, stay back and position the bike slightly right within the lane so that you have a clear view of the truck's mirrors
- § When a semi-trailer passes don't assume the road is clear--there may be a second trailer or "pup"
- § In city traffic, pay particular attention to the truck's turn signals--if the truck is turning right, don't even think about cutting around on the right
- § The bigger the truck, the bigger the danger
- § At 55 mph, it takes a truck 300 feet to stop (plus reaction time)
- § Sun glare during early morning or late afternoon can make a cyclist hard to see
- § Always ride with traffic
- § Check for following traffic before making a lateral move
- § Ride as far right as practical but allow 24" to swerve out for hazards
- § On a group ride, split up into six or fewer bikes so drivers can safely pass
- § Keep your hands on your brakes
- § If you're slowing traffic, pull off the road and let traffic pass

- § Whenever possible, make eye contact with motor vehicle drivers, particularly at intersections
- § Don't use headphones
- § If you must stop, pull completely off the road
- § Always wear an approved helmet
- § Mirrors help you observe following traffic
- § Wear bright colors to be visible; have lights and reflectors if you ride at night

The following advice is provided for professional drivers:

- § Be aware that cyclist skills vary widely--a safe rider holds a steady line
- § Respect the bicyclist's safety and legal right to the roadway
- § Yield the right of way to a bicyclist as you would to a car
- § Use extra caution during peak morning and afternoon hours
- § Lay off the horn and flashing headlights--they may startle the bicyclist
- § Slow down when meeting or passing cyclists--wind turbulence can affect a cyclist's control
- § Allow cyclists extra room to swerve around road defects
- § Show cyclists extra courtesy while negotiating railroad tracks and narrow bridges
- § Don't pass a cyclist on a two-lane road if oncoming traffic is near
- § For safe passing, allow three to five feet of space--add one foot for every 10 mph over 50 mph



Uncle Bob's bike-o-rama safety quiz

Source: Department of Transportation, Bureau of Transportation Safety, Pedestrian/Bicycle Safety Program Manager, 4802 Sheboygan Avenue, Room 809, P.O. Box 7936, Madison, WI 53707-7936, Telephone: (608) 267-3154

Date: Undated

Summary description: This colorful 8-1/2 x 11 brochure is folded to 3-3/4 x 8-1/2 colorful brochure. It gives bicycle safety tips from “Uncle Bob” Uecker.

Major content points and behaviors: The brochure recommends the following:

- § Always wear a helmet
- § Make sure the helmet fits properly
- § Never ride against traffic
- § Look left-right-left before entering the street from driveways
- § Obey signs and signals
- § Stop at uncontrolled intersections and look left-right-left before proceeding
- § Communicate with hand signals
- § At night, have a headlight, tail light and reflector
- § Wear light colored clothing at night
- § Watch for potholes, drain gates and other hazards
- § Look over your shoulder before turning
- § Keep your bike in tip top shape



Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist

Source: Texas Bicycle Coalition, P.O. Box 1121, Austin, TX 78767,

Telephone: (512) 476-6655

Date: Undated

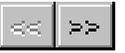
Summary description: This 14 x 8-1/2 brochure is folded to 3-1/2 x 8-1/2. It is designed for children in the 4th and 5th grades. It presents a scene in which bicyclists break various safety rules. It points out the rules that are broken and what a SuperCyclist would do to ride safely. It also describes the importance of wearing a helmet and proper helmet positioning.

Major content points and behaviors: The major behaviors covered are:

- § Keep two hands on the handlebars for maximum safety
- § Don't ride in the crosswalk
- § Watch out for hazards in the roadway (drain grates, leaves, etc.)
- § Obey all traffic signs and signals
- § Lock your bike when unattended
- § Give proper hand and arm signals before turning
- § Don't let your unattended bike block access to anything
- § Watch for opening car doors
- § Always look over your shoulder before turning
- § Don't hitch a ride on a moving vehicle
- § Don't work on bicycle repairs on the sidewalk
- § Watch out for unrestrained dogs

- § Wear a properly-fitted and positioned helmet at all times
- § Ride in the same direction as traffic
- § Don't have more than one rider per bicycle
- § Yield to pedestrians
- § Equip the bike with a red rear reflector
- § Make sure shoelaces are tied and that laces and pants are tucked in
- § Secure packages in a basket
- § Wear bright colors

A note to parents advises them that the bicycle is likely to be the child's first roadway vehicle, and it is important that children be taught how to ride safely.



Wisconsin's saved by the bicycle helmet club

Source: Saved by the Bicycle Helmet Club, Wisconsin Information Network for Safety, 1007 Ellis Street, Stevens Point, WI 54481, Telephone: (800) 261-9467

Date: Undated

Summary description: This 8-1/2 x 11 flyer is printed in black on green paper. It provides a means for Wisconsin bicyclists who have been saved from death or injury by their helmets to join a club of similar bicyclists.

Major content points and behaviors: The flyer provides for identifying information on the applicant and a brief description of the crash.



Heads up helmets on (Stock #3205)

Source: American Automobile Association

Date: 1992

Summary description: This 4 x 9 flyer is printed in black, red and blue on white paper. It encourages the use of bicycle helmets.

Major content points and behaviors: The following points are made:

- § No other serious injury is as easy to prevent as a head injury
- § Bicycle helmets reduce the risk of injury by 85%
- § Today's helmets are lightweight, cool and comfortable and come in a variety of styles
- § Helmets should meet ANSI or Snell standards
- § The helmet should fit snugly and cover the top of the forehead
- § The cost of a helmet is small compared to the benefits gained



Bicycle injury fact sheet

Source: National Safe Kids Campaign, 111 Michigan Avenue, NW, Washington, DC 20010-2970,
Telephone: (202) 884-4993

Date: 1995

Summary description: This 8-1/2 11 fact sheet contains information on the bicycle injury problem and the importance of wearing helmets and following the rules of the road.

Major content points and behaviors: This fact sheet covers the following topics:

- § Bicycle deaths and injuries to children
- § When and where bicycle deaths and injuries occur
- § Which children are at greatest risk--males and children under age 9
- § Bicycle helmet effectiveness
- § Bicycle helmet laws
- § Health care costs and savings
- § Prevention tips



Does your bicycle helmet fit properly?

Source: Snell Memorial Foundation, Inc., 3628 Madison Avenue, Suite 11, North Highlands, CA 95660,
Telephone: (916) 331-5073

Date: Undated

Summary description: This 8-1/2 x 11 black and white flyer in ad “slick” format describes and illustrates how to ensure proper helmet fit and construction. It can be used in a variety of publications.

Major content points and behaviors: The flyer makes the following points:

- § Size--the helmet should fit securely and fit comfortably
- § Straps--they should fit around the ears and under the chin snugly and comfortably
- § Straight--the helmet should be straight on the head (low on the forehead just above the eyes)
- § Sticker--the Snell standards exceed those of ANSI and ASTM

Note: The artwork for this flyer is also available on disk. A colorful poster of it has been distributed to bike shops and schools.



Sally says: Bicycle safety is every parent's responsibility!

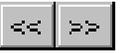
Source: Office of Traffic Safety, Department of Motor Vehicles and Public Safety, 555 Wright Way, Carson City, NV 89711-0999

Date: 1995

Summary description: This 8-1/2 x 11 flyer is printed in purple on white paper. It provides bicycle safety tips for parents.

Major content points and behaviors: The flyer covers the following topics:

- § Strap a helmet on the child
- § Let the child learn to coast and balance
- § Walk alongside as the child learns
- § Build handling skills
- § Teach the child to ride in traffic
- Always stop at the edge and look left-right-left
- Always ride with traffic



About bicycle helmets (HE0075)

Source: American Academy of Pediatrics, The Injury Prevention Program (TIPP), 141 Northwest Point Boulevard, PO Box 927, Elk Grove Village, IL 60009, Telephone: (847) 228-5005

Date: 1994

Summary description: This 8-1/2 x 11 flyer is printed in black and orange on white paper. It covers information on bicycle helmets.

Major content points and behaviors: The flyer covers the following main points:

- § Helmets should meet ANSI or Snell standards
- § A child should only wear a bicycle helmet when riding
- § Bicycle helmets can be purchased in many types of shops
- § Either a hard or soft shell helmet may be used--the main difference is style and comfort
- § The helmet should be worn squarely on top of the head
- § There are soft-shell helmets for infants
- § A child's helmet will fit for several years--most models have removable fitting pads
- § A helmet that has been in a serious crash should be replaced



Sally says: Safety starts at home

Source: Office of Traffic Safety, Department of Motor Vehicles and Public Safety, 555 Wright Way, Carson City, NV 89711-0999

Date: 1995

Summary description: This 8-1/2 x 11 flyer is printed in black on yellow. It describes techniques for parents to get their children safely to school by walking, bicycling, bus or car.

Major content points and behaviors: The flyer makes the following points:

§ Getting ready--make sure children put everything in a back pack

§ Walking--make sure children:

- Use a safe route
- Use sidewalks and crosswalks
- Obey traffic signals and crossing guards
- Stop and look left-right-left
- Cross when it's safe looking as you cross

§ Bicycling--make sure children:

- Wear a helmet
- Give pedestrians the right of way on the sidewalk
- Ride with traffic
- Obey all traffic signs

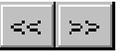
§ Busing

- Go to bus stop with young children and have older children walk in groups

Sally says: Safety starts at home

- When picking up the child, wait on the side where the bus stops

§ Car--make sure children look left-right-left before crossing the lot



Bicycle inspection checklist (Stock #3287)

Source: American Automobile Association

Date: Undated

Summary description: This 8-1/2 x 11 flyer is printed in blue on white paper. It provides a checklist for inspecting a bicycle to ensure that it is safe to ride.

Major content points and behaviors: This checklist provides for the rider to indicate the safe or unsafe riding condition of the following bicycle parts, equipment and accessories:

- § Wheels
- § Tires
- § Reflectors
- § Frame
- § Sprockets
- § Chain
- § Pedals
- § Fork
- § Handlebar
- § Saddle (seat)
- § Hand brake
- § Derailleurs
- § Helmet

§ Bell/horn

§ Lock, chain or cable

The reverse side of the sheet provides diagrams of the BMX bicycle and 10-12-18 speed bicycles and points out the location of each of the above parts on these bicycles.



The child as a passenger on an adult's bicycle (HE0082)

Source: American Academy of Pediatrics, The Injury Prevention Program (TIPP), 141 Northwest Point Boulevard, PO Box 927, Elk Grove Village, IL 60009, Telephone: (847) 228-5005

Date: 1994

Summary description: This 8-1/2 x 11 flyer is printed in black and orange on white paper. It covers information on the child as a passenger on an adult's bicycle.

Major content points and behaviors: The flyer covers the following main points:

- § Only competent adult cyclists should carry young passengers
- § Don't ride on busy streets or in bad weather
- § Don't carry infants too young to sit in a rear seat
- § Only children who are old enough to sit unsupported and to wear a helmet should be carried in a rear seat
- § A rear-mounted seat must be securely attached over the rear wheel, have spoke guards to prevent feet and hands from being caught in the wheels, and have a high back and sturdy shoulder harness and lap belt that will support a sleeping child
- § A lightweight infant bike helmet should be worn by a young passenger

A drawing is included that a child can color.



Tips for getting your children to wear bicycle helmets (HE0079)

Source: American Academy of Pediatrics, The Injury Prevention Program (TIPP), 141 Northwest Point Boulevard, PO Box 927, Elk Grove Village, IL 60009, Telephone: (847) 228-5005

Date: 1994

Summary description: This 8-1/2 x 11 flyer is printed in black and orange on white paper. It covers information on bicycle helmets.

Major content points and behaviors: The flyer covers the following main points:

- § Establish the helmet habit early
- § Wear a helmet yourself
- § Talk to your children about why you want them to protect their heads
- § Reward your kids for wearing helmets
- § Don't let children ride their bikes unless they wear helmets
- § Encourage your children's friends to wear helmets

Games are provided for children aged 10.



Share the road

Source: Maine Department of Transportation, 16 State House Station, Child Street, Augusta, ME 04333,
Telephone: (207) 287-6600

Date: 1994

Summary description: This 8-1/2 x 11 flyer is printed two-sided in black on orange paper. It contains hints for both bicyclists and motorists in sharing the road.

Major content points and behaviors: For bicyclists, the following is provided:

§ Bicycles and the law

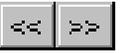
§ Tips for safety

- Share the road
- Drive on the right side
- Obey all traffic signs and signals
- Ride single file
- Signal when turning, slowing or stopping
- Wear an approved bicycle helmet
- Be visible
- Keep your bicycle in good repair

Motorists are advised to:

§ Leave three feet of passing space

- § Reduce speed when passing a cyclist
- § Yield to oncoming bicycles when turning left at an intersection
- § After passing a cyclist, check that you have allowed adequate distance before merging back in
- § Don't blast your horn near cyclists
- § Give cyclists extra space in bad weather
- § Watch for things that could prove hazardous for cyclists
- § Look for cyclists before opening the car door
- § Be aware that children on bicycles are often unpredictable
- § Be aware that the cyclist may need to take the travel lane on narrow roads



At night, ride with lights. It's the law!

Source: The Florida Bicycle Program, Department of Transportation, 605 Suwannee Street, MS 82, Tallahassee, FL 32399-0450, Telephone: (850) 487-1200

Date: Undated

Summary description: This 4 x 8-1/2 two-sided flyer, printed in color, describes Florida's requirements for nighttime conspicuity.

Major content points and behaviors: The flyer states that every bicycle in use between sunset and sunrise must be equipped with the following:

§ Lamp on the front exhibiting a white light visible from at least 500 feet

§ Lamp and reflector on the rear each exhibiting a red light visible from a distance of 600 feet to the rear

The dangers of night riding are noted. Clothing containing retroreflective material is recommended. In addition, use of a helmet is recommended.



Ten commandments of bicycling

Source: League of American Bicyclists, Bicycle USA, July/August 1996, page 15

Date: 1996

Summary description: This 8-1/2 x 11 flyer is printed in black on green paper. It lists 10 commandments for bicycling.

Major content points and behaviors: The flyer covers the following points:

- § Wear a properly fitted helmet
- § Conduct a quick maintenance check before each ride
- § Obey traffic laws and ride on the right, with slowest traffic farthest to the right
- § Ride predictably and be visible at all times
- § Drive in the proper lane and, at an intersection, choose the right-most lane that leads to your destination
- § Scan for overtaking traffic and signal lane changes and turns
- § Be prepared for mechanical emergencies
- § Maintain control of the bicycle at all times
- § Drink before becoming thirsty and eat before becoming hungry
- § Have fun



Bike safely first ride every ride

Source: Pennsylvania Department of Transportation, Bureau of Highway Safety and Traffic Engineering, PO Box 2047, Harrisburg, PA 17105-2047

Date: 1996

Summary description: This flyer is in the shape of a child's head with a helmet. It measures approximately 8-1/2 x 8-1/2 and is printed in black on orange paper. It explains the helmet law and how to buy and wear helmets.

Major content points and behaviors: The flyer makes the following points:

- § Children under 12 must wear an approved helmet (ANSI, Snell, ASTM)
- § The helmet should be snug
- § Helmet use can reduce the risk of head injury by 85%



Schools help kids get the helmet habit

Source: National Safe Kids Campaign, 111 Michigan Avenue, NW, Washington, DC 20010-2970,
Telephone: (202) 884-4993

Date: Undated

Summary description: This 8-1/2 x 11 flyer suggests tips for use by PTAs and school administrators in getting children to wear helmets.

Major content points and behaviors: The following suggestions are made:

- § Establish a policy
- § Reward helmet use with a prize
- § Give students a place to store their helmets
- § Organize a mass purchase
- § Head a fund raising drive
- § Conduct a rodeo
- § Sponsor a poster contest
- § Make a flyer for children to take home
- § Be role models (have teachers and administrators wear helmets when they ride)



Bicycles and the new UC Davis cyclist, 1998-99

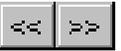
Source: Bicycle Program Coordinator, Transportation and Parking Services, University of California at Davis, Davis, CA 95616, Telephone: (916) 752-2453

Date: 1998

Summary description: This 8-1/2 x 11 flyer is printed in black on lavender paper. It provides information and advice to the new bicycling entrant to the university.

Major content points and behaviors: The flyer covers the following points:

- § Theft prevention
- § Bike registration
- § Buying a bike in Davis
- § Storing the bike in the residence hall at Davis
- § The importance of buying and wearing a helmet
- § According to the California Vehicle Code, a bicyclist has all the rights and responsibilities of a motor vehicle driver
- § State laws are strictly enforced on campus--the bicyclist can be cited for running a stop sign, riding at an unsafe speed for conditions, riding on the wrong side of the road, using headphones when cycling, riding at night without proper light and/or reflectors, not having legal brakes, etc.
- § The bike should have legal brakes, light and reflectors if driven after dark and safe tires
- § Bicycles may be parked only in designated parking spaces and locked only to bike racks or pods.



The facts

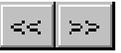
Source: National Highway Traffic Safety Administration, Traffic Safety Programs, NTS-15, 400 Seventh Street, SW, Washington, DC 20590

Date: Undated

Summary description: This 8-1/2 x 11 flyer is printed in black on white with splashes of color. It provides bicycle safety facts for the year 1996.

Major content points and behaviors: The flyer makes the following points:

- § Almost one-third of bicyclists killed in crashes in 1996 were between 5 and 15 years of age.
- § Helmets are 85-88% effective in mitigating head and brain injuries.
- § Helmet use is low (18% nationally).
- § Most existing laws cover only young bicyclists.
- § Helmets conform to Snell or ANSI standards.
- § Lifetime medical cost savings would total \$109-142 million if 85% of child bicyclists wore helmets.
- § Universal helmet use by children would prevent 135-155 deaths, 39,000-45,000 head injuries and 18,000-55,000 scalp and face injuries annually.



Prevent bicycle crashes (DOT HS 808-607)

Source: National Highway Traffic Safety Administration, Traffic Safety Programs, NTS-15, 400 Seventh Street, SW, Washington, DC 20590, Telephone: (202) 366-0910

Date: 1997

Summary description: This 8-1/2 x 11 flyer is printed in blue, orange and buff on white paper. It explains common bicycle/motor vehicle crashes and provides advice to parents on how to keep their child bicyclists safe.

Major content points and behaviors: This flyer makes the following points:

- § Most crashes are due to behavioral errors on the part of the bicyclist or motorist.
- § Head injuries are the most serious type of injury and the most common cause of death.
- § Helmets reduce head injuries.
- § A bicycle is not a toy.

Advice to parents includes the following:

- § Insist that the child wear a helmet; replace it if damaged.
- § Make sure the helmet has an ANSI or Snell sticker.
- § Make sure the helmet fits snugly.
- § Wear a helmet yourself.
- § Check the bicycle for fit, proper working parts and reflectors.
- § Don't let your child ride at night.

- § Teach the child to look left-right-left before entering the roadway.
- § Never let the child bicyclist wear headphones.
- § Stress the need to ride defensively.
- § Have child ride single file on the right side of the road.
- § Have children signal their intentions.

Illustrations and descriptions of the following crash types are provided along with what to do to avoid them:

- § Midblock riding
- § Wrong-way riding
- § Overtaking motorist
- § Bicyclist turn/ swerve
- § Bicyclist failure to obey stop signs



Safe bicycling starts early (HE0081)

Source: American Academy of Pediatrics, The Injury Prevention Program (TIPP), 141 Northwest Point Boulevard, PO Box 927, Elk Grove Village, IL 60009, Telephone: (847) 228-5005

Date: 1994

Summary description: This 8-1/2 x 11 flyer is printed in black and orange on white paper. It covers what parents should explain to children about safe bicycling and includes activities for 8-year olds.

Major content points and behaviors: The flyer covers the following main points:

- § Under age 8, children should not ride in the street
- § Children should wear helmets
- § Children should follow the most important rules of the road:
 - Ride with traffic
 - Stop and look both ways before entering the street
 - Stop at all intersections
 - Use hand signals and look all ways before turning
- § Children should not ride at dusk or in the dark
- § Children who ignore basic safety rules should be appropriately disciplined
- § Children should learn how to keep their bikes in good repair

Also included is a puzzle in which children search for the word “helmet” and a game in which children match words to form sentences that state rules of the road.



Choosing the right size bicycle for your child (HE0080)

Source: American Academy of Pediatrics, The Injury Prevention Program (TIPP), 141 Northwest Point Boulevard, PO Box 927, Elk Grove Village, IL 60009, Telephone: (847) 228-5005

Date: 1994

Summary description: This 8-1/2 x 11 flyer is printed in black and orange on white paper. It covers what parents should explain to children about safe bicycling and includes activities for 5- and 6-year olds.

Major content points and behaviors: The flyer covers the following main points:

- § Don't push a child to ride a two-wheeled bike until ready
- § Take the child with you when you shop for a bike
- § Buy a bike that fits
- § Buy an approved helmet at the same time

Also included is a drawing for the child to color the helmet and draw a smile on the face (because the bicyclist is being safe) and a maze that connects a bicycle with a helmet.



Bicycle safety myths and facts (HE0076)

Source: American Academy of Pediatrics, The Injury Prevention Program (TIPP), 141 Northwest Point Boulevard, PO Box 927, Elk Grove Village, IL 60009, Telephone: (847) 228-5005

Date: 1994

Summary description: This 8-1/2 x 11 flyer is printed in black and orange on white paper. It covers myths and facts of bicycle safety.

Major content points and behaviors: The flyer covers the following main points:

- § A child needs to wear a helmet on every ride no matter how short or how close to home
- § Only a bicycle helmet should be worn when biking
- § A bicycle should fit the child
- § The child should ride facing traffic
- § Children should be taught to use hand signals before they ride in the street
- § It's never safe for a child to ride at night
- § Biking is fun if done safely



Sprocket man (009302)

Source: U.S. Consumer Product Safety Commission, Washington, DC 20207, Telephone: (800) 638-8270

Date: 1996

Summary description: This 28-page 6-3/4 x 10 comic book uses a character named “Sprocket Man” to make bicycle safety points in the following areas: bicycle maintenance, hazards, helmets, paying attention, being seen, the appropriately-sized bike, carrying gear, using child seats, being predictable, signaling, making turns, obeying signs and signals, riding with traffic, keeping safe brakes, passing pedestrians, and locking the bike.

Major content points and behaviors: The comic book makes the following major safety points:

- § Maintain the bicycle
- § Report hazards to the state bicycle/pedestrian coordinator
- § Wear a properly-fitted helmet and replace it if in a crash
- § Be visible day and night and don't wear headphones
- § Ride a bicycle of the appropriate size and carry only gear that fits in available baskets or backpacks
- § Make sure a child seat has a safe design and is fastened securely
- § Be predictable in traffic
- § Signal when turning
- § Ride with traffic and follow all rules of the road
- § Don't ride on sidewalks in business districts
- § Brake safely
- § Give pedestrians the right of way
- § Watch for opening car doors

§ Practice riding the bike

§ Keep the bicycle locked



Bucklebear's rules for cycling

Source: Center for Injury Prevention, 5009 Coye Drive, Stevens Point, WI 54481, Telephone: (800) 344-7580

Date: 1997

Summary description: This eight-page 8-1/8 x 10-3/4 booklet is printed in black on white paper and can be used as a coloring book. The cover is printed in color. The storybook contains advice on safe cycling for both very young children and their parents.

Major content points and behaviors: The storybook provides the following advice:

- § Always wear a helmet
- § Always wear shoes
- § Wear bright colored clothing
- § Keep the bicycle clean and neat
- § Stay on the sidewalk--don't ride in the street
- § Ring your bell for walkers and stop for them
- § Stop, look and listen when you come to a driveway
- § Look and listen as you ride around



Helmet safe with Bucklebear

Source: Center for Injury Prevention, 5009 Coye Drive, Stevens Point, WI 54481, Telephone: (800) 344-7580

Date: 1993

Summary description: This 16-page 8 x 8 booklet on the importance of helmets is printed in color. Designed for the very young child, it includes hints for adults.

Major content points and behaviors: Written in rhyme format, the storybook makes the following points:

- § The brain directs everything you do
- § You need a helmet when you ride to keep your brain safe



Biking with Bucklebear

Source: Center for Injury Prevention, 5009 Coye Drive, Stevens Point, WI 54481, Telephone: (800) 344-7580

Date: 1994

Summary description: This 24-page 8-1/8 x 10-3/4 booklet is printed in black on white paper and can be used as a coloring book. The cover is printed in color. The storybook contains advice on safe cycling for very young children.

Major content points and behaviors: The storybook provides the following advice:

- § Wear a properly fitted helmet
- § Don't ride alone--have adult supervision
- § Wear shoes
- § Wear bright clothing
- § Use a high flag
- § Stop and look at driveways
- § Stop when bushes block the view
- § Walk bikes across intersections
- § Watch for cars and listen for their sound
- § Make sure the bike fits



Bike like the best

Source: Pennsylvania Department of Transportation, Bureau of Highway Safety and Traffic Engineering, PO Box 2047, Harrisburg, PA 17105-2047

Date: 1997

Summary description: This 22-page 12 x 9 booklet is reproduced in color. It is a guide to safe biking in Pennsylvania.

Major content points and behaviors: The booklet covers the following:

- § Checking out and maintaining the bicycle
- § Choosing and wearing the correct helmet
- § Riding bright, especially at night
- § Recognizing and obeying signs and signals
- § Using signals
- § Riding right
- § Stop means stop
- § Watching for driveway dangers
- § Looking before turning
- § Making left turns
- § Roadway hazards
- § How to stop fast

The booklet also provides a picture with hazards to identify.



Bicycle safety: What every parent should know (John Williams)

Source: Adventure Cycling Association, P.O. Box 8308, Missoula, MT 59807, Telephone: (406) 721-1776

Date: 1981

Summary description: This four-page 8-1/2 x 11 booklet is printed in black on blue paper. It contains bicycle safety information for parents. It debunks some standard myths about bicycle riding and explains the major causes of child crashes and what parents can do to make their children safe riders.

Major content points and behaviors: The following points are made:

- § Bicyclists should ride with traffic
- § Children should have bicycles appropriate to their size
- § The bicycle should be appropriate for the child, e.g., small hands can't work brakes on a 10-speed bike
- § The majority of bike accidents occurs near home

The following rules are recommended:

- § No playing in the road
- § No riding on busy streets
- § No riding at night
- § Stop for all stop signs
- § Ride on the right with traffic

§ Make your own decisions

The booklet identifies the following major bicycle crashes involving children and describes how parents can work with their children to help them avoid these crashes:

§ Driveway rideout

§ Running a stop sign

§ Making turns without warning

§ Nighttime riding

§ Following the leader

The importance of helmet use is also covered.



Oregon bicyclist's manual

Source: Bicycle and Pedestrian Program Manager, Mill Creek Office Park, 555 13th Street NE, Salem, OR 97310, Telephone: (503) 986-4190

Date: 1996

Summary description: This 16-page 5-1/2 x 8-1/2 booklet (printed in brown on a gray-green background) was prepared to help adults and parents of young bicyclists to understand how to ride safely and legally in Oregon. It covers the following four basic principles: maintaining control of the bicycle, riding with traffic in a predictable manner, being visible and riding alertly, and protecting oneself.

Major content points and behaviors: The booklet makes the following points:

- § Make sure the bicycle is the right size and adjusted to fit properly
- § Make sure the bike is in good working order--brakes, tires, luggage racks/saddle bags, fenders
- § Practice riding in control
- § Ride with traffic
- § Ride to the right but don't hug the curb
- § Watch for and avoid surface hazards
- § Ride far enough away from parked cars so that you aren't hit by opening cars doors
- § Ride in a straight line
- § Ride side by side only if you don't impede traffic
- § Ride closer to the center of the lane if it is narrow and there is no bike lane or shoulder
- § Obey traffic signs and signals
- § Make a left turn either as a vehicle or as a pedestrian
- § Use hand signals when turning

- § Pass other vehicles on the left
- § Be visible and ride alertly
- § Wear a properly fitted helmet

Hints are also provided for crossing railroad tracks,, triggering loop detectors, riding on sidewalks, riding on paths, and what to do in case of a crash.



The best bicyclist on earth

Source: Outdoor Empire Publishing Company, Inc., 511 Eastlake Avenue East, Seattle, WA 98109,
Telephone: (206) 624-3845

Date: 1992

Summary description: This 48-page booklet guides children aged 8 through 12 through a series of activities designed to make them the best possible bicyclists.

Major content points and behaviors: The booklet covers the following major topics:

- § The bicycle parts
- § Types of bicycles
- § Buying a bicycle--type and fit
- § Repair and maintenance
- § Bicycles are vehicles
- § Seeing and being seen
- § Night riding
- § Wrong-way riding
- § Bicycling hazards
- § Reaction time
- § Bicycling emergencies
- § Riding safely
- § Tips and review



Share the road, share the air (Morris County Bicycle Safety Program)

Source: Biking is Kind to the Environment, Inc., PO Box 667, Chatham, NJ 07928, Telephone:
(201) 635-2211

Date: 1996

Summary description: This 20-page 5-1/2 x 8-1/2 booklet presents some common roadway situations from the point of view of both the motorist and the bicyclist. The booklet describes what each should do to improve safety. The text and graphics are available in Mac and IBM formatted disks.

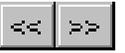
Major content points and behaviors: The booklet covers the following topics from bicyclist and motorist points of view:

- § Communicating
- § Following the rules
- § Recognizing hazards to bicyclists
- § Being courteous
- § Yielding to pedestrians
- § Traveling on busy roads
- § Making left turns
- § Using bells and horns
- § Opening car doors
- § Passing
- § Bicyclist riding right
- § Two abreast on a bicycle

§ Hills

§ Locking the bike

§ Places to park a bike



So you're going to leave your bike at home today (Morris County Bicycle Safety Program)

Source: Biking is Kind to the Environment, Inc., PO Box 667, Chatham, NJ 07928, Telephone: (201) 635-2211

Date: 1996

Summary description: This 20-page 5-1/2 x 8-1/2 booklet provides safety tips for adult riders who choose to make some of their trips by bicycle. The text and graphics are available in Mac and IBM formatted disks.

Major content points and behaviors: The booklet covers the following major points:

- § Inspect your bicycle for safety before you ride
- § Wear an approved and properly fitted helmet
- § Obey all traffic laws
- § Practice your skills in a safe place
- § Be visible
- § Be heard
- § Choose a safe route
- § Leave enough time
- § At night, use a white light in front and a red light in back
- § Carry heavy objects in a rack, basket or pannier

So you're going to leave your bike at home today (Morris County Bicycle Safety Program)

Also included is a list of resources.



Pocket guide: Safe bicycling in Nevada

Source: Office of Traffic Safety, Department of Motor Vehicles and Public Safety, 555 Wright Way, Carson City, NV 89711-0999

Date: 1994

Summary description: This 34-page 2-3/4 x 4-3/4 pocket guide is printed in red and black on white. It summarizes Nevada's bicycling laws and safety rules.

Major content points and behaviors: This guide covers the following topics, among others:

- § Sharing the road
- § Number of people on the bicycle
- § Clinging to another vehicle
- § Being seen
- § Equipment--lamps, reflectors and brakes
- § Being alert
- § Being defensive
- § Using hand signals
- § Carrying articles
- § Using bicycle lanes
- § Riding on the sidewalk
- § Restrictions on bicycle riding



Save a life like yours with Sally and friends: Activity book

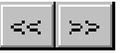
Source: Office of Traffic Safety, Department of Motor Vehicles and Public Safety, 555 Wright Way, Carson City, NV 89711-0999

Date: 1995

Summary description: This 12-page booklet provides traffic safety activities for children.

Major content points and behaviors: The booklet provides activities in the following areas:

- § Safety belts
- § Crossing the street
- § Following traffic safety rules
- § Wearing a helmet when biking, skating, skate-boarding, playing football, etc.
- § Never darting out of a driveway



Sam's adventures through Nevada: Safe pedaling in Nevada

Source: Office of Traffic Safety, Department of Motor Vehicles and Public Safety, 555 Wright Way, Carson City, NV 89711-0999

Date: 1994

Summary description: This 14-page booklet provides activities for children on safe bicycling in Nevada.

Major content points and behaviors: The booklet contains maze maps that the child can bike through and discuss what to do at various points, e.g., stop signs, detours, etc. Safe riding hints are provided at various places on the maps, including the following:

- § Ride right with the flow
- § Watch for roadway hazards
- § Look left-right-left before crossing
- § Use hand signals
- § Signal before turning
- § If there is no shoulder, look for a safer route
- § Don't swerve
- § Don't ride at night
- § Stop at railroad crossings
- § Obey all signs
- § Be seen
- § Watch for opening car doors
- § Wear a helmet

§ Use marked bike lanes



Bicycle safety: A wheely good idea (HS-213)

Source: Wisconsin Department of Transportation, Bureau of Transportation Safety, Pedestrian/Bicycle Safety Program Manager, 4802 Sheboygan Avenue, Room 809, P.O. Box 7936, Madison, WI 53707-7936, Telephone: (608) 267-3154

Date: Undated

Summary description: This 18-page storybook provides information for children on bicycle safety.

Major content points and behaviors: The following points are brought out in the story:

- § Always wear helmets
- § Stop at the end of the driveway and look left-right-left for traffic before entering the street
- § Ride on the right side of the street
- § Watch out for roadway hazards
- § Make proper signals when turning
- § Practice (in a safe place) riding in a straight line while signaling and looking behind you
- § Check behind you and signal before making left turns
- § Cross busy streets in the crosswalk as pedestrians
- § Ride far enough from parked cars that you don't get hit if someone opens the door
- § Ride in a straight line
- § If riding on the sidewalk, watch for cars coming out of driveways and let pedestrians know you are passing them
- § Walk your bikes on sidewalk when there are lots of pedestrians

The booklet also includes an exam on the information covered in the story,



Bicyclist's guide

Source: Outdoor Empire Publishing Company, Inc., 511 Eastlake Avenue East, Seattle, WA 98109, Telephone: (206) 624-3845.

Date: 1996

Summary description: This 32-page booklet provides safety information for bicyclists.

Major content points and behaviors: The booklet provides information on the following topics:

- § Helping your child
- § Questions for parents
- § Which bicycle to choose
- § Fitting the bicycle to the rider
- § Safety equipment
- § Protecting the bike from theft
- § Bike maintenance
- § How to ride a bicycle
- § Bicycle skill exercises
- § How to recognize and avoid hazards
- § Traffic patterns and controls
- § Traveling by bicycle



Berton the big wheel (Stock #3208)

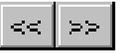
Source: American Automobile Association

Date: Undated

Summary description: This 8-page 6 x 9 booklet is printed in blue and black on white paper. It tells a safety story about a boy and his 3-wheel bike. It is designed for parents to read to children.

Major content points and behaviors: The story makes the following points:

- § Ride on the sidewalk in front of your yard or at the playground
- § Never drive down a driveway into the street
- § Don't go so fast that you can't turn or stop
- § When you drive on the sidewalk, watch out for people
- § Look out for cars backing out of driveways
- § Play away from parked cars
- § When you're not riding, keep your bike where people won't trip over it or bump into it



Bike basics: A guide to safe bicycling for ages 10-15 (Stock #3279)

Source: American Automobile Association (and Safe Kids)

Date: 1989

Summary description: This 10-page 6 x 9 booklet is printed in red and black on white paper. It provides safe bicycling tips for ages 10-15.

Major content points and behaviors: It provides information on the following topics:

- § Selecting the right bike
- § Making sure the bike fits
- § Mastering the basics--balance, braking, circling, control, looking back
- § Avoiding accidents--scan, identify, predict, decide, act
 - Left-turning vehicles
 - Swerving left into motorist's path
 - Drain or sewer gratings
 - Roadway debris
 - Riding in the rain
 - The parked car problem
 - Right-turning vehicles
- § Taking care of the bike
- § Equipment and accessories--helmets, clothing, lights, reflectors
- § Theft protection

§ Reducing bicycling risks



Herbert gets his glopp: A safe bike riding story (Stock #3278)

Source: American Automobile Association (and Safe Kids)

Date: Undated

Summary description: This 14-page 5-1/2 x 8 booklet is printed in black and green on white paper. It is a story on safe biking prepared for ages 7-10.

Major content points and behaviors: Information covered in the story includes the following:

- § Selecting a bicycle that fits
- § Helmet use
- § Proper clothing and bicycle accessories
- § Riding skills
- § Safe behaviors to follow
- § Theft protection

A crossword puzzle is included. In addition, there are hints for parents to help their children understand the concepts included in the story.



Getting there safely by foot, by bike, by bus, by car

Source: Outdoor Empire Publishing Company, Inc., 511 Eastlake Avenue East, Seattle, WA 98109, Telephone: (206) 624-3845.

Date: 1997

Summary description: This 16-page 8-1/4 x 10-3/4 booklet is printed primarily in red and black on white paper. It provides drawings and safety hints for parents to discuss with their children

Major content points and behaviors: The booklet covers the following behaviors:

- § Always use a crosswalk
- § Look left-right-left
- § Be careful at intersections
- § Walk facing traffic
- § Ride on the right side of the street with traffic
- § Obey the rules of the road when biking
- § Always wear a helmet
- § Wear bright or reflective clothing when biking
- § Buckle up and drive safely
- § Avoid the bus danger zones
- § Getting off the bus
- § Walk or bike as a family outing



Team helmet bike safety book

Source: Outdoor Empire Publishing Company, Inc., 511 Eastlake Avenue East, Seattle, WA 98109,
Telephone: (206) 624-3845

Date: 1997

Summary description: This 16-page 8-1/4 x 10-3/4 booklet provides illustrations, bicycle safety tips and activities for children.

Major content points and behaviors: The booklet covers the following major points:

- § Always wear a helmet
- § Make sure your bike fits
- § Check the bike for safety
- § Obey signs and signals
- § Signal when turning
- § Be bright if you ride at night
- § Watch for cars leaving driveways
- § Watch for roadway hazards
- § Ride on the right
- § Share the road with cars and pedestrians
- § Lock your bike



Badger bicycle tips (HS-215)

Source: Wisconsin Department of Transportation, Bureau of Transportation Safety, Pedestrian/Bicycle Safety Program Manager, 4802 Sheboygan Avenue, Room 809, P.O. Box 7936, Madison, WI 53707-7936, Telephone: (608) 267-3154

Date: Undated

Summary description: This 24-page 8-1/2 x 11 booklet is printed in blue and black on white paper. It explains the basis of safe bicycling, Wisconsin bicycle laws, riding techniques, buying and maintaining a bicycle, bicycle equipment and clothing and how to get more involved in bicycling.

Major content points and behaviors: The booklet covers the following topics:

§ Safety and laws

- Be predictable
- Be visible
- Ride defensively
- Always wear a helmet
- Wisconsin laws

§ Riding techniques

- Braking
- Gearing
- Pedaling and cadence
- Emergency maneuvers
- Riding in difficult conditions

§ Buying, using and maintaining your bike

- Getting the right bike
- Commuting
- Touring
- Off-road riding
- Maintenance

§ Additional information

- Books about bicycling
- Bicycling maps
- Bicycling organizations
- Resource people



From A to Z by bike

Source: AMC Media Corporation, Suite 729, 250 "H" Street, Blaine, WA 98230, Telephone: (604) 736-6931

Date: 1995

Summary description: This 32-page 7-3/4 x 9-3/4 booklet is printed in color. It uses the alphabet to explain how to ride safely.

Major content points and behaviors: Using the alphabet, it covers the following:

- § A = all (kids, bikes, all over the world)
- § B = bicycle, brakes
- § C = clothing, crosswalks
- § D = driveways
- § E = energy
- § F = fast, fit, flag
- § G = gears
- § H = helmet
- § I = intersection
- § J = jumping
- § K = kids
- § L = left turns, locking
- § M = maintenance
- § N = night

- § O = other bike activities
- § P = parents, pedestrians
- § Q = questions (three quizzes are given)
- § R = right of way, rules of the road
- § S = shoulder check, signaling, signs
- § T = tips
- § U = uphill
- § V = vehicles, visibility
- § W = watch out for hazards, weather
- § X = X is sign for crossing in some places
- § Y = yellow
- § Z = zone



Florida cycling tips: Staying alive on the roads

Source: The Florida Bicycle Program, Department of Transportation, 605 Suwannee Street, MS 82, Tallahassee, FL 32399, Telephone: (904) 487-1200

Date: 1986

Summary description: This 24-page booklet provides cycling tips for Florida cyclists.

Major content points and behaviors: The booklet covers the following topics:

§ The bicycle is a vehicle

§ Five common mistakes--cyclist ignores stop sign, cyclist rides the wrong way, cyclist rides at night without lights, motorist pulls out in front of cyclist at stop sign, motorist turns in front of cyclist

§ Position in the roadway depends on:

- Your speed
- Your destination
- Road conditions

§ Making left turns

§ Tripping traffic signals

§ When to walk

§ Florida's cycling law

- Cyclist must stop at stop signs and red lights
- Cyclists must go with the flow
- Cyclists must use lights and reflectors at night

- Riding with headphones is illegal

- Cyclists must ride close to the right edge of the roadway unless there are roadway hazards, the cyclist is moving at the speed of traffic, or the lane is too narrow to share

§ Survival skills

- Panic stops

- Making an instant turn

- Looking back before moving left

- Dodging road junk

- Anticipation

- Wearing a helmet

§ Riding at night

§ Bicycle theft



Delaware bicycle driver's manual

Source: University of Delaware Research and Education Center, RD #6, Box 48, Georgetown, DE 19947

Date: Undated

Summary description: This eight-page booklet is printed in red and black on white paper. It serves as a driver's manual for bicyclists in Delaware.

Major content points and behaviors: The booklet covers the following points:

- § Be responsible
- § An Oregon study showed motorists at fault 45% of the time and bicyclists 55% of the time
- § Be visible
- § Be predictable
- § Be defensive
- § Wear a helmet--it's the law
- § Common bicycle and motor vehicle crashes
 - Midblock rideout
 - Wrong-way riding
 - Motorist overtaking cyclist
 - Bicyclist left turn or sudden swerve
 - Stop sign rideout
 - Motorist failure to yield
- § Delaware bicycle laws
- § Advice for parents

§ Bicycle safety equipment



Drive your bicycle safely

Source: Channing L. Bete Company, Inc., 200 State Road, South Deerfield, MA 01373

Date: 1993

Summary description: This eight-page booklet provides bike safety coloring and activities for young children.

Major content points and behaviors: The following topics are covered:

- § When learning, drive where there are no cars
- § Learn to signal, turn, slow down and stop
- § Obey street signs
- § Walk across busy intersections
- § Stop and look all ways before entering the street
- § Drive right
- § Drive single file
- § Wear your helmet



Bicycling: Safe and easy

Source: Secretary of State, Community Programs, 2701 South Dirksen Parkway, Springfield, IL 62723, Telephone: (217) 785-1444

Date: 1989

Summary description: This eight-page 5-1/2 x 8-1/2 booklet provides hints on safe bicycle riding in Illinois.

Major content points and behaviors: The booklet covers the following points:

- § Signaling
- § Signs and signals
- § Riding right--close to the edge of the road
- § Keeping both hands on the handlebars
- § Being watchful for hazards
- § Riding no more than two abreast
- § Not hanging on to another vehicle
- § Riding one to a bike
- § Avoiding night riding
- § Having appropriate equipment if night riding

In addition, the following hints are provided for parents:

- § Have child ride in a safe place

- § Make child wear a helmet
- § Buy child an appropriately-sized bicycle
- § Make sure bicycle has all needed safety equipment and is maintained in good order
- § Set a good example



Let's learn more about bike driving

Source: Channing L. Bete Company, Inc., 200 State Road, South Deerfield, MA 01373

Date: 1987

Summary description: This 16-page 8-1/2 x 11 booklet is printed in green and black on white paper. It provides bicycle information and activities for children.

Major content points and behaviors: The following topics are covered:

§ Types of bicycles

§ Buying a bicycle

§ Choosing a helmet

§ Bike accessories

§ Clothing

§ Rules of the road

§ Signs and signals

§ Defensive riding

- Stop and look left-right-left before entering the street
- Keep at least three feet from parked cars
- Look ahead for children or animals who might run into the street
- Don't drive off the sidewalk into the street
- Don't pull up to the right of a car at an intersection--it might turn right
- Pass cars only on the left
- Use a bike path when available

Let's learn more about bike driving

- Walk the bike across tricky intersections
- Look first before making left turns
- Make left turns from near the center of the street or from the right side of a left-turn lane

§ Roadway hazards

§ Bike maintenance

§ Locking the bike



Street smarts: Bicycling's traffic survival guide (John S. Allen)

Source: Rodale Press, Emmaus, PA 18098

Date: 1988 (reprinted 1994)

Summary description: This 40-page 5-3/8 x 8-3/8 booklet covers safe riding skills for adults.

Major content points and behaviors: The booklet covers the following major points:

- § Equipment--bicycle, helmet, rear-view mirror, gloves, tools, baggage
- § Starting--preparation, using toe clips, avoiding common mistakes
- § Where to ride in the roadway
- § Riding through intersections
- § Getting across non-standard intersections
- § Avoiding hazards
- § Using the brakes
- § Riding in rain and darkness
- § Dealing with tough situations



Safe bicycling in Chicago (Also available in Polish and Spanish)

Source: Chicago Bureau of Traffic, Suite 400, 30 North LaSalle Street, Chicago, IL 60602, Telephone: (312) 744-4686

Date: 1994

Summary description: This 36-page 5-1/2 x 8-1/2 booklet is printed in blue, yellow and black on white paper. It explains how to be a better bicyclist.

Major content points and behaviors: The booklet covers the following topics:

- § Fitting and equipping the bike
- § Quick maintenance checks
- § Where to park the bike (parking meters, bike racks, sign poles) and how to lock up
- § All about bike helmets
- § Traffic basics
 - Riding predictably
 - Traffic rules
 - Look behind you
 - Use hand signals
 - Using a map
- § Lane positioning, turning and passing
 - Ride with traffic
 - When to stay right

- When to ride in the middle
- Bike lanes
- Dangerous areas
- El tracks
- Parked cars
- Riding with others
- Blind spots
- § Intersections and turns
- § Passing
- § Trouble situations
- Emergency moves
- Dogs, pedestrians, tracks and attacks
- Conflicts with motorists
- § What to do after a collision
- § Off-street bicycling
- § Riding at night and in bad weather
- § Bicyclist resources



Colorado bicycling manual: A guide for all trail and road users

Source: Colorado Department of Transportation Bicycle Program, 4201 East Arkansas Avenue, Suite 212, Denver, CO 80203, Telephone: (303) 757-9982

Date: 1998

Summary description: This 72-page 8-1/2 x 11 booklet was prepared to encourage the use of bicycles for transportation in Colorado. It provides an overview of the rules of the road and rules of trails. It includes both employer and employee guides for commuter bicycling. It also covers required and recommended equipment and accessories, effective bicycling skills, theft prevention, what parents should know about child bicycling, safety for pedestrians, Colorado statutes referencing bicycling and a resource directory.

Major content points and behaviors: The following rules of the road are described:

- § Ride on the right, in a straight line and single file
- § Ride with traffic
- § Don't pass on the right
- § Scan the road and make eye contact with the driver
- § Obey traffic signs and signals
- § Use hand signals
- § Use lights and reflectors at night
- § Have working brakes
- § Keep at least one hand on the handlebars
- § Carry only the number of people for which the bicycle is designed or equipped
- § Position the bike to trigger traffic signals

- § Never catch a ride
- § Check the route before riding
- § Avoid road hazards

The employer guide for bicycling commuting outlines the benefits to the employer of a bicycle commuter program and provides steps to follow to start such a program. The employee guide outlines benefits from commuting by bicycle and tips for making it a safe, pleasurable and reliable trip. Tips are also provided for bicycle touring, racing and off-road bicycling.

Equipment and accessories needed for safe bicycling include the following: a bicycle that is the appropriate size, a helmet that fits (and is replaced if in a crash), eye protection, identification, lock, rear view mirror and night riding equipment--flashing red reflector light, white headlamp and reflective materials on both bicycle and bicyclist.

The following effective bicycling skills are described: be predictable, be visible, share the road or trail, be assertive, drive defensively, ride in a straight line and know how to operate your bicycle (braking, using gears, making quick turns). Brief information is provided on the major bicyclist/motor vehicle crashes involving children and adults. In addition, included are information that parents should know about children, crossing advice for pedestrians, and Colorado bicycling statutes.



Safe kids are no accident

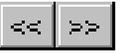
Source: National Safe Kids Campaign, 111 Michigan Avenue, NW, Washington, DC 20010-2970,
Telephone: (202) 884-4993

Date: 1995

Summary description: This 12-page three-color 8-1/2 x 11 booklet contains games, fun facts, activities and tips for safe cycling and walking.

Major content points and behaviors: The following topics are covered:

- § Wearing an approved helmet
- § Getting a good helmet fit
- § Rules for safe bicycling
- § Rules for safe walking
- § Wearing safety belts
- § What to do in an emergency



Sharing the Road Safely: New York State pedestrian, bicycle and in-line skating laws [C-77 (2/98)]

Source: Governor's Traffic Safety Committee, Empire State Plaza, Swan Street Building, Room 414, Albany, NY 12228, Telephone: (518) 474-5777

Date: 1998

Summary description: This 16-page 3-7/8 x 8-1/2 booklet is printed in black and blue on white paper. It answers common questions about the state's pedestrian, bicycle and in-line skating laws and provides tips to motorists for sharing the road with cyclists, in-line skaters and pedestrians.

Major content points and behaviors: The booklet makes the following points regarding bicyclists:

- § The same laws apply to bicyclists as to motorists
- § Bicyclists must come to a full stop before entering a roadway from any private road, driveway, alley or curb and should always yield to pedestrians
- § Bicyclists must use standard signals for turns or stops
- § Bicycling is allowed on most public roads but prohibited on interstate highways and expressways
- § Bicyclists must ride with traffic
- § If there is a usable bicycle lane, the bicyclist must use it; if not, the bicyclist should ride on the right shoulder or near the right edge or curb
- § Bicyclists may ride two abreast but must ride single file when being overtaken by other vehicles
- § The bicyclist may make turns as a motor vehicle does or may dismount and make turns as a pedestrian does
- § Motorists must exercise due care to avoid colliding with bicycles

§ All bicyclists under the age of 14 must wear an approved helmet

§ Child bicyclists under the age of four must wear an approved helmet and ride in a child safety seat

§ Children under the age of one are prohibited from being transported by bicycle

§ A bicycle must be equipped with a brake that will make tires skid on dry pavement; a bell, horn or other device that can be heard 100 feet away (sirens or whistles not permitted), and, when driven ½ hour after sunset or before sunrise, a white front headlight visible in darkness for at least 500 feet and a red taillight visible for at least 300 feet. One of these lights must also be visible on each side for at least 200 feet. When driven at night, the bicycle must have reflective tires or wide-angle spoke-mounted reflectors. Reflectors must be colorless or amber for front wheels and colorless or red for rear wheels.

§ Bicyclists must report to the DMV within 10 days an accident involving death or serious injury

§ Bicyclists must sit on the bike seat, keep at least one hand on the handlebar, never attach themselves to another vehicle, never drive a bicycle with a motor attached and never wear more than one earphone

Motorists are advised to watch for pedestrians, skaters and bicyclists, not to blast their horn when near them, allow plenty of space when passing them, make eye contact with them, and use caution at intersections.



The University of Montana cyclist's survival guide

Source: Bicycle/Pedestrian Office, Department of Public Works, 435 Ryman, Missoula, MT 59802,
Telephone: (406) 523-4626

Date: Undated

Summary description: This 16-page 5-1/2 x 8-1/2 booklet also includes a one-page insert (printed on both sides). It describes how to ride safely in Missoula, Montana.

Major content points and behaviors: The booklet covers the following topics:

§ Ride right

§ The closer you travel to the speed of traffic, the farther you should ride from the curb

§ Your position at an intersection should tell where you are going

§ Ride to the left of any roadside hazards and at least three feet from parked cars

§ On a wide roadway, ride well away from the curb to improve visibility

§ Nighttime is a dangerous time to ride--be sure to be seen; decent lights and reflectors are required; reflective materials are advised

§ The laws:

- Stopping for stop signs and red lights

- Riding with traffic

- Using lights at night

- Staying off business district sidewalks (or all sidewalks if older than 15)

- Signaling turns by pointing

- Passing on the right is illegal

- Riding should be as close to the curb as practical in most instances

§ Campus safety tips:

- Keep your speed down

- Keep to the wider paths and watch out at blind corners

- Warn pedestrians and other cyclists when you're going to pass

- Ride with your hands on the brakes

- Watch out at intersections

§ Emergency maneuvers

§ Equipment for safe braking

§ The rock dodge

§ The instant turn

§ Scanning behind

§ A helmet can save your life

§ Bike sizing and maintenance

§ Protecting the bike from theft

§ Missoula resources



Florida driver's handbook

Source: Department of Highway Safety and Motor Vehicles, Division of Driver Licenses, Neil Kirkman Building, Tallahassee, FL, Telephone: (850) 487-4303

Date: 1998

Summary description: This 96-page 5-1/4 x 8-3/8 booklet describes laws and regulations for operating a motor vehicle in Florida. It includes tips for operating a bicycle safely.

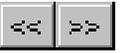
Major content points and behaviors: The booklet covers the following driving hints pertinent to bicycle safety:

- § Don't drink or use drugs and drive
- § Drive at appropriate speeds for the conditions and the roadway
- § Yield to bicyclists at intersections before making turns
- § Search for bicyclists before making right or left turns
- § Slow down and watch for bicyclists at intersections
- § Signal a turn prior to crossing through a bike lane
- § If there is no right turn lane, check for bicyclists before turning into the bike lane
- § Treat bicycles with the same respect and courtesy offered to other vehicle operators

The following tips are provided for bicyclists:

- § Always wear a bicycle helmet
- § Use a front and rear light and reflector if you must drive at night
- § Wear yellow and fluorescent colors in the daytime and retroreflective materials at night
- § Keep brakes in good working order
- § Carry parcels in a backpack, rack, basket or trailer

- § Obey all traffic laws, signs and signals
- § Walk your bike to the street before mounting
- § Look left-right-left for a safe gap in traffic when entering the road or crossing an intersection
- § At an intersection or driveway, avoid being alongside a vehicle that could turn right
- § At an intersection or driveway, watch for vehicles that could turn left into your path
- § When riding on a sidewalk, watch for cars entering/exiting driveways and yield to pedestrians
- § Avoid riding on a sidewalk in a commercial area
- § Ride on the right side of the road with traffic
- § Ride single file (or no more than two side by side)
- § Check behind before changing lanes
- § Be aware of pedestrians and other vehicles and learn to anticipate their actions
- § Signal moves by pointing
- § Watch for potential roadway hazards like litter, potholes, storm grates, opening car doors
- § Don't wear headphones when riding
- § Use an approved carrier for children and have them wear helmets
- § Don't ride a bicycle under the influence of alcohol or drugs
- § Keep the bicycle locked when not in use



North Carolina driver's handbook

Source: Division of Motor Vehicles, 1100 New Bern Avenue, Raleigh, NC 27697, Telephone: (919) 715-7000

Date: 1997

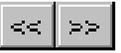
Summary description: This 106-page 4 x 9 booklet describes laws and regulations for operating a motor vehicle in North Carolina.

Major content points and behaviors: The booklet includes the following driving hints pertinent to bicycle safety:

- § Don't drink or use drugs and drive
- § Adjust driving speed to driving conditions
- § When a bicycle lane or path travels on or close to the roadway, pay special attention to bicyclists when approaching and moving through an intersection, particularly when turning right
- § Be alert to bicycle traffic on any road at any time
- § Respect the bicyclist's rights--bicycles are vehicles and must follow the same traffic laws as other vehicles
- § Watch for bicyclists--many crashes happen because drivers don't see bicyclists soon enough
- § If possible, make eye contact with the bicyclist, especially at intersections
- § If you must use your horn, use a gentle beep
- § Leave the bicyclist plenty of room in case the bicyclist needs to swerve to avoid a pothole or other roadway hazard
- § Wait until the bicyclist has cleared an intersection before making a turn to the right or left
- § Slow down when passing a bicyclist and make sure the bicyclist is aware of your presence
- § Leave a minimum of two feet when you pass a bicyclist and even more if there is danger that the

vehicle windstream could cause the bicyclist to lose control

- § Be careful in judging the bicyclist's speed--don't cut back in front of the bicyclist too soon
- § Be alert that the cyclist might swerve or turn in front of you with little or no warning
- § Use extra caution during the morning and afternoon hours when cyclists are traveling
- § At night, do not assume that bicycles will always have lights and reflectors--be alert for them
- § Always dim headlights when meeting an oncoming bicyclist at night
- § Be certain that your children learn how to ride a bicycle properly and knows the necessary signs, signals and rules



Oregon driver manual

Source: Department of Transportation, Driver and Motor Vehicle Services, 1905 Lana Avenue, N.E., Salem, OR 97314, Telephone: (503) 945-5000

Date: 1998

Summary description: This 102-page 5-1/4 x 8-3/8 booklet describes laws and regulations for operating a motor vehicle in Oregon.

Major content points and behaviors: The booklet includes the following driving hints pertinent to bicycle safety:

- § Do not pass on the right if any part of your vehicle is off the main part of the highway and on the shoulder or in a bike lane
- § Do not use a bike lane to pass stopped vehicles on the right even when making a right turn
- § Before opening a car door, make sure the open door will not interfere with a bicyclist
- § When entering the roadway from a parked position, be especially alert for bicycles
- § Be aware that drivers have trouble seeing bicyclists, particularly at night
- § Slow down when you approach a bicycle
- § Give the bicycle plenty of room when passing
- § Remember that bicyclists have the same rights and duties as motor vehicle drivers
- § Do not drive on a bicycle lane or park a vehicle in the lane
- § Yield to bicycles in a bicycle lane or on a sidewalk before you turn across the lane or sidewalk
- § Yield to bicycle riders at intersections the same as you do for other types of vehicles
- § Wait for a clear stretch of road before passing a cyclist and don't crowd the bicyclist when passing
- § Do not honk at a bicyclist
- § Give the bicyclist plenty of clearance in areas where there are roadway hazards

§ Know that some bicyclists will be less experienced than others and may weave and wobble when riding

§ Give children on bicycles extra considerations

§ Be aware of four common errors that could cause a crash: turning left without noticing an oncoming bicyclist, turning right at an intersection or driveway without checking for a bicyclist on the right who is continuing straight ahead, entering or crossing a street without checking for a bicyclist in the street or on the sidewalk, and opening a vehicle car door into the path of a bicyclist

§ Don't drink or use drugs and drive

The following rules and responsibilities are provided for bicyclists:

§ Wear a helmet

§ Ride with traffic and do not ride more than two abreast

§ Increase visibility with bright colors during the day and white or reflectorized clothing at night

§ Keep at least one hand on the handlebars at all times

§ Don't carry more passengers than there are seats available

§ Yield to pedestrians

§ Have adequate brakes

§ Never perform stunts when riding

§ Signal your intentions



Illinois bicycle rules

Source: Secretary of State, Springfield, IL 62723, Telephone: (217) 782-6212

Date: 1998

Summary description: This 12-page 5-1/2 x 8-1/2 booklet provides rules for riding a bicycle in Illinois.

Major content points and behaviors: The booklet covers the following rules:

- § An approved helmet should always be worn
- § The bicycle should be equipped with required lights and reflectors
- § Brakes should be reliable
- § Gears should be adjusted and operate smoothly
- § The seat should be properly adjusted
- § Handlebars and all accessories should be securely attached
- § Parents should ensure that children have the proper equipment and obey all laws
- § It is against the law to ride more than two abreast
- § A bicyclist should never hang on to another vehicle
- § There should only one person riding on the bike
- § Night riding should be avoided if possible
- § The bicyclist should wear white or reflectorized clothing if riding at night
- § The bicyclist should ride with traffic and as close to the right edge of the road as is practical
- § Both hands should be kept on the handlebars
- § The bicyclist should slow down when riding on wet streets, on roads with loose gravel or bumps, and at intersections and railroad crossings

- § Bicycle riders should obey traffic signs and signals and pavement markings
- § Bicycle riders should use their hand to signal their intentions
- § Bicycle riders should yield to pedestrians on sidewalks
- § Bicyclists should not ride on sidewalks or in crosswalks where prohibited



New York State driver's manual [MV-21 (3/96)]

Source: Department of Motor Vehicles, Empire State Plaza, Albany, NY 12228, Telephone: (518) 262-5606

Date: 1996

Summary description: This 108-page 7-1/2 x 5-1/4 booklet provides rules and regulations for operating a motor vehicle in New York.

Major content points and behaviors: The booklet includes the following driving hints pertinent to bicycle safety:

- § Approach bicyclists with extreme caution--give them room and slow down when passing
- § Be aware of how a bicyclist might have to react to roadway hazards
- § Yield to bicyclists just as you would to motorists
- § Be aware that bicyclists are often hard to see in traffic

The following rules apply to bicyclists:

- § Signal turns, lane changes and stops.
- § Never carry an infant under one year old as a passenger
- § Secure a 1-4 year old child passenger in a bicycle safety seat
- § Put an approved helmet on a 1-4 year old
- § Ride in a bicycle lane if a usable one is available--otherwise stay right
- § Come to a full stop before entering a roadway from a driveway, alley or over the curb

- § Never ride more than two abreast
- § Don't carry a passenger unless the bicycle is equipped with a passenger seat
- § Keep at least one hand on the handlebars at all times
- § Don't ride on sidewalks where prohibited by local law
- § Report any bicycle crash resulting in death or serious injury within 10 days
- § Equip a bicycle driven on a public highway with adequate brakes and a horn or bell that can be heard from 100 feet away
- § Equip a bicycle used at night with a headlight visible from at least 500 feet ahead and a taillight visible from at least 300 feet behind--one of these lights must also be visible from at least 200 feet away on each side
- § A bicycle sold by a dealer must have wide-angle, spoke-mounted reflectors or reflective tires, a wide-angle rear reflector and pedal reflectors



New Jersey bicycle manual

Source: Outdoor Empire Publishing Company, Inc., 511 Eastlake Avenue East, Seattle, WA 98109,
Telephone: (206) 624-3845

Date: 1997

Summary description: This 56-page 7-1/4 x 5-1/4 booklet covers riding a bicycle safely in New Jersey.

Major content points and behaviors: The booklet includes the following:

§ New Jersey bicycle laws

- Children under 14 must wear a helmet
- For riding in darkness, the bicycle must be equipped with a front white headlamp visible from 500 feet and a rear red light visible from 500 feet
- The bicycle must be equipped with an audible device that can be heard at least 100 feet away
- The brake should make the wheels skid on dry, level, clean pavement
- Passengers should be limited to the number for which the vehicle was designed
- Riders shall not attach themselves to another vehicle
- Drivers should ride right as near to the right side as practical except when making left turns, avoiding debris, passing slower moving vehicles, occupying the lane
- Riders should travel no more than two abreast

§ Choosing a bicycle for the bicyclist's kind of travel

§ Buying a bicycle that fits and has the required equipment

§ Bike maintenance

§ Protecting the bicycle from theft

§ How to ride a bicycle

- § Traffic controls
- § Avoiding hazards
- § Bicyclist's review
- § Traveling by bicycle--commuting and touring

The booklet provides the following tips for safe bicycling:

- § Always wear a helmet
- § Obey all traffic laws
- § Ride right with traffic
- § Watch out for drain grates, loose stones, rocks, sand, and soft shoulders
- § Ride in a straight path at least three feet from parked cars
- § At an intersection, look for slow-moving vehicles and those making turns--they might not see you
- § Use hand signals
- § Protect yourself at night with reflectors, retroreflective clothing and lights
- § Keep the bike mechanically sound and always lock the bike
- § Stay alert and watch out for others
- § Wear highly visible clothing--daytime and nighttime

The booklet also provides hints for parents to help their children avoid crashes.



1998 California driver handbook

Source: Department of Motor Vehicles, M/S C 165, PO Box 932345, Sacramento, CA 94232-3450,
Telephone: (916) 657-6555

Date: 1998

Summary description: This 103-page booklet provides rules and regulations for operating a motor vehicle in California.

Major content points and behaviors: The booklet contains the following driving tips and information relative to bicycles:

- § Watch for bicycles and pedestrians near schools
- § Don't drive in a bike lane (shown by a solid white line on either side of the street four or more feet from the curb) unless you are making a right turn at a corner or other entrance, such as a driveway
- § Drive into a bike lane no more than 200 feet from the entrance or corner before your turn
- § Watch for bikes before entering a bike lane
- § Drivers of motorized bicycles should use the bike lanes carefully to avoid accidents with bicycle riders
- § When making a right turn on red or a left turn against a red light on a one-way street, be careful not to interfere with bicyclists
- § Watch for bicyclists and vehicles when making turns at a T-intersection
- § Signal turns, slow downs and stops to drivers and bicyclists
- § Turn your head before changing lanes because mirrors have blind spots that can hide a motorcycle or bicycle
- § Be careful when riding near bicycles because bicyclists could be seriously hurt in an accident
- § Always leave plenty of room between your car and a bicycle

- § Watch carefully for bicyclists before turning
- § Give a child bicyclist a lot of room because the child may make a sudden move
- § Look ahead for road conditions before passing--you may lose your space for passing because of people or bikers near the road
- § Treat bicyclists the same as drivers of motor vehicles
- § Leave safe passing room and don't turn so close to them that the bicyclist is in danger of being hit
- § Note that bicyclists may need to swerve to avoid an opening car door
- § When the lane is too narrow to pass a bicyclist safely, wait until the next lane is clear and give the bicyclists all the rights of any slow-moving vehicle
- § When parked, don't open the car door without first looking for other vehicles, including bicycles and motorcycles
- § Remember that bicycles are small and sometimes drivers don't see them
- § Be aware that bicycle riding is an alternative to driving
- § Bicycle riders may indicate a right turn with their right arm extended straight out
- § Bicyclists must obey stop signs, signal lights and most other traffic laws and signs
- § Bicyclists under 18 years of age must wear a properly fitted and fastened helmet that meets applicable safety standards



The Minnesota peace officer's guide to bicycle traffic management (Kirby Beck)

Source: Outdoor Empire Publishing Company, Inc., 511 Eastlake Avenue East, Seattle, WA 98109,
Telephone: (206) 624-3845

Date: 1991

Summary description: This 48-page 4 x 6-3/4 guide provides an overview of bicycling in Minnesota, the major bicycle/motor vehicle crash types, dangers of wrong-way riding, legal and illegal bicycle acts, enforcement options, conducting a bicycle crash investigation and the Minnesota bicycle registration system.

Major content points and behaviors: The following six crash types account for over 70% of car-bike collisions:

- § Intersection rideout
- § Midblock rideout
- § Bicyclist turn/swerve into path of motorist
- § Turning motorist failure to yield
- § Motorist restarting from stop sign
- § Motorist overtaking (failing to see bicyclist or misjudging passing space)
- § Wrong-way riding

Enforcement options include issuing citations, issuing written or verbal warnings or providing some form of positive reinforcement (verbal commendations or giveaways). Police officers also organize bike rodeos.

The major bicycle violations in Minnesota are:

§ Disobeying stop signs or red lights

§ Riding on the wrong side of the road

§ Failure to yield right of way at uncontrolled intersections or when making a left turn



Injury-control recommendations: Bicycle helmets (Centers for Disease Control and Prevention, MMWR 1995-44/No. RR-1)

Source: Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9325, Telephone: (202) 783-3238

Date: 1995

Summary description: This 24 page 5-7/8 x 8-1/2 document provides recommendations for use by state and local health departments in planning injury control programs to increase helmet use. The guidelines provide information on the magnitude and extent of the problem of bicycle-related head injuries and the potential impact of increased helmet use; characteristics of helmets including biomechanical characteristics, standards and performance in actual crash conditions; barriers that impede increased helmet use; and approaches to increasing bicycle use in the community.

Major content points and behaviors: The document notes that head injuries account for 62% of bicycle-related deaths, 33% of bicycle-related emergency department visits and 67% of bicycle-related hospital admissions. The following points are made:

§ Use of any helmet will protect the brain and skull but problems in design have been noted.

§ All three existing standards (ANSI, Snell and ASTM) require that manufacturers include warning labels that advise consumers that helmets are for bicycle use only. In addition, they must carry a warning label that they should be discarded or returned to the manufacturer for inspection if they have sustained an impact, and that helmets need to be fitted and fastened securely to the bicyclist's head for maximum protection.

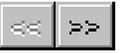
§ Barriers to helmet use include cost, wearability of the helmet, and lack of knowledge regarding helmet effectiveness.

State and local health departments may be responsible for the following tasks when conducting

community campaigns:

- § Collecting and analyzing data relevant to a bicycle helmet campaign, including deaths and injuries attributable to bicycle-related head injuries, rates for helmet use and barriers to helmet use.
- § Overseeing the development of a coalition
- § Identifying resource needs and sources, including funding and training
- § Providing assistance in planning intervention activities and developing educational and promotional materials
- § Developing a process for program evaluation and collecting and analyzing data to evaluate process, impact and outcome.
- § Conducting educational campaigns
- § Developing legislation

Results of selected legislation and community programs to increase helmet use are summarized. Recommendations for bicycle helmet legislation are included as is a listing of organizations that provide information on bicycle helmet campaigns.



Injuries to bicyclists: A national perspective (Susan P. Baker, Guohua Li, Carolyn Fowler, and Andrew L. Dannenberg)

Source: Program Development and Implementation Branch, National Center for Injury Prevention and Control, Centers for Disease Control, 4770 Buford Highway NE, MS-F41, Chamblee, GA 30341-3724, Telephone: (404) 488-4400

Date: 1993

Summary description: This 90-page report includes a literature review and analyses of several databases on bicycle injuries and deaths in the United States.

Major content points and behaviors: The report provides the following statistics:

- § Each year more than 900 bicyclists are killed, 20,000 are admitted to hospitals and 580,000 receive emergency room treatment
- § For the population as a whole, there are approximately 1.8 billion bicycle trips, 300 injuries per million trips and one death in every two million trips
- § Helmets are needed because head injuries are noted in 65,000 emergency room cases and 7,700 hospital admissions annually, about 40% of bicyclists admitted to hospitals and an estimated 70% to 80% of fatally injured bicyclists
- § Bicyclists hospitalized with head injuries are 20 times more likely to die as those without
- § Bicyclist injury rates per million trips are highest at age 5-15
- § Bicyclist death rates per million trips are highest above age 50
- § Bicyclist death rates per 100,000 population are highest at age 10-14

- § 56% of fatally injured bicyclists are age 20 or older
- § Death rates for male bicyclists age 20-54 have substantially increased in recent years
- § Compared with females, males make 2.5 times as many bicycle trips, are 2.4 times as likely to be killed per trip and have a death rate per 100,000 population that is six times as high
- § The death rate per million trips is eight times as high from 10 pm - 1 am as from 9 am - 1
- § Motor vehicles are involved in 90-92% of bicycle deaths and 12% of injuries
- § One third of bicyclist fatalities occur on roads with speed limits of 55 mph or higher
- § Two thirds of fatally injured bicyclists are tested for alcohol; 32% of those tested have been drinking
- § Bicycle death rates per trip per person mile of travel greatly exceed the rates for car occupants

Recommendations include the following:

- § No age group should be exempt from helmet requirements or other preventive measures
- § Separation of bicyclists from motorized traffic, where possible, is recommended
- § Alcohol regulations for motor vehicle operators should be extended to include bicyclists
- § Attention should be given to visibility of bicycles and bicyclists, especially at night
- § Head protection is needed even in the absence of exposure to motorized traffic
- § A broad approach to bicyclist injuries and deaths is recommended, including strategies designed to protect other parts of the body and strategies that operate in the pre-impact and post-impact phases



Wisconsin bicycle planning guidance

Source: Bureau of Planning, Division of Transportation Investment Management, Wisconsin Department of Transportation, PO Box 7913, Madison, WI 53707-7913, Telephone: (608) 266-3661

Date: 1993

Summary description: This 46-page document provides guidelines for Wisconsin metropolitan planning organizations, communities and counties in planning and developing bicycle facilities.

Major content points and behaviors: The report covers the following planning topics:

- § Development of goals, objectives and policies
- § Establishment/refinement of bicycle planning criteria
- § Inventory of bicycle uses, crashes, and bikeway and roadway system characteristics
- § Identification of bicycle travel corridors
- § Evaluation and selection of specific route and facility types
- § Safety component
- § Evaluation of the finished plan against planning criteria and goals/objectives

The following implementation topics are covered:

- § Funding
- § Bicycle signing and mapping
- § Design
- § Bicycle planning

- § Interim measures
- § Land use and site plan

Appendices include the following:

- § Bicycle planning criteria
- § Bicycle facilities
- § Developing the safety component of a bicycle plan--discusses Cross and Fisher study and importance of getting local data to determine crash type problems
- § Rerouting hazards
- § Improving local conditions for bicycling
- § Wisconsin statutes on bicycles, road sharing and in-line skates
- § Definitions
- § References



State legislative fact sheet: Bicycle helmet use law

Source: U.S. Department of Transportation, National Highway Traffic Safety Administration, NTS-23, 400 Seventh Street, SW, Washington, DC 20590, Telephone: (202) 366-1739

Date: 1998

Summary description: These four pages (8-1/2 x 11) provide facts on bicycle crashes and the legislative status of bicycle helmet use laws.

Major content points and behaviors: The following facts are provided:

§ In 1996, 761 bicyclists were killed in crashes with motor vehicles and approximately 59,000 were injured.

§ Each year almost 400,00 children ages 14 and under are treated in emergency rooms for bicycle-related injuries.

§ Universal bicycle helmet use by children ages 4 to 15 would prevent 39,000 to 45,000 head injuries and 18,000 to 55,000 scalp and face injuries annually.

§ Bicycle helmets are 85-88% effective in mitigating total head and brain injuries.

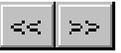
The following legislative facts are provided:

§ As of September 1997, 15 states have age-specific bicycle helmet laws

§ The Child Safety Protection Act of 1994 requires CPSC to develop a mandatory bicycle helmet standard

§ Pending issuance of the standard, manufacturers are required to conform to one of the existing voluntary standards (i.e., ASTM, ANSI or Snell)

Cost savings of using bicycle helmets are estimated. Organizations supporting helmet use laws are listed. In addition, selected references are provided.



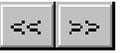
Use of bicycle stress level to evaluate street compatibility for bicyclists (Alex Sorton)

Source: Engineering Division, Traffic Institute, Northwestern University, 405 Church Street, PO Box 1409, Evanston, IL 60204, Telephone: (847) 491-5476

Date: Undated

Summary description: This nine-page 8-1/2 x 11 document describes how to use bicycle stress level to evaluate street compatibility for bicyclists.

Major content points and behaviors: This report proposes a system for evaluating the stress level of a street for bicycling based on three variables: curb-lane traffic volume, speed of the motor vehicles, and curb lane width. Value ranges for five stress levels are defined for each of the three variables. The final stress level is determined by averaging the stress-level results of the three variables. The system was partially validated by a group of volunteer bicyclists who viewed videotaped segments of roadways and rated them according to the stress level concept.



Bibliography of helmet documents

Source: Bicycle Helmet Safety Institute, 4611 Seventh Street South, Arlington, VA 22204, Telephone: (703) 486-0100

Date: 1995

Summary description: This 111-page 8-1/2 x 11 document provides a bibliography of helmet documents as of April 13, 1995.

Major content points and behaviors: This bibliography provides an alphabetized list of helmet documents. Also included is an index to the bibliography.



Bicycle helmet campaign guide

Source: Bicycle Helmet Safety Institute, 4611 Seventh Street South, Arlington, VA 22204, Telephone: (703) 486-0100

Date: 1997

Summary description: This 51-page 8-1/2 x 11 document describes how to conduct a bicycle helmet campaign. This document is also available on disk.

Major content points and behaviors: The report covers the following:

§ Bicycle helmet campaigns in the 90's

§ All about heads and bicycle helmets--head injuries and how helmets help, how to buy a helmet, what it will cost, tips for parents (choosing a helmet, fitting the child's helmet, taking care of the helmet, how to get the child to wear the helmet)

§ Organizing a local bike helmet campaign--selecting a target age group, setting project goals and objectives, using a steering committee

§ Creating the campaign--choosing a time frame, setting a time table, finding money and supplies, choosing campaign messages

§ The pieces of a campaign--creating displays, rewards for helmet use, cutting helmet prices, making presentations, getting media support

Appendices include references and contacts, sample budgets and case studies.



Helmet program toolkit

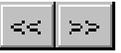
Source: Bicycle Helmet Safety Institute, 4611 Seventh Street South, Arlington, VA 22204, Telephone: (703) 486-0100

Date: 1997

Summary description: This 36-page 8-1/2 x 11 document provides a “toolkit” of materials on bicycle helmets.

Major content points and behaviors: Included in the toolkit are addresses of organizations that are involved in helmet promotion and a sampling of articles on head injuries, helmets and helmet promotions. Also included are the following materials:

- § A consumer’s guide to bicycle helmets - a flyer providing information on how to buy a helmet
- § Must I buy my child a helmet? - a flyer explaining why and how parents should buy helmets for their children
- § Use your head and wear a helmet - a brochure describing the dangers of not wearing a helmet, the elements of a good helmet, and how to find a good helmet
- § Bicycle helmet campaign guide - a diskette providing information on how to conduct a bicycle helmet campaign



Bicycle safety-related research synthesis (FHWA-RD-94-062, A. Clarke and L. Tracy)

Source: U.S. Department of Transportation, Federal Highway Administration, 6300 Georgetown Pike, McLean, VA 22101

Date: 1995

Summary description: This 152-page report reviews bicycle safety-related research conducted in the United States since 1981.

Major content points and behaviors: The report covers the following topics:

§ Bicycling in the United States in the 1990's

§ Bicycle crash experience

§ Intersection countermeasures--stop signs, traffic signals, right turn on red, limited access (freeway) intersections, right-turn-only lanes, advanced stop signs, roundabouts, traffic circles, midblock crossings and rideouts

§ Bicycle accommodations and facilities--facility selection, separation versus integration, designing and selecting facilities, shoulders, wide curb lanes, bicycle routes, bicycle lanes, bicycle paths, shared lanes, bicycle and bus lanes, bicycle boulevards

§ Surface quality--railroad crossings, drainage grates, surface materials, maintenance and other issues

§ Traffic calming

§ Safety equipment--lights and reflectors, helmets

§ Education

§ Enforcement and regulations



Making streets that work

Source: Local Government Commission, 1414 K Street, Suite 250, Sacramento, CA 95814-3929,
Telephone: (800) 290-8202

Date: 1996

Summary description: This 174-page guidebook provides a neighborhood street planning tool for the city of Seattle, Washington. There is an accompanying video.

Major content points and behaviors: The guidebook covers the following topics:

- § What is a street?
- § The right tool for the job
 - Taking stock of neighborhood streets
 - Developing a neighborhood plan
 - Diagramming the street
 - Identifying the symptoms
 - Identifying the solution
 - Activities that can be undertaken to make workable streets--explains when to use, when not to use and costs
- § Putting it all together--working with city departments
- § Profiles of selected Seattle streets that work
- § Resources



Oregon bicycle and pedestrian plan

Source: Oregon Department of Transportation, Bicycle and pedestrian Program, Room 210, Transportation Building, Salem, OR 97310, Telephone: (503) 966-3555

Date: 1995

Summary description: This 259-page document is three-hole punched and can be inserted in a notebook. It describes the bicycle and pedestrian plan adopted by the Oregon Transportation Commission in June of 1995.

Major content points and behaviors: The plan covers the following major points:

§ The policy and action plan

- The importance of bicycling and walking
- State and federal laws relating to bicycling and walking
- Current conditions for pedestrians and bicyclists
- Bicycle and pedestrian policy, goals, actions and strategies
- Implementation

§ Planning, design, maintenance and safety of bikeways and walkways

- Planning walkway and bikeway networks
 - . Background
 - . Planning principles
 - . Local transportation system plans
- Facility design standards
 - . On-road bikeways
 - . Restriping existing roads with bike lanes

- . Bicycle parking
- . Walkways
- . Street crossings
- . Multi-use paths
- . Intersections
- . Signing and marking
- . Traffic calming
- . Bicycle maps
- Maintenance and construction considerations
 - . Bikeway and walkway maintenance
 - , Operating bikeways and walkways during construction
- Safety considerations
 - . Bicycle safety
 - . Pedestrian safety



Fairfax County Police Department Bike Safety Team

Source: Fairfax County Police Department, Traffic Safety Section, 3911 Woodburn Road, Annandale, VA 22003, Telephone: (703) 280-0550

Date: Undated

Summary description: This eight-page 8-1/2 x 11 report is printed in black on blue paper. It explains how eight of the county's police officers will ride bicycles and function as a team to enforce the helmet law (enacted July 12, 1993) and other bicycle safety laws.

Major content points and behaviors: Included in the report are the following:

- § A brief description of the team and how it will function--it will initially give out warnings and, after an educational period, will give out tickets
- § The helmet law
- § A copy of the warning
- § A summary of the problem and how the bike team will work to solve it
- § IACP bicycle helmet use rate
- § A bicycle safety pledge to be signed by parent and child



What needs to be done to prevent alcohol/drug related pedestrian and bicycle crashes?

Source: Wisconsin Department of Transportation, Bureau of Transportation Safety, Pedestrian/Bicycle Safety Program Manager, 4802 Sheboygan Avenue, Room 809, P.O. Box 7936, Madison, WI 53707-7936, Telephone: (608) 267-3154

Date: 1992

Summary description: This 77-page 8-1/2 x 11 report provides a review of Wisconsin's alcohol/drug impaired pedestrian and bicyclist problem and presents recommendations to help alleviate the problem.

Major content points and behaviors: The following recommendations were made relative to bicyclists:

- § Enact a pedaling under the influence statute
- § Penalties for hit and run drivers should be strengthened
- § Responsible beverage service training should be mandated
- § Ordinances should be evaluated to ensure that they are clear, enforceable and based on the UVC
- § Bicycle helmet use should be mandated
- § Dram shop legislation should permit the server to be sued for overserving if a crash occurs
- § Speed limits should be lowered in high crash areas
- § Increased enforcement, engineering changes and public information should be implemented as needed in high crash areas



Road hazard identification project

Source: Wisconsin: Wisconsin Department of Transportation, Bureau of Transportation Safety, Pedestrian/Bicycle Safety Program Manager, 4802 Sheboygan Avenue, Room 809, P.O. Box 7936, Madison, WI 53707-7936, Telephone: (608) 267-3154

Non-Wisconsin: State Pedestrian/Bicycle Coordinator

Date: 1995

Summary description: These materials describe a program for identifying and facilitating the repair of road conditions that are hazardous to bicyclists. It provides for citizens to fill out a pre-addressed road hazard card (available at bicycle shops) and mail it to a central address where it is checked for accuracy and danger to cyclists and then forwarded to the appropriate jurisdiction for repairs.

Major content points and behaviors: Included in the package are the following materials:

- § A diskette containing two databases--one contains all the database tables and the other contains the forms, reports and queries needed to put information into the database, change it, produce reports and find answers to specific questions (Microsoft Access database)
- § A 20-page document that describes the database files
- § A two-page letter to a community director of public works describing the program and requesting a meeting to discuss the program
- § A one-page list of training requirements for program implementation
- § A one-page outline of an initial street department meeting
- § A two-page outline of the project coordinator training
- § A one-page outline of street department staff training
- § A one-page outline of inspector training
- § A one-page letter to bicycle shop owners/managers to describe the project and request a meeting to

discuss the program

- § Two press releases describing the project
- § A sample road hazard identification card
- § A one-page time estimate worksheet
- § A one-page cost estimate worksheet
- § A one-page listing of training sources
- § A one-page illustration of a road hazard template
- § A one-page child's illustration of various road hazards
- § A one-page newspaper story on the program
- § An 8-1/2 x 11 brochure folded to 3-3/4 x 8-1/2 printed in black on gray and titled Police improving bicycle safety through road hazard identification--describes how police can use the project to improve bicycle safety
- § An 11-page training manual that describes the problem, bikeway surface tolerances, common hazards and remedies, factors that may make hazards more dangerous, hazard detection and use of the hazard identification template
- § A seven-page final report describing the results of the pilot program on the project



Bicycle facilities planning and design handbook

Source: Department of Transportation, State Safety Office, MS 82, Bicycle and Pedestrian Program, Tallahassee, Florida, Telephone: (850) 487-1200

Date: 1998

Summary description: This 165-page document is three-hole punched and can be inserted in a notebook. It provides guidelines and criteria for planning, design, construction, operation and maintenance of safe on-road bicycle facilities and multi-use trails in Florida.

Major content points and behaviors: The document covers the following topics:

- § Planning
- § Safety
- § Design, on-road
- § Design, multi-use trails
- § Supplemental facilities

Appendices include:

- § Florida statutes
- § Trail intersection research
- § Intersection striping guidelines
- § Signal loop marker and sign design
- § Low impact rumble strip design

- § Suncoast Parkway trail drawings
- § Minimum design radii
- § Guidelines for bicycle warning signs



Traditional neighborhood development street design guidelines

Source: Institute of Transportation Engineers, 525 School Street, SW, Suite 410, Washington, DC 20024, Telephone: (202) 554-8050.

Date: 1997

Summary description: This 50-page guide represents a proposed ITE recommended practice. It discusses the concepts of traditional neighborhood development (TND) as they relate to the role of streets in TND communities and the community design parameters under which the guidelines would apply. It presents the design principles underlying the guidelines, specific guidance on geometric street design and some recent findings on the relationship between urban design and travel demand.

Major content points and behaviors: The guide covers the following design principles:

- § Design is specific to each street
- § Concept of “lanes” and shared street space
- § Scale must consider the human being
- § Bicycle travel must be encouraged
- § TND streets are interconnected and most are designed to minimize through traffic
- § More TND street capacity is utilized than is typical
- § Curb return radii must be selected to permit pedestrian crossing
- § Emergency vehicle accommodation
- § Utility location
- § Locations of highways and other large vehicular corridors
- § TND neighborhoods are sized in walkable units

- § Eye contact and street safety
- § Conflicts should be resolved in favor of non-vehicular users
- § Preferences should be separated from mandates
- § In terms of safety, the non-motorist should be favored
- § As speed increases, reaction time increases
- § Desired actual vehicle speed is 20 mph--problems with minimum speed regulations
- § Pedestrian injuries increase as vehicular speeds increase
- § Importance of traffic calming

The following geometric design elements are discussed: traffic calming, vehicular mix, on-street parking, street width, minimum centerline radii, curb return radius, pedestrian characteristics and volume, widths of rights-of-way, bicycles, planting strips and street trees, stopping sight distances, maximum and minimum grades, alleys, lighting, snow plowing and removal, trip generation, and transit.



Traffic engineering handbook (Institute of Transportation Engineers)

Source: Prentice-Hall, Englewood Cliffs, New Jersey 07632

Date: Fourth Edition, 1992

Summary description: This 494-page handbook provides professional engineers with a basic source of reference on principles and proven techniques in the practice of traffic engineering.

Major content points and behaviors: The handbook covers the following topics:

- § Driver and pedestrian characteristics
- § Traffic and vehicle operating characteristics
- § Traffic studies
- § Traffic accidents and highway safety
- § Operational aspects of highway capacity
- § Roadway geometric design
- § Parking and terminals
- § Traffic signs and markings
- § Traffic signals
- § Roadway lighting
- § Traffic regulations
- § Traffic management
- § Freeway surveillance and control
- § Public relations and program implementation methods

§ Traffic administration

§ Legal liability

§ Intelligent vehicle-highway systems



Manual on uniform traffic control devices for streets and highways (FHWA-SA-89-006)

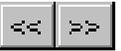
Source: Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402

Date: 1988 (with revisions of 3/89)

Summary description: This 584-page 5-3/4 x 9 manual covers all signs, signals, markings and devices placed on, over or adjacent to a street or highway by authority of a public body or official having jurisdiction to regulate, warn or guide traffic.

Major content points and behaviors: The manual covers the following:

- § General provisions
- § Signs
- § Markings
- § Signals
- § Islands
- § Traffic controls for street and highway construction, maintenance, utility and emergency operations
- § Traffic controls for school areas
- § Traffic control systems for railroad-highway grade crossings
- § Traffic controls for bicycle facilities



Highway safety design and operations guide (ISBN 1-56051-041-2)

Source: American Association of State Highway and Transportation Officials, 444 North Capitol Street, NW, Suite 249, Washington, DC 20001, Telephone: (800) 231-3475

Date: 1997

Summary description: This 132-page 8-1/2 x 11 guide presents concepts for enhancing safety in the operation and maintenance of highways. It presents state-of-the-art technologies that must be applied to achieve a safe level of traffic operations on the nation's highway network.

Major content points and behaviors: The following topics are covered:

§ Introduction

§ Design concepts for safe highways--identifying highway safety levels, safety management, general design considerations, specific design elements, intelligent transportation systems

§ Freeways--roadway design features, special features and considerations, bridge structures, roadsides and medians, interchanges

§ Rural highways--roadway design and operational considerations, roadsides and medians, access management, intersections, bridges and bridge approaches, special considerations

§ Urban and suburban highways--roadway design considerations, roadsides and medians, access management, operational features, intersections, special considerations

§ Maintaining highway safety--staff knowledge and training, opportunities for safety enhancement, scheduling safety inspections and repairs, considerations in repairing highway features, special maintenance concerns, routine maintenance



Campus biking: Challenges and Strategies. The Campus Bike-Right Project at Cornell University (Lois Chaplin)

Source: 325 Riley-Robb Hall, Cornell University, Ithaca, NY, 14853

Date: 1998

Summary description: This 65-page compilation of materials describes the bicycling project at Cornell University and contains a variety of materials describing efforts that were taken to identify and address safety concerns on campus. Included are newspaper articles, campus bicycle regulations, crash data, helmet use data, stolen bike data, brochures, outlines of courses, pedestrian and bicycle quizzes (with answers), campus sign definitions, preparing guides for helmet program and New York State traffic enforcement policy..

Major content points and behaviors: The document covers the following information:

§ Results of a survey of bicycle crash data and its implications for education activities. Targeted messages for bicyclists included:

- Wear a helmet
- Ride on the right side of the street
- Yield to pedestrians in crosswalks
- Use a light when biking at night
- Wear reflective clothing

§ Formulation of a campus subcommittee to:

- Recommend strategies to increase community awareness and education of safety issues

- Formulate policies and strategies to reduce cyclist/pedestrian/motorist conflicts on campus
 - Recommend campus facility needs to eliminate roadway hazards
 - Recommend actions to encourage and incorporate safe bicycling on and around campus
 - Serve as a sounding board for the community's concerns about pedestrian and bicycle safety
- § Bike registration program--including incentives to register
 - § The Bike-right brochure
 - § Helmet initiatives including low-cost purchase plan and a brochure
 - § Public events (bike safety days), bulletin board displays, print media, Web pages
 - § Skills classes--the Effective cycling program
 - § Video--The E's of cycling
 - § Judicial administration
 - § Roadway marking--white = exclusive bike lane; yellow = bicyclists must yield to pedestrians; red = bicyclist must dismount
 - § Bike parking
 - § Walkable and bikeable communities workshops
 - § Bicycle enforcement--the police cyclist unit and state-wide training program
 - § Bike racks installed on all buses in the county
 - § 4-H youth education--workshops, rodeos, teacher resource guide, coloring book, police cyclist youth mentor project

Copies of the following brochures are included: Bicycle regulations; Is your bicycle going to be there when you get back?



Bicycle suitability criteria for state roadways in Texas (Research Report 3988-S)

Source: Texas Department of Transportation, Research and Technology Transfer Office, P.O. Box 5080, Austin, TX 78763-3135

Date: 1997

Summary description: This 98-page report describes a study in which bicycle suitability criteria for state roadways in Texas were developed and evaluated. The suitability criteria can be used to evaluate existing roads and plan improvements as well as to develop maps for bicyclists. The recommended bicycle suitability criteria include shoulder or travel lane width, average daily traffic volume per lane, vehicle speed (or posted speed limit) and shoulder or travel lane pavement surface quality. A bicycle suitability score combines values for these factors into a single numerical score.

Major content points and behaviors: The report covers the following topics:

- § Literature review
- § State-of-the-practice review
- § Assessing Texas DOT needs
- § Gathering and reviewing information
- § Investigating statewide data resources
- § Developing logical, practical criteria
- § Example applications of the suitability criteria and score
- § Recommendations



Guide for the development of bicycle facilities

Source: American Association of State Highway and Transportation Officials, 444 North Capitol Street, NW, Suite 225, Washington, DC 20001, Telephone: (202) 624-5800

Date: 1999

Summary description: This 85-page guide provides information on the development of new facilities to enhance and encourage safe bicycle travel. It provides guidelines for accommodating bicycle traffic in all riding environments. The guidelines are sensitive to the needs of bicyclists and other highway users.

Major content points and behaviors: The guide covers the following topics:

§ Introduction

- Purpose
- Scope
- Definitions

§ Planning

- The bicycle
- The bicycle user
- Choosing the appropriate facility type
- Types of bicycle facilities
- Inventory of existing conditions
- Plans for improvements
- Selection of a bicycle facility
- Education programs for bicyclists and motorists

§ Design

- Shared roadways
 - . Paved shoulders
 - . Increased lane width
 - . On-street parking
 - . Pavement surface quality
 - . Drainage inlet grates
- Signed shared roadways
 - . Designating sidewalks as signed bikeways
 - . Signing of designated shared roadways
- Bike lanes
 - . Bike lane widths
 - . Bike lanes at intersections
 - . Bike lanes and turning lanes
 - . Bike lane symbol guidelines
- Shared use paths
 - . Separation between shared use paths and roadways
 - . Width and clearance
 - . Design speed
 - . Horizontal alignment
 - . Grade
 - . Sight distance
 - . Path roadway intersections
 - . Signing and marking
 - . Pavement structure
 - . Structures
 - . Drainage

- . Lighting
- . Restriction of motor vehicle traffic
- . Undesirability of sidewalks as shared use paths
- . Shared use with motorbikes, horses and snowmobiles
- Other design considerations
 - . Railroad crossings
 - . Bicycles on freeways
 - . Bicycle facilities through interchange areas
 - . Bicycles at modern roundabouts
 - . Traffic signals
 - . Obstruction markings
 - . Bicycle parking facilities
 - . Additional bicycle amenities
 - . Accessibility requirements
- § Operation and maintenance

An appendix provides a review of legal status. References are also included.



A policy on geometric design of highways and streets

Source: American Association of State Highway and Transportation Officials, 444 North Capitol Street, NW, Suite 225, Washington, DC 20001, Telephone: (202) 624-5800

Date: 1994

Summary description: This 1050-page book provides policy for the geometric design of highways and streets.

Major content points and behaviors: The book covers the following topics:

- § Highway functions--systems and classifications, the concept of functional classification, functional system characteristics
- § Design controls and criteria--design vehicles, driver performance, traffic characteristics, highway capacity, access control and access management, the pedestrian, bicycle facilities, safety, environment, economic analysis
- § Elements of design--sight distance, horizontal alignment, vertical alignment, combination of horizontal and vertical alignment, other elements affecting geometric design
- § Cross section elements--pavement, lane widths, shoulders, horizontal clearance to obstructions, curbs, sidewalks, drainage channels and slideslopes, illustrative outer cross sections, traffic barriers, medians, frontage roads, outer separations, noise control, roadside control, tunnels, pedestrian crossings, bicycle facilities, bus turnouts, on-street parking
- § Local roads and streets--local rural roads, local urban streets, special purpose roads
- § Collector roads and streets--rural collectors, urban collectors
- § Rural and urban arterials--rural arterials, urban arterials, access control
- § Freeways--general design considerations, urban freeways, rural freeways
- § At-grade intersections--general design considerations and objectives, types and examples of at-grade

intersections, capacity analysis, alinement and profile, intersection curves, islands, minimum design for turning roadways, application at turning roadway terminals, sight distance, stopping sight distance at intersections for turning roadways, design to discourage wrong-way entry, superelevation for curves at intersections, traffic control devices, general intersection types, channelization, speed-change lanes at intersections, median openings, above-minimum designs for direct left turns, indirect left turns and indirect U-turns, continuous left turn lanes (two-way), auxiliary lanes, simultaneous left turns, intersection design elements with frontage roads, bicycles at intersections, wheelchair ramps at intersections, lighting at intersections, driveways, railroad grade crossings

§ Grade separations and interchanges--general types of intersections, warrants for interchanges and grade separations, adaptability of highway grade separations and interchanges, grade separation structures, interchanges



Traffic calming state-of-the-art (R. Ewing and C. Kooshian)

Source: Institute of Transportation Engineers, 525 School Street, SW, Suite 410, Washington, DC 20024, Telephone: (202) 554-8050

Date: 1999

Summary description: This guide provides over 300 pages on the state-of-the-art of traffic calming. It defines traffic calming as changes in street alignment, installation of barriers, and other physical measures to reduce traffic speeds and/or cut-through volumes.

Major content points and behaviors: The guide covers the following topics:

§ Introduction

- What traffic calming is
- Purposes of traffic calming
- Overview of current practice

§ Selective history of traffic calming

- International origins
- U.S. beginnings

§ Different measures for different purposes (the “toolbox”)

- Choosing the right tools
- Right and wrong measures
- Measures defined and illustrated
- Cost of traffic calming measures
- Trends in design and application

§ Engineering and aesthetics

- Design principles
- Standard geometric designs
- Use of temporary measures
- Use of landscaping
- Signing and marking

§ Impacts on speed, volumes and collisions

- Impacts of education and enforcement
- Impacts of regulatory measures
- Impacts of psycho-perception measures
- Impacts of traffic calming measures--speeds, traffic volumes, collisions, crime, street life, property values, noise levels

§ Legal status

- Initial ban on humps
- Minimizing liability
- Case law--legal authority, tort liability, loss of access, failure to act
- Damage claims

§ Agency concerns (and how they can be addressed)

- Emergency service concerns
- Emergency response times
- Strategies for addressing concerns
- Other public agency concerns--police, public works

§ Procedures and warrants (the “right” balance of flexibility and standardization)

- Basic program options
- Warrants and alternative to warrants
- Public involvement
- Safeguards against diversion of traffic

§ Beyond residential traffic calming

- Successful cases

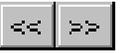
- Principles from Europe

- High volume streets in featured communities

§ Traffic calming in new developments (or avoiding the need for future fixes)

§ Appendix--impact tables

§ References



Implementing bicycle improvements at the local level (FHWA-RD-98-105), J. Williams, B. Burgess, P. Moe and B. Wilkinson)

Source: U.S. Department of Transportation, Federal Highway Administration, 6300 Georgetown Pike, McLean, VA 22101

Date: 1998

Summary description: This 110-page manual provides guidance for local governments who want to make improvements to existing conditions that affect bicycling. Thirteen typical situations or factors that impact bicycle use are considered. For each, as appropriate, are provided a problem overview, a solution overview, implementation strategies, objectives, resource requirements, subtasks, a schedule, specifications and references.

Major content points and behaviors: The following situations or factors are included:

- § Major urban streets
- § Minor urban street traffic
- § Minor street/major street crossings
- § Overcoming bicycling barriers
- § Trail networks
- § Transit connections
- § Roadway bridge modifications
- § Railroad crossings
- § Traffic signals

§ Drainage grates and utility covers

§ Rural road shoulders

§ Bicycle parking

§ Bicycle-related maintenance



Traffic Safety Facts 1997: Pedalcyclists

Source: U.S. Department of Transportation, National Highway Traffic Safety Administration, National Center for Statistics & Analysis, Research & Development, 400 Seventh Street, SW, Washington, DC 20590, Telephone: (800) 934-8517 (Also available on the internet at <http://www.nhtsa.dot.gov/people/ncsa>)

Date: Produced annually for the previous year

Summary description: These four-pages provide statistical data on bicycle crashes with motor vehicles in 1997.

Major content points and behaviors: The fact sheets cover the following topics:

- § Trends in pedalcyclist and total traffic fatalities, 1987-1997
- § Fatalities by year from 1987 through 1997
- § Fatalities and injuries for 1997
- § Fatality and injury rates by age and sex for 1997
- § Fatalities and fatality rates by state for 1997



Access management. . . A key to safety and mobility

Source: Institute of Transportation Engineers, , 525 School Street, SW, Suite 410, Washington, DC 20024, Telephone: (202) 554-8050

Date: 1998

Summary description: This 24-page 4 x 9-1/2 guide promotes and supports the cooperative effort of governmental agencies to better manage access.

Major content points and behaviors: The guide covers the following topics

§ Principles of access management

- Coordination between access and traffic flow
- Integration of land use and transportation
- Key elements of a well-designed access management plan

§ Why access management is so important

§ How access management is implemented

- Techniques
- Access management programs
- Corridor plans

§ How access can be regulated

- Government agency regulation
- Acquisition of access rights

- Land development codes

- Cooperative agreements

§ The most effective access management strategies

- Separate conflict points

- Restrict turning movements at unsignalized driveways and intersections on multilane roads

- Maintain a hierarchy of streets

- Establish design standards

- Locate and design traffic signals to enhance traffic movement

- Remove turning vehicles from through traffic lanes

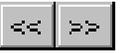
- Encourage shared driveways, unified site plans and cross access easements

- Plan for pedestrians, bicycles and transit vehicles

§ Benefits of access management

§ Disadvantages associated with lack of access management

§ References



Bicycle and pedestrian provisions of the federal-aid program [FHWA-PD-98-049, HEP-10/8-98 (20M)E]

Source: U.S. Department of Transportation, Federal Highway Administration, HEP-50, 400 Seventh Street, SW, Washington, DC 20590

Date: 1998

Summary description: This 22-page 4 x 9 guide is printed in blue and red on white paper. It summarizes bicycle and pedestrian provisions of the federal-aid program as amended by the Transportation Equity Act for the 21st Century (TEA-21).

Major content points and behaviors: The guide covers the following topics:

§ Funding sources for bicycle and pedestrian projects

- Federal-aid highway program
- Federal transit program
- Highway safety programs
- Federal/state matching requirements

§ Planning for bicycling and walking

§ Policy and program provisions

- Protection of non-motorized transportation traffic
- Users of a bicycle and pedestrian facility

§ Facility design guidance

- Bridges

- Railway-highway crossings

§ Research, special studies and reports



Incorporating consideration of bicyclists and pedestrians into education programs

Source: U.S. Department of Transportation, Federal Highway Administration, 6300 Georgetown Pike, McLean, VA, 22101

Date: 1993

Summary description: This 68-page report describes how consideration of bicyclists and pedestrians can be incorporated into educational curricula and programs, including driver licensing materials.

Major content points and behaviors: The report covers the following information relative to bicycling:

§ Coverage of bicycle topics in selected school-based bicyclist training programs and driver education programs and recommendations for topics to include in driver education and licensing materials

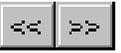
§ Coverage of bicycle topics in state driver license manuals. This analysis resulted in identification of 50 topics currently included in driver license manuals. They were organized into the following groups:

- Efficiencies of the bicycle as a mode of transportation
- Vulnerability of the bicyclist
- Roadway hazards
- Legal rights
- The bicycle rider
- Intersections
- Passing the bicyclist

- Making turns
- Alleys/driveways
- Conspicuity
- Night driving
- Anticipating bicyclists at selected locations and during selected times of day
- Parking
- Special precautions

§ Strategies for incorporating the following topics into education programs, including school-based safety and health training, driver education, driver licensing and driver public information:

- Road sharing
- Personal/environmental health
- Legal rights/responsibilities
- Conspicuity
- Communication
- Obeying the law
- Identifying conflicts
- Personal considerations



The bicycle compatibility index: A level of service concept. Implementation manual.

Source: U.S. Department of Transportation, Federal Highway Administration, 6300 Georgetown Pike, McLean, VA, 22101

Date: 1998

Summary description: This 53-page report and Microsoft Excel workbook (provided on diskette) present a methodology for deriving a bicycle compatibility index that can be used by bicycle coordinators, transportation planners, traffic engineers and others to evaluate the capability of specific roadways to accommodate both motorists and bicyclists. The bicycle compatibility index was developed for urban and suburban roadway segments, i.e., midblock locations that are exclusive of major intersections. It incorporates those variables that bicyclists typically use to assess the “bicycle friendliness” of a roadway, for example, curb lane width, traffic volume and vehicle speeds. The developed tool allows the practitioner to evaluate existing facilities in order to determine what improvements may be required as well as to determine the geometric and operational requirements for new facilities.

Major content points and behaviors: The report and diskette cover the following topics:

§ Introduction--purpose and use of the bicycle compatibility index

§ Development of the model

§ Data requirements and assumptions

- Number of through motor vehicle lanes in one direction and the presence or absence of a bicycle lane or paved shoulder
- Width of the motor vehicle travel lane closest to the curb
- Width of the bicycle lane or paved shoulder, if present
- 85th percentile speed of traffic

- Traffic volume by lane in one direction of travel
- Presence of an on-street parking lane and percentage of spaces occupied
- Type of development or land use adjacent to the roadway
- Large truck volume in the curb lane
- Parking time limits for on-street spaces
- Volume of vehicles turning right into all driveways and intersecting streets along the midblock segment being evaluated

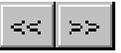
§ Description of the workbook

§ Application examples

- Evaluation of existing conditions
- Assessment of proposed design alternatives
- Planning to accommodate bicyclists

§ English units version of the bicycle compatibility index

§ Logic used in the Microsoft Excel workbook



Development of the bicycle compatibility index: A level of service concept. Final Report.

Source: U.S. Department of Transportation, Federal Highway Administration, 6300 Georgetown Pike, McLean, VA, 22101

Date: 1998

Summary description: This 94-page report describes the development of an index that can be used by bicycle coordinators, transportation planners, traffic engineers and others to evaluate the capability of specific roadways to accommodate both motorists and bicyclists. The bicycle compatibility index was developed for urban and suburban roadway segments, i.e., midblock locations that are exclusive of major intersections. It incorporates those variables that bicyclists typically use to assess the “bicycle friendliness” of a roadway, for example, curb lane width, traffic volume and vehicle speeds. The developed tool allows the practitioner to evaluate existing facilities in order to determine what improvements may be required as well as to determine the geometric and operational requirements for new facilities. Included in the report is a discussion of the research methodology, data collection procedures, data analysis and model development.

Major content points and behaviors: The report covers the following topics:

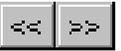
- § Introduction--background, objectives and scope of the study
- § Development and validation of the research methodology
- § Data collection--site selection, field data collection, video production and video survey
- § Data analysis
- § Pilot study to assess if the approach was valid for rating the bicycle compatibility of intersections
- § Summary and conclusions
- § Literature review

§ Pilot study data analysis

§ Survey instruments

§ English units version of the bicycle compatibility index

§ References



Training programs for bicycle safety

Source: Harborview Injury Prevention and Research Center, 325 Ninth Avenue, Box 359960, Seattle, WA 98104, Telephone: (206) 521-1520

Date: 1998

Summary description: This 49-page report provides a review of 27 bicycle safety training programs. For each program, the following information is provided: program name and contact person, target age group, length of program, goals and objectives targeted, type of training and behavior targeted and evaluation information (where applicable).

Major content points and behaviors: Descriptions are provided for the following programs:

- § Effective cycling--League of American Bicyclists
- § Basics of bicycling--Bicycle Federation of America
- § Safe moves--Van Nuys, California
- § The elementary traffic safety education program--Seidler Productions
- § Florida traffic and bicycle safety education program--University of Florida
- § Pedal power camp--University of Minnesota
- § Basics of safe bicycling--University of Minnesota
- § Bike L.A. safety training (BLAST)--Los Angeles, California
- § Bike-Ed Hawaii- Hawaii Bicycle League
- § Riley riders bike safety smart program--Riley Hospital for Children
- § Bike star international--Glendale, California
- § Travis County supercyclist project--Austin, Texas
- § Heads up, helmets on--Waterford Police Department, Connecticut

- § Bicycle safety instructor training--Bicycle Coalition of Maine
- § Teaching safe bicycling--Wisconsin Department of Transportation
- § Motorists ed--League of American Bicyclists
- § Oklahoma ride right, ride on and breaking away--Oklahoma State Department of Health
- § Oklahoma elementary school injury prevention education--Oklahoma State Department of Health
- § Cascade Club programs--Seattle, Washington
- § Helmets on wheels--Tacoma Wheelmen Club
- § Free ride zone--International Bicycle Fund, Seattle, Washington
- § Ride right cycle right rodeo--Another Dam Bike Club, Knoxville, Tennessee
- § The bicycle project--Cornell University
- § American Automobile Association materials
- § Colorado programs
- § Bucklebear products--Center for Injury Prevention
- § Risk watch--National Fire Prevention Association and Lowe's Home Safety Council



North Carolina bicycle facilities planning and design guidelines

Source: Department of Transportation, Office of Bicycle and Pedestrian Transportation, PO Box 25201, Raleigh, NC 27611, Telephone: (919) 733-2804

Date: 1994

Summary description: This 108-page report provides guidelines for planning and design of bicycle facilities. It was prepared to inform engineers, planners and other transportation officials of the planning and design considerations which are recommended for good bicycle facility design.

Major content points and behaviors: The report covers the following topics:

§ Planning for bicycle use

§ Design factors

§ Roadway improvements

- Drainage grates

- Railroad crossings

- Pavement quality

- Traffic control devices

- Structures

- Bridges

- Tunnels, underpasses, interchanges

- Shoulders

- Rumble strips

- Wide outside lanes

§ Bicycle lanes

- Delineation
- Surface quality
- Widths
- Intersection design

§ Bicycle routes

- Overall planning
- Selecting routes
- Designating routes
- Mapping

§ Bicycle paths

- Separating paths and highways
- Multipurpose recreational trails
- Width and clearance
- Design speed
- Horizontal alignment and superelevation
- Grades
- Sight distance
- Intersections
- Restrictions of motor vehicle traffic
- Bike path signing and marking
- Pavement structure
- Bike path structures
- Drainage
- Lighting
- Multi-use paths

§ Supplemental facilities

§ Operation and maintenance



Lincoln bicycle routes

Source: Lincoln Traffic Safety Committee, c/o Mayor's Office, 555 South 10th Street, Lincoln, NE 68508, Telephone: (402) 441-6006

Date: 1995

Summary description: This 24 x 18 map is folded to 4-1/2 x 9. It provides a map of the bicycle routes of the city as well as bicycle rules and regulations.

Major content points and behaviors: The map includes information on the following topics:

- § Licensing
- § Required equipment
- § Making left turns
- § Riding on arterial streets
- § Riding in groups
- § Holding onto moving vehicles
- § Right of way
- § Making right turns
- § Right turn only lanes
- § Riding on the sidewalk
- § Control of the bicycle
- § Attachment of bicycle to a fire hydrant
- § Penalty

A separate map is provided of the areas where riding on the sidewalk is prohibited.. Also included are words and sketches of bicycle safety tips.



South-east Morris County bicycle suitability map

Source: Biking is Kind to the Environment, Inc., PO Box 667, Chatham, NJ 07928, Telephone: (201) 635-2211

Date: Undated

Summary description: This is an 11 x 15 suitability map in color of south-east Morris County, New Jersey.

Major content points and behaviors: Both sides of the sheet are used to show different sections of the area. Roads are graded on their suitability to support bicycle traffic.



Chicago bicycling map: Share the road

Source: Chicago Bureau of Traffic, Suite 400, 30 North LaSalle Street, Chicago, IL 60602, Telephone: (312) 744-4686

Date: 1994

Summary description: This 10-7/8 x 16-1/4 color map folds to 3-5/8 x 8-1/8. It shows recommended and cautionary on-street bike routes, off-street bike routes and planned off-street routes. Also included is a list of traffic safety tips and Chicago bicyclist resources.

Major content points and behaviors: In addition to bike routes and resources in Chicago, the map provides the following traffic tips:

- § Obey traffic signs and laws
- § Ride visibly and predictably
- § Use hand signals
- § Pass with caution
- § Scan the road ahead and behind
- § Use the center lane when necessary
- § Follow lane markings at intersections
- § Avoid hazards
- § Don't ride against traffic



Traffic safety education posters (Stock #3021)

Source: American Automobile Association

Date: 1996

Summary description: This 11-1/2 x 17-5/8 package provides 10 traffic safety posters in color. The posters were winning designs by elementary school children

Major content points and behaviors: The posters emphasize the following behaviors:

- § Listen to your safety patrol
- § Walk facing traffic
- § Buckle your safety belt
- § Wear your helmet when you ride
- § Be seen after dark
- § Cross carefully at corners
- § Curb the urge to dash across
- § Look all ways before crossing
- § Use your head, wear a helmet
- § Play away from traffic



Bike like the best

Source: Pennsylvania Department of Transportation, Bureau of Highway Safety and Traffic Engineering, PO Box 2047, Harrisburg, PA 17105-2047

Date: Undated

Summary description: This 11 x 17 poster is reproduced in color. It provides safety hints for safe bicycling.

Major content points and behaviors: The poster covers the following points:

- § Ride right with traffic
- § Stop at stop signs and red lights
- § Be extra careful at crossroads
- § Make proper turns
- § Don't be thrown by hazards
- § Know road signs
- § Use the right gear--especially a helmet



Sally says: Save a life like yours

Source: Office of Traffic Safety, Department of Motor Vehicles and Public Safety, 555 Wright Way, Carson City, NV 89711-0999

Date: Undated

Summary description: This series of eight 2 x 6 bookmarks, printed in black and white, make various safety points for child bicyclists and pedestrians.

Major content points and behaviors: The three pedestrian bookmarks make the following points:

- § Stop at the edge of the road
- § Look left-right-left
- § Keep looking

The five bicyclist bookmarks make the following points:

- § Stop at the edge
- § Signal when turning
- § Keep looking--be alert
- § Look back before you enter traffic
- § Look left-right-then left again



Ride on the right. . . Go with the flow

Source: Delaware Office of Highway Safety, 540 South duPont Highway, Dover, DE 19901, Telephone: (302) 736-4475

Date: 1988

Summary description: This 2-3/4 x 7 two-sided bookmark is printed in green and black on white paper. It advises cyclists to ride right.

Major content points and behaviors: The bookmark gives the following reasons for riding right:

- § It's the law that vehicles are to be driven on the right
- § Bicycles are vehicles
- § Motorists aren't looking for vehicles being ridden the wrong way and may not see you
- § Traffic signs and signals are placed to be seen by drivers on the right
- § If in danger on the wrong side of the road, both you and a motorist have less time to react and avoid an accident
- § It is much less dangerous



Bike safely first ride, every ride

Source: Pennsylvania Department of Transportation, Bureau of Highway Safety and Traffic Engineering,
PO Box 2047, Harrisburg, PA 17105-2047

Date: 1996

Summary description: This 2-1/2 x 7 bookmark is printed in green and buff on white paper. It explains the helmet law and how to buy and wear helmets.

Major content points and behaviors: The bookmark makes the following points:

- § Children under 12 must wear an approved helmet (ANSI, Snell, ASTM)
- § The helmet should be snug
- § Helmet use can reduce the risk of head injury by 85%



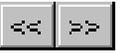
Facility improvement request form

Source: City of Portland Bicycle Program, Office of Transportation, 1120 SW 5th Avenue, Room 730, Portland OR 97204-9791

Date: Undated

Summary description: This 6-3/4 x 5-1/4 prepaid postcard permits citizens of Portland, Oregon to notify the bicycle program of needed roadway improvements.

Major content points and behaviors: This card provides an opportunity for the bicyclist to note needed small improvements, e.g., pavement maintenance and sweeping, hazard removal, bike rack installation and grating repair. Included is a place for indicating the location (street and cross street or landmark), the specific suggestion, the date and the name, address and phone number of the requestor. Also included is space for the bicycle program staff to indicate the action taken (person to whom the request was referred, condition before and after the job is completed, signature and date).



Official bike safety ID

Source: Rhode Island Department of Health, 3 Capitol Hill, Providence, RI 02908

Date: Undated

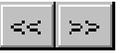
Summary description: This 4-1/4 x 2-5/8 orange card serves as an identification card for children in Rhode Island.

Major content points and behaviors: The front side of the card states “I will always wear my helmet when riding a bike.” It notes that children under 8 years of age are required to wear a properly fitted helmet when riding a bike.

The reverse side of the card lists the following safety tips:

- § Always wear an approved bike safety helmet that fits properly
- § Always ride on the right side of the road with the flow of traffic
- § Obey all traffic signs, signals and pavement markings
- § Give cars and pedestrians the right of way and ride single file
- § Stop and check for traffic before entering a street from a sidewalk, driveway or parking lot
- § Use hand signals and walk, don't ride, across busy intersections
- § Yield to traffic before turning left at intersections
- § Wear bright colors, use reflectors on your bike, avoid bicycling after dark
- § Be sure your bike is the correct size and in good repair

A place is included for the child's name, address and telephone number.



Bicycle owner's identification (Stock #3284)

Source: American Automobile Association

Date: Undated

Summary description: This 3-1/2 x 4 card is printed in blue on white. It provides owner ID as well as safe bicycling tips.

Major content points and behaviors: In addition to space for owner ID, the card provides the following bicycle safety tips:

- § Stop at intersections; walk bike across busy intersections
- § Drive on the right with traffic
- § Obey traffic signs, signals and pavement markings
- § Stop and be sure roadway is clear before entering from a sidewalk or driveway
- § Use proper hand signal for turning or stopping
- § Avoid driving at night
- § Give the right of way to pedestrians
- § Watch out for opening car doors
- § Make sure you are seen by motorists
- § Use bike paths and lightly traveled streets when you can
- § Keep bike in good repair



Spot me

Source: Bicycle Coalition of Maine, Box 5275, Augusta, ME 04330, Telephone: (207) 865-4842 and Maine Department of Transportation, 16 State House Station, Child Street, Augusta, ME 04333, Telephone: (207) 287-6600

Date: Undated

Summary description: This 5-1/2 x 4-1/4 postcard and accompanying 8-1/2 x 11 flyer are printed in black on orange paper. The flyer urges bicyclists to report needed roadway improvements on the postage-paid card

Major content points and behaviors: Bicyclists are encouraged to report roadway problems on the mail-in cards that are found at bike shops, bike clubs, the library or the local Maine DOT office. Bicyclists will get a letter from Maine DOT telling them how the problem is being resolved.



Bicycling in Colorado: Rules of the road

Source: Colorado Bicycle/Pedestrian Program, 4201 East Arkansas Avenue, #212, Denver, CO 80222

Date: Undated

Summary description: This 2-1/8 x 3-3/8 laminated card lists Colorado rules of the road and rules for multi-use trails. It is printed in purple on white paper.

Major content points and behaviors: The card covers the following topics:

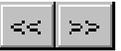
§ Rules of the road

- Ride right
- Ride single file
- Obey traffic laws, signs and signals
- Use headlight, taillight and reflectors at night
- Make eye contact with drivers

§ Rules for multi-use trails

- Ride right
- Ride single file when other users are present
- Control speed
- Bicyclists yield to other users
- Use caution when overtaking other users
- Announce intentions when overtaking other users
- Never spook animals
- Leave no trace

- Wear a helmet



10 smart routes to bicycle safety

Source: National Highway Traffic Safety Administration, U.S. Department of Transportation, NTS-15, 400 Seventh Street, Washington, DC 20590 (and U.S. Consumer Product Safety Commission)

Date: Undated

Summary description: This 12-page 4-7/8 x 7 document is designed to be used as a hang tag on new bicycles. It describes 10 smart routes to bicycle safety.

Major content points and behaviors: The following bicycle safety tips are provided:

- § Protect your head; wear a helmet
- § See and be seen
- § Avoid biking at night
- § Stay alert; always keep a lookout for obstacles in your path
- § Go with the flow; the safe way is the right way
- § Check for traffic; always be aware of the traffic around you
- § Learn the rules of the road; obey traffic laws
- § Assure bicycle readiness; make sure your bicycle is adjusted properly
- § Stop it; always check brakes before riding
- § Don't flip over your bicycle; wheels should be securely fastened

Note: This hang tag is currently being revised by NHTSA



Use your head and wear a helmet

Source: Snell Memorial Foundation, Inc., 3628 Madison Avenue, Suite 11, North Highlands, CA 95660,
Telephone: (916) 331-5073

Date: Undated

Summary description: This 4 x 4 hang tag is printed in black and blue on yellow and black and blue on white (reverse). The hang tag warns of the dangers of riding without a helmet and advises bicyclists to look for the Snell certificate.

Major content points and behaviors: The following points are made:

- § Bicyclist injury rates are highest between ages 5 and 15
- § 7,700 bicyclists are admitted to hospitals due to head injuries
- § Bicycle helmets could reduce head injuries by 85%
- § Helmets carrying the Snell certificate meet rigorous standards



Head Smart® public service announcement (item #1VHSP)

Source: Brain Injury Association, Inc., 105 North Alfred Street, Alexandria, VA 22314, Telephone: (703) 236-6000

Date: 1996

Summary description: Two television PSAs (0:30 each) are packaged on one videotape. The English version is titled Aerodynamic helmet. It explains the design of a helmet and encourages helmet use. The Spanish version is titled Ponte El Casco. It encourages bicycle helmet use and notes its use in other sports.

Major content points and behaviors: Brief descriptions of these two PSAs follow:

§ Aerodynamic helmet--This PSA displays a bicycle helmet and notes that it is aerodynamically designed to break the wind at high speeds, has an outer shell that matches euro-style competition and an ANSI and Snell approved inner shell. It encourages helmet use.

§ Ponte El Casco-- This PSA shows other activities using helmets (e.g., football, horse racing, motorcycle riding, car racing) and encourages bicycle helmet use.



Davis bike map

Source: Bicycle Program Coordinator, Transportation and Parking Services, University of California at Davis, Davis, CA 95616, Telephone: (916) 752-2453

Date: Undated

Summary description: This 32-1/2 x 17-1/2 map is folded to 4-1/8 x 8-3/4. It is printed in black and blue on white with special routes shown in green (streets with marked bike lanes), orange (bike paths on which motor vehicle traffic is limited) and purple (intercity routes for travel to and from Davis).

Major content points and behaviors: This map shows the University of California at Davis campus and the city of Davis. The reverse side of the map provides the following advice, rules and regulations:

- § Wear a helmet
- § Park only where designated on the campus and don't park where prohibited in town
- § Bicycling on sidewalks is prohibited in downtown Davis
- § Obey posted speed limits
- § Don't operate a bike under the influence of alcohol or drugs
- § Don't ride two persons per bike
- § Don't use earphones on both ears
- § Register the bike--it's the law
- § Always lock the bike
- § Obey traffic signs and signals
- § Use "loop" vehicle detectors
- § Use hand signals
- § Ride in a straight line

- § Don't weave between parked cars
- § Follow lane markings
- § Choose the best way to turn left
- § Watch for right-turning vehicles
- § Respect pedestrian's rights
- § Watch for cars pulling out
- § Scan the road behind
- § Avoid road hazards
- § Keep both hands ready to brake
- § Watch for chasing dogs
- § See and be seen--have required equipment for night riding
- § Wear gloves to protect you if you fall
- § Maintain the bike in good working condition
- § Ride counterclockwise in traffic circles
- § Ride with traffic
- § Ride as far to the right as practicable and safe



Safety first. . . Always!

Source: Pennsylvania Department of Transportation, Bureau of Highway Safety and Traffic Engineering, PO Box 2047, Harrisburg, PA 17105

Date: 1997

Summary description: This 15-1/2 x 11 calendar is printed in color. It contains a calendar for each month from September 1997 through June 1998.

Major content points and behaviors: The 10-month calendar includes key messages and skills to practice for each of the following topic areas:

- § September--Steer clear of the danger zones (school bus)
- § October--Dress right, stay in sight
- § November--Your best protection: belts and air bags
- § December--Your choice--your consequences (drugs and alcohol)
- § January--Protect your head...wear a helmet
- § February--The back seat can't be beat (seat belts)
- § March--Exit drills...protect your skills (school bus)
- § April--Scan the street! Look left, then right then left again
- § May--Bike smart...follow the rules
- § June--Enhance your chance...don't lose to booze

The calendar also describes Pennsylvania laws and resources.



What would a SuperCyclist do?

Source: Texas Bicycle Coalition, P.O. Box 1121, Austin, TX 78767,

Telephone: (512) 476-6655

Date: Undated

Summary description: This 23-1/2 x 17-1/2 poster is designed for children in the 4th and 5th grades. It presents a scene in which bicyclists break various safety rules. It points out the rules that are broken and what a SuperCyclist would do to ride safely.

Major content points and behaviors: The major behaviors covered are:

- § Keep two hands on the handlebars for maximum safety
- § Don't ride in the crosswalk
- § Watch out for hazards in the roadway (drain grates, leaves, etc.)
- § Obey all traffic signs and signals
- § Lock your bike when unattended
- § Give proper hand and arm signals before turning
- § Don't let your unattended bike block access to anything
- § Watch for opening car doors
- § Always look over your shoulder before turning
- § Don't hitch a ride on a moving vehicle
- § Don't work on bicycle repairs on the sidewalk
- § Watch out for unrestrained dogs
- § Wear a helmet at all times

What would a SuperCyclist do?

- § Ride in the same direction as traffic
- § Don't have more than one rider per bicycle
- § Yield to pedestrians
- § Equip the bike with a red rear reflector
- § Make sure shoelaces are tied and that laces and pants are tucked in
- § Secure packages in a basket
- § Wear bright colors



Vehicle safety inspection

Source: Texas Bicycle Coalition, P.O. Box 1121, Austin, TX 78767,

Telephone: (512) 476-6655

Date: Undated

Summary description: This 23-1/2 x 17-1/2 poster is designed for children in the 4th and 5th grades. It presents a picture of a bicycle with its various parts identified and a checklist of safety needs for various parts.

Major content points and behaviors: A checklist of bicycle safety needs is organized as follows:

- § Frame size--too high, too low, ok
- § Frame fork--bent, ok
- § Saddle position--too high, too low, too loose, correct height, ok--cannot move easily
- § Chain--dirty, rusty, too loose, ok
- § Hand brakes--front pads worn, levers need adjustment, rear pads worn, cable ends frayed, cable end is capped, ok--brakes are effective
- § Coaster foot brakes--do not stop, ok--brakes are effective
- § Tires--low pressure, ok
- § Handgrips--hand grips uncovered, ends plugged and protected, ok--grips don't twist
- § Handlebar--too loose, ok--cannot move easily
- § Reflectors and lights--front light missing, front light attached, rear red reflector missing, reflector improperly bent, red reflector attached and properly positioned, optional rear red light added, ok--light and reflectors attached



Video on traditional neighborhood design

Summary description: Most new developments are built with guidelines and development code calling for isolation of activities, low density, wide streets and long blocks. Often sidewalks and trails are left out of the code or have "if-you-want-to" language. This results in car-dependent lifestyles, generating high traffic volumes and speed in neighborhoods. As a result, many parents feel it is unsafe for their children to ride bicycles or walk, and so they drive their children to both near and distant locations. Roadways therefore become less safe for children who do ride bicycles or walk. This 15- to 20-minute video will summarize and describe to developers and community officials the reasons for adopting new policy and code for building subdivisions and neighborhoods that are bicycle and pedestrian friendly. Drawings, sample development code, policy, procedure and principles will be provided.

Major contents: The video will include the following topics:

- § Opening that explains the lifestyle and marketing advantages of traditional neighborhood development
- § Traditional neighborhood development principles
- § Sample policy and procedure
- § Sample code text for various street configurations
- § Sample code for sidewalks and trail development
- § Sample code text for various new street designs
- § Relevant research
- § Case studies and examples

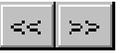


Model bicycle owner's videos--one for adults, one for parents of small children

Summary description: At least 50% of all bicycle crashes could be prevented with just a few cautionary steps. Use of a helmet at all times when riding could prevent up to 75% of fatal and permanent injuries. Proper clothing and night lighting could prevent up to 30% of serious crashes. Information related to defensive riding skills could help eliminate up to 70% of adult crashes. There will be two 15 to 20 minute videos--one for adults and one for parents of children. The videos will be created as models for manufacturers to adopt and incorporate as free items released as a purchasing incentive with their bikes. Exceptionally powerful graphics, fun and simple-to-understand language will be developed and made available to all manufacturers to adopt and incorporate as videos with their bikes. The videos will be companions to the owner's manuals. Other copies can be shown at bike shops, large department stores and other areas where customers can be attracted to watch a short video. Other copy will be adapted for parts and equipment manufacturers for other point of purchase distribution. The parent version will include fun activities for parents and children to do together.

Major contents: The videos will include the following information:

- § The best ways to stay healthy on a bike
- § Helmets
- § Clothing, seeing and being seen
- § Defensive riding--what will go wrong, how to see it before it happens
- § Proper skills development
- § Riding with the flow
- § Neighborhood tips
- § Commercial street tips
- § Touring and bike path tips
- § Activities for parents to do with children



Conducting community audits (a set of three videos)

Summary description: These three separate videos will train parents, police and engineering personnel to conduct simple but productive audits of neighborhoods, an entire community or a specific crash site to identify and, when possible, eliminate safety hazards to bicyclists.

Major contents: There is not a high correlation between the locations that look hazardous to the casual observer and the locations where bike related crashes actually occur. Among the most important situations are those in which visual obstructions limit sight distance at intersections of roadways or intersections of roadways and driveways. The videos will focus on the following:

- § Obtaining local crash data to identify potential high crash locations
- § The major hazards that are readily observable and “auditable”
- § Factors that contribute to inadequate sight distance
- § Sight distance standards
- § Procedures for measuring sight distance
- § Roadway maintenance problems
- § Roadway parking
- § Roadway speed--posted and actual
- § Hazardous turning movements for motor vehicles and bicycles
- § Traffic volume
- § Signal adequacy and functioning
- § Railroad tracks
- § Lighting, competing glare
- § Visual clutter and its impact on crash generation

Conducting community audits (a set of three videos)

§ Methods and procedures for reducing risk at locations where risk is found to be high.

§ Reporting procedures-- local and state agencies that should be contacted for assistance in identifying and implementing risk reduction methods

Companion brochures are also proposed.



Video on the impaired bicyclist and appropriate police responses

Summary description: This video will describe the impaired bicyclist problem and appropriate police responses.

Major contents: The video will cover the following topics:

§ The bicycle alcohol problem

- Statistics on deaths and injuries
- Typical crash types
- Who is the person involved--gender, age?
- When does the crash occur?
- Where does the crash occur?

§ Appropriate police responses

- Intervene and counsel
- Arrange for transportation
- Confiscate open bottles of liquor
- Arrest if necessary

§ Other supportive police activities

- Provide information on the problem to community groups
- Distribute alcohol information in bars
- Assist schools in implementing alcohol prevention programs

- Promote citizens' calls for assistance with drunk bicyclists
- Enforce speed laws
- Report lighting and visibility problems to engineering



Video promoting bicycle safety by parents

Summary description: This video will be designed to motivate parents to promote bicycle safety. The video will describe common bicycle/motor vehicle crashes and explain what parents can do to promote safety.

Major contents: The video will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that parents can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets

§ How motorist actions cause crashes

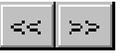
- Improper turns and search failures
- Driving too fast
- Drinking and driving

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking
- Roadway maintenance

- § Critical need for child supervision
- § Removing visual screens from property
- § Blocking driveways
- § Assuring helmet use
- § Assuring conspicuity
- § Working with schools to develop and implement countermeasures

A companion brochure is also proposed.



Video promoting bicycle safety by community and civic organizations

Summary description: This video will be designed to motivate community and civic organizations to promote bicycle safety. The video will describe common bicycle/motor vehicle crashes and explain what community and civic organizations can do to promote safety.

Major contents: The video will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that community and civic organizations can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets
- Drinking and riding

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking

- Roadway maintenance

§ Generating funding for countermeasure programs

§ Distributing information to family and friends

§ Encouraging government leaders to support bicycle safety programs

A companion brochure is also proposed.



Video promoting bicycle safety by elected officials

Summary description: This video will be designed to motivate elected officials to promote bicycle safety. The video will describe common bicycle/motor vehicle crashes and explain what elected officials can do to promote safety.

Major contents: The video will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that elected officials can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets
- Drinking and riding

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking

Video promoting bicycle safety by elected officials

- Roadway maintenance

§ Generating publicity

§ Working with planners, builders and engineers

A companion brochure is also proposed.



Video promoting bicycle safety by traffic court judges

Summary description: This video will be designed to motivate traffic court judges to promote bicycle safety. The video will describe common bicycle/motor vehicle crashes and explain what traffic court judges can do to promote safety.

Major contents: The video will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that traffic court judges can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets
- Drinking and riding

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking

- Roadway maintenance

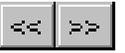
§ Need to impose sanctions

§ The full range of sanctions for motorist and bicyclist violations

§ Sanctions that can be imposed on parents of young bicyclists

§ Relative effectiveness of alternate sanctions

A companion brochure is also proposed.



Video promoting bicycle safety by health care officials

Summary description: This video will be designed to motivate health care officials to promote bicycle safety. The video will describe common bicycle/motor vehicle crashes and explain what health care officials can do to promote safety.

Major contents: The video will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that health care officials can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets
- Drinking and riding

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking

- Roadway maintenance

§ Countermeasures that reduce crash severity

§ Benefits to be realized from crash and injury reduction

§ Obtaining bicycle crash data

A companion brochure is also proposed.



Video promoting bicycle safety by first responders

Summary description: This video will be designed to motivate police and emergency medical services to promote bicycle safety. The video will describe common bicycle/motor vehicle crashes and explain what first responders can do to promote safety.

Major contents: The video will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that first responders can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets
- Drinking and riding

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking

- Roadway maintenance

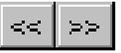
§ Providing a teachable moment

§ Obtaining needed enforcement data

§ Obtaining needed medical data

§ Supporting countermeasure programs--rodeos, helmet promotions, etc.

A companion brochure is also proposed.



Video promoting bicycle safety by pre-school administrators

Summary description: This video will be designed to motivate pre-school administrators to promote bicycle safety. The video will describe common bicycle/motor vehicle crashes and explain what pre-school administrators can do to promote safety.

Major contents: The video will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that pre-school administrators can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking
- Roadway maintenance

§ Identifying appropriate countermeasures for the pre-school child

§ Working with parents to implement countermeasures

A companion brochure is also proposed.



Video promoting bicycle safety by elementary, middle and high school administrators

Summary description: This video will be designed to motivate school administrators to promote bicycle safety. The video will describe common bicycle/motor vehicle crashes and explain what school administrators can do to promote safety.

Major contents: The video will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that school administrators can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking

- Roadway maintenance

- § Importance of bicyclist education
- § Working with parents to implement countermeasures
- § Establishing safe routes to school
- § Implementing in-school training programs
- § Implementing other countermeasure programs, e.g., helmet programs
- § Providing school facilities--lockers, parking, etc.

A companion brochure is also proposed.



Video promoting bicycle safety by college administrators

Summary description: This video will be designed to motivate college administrators to promote bicycle safety. The video will describe common bicycle/motor vehicle crashes and explain what college administrators can do to promote safety.

Major contents: The video will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that college administrators can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets
- Drinking and riding

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

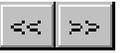
§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking

- Roadway maintenance

- § Setting bicycle rules
- § Designing pedestrian-bike paths
- § Indoctrinating students
- § Providing on-campus parking, lockers, etc.
- § Using bicycle patrols
- § Collecting bicycle crash data
- § Reporting data in campus media
- § Handling motorist and bicyclist violations

A companion brochure is also proposed.



Video promoting bicycle safety by corporate business officials

Summary description: This video will be designed to motivate corporate business officials to promote bicycle safety. The video will describe common bicycle/motor vehicle crashes and explain what business officials can do to promote safety.

Major contents: The video will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that business officials can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets
- Drinking and riding

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking

- Roadway maintenance

§ Funding countermeasure programs

§ Distributing information to employees

§ Encouraging government leaders to develop and/or implement bicycle safety programs

§ Encouraging the public to support bicycle safety programs

§ Providing on-site facilities (showers, parking, etc.)

§ Providing information to clients

A companion brochure is also proposed.



Video promoting bicycle safety by engineering and planning groups

Summary description: This video will be designed to motivate engineering and planning groups to promote bicycle safety. The video will describe common bicycle/motor vehicle crashes and explain what engineers and planners can do to promote safety.

Major contents: The video will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that engineers and planners can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking
- Roadway maintenance

- § Enacting ordinances
- § Generating publicity
- § Working with planners, builders and engineers
- § Designing neighborhoods for bicycle safety
- § Implementing traffic calming methods
- § Designing low-speed intersections
- § Providing on-street facilities
- § Providing off-street facilities

A companion brochure is also proposed.



Conducting community audits (a package of three brochures)

Summary Description: These three separate brochures will aid parents, police and engineering personnel to conduct simple but productive audits of neighborhoods, an entire community or a specific crash site to identify and, when possible, eliminate safety hazards to bicyclists.

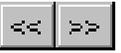
Major contents: There is not a high correlation between the locations that look hazardous to the casual observer and the locations where bike related crashes actually occur. Among the most important situations are those in which visual obstructions limit sight distance at intersections of roadways or intersections of roadways and driveways. The brochures will focus on the following:

- § Obtaining local crash data to identify potential high crash locations
- § The major hazards that are readily observable and “auditable”
- § Factors that contribute to inadequate sight distance
- § Sight distance standards
- § Procedures for measuring sight distance
- § Roadway maintenance problems
- § Roadway parking
- § Roadway speed--posted and actual
- § Hazardous turning movements for motor vehicles and bicycles
- § Traffic volume
- § Signal adequacy and functioning
- § Railroad tracks
- § Lighting, competing glare
- § Visual clutter and its impact on crash generation

§ Methods and procedures for reducing risk at locations where risk is found to be high.

§ Reporting procedures-- local and state agencies that should be contacted for assistance in identifying and implementing risk reduction methods

Companion videos are also proposed.



Brochure on visual screens for owners of roadside businesses

Summary description: This brochure will describe the dangers of visual screens that prevent drivers and bicyclists from seeing each other and the sight angles needed for adequate viewing. The brochure will be designed to teach and motivate owners of roadside businesses to remove visual obstructions located on their property. Such a document could be handed out by police officers or zoning officials.

Major contents: The brochure will encourage owners of roadside businesses to remove signs, vegetation, or other objects that obstruct the view of vehicle operators who are approaching or exiting commercial driveways. The following topics will be covered:

- § Incidence and consequences of crashes for which inadequate sight distance is a contributing factor
- § The particular problems of businesses that are served by a commercial driveway or alley
- § Sight distance standards
- § Types of objects and situations that limit sight distance such as newspaper boxes, low hanging street signs and overgrown vegetation
- § Simple procedures for measuring sight distance
- § The business owner's legal liability in the event of a crash that is caused, wholly or in part, by a visual obstruction located on the business owner's property.



Brochure providing road sharing information for motorists

Summary description: This brochure will provide information for motorists regarding sharing the road with bicyclists.

Major contents: The brochure will cover the following main topics:

- § Advantages of bicycling
- § Vulnerability of the bicyclist
- § The child bicyclist
- § Bicyclist conspicuity
- § Legal rights and responsibilities
- § Roadway and weather hazards
- § Communicating
- § Intersections
- § Alleys and driveways
- § Passing the bicyclist
- § Making turns
- § Night driving
- § Parking

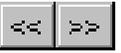


Brochure on the midblock rideout crash type for homeowners

Summary description: This brochure will describe the midblock rideout crash problem and explain what homeowners can do to help solve the problem. It will be suitable for distribution by real estate agents, utility company workers and others who deal with homeowners, particularly those who move into new neighborhoods.

Major contents: The brochure will cover the following topics:

- § The midblock rideout crash
 - What happens
 - Age group typically involved
- § Removing visual screens
 - Vegetation
 - Fences
 - Parking
- § Blocking the driveway
- § Supervising small children
- § Assuring that the bicyclist is conspicuous



Brochure promoting bicycle safety by parents

Summary description: This brochure will be designed to motivate parents to promote bicycle safety. The brochure will describe common bicycle/motor vehicle crashes and explain what parents can do to promote safety.

Major contents: The brochure will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that parents can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking
- Roadway maintenance

- § Critical need for child supervision
- § Removing visual screens from property
- § Blocking driveways
- § Assuring helmet use
- § Assuring conspicuity
- § Working with schools to develop and implement countermeasures

A companion video is also proposed.



Brochure promoting bicycle safety by community and civic organizations

Summary description: This brochure will be designed to motivate community and civic organizations to promote bicycle safety. The brochure will describe common bicycle/motor vehicle crashes and explain what community and civic organizations can do to promote safety.

Major contents: The brochure will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that community and civic organizations can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets
- Drinking and riding

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking

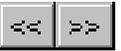
- Roadway maintenance

§ Generating funding for countermeasure programs

§ Distributing information to family and friends

§ Encouraging government leaders to support bicycle safety programs

A companion video is also proposed.



Brochure promoting bicycle safety by elected officials

Summary description: This brochure will be designed to motivate elected officials to promote bicycle safety. The brochure will describe common bicycle/motor vehicle crashes and explain what elected officials can do to promote safety.

Major contents: The brochure will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that elected officials can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets
- Drinking and riding

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking

- Roadway maintenance

§ Generating publicity

§ Working with planners, builders and engineers

A companion video is also proposed.



Brochure promoting bicycle safety by traffic court judges

Summary description: This brochure will be designed to motivate traffic court judges to promote bicycle safety. The brochure will describe common bicycle/motor vehicle crashes and explain what traffic court judges can do to promote safety.

Major contents: The brochure will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that traffic court judges can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets
- Drinking and riding

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking

- Roadway maintenance

§ Need to impose sanctions

§ The full range of sanctions for motorist and bicyclist violations

§ Sanctions that can be imposed on parents of young bicyclists

§ Relative effectiveness of alternate sanctions

A companion video is also proposed.



Brochure promoting bicycle safety by health care officials

Summary description: This brochure will be designed to motivate health care officials to promote bicycle safety. The brochure will describe common bicycle/motor vehicle crashes and explain what health care officials can do to promote safety.

Major contents: The brochure will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that health care officials can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets
- Drinking and riding

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking

- Roadway maintenance

§ Countermeasures that reduce crash severity

§ Benefits to be realized from crash and injury reduction

§ Obtaining bicycle crash data

A companion video is also proposed.



Brochure promoting bicycle safety by first responders

Summary description: This brochure will be designed to motivate police and emergency medical services to promote bicycle safety. The brochure will describe common bicycle/motor vehicle crashes and explain what first responders can do to promote safety.

Major contents: The brochure will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that first responders can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets
- Drinking and riding

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking

- Roadway maintenance

§ Providing a teachable moment

§ Obtaining needed enforcement data

§ Obtaining needed medical data

§ Supporting countermeasure programs--rodeos, helmet promotions, etc.

A companion video is also proposed.



Brochure promoting bicycle safety by pre-school administrators

Summary description: This brochure will be designed to motivate pre-school administrators to promote bicycle safety. The brochure will describe common bicycle/motor vehicle crashes and explain what pre-school administrators can do to promote safety.

Major contents: The brochure will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that pre-school administrators can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

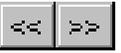
§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking
- Roadway maintenance

§ Identifying appropriate countermeasures for the pre-school child

§ Working with parents to implement countermeasures

A companion video is also proposed.



Brochure promoting bicycle safety by elementary, middle and high school administrators

Summary description: This brochure will be designed to motivate school administrators to promote bicycle safety. The brochure will describe common bicycle/motor vehicle crashes and explain what school administrators can do to promote safety.

Major contents: The brochure will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that school administrators can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking

- Roadway maintenance

- § Importance of bicyclist education
- § Working with parents to implement countermeasures
- § Establishing safe routes to school
- § Implementing in-school training programs
- § Implementing other countermeasure programs, e.g., helmet programs
- § Providing school facilities--lockers, parking, etc.

A companion video is also proposed.



Brochure promoting bicycle safety by college administrators

Summary description: This brochure will be designed to motivate college administrators to promote bicycle safety. The brochure will describe common bicycle/motor vehicle crashes and explain what college administrators can do to promote safety.

Major contents: The brochure will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that college administrators can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets
- Drinking and riding

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking

- Roadway maintenance

- § Setting bicycle rules
- § Designing pedestrian-bike paths
- § Indoctrinating students
- § Providing on-campus parking, lockers, etc.
- § Using bicycle patrols
- § Collecting bicycle crash data
- § Reporting data in campus media
- § Handling motorist and bicyclist violations

A companion video is also proposed.



Brochure promoting bicycle safety by corporate business officials

Summary description: This brochure will be designed to motivate corporate business officials to promote bicycle safety. The brochure will describe common bicycle/motor vehicle crashes and explain what business officials can do to promote safety.

Major contents: The brochure will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that business officials can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets
- Drinking and riding

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

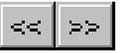
§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking

- Roadway maintenance

- § Funding countermeasure programs
- § Distributing information to employees
- § Encouraging government leaders to develop and/or implement bicycle safety programs
- § Encouraging the public to support bicycle safety programs
- § Providing on-site facilities (showers, parking, etc.)
- § Providing information to clients

A companion video is also proposed.



Brochure promoting bicycle safety by engineering and planning groups

Summary description: This brochure will be designed to motivate engineering and planning groups to promote bicycle safety. The brochure will describe common bicycle/motor vehicle crashes and explain what engineers and planners can do to promote safety.

Major contents: The brochure will be initiated with an overview of common bicycle/motor vehicle crashes and their dangers. This section will be followed by activities that engineers and planners can perform to improve bicycle safety. Topics to be covered include:

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets

§ How motorist actions cause crashes

- Improper turns and search failures
- Driving too fast
- Drinking and driving

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking
- Roadway maintenance

- § Enacting ordinances
- § Generating publicity
- § Working with planners, builders and engineers
- § Designing neighborhoods for bicycle safety
- § Implementing traffic calming methods
- § Designing low-speed intersections
- § Providing on-street facilities
- § Providing off-street facilities

A companion video is also proposed.



Brochure to discourage nighttime riding

Summary description: This brochure will discourage nighttime riding and will provide information on bicycle lighting equipment that is needed when night riding takes place. It will likely be most effective if directed to specific audiences and locations.

Major contents: The brochure will include the following:

§ Discouragement of night bike riding in the community.

§ Information about bicycle lighting equipment that is essential when night riding simply cannot be avoided.

§ Samples of information and illustrations that should be provided to the media.

§ Other means for getting the message to bicyclists and to the parents of young bicyclists.



Model bicycle owner's manuals--one for adults, one for parents of small children

Summary description: At least 50% of all bicycle crashes could be prevented with just a few cautionary steps. Use of a helmet at all times when riding could prevent up to 75% of fatal and permanent injuries. Proper clothing and night lighting could prevent up to 30% of serious crashes. Information related to defensive riding skills could help eliminate up to 70% of adult crashes. Owners manuals need to be interesting so that bicyclists will be motivated to read them. There will be two 15 to 20 page manuals--one for adults and one for parents of children. They will be created as models for manufacturers and distributors to adopt as guides to be read before riding. Exceptionally powerful graphics, fun and simple-to-understand text will be developed and made available to all manufacturers to adopt and incorporate on their bikes. Other copy will be adapted for parts and equipment manufacturers for other point of purchase distribution. Fun activities will be included for parents and children to read and practice together.

Major contents: The manuals will include the following information:

- § The best ways to stay healthy on a bike
- § Helmets
- § Clothing, seeing and being seen
- § Defensive riding--what will go wrong, how to see it before it happens
- § Proper skills development
- § Riding with the flow
- § Neighborhood tips
- § Commercial street tips
- § Touring and bike path tips
- § Parent activities with children



Responses to queries on bicycle safety

Summary description: This guide will be designed for pedestrian/bicycle coordinators at the state and local levels as well as CTSPs/CTSTs. It will explain how to design, produce and maintain current, accurate information on various aspects of bicycle safety in order to be able to provide up-to-date information to the media upon request. It will consist of shells that can be filled out locally as events occur and kept current.

Major contents: Shells will be developed for the following:

§ Fatalities

- National statistics
- Local statistics
- Age-related statistics
- Last local fatality--crash type, location, date of occurrence, bicyclist age/sex, precipitating factors
- Corrective actions taken

§ Helmets

- National use
- Local use
- National fatality/injury data
- Local fatality/injury data
- State/local laws
- Last local crash--crash type, location, date of occurrence, bicyclist age/sex, precipitating factors
- Corrective actions taken

§ Child crashes

- National crash data

- Local crash data

- Last local crash--crash type, location, date of occurrence, bicyclist age/sex, precipitating factors

- Corrective actions taken

§ Alcohol involvement--motorist and bicyclist

- National crash data

- Local crash data

- Last local crash--crash type, location, date of occurrence, bicyclist age/sex, precipitating factors

- Corrective actions taken

§ Nighttime crashes

- National crash data

- Local crash data

- Last local crash--crash type, location, date of occurrence, bicyclist age/sex, precipitating factors

- Corrective actions taken

§ Conspicuity

- National crash data

- Local crash data

- Last local crash--crash type, location, date of occurrence, bicyclist age/sex, precipitating factors

- Corrective actions taken

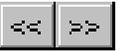
§ Wrong-way riding

- National crash data

- Local crash data

- Last local crash--location, date of occurrence, bicyclist age/sex, precipitating factors

- Corrective actions taken



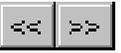
Residential traffic calming guidelines

Summary description: This guide will provide engineers and planners with essential background and elements to make residential streets and intersections safer and less of an interruption for walking and bicycling. Many conventional neighborhood streets and intersections pose risks to people wishing to walk or bicycle. Due to the extreme width of intersections and fast speed of traffic, children often run across or ride through residential intersections. Overly wide design of streets and intersections and the increased failure of traffic handling capacity on major streets increase motorist volume and speed in neighborhoods. Many neighborhood streets often exceed the 15% speeding tolerance. Law enforcement cannot ticket high percentages of speeders. Speeding greatly increases injury and fatality rates. Motorists traveling appropriate speeds (20 mph) rarely injure or kill those they hit (5% fatalities). Motorists traveling 40 mph take the life of 83% of the people they hit. Many residents know of the dangers of these unsafe speeds. They restrict their own walking or bicycling or the walking and bicycling of family members. They also often ask for unwarranted stop signs or signals or speed humps. Once installed these unwarranted signs, signals and humps push the problems to adjacent streets or lead to other problems in the neighborhood, such as increased speeding in other locations. Properly designed and placed traffic calming devices have been shown to be effective in reducing speeding and unwarranted traffic volumes.

Major contents: This guide will feature easy-to-implement examples to calm neighborhood intersection and mid-block traffic. Traffic calming principles and procedures will be provided. Sample plans, drawings, sketches, photos of typical intersection and mid-block solutions will be provided. The guide will illustrate and provide language for handling design, operations, maintenance, liability, pre and post testing and related issues. Over 30 designs will be provided. Best applications of each design will be detailed. Appropriate documentation will be cited for background on acceptability of these traffic calming designs. References and case studies will be cited. Details will include the following:

- § Neighborhood traffic management
- § Measurement and application of speed, volume flow rates, traffic distribution
- § Gateways, roundabouts, mini-circles and other intersection treatments
- § Bulbouts, neckdowns
- § Emphasis on horizontal shift features, use of illusions to calm traffic
- § Medians, refuge islands, other channeling and deflection

- § Use of trees, ground cover, other landscaping
- § Proper uses of stop signs and signals
- § Emergency responder friendly designs
- § Signing, pavement markings, street lighting
- § Sample code and technical applications
- § Snow removal, emergency response planning, other operations
- § Improper uses of traffic calming devices
- § Citizen's self audit checklist to determine if warrants are met



Guide to four-lane to three-lane street conversion

Summary description: This guide will detail the opportunity to compress a four-lane undivided roadway into three lanes, with bike lanes. Many four-lane roadways have operating characteristics and volumes that allow improved safety and operations by compressing through lanes. Typical four-lane roads often lack bike lanes. Bicyclists using the roadway travel lanes are at heightened risk. Bicyclists using sidewalks are at risk at each driveway. These bicyclists also impede or endanger the movements of pedestrians. A number of cities have compressed four-lane roads to two lanes, picking up a center scramble lane and adding bike lanes. Often this results in far safer bicycling, walking, motoring and transit conditions, aids people getting in and out of their driveways, and reduces speeding.

Major contents: The guide will detail the before and after typical sections of various four-lane to three-lane conversions. Tables will be built to explain when the roadway can be successfully converted. Spacing of signals, average daily traffic, peak hour traffic, frequency of driveways, block lengths and other factors will be considered. If possible, an equation and other analytic tools will be created to aid the engineer in determining when the adaptation will improve overall conditions. Details will include:

- § Typical sections (before and after)
- § Use of refuge islands
- § Analytic tools
- § How to design to assist emergency responders
- § Improvements for bicyclists
- § Improvements for pedestrians
- § Case studies (before/after speeds and operations)
- § When the application works
- § When further analysis is needed
- § When the application will not work
- § Benefits to motorists, bicyclists, pedestrians, residential property owners, businesses

§ References

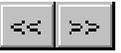


Guide to improved urban area street lighting

Summary description: This guide will detail the problems faced by motorists, pedestrians and bicyclists who use collector and arterial roadways during night conditions. In most states, over 40% of all fatal bicyclist, pedestrian and motorist crashes occur under low light conditions. There are many instances where motorists (driving over 30 mph) are not given sufficient street lighting to successfully detect a bicyclist in time to avoid tragedy. This guide will clearly explain how to measure and provide adequate urban collector and arterial street lighting.

Major contents: The guide will take the base language of existing lighting manuals and combine it with the needs of motorists to successfully detect pedestrians and bicyclists. There is little or no guidance on how much lighting is needed for various speeds of night driving for detection of pedestrians and bicyclists. The research has been completed and needs documentation. Among the many lighting conditions that must be addressed are the following:

- § Typical lighting, basic design principles
- § Measuring lighting to meet performance measures addressing pedestrian and bicycling activity
- § Lighting and tree canopies and other screening
- § Competing glare lighting, standards to reduce glare and competition
- § Maintenance agreements
- § Additional lighting concepts
- § Case studies (before/after speeds and operations)
- § References

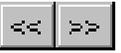


Guide to identifying high risk locations

Summary description: This guide will assist the highway professional in assessing roadway safety. The guide will be usable for single streets or for a street complex. Information will be provided in lay terms so that volunteers can assist with street safety performance measurements. Many cities have no way of measuring and assessing their high risk bicycling locations. To wait until a tragedy occurs is socially unacceptable and fails to provide meaningful numbers.

Major contents: This document will guide the professional and volunteer through a series of decisions to weigh the relative safety of a street, or set of streets, for bicycling. The guide will make use of existing research and practical evaluations. It will create an “if, then” format and will direct the community to those roadways most in need of upgrading. Details will include:

- § Typical widths, average daily traffic, speed, sight distances, maintenance conditions (rating)
- § Evaluation forms and a guide to their use
- § How to conduct an audit
- § Evaluating the audit
- § Assembling priority improvements
- § Risk management and tort liability issues
- § Case studies (before/after speeds and operations)
- § References



Guide to creating bicycle boulevards

Summary description: This guide will assist the highway professional in creating quiet, pleasant bicycle thoroughways that form a bicycle arterial system along tree-shaded neighborhood streets. Many novice and skilled commuter bicyclists would avoid major roadway corridors for a large part of their trip if well-connected streets could be improved for bicycling. Bicycle boulevards create a through condition for bicyclists, but interrupt motorist trip continuity. Techniques such as traffic calming and partial street closures allow engineers to create through conditions for bicyclists, while diverting motorists back to the main travel ways. Well designed bicycle boulevards can increase bicycling and reduce the number and speed of conflicts.

Major contents: This document will provide guidance on the uses and applications of bicycle boulevards. Both a planning and a design section will be included. Key ingredients, such as pavement quality, street width, use of tree canopies, security, overall attractiveness, connectivity and efficiency will be addressed. Design features, such as the use of diagonal, star and other diverters, and partial street closures will be detailed. Case studies and sample conversions will be featured. Details will include the following:

- § Background on bicycle boulevard treatments and needs
- § Safety benefits, cost benefit analysis
- § Proper marking and signing techniques
- § Planning criteria
- § How to work with neighborhood leaders to establish boulevards
- § Evaluating a proposed section for security, maintenance and operations
- § Performance measures for boulevards
- § Overcoming typical problems of retrofitting
- § Case studies (before/after)
- § References



Separated grade crossings--Guide to overpass, bridge and tunnel placement and design

Summary description: This guide will assist the highway professional in creating safer movements by bicyclists and pedestrians through and across complex intersections, waterways and other barriers. Bridges, overpasses and tunnels require expensive treatments that can reduce serious crashes, but only in a few locations. The desire to stay at grade to cross a roadway, security issues, trail alignment and many other complex issues drive whether a given overpass, bridge or tunnel will be successful. When it comes to crossing a river, creek, wide portion of a lake, railroad yard or other significant barrier, a bridge or tunnel is the major issue.

Major contents: Bridges, tunnels and overpasses must be well planned and designed. This document will detail places where these structures are most likely to work and places where they are likely to fail. Design details include geometrics, operations and maintenance. Ways to retrofit existing bridges and tunnels will be provided. Details will include:

- § Background on use of structures to reduce intersection crashes
- § Overpasses--where they work, where they fail
- § Keys to successful tunnels
- § Security issues and how to overcome troublesome locations
- § Affordable designs, trail alignments
- § ADA issues with bridges, tunnels and overpasses
- § Overcoming typical problems of retrofitting bridges and tunnels
- § Improvements to existing bridges to aid bicyclists
- § Maintenance of existing bridges and overpasses
- § Lighting, control of wind, and other environmental factors
- § Case studies (before/after)

§ References

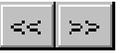


Traffic calming main street and the central business district

Summary description: This guide will assist the highway professional in creating safer downtown areas and central business districts, thereby welcoming more bicycle and foot traffic. Traffic calming measures greatly benefit bicyclists by reducing overall travel speeds. However, many designs being proposed create "pinch points" for bicyclists, forcing them into compromising positions with motorists.

Major contents: Successful methods to plan and implement bicycle friendly traffic calming features will be detailed. The use of innovative techniques such as half-bulbs, special chicanes, intersection markings, adapted roundabouts, and other techniques will be developed. There will be many locations where speeds can be achieved where bicyclists need no special provisions. Performance measurements will be provided for rating various treatments and corridors. Details will include the following:

- § Background on use of traffic calming to reduce intersection and midblock crashes
- § Common complaints by bicyclists with traffic calming, and ways to correct these problems
- § Design adaptations for bulbouts, medians, midblock diverters, etc.
- § Channeling bicyclists through roundabout intersections
- § Use of bike lanes on traffic calmed streets
- § Lane widths and other appropriate details
- § Assisting bicyclists through intersections
- § Diagram of conditions for bicyclists before and after traffic calming a street corridor
- § Case studies (before/after)
- § References



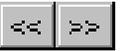
Guide to creating safer neighborhoods

Summary description: This guidebook will provide a neighborhood street planning tool. Many bicycle crashes occur on quiet, low or moderate traffic neighborhood streets. These places feel benign to many bike riders. Poor sight distances, speeding, overly wide streets and intersections, poor maintenance and operations, and a number of other conditions lead to hazardous roadways. This guide will assist the citizen and professional in creating safer neighborhoods.

Major contents: A guide and its accompanying video that were prepared for the City of Seattle and entitled Making streets that work (Local Government Commission, 1414 K Street, Suite 250, Sacramento, CA 95814-3929) will serve as a model. It will be studied, evaluated and adapted for national use. Details will include:

- § Background on the motorist, bicycle and pedestrian safety problem in neighborhoods
- § Citizen's guide to bringing change
- § How to evaluate and detect unsafe conditions
- § How to find a solution to unsafe conditions
- § How to work with engineering staff to bring change
- § Twenty to thirty improvements (one page per change)
- § Case studies (before/after)
- § References

This guide might benefit from a companion video.



Model development codes for traffic-calmed streets

Summary description: Most neighborhoods in America are experiencing high traffic volumes and speed on local streets. This problem is increasing as motorists seek ways to "rat run" around ever increasing traffic snarls, or simply to make better time through their own neighborhoods. This creates unsafe conditions for children wishing to ride their bikes or walk to nearby parks, schools, and the houses of friends. Many parents now drive their children to these common destinations, adding to the already higher volumes of traffic. This guide will summarize the best traffic calming principles and code developments in America.

Major contents: The guide will provide language and drawings that allow communities to alter existing streets or make improvements to new ones in the site review process. An emphasis will be given to the process of traffic calming. Details will include the following:

- § Traffic calming principles
- § Sample policy and procedure
- § Sample code text for various street retrofitting needs
- § Sample code text for various new street designs
- § Relevant research
- § Case studies (before/after)
- § References



Neighborhood development guidelines

Summary description: This graphically rich guide will provide developers and planners with the elements needed to make both conventional and traditional neighborhoods friendly for low-speed well-distributed traffic circulation. This guide will feature ways to make neighborhoods more friendly for walking and bicycling, reduce motorist speed and improve quality of life. The two types of neighborhoods may be described as follows:

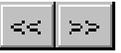
§ Conventional neighborhoods are characterized by wide streets, long blocks, strong road hierarchy and lack of sidewalks and trails. The design significantly reduces walking and bicycling, and leads to higher numbers and severity of injuries to motorists, bicyclists and pedestrians. They often have streets and intersections that are overly wide, abundant off street parking, and many driveways (every 75-125 feet). Children and adults have to walk or bicycle long distances through wide, high-speed intersections to get to common destinations. Most children are bused or driven to school, parks, stores and other attractions. Added driving by parents increases traffic volumes, further reducing the desire and ability to walk and bicycle.

§ Traditional neighborhoods are anti-sprawl center town or suburban development. They are characterized as people oriented places with moderate housing densities. They have medium or small lots, narrow streets, short blocks, well-dispersed traffic, lack of cul-de-sacs, and abundant sidewalks and trails. This pattern of design enhances walking and bicycling, and leads to lower numbers and severity of injuries to motorists, bicyclists and pedestrians. Speeding is rare and few, if any, driveways are present. Garages are typically found at the back of properties. Children and adults walk or bicycle comfortable distances to nearby parks, schools, stores, churches and other neighborhood attractions. Trails connect to other neighborhoods common destinations. Parents are comfortable having their children walk or bicycle to most destinations.

Major contents: This guide will feature easy-to-implement examples to upgrade neighborhood designs. Drawings, sketches and photographs will be included as will checklists for site planning. AASHTO, ITE, NHB and other documentation will be cited for background on acceptability of alternate designs. References and case studies will be cited. The following topics will be covered:

§ Shared driveways

- § Trail easements
- § Frequency, size and locations of neighborhood parks
- § Connections to other neighborhoods
- § Sidewalk widths and locations
- § Nature strips, tree canopies, street edges
- § T-intersections emphasized over 4-cross intersections
- § Fine grained street system (short blocks to curtail speed)
- § Use of loop roads and British Close vs. cul-de-sacs
- § Driveway site distances and setbacks for vegetation and fences
- § Corner sight triangles
- § Avoiding visual screens
- § The relationship of homes to the street
- § Sample code
- § Check off guide for site plan reviews
- § Case study developments using various price ranges, sales, home value



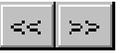
Commercial site planning

Summary description: Today many major highways and commercial properties lack proper planning for driveways, interior circulation and roadway median and turn lane control. Unexpected turns by motorists place the motoring, walking and bicycling public at risk. Poorly planned and designed highways lead to a loss of safety, efficiency and aesthetics. This reduces the desire to walk, use transit or ride bikes to many destinations. The net result is an increase in congestion. This guide will provide a checklist format for aiding the commercial property site plan review.

Major contents: The reader will be led through a screening of quality walking, bicycling and quality of life measures. The guide will feature ways to make commercial strip development more friendly for walking, transit and bicycling. The guide will assist reviewers and developers in assessing performance measures for safe, secure, interactive, physically active, commercial space. Careful application of the guide can lead to a 50% reduction in crashes, and a doubling of walking and bicycling activity. The guide will employ a checklist format, driven by photographs, patterns, line drawings and other simple-to-follow text and graphic aids. The guide will reference documents to aid the developer in upgrading and speeding up the project review. The following topics will be covered:

- § Shared driveways
- § Interior circulation of traffic among businesses
- § Rear access by trail easements
- § Bike lanes and other main road and side road typical designs
- § Building setbacks (pull forward)
- § Connections to neighborhoods
- § Sidewalk widths and locations
- § Nature strips, tree canopies, street edges
- § Tee intersections emphasized over 4-cross intersections
- § Narrow streets, compact intersections
- § Adequate night lighting

- § Use of loop roads and British Close vs. cul-de-sacs
- § Driveway site distances and setbacks for vegetation at driveway locations,
- § Corner sight triangles
- § Avoiding visual screens
- § Mixed land uses, credits and densities
- § Public space, green, brownfield development,
- § Minimizing and location of parking
- § Pedestrian access from the street in large site plans
- § Transit stops, waiting areas
- § References



Bicycle improvements for collector and arterial roadways

Summary description: This guide will detail the problems faced by bicyclists using collector and arterial roadways. The document will set a philosophy that the more the traffic volume and speed, the greater the need to provide supportive facilities, such as bike lanes, and intersection improvements. Bicyclists encounter higher potential for severe injury when speed differentials are greatest. Motorists have less time to detect and react to bicyclists. In poor weather or poor lighting conditions, motorists are especially challenged.

Major contents: The guide will take the base language of the newly approved language for the AASHTO, Guide for the development of bicycle facilities, other language from ITE, APWA, and other documents. It will highlight the 22 benefits of bike lanes to highway users, and build a solid case for upgrading most collector and arterial urban roadways to be bicycle friendly. The following topics will be covered:

- § Typical sections
- § Basic principles
- § Tort liability and benefits of this approach
- § Improved operations, maintenance
- § Detailed explanation of benefits to bicyclists, motorists, pedestrians, businesses, etc.
- § Analytic tools
- § How to adapt existing roads
- § How to assist emergency responders
- § Case studies (before/after speeds and operations)
- § References

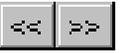


Best techniques for bicycle operations

Summary description: This guide will assist the highway professional in improving intersections and conflict points where motorists, pedestrians and bicyclists are each impacted. The guide can be used for collectors and arterials, as well as for complex commercial driveways. Nearly 80% of all bicycle/motor-vehicle crashes occur at intersections. The speed, volume and complexity of these conflicts can be reduced through improved operations.

Major contents: The movement of motorists and bicyclists is laid out in numerous manuals but many design details for reducing bicycle/motor-vehicle crashes are lacking. This guide will focus engineers' attention on special curative solutions to behavioral and conflict conditions. Numerous diagrams will be used in the guide. The following topics will be covered:

- § Background on intersection movements and needs
- § Description of turning and through movements
- § Best techniques for moving bicyclists through an intersection
- § Best techniques for moving bicyclists around transit
- § Best techniques for moving bicyclists across complex commercial driveways
- § Best techniques for moving bicyclists through channelized intersections
- § Best techniques for left hand turns, box left hand turns, etc.
- § Best techniques for moving bicyclists through complex intersections
- § Best techniques for moving bicyclists through roundabouts
- § Performance measures for intersection operations
- § Case studies (before/after)
- § References



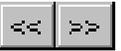
Improved roadway maintenance

Summary description: This guide will detail the problems faced by bicyclists and motorists using collector and arterial roadways that are poorly maintained. Bicycles are subject to roadway surface conditions. Seams, uneven utility caps, improperly matched pavement overlays, potholes, spilled concrete, fissures and many other objects cause bicyclists to swerve suddenly, or risk falling. Bicyclists do not always detect these imperfections in time to avoid trauma. Bicyclists have special problems detecting these imperfections in low-light or night conditions.

Major contents: This document will take the base contents of existing maintenance manuals and guides, extract relevant language, and modify it to accommodate safe bicycling. Maintenance manuals rarely cover the highly specialized needs of bicyclists. This document will provide considerable aid to construction and maintenance staff in setting performance measures. It will also provide tips on how to better maintain roadways through improved design and how to phase regular and periodic maintenance, such as sweeping. The following topics will be covered:

- § Typical maintenance practices and principles
- § Overview of bicycling stability, bicycle control
- § Common maintenance performance measures
- § Adding bicycling to these performance standards
- § Maintenance agreements
- § Leaf, debris and snow removal practices
- § Resurfacing practices, milling, resetting utility caps
- § RR track crossing maintenance
- § Case studies (before/after speeds and operations)
- § References

This guide would benefit from a companion video.

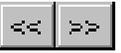


Bike lanes and paved shoulders

Summary description: This guide will assist the highway professional in improving higher volume, higher speed roadways where motorists and bicyclists are in conflict. Bike lanes and paved shoulders have the potential to reduce the most serious bicycling injuries. The guide can be used for collectors and arterials. Nearly 40% of all bicycle/motor-vehicle fatal crashes are on higher speed (above 30 mph) roadways. There are no documents that serve the average engineer in building a case for paved shoulder and bike lane improvements. There are more than 22 benefits to motorists in having bike lanes or paved shoulders added to a roadway.

Major contents: This document will provide guidance on the uses and applications of bike lanes and paved shoulders. Special types of bike lanes and paved shoulders will also be presented. The planner and engineer will better understand the benefits of using these facility treatments, and the criticality of using them on certain types of roadways. The following topics will be covered:

- § Background on bike lanes/shoulders and needs
- § Safety benefits, cost benefit analysis
- § Description of 22 benefits
- § When to mark bike lanes, when to leave unmarked
- § Planning a paved shoulder and bike lane system
- § Proper marking and signing techniques
- § Performance measures for bike lane operations
- § Adding bike lanes or paved shoulders during resurfacing or reconditioning projects
- § Overcoming typical problems of retrofitting

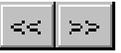


Residential intersection guidelines

Summary description: This graphically rich guide will provide developers and planners essential background and elements to make residential intersections safer and less of an interruption for walking and bicycling. Many conventional intersections pose risks to children and others wishing to walk or bicycle in their neighborhoods. Due to the extreme width of intersections, children often ride through residential intersections without a proper search. This behavior accounts for up to 30% of all bicycle-related traffic fatalities to children under age 14. Wide intersections generate high travel and turning speeds, can be an impediment to walking, and pose serious problems for people with disabilities. Many residents know of the dangers of these unsafe intersections and often ask for unwarranted stop signs or signals. Once installed these unwarranted signs and signals lead to other problems in the neighborhood, such as increased speeding, and channeling traffic to other streets.

Major contents: This document will feature easy-to-implement examples to create neighborhood intersection designs. Example drawings, sketches, photographs and typical intersections will be provided. The guide will illustrate and provide language for intersection sight triangles, entry angles, acceptable entry grades, examples of combining shared driveways, etc. AASHTO, ITE, NHB, National Fire Code (NFC), transit operations and other documentation will be cited for background on acceptability of these alternate intersection designs. References and case studies will be cited. The following topics will be covered:

- § T-intersection design and preference
- § Four-cross alternative, various street widths, typicals
- § Sidewalk ramps, locations, setbacks
- § Sight triangles for near/far approaches, transit stops
- § Relationship to sidewalks, planting strips, tree canopies, street edges
- § Building, vegetation, parking, fencing setbacks for corner locations,
- § Landscaping, acceptable fence treatments, ground cover, tree locations and types
- § Sample code
- § Check off guide for site plan reviews



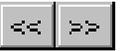
School site plans

Summary description: This graphically rich guide will provide engineers, planners, architects and landscape architects with essential background and elements to make school sites, school zones and residential streets and intersections safer and less of an interruption for walking and bicycling. Many neighborhood streets and intersections pose risks to children and others wishing to walk or bicycle to their schools. Due to the extreme width of intersections and fast speed of traffic, children often run across or ride through residential intersections. Many parents feel it is unsafe for their children to walk or ride their bikes, and they drive their children to and from school, creating unsafe and uncomfortable conditions for those children who wish to or need to walk or ride their bikes. Many school site designs, especially for non-public and parochial schools do not properly accommodate a mixture of school buses and pedestrian and bicycle traffic.

Major contents: This guide will feature easy-to-implement examples to properly site a school, provide for adequate and separate school bus loading areas, separate and circulate different types of traffic, calm neighborhood intersections and mid-block traffic. Traffic calming principles and procedures will be provided. Example plans, drawings, sketches, photographs and typical intersection and mid-block solutions will be provided. The guide will illustrate and provide language for handling design, operations, maintenance, liability, pre- and post-testing and related issues. Designs for various types of schools and neighborhoods will be provided. Best applications of each design will be detailed. AASHTO, ITE, NHB, MUTCD, National Fire Code (NFC), transit operations and other documentation will be cited for background on acceptability of these school-related designs. References and case studies will be cited. The following topics will be covered:

- § School site planning
- § Interior traffic circulation plans and models
- § Traffic management
- § Measurement and application of speed, volume flow rates, traffic distribution
- § Use of common traffic calming features, including gateways, roundabouts, mini-circles, speed tables, raised intersections, medians
- § Bulbouts, neckdowns
- § Emphasis on horizontal shift features, use of illusions to calm traffic

- § Use of trees, ground cover, other landscaping
- § Emergency responder friendly designs
- § Signing, pavement markings, street lighting
- § Sample code and technical applications
- § Snow removal, emergency response planning, other operations
- § Staging drop-offs to minimize pedestrian conflicts
- § Effective speed controls
- § Pedestrian access, sidewalks, buffers, sight triangles
- § Planning the safe route to school
- § Bicycle storage
- § Placement of trails, connections
- § Relevant research
- § Case studies (before/after)
- § References



Access management

Summary description: This guide will assist highway planners and engineers in creating safer routes of travel along principal roadways. It will emphasize a reduction in the number of driveways, the removal of driveways from unsafe locations, and the use of medians and other techniques to reduce arterial and collector street crashes. Bicyclists are often at higher risk on urban and suburban arterials due to the great frequency of turning movements. Accessed-managed roadways greatly reduce the speed of turning conflicts, the removal of unsafe turning locations and the number of turning conflicts.

Major contents: This document will provide guidance on the need for curbs and gutters on all collectors and arterials. The need for well placed driveways to minimize conflicts, the proper location of sidewalks, sight triangles and other features will be detailed. Access management improves the overall performance (safety, aesthetics and efficiency) of a roadway. The many benefits to bicyclists, motorists and adjacent property owners will be detailed and illustrated in a before and after diagram. Details will be provided for converting a poorly access-managed roadway into a moderately or well-managed roadway. Guidance on control of turning speeds, separating conflicts through driveways channels, and other techniques will be graphically presented. The following topics will be covered:

- § Background on access management treatments and needs
- § Safety improvements
- § Proper driveway locations, internal traffic circulation
- § Places not to put driveways, and why
- § Proper sidewalk and trail locations
- § ADA compliance with driveways
- § Corner sight triangles
- § Proper radii for street design speed (table, chart, graphics)
- § Use of channelized islands, and right-in, right-out only
- § Use of dedicated right turn lanes, proper geometrics
- § Use of the "Hague" traffic calmed driveway for major entries

- § Use of medians, refuge islands, spacing
- § Overcoming typical problems of retrofitting
- § Overcoming stakeholder resistance
- § How to "sell" the many benefits of access management
- § Code and code enforcement
- § Reviewing site plans
- § Case studies (before/after)
- § References



Channelized turn lanes

Summary description: This guide will assist highway planners and engineers in creating safer movements by motorists, pedestrians and bicyclists through and across dedicated right turn channelized islands, and at center island locations. Current standards and practices either omit this valuable safety tool, or call for a design that leads to the motorist turning right at too high a speed, making a high-speed left turn, or both. Thus, motorists, pedestrians and bicyclists are placed in conflict with one another. In many cases the designs force motorists to look away from the unsuspecting pedestrian or bicyclist.

Major contents: Channelized raised median islands (slip lanes, and median dividers) at large intersections reduce the number of conflicts a motorist, bicyclist or pedestrian must deal with at a moment in time. With these improvements it is possible for the pedestrian or bicyclist to handle right turning traffic as a single threat. The next threat is handled as a through movement. The next threat is a left turning motorist and through motorist. Finally, the far turning movement is another single threat. This document will track and explain the need to create these separate threats. It will show how to retrofit an existing intersection, illustrate and detail the proper geometrics and signing, and create preferred measurements. Use of a triple centered compound turn will be explained. Although AASHTO recommends these to minimize turning conflicts, it has been learned that less than 1% of engineers have ever applied the technique. The following topics will be covered:

- § Background on use of channelization to reduce crashes
- § Diagram showing the reduced speed and points of conflict
- § Proper geometrics of slip lanes and median dividers with openings
- § ADA issues and solutions with channelized islands
- § Places not to put channels, warrants and sight alignments
- § Overcoming typical problems of retrofitting
- § Improvements to bicyclists
- § Reviewing site plans
- § Case studies (before/after)
- § References



College bicyclist education and enforcement program guide

Summary description: This guide will provide detailed instruction on the creation and implementation of an education and enforcement program to decrease college students' involvement in bicycle crashes on and off campus. A number of colleges have bicyclist education and enforcement programs that have been developed specifically for their campuses. There is a need to consolidate the lessons learned from such programs into a comprehensive guide that can be used by college officials who are motivated to develop a coordinated education and enforcement program. Before such a program guide can be developed, however, it will be necessary to compile more information about the types, frequency, and severity of crashes that occur on or near college campuses and the training and enforcement programs that have been effective in reducing such crashes.

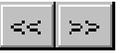
Major contents: The guide will include the following:

§ College student involvement in bicycle crashes

§ Effective education programs

§ Effective engineering programs

§ Effective enforcement programs



Guide to school bicycle safety presentations by police officers

Summary description: This guide will assist law enforcement officers in preparing bicycle safety presentations to be delivered at elementary schools and middle schools.

Major contents: Some local law enforcement agencies routinely send officers to local elementary and middle schools to make presentations on traffic safety. In nearly all cases, bicycle safety is among the topics that are addressed during the presentation. The better programs expose all the students in the community to one or two presentations each year; the maximum length of a presentation is about 50 minutes and may be less for very young students.

Presentations by law enforcement officers can be a highly effective element of a comprehensive bike-safety education program. In particular, presentations by police officers can help to eliminate knowledge deficiencies and to modify attitudes that are known to predispose bicycle/motor-vehicle crashes. Because of their limited frequency and exposure time, the presentations must be prepared with great care. The effectiveness of the presentations will be influenced by their focus on relevant educational objectives, the quality of the visuals and the skill of the presenter.

The guide will cover the following topics:

§ Key educational objectives that can be accomplished during relatively brief presentations including wrong-way riding, helmet use and the need to search before entering any roadway

§ Specific methods for accomplishing the objectives

§ Visual aids that have proved to be effective in presentations

§ Guidance for producing at least two presentations: one for elementary school students and one for

middle school students.

Ideally, the guide will be accompanied by a floppy disc that can be used to create visual aids that are known to be effective for imparting knowledge, modifying attitudes, and maintaining the attention of students.



Media guide on bicycle safety

Summary description: This guide will describe the causes of bicycle crashes and what the media can do to promote safety. Separate sections will be provided for media producers and news reporters. The main objective will be to promote the portrayal and description of safe bicyclist and motorist behaviors whenever possible and consistent with the dramatic or news intent of the media piece being produced.

Major contents: The following will be included:

Introductory material (all groups)

§ How bicyclist actions cause crashes and affect crash severity

- Types of crashes
- Conspicuity
- Helmets
- Drinking and riding

§ How motorist actions cause crashes

§ How the environment contributes to safety

- Visual screens
- Intersection design
- On-road facilities
- Off-road facilities
- Roadway parking
- Roadway maintenance

Producers

§ Key behaviors to avoid showing, e.g., entering a roadway without searching, riding without a helmet, improper passing of a bicyclist

§ Key behaviors to portray whenever possible, e.g., helmet use, active search, dealing with large visual screens, being courteous to bicyclists, using lights and retroreflective materials when riding at night

Reporters

§ Key positive and negative aspects to cite when dealing with bicycle crashes, e.g., helmet use, light use, retroreflective material use

§ Importance of including the motorist's error/failure when discussing bicycle crashes



Guide for developing bicycle indoctrination material for new college students

Summary description: This guide will aid college personnel in producing an indoctrination guide or video that will be required reading/viewing by all entering college students who intend to ride a bicycle on or near campus.

Major contents: The guide will identify the important topics to include in indoctrination materials for freshmen and other entering students: The following topics will be included:

- § Campus bicycling facilities
- § Traffic rules and enforcement
- § Licensing requirements
- § Types, causes, and severity of the bicycle crashes that occur on and near campus
- § Bicycling and alcohol



Hang tag for parents on child bike safety

Summary description: This hang tag will be designed for bicycles with a wheel base of 22 inches or less. It will educate parents about the importance of helmets, the types of bicycle/motor-vehicle crashes that typically involve young bicyclists, and the main things parents must do to reduce the likelihood that their children will be involved in a bicycle/motor-vehicle crash.

Major contents: The hang-tag will inform parents of the high risk of unsupervised riding by pre-school children and older children who are novice riders. It also will contain the strongest possible recommendation that parents prohibit unsupervised riding by their novice bicyclists at any location that is near motor vehicle traffic. The following topics will be included:

§ Severe hazards of unsupervised riding by pre-school children and older children who are novice bicyclists

§ Areas in which unsupervised riding must be prohibited--all roadways, driveways, alleys, motor vehicle parking lots, and sidewalks that are in close proximity to roadways

§ Illustrations and commentary about the types of crashes that typically involve very young bicyclists

§ Things that parents must do to reduce the likelihood that their children will be involved in a bicycle/motor-vehicle crash

§ A discussion of the importance of helmets and guidelines for purchasing, fitting and using helmets.



Law enforcement public information and education (PI&E) materials

Summary description: This package of materials will consist of public service announcements (PSAs) and other PI&E materials that law enforcement agencies can use to augment an enforcement program aimed at decreasing bicycle/motor-vehicle crashes. PI&E has been shown to increase the effectiveness of an enforcement program aimed at reducing specific violations. In addition, PI&E can change public opinion about the importance of law enforcement officers' spending time issuing citations to bicyclists. The change in public opinion about citing bicyclists, in turn, will decrease law enforcement officers' reluctance to cite bicyclists, particularly young bicyclists.

Major contents: Examples of products that can be developed for a comprehensive PI&E package follow:

§ A short pamphlet that describes procedures for developing and implementing a PI&E program. The pamphlet will identify the full range of media that can be employed and the best approaches for obtaining the necessary media support.

§ A set of press releases that can be easily edited for the community (e.g., inserting the name of the community and the names of participating officials). To facilitate editing and reproduction, the press releases will be stored on a floppy disk.

§ Photo ready illustrations of crash types, slogans, and logos that are suitable for reproduction in local newspapers and other local publications.

§ A set of television spots and radio spots designed to inform the public about the purpose of the enforcement program and the enforcement activities that are planned.



Model bicycle owner's CDs--one for adults, one for parents

Summary description: At least 50% of all bicycle crashes could be prevented with just a few cautionary steps. Use of a helmet at all times when riding could prevent up to 75% of fatal and permanent injuries. Proper clothing and night lighting could prevent up to 30% of serious crashes. Information related to defensive riding skills could help eliminate up to 70% of adult crashes. There will be two interactive versions of this CD--one for the MacIntosh and one for the IBM personal computer, with sections for adults and children. The CDs will guide the bicyclist down a mythical street. Participants will learn to predict problems before they occur. Copies will be a purchase incentive. Other copies can be available for use at computer terminals in bike shops, large department stores, game arcades, schools and other areas where people can be attracted to watch or use the interactive CDs.

Major contents: The CDs will include the following:

- § The best ways to stay healthy on a bike
- § Helmets
- § Clothing, seeing and being seen
- § Selecting a neighborhood (skills will relate to the type of neighborhood the user selects)
- § Selecting a ride (skills will relate to the type of riding the person will do)
- § Selecting a time of day for riding
- § Planning a route to school, shop or work
- § Defensive riding--what will go wrong, how to see it before it happens
- § Proper skills development
- § Riding with the flow
- § Neighborhood tips
- § Commercial street tips

§ Touring and bike path tips

§ Parent activities with children



Slicks that contain crash illustrations and related safety information for young bicyclists and their parents

Summary description: These slicks will contain crash type illustrations and related safety messages for young bicyclists and their parents. They can be in hard copy and/or electronic format. They will point out basic behavioral errors and remedies for the errors. There are many low-cost methods for exposing the target groups to the illustrations and safety messages. Among the most cost effective are fast food restaurant place mats, grocery bags, and school posters. Managers of fast food chains and managers of grocery chains may be willing to pay for the printing costs but probably would not be willing to pay for the cost of developing the artwork. The concept is to develop hard copy "slicks" that would provide printers with all they need to print the illustrations on place mats, grocery bags, posters, handouts, envelope stuffers, or any other printed product (including newspapers and magazines). In addition, the slicks could be used to print flyers that could be included with routine mail (e.g., utility bills, advertisements). Similarly, the slicks could be used to print the illustrations and safety messages in magazines, newspapers, newsletters, and other types of publications.

Major contents: The slicks will include the following crash types:

- § Midblock rideout
- § Wrong-way riding
- § Motorist overtaking bicyclist
- § Bicyclist turn/swerve
- § Intersection rideout

Slicks will also be provided for the following bicycle safety topics:

- § Helmet use

§ Seeing

§ Being seen

§ Being predictable

§ Night riding



A package of safety education products for distribution by health care organizations and professionals

Summary description: This countermeasure will involve development of a package of safety materials designed for bicyclists and motorists. Many elements of the health care industry have the potential for being distributors of safety education products. However, the elements differ in the types of products that they are capable and willing to distribute. Some elements, such as pharmaceutical companies and medical supply companies, are capable of distributing information to their employees and to other health care organizations, but have no capability to distribute information directly to the general public. Other elements of the health care industry, such as medical associations and societies, can distribute information to large numbers of health care professionals but are not capable of distributing information directly to the general public. However, the health care industry includes a variety of treatment centers that are capable of distributing information to a wide range of individuals who seek medical treatment. Treatment centers include doctors' offices, dentists' offices, clinics, hospitals, immediate care centers, and a wide range of therapy centers.

Because of the great variety in the capabilities of health care organizations to distribute information, there is a need for a relatively large package of safety education products that can be tailored to the needs and interests of each type of organization. Products should be developed that are suitable for distribution at the following sites:

- § Doctors' and dentists' offices
- § Hospitals, medical clinics, and therapy centers
- § Headquarters of state and national medical associations, societies, and foundations
- § Headquarters of health maintenance organizations
- § Headquarters of pharmaceutical companies and medical supply companies
- § Headquarters of medical insurance companies

The package should include hard copy products (or masters that can be used to produce hard copy products) as well as electronic products that can be distributed as e-mail messages.



Internet web page providing a living library of bicycle model laws and ordinances

Summary description: An Internet web page will provide a continuously updated library of model laws and ordinances that can be easily accessed by users. There is compelling evidence that some laws and ordinances have the potential for reducing the frequency of bicycle/motor vehicle crashes. A substantial number of laws and ordinances are known to be effective and others are certain to be identified in the future. Considerable time, effort, and expertise are required to identify laws and ordinances that are needed and to draft laws and ordinances in clear, unambiguous language. Expertise is also required to avoid adopting laws and ordinances that appear beneficial but are ineffective in reducing bicycle-related crashes. Individual states and communities may lack the resources that are needed to identify and draft laws and ordinances that are effective in reducing bicycle/motor vehicle crashes.

Major contents: There is a need for a centralized reference library of model laws and ordinances that is compiled and updated by experts. This library should be easy to update and should be easily accessible by users. Ideally, such a library would be established as an Internet web page and would be designed to enable users to accomplish the following:

§ Locate and down load model laws and ordinances that promise to reduce the incidence of one or a set of crash types.

§ Identify the crash types that are likely to be influenced (positively or negatively) by a law or ordinance being considered.

§ Locate the laws and ordinances that must be or should be in place to support a specific design solution or planning solution (e.g., on-street or off-street bicycle facilities).

§ Locate information about the effectiveness of the model laws and ordinances and the communities in which they have been adopted.

§ Locate the laws and ordinances that are ineffective in reducing bicycle/motor vehicle crashes, that increase the likelihood of other types of crashes, or that are politically unacceptable.

§ Locate the laws and ordinances that are effective in reducing bicycle/motor vehicle crashes, that do not increase the likelihood of other types of crashes, and that are politically acceptable.



Pre-formatted electronic mail safety messages

Summary description: Businesses and government organizations will use these electronic mail messages to inform parents of the severe hazards of unsupervised riding by pre-school children and older children who are novice bicyclists. Many organizations have extensive computer networks that can be used to send e-mail messages. In addition, many organizations and individuals have the capability to send and receive e-mail messages via individual modems connected to the Internet system. Many businesses and government agencies now have extensive computer networks that can be used to send electronic messages to all or most of their employees. The transmission of electronic safety messages need not be limited to the subscribers on a local network. Messages (e.g., awareness messages) can be sent to business leaders, government officials, and other community leaders via the Internet if the e-mail address of the individuals or their organizations can be obtained.

Major contents: These computer networks provide the capability to convey a wide variety of information to all persons on the network or to a selected group of persons. For example:

§ Messages about the hazards of unsupervised riding by young children could be sent only to persons who are known to be parents of young children.

§ Other messages intended to inform the motorist population about common bicycle/motor vehicle crash types could be sent to everyone on the computer network.



Scripts for television PSAs discouraging the drinker from riding a bicycle

Summary description: These scripts for television public service announcements (PSAs) will discourage the drinker from riding a bicycle.

Major contents: These PSAs will cover the following points:

- § The dangers of riding after drinking
- § The importance of staying home (or at a friend's) when drinking

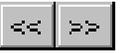


Scripts for radio PSAs discouraging the drinker from riding a bicycle

Summary description: These scripts for radio public service announcements (PSAs) will discourage the drinker from riding a bicycle.

Major contents: These PSAs will cover the following points:

- § The dangers of riding after drinking
- § The importance of staying home (or at a friend's) when drinking



Model driveway parking ordinance

Summary description: This ordinance would permit parking of a properly-identified vehicle in front of the driveway of a single occupancy dwelling as a means of discouraging bicyclists from riding down the driveway into the street.

Major contents: A sample model ordinance follows.

Model Driveway Parking Ordinance

§ 1 - Parking across driveways permitted

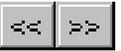
Notwithstanding the provisions of ----- (insert citation to state law or local ordinance comparable to UVC § 11-1003 (a) (2) (a) (1992), which forbids standing or parking a vehicle “in front of a public or private driveway”), a person may park a vehicle in front of a driveway serving a single occupancy dwelling unit (as a means of discouraging bicyclists from riding down the driveway into the street) if that person displays identification meeting the requirements specified under § 2.

§ 2 - Identification requirements

The (appropriate police agency) shall specify a format for an identification placard to be placed in plain view on any vehicle which is parked in front of a driveway in accordance with § 1. At a minimum, this identification placard shall include the address at which parking across a driveway is permitted and shall bear the signature and telephone number of the owner or current occupant of the dwelling unit served by the driveway.

§ 3 - When parking across driveways prohibited

A person shall not park a vehicle in front of a driveway without displaying the identification placard for that location nor in violation of other prohibitions, restrictions and limitations on stopping, standing or parking vehicles.



Model highway entry law

Summary description: This law would require the driver of a vehicle emerging from an alley, building, private road or driveway to stop immediately prior to moving onto a sidewalk or sidewalk area and look for approaching traffic.

Major contents: A sample model ordinance follows.

Model Highway Entry Law

§ 1 - Stops before emerging from alley, driveway or building

The driver of a vehicle emerging from an alley, building, private road or driveway shall stop immediately prior to moving onto a sidewalk or onto the sidewalk area extending across such alley, building entrance, road or driveway, and shall stop at the point nearest the roadway to be entered where the operator has a view of approaching traffic thereon. After each stop, the driver of a vehicle shall look for approaching traffic.

§ 2 - Yield to traffic on sidewalks

The driver of a vehicle crossing a sidewalk shall yield the right of way to any pedestrian and all other traffic on the sidewalk.

§ 3 - Yield to traffic on roadway or shoulder

The driver of a vehicle about to enter or cross a roadway or shoulder from any place other than another roadway or shoulder shall yield the right of way to all traffic approaching on the roadway or shoulder to be entered or crossed.



Model regulation to prohibit riding bicycles on sidewalks

Summary description: This regulation would prohibit bicyclists from riding on the sidewalk.

Major contents: A sample model ordinance follows.

Model Regulation to Prohibit Riding Bicycles on Sidewalks

§ 1 - Authority to prohibit bicycle riding on sidewalks

(a) The (traffic engineer, traffic commissioner) may prohibit riding bicycles on any sidewalk when an engineering and traffic investigation determines such riding would be unsafe.

(b) Any prohibition against riding a bicycle on a sidewalk adopted under this section shall be effective only when indicated by official traffic control devices.

§ 2 - Bicyclist to comply with signs

A person driving a bicycle shall obey the instructions of any official traffic control device authorized by § 1.



Update of signs and pavement markings for the MUTCD, Part IX

Summary description: Engineers reference the Manual on Uniform Traffic Control Devices (MUTCD), Part IX and related documents when creating, ordering or placing signs and pavement markings. Current illustrations and standards depict bicyclists without helmets and bicyclists riding against traffic (lane stencil). Wrong-way riding and bicyclists riding without helmets contribute significantly to bicycling injuries and severe trauma. This document will be updated so that all stencils and signs depict bicyclists with helmets. In addition, stencils and signs will be updated to depict bicyclists going with the flow of traffic. It will be mandated that all bike lanes have directional arrows. Special markings will also be created for ways to alert bicyclists to the need to search for turning motorists (right and left turns) when using a bike lane.

Major contents: The following signs and stencils will be created:

- § Stencils showing bicyclists going with the flow of traffic
- § Signs depicting bicyclists with helmets
- § Stencils for large directional arrows
- § Signing that alerts bicyclists of dangers to search for before reaching an intersection
- § Signing to educate bicyclists about helmet wearing, especially at trailheads
- § Other innovative communications, colored pigments, painted crossings, etc.



Engineering/Architecture Groups

- § [Bicyclist Errors](#)
- § [Motorist Errors](#)
- § [Impairment](#)
- § [Visibility/Conspicuity](#)
- § [Special Locations](#)
- § [Geometrics/Operations](#)
- § [High Injury Severity](#)
- § [Target Group](#)
- § [Other](#)



Public Highway Agencies

- § [Bicyclist Errors](#)
- § [Motorist Errors](#)
- § [Impairment](#)
- § [Visibility/Conspicuity](#)
- § [Special Locations](#)
- § [Geometrics/Operations](#)
- § [High Injury Severity](#)
- § [Target Group](#)
- § [Other](#)



Planning Groups

- § [Bicyclist Errors](#)
- § [Motorist Errors](#)
- § [Impairment](#)
- § [Visibility/Conspicuity](#)
- § [Special Locations](#)
- § [Geometrics/Operations](#)
- § [High Injury Severity](#)
- § [Target Group](#)
- § [Other](#)



Public Highway Safety Groups

- § [Bicyclist Errors](#)
- § [Motorist Errors](#)
- § [Impairment](#)
- § [Visibility/Conspicuity](#)
- § [Special Locations](#)
- § [Geometrics/Operations](#)
- § [High Injury Severity](#)
- § [Target Group](#)
- § [Other](#)



Private Highway Safety Groups

- § [Bicyclist Errors](#)
- § [Motorist Errors](#)
- § [Impairment](#)
- § [Visibility/Conspicuity](#)
- § [Special Locations](#)
- § [Geometrics/Operations](#)
- § [High Injury Severity](#)
- § [Target Group](#)
- § [Other](#)



Private/Corporate Business

- § [Bicyclist Errors](#)
- § [Motorist Errors](#)
- § [Impairment](#)
- § [Visibility/Conspicuity](#)
- § [Special Locations](#)
- § [Geometrics/Operations](#)
- § [High Injury Severity](#)
- § [Target Group](#)
- § [Other](#)



Healthcare Organizations

- § [Bicyclist Errors](#)
- § [Motorist Errors](#)
- § [Impairment](#)
- § [Visibility/Conspicuity](#)
- § [Special Locations](#)
- § [Geometrics/Operations](#)
- § [High Injury Severity](#)
- § [Target Group](#)
- § [Other](#)



Law Enforcement/Adjudication

- § [Bicyclist Errors](#)
- § [Motorist Errors](#)
- § [Impairment](#)
- § [Visibility/Conspicuity](#)
- § [Special Locations](#)
- § [Geometrics/Operations](#)
- § [High Injury Severity](#)
- § [Target Group](#)
- § [Other](#)



Schools

- § [Bicyclist Errors](#)
- § [Motorist Errors](#)
- § [Impairment](#)
- § [Visibility/Conspicuity](#)
- § [Special Locations](#)
- § [Geometrics/Operations](#)
- § [High Injury Severity](#)
- § [Target Group](#)
- § [Other](#)



Bike-related Organizations

- § [Bicyclist Errors](#)
- § [Motorist Errors](#)
- § [Impairment](#)
- § [Visibility/Conspicuity](#)
- § [Special Locations](#)
- § [Geometrics/Operations](#)
- § [High Injury Severity](#)
- § [Target Group](#)
- § [Other](#)



Community/Civic Groups

- § [Bicyclist Errors](#)
- § [Motorist Errors](#)
- § [Impairment](#)
- § [Visibility/Conspicuity](#)
- § [Special Locations](#)
- § [Geometrics/Operations](#)
- § [High Injury Severity](#)
- § [Target Group](#)
- § [Other](#)



Elected Officials

- § [Bicyclist Errors](#)
- § [Motorist Errors](#)
- § [Impairment](#)
- § [Visibility/Conspicuity](#)
- § [Special Locations](#)
- § [Geometrics/Operations](#)
- § [High Injury Severity](#)
- § [Target Group](#)
- § [Other](#)



Media

- § [Bicyclist Errors](#)
- § [Motorist Errors](#)
- § [Impairment](#)
- § [Visibility/Conspicuity](#)
- § [Special Locations](#)
- § [Geometrics/Operations](#)
- § [High Injury Severity](#)
- § [Target Group](#)
- § [Other](#)



Manufacturers and Sellers

- § [Bicyclist Errors](#)
- § [Motorist Errors](#)
- § [Impairment](#)
- § [Visibility/Conspicuity](#)
- § [Special Locations](#)
- § [Geometrics/Operations](#)
- § [High Injury Severity](#)
- § [Target Group](#)
- § [Other](#)



Driver Regulatory Agencies

- § [Bicyclist Errors](#)
- § [Motorist Errors](#)
- § [Impairment](#)
- § [Visibility/Conspicuity](#)
- § [Special Locations](#)
- § [Geometrics/Operations](#)
- § [High Injury Severity](#)
- § [Target Group](#)
- § [Other](#)



Midblock Rideout

Problem Description: The bicyclist rides into the street from a driveway (or alley) or enters the street midblock from the sidewalk or curb and presents a short time exposure to the motorist. The bicyclist typically rides into the roadway without stopping and searching adequately for motor vehicles. The motorist typically assumes that any entering traffic will yield and therefore also fails to search. A visual screen, such as a parked car or vegetation, is frequently a contributing factor. The problem occurs at both residential and commercial driveways. Most midblock rideout crashes occur to children under 15 years of age, but any age can be involved. Frequently, the rideout occurs from the bicyclist's own driveway. A play vehicle or "big wheel" is often involved.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

§ The bicyclist will stop at the end of the driveway/alley or visual screen (or edge of the sidewalk/curb) and search left-right-left for vehicles before entering the street midblock.

§ Parents will be aware of child bicycle dangers and, through instruction and supervision, will train their children to avoid the dangers.

§ The bicyclist will be conspicuous at all times.

Motorist:

§ The motorist will search for bicyclists entering the street midblock from driveways/alleys or from the sidewalk/curb.

§ The motorist will travel at an appropriate speed for the area.

Roadway:

§ The speed of traffic along neighborhood streets will be reduced.

§ The sight distances at residential driveways will be improved.



Midblock Turns

Problem Description: The bicyclist is riding midblock and suddenly turns or swerves left into the path of a motorist overtaking from the rear or approaching from the front. The problem can also occur when a wrong-way bicyclist makes a right turn in front of an overtaking or approaching motorist. The bicyclist sometimes loses control. The crashes tend to involve children. They occur both at junctions in the roadway (for example, with driveways) and where no junction exists. In virtually all cases, the bicyclist fails to search before the turn or provide any overt cues that the turn is about to take place. The motorist sees the bicyclist and could easily avoid a crash but has no idea that a sudden turn is imminent.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

§ The bicyclist will search for overtaking and approaching vehicles before initiating a turn at a midblock location.

§ Parents will be aware of child bicycle dangers and, through instruction and supervision, will train their children to avoid the dangers.

§ The bicyclist will be conspicuous at all times.

§ The bicyclist will be predictable at all times.

Motorist:

§ When approaching or overtaking a bicyclist, the motorist will reduce speed and be prepared to stop or swerve if the bicyclist makes a sudden turn.

§ The motorist will travel at an appropriate speed for the area.

Roadway:

§ The speed of traffic along neighborhood streets will be reduced.

§ Driveway access to properties will be appropriately limited for that neighborhood.



Intersection Rideout/Negotiation

Problem description: The bicyclist fails to stop or yield at a stop sign or signal or fails to negotiate an intersection safely. In the latter case, there can be several possible causes. First, the bicyclist fails to clear the intersection before the light turns green for opposing traffic and is then trapped in the intersection. Second, the bicyclist enters the intersection in front of a vehicle that has stopped to let the bicyclist pass and then is hit by a vehicle in the next lane whose driver cannot see the bicyclist because of the screening effect of the stopped vehicle (the multiple threat crash). Finally, the bicyclist fails to negotiate an intersection turn, either by cutting the corner or swinging too wide. Most intersection rideout/negotiation crashes occur to children under 15 years of age.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

- § The bicyclist will obey all traffic signs and signals.

- § The bicyclist will not enter a signalized intersection when the signal is in the amber phase.

- § The bicyclist will search appropriately before entering an intersection.

- § The bicyclist will search while riding--including around cars that have stopped to let the bicyclist pass.

- § The bicyclist will search for overtaking and approaching vehicles before initiating a left-hand turn at an intersection.

- § The bicyclist will negotiate turns smoothly including positioning the bicycle properly in the roadway and signaling appropriately.

§ Parents will be aware of child bicycle dangers and, through instruction and supervision, will train their children to avoid dangers.

§ The bicyclist will be conspicuous at all times.

§ The bicyclist will be predictable at all times.

Motorist:

§ The motorist will search for bicyclists at intersections and will yield to bicyclists who have the right of way.

§ The motorist will travel at an appropriate speed for the area.

Roadway:

§ The speed of traffic along neighborhood streets will be reduced.

§ Intersection design will reduce turning speeds and permit safe vehicle turning movements.

§ Sight distances at intersections will be improved.



Wrong-Way Riding

Problem description: The bicyclist rides facing traffic due either to lack of knowledge of the rules of the road, the difficulty of crossing the road, or fear of overtaking traffic. A crash frequently occurs at an intersection or driveway when the motorist confronts the bicyclist from an unexpected direction--either riding in the roadway or on the sidewalk. Crashes also occur when the motorist makes a left turn in front of the bicyclist or makes a right turn, including a right turn on red. Crashes occur when the motorist drives out of a driveway or stops at an intersection stop sign but does not yield. They also occur when the bicyclist rides out from a stop sign.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

§ Bicyclists will always ride with traffic.

§ Parents will be aware of child bicycle dangers and, through instruction and supervision, will train their children to avoid the dangers.

§ The bicyclist will be conspicuous at all times.

Motorist:

§ The motorist will constantly search for other road users.

Roadway:

§ Adequate on- and off-street bicycle facilities will be provided.

§ Bike lanes will have directional arrows.

§ The speed of traffic along neighborhood streets will be reduced.

§ Sight distances at intersections and driveways will be improved.



Wrong Way Riding Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for their members to promote on- and off-street systems. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. They can write new guidelines for streets and street systems. Bicyclists fare best when integrated into existing roadway and transportation systems. The higher the speed and volume of traffic and the wider the roadway, the more important bike lanes and other dedicated facilities become. Bike lanes can reduce high-risk commercial sidewalk riding. Half of the time that bicyclists ride on sidewalks, they are riding against the flow of traffic. Bike lanes should have directional arrows to reduce wrong-way riding. Many cities have some underutilized streets. Converting some low volume four-lane roads to three-lane roads can result in safer, more efficient roadways that support safer driving, walking, bicycling and transit. For example, a 48-foot wide four-lane roadway could convert to two 12-foot travel lanes, a 12-foot center scramble lane and two 6-foot bicycle lanes. Bicycle boulevards and trails (dedicated bike systems) in neighborhoods are an additional way to reduce the number of novice bicyclists that feel that their only place to ride is on a commercial street sidewalk or that they must ride against the flow of traffic. Reducing the speed in neighborhoods gives the motorist additional time to react to a wrong-riding bicyclist and avoid a crash. In addition, improved sight distances at intersections can improve the likelihood that the motorist will detect the wrong-way bicyclist.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

- Video [Video promoting bicycle safety by engineering and planning groups](#)
- Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)
- Report/Guide [Residential traffic calming guidelines](#)
- Report/Guide [Guide to four -lane to three-lane street conversion](#)
- Report/Guide [Guide to creating bicycle boulevards](#)
- Report/Guide [Traffic calming main street and the central business district](#)
- Report/Guide [Model development codes for traffic-calmed streets](#)
- Report/Guide [Neighborhood development guidelines](#)
- Report/Guide [Bicycle improvements for collector and arterial roadways](#)
- Report/Guide [Bike lanes and paved shoulders](#)
- Report/Guide [Residential intersection guidelines](#)
- Other [Update of signs and pavement markings for the MUTCD, Part IX](#)



Wrong Way Riding Public Highway Agencies

Potential Role: Regional and local public highway agencies can adopt and implement improved guidelines and policies to promote on and off-street systems. They can promote the guidelines to local planning agencies and provide training for builders and engineers. A collaborative team made up of local engineers, planners and administrators can enact new guidelines for streets and street systems. Model projects can be built, evaluated and refined. Bicyclists fare best when integrated into existing roadway and transportation systems. Bike lanes can reduce high-risk commercial sidewalk riding. Half of the time that bicyclists are riding on sidewalks, they are riding against the flow of traffic. Bike lanes should have directional arrows to reduce wrong-way riding. The higher the speed and volume of traffic, and the wider the roadway, the more important bike lanes and other dedicated facilities become. Many cities have some underutilized streets. Converting some low volume four-lane roads to three-lane roads can result in safer, more efficient roadways that support safer driving, walking, bicycling and transit. For example, a 48-foot wide four-lane roadway could convert to two 12-foot travel lanes, a 12-foot center scramble lane and two 6-foot bicycle lanes. Bicycle boulevards and trails (dedicated bike systems) in neighborhoods are an additional way to reduce the number of novice bicyclists that feel that their only place to ride is on a commercial street sidewalk, or ride against the flow of traffic. Reducing the speed in neighborhoods gives the motorist additional time to react to a wrong-riding bicyclist and avoid a crash. In addition, improved sight distances at intersections can improve the likelihood that the motorist will detect the wrong-way bicyclist.

Countermeasure Focus: [Roadway](#)

Existing Countermeasure:

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

- Video [Video promoting bicycle safety by engineering and planning groups](#)
- Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)
- Report/Guide [Residential traffic calming guidelines](#)
- Report/Guide [Guide to four-lane to three-lane street conversion](#)
- Report/Guide [Guide to creating bicycle boulevards](#)
- Report/Guide [Traffic calming main street and the central business district](#)
- Report/Guide [Traffic calmed streets model development code](#)
- Report/Guide [Neighborhood development guidelines](#)
- Report/Guide [Bicycle improvements for collector and arterial roadways](#)
- Report/Guide [Bike lanes and paved shoulders](#)
- Report/Guide [Residential intersection guidelines](#)
- Other [Update of signs and pavement markings for the MUTCD, Part IX](#)



Wrong Way Riding Planning Groups

Potential Role: Local and regional planning groups can adopt and implement improved guidelines and policies to promote on- and off-street systems. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply the new guidelines. They can rewrite local codes for implementing design changes and can promote these codes. Model projects can be built, evaluated and refined. Bicyclists fare best when integrated into existing roadway and transportation systems. Bike lanes reduce high-risk commercial sidewalk riding. Half of the time bicyclists are riding on sidewalks they ride against the flow of traffic. Bike lanes should have directional arrows to reduce wrong-way riding. The higher the speed and volume of traffic, and the wider the roadway, the more important bike lanes and other dedicated facilities become. Many cities have some underutilized streets. Converting some low volume four-lane roads to three-lane roads can result in safer, more efficient roadways that support safer driving, walking, bicycling and transit. For example, a 48-foot wide four-lane roadway could convert to two 12-foot travel lanes, a 12-foot center scramble lane and two 6-foot bicycle lanes. Bicycle boulevards and trails (dedicated bike systems) in neighborhoods are an additional way to reduce the number of novice bicyclists that feel that their only place to ride is on a commercial street sidewalk, or ride against the flow of traffic. Reducing the speed in neighborhoods gives the motorist additional time to react to a wrong-riding bicyclist and avoid a crash. In addition, improved sight distances at intersections can improve the likelihood that the motorist will detect the wrong-way bicyclist.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

- Video [Video promoting bicycle safety by engineering and planning groups](#)
- Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)
- Report/Guide [Residential traffic calming guidelines](#)
- Report/Guide [Guide to four-lane to three-lane street conversion](#)
- Report/Guide [Guide to creating bicycle boulevards](#)
- Report/Guide [Traffic calming main street and the central business district](#)
- Report/Guide [Traffic calmed streets model development code](#)
- Report/Guide [Neighborhood development guidelines](#)
- Report/Guide [Bicycle improvements for collector and arterial roadways](#)
- Report/Guide [Bike lanes and paved shoulders](#)
- Report/Guide [Residential intersection guidelines](#)
- Other [Update of signs and pavement markings for the MUTCD, Part IX](#)



Wrong-Way Riding Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can develop and implement a model neighborhood bicycle safety program. For example, they can do all or any part of the following: analyze the incidence of the wrong-way riding problem in the community, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to reduce the wrong way riding problem.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Bicyclist Training [Annual pedal power camp report](#)

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Implementer Training [Teaching safe bicycling](#)

Video [Bicycle safety](#)

Video [Be safe on your bike](#)

Video [A kid's eye view](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

- Brochure [A bicycle is not a toy!](#)
- Brochure [Safe bicycle riding in New Jersey](#)
- Brochure [Don't go head over handlebars--drive with your head](#)
- Brochure [Seeing and being seen](#)
- Brochure [Just where do I belong?](#)
- Brochure [Kids and bikes](#)
- Brochure [Have you "shared the road" today?](#)
- Brochure [Kids & bikes & safety](#)
- Brochure [Did you know?](#)
- Brochure [10 tips for fun and safe biking](#)
- Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)
- Brochure [Uncle Bob's bike-o-rama safety quiz](#)
- Flyer [Sally says: Bicycle safety is every parent's responsibility!](#)
- Flyer [Sally says: Safety starts at home](#)
- Flyer [Ten commandments of bicycling](#)
- Flyer [Prevent bicycle crashes](#)
- Booklet [Sprocket man](#)
- Booklet [Bike like the best](#)
- Booklet [Oregon bicyclist's manual](#)
- Booklet [Pocket guide: Safe bicycling in Nevada](#)
- Booklet [Florida cycling tips: Staying alive on the roads](#)
- Booklet [Delaware bicycle driver's manual](#)
- Booklet [Drive your bicycle safely](#)
- Booklet [Bicycling: Safe and easy](#)
- Booklet [Let's learn more about bike driving](#)
- Booklet [Safe bicycling in Chicago \(Also available in Polish and Spanish\)](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Booklet [New Jersey bicycle manual](#)

Other [Lincoln bicycle routes \(map\)](#)

Other [Bike like the best \(poster\)](#)

Other [Ride on the right. . . Go with the flow \(bookmark\)](#)

Other [Bicycling in Colorado: Rules of the road \(card\)](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Report/Guide [Responses to queries on bicycle safety](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Wrong-Way Riding Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on the wrong-way riding problem and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Annual pedal power camp report](#)

Video [Pedal smarts](#)

Video [Getting there by bike](#)

Video [Effective cycling](#)

Video [Bicycle safety](#)

Video [Be safe on your bike](#)

Video [A kid's eye view](#)

Video [Otto the auto on bicycle safety](#)

Video [The bicycle zone](#)

- Brochure [Stop: Let me tell you how to save a life like yours](#)
- Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)
- Brochure [A bicycle is not a toy!](#)
- Brochure [Safe bicycle riding in New Jersey](#)
- Brochure [Don't go head over handlebars--drive with your head](#)
- Brochure [Seeing and being seen](#)
- Brochure [Just where do I belong?](#)
- Brochure [Kids and bikes](#)
- Brochure [Have you "shared the road" today?](#)
- Brochure [Kids & bikes & safety](#)
- Brochure [Did you know?](#)
- Brochure [10 tips for fun and safe biking](#)
- Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)
- Brochure [Uncle Bob's bike-o-rama safety quiz](#)
- Flyer [Sally says: Bicycle safety is every parent's responsibility!](#)
- Flyer [Sally says: Safety starts at home](#)
- Flyer [Ten commandments of bicycling](#)
- Flyer [Prevent bicycle crashes](#)
- Booklet [Sprocket man](#)
- Booklet [Bike like the best](#)
- Booklet [Oregon bicyclist's manual](#)
- Booklet [Herbert gets his glopp: A safe bike riding story](#)
- Booklet [Delaware bicycle driver's manual](#)
- Booklet [Drive your bicycle safely](#)
- Booklet [Safe bicycling in Chicago \(Also available in Polish and Spanish\)](#)
- Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Other [Lincoln bicycle routes \(map\)](#)

Other [Bike like the best \(poster\)](#)

Other [Ride on the right. . . Go with the flow \(bookmark\)](#)

Other [Bicycle owner's identification \(identification card\)](#)

Other [Bicycling in Colorado: Rules of the road \(card\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Wrong-Way Riding Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Annual pedal power camp report](#)

Implementer Training [Effective cycling: Motorist education](#)

Video [Be safe on your bike](#)

Video [A kid's eye view](#)

Video [Otto the auto on bicycle safety](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [A bicycle is not a toy!](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [10 tips for fun and safe biking](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Flyer [Sally says: Safety starts at home](#)

Booklet [Sprocket man](#)

Booklet [Oregon bicyclist's manual](#)

Booklet [Bicyclist's guide](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Safe bicycling in Chicago \(Also available in Polish and Spanish\)](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Other [Lincoln bicycle routes \(map\)](#)

Other [Ride on the right. . . Go with the flow \(bookmark\)](#)

Other [Bicycle owner's identification \(identification card\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [Pre-formatted electronic mail safety messages](#)



Wrong-Way Riding Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as running rodeos and making presentations to both bicyclists and parents on the wrong-way riding problem and other bicycle safety issues. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups, for example, a brochure for parents on the wrong-way riding problem and other problems common to child bicyclists.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Bicyclist Training [Safe moves city](#)

Implementer Training [Teaching safe bicycling](#)

Video [Bicycle safety](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Flyer [Safe bicycling starts early](#)

Flyer [Bicycle safety myths and facts](#)

Booklet [Team helmet bike safety book](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [A package of safety education products for distribution by health care organizations and professionals](#)

Other [Pre-formatted electronic mail safety messages](#)



Wrong-Way Riding Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction in wrong-way riding crashes in at least three ways. The first way is to issue citations or warnings to bicyclists who fail to ride with traffic. A second way is through formal and informal training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to elementary and middle school children. Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists (and their parents) when they ride the wrong way. They can also provide positive reinforcement to bicyclists who are observed behaving in a desirable manner. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Bicyclist Training [Someone else](#)

Bicyclist Training [The right way](#)

Bicyclist Training [Bicycle traffic safety school](#)

Bicyclist Training [Safe moves city](#)

Implementer Training [Enforcement for bicycle safety](#)

Implementer Training [Law enforcement bicycle patrol course](#)

Implementer Training [Bike patrol training manual](#)

Implementer Training [Teaching safe bicycling](#)

Video [The E's of cycling](#)

Video [Otto the auto on bicycle safety](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Booklet [Pocket guide: Safe bicycling in Nevada](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [New Jersey bicycle manual](#)

Report/Guide [The Minnesota peace officer's guide to bicycle traffic management](#)

Other [Ride on the right. . . Go with the flow \(bookmark\)](#)

Proposed Countermeasures:

Bicyclist Training [Insert on bicycle safety for offender school training](#)

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)

Other [Law enforcement public information and education \(PI&E\) materials](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Wrong-Way Riding Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to reduce wrong-way riding crashes. Clearly, the most effective action is to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The dangers of wrong-way riding can be reinforced at the middle school, high school and even college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Pre-schools and elementary schools can serve as efficient conduits for conveying educational materials to young bicyclists' parents on the dangers of wrong-way riding and the actions that they can take to reduce the likelihood that their child will be involved in a bicycle/motor-vehicle crash. Information on the problem can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate wrong-way riding crash information in driver education programs to emphasize the need for motorists to drive slowly through neighborhoods and to constantly search for bicyclists and other roadway users. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Teacher's guide to bicycle safety: Kindergarten-grade 8](#)

Bicyclist Training [Someone else](#)

Bicyclist Training [The right way](#)

Bicyclist Training [Bicycle traffic safety school](#)

- Bicyclist Training [Traffic safety education guide](#)
- Bicyclist Training [The basics of bicycling](#)
- Bicyclist Training [The elementary traffic education program](#)
- Bicyclist Training [Bike Ed Hawaii](#)
- Bicyclist Training [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)
- Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)
- Implementer Training [Effective cycling: Motorist education](#)
- Implementer Training [Bicycle and pedestrian traffic safety education](#)
- Implementer Training [Teaching safe bicycling](#)
- Video [Pedal smarts](#)
- Video [The E's of cycling](#)
- Video [Bicycle safety](#)
- Video [Basic bicycle education](#)
- Video [Be safe on your bike](#)
- Video [A kid's eye view](#)
- Video [Bike right. . . The face you save may be your own](#)
- Video [Otto the auto on bicycle safety](#)
- Video [The bicycle zone](#)
- Brochure [Stop: Let me tell you how to save a life like yours](#)
- Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)
- Brochure [A bicycle is not a toy!](#)
- Brochure [Safe bicycle riding in New Jersey](#)
- Brochure [Kids and bikes](#)
- Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)
- Flyer [Sally says: Bicycle safety is every parent's responsibility!](#)
- Flyer [Sally says: Safety starts at home](#)

Flyer [Bicycles and the new UC Davis cyclist, 1998-99](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Sprocket man](#)

Booklet [Bike like the best](#)

Booklet [The best bicyclist on earth](#)

Booklet [Sam's adventures through Nevada: Safe pedaling in Nevada](#)

Booklet [Bicycle safety: A wheely good idea](#)

Booklet [Herbert gets his glopp: A safe bike riding story](#)

Booklet [Getting there safely by foot, by bike, by bus, by car](#)

Booklet [Team helmet bike safety book](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Drive your bicycle safely](#)

Booklet [Let's learn more about bike driving](#)

Report/Guide [Campus biking: Challenges and Strategies. The Campus Bike-Right Project at Cornell University](#)

Other [Bike like the best \(poster\)](#)

Other [Ride on the right. . . Go with the flow \(bookmark\)](#)

Other [Official bike safety ID \(identification card\)](#)

Other [Bicycle owner's identification \(identification card\)](#)

Other [Davis bike map \(university and city map\)](#)

Other [What would a SuperCyclist do? \(poster\)](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide for developing bicycle indoctrination material for new college students](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Wrong-Way Riding Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements. They can also produce and/or distribute brochures on the wrong-way riding problem and other bicycle safety problems common to young children.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Effective cycling: Road I, Road II and Road III](#)

Bicyclist Training [Annual pedal power camp report](#)

Bicyclist Training [Effective cycling: Kids I and Kids II](#)

Bicyclist Training [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Bicyclist Training [Safe moves for older adults](#)

Bicyclist Training [Safe moves city](#)

Implementer Training [Safe moves for service providers](#)

Implementer Training [Effective cycling: Motorist education](#)

Implementer Training [Teaching safe bicycling](#)

Video [Pedal smarts](#)

Video [Getting there by bike](#)

Video [Effective cycling](#)

Video [Bicycle safety](#)

Video [Basic bicycle education](#)

Video [Otto the auto on bicycle safety](#)

Video [The bicycle zone](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [A bicycle is not a toy!](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [Don't go head over handlebars--drive with your head](#)

Brochure [Seeing and being seen](#)

Brochure [Just where do I belong?](#)

Brochure [Have you "shared the road" today?](#)

Brochure [Kids & bikes & safety](#)

Brochure [Did you know?](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Flyer [Sally says: Safety starts at home](#)

Flyer [Ten commandments of bicycling](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Sprocket man](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Bicycling: Safe and easy](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Other [Lincoln bicycle routes \(map\)](#)

Other [Ride on the right. . . Go with the flow \(bookmark\)](#)

Other [Bicycling in Colorado: Rules of the road \(card\)](#)

Other [What would a SuperCyclist do? \(poster\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Wrong-Way Riding Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Such groups can assist in conducting community audits and provide parents with information on how to make roadways safer for bicyclists. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. To reduce wrong-way riding crashes, all community and civic groups can conduct community audits and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Annual pedal power camp report](#)

Bicyclist Training [Safe moves city](#)

Implementer Training [Teaching safe bicycling](#)

Video [Getting there by bike](#)

Video [Basic bicycle education](#)

Video [Be safe on your bike](#)

Video [A kid's eye view](#)

Video [Pedal smarts](#)

Video [Otto the auto on bicycle safety](#)

Video [The bicycle zone](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [A bicycle is not a toy!](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [Don't go head over handlebars--drive with your head](#)

Brochure [Kids and bikes](#)

Brochure [Kids & bikes & safety](#)

Brochure [Did you know?](#)

Brochure [10 tips for fun and safe biking](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Brochure [Neighborhood adventures in bicycle safety: Striving to be a Super Cyclist](#)

Flyer [Sally says: Safety starts at home](#)

Booklet [Sprocket man](#)

Booklet [Oregon bicyclist's manual](#)

Booklet [Bicyclist's guide](#)

Booklet [Herbert gets his glopp: A safe bike riding story](#)

Booklet [Delaware bicycle driver's manual](#)

Other [Lincoln bicycle routes \(map\)](#)

Other [Ride on the right. . . Go with the flow \(bookmark\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Wrong-Way Riding Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate wrong-way riding crashes in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of the wrong-way riding problem as well as methods to solve the problem. They can help eliminate the problem by supporting a police role in bicycle safety, by ensuring that the streets are appropriately traffic-calmed for the community, and by ensuring that the bicycle operates on the streets of the community as a vehicle.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Wrong-Way Riding Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate wrong-way riding crashes. They can provide seasonal hot-button reminders on the problem. They can provide the public with information on the nature and incidence of the wrong-way riding problem while providing routine reporting on a crash attributable to that problem. They can also provide positive publicity on community programs designed to reduce wrong-way crashes, such as installation of bike lanes with directional arrows. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Wrong-Way Riding Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing the threat of wrong-way riding. The bicycle manufacturer is the best and sometimes only point of purchase information source to the consumer about child risks associated with bicycles. The manufacturer can alert parents of young children to the great risks of wrong-way riding. Guidance can be provided to older cyclists and to parents through bicycle hang tags, owner's manuals and owner's videos. Bicycles with a 16-24 inch wheel base could have special hang tags devoted to the behavior and needs of the young child. In addition, flags on poles could be mounted on bikes of this size; a bracket for this purpose could be added to this category of bicycle at the factory. Hang tags on bicycle use could also be added to children's helmets by helmet manufacturers, but these should not preempt the need for proper use information on the bicycle itself. In addition, bicycle shops can display and distribute brochures that describe wrong-way riding and other crashes common to child bicyclists and what parents can do to help minimize these crashes. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [Don't go head over handlebars--drive with your head](#)

Brochure [Seeing and being seen](#)

Brochure [Just where do I belong?](#)

Brochure [Kids and bikes](#)

Brochure [Have you "shared the road" today?](#)

Brochure [Kids & bikes & safety](#)

Brochure [Did you know?](#)

Brochure [10 tips for fun and safe biking](#)

Flyer [Ten commandments of bicycling](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Bicycling: Safe and easy](#)

Booklet [Let's learn more about bike driving](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Other [Lincoln bicycle routes \(map\)](#)

Other [Bike like the best \(poster\)](#)

Other [Ride on the right. . . Go with the flow \(bookmark\)](#)

Other [Bicycle owner's identification \(identification card\)](#)

Other [Bicycling in Colorado: Rules of the road \(card\)](#)

Other [10 smart routes to bicycle safety \(hang tag\)](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Wrong-Way Riding Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. To reduce wrong-way riding crashes, the driver's manual can point out the importance of the motorist's proceeding slowly and carefully in neighborhoods and constantly watching for bicyclists who might be riding in the wrong direction. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), the dangers of wrong-way riding can be pointed out as well as the reasons the bicyclist should ride with traffic. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Booklet [Oregon bicyclist's manual](#)

Booklet [Pocket guide: Safe bicycling in Nevada](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Booklet [Florida driver's handbook](#)

Booklet [Oregon driver manual](#)

Booklet [Illinois bicycle rules](#)

Booklet [New York State driver's manual](#)

Booklet [New Jersey bicycle manual](#)

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Intersection Rideout/Negotiation Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. To reduce intersection crashes, the driver's manual can point out the importance of the motorist's proceeding slowly and carefully at intersections and yielding to bicyclists who have the right of way. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), the dangers of intersection crashes can be pointed out as well as the necessity for the bicyclist to obey all traffic signs and signals, search carefully before entering an intersection and while riding through an intersection, and not enter an intersection unless the bicyclist can clear the intersection before crossing traffic is permitted to enter. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Booklet [Oregon bicyclist's manual](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Booklet [Florida driver's handbook](#)

Booklet [New Jersey bicycle manual](#)

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Intersection Rideout/Negotiation Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing the threat of intersection rideout/negotiation crashes. The bicycle manufacturer is the best and sometimes only point of purchase information source to the consumer about child risks associated with bicycles. The manufacturer can alert parents of young children to the great risk in negotiating intersections. Guidance can be provided to older cyclists and to parents through bicycle hang tags, owner's manuals and owner's videos. Bicycles with a 16-24 inch wheel base could have special hang tags devoted to the behavior and needs of the young child. In addition, flags on poles could be mounted on bikes of this size; a bracket for this purpose could be added to this category of bicycle at the factory. Hang tags on bicycle use could also be added to children's helmets by helmet manufacturers, but these should not preempt the need for proper use information on the bicycle itself. In addition, bicycle shops can display and distribute brochures that describe intersection and other crashes common to child bicyclists and what parents can do to help minimize these crashes. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [How to ride the intersections](#)

Brochure [Seeing and being seen](#)

Brochure [Have you "shared the road" today?](#)

Brochure [Kids & bikes & safety](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Bicycling: Safe and easy](#)

Booklet [Let's learn more about bike driving](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Other [Bike like the best \(poster\)](#)

Other [Bicycle owner's identification \(identification card\)](#)

Other [10 smart routes to bicycle safety \(hang tag\)](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Intersection Rideout/Negotiation Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate intersection crashes. They can provide seasonal hot-button reminders on the problem. They can provide the public with information on the nature and incidence of the intersection problem while providing routine reporting on a crash attributable to that problem. They can also provide positive publicity on community programs designed to reduce intersection crashes, such as intersection design changes that decrease vehicle speeds or increase sight angles and enforcement of traffic laws for bicyclists. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Intersection Rideout/Negotiation Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate intersection crashes in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of the intersection crash problem as well as methods to solve the problem. They can help eliminate the problem by supporting a police role in bicycle safety and by ensuring that adequate attention is given to the appropriateness of intersection signs, signals, and sight angles. They can also ensure that streets are appropriately traffic-calmed for the neighborhood.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Intersection Rideout/Negotiation Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Such groups can assist in conducting community audits and provide parents with information on how to make roadways safer for bicyclists. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. To reduce intersection crashes, all community and civic groups can conduct community audits and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bicycle driving course](#)

Bicyclist Training [Safe moves city](#)

Implementer Training [Teaching safe bicycling](#)

Video [Pedal smarts](#)

Video [Getting there by bike](#)

Video [Basic bicycle education](#)

Video [Be safe on your bike](#)

Video [A kid's eye view](#)

Video [Biking. . . Get the big picture](#)

Video [Otto the auto on bicycle safety](#)

Video [The bicycle zone](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [A bicycle is not a toy!](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Booklet [Sprocket man](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Oregon bicyclist's manual](#)

Booklet [Share the road, share the air](#)

Booklet [Herbert gets his glopp: A safe bike riding story](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Intersection Rideout/Negotiation Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements. They can also produce and/or distribute brochures on the intersection rideout/negotiation problem and other bicycle safety problems common to young children.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Effective cycling: Road I, Road II and Road III](#)

Bicyclist Training [Effective cycling: Kids I and Kids II](#)

Bicyclist Training [Bicycle driving course](#)

Bicyclist Training [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Bicyclist Training [Safe moves for older adults](#)

Bicyclist Training [Safe moves city](#)

Implementer Training [Safe moves for service providers](#)

Implementer Training [Effective cycling: Motorist education](#)

Implementer Training [Teaching safe bicycling](#)

Video [Pedal smarts](#)

Video [Getting there by bike](#)

Video [Effective cycling](#)

Video [Ace of cycling](#)

Video [Bicycle safety](#)

Video [Basic bicycle education](#)

Video [Biking. . . Get the big picture](#)

Video [Otto the auto on bicycle safety](#)

Video [The bicycle zone](#)

Video [Community awareness](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [A bicycle is not a toy!](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [How to ride the intersections](#)

Brochure [Seeing and being seen](#)

Brochure [Have you "shared the road" today?](#)

Brochure [Kids & bikes & safety](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Sprocket man](#)

Booklet [Share the road, share the air](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Bicycling: Safe and easy](#)

Booklet [Street smarts: Bicycling's traffic survival guide](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Other [What would a SuperCyclist do? \(poster\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Intersection Rideout/Negotiation Schools

Potential Role: There are many ways that school administrators and teachers can participate in programs to reduce intersection rideout/negotiation crashes among children. Clearly, the most effective action is to implement a comprehensive bicycle safety education program that focuses on the crash types that typically involve young children. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Elementary schools can serve as efficient conduits for conveying educational materials to young bicyclists' parents. Parents can be educated on intersection rideout/negotiation and other crash types that commonly involve children and the actions that they can take to reduce the likelihood that their child will be involved in a bicycle/motor-vehicle crash. Information on the problem can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate intersection rideout/negotiation crash information in driver education programs to emphasize the need for motorists to drive slowly through neighborhoods and to search for bicyclists at all times. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Teacher's guide to bicycle safety: Kindergarten-grade 8](#)

Bicyclist Training [Someone else](#)

Bicyclist Training [Instructor's guide for the bicycle driver's test \(How well do you drive your bike?\)](#)

Bicyclist Training [The right way](#)

- Bicyclist Training [Bicycle traffic safety school](#)
- Bicyclist Training [Traffic safety education guide](#)
- Bicyclist Training [The basics of bicycling](#)
- Bicyclist Training [The elementary traffic education program](#)
- Bicyclist Training [Bicycle driving course](#)
- Bicyclist Training [Bike Ed Hawaii](#)
- Bicyclist Training [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)
- Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)
- Implementer Training [Effective cycling: Motorist education](#)
- Implementer Training [Bicycle and pedestrian traffic safety education](#)
- Implementer Training [Teaching safe bicycling](#)
- Video [Pedal smarts](#)
- Video [The E's of cycling](#)
- Video [Ace of cycling](#)
- Video [Bicycle safety](#)
- Video [Basic bicycle education](#)
- Video [Be safe on your bike](#)
- Video [A kid's eye view](#)
- Video [Bike right. . . The face you save may be your own](#)
- Video [Biking. . . Get the big picture](#)
- Video [Otto the auto on bicycle safety](#)
- Video [The bicycle zone](#)
- Video [Sharing the road](#)
- Video [Community awareness](#)
- Brochure [Stop: Let me tell you how to save a life like yours](#)
- Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [A bicycle is not a toy!](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [Do the right thing \(It's a bike thing\)](#)

Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Flyer [Bicycles and the new UC Davis cyclist, 1998-99](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Sprocket man](#)

Booklet [The best bicyclist on earth](#)

Booklet [Share the road, share the air](#)

Booklet [Bicycle safety: A wheely good idea](#)

Booklet [Herbert gets his glopp: A safe bike riding story](#)

Booklet [Team helmet bike safety book](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Drive your bicycle safely](#)

Booklet [Let's learn more about bike driving](#)

Booklet [The University of Montana cyclist's survival guide](#)

Other [Bike like the best \(poster\)](#)

Other [Bicycle owner's identification \(identification card\)](#)

Other [Davis bike map \(university and city map\)](#)

Other [What would a SuperCyclist do? \(poster\)](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide for developing bicycle indoctrination material for new college students](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Intersection Rideout/Negotiation Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction in intersection crashes in at least three ways. The first way is to issue citations or warnings to bicyclists who fail to obey signs or signals at intersections or make other intersection errors. A second way is through formal and informal training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to elementary and middle school children. Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists (and their parents) when they fail to obey intersection laws or regulations. They can also provide positive reinforcement to bicyclists who are observed behaving in a desirable manner. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Bicyclist Training [Someone else](#)

Bicyclist Training [The right way](#)

Bicyclist Training [Bicycle driving course](#)

Bicyclist Training [Safe moves city](#)

Implementer Training [Enforcement for bicycle safety](#)

Implementer Training [Bike patrol training manual](#)

Implementer Training [Teaching safe bicycling](#)

Video [The E's of cycling](#)

Video [Biking. . . Get the big picture](#)

Video [Otto the auto on bicycle safety](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [New Jersey bicycle manual](#)

Report/Guide [The Minnesota peace officer's guide to bicycle traffic management](#)

Proposed Countermeasures:

Bicyclist Training [Insert on bicycle safety for offender school training](#)

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)

Other [Law enforcement public information and education \(PI&E\) materials](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Intersection Rideout/Negotiation Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as running rodeos and making presentations to both bicyclists and parents on the intersection problem and other bicycle safety issues. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups, for example, a brochure for parents on the intersection rideout/negotiation problem and other problems common to child bicyclists.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Bicyclist Training [Safe moves city](#)

Implementer Training [Teaching safe bicycling](#)

Video [Bicycle safety](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Booklet [Team helmet bike safety book](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [A package of safety education products for distribution by health care organizations and professionals](#)

Other [Pre-formatted electronic mail safety messages](#)



Intersection Rideout/Negotiation Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children. Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bicycle driving course](#)

Implementer Training [Effective cycling: Motorist education](#)

Video [Be safe on your bike](#)

Video [A kid's eye view](#)

Video [Biking. . . Get the big picture](#)

Video [Otto the auto on bicycle safety](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [A bicycle is not a toy!](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Booklet [Sprocket man](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Oregon bicyclist's manual](#)

Booklet [Share the road, share the air](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Safe bicycling in Chicago \(Also available in Polish and Spanish\)](#)

Other [Bicycle owner's identification \(identification card\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [Pre-formatted electronic mail safety messages](#)



Intersection Rideout/Negotiation Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on the intersection rideout/negotiation problem and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bicycle driving course](#)

Video [Pedal smarts](#)

Video [Getting there by bike](#)

Video [Effective cycling](#)

Video [Ace of cycling](#)

Video [Bicycle safety](#)

Video [Be safe on your bike](#)

Video [A kid's eye view](#)

Video [Biking. . . Get the big picture](#)

Video [Otto the auto on bicycle safety](#)

Video [The bicycle zone](#)

Video [Sharing the road](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [A bicycle is not a toy!](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [How to ride the intersections](#)

Brochure [Seeing and being seen](#)

Brochure [Have you "shared the road" today?](#)

Brochure [Kids & bikes & safety](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Sprocket man](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Oregon bicyclist's manual](#)

Booklet [Share the road, share the air](#)

Booklet [Herbert gets his glopp: A safe bike riding story](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Drive your bicycle safely](#)

Booklet [Safe bicycling in Chicago \(Also available in Polish and Spanish\)](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Other [Bike like the best \(poster\)](#)

Other [Bicycle owner's identification \(identification card\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Intersection Rideout/Negotiation Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can develop and implement a model neighborhood bicycle safety program. For example, they can do all or any part of the following: analyze the incidence of the bicycle intersection rideout/negotiation problem in the community, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to assist the cyclist in negotiating intersections safely.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Bicyclist Training [Bicycle driving course](#)

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Implementer Training [Teaching safe bicycling](#)

Video [Ace of cycling](#)

Video [Bicycle safety](#)

Video [Be safe on your bike](#)

Video [A kid's eye view](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

- Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)
- Brochure [A bicycle is not a toy!](#)
- Brochure [Safe bicycle riding in New Jersey](#)
- Brochure [How to ride the intersections](#)
- Brochure [Seeing and being seen](#)
- Brochure [Have you "shared the road" today?](#)
- Brochure [Kids & bikes & safety](#)
- Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)
- Brochure [Uncle Bob's bike-o-rama safety quiz](#)
- Flyer [Prevent bicycle crashes](#)
- Booklet [Sprocket man](#)
- Booklet [Bicycle safety: What every parent should know](#)
- Booklet [Oregon bicyclist's manual](#)
- Booklet [Share the road, share the air](#)
- Booklet [Florida cycling tips: Staying alive on the roads](#)
- Booklet [Delaware bicycle driver's manual](#)
- Booklet [Drive your bicycle safely](#)
- Booklet [Bicycling: Safe and easy](#)
- Booklet [Let's learn more about bike driving](#)
- Booklet [Safe bicycling in Chicago \(Also available in Polish and Spanish\)](#)
- Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)
- Booklet [New Jersey bicycle manual](#)
- Other [Bike like the best \(poster\)](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Report/Guide [Responses to queries on bicycle safety](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Intersection Rideout/Negotiation Planning Groups

Potential Role: Local and regional planning groups can adopt and implement low speed neighborhood street and trail network guidelines for their communities. Working with local neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets, street systems and site plan reviews, among others. Specifications are needed for both single family and multi-family residence neighborhoods. They can rewrite local codes for implementing neighborhood design and can promote these codes. In addition, they can assist developers to create model subdivisions and can work with neighborhood groups to retrofit existing neighborhoods. Local neighborhood street classifications need design specifications featuring good sight distances at all intersections, appropriate sidewalk designs and placement, and proper design speeds. Excessive crossing widths and high crossing speeds of motor vehicles exist on many neighborhood streets. Intersection geometrics, operations and maintenance should be set to invite safe and courteous vehicle turning movements. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improved sight distances at intersections and slower turning speeds increase the likelihood that motorist and bicyclist will see each other and have time to react to avoid an intersection crash.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Report/Guide [Implementing bicycle improvements at the local level](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)



Intersection Rideout/Negotiation Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement low speed neighborhood street and trail network guidelines for their communities. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Working with local neighborhood leaders, builders associations, and safety officials, they can enact new guidelines for streets, street systems and site plan reviews, among others. Specifications are needed for both single family and multi-family residence neighborhoods. Local neighborhood street classifications need design specifications featuring good sight distances at all intersections, appropriate sidewalk designs and placement, and proper design speeds. Excessive crossing widths and high crossing speeds of motor vehicles exist on many neighborhood streets. Intersection geometrics, operations and maintenance should be set to invite safe and courteous vehicle turning movements. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improved sight distances at intersections and slower turning speeds increase the likelihood that motorist and bicyclist will see each other and have time to react to avoid an intersection crash.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Report/Guide [Implementing bicycle improvements at the local level](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)



Intersection Rideout/Negotiation Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt low speed neighborhood street and trail network guidelines for their members. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. They can write new guidelines for streets, street systems, and site plan reviews, among others. Local neighborhood street classifications should specify designs featuring good sight distances at all intersections, appropriate sidewalk designs and placement, and proper design speeds for neighborhoods. Excessive crossing widths and high crossing speeds of motor vehicles exist on many neighborhood streets. In addition, intersection geometrics, operations and maintenance should be set to invite safe and courteous vehicle turning movements. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improved sight distances at intersections and slower turning movements increase the likelihood that motorist and bicyclist will see each other and have time to react to avoid an intersection crash.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Report/Guide [Implementing bicycle improvements at the local level](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)



Midblock Turns Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. To reduce midblock turn crashes, the driver's manual can point out the importance of the motorist's proceeding slowly and carefully in neighborhoods and watching for bicyclists who might suddenly turn or swerve into their path. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), the dangers of midblock turns can be pointed out as well as the necessity for the bicyclist to search before making any roadway turns and to be predictable at all times. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Booklet [Delaware bicycle driver's manual](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Booklet [Florida driver's handbook](#)

Booklet [New Jersey bicycle manual](#)

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Midblock Turns Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing the threat of midblock turn crashes. The bicycle manufacturer is the best and sometimes only point of purchase information source to the consumer about the child risks associated with bicycles. The manufacturer can alert parents of young children to the great risk of making turns midblock without first searching for dangers in the roadway. Guidance can be provided to parents and cyclists through bicycle hang tags, owner's manuals and owner's videos. Bicycles with a 16-24 inch wheel base could have special hang tags devoted to the behavior and needs of the young child. In addition, flags on poles could be mounted on bikes of this size; a bracket for this purpose could be added to this category of bicycle at the factory. Hang tags on bicycle use could also be added to children's helmets by helmet manufacturers, but these should not preempt the need for proper use information on the bicycle itself. In addition, bicycle shops can display and distribute brochures that describe midblock turn and other crashes common to child bicyclists and what parents can do to help minimize these crashes. Sellers can also promote products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [How to ride the intersections](#)

Brochure [City cycling](#)

Brochure [Just where do I belong?](#)

Brochure [How to "talk" to people in cars](#)

Brochure [Kids & bikes & safety](#)

Flyer [Ten commandments of bicycling](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Midblock Turns Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes that occur when the bicyclist turns or swerves into the path of the motorist. They can provide seasonal hot-button reminders on the problem. They can provide the public with information on the nature and incidence of the midblock turn problem while providing routine reporting on a crash attributable to the problem. They can also provide positive publicity on community programs designed to ensure that streets are appropriately traffic-calmed for the neighborhood. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Midblock Turns Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate midblock turn crashes in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of the midblock turn problem as well as methods to solve the problem. Elected officials can promote actions designed to ensure that the bicyclist will not turn or swerve into the path of the motorist by supporting a police role in bicycle safety and by ensuring that the city's streets are appropriately traffic-calmed for the neighborhood. They can also play a lead role in ensuring that neighborhoods are designed to accommodate safe use of bicycles.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Midblock Turns Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Such groups can assist in conducting community audits and provide parents with information on how to make roadways safer for bicyclists. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. To reduce midblock turn crashes, all community and civic groups can conduct community audits and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bicycle driving course](#)

Bicyclist Training [Safe moves city](#)

Implementer Training [Teaching safe bicycling](#)

Video [Pedal smarts](#)

Video [Be safe on your bike](#)

Video [A kid's eye view](#)

Video [Biking. . . Get the big picture](#)

Video [Otto the auto on bicycle safety](#)

Video [The bicycle zone](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [Kids & bikes & safety](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Share the road, share the air](#)

Booklet [Bicyclist's guide](#)

Booklet [Delaware bicycle driver's manual](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Midblock Turns Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements. They can also produce and/or distribute brochures on the midblock turn problem and other bicycle safety problems common to young children.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Effective cycling: Kids I and Kids II](#)

Bicyclist Training [Bicycle driving course](#)

Bicyclist Training [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Bicyclist Training [Safe moves for older adults](#)

Bicyclist Training [Safe moves city](#)

- Implementer Training [Safe moves for service providers](#)
- Implementer Training [Teaching safe bicycling](#)
- Video [Pedal smarts](#)
- Video [Effective cycling](#)
- Video [Ace of cycling](#)
- Video [Bicycle safety](#)
- Video [Biking. . . Get the big picture](#)
- Video [Otto the auto on bicycle safety](#)
- Video [The bicycle zone](#)
- Video [Community awareness](#)
- Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)
- Brochure [How to ride the intersections](#)
- Brochure [City cycling](#)
- Brochure [Just where do I belong?](#)
- Brochure [How to "talk" to people in cars](#)
- Brochure [Kids & bikes & safety](#)
- Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)
- Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)
- Flyer [Ten commandments of bicycling](#)
- Flyer [Prevent bicycle crashes](#)
- Booklet [Share the road, share the air](#)
- Booklet [Badger bicycle tips](#)
- Booklet [Delaware bicycle driver's manual](#)
- Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)
- Other [What would a SuperCyclist do? \(poster\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Midblock Turns Schools

Potential Role: There are many ways that school administrators and teachers can participate in programs to reduce midblock turn crashes among children. Clearly, the most effective action is to implement a comprehensive bicycle safety education program that focuses on the crash types that typically involve young children. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of searching for vehicles before making turns and of being conspicuous at all times needs to be emphasized at an early age. It can be reinforced at the middle school, high school and college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Pre-schools and elementary schools can serve as efficient conduits for conveying educational materials to young bicyclists' parents. Parents can be educated on the midblock turn and other crash types that commonly involve young children and the actions that they can take to reduce the likelihood that their child will be involved in a bicycle/motor-vehicle crash. Information on the problem can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate midblock turn crash information in driver education programs to emphasize the need for motorists to drive slowly through neighborhoods and to constantly search for bicyclists. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Teacher's guide to bicycle safety: Kindergarten-grade 8](#)

Bicyclist Training [Someone else](#)

Bicyclist Training [Instructor's guide for the bicycle driver's test \(How well do you drive your bike?\)](#)

- Bicyclist Training [The right way](#)
- Bicyclist Training [Traffic safety education guide](#)
- Bicyclist Training [The basics of bicycling](#)
- Bicyclist Training [The elementary traffic education program](#)
- Bicyclist Training [Bicycle driving course](#)
- Bicyclist Training [Bike Ed Hawaii](#)
- Bicyclist Training [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)
- Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)
- Implementer Training [Bicycle and pedestrian traffic safety education](#)
- Implementer Training [Teaching safe bicycling](#)
- Video [Pedal smarts](#)
- Video [Ace of cycling](#)
- Video [Bicycle safety](#)
- Video [Be safe on your bike](#)
- Video [A kid's eye view](#)
- Video [Bike right. . . The face you save may be your own](#)
- Video [Biking. . . Get the big picture](#)
- Video [Otto the auto on bicycle safety](#)
- Video [The bicycle zone](#)
- Video [Community awareness](#)
- Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)
- Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)
- Flyer [Prevent bicycle crashes](#)
- Booklet [Bike like the best](#)
- Booklet [Share the road, share the air](#)
- Booklet [Delaware bicycle driver's manual](#)

Booklet [The University of Montana cyclist's survival guide](#)

Other [Davis bike map \(university and city map\)](#)

Other [What would a SuperCyclist do? \(poster\)](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide for developing bicycle indoctrination material for new college students](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Midblock Turns Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction in midblock turn crashes in at least three ways. The first way is to issue citations or warnings to bicyclists who make turns without first searching for vehicles. A second way is through formal and informal training. Enforcement officers can provide both classroom training (e.g., the Officer Friendly Program) and on-bike training (e.g., bike rodeos) to children. Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists (and their parents) when they are seen making midblock turns without first searching for cars. They can also provide positive reinforcement to bicyclists who are observed behaving in a desirable manner. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training- [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Bicyclist Training [Someone else](#)

Bicyclist Training [The right way](#)

Bicyclist Training [Bicycle driving course](#)

Bicyclist Training [Safe moves city](#)

Implementer Training [Enforcement for bicycle safety](#)

Implementer Training [Bike patrol training manual](#)

Implementer Training [Teaching safe bicycling](#)

Video [Biking. . . Get the big picture](#)

Video [Otto the auto on bicycle safety](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [New Jersey bicycle manual](#)

Report/Guide [The Minnesota peace officer's guide to bicycle traffic management](#)

Proposed Countermeasures:

Bicyclist Training [Insert on bicycle safety for offender school training](#)

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)

Other [Law enforcement public information and education \(PI&E\) materials](#)

Other [Slicks that contain crash illustrations and related safety information for Young bicyclists and their parents](#)



Midblock Turns Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as running rodeos and making presentations to both bicyclists and parents on the midblock turn problem and other bicycle safety issues. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups, for example, a brochure for parents on the midblock turn problem and other problems common to child bicyclists.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Bicyclist Training [Safe moves city](#)

Implementer Training [Teaching safe bicycling](#)

Video [Bicycle safety](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [A package of safety education products for distribution by health care organizations and professionals](#)

Other [Pre-formatted electronic mail safety messages](#)



Midblock Turns Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bicycle driving course](#)

Video [Be safe on your bike](#)

Video [A kid's eye view](#)

Video [Biking. . . Get the big picture](#)

Video [Otto the auto on bicycle safety](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet- [Share the road, share the air](#)

Booklet [Bicyclist's guide](#)

Booklet [Delaware bicycle driver's manual](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [Pre-formatted electronic mail safety messages](#)



Midblock Turns Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on the midblock turn problem and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program--engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bicycle driving course](#)

Video- [Pedal smarts](#)

Video [Effective cycling](#)

Video [Ace of cycling](#)

Video [Bicycle safety](#)

Video [Be safe on your bike](#)

Video [A kid's eye view](#)

Video [Biking. . . Get the big picture](#)

Video [Otto the auto on bicycle safety](#)

Video [The bicycle zone](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [How to ride the intersections](#)

Brochure [City cycling](#)

Brochure [Just where do I belong?](#)

Brochure [How to "talk" to people in cars](#)

Brochure [Kids & bikes & safety](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Flyer [Ten commandments of bicycling](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Bike like the best](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Share the road, share the air](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Midblock Turns Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can develop and implement a model neighborhood bicycle safety program. For example, they can do all or any part of the following: analyze the incidence and location of the midblock turn crash problem in the community, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to prevent the cyclist from making sudden unexpected midblock turns.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Bicyclist Training [Bicycle driving course](#)

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Implementer Training [Teaching safe bicycling](#)

Video [Ace of cycling](#)

Video [Bicycle safety](#)

Video [Be safe on your bike](#)

Video [A kid's eye view](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [How to ride the intersections](#)

Brochure [City cycling](#)

Brochure [Just where do I belong?](#)

Brochure [How to "talk" to people in cars](#)

Brochure [Kids & bikes & safety](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Flyer [Ten commandments of bicycling](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Bike like the best](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Share the road, share the air](#)

Booklet [Badger bicycle tips](#)

Booklet [Florida cycling tips: Staying alive on the roads](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Booklet [New Jersey bicycle manual](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Report/Guide [Responses to queries on bicycle safety](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Midblock Turns Planning Groups

Potential Role: Local and regional planning groups can adopt and implement low speed neighborhood street and trail network guidelines for their communities. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets, street systems and site plan reviews, among others. They can rewrite local codes for implementing neighborhood design and can promote these codes. In addition, they can assist developers to create model subdivisions and can work with neighborhood groups to retrofit existing neighborhoods. For local neighborhood street classifications, design features should specify appropriate driveway design and placement and proper design speeds. Specifications are needed for single family and multi-family residences.. Street patterns, streetscaping and geometric designs set the speed of a neighborhood street and street system. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, limiting driveway access to properties may minimize the likelihood of midblock turns.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Report/Guide [Implementing bicycle improvements at the local level](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)



Midblock Turns Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement low speed neighborhood street and trail network guidelines. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Working with neighborhood leaders, builders associations and safety officials, they can review development sites, adopt a model code, and fine tune the code. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. Appropriate sight distances, sidewalk and driveway design and placement, fence and vegetation setbacks and proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, limiting driveway access to properties may minimize the likelihood of sudden bicyclist midblock turns

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Report/Guide [Implementing bicycle improvements at the local level](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)



Midblock Turns Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt low speed neighborhood street and trail network guidelines for their members. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. They can write new guidelines for streets, street systems, and site plan reviews, among others. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, limiting driveway access to properties may minimize the likelihood of sudden bicyclist midblock turns. Thus guidelines are needed for driveway design and placement.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Report/Guide [Implementing bicycle improvements at the local level](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)



Midblock Rideout Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. To reduce midblock rideout crashes, the driver's manual can point out the importance of the motorist's proceeding slowly and carefully in neighborhoods and watching for bicyclists who might enter the roadway from a residential or commercial driveway or from the sidewalk. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), the dangers of midblock rideouts can be pointed out as well as the necessity for the bicyclist to stop and look for traffic before entering the roadway and to be conspicuous at all times. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Booklet [Oregon bicyclist's manual](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Booklet [Florida driver's handbook](#)

Booklet [New York State driver's manual](#)

Booklet [New Jersey bicycle manual](#)

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Midblock Rideout Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing the threat of midblock rideout crashes. The bicycle manufacturer is the best and sometimes only point of purchase information source to the consumer about the risks associated with bicycles and driveways. The manufacturer can alert parents of young children to the great risk in the driveways and walkways in front of their own homes. Guidance can be provided to parents through bicycle hang tags, owner's manuals and owner's videos. Bicycles with a 16-24 inch wheel base could have special hang tags devoted to the behavior and needs of the young child. In addition, flags on poles could be mounted on bikes of this size; a bracket for this purpose could be added to this category of bicycle at the factory. Hang tags on bicycle use could also be added to children's helmets by helmet manufacturers, but these should not preempt the need for proper use information on the bicycle itself. In addition, bicycle shops can display and distribute brochures that describe midblock rideout and other crashes common to child bicyclists and what parents can do to help minimize these crashes. Sellers can also promote products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Flyer [Prevent bicycle crashes](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Let's learn more about bike driving](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Other [Lincoln bicycle routes \(map\)](#)

Other [10 smart routes to bicycle safety \(hang tag\)](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Midblock Rideout Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign directed to parents to help eliminate midblock rideout crashes. They can provide seasonal hot-button reminders on the problem. They can provide the public with information on the nature and incidence of the problem while providing routine reporting on a crash attributable to that problem. They can provide positive publicity on community programs designed to ensure that children, parents and homeowners are aware of the problem and what can be done to minimize it. They can also publicize programs designed to ensure that streets are appropriately traffic-calmed for the neighborhood and that appropriate sight distances are maintained at residential and commercial driveways. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Midblock Rideout Elected Officials

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate midblock rideout crashes in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of the midblock rideout problem as well as methods to help solve the problem. For example, they can promote removal of visual screens (shrubs, fences and other objects that prevent drivers and bicyclists from seeing each other) from residential and commercial driveways. They can promote legislation and chart laws that will promote bicycle safety. They also can play a lead role in ensuring that neighborhoods are designed to accommodate safe use of bicycles.

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)

Other [Model driveway parking ordinance](#)

Other [Model highway entry law](#)



Midblock Rideout Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore, can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Such groups can assist in conducting community audits and provide parents with information on how to make driveways and roadways safer for bicyclists. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. To reduce midblock rideout crashes, all community and civic groups can conduct community audits and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Bicyclist Training [Bicycle driving course](#)

Implementer Training [Teaching safe bicycling](#)

Video [A kid's eye view](#)

Video [The bicycle zone](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Biking with Bucklebear](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Oregon bicyclist's manual](#)

Booklet [Herbert gets his glopp: A safe bike riding story](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Other [Lincoln bicycle routes \(map\)](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure on the midblock rideout crash type for homeowners](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Midblock Rideout Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements. They can also produce and/or distribute brochures on the midblock rideout problem and what homeowners can do to prevent the problem.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Bicyclist Training [Effective cycling: Kids I and Kids II](#)

Bicyclist Training [Bicycle driving course](#)

Bicyclist Training [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Bicyclist Training [Safe moves for older adults](#)

Implementer Training [Safe moves for service providers](#)

Implementer Training [Teaching safe bicycling](#)

Video [Ace of cycling](#)

Video [Bicycle safety](#)

Video [The bicycle zone](#)

Video [Community awareness](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Biking with Bucklebear](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Other [Lincoln bicycle routes \(map\)](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure on the midblock rideout crash type for homeowners](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Midblock Rideout Schools

Potential Role: There are many ways that school administrators and teachers can participate in programs to reduce midblock rideout crashes among children. Clearly, the most effective action is to implement a comprehensive bicycle safety education program that focuses on the crash types that typically involve young children. For midblock rideout crashes, this is particularly important at the pre-school and elementary school levels when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of searching for vehicles before entering the roadway and of being conspicuous at all times needs to be emphasized at an early age. It can be reinforced at the middle school, high school and college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Pre-schools and elementary schools can serve as efficient conduits for conveying educational materials to young bicyclists' parents. Parents can be educated on the midblock rideout and other crash types that commonly involve young children and the actions that they can take to reduce the likelihood that their child will be involved in a bicycle/motor-vehicle crash. Information on the problem can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate midblock rideout crash information in driver education programs to emphasize the need for motorists to drive slowly through neighborhoods and to search for bicyclists entering the street midblock. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Teacher's guide to bicycle safety: Kindergarten-grade 8](#)

Bicyclist Training [Instructor's guide for the bicycle driver's test \(How well do you drive your bike?\)](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Bicyclist Training [Traffic safety education guide](#)

Bicyclist Training [The basics of bicycling](#)

Bicyclist Training [The elementary traffic education program](#)

Bicyclist Training [Biking with Bucklebear](#)

Bicyclist Training [Bicycle driving course](#)

Bicyclist Training [Bike Ed Hawaii](#)

Bicyclist Training [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Implementer Training [Bicycle and pedestrian traffic safety education](#)

Implementer Training [Teaching safe bicycling](#)

Video [Ace of cycling](#)

Video [Bicycle safety](#)

Video [A kid's eye view](#)

Video [The bicycle zone](#)

Video [Sharing the road](#)

Video [Community awareness](#)

Brochure [Drive your bike safely](#)

Flyer [Sally says: Bicycle safety is every parent's responsibility!](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Biking with Bucklebear](#)

Booklet [Bike like the best](#)

Booklet [The best bicyclist on earth](#)

Booklet [Save a life like yours with Sally and friends: Activity book](#)

Booklet [Sam's adventures through Nevada: Safe pedaling in Nevada](#)

Booklet [Bicycle safety: A wheely good idea](#)

Booklet [Herbert gets his glopp: A safe bike riding story](#)

Booklet [Team helmet bike safety book](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Drive your bicycle safely](#)

Booklet [Let's learn more about bike driving](#)

Other [Sally says: Save a life like yours \(bookmark\)](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide for developing bicycle indoctrination material for new college students](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Midblock Rideout Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction of midblock rideout crashes in at least three ways. The first is to issue citations or warnings to bicyclists who are seen entering the roadway without stopping and searching for approaching traffic. A second way is through formal and informal training. Enforcement officers can provide both classroom training (e.g., the Officer Friendly Program) and on-bike training (e.g., bike rodeos) to children. Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists (and their parents) when they are seen exiting driveways without first stopping and searching for vehicles. They can also provide positive reinforcement to bicyclists who are observed behaving in a desirable manner. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report driveway/roadway junctions where the sight distance is limited by vegetation, structures or parked vehicles. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Bicyclist Training [Bicycle driving course](#)

Implementer Training [Enforcement for bicycle safety](#)

Implementer Training [Bike patrol training manual](#)

Implementer Training [Teaching safe bicycling](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [New Jersey bicycle manual](#)

Report/Guide [The Minnesota peace officer's guide to bicycle traffic management](#)

Proposed Countermeasures:

Bicyclist Training [Insert on bicycle safety for offender school training](#)

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)

Other [Law enforcement public information and education \(PI&E\) materials](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Midblock Rideout Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as running rodeos and making presentations to both bicyclists and parents on the midblock rideout problem and other bicycle safety issues. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups, for example, a brochure for parents on the midblock rideout problem and other problems common to child bicyclists.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Implementer Training [Teaching safe bicycling](#)

Video [Bicycle safety](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Flyer [Safe bicycling starts early](#)

Booklet [Team helmet bike safety book](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [A package of safety education products for distribution by health care organizations and professionals](#)

Other [Pre-formatted electronic mail safety messages](#)



Midblock Rideout Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bicycle driving course](#)

Video [A kid's eye view](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Booklet [Bucklebear's rules for cycli](#)

Booklet [Biking with Bucklebear](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Oregon bicyclist's manual](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Other [Lincoln bicycle routes \(map\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure on the midblock rideout crash type for homeowners](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [Pre-formatted electronic mail safety messages](#)



Midblock Rideout Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on the midblock rideout problem and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program--engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure program materials developed under government auspices. In addition, they hold meetings and promote their areas of interest. They can also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group.

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bicycle driving course](#)

Video [Ace of cycling](#)

Video [Bicycle safety](#)

Video [A kid's eye view](#)

Video [The bicycle zone](#)

Video [Sharing the road](#)

Brochure [Drive your bike safely](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Flyer [Sally says: Bicycle safety is every parent's responsibility!](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Biking with Bucklebear](#)

Booklet [Bike like the best](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Oregon bicyclist's manual](#)

Booklet [Herbert gets his glopp: A safe bike riding story](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Drive your bicycle safely](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Other [Lincoln bicycle routes \(map\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure on the midblock rideout crash type for homeowners](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Midblock Rideout Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can develop and implement a model neighborhood bicycle safety program. For example, they can do all or any part of the following: analyze the incidence and location of the midblock rideout problem in the community, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to reduce the midblock rideout problem.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Bicyclist Training [Bicycle driving course](#)

Implementer Training [Teaching safe bicycling](#)

Video [Ace of cycling](#)

Video [Bicycle safety](#)

Video [A kid's eye view](#)

Brochure [Drive your bike safely](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Flyer [Sally says: Bicycle safety is every parent's responsibility!](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Biking with Bucklebear](#)

Booklet [Bike like the best](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Oregon bicyclist's manual](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Drive your bicycle safely](#)

Booklet [Let's learn more about bike driving](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Booklet [New Jersey bicycle manual](#)

Other [Lincoln bicycle routes \(map\)](#)

Other [Sally says: Save a life like yours \(bookmark\)](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure on the midblock rideout crash type for homeowners](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Report/Guide [Responses to queries on bicycle safety](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Midblock Rideout Planning Groups

Potential Role: Local and regional planning groups can adopt and implement low speed neighborhood street and trail network guidelines for their communities. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets, street systems and site plan reviews, among others. They can rewrite local codes for implementing neighborhood design and can promote these codes. In addition, they can assist developers to create model subdivisions and can work with neighborhood groups to retrofit existing neighborhoods. For local neighborhood street classifications, design features should specify good sight distances, appropriate sidewalk design and placement, and proper design speeds for neighborhoods. Specifications are needed for single family and multi-family residences. Street patterns, streetscaping and geometric designs set the speed of a neighborhood street and street system. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential and commercial driveways/alleys increases the likelihood that exiting bicyclists and motorists will see each other and, therefore, that midblock rideout crashes will be reduced.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide- [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)



Midblock Rideout Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement low speed neighborhood street and trail network guidelines. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Working with neighborhood leaders, builders associations and safety officials, they can review development sites, adopt a model code, and fine tune the code. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. Appropriate sight distances, sidewalk and driveway design and placement, fence and vegetation setbacks and proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential and commercial driveways/alleys increases the likelihood that exiting bicyclists and motorists will see each other and, therefore, that midblock rideout crashes will be reduced.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)



Midblock Rideout Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt low speed neighborhood street and trail network guidelines for their members. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. They can write new guidelines for streets, street systems, and site plan reviews, among others. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential and commercial driveways/alleys increases the likelihood that exiting bicyclists and motorists will see each other and, therefore, that midblock rideout crashes will be reduced. Thus, guidelines are needed for driveway and sidewalk design/location including setbacks for vegetation and fences.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasure:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)



Misjudging Passing Space Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out the importance of the motorist's proceeding slowly and exercising caution when passing a bicyclist. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), the necessity to ride defensively and to be conspicuous at all times can be emphasized. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Video [Sharing the road: Bus operator training](#)

Brochure [Sharing the road: Survival of the smallest](#)

Flyer [Share the road](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Booklet [North Carolina driver's handbook](#)

Booklet [Oregon driver manual](#)

Booklet [New York State driver's manual](#)

Booklet [1998 California driver handbook](#)

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Misjudging Passing Space Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing the importance of being conspicuous and of riding defensively at all times. Bicycle manufacturers can provide guidance to cyclists and parents through bicycle hang tags, owner's manuals and owner's videos. Flags on poles could be mounted on bikes with a wheel base of 16-24 inches; a bracket for this purpose could be added to this category of bicycle at the factory. In addition, bicycle shops can display and distribute brochures that describe common motorist errors and what cyclists can do to avoid crashes. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Flyer [Share the road](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Misjudging Passing Space Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes due to motorist misjudgment of the space needed to pass the cyclist. They can provide seasonal hot-button reminders on the problem. They can provide the public with information on the nature and incidence of the problem while providing routine reporting on a crash attributable to that problem. The media can also support the installation of separate on-street lanes for cyclists (or appropriate off-street facilities). Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Misjudging Passing Space Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate crashes due to motorist misjudgment of the passing space in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of this problem as well as methods to solve the problem. They can ensure that streets are appropriately traffic-calmed for the community, promote the installation of bicycle lanes or trails where appropriate, and encourage the conduct of both driver training programs and cyclist defensive riding courses.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Misjudging Passing Space Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. To reduce crashes due to motorist errors, all community and civic groups can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Brochure [Sharing the road: Survival of the smallest](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Misjudging Passing Space Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements, such as installation of bicycle lanes and improvements in street lighting. They can also produce and/or distribute brochures on common motorist errors and what motorists can do to improve bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Brochure [Sharing the road: Survival of the smallest](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Misjudging Passing Space Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to reduce crashes due to motorist failure to judge the space needed to pass a bicyclist. The most effective action may be to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of being conspicuous and riding defensively needs to be learned at a young age. It can be reinforced at the middle school, high school and college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Elementary schools can serve as efficient conduits for conveying educational materials to bicyclists' parents on driving errors made by motorists and the actions that they can take to reduce the likelihood that their child will be involved in a bicycle/motor-vehicle crash. Information on the problem can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate motorist errors in driver education programs to emphasize the need for motorists to drive slowly through neighborhoods and to constantly search for bicyclists and other roadway users. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Implementer Training [Bicycle and pedestrian traffic safety education](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide for developing bicycle indoctrination material for new college students](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Misjudging Passing Space Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction in crashes due to an overtaking motorist's failure to judge the passing space in at least three ways. The first is to issue warnings to motorists who do not provide at least three feet of space when passing a bicyclist. The second way is through formal and informal bicyclist training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to teach elementary and middle school children to be conspicuous and to ride defensively and predictably at all times. They can also provide positive reinforcement to bicyclists who are observed behaving in a desirable manner. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Implementer Training [Enforcement for bicycle safety](#)

Implementer Training [Bike patrol training manual](#)

Report/Guide [The Minnesota peace officer's guide to bicycle traffic management](#)

Proposed Countermeasures:

Bicyclist Training [Insert on bicycle safety for offender school training](#)

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Misjudging Passing Space Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as running rodeos and making presentations to both bicyclists and motorists on the motorist failure to judge the passing space and other bicycle safety issues. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups, for example, a brochure for bicyclists and motorists on driving errors that contribute to bicycle crashes.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [A package of safety education products for distribution by health care organizations and professionals](#)

Other [Pre-formatted electronic mail safety messages](#)



Misjudging Passing Space Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Video [Sharing the road: Bus operator training](#)

Brochure [Sharing the road: Survival of the smallest](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [Pre-formatted electronic mail safety messages](#)



Misjudging Passing Space Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on motorist misjudgment of the bicyclist passing space and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Video [Sharing the road: Bus operator training](#)

Brochure [Sharing the road: Survival of the smallest](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Flyer [Share the road](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Misjudging Passing Space Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can do all or any part of the following: analyze the incidence of bicycle crashes in the community that are due to motorist misjudgment of the space needed to pass the cyclist, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to reduce crashes due to motorist misjudgment of the passing space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Sharing the road: Bus operator training](#)

Brochure [Sharing the road: Survival of the smallest](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Flyer [Share the road](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Report/Guide [Responses to queries on bicycle safety](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Misjudging Passing Space Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. Crashes in which the motorist misjudges the passing space can be reduced by improved lighting conditions and by creating bike lanes or paved shoulders on collector and arterial roadways. These bike lanes and paved shoulders pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and roadway volume, the higher the potential for these lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes, and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. In addition, local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)



Misjudging Passing Space Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines that promote safe and courteous roadway sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Crashes in which the motorist misjudges the passing space can be reduced by improved lighting conditions and by creating bike lanes or paved shoulders on collector and arterial roadways. These bike lanes and paved shoulders pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and roadway volume, the higher the potential for these lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes, and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. In addition, local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)



Misjudging Passing Space Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street geometrics, operations and maintenance that invite safe and courteous roadway sharing. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. Crashes in which the motorist misjudges the passing space can be reduced by improved lighting conditions and by creating bike lanes or paved shoulders on collector and arterial roadways. These bike lanes and paved shoulders pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and roadway volume, the higher the potential for these lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes, and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. In addition, local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)



Overtaking, Failure to See Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out the importance of the motorist's proceeding slowly and searching carefully for bicyclists and pedestrians. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), the necessity to ride defensively and to be conspicuous at all times can be emphasized. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Video [Sharing the road: Bus operator training](#)

Brochure [Sharing the road: Survival of the smallest](#)

Flyer [Share the road](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Booklet [New York State driver's manual](#)

Booklet [1998 California driver handbook](#)

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Overtaking, Failure to See Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing the importance of being conspicuous and of riding defensively at all times. Bicycle manufacturers can provide guidance to cyclists and parents through bicycle hang tags, owner's manuals and owner's videos. Flags on poles could be mounted on bikes with a 16-24 inch wheel base; a bracket for this purpose could be added to this category of bicycle at the factory. In addition, bicycle shops can display and distribute brochures that describe common motorist errors and what cyclists can do to avoid crashes. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Flyer [Share the road](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Overtaking, Failure to See Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes due to failure of the motorist to see the cyclist. They can provide seasonal hot-button reminders on the problem. They can publicize information designed to inform the community about the need for the motorist to search carefully at all times and for the cyclist to be conspicuous at all hours of the day. They can provide information on the types of materials that cyclists should wear during the day and at night as well as proper bicycle nighttime illumination devices. They can also provide the public with information on the nature and incidence of the problem while providing routine reporting on a crash attributable to that problem. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Overtaking, Failure to See Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate crashes due to motorist failure to see the cyclist in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of this problem as well as methods to solve the problem. They can ensure that streets are appropriately traffic-calmed for the community, promote the installation of bicycle lanes or trails where appropriate, and encourage the conduct of both driver training programs and cyclist defensive riding courses. They can support legislation and chart laws that will promote bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Overtaking, Failure to See Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. To reduce crashes due to motorist errors, all community and civic groups can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends. To improve the motorist's ability to detect the bicyclist, community and civic groups can provide funding, expertise, or encouragement to develop more effective rear lighting systems for bicycles.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Brochure [Sharing the road: Survival of the smallest](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Booklet [Sprocket man](#)

Booklet [Delaware bicycle driver's manual](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Overtaking, Failure to See Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements, such as improvements in street lighting. They can also produce and/or distribute brochures on common motorist errors and what motorists can do to improve bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Video [Community awareness](#)

Brochure [Sharing the road: Survival of the smallest](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Booklet [Sprocket man](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Overtaking Failure to See Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to reduce crashes due to motorist failure to see the bicyclist. The most effective action may be to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of being conspicuous and riding defensively needs to be learned at a young age. It can be reinforced at the middle school, high school and college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Elementary schools can serve as efficient conduits for conveying educational materials to bicyclists' parents on driving errors made by motorists and the actions that they can take to reduce the likelihood that their child will be involved in a bicycle/motor-vehicle crash. Information on the problem can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate motorist errors in driver education programs to emphasize the need for motorists to drive slowly through neighborhoods and to constantly search for bicyclists and other roadway users. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Instructor's guide for the bicycle driver's test \(How well do you drive your bike?\)](#)

Implementer Training [Bicycle and pedestrian traffic safety education](#)

Video [Community awareness](#)

Video [Sharing the road](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Booklet [Sprocket man](#)

Booklet [Delaware bicycle driver's manual](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide for developing bicycle indoctrination material for new college students](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Overtaking, Failure to See Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction in crashes due to an overtaking motorist's failure to see the bicyclist in at least three ways. The first is to issue citations or warnings to bicyclists who are not adequately conspicuous. Law enforcement officers can also check the night lighting equipment of bicycles to make sure it complies with the law. The second way is through formal and informal bicyclist training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to teach elementary and middle school children to be conspicuous and to ride defensively and predictably at all times. They can also provide positive reinforcement to bicyclists who are observed behaving in a desirable manner. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Implementer Training [Enforcement for bicycle safety](#)

Implementer Training [Bike patrol training manual](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Booklet [Delaware bicycle driver's manual](#)

Report/Guide [The Minnesota peace officer's guide to bicycle traffic management](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Bicyclist Training [Insert on bicycle safety for offender school training](#)

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Overtaking, Failure to See Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as running rodeos and making presentations to both bicyclists and motorists on the motorist failure to see problem and other bicycle safety issues. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups, for example, a brochure for bicyclists and motorists on driving errors that contribute to bicycle crashes.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [A package of safety education products for distribution by health care organizations and professionals](#)

Other [Pre-formatted electronic mail safety messages](#)



Overtaking, Failure to See Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research. For example, they can provide funding, expertise or encouragement to develop more effective rear lighting systems for bicycles.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Video [Sharing the road: Bus operator training](#)

Brochure [Sharing the road: Survival of the smallest](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Booklet [Sprocket man](#)

Booklet [Delaware bicycle driver's manual](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [Pre-formatted electronic mail safety messages](#)



Overtaking, Failure to See Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research to determine where and why motorists fail to detect bicyclists and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space. In addition, they might study or support programs designed to evaluate various materials and/or equipment for conspicuity.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Video [Sharing the road](#)

Brochure [Sharing the road: Survival of the smallest](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Flyer [Share the road](#)

Booklet [Sprocket man](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Overtaking, Failure to See Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can do all or any part of the following: analyze the incidence of bicycle crashes in the community that are due to the fact that the motorist does not see the cyclist, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to ensure that the motorist sees the bicyclist.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Brochure [Sharing the road: Survival of the smallest](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Video [Sharing the road: Bus operator training](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Flyer [Share the road](#)

Booklet [Sprocket man](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Report/Guide [Responses to queries on bicycle safety](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Overtaking, Failure to See Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. Crashes in which the motorist overtakes but fails to see the bicyclist can be reduced by improved lighting conditions and by creating bike lanes or paved shoulders on collector and arterial roadways. These bike lanes and paved shoulders pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and roadway volume, the higher the potential for these lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes, and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. In addition, local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)



Overtaking, Failure to See Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines that promote safe and courteous roadway sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Crashes in which the motorist overtakes but fails to see the bicyclist can be reduced by improved lighting conditions and by creating bike lanes or paved shoulders on collector and arterial roadways. These bike lanes and paved shoulders pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and roadway volume, the higher the potential for these lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes, and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. In addition, local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)



Overtaking, Failure to See Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street geometrics, operations and maintenance that invite safe and courteous roadway sharing. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. Crashes in which the motorist overtakes but fails to see the bicyclist can be reduced by improved lighting conditions and by creating bike lanes or paved shoulders on collector and arterial roadways. These bike lanes and paved shoulders pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and roadway volume, the higher the potential for these lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes, and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. In addition, local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)



Excessive Speed Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out the importance of the motorist's driving slowly and searching carefully for bicyclists and pedestrians. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), the necessity to ride defensively and to be conspicuous at all times can be emphasized. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Booklet [Florida driver's handbook](#)

Booklet [North Carolina driver's handbook](#)

Booklet [Oregon driver manual](#)

Booklet [1998 California driver handbook](#)

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Excessive Speed Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing the threat of excessive motorist speed. Cyclists need to be aware of the importance of being conspicuous and riding defensively at all times. Older cyclists and parents of young cyclists can be alerted to the need to drive motor vehicles at reasonable speeds. Bicycle manufacturers can provide guidance to cyclists and parents through bicycle hang tags, owner's manuals and owner's videos. In addition, bicycle shops can display and distribute brochures that describe common motorist errors and what cyclists can do to avoid crashes. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Excessive Speed Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes due to excessive motorist speed. They can provide seasonal hot-button reminders on the problem. The media can publicize information designed to inform the community about the dangers that excessive motorist speed can pose to cyclists and the importance of the motorist's driving with care and being alert at all times to the possible presence of a cyclist in the roadway. They can provide the public with information on the nature and incidence of the problem while providing routine reporting on a crash attributable to that problem. They can also publicize street speeds that are safe and those that are unsafe. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Excessive Speed Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate crashes due to excessive motorist speed in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of this problem as well as methods to solve the problem. They can ensure that streets are appropriately traffic-calmed for the community, promote the installation of bicycle lanes or trails where appropriate, and encourage the conduct of both driver training programs and cyclist defensive riding courses.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Excessive Speed Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. To reduce crashes due to motorist errors, all community and civic groups can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their](#)



Excessive Speed Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements. They can also produce and/or distribute brochures on common motorist errors and what motorists can do to improve bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their](#)

parents



Excessive Speed Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to reduce crashes due to excessive motorist speed. The most effective action may be to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of being conspicuous and riding defensively needs to be learned at a young age. It can be reinforced at the middle school, high school and college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Elementary schools can serve as efficient conduits for conveying educational materials to bicyclists' parents on driving errors made by motorists and the actions that they can take to reduce the likelihood that their child will be involved in a bicycle/motor-vehicle crash. Information on the problem can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate motorist errors in driver education programs to emphasize the need for motorists to drive slowly through neighborhoods and to constantly search for bicyclists and other roadway users. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Implementer Training [Bicycle and pedestrian traffic safety education](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide for developing bicycle indoctrination material for new college students](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Excessive Speed Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction in crashes due to the excessive motorist speed in at least three ways. The first is to issue citations or warnings to motorists who are traveling at excessive speeds. The second way is through formal and informal bicyclist training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to teach elementary and middle school children to be conspicuous and to ride defensively and predictably at all times. They can also provide positive reinforcement to bicyclists who are observed behaving in a desirable manner. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Implementer Training [Enforcement for bicycle safety](#)

Implementer Training [Bike patrol training manual](#)

Proposed Countermeasures:

Bicyclist Training [Insert on bicycle safety for offender school training](#)

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Excessive Speed Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as running rodeos and making presentations to both bicyclists and motorists on the motorist speed problem and other bicycle safety issues. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups, for example, a brochure for bicyclists and motorists on driving errors that contribute to bicycle crashes.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [A package of safety education products for distribution by health care organizations and professionals](#)

Other [Pre-formatted electronic mail safety messages](#)



Excessive Speed Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Other [Pre-formatted electronic mail safety messages](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Excessive Speed Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on excessive motorist speed and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Excessive Speed Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can do all or any part of the following: analyze the incidence of bicycle crashes in the community that are due to excessive motorist speed, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to reduce motorist speed.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Report/Guide [Responses to queries on bicycle safety](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their](#)



Excessive Speed Planning Groups

Potential Role: Local and regional planning groups can adopt and implement low speed neighborhood and commercial street and trail network guidelines for their communities. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. In addition, they can assist developers to create model subdivisions and can work with neighborhood groups to retrofit existing neighborhoods. Street geometrics, operations and maintenance should invite safe and courteous travel speeds. Lower design speeds can be specified for neighborhoods, school zones, college campuses and central business districts. A return to appropriate street widths, block lengths, tree canopies, and other details of traditional neighborhood design can greatly lower crash rates. Appropriate traffic calming techniques can be applied to neighborhood streets with excessive speeds. On regional streets, bike lanes are helpful in identifying bicycling locations, reminding the motorist of the presence of bicyclists and removing bicyclists from higher-speed traffic lanes. Guidelines for school siting and traffic circulation around schools can be a means to greatly reduce those crashes where bicycling is most concentrated.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Model development codes for traffic-calmed streets](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [School site plans](#)



Excessive Speed Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement low speed neighborhood and commercial street and trail network guidelines. They can promote the guidelines to local planning agencies and provide training for builders and engineers. They can adopt new guidelines for streets and street systems. Street geometrics, operations and maintenance should invite safe and courteous travel speeds. Lower design speeds can be specified for neighborhoods, school zones, college campuses and central business districts. A return to appropriate street widths, block lengths, tree canopies, and other details of traditional neighborhood design can greatly lower crash rates. Appropriate traffic calming techniques can be applied to neighborhood streets with excessive speeds. On regional streets, bike lanes are helpful in identifying bicycling locations, reminding the motorist of the presence of bicyclists and removing bicyclists from higher-speed traffic lanes. Guidelines for school siting and traffic circulation around schools can be a means to greatly reduce those crashes where bicycling is most concentrated.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Model development codes for traffic-calmed streets](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [School site plans](#)



Excessive Speed Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt low speed neighborhood and commercial street and trail network guidelines for their members. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. They can write new guidelines for streets and street systems. Street geometrics, operations and maintenance should invite safe and courteous travel speeds. Lower design speeds can be specified for neighborhoods, school zones, college campuses and central business districts. A return to appropriate street widths, block lengths, tree canopies, and other details of traditional neighborhood design can greatly lower crash rates. Appropriate traffic calming techniques can be applied to neighborhood streets with excessive speeds. On regional streets, bike lanes are helpful in identifying bicycling locations, reminding the motorist of the presence of bicyclists and removing bicyclists from higher-speed traffic lanes. Guidelines for school siting and traffic circulation around schools can be a means to greatly reduce those crashes where bicycling is most concentrated.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Model development codes for traffic-calmed streets](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [School site plans](#)



Right Turn on Red Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out the importance of the motorist's proceeding slowly and searching carefully for bicyclists and pedestrians before making a right turn on red. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), the necessity to ride defensively and to be conspicuous at all times can be emphasized. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Booklet [North Carolina driver's handbook](#)

Booklet [1998 California driver handbook](#)

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Right Turn on Red Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing the potential threat to bicyclists when motorists make right turns on red. Cyclists need to be aware of the importance of being conspicuous and of riding defensively at all times. Bicycle manufacturers can provide guidance to cyclists through bicycle hang tags, owner's manuals and owner's videos. Flags on poles could be mounted on bikes with a 16-24 inch wheel base; a bracket for this purpose could be added to this category of bicycle at the factory. In addition, bicycle shops can display and distribute brochures that describe common motorist errors and what cyclists can do to avoid crashes. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Booklet [Bike basics: A guide to safe bicycling for ages 10-15](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Right Turn on Red Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes due to motorists making right turns on red. They can provide seasonal hot-button reminders on the problem. They can publicize information designed to inform the community about the dangers that right turns on red can pose to cyclists and the importance of searching for cyclists when making such turns. They can also provide publicity on areas of the community where such turns are prohibited and can mount campaigns to urge their prohibition at particularly dangerous intersections. They can provide the public with information on the nature and incidence of the problem while providing routine reporting on a crash attributable to that problem. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Right Turn on Red Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate wrong-way riding crashes in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of the wrong-way riding problem as well as methods to solve the problem. They can help eliminate the problem by supporting a police role in bicycle safety, by ensuring that the streets are appropriately traffic-calmed for the community, and by ensuring that the bicycle operates on the streets of the community as a vehicle.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Right Turn on Red Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. To reduce crashes due to motorist errors, all community and civic groups can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Video [Getting there by bike](#)

Booklet [Bike basics: A guide to safe bicycling for ages 10-15](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Right Turn on Red Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements, such as restrictions on right turn on red. They can also produce and/or distribute brochures on common motorist errors and what motorists can do to improve bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Video [Getting there by bike](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their](#)

parents



Right Turn on Red Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to reduce crashes due to motorist right turns on red. The most effective action may be to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of being conspicuous and riding defensively needs to be learned at a young age. It can be reinforced at the middle school, high school and college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Elementary schools can serve as efficient conduits for conveying educational materials to bicyclists' parents on driving errors made by motorists and the actions that they can take to reduce the likelihood that their child will be involved in a bicycle/motor-vehicle crash. Information on the problem can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate motorist errors in driver education programs to emphasize the need for motorists to drive slowly through neighborhoods and to constantly search for bicyclists and other roadway users, particularly when making right turns on red. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Implementer Training [Bicycle and pedestrian traffic safety education](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide for developing bicycle indoctrination material for new college students](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Right Turn on Red Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction in crashes due to the motorist making a right turn on red in at least three ways. The first is to issue citations or warnings to motorists who make right turns on red across a bicyclist's path. The second way is through formal and informal bicyclist training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to teach elementary and middle school children to be conspicuous and to ride defensively and predictably at all times. They can also provide positive reinforcement to bicyclists who are observed behaving in a desirable manner. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Implementer Training [Enforcement for bicycle safety](#)

Implementer Training [Bike patrol training manual](#)

Report/Guide [The Minnesota peace officer's guide to bicycle traffic management](#)

Proposed Countermeasures:

Bicyclist Training [Insert on bicycle safety for offender school training](#)

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Right Turn on Red Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as running rodeos and making presentations to both bicyclists and motorists on the right turn on red problem and other bicycle safety issues. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups, for example, a brochure for bicyclists and motorists on driving errors that contribute to bicycle crashes.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [A package of safety education products for distribution by health care organizations and professionals](#)

Other [Pre-formatted electronic mail safety messages](#)



Right Turn on Red Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [Pre-formatted electronic mail safety messages](#)



Right Turn on Red Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They conduct or support research on the right-turn-on-red problem and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Video [Getting there by bike](#)

Booklet [Bike basics: A guide to safe bicycling for ages 10-15](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Right Turn on Red Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can do all or any part of the following: analyze the incidence of bicycle crashes in the community that are due to the motorist making right turns on red, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to reduce crashes due to the motorist making a right turn on red.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Report/Guide [Responses to queries on bicycle safety](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Right Turn on Red Planning Groups

Potential Role: Local and regional planning groups can adopt and implement low speed neighborhood and commercial street and trail network guidelines for their communities. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. In addition, they can assist developers to create model subdivisions and can work with neighborhood groups to retrofit existing neighborhoods. Street geometrics, operations and maintenance should invite safe and courteous turning movements. Right turn on red crashes can be reduced through access management (well designed right-in, right-out only bays), lower speed turns, and other emphasis on an efficient highway system. Bike lanes are helpful in identifying bicyclist riding locations and in reminding the motorist of the presence of bicyclists in the roadway. Guidelines for school siting and traffic circulation around schools can be a means to greatly reduce these crashes where bicycling is most concentrated. Areas around schools, college campuses and downtown business districts can be considered for reduced right turn on red movements. Proper placement of trails and sidewalks can reduce these crashes. Channelized islands that have been modified to reduce the speed of turns can be successful in reducing these crashes.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [Traffic calming state-of-the-art](#)

Report/Guide [Access management. . . A key to safety and mobility](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [School site plans](#)

Report/Guide [Access management](#)

Report/Guide [Channelized turn lanes](#)



Right Turn on Red Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement low speed neighborhood and commercial street and trail network guidelines. They can promote the guidelines to local planning agencies and provide training for builders and engineers. They can adopt new guidelines for streets and street systems. Street geometrics, operations and maintenance should invite safe and courteous turning movements. Right turn on red crashes can be reduced through access management (well designed right-in, right-out only bays), lower speed turns, and other emphasis on an efficient highway system. Bike lanes are helpful in identifying bicyclist riding locations and in reminding the motorist of the presence of bicyclists in the roadway. Guidelines for school siting and traffic circulation around schools can be a means to greatly reduce these crashes where bicycling is most concentrated. Areas around schools, college campuses and downtown business districts can be considered for reduced right turn on red movements. Proper placement of trails and sidewalks can reduce these crashes. Channelized islands that have been modified to reduce the speed of turns can be successful in reducing these crashes.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [Traffic calming state-of-the-art](#)

Report/Guide [Access management. . . A key to safety and mobility](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [School site plans](#)

Report/Guide [Access management](#)

Report/Guide [Channelized turn lanes](#)



Right Turn on Red Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt low speed neighborhood and commercial street and trail network guidelines for their members. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. They can write new guidelines for streets and street systems. Street geometrics, operations and maintenance should invite safe and courteous turning movements. Right turn on red crashes can be reduced through access management (well designed right-in, right-out only bays), lower speed turns, and other emphasis on an efficient highway system. Bike lanes are helpful in identifying bicyclist riding locations and in reminding the motorist of the presence of bicyclists in the roadway. Guidelines for school siting and traffic circulation around schools can be a means to greatly reduce these crashes where bicycling is most concentrated. Areas around schools, college campuses and downtown business districts can be considered for reduced right turn on red movements. Proper placement of trails and sidewalks can reduce these crashes. Channelized islands that have been modified to reduce the speed of turns can be successful in reducing these crashes.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [Traffic calming state-of-the-art](#)

Report/Guide [Access management. . . A key to safety and mobility](#)

Proposed Countermeasures:

- Video [Video promoting bicycle safety by engineering and planning groups](#)
- Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)
- Report/Guide [Residential traffic calming guidelines](#)
- Report/Guide [Traffic calming main street and the central business district](#)
- Report/Guide [Neighborhood development guidelines](#)
- Report/Guide [Commercial site planning](#)
- Report/Guide [Residential intersection guidelines](#)
- Report/Guide [School site plans](#)
- Report/Guide [Access management](#)
- Report/Guide [Channelized turn lanes](#)



Failure to Search Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out the importance of the motorist's proceeding slowly and constantly searching for other roadway users. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), the necessity for the bicyclist to ride defensively and to be conspicuous at all times can be emphasized. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Video [The professional driver and the bicyclist](#)

Brochure [Sharing the road: Survival of the smallest](#)

Flyer [Share the road](#)

Booklet [Florida driver's handbook](#)

Booklet [North Carolina driver's handbook](#)

Booklet [Oregon driver manual](#)

Booklet [New York State driver's manual](#)

Booklet [1998 California driver handbook](#)

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Failure to Search Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing the threat of motorist failure to search. Cyclists need to be aware of the importance of being conspicuous and of riding defensively at all times. Bicycle manufacturers can provide guidance to cyclists through bicycle hang tags, owner's manuals and owner's videos. Flags on poles could be mounted on bikes with a 16-24 inch wheel base; a bracket for this purpose could be added to this category of bicycle at the factory. In addition, bicycle shops can display and distribute brochures that describe common motorist errors and what cyclists can do to avoid crashes. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Flyer [Share the road](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Failure to Search Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes due to failure of the motorist to search. They can publicize information about the dangers that inadequate motorist search can pose to cyclists and other roadway users. They can provide seasonal hot-button reminders on the problem. They can provide the public with information on the nature and incidence of the problem while providing routine reporting on a crash attributable to that problem. They can also provide positive publicity on community programs designed to reduce bicycle crashes caused by failure of the motorist to search. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Failure to Search Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate crashes due to motorist failure to search in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of this problem as well as methods to solve the problem. They can ensure that streets are appropriately traffic-calmed for the community, promote the installation of bicycle lanes or trails where appropriate, and encourage the conduct of both driver training programs and cyclist defensive riding courses.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)

Other [Model highway entry law](#)



Failure to Search Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. To reduce crashes due to motorist errors, all community and civic groups can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Video [Pedal smarts](#)

Video [Getting there by bike](#)

Brochure [Sharing the road: Survival of the smallest](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Failure to Search Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements. They can also produce and/or distribute brochures on common motorist errors and what motorists can do to improve bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Video [Pedal smarts](#)

Video [Getting there by bike](#)

Brochure [Sharing the road: Survival of the smallest](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Failure to Search Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to reduce crashes due to motorist failure to search. The most effective action may be to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of being conspicuous and riding defensively needs to be learned at a young age. It can be reinforced at the middle school, high school and college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Elementary schools can serve as efficient conduits for conveying educational materials to bicyclists' parents on driving errors made by motorists and the actions that they can take to reduce the likelihood that their child will be involved in a bicycle/motor-vehicle crash. Information on the problem can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate motorist errors in driver education programs to emphasize the need for motorists to drive slowly through neighborhoods and to constantly search for bicyclists and other roadway users. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Instructor's guide for the bicycle driver's test \(How well do you drive your bike?\)](#)

Implementer Training [Bicycle and pedestrian traffic safety education](#)

Video [Pedal smarts](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide for developing bicycle indoctrination material for new college students](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Failure to Search Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction in crashes due to motorist failure to search in at least three ways. The first is to issue citations or warnings to motorists who are observed failing to make an adequate search before initiating a turn. The second way is through formal and informal bicyclist training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to teach elementary and middle school children to be conspicuous and to ride defensively and predictably at all times. They can also provide positive reinforcement to bicyclists who are observed behaving in a desirable manner. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Implementer Training [Enforcement for bicycle safety](#)

Implementer Training [Bike patrol training manual](#)

Report/Guide [The Minnesota peace officer's guide to bicycle traffic management](#)

Proposed Countermeasures:

Bicyclist Training [Insert on bicycle safety for offender school training](#)

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Failure to Search Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as running rodeos and making presentations to both bicyclists and motorists on the motorist search problem and other bicycle safety issues. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups, for example, a brochure for bicyclists and motorists on driving errors that contribute to bicycle crashes.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [A package of safety education products for distribution by health care organizations and professionals](#)

Other [Pre-formatted electronic mail safety messages](#)



Failure to Search Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Video [The professional driver and the bicyclist](#)

Brochure [Sharing the road: Survival of the smallest](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [Pre-formatted electronic mail safety messages](#)



Failure to Search Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on motorist failure to search and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Video [Pedal smarts](#)

Video [Getting there by bike](#)

Video [The professional driver and the bicyclist](#)

Brochure [Sharing the road: Survival of the smallest](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

Flyer [Share the road](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Failure to Search Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can do all or any part of the following: analyze the incidence of bicycle crashes in the community that are due to failure of the motorist to search, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to reduce crashes due to failure of the motorist to search for the cyclist.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [The professional driver and the bicyclist](#)

Brochure [Sharing the road: Survival of the smallest](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

Flyer [Share the road](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Report/Guide [Responses to queries on bicycle safety](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Failure to Search Planning Groups

Potential Role: Local and regional planning groups can adopt and implement low speed neighborhood and commercial street and trail network guidelines for their communities. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. In addition, they can assist developers to create model subdivisions and can work with neighborhood groups to retrofit existing neighborhoods. Appropriate sight distances, sidewalk design and placement, fence and vegetation setback and proper design speeds can be specified. Bicyclists fare best when integrated into existing roadway and transportation systems. The higher the speed and volume of traffic and the wider the roadway, the more important bike lanes and other dedicated facilities become. Bike lanes are helpful to identify bicyclist riding locations and to remind the motorist of the presence of bicyclists. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, increasing the sight distance at intersections and driveways (residential and commercial) increases the opportunity for the motorist to see the bicyclist. Conversion of low-use four-lane roads to three-lane roads can improve detection of bicyclists. For example, a 48-foot wide four-lane roadway could convert to two 12-foot travel lanes, a 12-foot center scramble lane and two 6-foot bicycle lanes.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [Traffic calming state-of-the-art](#)

Report/Guide [Access management. . . A key to safety and mobility](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Guide to four-lane to three-lane street conversion](#)

Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Failure to Search Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement low speed neighborhood and commercial street and trail network guidelines. They can promote the guidelines to local planning agencies and provide training for builders and engineers. They can adopt new guidelines for streets and street systems. Appropriate sight distances, sidewalk and driveway design and placement, fence and vegetation setbacks and proper design speeds can be specified. Bicyclists fare best when integrated into existing roadway and transportation systems. The higher the speed and volume of traffic and the wider the roadway, the more important bike lanes and other dedicated facilities become. Bike lanes are helpful to identify bicyclist riding locations and to remind the motorist of the presence of bicyclists. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, increasing the sight distance at intersections and driveways (residential and commercial) increases the opportunity for the motorist to see the bicyclist. Conversion of low-use four-lane roads to three-lane roads can improve detection of bicyclists. For example, a 48-foot wide four-lane roadway could convert to two 12-foot travel lanes, a 12-foot center scramble lane and two 6-foot bicycle lanes.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Report/Guide [Access management. . . A key to safety and mobility](#)

Proposed Countermeasures:

- Video [Video promoting bicycle safety by engineering and planning groups](#)
- Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)
- Report/Guide [Residential traffic calming guidelines](#)
- Report/Guide [Guide to four-lane to three-lane street conversion](#)
- Report/Guide [Traffic calming main street and the central business district](#)
- Report/Guide [Neighborhood development guidelines](#)
- Report/Guide [Commercial site planning](#)
- Report/Guide [Bike lanes and paved shoulders](#)
- Report/Guide [Residential intersection guidelines](#)
- Report/Guide [Access management](#)



Failure to Search Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt low speed neighborhood and commercial street and trail network guidelines for their members. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. They can write new guidelines for streets and street systems. Appropriate sight distances, sidewalk design and placement, fence and vegetation setbacks and proper design speeds can be specified. Bicyclists fare best when integrated into existing roadway and transportation systems. The higher the speed and volume of traffic and the wider the roadway, the more important bike lanes and other dedicated facilities become. Bike lanes are helpful in identifying bicyclist riding locations and in reminding the motorist of the presence of bicyclists in the roadway. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, increasing the sight distance at intersections and driveways (residential and commercial) increases the opportunity for the motorist to see the bicyclist. Conversion of low-use four-lane roads to three-lane roads can improve detection of bicyclists. For example, a 48-foot wide four-lane roadway could convert to two 12-foot travel lanes, a 12-foot center scramble lane and two 6-foot bicycle lanes.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [Traffic calming state-of-the-art](#)

Report/Guide [Access management. . . A key to safety and mobility](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Guide to four-lane to three-lane street conversion](#)

Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Improper Turns Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. To reduce crashes due to improper motorist turns, the driver's manual can point out the importance of the motorist's proceeding slowly and carefully as needed and performing a full search before making any turns. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), the dangers of improper motorist turns can be pointed out as well as the necessity for the bicyclist to ride defensively and to be conspicuous at all times. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Video [The professional driver and the bicyclist](#)

Video [Sharing the road: Bus operator training](#)

Flyer [Share the road](#)

Booklet [Florida driver's handbook](#)

Booklet [North Carolina driver's handbook](#)

Booklet [Oregon driver manual](#)

Booklet [1998 California driver handbook](#)

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Improper Turns Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing the threat to bicyclists of improper motorist turns. Cyclists need to be aware of the importance of being conspicuous and of riding defensively at all times. Bicycle manufacturers can provide guidance to cyclists through bicycle hang tags, owner's manuals and owner's videos. Flags on poles could be mounted on bikes with a 16-24 inch wheel base; a bracket for this purpose could be added to this category of bicycle at the factory. In addition, bicycle shops can display and distribute brochures that describe common motorist errors and what cyclists can do to avoid crashes. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [Motorists make mistakes too](#)

Flyer [Share the road](#)

Booklet [Bike basics: A guide to safe bicycling for ages 10-15](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Improper Turns Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes due to improper motorist turns. They can provide seasonal hot-button reminders on the problem. They can publicize information on the types of improper motorist turns and the dangers they pose to cyclists and other roadway users. They can provide information on the nature and incidence of the problem while providing routine reporting on a crash attributable to that problem. They can also provide positive publicity on community programs designed to reduce bicycle crashes caused by improper motorist turns. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Improper Turns Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate crashes due to improper motorist turns in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of this problem as well as methods to solve the problem. They can ensure that streets are appropriately traffic-calmed for the community, can support the installation of bike lanes or trails as appropriate, and can encourage the conduct of both driver training programs and cyclist defensive riding courses.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Improper Turns Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. To reduce crashes due to motorist errors, all community and civic groups can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Brochure [Stop: Let me tell you how to save a life like yours](#)

Bicyclist Training [Safe moves city](#)

Booklet [Sprocket man](#)

Booklet [Share the road, share the air](#)

Booklet [Bike basics: A guide to safe bicycling for ages 10-15](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Improper Turns Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements. They can also produce and/or distribute brochures on common motorist errors and what motorists can do to improve bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Video [Ace of cycling](#)

Brochure [Motorists make mistakes too](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Bicyclist Training [Safe moves for older adults](#)

Bicyclist Training [Safe moves city](#)

Implementer Training [Safe moves for service providers](#)

Booklet [Sprocket man](#)

Booklet [Share the road, share the air](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Improper Turns Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to reduce crashes due to improper motorist turns. The most effective action may be to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of being conspicuous and riding defensively needs to be learned at a young age. It can be reinforced at the middle school, high school and even college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Elementary schools can serve as efficient conduits for conveying educational materials to bicyclists' parents on driving errors made by motorists and the actions that they can take to reduce the likelihood that their child will be involved in a bicycle/motor-vehicle crash. Information on the problem can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate motorist errors in driver education programs to emphasize the need for motorists to drive slowly through neighborhoods and to constantly search for bicyclists and other roadway users, particularly before making any turns. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Instructor's guide for the bicycle driver's test \(How well do you drive your bike?\)](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Implementer Training [Bicycle and pedestrian traffic safety education](#)

Video [The E's of cycling](#)

Video [Ace of cycling](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

Booklet [Sprocket man](#)

Booklet [Share the road, share the air](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide for developing bicycle indoctrination material for new college students](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Improper Turns Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction in crashes due to improper motorist turns in at least three ways. The first is to issue citations or warnings to motorists who make improper turns into a bicyclist's path. The second way is through formal and informal bicyclist training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to teach elementary and middle school children to be conspicuous and to ride defensively and predictably at all times. They can also provide positive reinforcement to bicyclists who are observed behaving in a desirable manner. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Implementer Training [Enforcement for bicycle safety](#)

Implementer Training [Bike patrol training manual](#)

Bicyclist Training [Safe moves city](#)

Video [The E's of cycling](#)

Report/Guide [The Minnesota peace officer's guide to bicycle traffic management](#)

Proposed Countermeasures:

Bicyclist Training [Insert on bicycle safety for offender school training](#)

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Improper Turns Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as running rodeos and making presentations to both bicyclists and motorists on the motorist turn problem and other bicycle safety issues. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups, for example, a brochure for bicyclists and motorists on driving errors that contribute to bicycle crashes.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [A package of safety education products for distribution by health care organizations and professionals](#)

Other [Pre-formatted electronic mail safety messages](#)



Improper Turns Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Video [The professional driver and the bicyclist](#)

Video [Sharing the road: Bus operator training](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

Booklet [Sprocket man](#)

Booklet [Share the road, share the air](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [Pre-formatted electronic mail safety messages](#)



Improper Turns Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on improper motorist turns and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group.

Existing Countermeasures:

Video [Ace of cycling](#)

Video [The professional driver and the bicyclist](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

Brochure [Motorists make mistakes too](#)

Flyer [Share the road](#)

Booklet [Sprocket man](#)

Booklet [Share the road, share the air](#)

Booklet [Bike basics: A guide to safe bicycling for ages 10-15](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Improper Turns Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can do all or any part of the following: analyze the incidence of bicycle crashes in the community that are due to improper motorist turns, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to reduce crashes due to improper motorist turns.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Ace of cycling](#)

Video [The professional driver and the bicyclist](#)

Video [Sharing the road: Bus operator training](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

Brochure [Motorists make mistakes too](#)

Flyer [Share the road](#)

Booklet [Sprocket man](#)

Booklet [Share the road, share the air](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Report/Guide [Responses to queries on bicycle safety](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Improper Turns Planning Groups

Potential Role: Local and regional planning groups can adopt and implement low speed neighborhood and commercial street and trail network guidelines for their communities. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. In addition, they can assist developers to create model subdivisions and can work with neighborhood groups to retrofit existing neighborhoods. Appropriate sight distances, sidewalk design and placement, fence and vegetation setback and proper design speeds can be specified. The adoption of updated street geometrics, operations and maintenance guidelines invites safer, more efficient and more courteous turning movements. Improper motorist turns can be reduced through access management (fewer left hand turns), lower speed turns into and out of driveways, and other emphasis on a safe urban highway system. Bike lanes are helpful to identify bicyclist riding locations and to remind the motorist of the presence of bicyclists. Conversion of low-use four-lane to three-lane roadways can improve detection of bicyclists and reduce turning conflicts. For example, a 48-foot wide four-lane roadway could convert to two 12-foot travel lanes, a 12-foot center scramble lane and two 6-foot bicycle lanes. Access and median controlled roadways can add to system efficiency while reducing bicyclist/motorist turning conflicts.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [Traffic calming state-of-the-art](#)

Report/Guide [Access management. . . A key to safety and mobility](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Guide to four-lane to three-lane street conversion](#)

Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)

Report/Guide [Channelized turn lanes](#)



Improper Turns Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement low speed neighborhood and commercial street and trail network guidelines. They can promote the guidelines to local planning agencies and provide training for builders and engineers. They can adopt new guidelines for streets and street systems. Appropriate sight distance, sidewalk and driveway design and placement, fence and vegetation setbacks and proper design speeds can be specified. The adoption of updated street geometrics, operations and maintenance guidelines invites safer, more efficient and more courteous turning movements. Improper motorist turns can be reduced through access management (fewer left hand turns), lower speed turns into and out of driveways, and other emphasis on a safe urban highway system. Bike lanes are helpful to identify bicyclist riding locations and to remind the motorist of the presence of bicyclists. Conversion of low-use four-lane roadways to three-lane roadways can improve detection of bicyclists and reduce turning conflicts. For example, a 48-foot wide four-lane roadway could convert to two 12-foot travel lanes, a 12-foot center scramble lane and two 6-foot bicycle lanes. Access and median controlled roadways can add to system efficiency while reducing bicyclist/motorist turning conflicts.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [Traffic calming state-of-the-art](#)

Report/Guide [Access management. . . A key to safety and mobility](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Guide to four-lane to three-lane street conversion](#)

Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)

Report/Guide [Channelized turn lanes](#)



Improper Turns Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt low speed neighborhood and commercial street and trail network guidelines for their members. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. They can write new guidelines for streets and street systems. Appropriate sight distances, sidewalk design and placement, fence and vegetation setbacks and proper design speeds can be specified. Street geometrics, operations and maintenance should invite safe and courteous turning movements. Improper motorist turns can be reduced through access management (few left hand turns), lower speed turns into and out of driveways, and other emphasis on an efficient highway system. Bike lanes are helpful in identifying bicyclist riding locations and in reminding the motorist of the presence of bicyclists in the roadway. Conversion of low-use four- lane roadways to three-lane roadways can improve detection of bicyclists and reduce turning conflicts. For example, a 48-foot wide four-lane roadway could convert to two 12-foot travel lanes, a 12-foot center scramble lane and two 6-foot bicycle lanes. Access and median controlled roadways can add to system efficiency while reducing bicyclist/motorist turning conflicts.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [Traffic calming state-of-the-art](#)

Report/Guide [Access management. . . A key to safety and mobility](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Guide to four-lane to three-lane street conversion](#)

Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)

Report/Guide [Channelized turn lanes](#)



Misjudging Passing Space

Problem Description: The motorist strikes the bicyclist because of a misjudgment of the space needed to overtake and pass the bicyclist. The motorist assumes that the motor vehicle can safely pass the bicyclist without changing lanes. The bicyclist is usually struck by the extreme right front portion of the motor vehicle. The crashes tend to occur to bicyclists aged 15 and over.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

§ The bicyclist will be conspicuous at all times.

§ The bicyclist will ride defensively at all times.

Motorist:

§ A motorist who is overtaking a bicyclist will correctly judge the space required to pass the bicyclist safely.

Roadway:

§ Street lighting in urban areas will be improved.

§ Competing roadway glare will be eliminated.

§ There will be appropriate roadway space for all road users.

§ Motorist speeds will be appropriate for the area.

§ Bicycle lanes or trails will be installed where appropriate.



Overtaking, Failure to See

Problem Description: The motorist is overtaking the bicyclist and fails to see the bicyclist until it is too late to take evasive action. This problem accounts for a large number of fatal crashes. Although the problem is more frequent during darkness, it also occurs during daylight. The crashes tend to occur to bicyclists aged 15 and over. Poor bicyclist conspicuity can be a contributing factor as can excess speed and alcohol use on the part of the motorist.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

§ Bicyclists and the parents of young bicyclists will be aware of the limited effectiveness of existing rear lighting equipment for bicycles.

§ The bicyclist will be aware that motorists sometimes fail to see bicyclists that are being overtaken and passed even when visibility conditions are good.

§ The bicyclist will be conspicuous at all times.

§ The bicyclist will ride defensively at all times.

Motorist:

§ A motorist who is overtaking a bicycle during daylight or darkness will see the bicyclist soon enough to initiate successful evasive action.

§ The motorist will search appropriately at all times.

Roadway:

§ Street lighting in urban areas will be improved.

§ Competing roadway glare will be eliminated.

§ The community's roads will provide appropriate space for all road users.

§ Bicycle lanes or trails will be installed where appropriate.



Excessive Speed

Problem Description: The motorist is driving too fast to respond quickly enough to avoid hitting a bicyclist. The bicyclist may be riding in the roadway or may appear suddenly in the roadway. In the latter case, the bicyclist rides out from a driveway, alley or sidewalk midblock, often on a play vehicle. Either the motorist or bicyclist may be traveling in the wrong direction. The motorist may be overtaking the bicyclist and simply may not see the bicyclist or may misjudge the space required to pass the bicyclist. The motorist may lose control of the vehicle.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

- § The bicyclist will ride defensively at all times.
- § The bicyclist will be conspicuous at all times.

Motorist:

- § The motorist will be aware that excessive motor vehicle speed contributes to many serious bicycle/motor-vehicle crashes.
- § The motorist will be aware that driving at the posted speed may be too fast in some locations, especially in residential neighborhoods.
- § The motorist will adjust speed and path so that there is sufficient time and maneuver room to stop and/or swerve when bicyclists are encountered.

- The motorist will travel at or below the posted speed.

Roadway:

- § Roadway travel and turning speeds will be reduced.
- § Motorized traffic volume will be reduced on neighborhood and commercial streets in urban areas.
- § Pedestrians and bicyclists will be given the priority movement in neighborhood and commercial areas.
- § Adequate on- and off-street bicycle facilities will be provided.
- § The roadway will be appropriately designed for bicycle use for that area.



Right Turn on Red

Problem Description: The motorist stops at a controlled intersection, searches for traffic approaching from the left and proceeds to make a right turn on a red signal without searching to the right. The motorist then strikes a bicyclist approaching from the right rear and overtaking the car on the right. By not searching in all directions, the motorist may also strike a bicyclist riding the wrong way in the roadway or on the sidewalk.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

§ The bicyclist will adjust speed and path so that there is sufficient time and maneuver room to stop and/or swerve if the motor vehicle driver fails to see the bicyclist.

§ The bicyclist will ride defensively at all times.

§ The bicyclist will be conspicuous at all times.

Motorist:

§ The motorist will search appropriately prior to making a right turn on red. The motorist will search to the right-rear for bicyclists overtaking on the roadway or on the sidewalk and will search ahead for wrong-way riding bicyclists and for bicyclists approaching on the sidewalk

Roadway

§ The turning speed, volume and frequency of right turning traffic on surface streets in urban areas will be reduced.

- § Driveways near intersections will be eliminated.
- § Right turn on red will be restricted around schools, colleges and downtown areas.
- § The use of right turn on red will be restricted in congested city areas.
- § On-street bicycling will be improved so that the bicyclist is less hidden.
- § Adequate on- and off-street bicycle facilities will be provided.
- § Street speeds will be reduced where appropriate.
- § Sight distances at intersections will be improved.
- § Turning speeds at right turn on red intersections will be reduced.



Failure to Search

Problem Description: The motorist simply fails to search adequately for other roadway users, and that is the major cause of the crash problem. This motorist error is commonly associated with several crash types. It can occur when the motorist is proceeding straight ahead or is turning into or out of an intersection, driveway or alley. The turn can be left or right, including right turn on red. The motorist may cut the corner when making a left turn. The motorist frequently fails to search adequately, particularly for bicycles, when entering or exiting on-street parking, when backing, or when in a non-roadway location (for example, a parking lot). The problem is often generated because the bicyclist is riding the wrong way on the street and therefore is in an unexpected location out of the motorist's normal scan pattern. The motorist may run a sign or signal without searching or, alternatively, the motorist may obey the sign or signal but fail to yield to a bicyclist because the bicyclist is not recognized.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

§ The bicyclist will adjust speed and path such that there is sufficient time and maneuver room to stop and/or swerve if the motorist fails to see the bicyclist.

§ The bicyclist will ride defensively at all times.

§ The bicyclist will be conspicuous at all times.

Motorist:

§ Motorists will actively search for bicyclists who are riding in the roadway (including bicyclists riding facing traffic) and for bicyclists who are preparing to enter the roadway from a driveway or alley or over a curb.

§ Motorists will decrease speed as needed to provide the time for an effective search.

Roadway:

§ Adequate on- and off-street bicycle facilities will be provided.

§ On-street bicycle facilities will be improved so that the bicyclist is less hidden.

§ Street speeds will be reduced where appropriate.

§ Sight distances at intersections and residential/commercial driveways will be improved.

§ The roadway will be appropriately designed for bicycle use for that area.

§ The number of intersection/driveway conflicts will be reduced.



Improper Turns

Problem Description: The motorist turns in front of the bicyclist who is traveling either in the same direction as the motor vehicle or in the opposite direction. At an intersection, the turn can be left or right, including a right turn on red. The motorist can also be making a turn midblock to enter or exit a driveway or alley. The motorist may run a stop sign or signal at an intersection while making the turn. A crash may occur because the motorist cuts the corner or swings wide while turning. The critical element is that the motorist workload is heightened by the turning maneuver leaving insufficient attention capacity to deal with a bicycle threat.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist

- § The bicyclist will adjust speed and path such that there is sufficient time and maneuver room to stop and/or swerve if the motor vehicle driver makes an improper turn in front of the bicyclist.
- § The bicyclist will ride defensively at all times.
- § The bicyclist will be conspicuous at all times

Motorist

- § The motorist will reduce speed as necessary to provide the time needed for an effective search.
- § The motorist will make a full search (including sidewalks) before turning.

Roadway

- § The speed of traffic along surface streets in urban areas will be reduced.

- § Adequate on- and off-street bicycle facilities will be provided.

- § On-street bicycle facilities will be improved so that the bicyclist is less hidden.

- § The number of intersection/driveway conflicts will be reduced.

- § The roadways will be designed to minimize the likelihood of improper or unexpected vehicle turns.



MotoristErrors



Motorist Alcohol/Drugs Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street geometrics, operations and maintenance that invite safe and courteous roadway sharing. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. Crashes in which the motorist has been drinking or using drugs can be reduced by improved lighting conditions and by creating bike lanes or paved shoulders on collector and arterial roadways. These bike lanes and paved shoulders pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and roadway volume, the higher the potential for these lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes, and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. In addition, local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to creating bicycle boulevards](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)



Motorist Alcohol/Drugs Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines that promote safe and courteous roadway sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Crashes in which the motorist has been drinking or using drugs can be reduced by improved lighting conditions and by creating bike lanes or paved shoulders on collector and arterial roadways. These bike lanes and paved shoulders pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and roadway volume, the higher the potential for these lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes, and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. In addition, local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to creating bicycle boulevards](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)



Motorist Alcohol/Drugs Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. Crashes in which the motorist has been drinking or using drugs can be reduced by improved lighting conditions and by creating bike lanes or paved shoulders on collector and arterial roadways. These bike lanes and paved shoulders pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and roadway volume, the higher the potential for these lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes, and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. In addition, local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to creating bicycle boulevards](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)



Motorist Alcohol/Drugs Public Highway Safety Groups

Potential Role: : Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can do all or any part of the following: analyze the incidence of bicycle crashes in the community that are due to motorist use of alcohol or drugs, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to prevent motorists from driving after drinking or using drugs.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Brochure [Sharing the road: Survival of the smallest](#)

Brochure [How to ride at night. . . and stay alive!](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Report/Guide [Responses to queries on bicycle safety](#)



Motorist Alcohol/Drugs Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on the motorist impairment problem and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Brochure [Sharing the road: Survival of the smallest](#)

Brochure [How to ride at night. . . and stay alive!](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Motorist Alcohol/Drugs Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Brochure [Sharing the road: Survival of the smallest](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Other [Pre-formatted electronic mail safety messages](#)



Motorist Alcohol/Drugs Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as providing counseling or making presentations on the motorist alcohol problem. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups, for example, a brochure for motorists on the dangers to bicyclists of driving a motor vehicle after consuming alcohol or drugs.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Other [A package of safety education products for distribution by health care organizations and professionals](#)

Other [Pre-formatted electronic mail safety messages](#)



Motorist Alcohol/Drugs Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction in crashes due to motorist use of alcohol or drugs in at least three ways. The first is to issue citations to impaired motorists. The second way is through formal and informal bicyclist training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to teach bicyclists to be aware of the cues of an impaired motorist, to ride defensively at all times, and to minimize their exposure to motorists who are under the influence of alcohol or drugs. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Severe sanctions are appropriate for driving a motor vehicle while impaired by alcohol or drugs.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Bicyclist Training [Insert on bicycle safety for offender school training](#)

Bicyclist Training [Module on bicycle safety for trainers of DWI offenders](#)

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)



Motorist Alcohol/Drugs Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to help reduce crashes due to motorist alcohol/drugs. An effective action may be to implement a comprehensive safety and health program at the elementary school level. The dangers of alcohol and drugs and of driving a motor vehicle with alcohol or drugs in the system need to be learned at a young age. They can be reinforced at the middle school, high school and college levels. The importance of being conspicuous, wearing a helmet and riding defensively needs to be learned at a young age. Elementary schools can serve as efficient conduits for conveying educational materials to bicyclists' parents on the impairment problem and the actions that they can take to reduce the likelihood that their child will be involved in a bicycle/motor-vehicle crash. Information on the problem can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate motorist impairment in driver education programs along with information. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety and health education programs. They also can support such programs indirectly by encouraging local and non-local government agencies to develop and implement effective programs and by publicly endorsing effective programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)

Report/Guide [College bicyclist education and enforcement program guide](#)



Motorist Alcohol/Drugs Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements. They can publicize the dangers of the impaired motorist and the importance of riding defensively at all times. They can promote severe sanctions for the impaired motorist. They can also promote the separation of bicyclists from motorists on higher speed roadways and the improvement of street lighting in urbanized areas, especially on higher speed, higher volume roadways.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Brochure [Sharing the road: Survival of the smallest](#)

Brochure [How to ride at night. . . and stay alive!](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Motorist Alcohol/Drugs Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists and their families. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. All community and civic groups can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [Sharing the road: Survival of the smallest](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)



Motorist Alcohol/Drugs Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate bicycle crashes due to motorist impairment in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of this problem as well as methods to solve the problem. They can support appropriate actions for those who break the per se laws.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Motorist Alcohol/Drugs Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes due to motorist impairment. They can provide seasonal hot-button reminders on the problem. They can provide information on the nature and incidence of the motorist impairment problem while providing routine reporting on a crash attributable to that problem. They can also publicize community programs designed to eliminate the problem, including enforcement actions. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Motorist Alcohol/Drugs Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing the dangers of the drunk motorist. Since most alcohol-related roadway problems occur at night, the fact that the cyclist needs to be conspicuous needs to be emphasized. The cyclist also needs to ride defensively at all times. Bicycle manufacturers can provide guidance to cyclists through owner's manuals and owner's videos. In addition, bicycle shops can display and distribute brochures that describe common motorist errors and what cyclists can do to avoid crashes, Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [How to ride at night. . . and stay alive!](#)

Proposed Countermeasures:



Motorist Alcohol/Drugs Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manuals typically explain the state laws on driving a motor vehicle under the influence of alcohol and drugs and frequently explain the effects of alcohol on the body. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), the importance of being alert to the possible presence of an impaired motorist and of riding defensively and being conspicuous at all times can be pointed out. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Brochure [Sharing the road: Survival of the smallest](#)

Booklet [Florida driver's handbook](#)

Booklet [North Carolina driver's handbook](#)

Booklet [Oregon driver manual](#)

Booklet [New York State driver's manual](#)

Booklet [1998 California driver handbook](#)

Proposed Countermeasures:



Bicyclist Alcohol/Drugs Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manuals typically explain the state laws on driving a motor vehicle under the influence of alcohol and drugs and frequently explain the effects of alcohol on the body. They can point out the clues of an impaired bicyclist and the importance of the motorist's proceeding slowly and carefully near one. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), the state laws and dangers of riding when impaired can be pointed out. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test. If authorized by the state legislature, the agency can make administrative laws dealing with bicycle riding while impaired.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Booklet [Florida driver's handbook](#)

Proposed Countermeasures:



Bicyclist Alcohol/Drugs Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing the importance of not mixing alcohol and bike riding. Since most alcohol-related roadway problems occur at night, the need to be conspicuous at all times needs to be emphasized. Bicycle manufacturers can provide guidance to cyclists through owner's manuals and owner's videos. In addition, bicycle shops can display and distribute brochures on the dangers of riding a bicycle after consumption of alcohol or drugs. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Bicyclist Alcohol/Drugs Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes due to bicyclist impairment. They can provide seasonal hot-button reminders on the problem. They can provide information on the nature and incidence of the bicyclist impairment problem while providing routine reporting on a crash attributable to that problem. The media can publicize community programs designed to prevent impaired persons from riding their bicycles, and they can warn drivers to be alert to the signs of an impaired bicyclist. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic). The media can also support the installation of separate lanes for cyclists.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Bicyclist Alcohol/Drugs Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate crashes due to bicyclist impairment in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of this problem as well as methods to solve the problem. They can help eliminate the problem by supporting a police role in bicycle safety as well as health programs designed to decrease the problem. They can also support legislation and chart laws that promote bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Bicyclist Alcohol/Drugs Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists and their families. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. All community and civic groups can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)



Bicyclist Alcohol/Drugs Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements. They can publicize the dangers of bicycling when impaired and the cues of an impaired rider. They can also promote the separation of bicyclists from motorists on higher speed roadways and the improvement of street lighting in urbanized areas, especially on higher speed, higher volume roadways.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Bicyclist Alcohol/Drugs Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to reduce crashes due to bicyclist alcohol/drugs. An effective action may be to implement a comprehensive bicycle safety and health program at the elementary school level. The dangers of alcohol and drugs and of riding a bicycle after using alcohol or drugs need to be learned at a young age. They can be reinforced at the middle school, high school and college levels. Elementary schools can serve as efficient conduits for conveying educational materials to bicyclists' parents on the impairment problem and the actions that they can take to reduce the likelihood that their child will be involved in a bicycle/motor-vehicle crash. Information on the problem can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate bicyclist impairment in driver education programs along with information on motorist impairment. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety and health education programs. They also can support such programs indirectly by encouraging local and non-local government agencies to develop and implement effective programs and by publicly endorsing effective programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Bicycle traffic safety school](#)

Video [Bike right. . . The face you save may be your own](#)

Other [Davis bike map \(university and city map\)](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)

Report/Guide [College bicyclist education and enforcement guide](#)

Report/Guide [Guide for developing bicycle indoctrination material for new college students](#)



Bicyclist Alcohol/Drugs Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction in crashes due to bicyclist use of alcohol or drugs in at least three ways. The first is to issue citations to impaired bicyclists. The second way is through formal and informal bicyclist training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to teach bicyclists to be responsible riders. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws. Severe sanctions are appropriate for riding a bicycle while impaired by alcohol or drugs.

Countermeasure Focus: [Bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Bicycle traffic safety school](#)

Proposed Countermeasures:

Bicyclist Training [Insert on bicycle safety for offender school training](#)

Bicyclist Training [Module on bicycle safety for trainers of DWI offenders](#)

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Video on the impaired bicyclist and appropriate police responses](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)

Other [Law enforcement public information and education \(PI&E\) materials](#)



Bicyclist Alcohol/Drugs Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as providing counseling or making presentations on the bicycle alcohol problem. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups, for example, a brochure for bicyclists on the dangers of riding after consuming alcohol or drugs.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Other [A package of safety education products for distribution by health care organizations and professionals](#)

Other [Pre-formatted electronic mail safety messages](#)



Bicyclist Alcohol/Drugs Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Implementer Training [Insert for dram shop seller/server training](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Other [Pre-formatted electronic mail safety messages](#)



Bicyclist Alcohol/Drugs Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on the bicyclist impairment problem and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Proposed Countermeasures:

Implementer Training [Insert for dram shop seller/server training](#)



Bicyclist Alcohol/Drugs Public Highway Safety Groups

Potential Role: : Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can do all or any part of the following: analyze the incidence of bicycle crashes in the community that are due to bicyclist use of alcohol or drugs, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to prevent bicyclists from riding after drinking or using drugs.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Report/Guide [What needs to be done to prevent alcohol/drug related pedestrian and bicycle crashes?](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Implementer Training [Insert for dram shop seller/server training](#)

Report/Guide [Responses to queries on bicycle safety](#)

Other [Scripts for television PSAs discouraging the drinker from riding a bicycle](#)

Other [Scripts for radio PSAs discouraging the drinker from riding a bicycle](#)



Bicyclist Alcohol/Drugs Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. Crashes in which the bicyclist has been drinking or using drugs can be reduced by improved lighting conditions and by creating bike lanes or paved shoulders on collector and arterial roadways. These bike lanes and paved shoulders pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and roadway volume, the higher the potential for these lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes, and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. In addition, local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to creating bicycle boulevards](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)



Bicyclist Alcohol/Drugs Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines that promote safe and courteous roadway sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Crashes in which the bicyclist has been drinking or using drugs can be reduced by improved lighting conditions and by creating bike lanes or paved shoulders on collector and arterial roadways. These bike paved shoulders pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and roadway volume, the higher the potential for these lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes, and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. In addition, local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to creating bicycle boulevards](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)



Bicyclist Alcohol/Drugs Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street geometrics, operations and maintenance that invite safe and courteous roadway sharing. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. Crashes in which the bicyclist has been drinking or using drugs can be reduced by improved lighting conditions and by creating bike lanes or paved shoulders on collector and arterial roadways. These bike lanes and paved shoulders pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and roadway volume, the higher the potential for these lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes, and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. In addition, local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to creating bicycle boulevards](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)



Motorist Alcohol/Drugs

Problem Description: The motorist is impaired by alcohol or drugs and hits a bicyclist. The motorist may be overtaking the bicyclist and may not detect the bicyclist or may misjudge the space required to pass safely. The motorist may lose control of the vehicle, obey a stop sign but not yield to the bicyclist or make a left turn in front of a bicyclist. The bicyclist may ride out into the roadway from the sidewalk or over the shoulder/curb.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

- § The bicyclist will be aware that alcohol and drug impaired drivers are most often encountered at night.
- § The bicyclist will be conspicuous at all times.
- § The bicyclist will ride defensively at all times.

Motorist:

- § The motorist will not operate a motor vehicle when under the influence of alcohol or illegal drugs.
- § Appropriate legal actions will be taken against the impaired motorist.
- § The motorist will receive appropriate care for any drinking/drug problem.

Roadway:

§ On higher speed and higher volume roadways, the bicyclist and motorist will be provided with separate riding spaces through wide curb lanes, bike lanes or paved shoulders.

§ Street lighting in urban areas will be improved.

§ Competing roadway glare will be eliminated.



Bicyclist Alcohol/Drugs

Problem Description: The bicyclist is impaired by alcohol or drugs and is struck by a motor vehicle after losing control of the bicycle or riding it into an extremely hazardous location. The bicyclist is frequently riding the wrong way or rides out into the street over the shoulder or curb. Crashes also occur to an intoxicated bicyclist when the motorist makes a turn, overtakes a bicyclist, or obeys a stop sign at an intersection but fails to yield to the bicyclist.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

- § The bicyclist will not ride a bicycle when under the influence of alcohol or illegal drugs.
- § The bicyclist will be conspicuous at all times.
- § Appropriate legal action will be taken against the impaired bicyclist.
- § The bicyclist will receive appropriate care for any drinking/drug problem.

Motorist:

- § The motorist will be aware of the cues of an impaired bicyclist.

Roadway:

- § On higher speed and higher volume roadways, the bicyclist and motorist will be provided with

separate riding spaces through wide curb lanes, bike lanes or paved shoulders.

§ Street lighting in urban areas will be improved.

§ Competing roadway glare will be eliminated.



Nighttime Conspicuity

Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street geometrics, operations and maintenance that invite safe and courteous roadway sharing. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies.

Nighttime conspicuity crashes can be reduced by creating bike lanes or paved shoulders on collector and arterial roadways, creating fully independent trails along parkways or other locations where there are few intersections or driveways, and improving street lighting on higher speed, higher volume urban roadways. Bike lane and paved shoulder facilities pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and volume of the roadway, the higher the potential for these lethal crashes. A common mistake is to not provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. Appropriate signing and marking should be provided. In addition, local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)



Nighttime Conspicuity Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines that promote safe and courteous roadway sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Nighttime conspicuity crashes can be reduced by creating bike lanes or paved shoulders on collector and arterial roadways, creating fully independent trails along parkways or other locations where there are few intersections or driveways, and improving street lighting on higher speed, higher volume urban roadways. Bike lane and paved shoulder facilities pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and volume of the roadway, the higher the potential for these lethal crashes. A common mistake is to not provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. Appropriate signing and marking should be provided. In addition, local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)



Nighttime Conspicuity Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. Nighttime conspicuity crashes can be reduced by creating bike lanes or paved shoulders on collector and arterial roadways, creating fully independent trails along parkways or other locations where there are few intersections or driveways, and improving street lighting on higher speed, higher volume urban roadways. Bike lane and paved shoulder facilities pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and volume of the roadway, the higher the potential for these lethal crashes. A common mistake is to not provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. Appropriate signing and marking should be provided. In addition, local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)



Nighttime Conspicuity Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can do all or any part of the following: analyze the incidence of bicycle crashes in the community that occur because the nighttime bicyclist is not conspicuous, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to improve the bicyclist's nighttime conspicuity.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Video [Ace of cycling](#)

Video [Bicycle safety](#)

Video [Sharing the road: Bicycles and buses](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [Seeing and being seen](#)

Brochure [Motorists make mistakes too](#)

Brochure [Buying a bicycle](#)

Brochure [How to ride at night. . . and stay alive!](#)

Brochure [Kids & bikes & safety](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Booklet [Sprocket man](#)

Booklet [Bike like the best](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Oregon bicyclist's manual](#)

Booklet [Pocket guide: Safe bicycling in Nevada](#)

Booklet [Badger bicycle tips](#)

Booklet [Florida cycling tips: Staying alive on the roads](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Bicycling: Safe and easy](#)

Booklet [Safe bicycling in Chicago \(Also available in Polish and Spanish\)](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Booklet [New Jersey bicycle manual](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure to discourage nighttime riding](#)

Report/Guide [Responses to queries on bicycle safety](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Nighttime Conspicuity Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on nighttime conspicuity and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Video [Pedal smarts](#)

Video [Getting there by bike](#)

Video [Effective cycling](#)

Video [Ace of cycling](#)

Video [Bicycle safety](#)

Video [Sharing the road: Bicycles and buses](#)

Video [The bicycle zone](#)

Brochure [Parents, buying your child a bike?](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

- Brochure [Safe bicycle riding in New Jersey](#)
- Brochure [Seeing and being seen](#)
- Brochure [Motorists make mistakes too](#)
- Brochure [Buying a bicycle](#)
- Brochure [How to ride at night. . . and stay alive!](#)
- Brochure [Kids & bikes & safety](#)
- Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)
- Brochure [Uncle Bob's bike-o-rama safety quiz](#)
- Booklet [Sprocket man](#)
- Booklet [Bike like the best](#)
- Booklet [Bicycle safety: What every parent should know](#)
- Booklet [Oregon bicyclist's manual](#)
- Booklet [Bike basics: A guide to safe bicycling for ages 10-15](#)
- Booklet [From A to Z by bike](#)
- Booklet [Delaware bicycle driver's manual](#)
- Booklet [Safe bicycling in Chicago \(Also available in Polish and Spanish\)](#)
- Booklet [Colorado bicycling manual: A guide for all trail and road users](#)
- Other [Bicycle owner's identification \(identification card\)](#)
- Other [Vehicle safety inspection \(poster\)](#)

Proposed Countermeasures:

- Video [Video promoting bicycle safety by parents](#)
- Brochure [Brochure promoting bicycle safety by parents](#)
- Brochure [Brochure to discourage nighttime riding](#)



Nighttime Conspicuity Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research. For example, they can support research and development programs to develop improved night lighting equipment for bicycles.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Video [Sharing the road: Bicycles and buses](#)

Brochure [Parents, buying your child a bike?](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Booklet [Sprocket man](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Oregon bicyclist's manual](#)

Booklet [Bicyclist's guide](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Safe bicycling in Chicago \(Also available in Polish and Spanish\)](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Booklet [Oregon bicyclist's manual](#)

Other [Bicycle owner's identification \(identification card\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Brochure [Brochure to discourage nighttime riding](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [Pre-formatted electronic mail safety messages](#)



Nighttime Conspicuity Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as running rodeos and making presentations to both bicyclists and parents on daytime conspicuity and other bicycle safety issues. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. For example, they can support research and development programs to improve night lighting equipment on bicycles. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups, for example, a brochure for bicyclists on methods to improve their conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Video [Bicycle safety](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Brochure [Brochure to discourage nighttime riding](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [A package of safety education products for distribution by health care organizations and professionals](#)

Other [Pre-formatted electronic mail safety messages](#)



Nighttime Conspicuity Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction of crashes due to lack of nighttime conspicuity in at least three ways. The first is to issue citations or warnings to bicyclists who are riding during darkness without all the lighting equipment required by law. A second way is through formal and informal training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to elementary and middle school children. Officers can provide impromptu training in the form of safety lectures to bicyclists when their nighttime conspicuity is judged inadequate. They can also provide positive reinforcement to bicyclists with good nighttime conspicuity. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report driveway/roadway junctions where the sight distance is limited and where bicyclists need to take special precautions to ensure that they are conspicuous. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Bicyclist Training [Bicycle traffic safety school](#)

Implementer Training [Law enforcement bicycle patrol course](#)

Implementer Training [Bike patrol training manual](#)

Video [The E's of cycling](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Booklet [Pocket guide: Safe bicycling in Nevada](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [New Jersey bicycle manual](#)

Other [Vehicle safety inspection \(poster\)](#)

Proposed Countermeasures:

Bicyclist Training [Insert on bicycle safety for offender school training](#)

Bicyclist Training [Module on bicycle safety for trainers of DWI offenders](#)

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Brochure [Brochure to discourage nighttime riding](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)

Other [Law enforcement public information and education \(PI&E\) materials](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Nighttime Conspicuity Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to improve the nighttime conspicuity of the bicyclist. The most effective action may be to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The dangers of nighttime riding, the importance of seeing and being seen and the importance of riding defensively at all times need to be learned at a young age. They can be reinforced at the middle school, high school and college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Elementary schools can serve as efficient conduits for conveying educational materials to bicyclists' parents on the conspicuity problem and the actions that they can take to reduce the problem. Information can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate the conspicuity problem in driver education programs and emphasize the importance of constantly searching for other roadway users. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective bicycle safety education programs. They also can support bicycle safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Teacher's guide to bicycle safety: Kindergarten-grade 8](#)

Bicyclist Training [Traffic safety teacher's guide](#)

Bicyclist Training [Instructor's guide for the bicycle driver's test \(How well do you drive your bike?\)](#)

Bicyclist Training [Bicycle traffic safety school](#)

Bicyclist Training [Traffic safety education guide](#)

- Bicyclist Training [The basics of bicycling](#)
- Bicyclist Training [The elementary traffic education program](#)
- Bicyclist Training [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)
- Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)
- Implementer Training [Bicycle and pedestrian traffic safety education](#)
- Video [Pedal smarts](#)
- Video [The E's of cycling](#)
- Video [Ace of cycling](#)
- Video [Bicycle safety](#)
- Video [Basic bicycle education](#)
- Video [Bike right. . . The face you save may be your own](#)
- Video [The bicycle zone](#)
- Video [Community awareness](#)
- Brochure [Stop: Let me tell you how to save a life like yours](#)
- Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)
- Brochure [Safe bicycle riding in New Jersey](#)
- Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)
- Flyer [Bicycles and the new UC Davis cyclist, 1998-99](#)
- Booklet [Sprocket man](#)
- Booklet [Bike like the best](#)

- Booklet [The best bicyclist on earth](#)
- Booklet [Getting there safely by foot, by bike, by bus, by car](#)
- Booklet [From A to Z by bike](#)
- Booklet [Delaware bicycle driver's manual](#)
- Booklet [The University of Montana cyclist's survival guide](#)

Report/Guide [Campus biking: Challenges and Strategies. The Campus Bike-Right Project at Cornell University](#)

Other [Bicycle owner's identification \(identification card\)](#)

Other [Davis bike map \(university and city map\)](#)

Other [What would a SuperCyclist do? \(poster\)](#)

Other [Vehicle safety inspection \(poster\)](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)

Brochure [Brochure to discourage nighttime riding](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide for developing bicycle indoctrination material for new college students](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Nighttime Conspicuity Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can serve as lobbying groups for roadway improvements. They can also produce and/or distribute brochures on bicyclist conspicuity.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Effective cycling: Bicycle commuting](#)

Bicyclist Training [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Bicyclist Training [Safe moves for older adults](#)

Implementer Training [Safe moves for service providers](#)

Video [Pedal smarts](#)

Video [Getting there by bike](#)

Video [Effective cycling](#)

Video [Ace of cycling](#)

Video [Bicycle safety](#)

Video [Basic bicycle education](#)

Video [Sharing the road: Bicycles and buses](#)

Video [The bicycle zone](#)

Video [Community awareness](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [Seeing and being seen](#)

Brochure [Motorists make mistakes too](#)

Brochure [Buying a bicycle](#)

Brochure [How to ride at night. . . and stay alive!](#)

Brochure [Kids & bikes & safety](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Booklet [Sprocket man](#)

Booklet [Badger bicycle tips](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Bicycling: Safe and easy](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Other [What would a SuperCyclist do? \(poster\)](#)

Other [Vehicle safety inspection \(poster\)](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure to discourage nighttime riding](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Nighttime Conspicuity Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. Officials and members of community and civic groups can support research and development programs to develop improved night lighting equipment for bicycles. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. All community and civic groups can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Video [Pedal smarts](#)

Video [Getting there by bike](#)

Video [Basic bicycle education](#)

Video [Sharing the road: Bicycles and buses](#)

Video [The bicycle zone](#)

Brochure [Parents, buying your child a bike?](#)

Brochure [Stop: Let me tell you how to save a life like yours](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [Kids & bikes & safety](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Booklet [Sprocket man](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Oregon bicyclist's manual](#)

Booklet [Bicyclist's guide](#)

Booklet [Bike basics: A guide to safe bicycling for ages 10-15](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Other [Vehicle safety inspection \(poster\)](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)

Brochure [Brochure to discourage nighttime riding](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Nighttime Conspicuity Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate bicycle crashes due to lack of nighttime conspicuity in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of this problem as well as methods to solve the problem. They can help to eliminate the problem by supporting a police role in bicycle safety and by supporting programs that are designed to improve the nighttime conspicuity of both the cyclist and bicycle. They can also support legislation and chart laws that will promote bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Nighttime Conspicuity Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes that occur because the nighttime bicyclist is not conspicuous. They can provide seasonal hot-button reminders on the problem. They can provide information on the nature and incidence of the conspicuity problem while providing routine reporting on a crash attributable to that problem. They can describe applicable laws and methods for assuring that the bicyclist will be conspicuous at night. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Nighttime Conspicuity Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing the importance of being conspicuous at all times. Bicycle manufacturers can provide guidance to cyclists through hang tags, owner's manuals and owner's videos. Flags on poles could be mounted on bikes with a 16 to 24 inch wheel base; a bracket for this purpose could be added to this category of bicycle at the factory. Bicycle manufacturers, manufacturers of bicycle lights and reflectors and clothing manufacturers can conduct research to increase the conspicuity of their products. Manufacturers of clothing and personal conspicuity items (e.g., wrist/ankle straps) can add hang tags to their products that describe the conspicuity features and what the bicyclist can do to increase conspicuity. Similar hang tags can be added to helmets by helmet manufacturers. Hang tags can also be added to bicycle conspicuity products (e.g., lights and reflectors) or similar information could be provided on their packaging. Finally, bicycle shops can display and distribute brochures on the conspicuity problem and what bicyclists can do to ensure that they are conspicuous at all times. Sellers can promote products that increase conspicuity. They can also promote helmet use.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [Seeing and being seen](#)

Brochure [Motorists make mistakes too](#)

Brochure [Buying a bicycle](#)

Brochure [How to ride at night. . . and stay alive!](#)

Brochure [Kids & bikes & safety](#)

Booklet [Bike basics: A guide to safe bicycling for ages 10-15](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Bicycling: Safe and easy](#)

Other [Bicycle owner's identification \(identification card\)](#)

Other [10 smart routes to bicycle safety \(hang tag\)](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Nighttime Conspicuity Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out the importance of the motorist's driving carefully and constantly searching for other roadway users. Bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures) can describe the dangers of nighttime riding and methods for the bicyclist to be conspicuous at nighttime. In addition, the necessity for the bicyclist to ride defensively at all times can be emphasized. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Booklet [Oregon bicyclist's manual](#)

Booklet [Pocket guide: Safe bicycling in Nevada](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Florida driver's handbook](#)

Booklet [Oregon driver manual](#)

Booklet [New York State driver's manual](#)

Booklet [New Jersey bicycle manual](#)

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Daytime Conspicuity Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out the importance of the motorist's driving carefully and constantly searching for other roadway users. Bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures) can describe methods for the bicyclist to be conspicuous in the daytime. In addition, the necessity for the bicyclist to ride defensively at all times can be emphasized. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Booklet [Pocket guide: Safe bicycling in Nevada](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Oregon driver manual](#)

Booklet [New Jersey bicycle manual](#)

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Daytime Conspicuity Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing the importance of being conspicuous at all times. Bicycle manufacturers can provide guidance to cyclists through hang tags, owner's manuals and owner's videos. Flags on poles could be mounted on bikes with a 16-24 inch wheel base; a bracket for this purpose could be added to this category of bicycle at the factory. Both bicycle and clothing manufacturers can conduct research to increase the conspicuity of their products. Manufacturers of clothing and personal conspicuity items (e.g., wrist/ankle straps) can add hang tags to their products that describe the conspicuity features and what the bicyclist can do to increase conspicuity. Similar hang tags can be added to helmets by helmet manufacturers. Finally, bicycle shops can display and distribute brochures on the conspicuity problem and what bicyclists can do to ensure that they are conspicuous at all times. Sellers can promote products that increase conspicuity. They can also promote helmet use.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [Don't go head over handlebars--drive with your head](#)

Brochure [Seeing and being seen](#)

Brochure [Kids & bikes & safety](#)

Brochure [10 tips for fun and safe biking](#)

Other [Bicycle owner's identification \(identification card\)](#)

Other [10 smart routes to bicycle safety \(hang tag\)](#)

Booklet [So you're going to leave your bike at home today](#)

Booklet [Bike basics: A guide to safe bicycling for ages 10-15](#)

Booklet [Delaware bicycle driver's manual](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Daytime Conspicuity Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes that occur because the daytime bicyclist is not conspicuous. They can provide seasonal hot-button reminders on the problem. They can provide information on the nature and incidence of the conspicuity problem while providing routine reporting on a crash attributable to that problem. They can describe methods for assuring that the bicyclist will be conspicuous in the daytime. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Daytime Conspicuity Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate bicycle crashes due to lack of daytime conspicuity in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of this problem as well as methods to solve the problem. They can help to eliminate the problem by supporting a police role in bicycle safety and encouraging programs to improve bicyclist conspicuity. They can also support legislation and chart laws that will promote bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Daytime Conspicuity Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. They can support research to identify practical methods to increase the daytime conspicuity of bicyclists and bicycles. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. All community and civic groups can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Video [Getting there by bike](#)

Video [Basic bicycle education](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [A bicycle is not a toy!](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [Don't go head over handlebars--drive with your head](#)

Brochure [Kids & bikes & safety](#)

Brochure [10 tips for fun and safe biking](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Biking with Bucklebear](#)

Booklet [So you're going to leave your bike at home today](#)

Booklet [Bike basics: A guide to safe bicycling for ages 10-15](#)

Booklet [Herbert gets his glopp: A safe bike riding story](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Daytime Conspicuity Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can serve as lobbying groups for roadway improvements. They can also produce and/or distribute brochures on bicyclist conspicuity.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Effective cycling: Road I, Road II, and Road III](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Bicyclist Training [Effective cycling: Bicycle commuting](#)

Bicyclist Training [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Bicyclist Training [Safe moves for older adults](#)

Implementer Training [Safe moves for service providers](#)

Video [Getting there by bike](#)

Video [Effective cycling](#)

Video [Bicycle safety](#)

Video [Basic bicycle education](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [A bicycle is not a toy!](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [Don't go head over handlebars--drive with your head](#)

Brochure [Seeing and being seen](#)

Brochure [Kids & bikes & safety](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Biking with Bucklebear](#)

Booklet [So you're going to leave your bike at home today](#)

Booklet [Badger bicycle tips](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Other [What would a SuperCyclist do? \(poster\)](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Daytime Conspicuity Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to improve the daytime conspicuity of the bicyclist. The most effective action may be to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of seeing and being seen as well as riding defensively needs to be learned at a young age. It can be reinforced at the middle school, high school and college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Elementary schools can serve as efficient conduits for conveying educational materials to bicyclists' parents on the conspicuity problem and the actions that they can take to reduce the problem. Information can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate the conspicuity problem in driver education programs and emphasize the importance of constantly searching for other roadway users. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective bicycle safety education programs. They also can support bicycle safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Teacher's guide to bicycle safety: Kindergarten-grade 8](#)

Bicyclist Training [Instructor's guide for the bicycle driver's test \(How well do you drive your bike?\)](#)

Bicyclist Training [Bicycle traffic safety school](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Bicyclist Training [Traffic safety education guide](#)

- Bicyclist Training [The basics of bicycling](#)
- Bicyclist Training [The elementary traffic education program](#)
- Bicyclist Training [Biking with Bucklebear](#)
- Bicyclist Training [Bike Ed Hawaii](#)
- Bicyclist Training [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)
- Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)
- Implementer Training [Bicycle and pedestrian traffic safety education](#)
- Video [Basic bicycle education](#)
- Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)
- Brochure [A bicycle is not a toy!](#)
- Brochure [Safe bicycle riding in New Jersey](#)
- Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)
- Booklet [Bucklebear's rules for cycling](#)
- Booklet [Biking with Bucklebear](#)
- Booklet [Bike like the best](#)
- Booklet [The best bicyclist on earth](#)
- Booklet [Herbert gets his glopp: A safe bike riding story](#)
- Booklet [Getting there safely by foot, by bike, by bus, by car](#)
- Booklet [From A to Z by bike](#)
- Booklet [Delaware bicycle driver's manual](#)

- Other [Bicycle owner's identification \(identification card\)](#)
- Other [Davis bike map \(university and city map\)](#)
- Other [What would a SuperCyclist do? \(poster\)](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide for developing bicycle indoctrination material for new college students](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Daytime Conspicuity Law Enforcement and Adjudication

Potential Role: Enforcement agencies can contribute to a reduction of crashes due to lack of daytime conspicuity in at least two ways. The first is through formal and informal training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to elementary and middle school children. Officers can provide impromptu training in the form of safety lectures to bicyclists when they are not conspicuous in the daytime. They can also provide positive reinforcement to bicyclists who are conspicuous. A second way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report driveway/roadway junctions where the sight distance is limited and where bicyclists need to take special precautions to ensure that they are conspicuous. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws.

Countermeasure Focus: [Bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Bicyclist Training [Bicycle traffic safety school](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Booklet [Pocket guide: Safe bicycling in Nevada](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [New Jersey bicycle manual](#)

Proposed Countermeasures:

- Bicyclist Training [Insert on bicycle safety for offender school training](#)
- Bicyclist Training [Module on bicycle safety for trainers of DWI offenders](#)
- Video [Conducting community audits \(a set of three videos\)](#)
- Video [Video promoting bicycle safety by traffic court judges](#)
- Video [Video promoting bicycle safety by first responders](#)
- Brochure [Conducting community audits \(a package of three brochures\)](#)
- Brochure [Brochure promoting bicycle safety by traffic court judges](#)
- Brochure [Brochure promoting bicycle safety by first responders](#)
- Report/Guide [College bicyclist education and enforcement program guide](#)
- Report/Guide [Guide to school bicycle safety presentations by police officers](#)
- Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Daytime Conspicuity Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as running rodeos and making presentations to both bicyclists and parents on daytime conspicuity and other bicycle safety issues. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. For example, they can support research to identify practical methods to increase the daytime conspicuity of bicyclists and bicycles. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups, for example, a brochure for bicyclists on methods to improve their conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Video [Bicycle safety](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [A package of safety education products for distribution by health care organizations and professionals](#)

Other [Pre-formatted electronic mail safety messages](#)



Daytime Conspicuity Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children. Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research. In this regard, they can support research to identify practical methods to increase the daytime conspicuity of bicyclists and bicycles.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [A bicycle is not a toy!](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [10 tips for fun and safe biking](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Biking with Bucklebear](#)

Booklet [So you're going to leave your bike at home today](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Other [Bicycle owner's identification \(identification card\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [Pre-formatted electronic mail safety messages](#)



Daytime Conspicuity Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on daytime conspicuity and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Video [Getting there by bike](#)

Video [Effective cycling](#)

Video [Bicycle safety](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [A bicycle is not a toy!](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [Don't go head over handlebars--drive with your head](#)

Brochure [Seeing and being seen](#)

Brochure [Kids & bikes & safety](#)

Brochure [10 tips for fun and safe biking](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Biking with Bucklebear](#)

Booklet [Bike like the best](#)

Booklet [So you're going to leave your bike at home today](#)

Booklet [Bike basics: A guide to safe bicycling for ages 10-15](#)

Booklet [Herbert gets his glopp: A safe bike riding story](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Other [Bicycle owner's identification \(identification card\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Daytime Conspicuity Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can do all or any part of the following: analyze the incidence of bicycle crashes in the community that occur because the daytime bicyclist is not conspicuous, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to improve the bicyclist's daytime conspicuity.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Video [Bicycle safety](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [A bicycle is not a toy!](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [Don't go head over handlebars—drive with your head](#)

Brochure [Seeing and being seen](#)

Brochure [Kids & bikes & safety](#)

Brochure [10 tips for fun and safe biking](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Biking with Bucklebear](#)

Booklet [Bike like the best](#)

Booklet [So you're going to leave your bike at home today](#)

Booklet [Pocket guide: Safe bicycling in Nevada](#)

Booklet [Badger bicycle tips](#)

Booklet [Florida cycling tips: Staying alive on the roads](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Booklet [New Jersey bicycle manual](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Report/Guide [Responses to queries on bicycle safety](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Daytime Conspicuity Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. Daytime conspicuity crashes can be reduced by maintaining clear, unobstructed sight lines on approaches to driveways and intersections and by creating bike lanes or paved shoulders on collector and arterial roadways. These bike lane and paved shoulder facilities pay the biggest dividends when lighting is poorest--at dusk and in foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and volume of the roadway, the higher the potential for these lethal crashes. A common mistake is to not provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. Appropriate signing and marking should be provided. AASHTO guidelines should be followed for maintaining adequate sight triangles on approaches to all intersections, turning pockets in medians and at driveways. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at intersections and other critical locations. The MUTCD provides guidelines on when to use yield signs and when to use stop signs when visual screening may occur.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Daytime Conspicuity Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines that promote safe and courteous roadway sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Daytime conspicuity crashes can be reduced by maintaining clear, unobstructed sight lines on approaches to driveways and intersections and by creating bike lanes or paved shoulders on collector and arterial roadways. These bike lane and paved shoulder facilities pay the biggest dividends when lighting is poorest--at dusk and in foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and volume of the roadway, the higher the potential for these lethal crashes. A common mistake is to not provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. Appropriate signing and marking should be provided. AASHTO guidelines should be followed for maintaining adequate sight triangles on approaches to all intersections, turning pockets in medians and at driveways. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at intersections and other critical locations. The MUTCD provides guidelines on when to use yield signs and when to use stop signs when visual screening may occur.

Countermeasure Focus: [Roadway](#) Pedestrian and bicyclist safety and accommodation

Existing Countermeasures:

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Daytime Conspicuity

Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street geometrics, operations and maintenance that invite safe and courteous roadway sharing. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies.

Daytime conspicuity crashes can be reduced by maintaining clear, unobstructed sight lines on approaches to driveways and intersections and by creating bike lanes or paved shoulders on collector and arterial roadways. These bike lane and paved shoulder facilities pay the biggest dividends when lighting is poorest--at dusk and in foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and volume of the roadway, the higher the potential for these lethal crashes. A common mistake is to not provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. Appropriate signing and marking should be provided. AASHTO guidelines should be followed for maintaining adequate sight triangles on approaches to all intersections, turning pockets in medians and at driveways. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at intersections and other critical locations. The MUTCD provides guidelines on when to use yield signs and when to use stop signs when visual screening may occur.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Visual Screens Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out the importance of the motorist's proceeding cautiously and being prepared to stop and search around any object that might prevent the motorist and bicyclist from seeing each other. The same advice can be provided in bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures). In addition, the necessity for the bicyclist to ride defensively and to be conspicuous at all times can be emphasized. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Visual Screens Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing the search procedures needed when riding in places where visual screens prevent the driver and cyclist from seeing each other. Bicycle manufacturers can provide guidance to cyclists through hang tags, owner's manuals and owner's videos. Flags on poles could be mounted on bikes with a 16-24 inch wheel base; a bracket for this purpose could be added to this category of bicycle at the factory. In addition, bicycle shops can display and distribute brochures that describe the visibility/conspicuity problem and what bicyclists can do to ensure that they are seen by the motorist. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Visual Screens Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes due to visual screens. They can provide seasonal hot-button reminders on the problem. They can also provide the public with information on the nature and incidence of the visual screen problem while providing routine reporting on a crash attributable to that problem. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Visual Screens Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate bicycle crashes due to visual screens in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of this problem as well as methods to solve the problem. They can help to eliminate the problem by supporting a police role in bicycle safety. They can also support removal of visual screens from residential and commercial driveways.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Visual Screens Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Such groups can assist in conducting community audits and provide parents with information on how to make driveways and roadways safer for bicyclists. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. To reduce crashes due to visual screens, all community and civic groups can conduct community audits and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Video [A kid's eye view](#)

Brochure [Visibility obstruction information](#)

Booklet [Biking with Bucklebear](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure on the midblock rideout crash type for homeowners](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Visual Screens Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements, such as elimination of visual screens, addition of bike lanes and improvements in street lighting. They can also produce and/or distribute brochures on visual screens.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Booklet [Biking with Bucklebear](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure on the midblock rideout crash type for homeowners](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Visual Screens Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to reduce crashes due to objects that prevent the driver and bicyclist from seeing each other. The most effective action may be to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of seeing and being seen as well as riding defensively needs to be learned at a young age. It can be reinforced at the middle school, high school and college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Elementary schools can serve as efficient conduits for conveying educational materials to bicyclists' parents on the visual screen problem and the actions that they can take to reduce the problem. Information can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate the visual screen problem in driver education programs and emphasize the importance of searching around visual screens for other roadway users. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective bicycle safety education programs. They can support bicycle safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented. School officials can also work cooperatively with other groups to remove visual screens in the neighborhood.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Instructor's guide for the bicycle driver's test \(How well do you drive your bike?\)](#)

Bicyclist Training [Traffic safety education guide](#)

Bicyclist Training [The basics of bicycling](#)

Bicyclist Training [The elementary traffic education program](#)

Bicyclist Training [Biking with Bucklebear](#)

Implementer Training [Bicycle and pedestrian traffic safety education](#)

Video [A kid's eye view](#)

Video [Sharing the road](#)

Booklet [Biking with Bucklebear](#)

Booklet [The best bicyclist on earth](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide for developing bicycle indoctrination material for new college students](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Visual Screens Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction of crashes due to visual screens in at least three ways. The first is to issue citations or warnings to bicyclists and motorists who are seen proceeding past a visual screen without first stopping/slowing and searching for other roadway users. A second way is through formal and informal training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to elementary and middle school children. Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists when they are seen proceeding past a visual screen without slowing or searching. They can also provide positive reinforcement to bicyclists who are observed behaving in a desirable manner. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report driveway/roadway junctions where the sight distance is limited by vegetation, structures or parked vehicles. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Brochure [Visibility obstruction information](#)

Proposed Countermeasures:

Bicyclist Training [Insert on bicycle safety for offender school training](#)

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Visual Screens Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as running rodeos and making presentations to both bicyclists and parents on the visual screen problem and other bicycle safety issues. They can also support efforts to identify and remove visual screens in residential neighborhoods, especially those in close proximity to residential driveways. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups, for example, a brochure for bicyclists and motorists on the visual screen and other roadway visibility problems.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [A package of safety education products for distribution by health care organizations and professionals](#)

Other [Pre-formatted electronic mail safety messages](#)



Visual Screens Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. They can support efforts to identify and remove visual screens, especially those in close proximity to driveways. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Video [A kid's eye view](#)

Booklet [Biking with Bucklebear](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure on visual screens for owners of roadside businesses](#)

Brochure [Brochure on the midblock rideout crash type for homeowners](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [Pre-formatted electronic mail safety messages](#)



Visual Screens Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on the visual screen problem and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Video [A kid's eye view](#)

Video [Sharing the road](#)

Brochure [Visibility obstruction information](#)

Booklet [Biking with Bucklebear](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure on the midblock rideout crash type for homeowners](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Visual Screens Public Highway Safety Groups

Potential Role: : Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can do all or any part of the following: analyze the incidence of bicycle crashes in the community that are due to visual screens that prevent bicyclists and drivers from seeing each other, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to remove visual screens from the roadway.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Video [A kid's eye view](#)

Brochure [Visibility obstruction information](#)

Booklet [Biking with Bucklebear](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure on visual screens for owners of roadside businesses](#)

Brochure [Brochure on the midblock rideout crash type for homeowners](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Visual Screens Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. Visual screen crashes can be reduced by maintaining clear, unobstructed sight lines on approaches to driveways and intersections, by reducing the number of bicyclists riding on sidewalks, and by creating bike lanes or paved shoulders on collector and arterial roadways. These bike lane and paved shoulder facilities pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and volume of the roadway, the higher the potential for these lethal crashes. A common mistake is to not provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. AASHTO guidelines should be followed for maintaining adequate sight triangles on approaches to all intersections, turning pockets in medians and at driveways. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at intersections and other critical locations. The MUTCD provides guidelines on when to use yield signs and when to use stop signs when visual screening may occur. In addition, local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Visual Screens Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines that promote safe and courteous roadway sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Visual screen crashes can be reduced by maintaining clear, unobstructed sight lines on approaches to driveways and intersections, by reducing the number of bicyclists riding on sidewalks, and by creating bike lanes or paved shoulders on collector and arterial roadways. These bike lane and paved shoulder facilities pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and volume of the roadway, the higher the potential for these lethal crashes. A common mistake is to not provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. AASHTO guidelines should be followed for maintaining adequate sight triangles on approaches to all intersections, turning pockets in medians and at driveways. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at intersections and other critical locations. The MUTCD provides guidelines on when to use yield signs and when to use stop signs when visual screening may occur. In addition, local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Visual Screens Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street geometrics, operations and maintenance that invite safe and courteous roadway sharing. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies.

Visual screen crashes can be reduced by maintaining clear, unobstructed sight lines on approaches to driveways and intersections, by reducing the number of bicyclists riding on sidewalks, and by creating bike lanes or paved shoulders on collector and arterial roadways. These bike lane and paved shoulder facilities pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and volume of the roadway, the higher the potential for these lethal crashes. A common mistake is to not provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. AASHTO guidelines should be followed for maintaining adequate sight triangles on approaches to all intersections, turning pockets in medians and at driveways. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at intersections and other critical locations. The MUTCD provides guidelines on when to use yield signs and when to use stop signs when visual screening may occur. In addition, local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Brochure [Visibility obstruction information](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Nighttime Conspicuity

Problem Description: The bicyclist is not conspicuous at night often because the bicycle and bicyclist are near or below the visual threshold for detection. Sometimes, parts of the bicycle, particularly the retroreflectors, are visible but do not stand out from among similar competing signals. The motorist can fail to see a bicyclist when the motorist is turning left in front of either an overtaking bicyclist or a bicyclist who is approaching from the front. Nighttime conspicuity can be a problem when the motorist is backing, driving out from a driveway or alley, running a sign or signal at an intersection, and overtaking a bicyclist.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

§ The bicyclist will be conspicuous at all times.

§ The bicyclist will ride defensively at all times.

§ Bicyclists and the parents of young bicyclists will be aware of the limited effectiveness of existing front and rear lighting equipment for bicycles.

§ The bicyclist will be aware that motorists often fail to see bicyclists during darkness even if the bicycle is equipped with all the lighting equipment required by law.

Motorist:

§ During darkness, a motorist who is overtaking a bicycle will see the bicyclist soon enough to initiate successful evasive action.

§ During darkness, a motorist who is preparing to enter a roadway from another roadway, a driveway, or an alley will see a bicyclist approaching from the right or left riding on the roadway or on a sidewalk).

§ During darkness, a motorist who is preparing to turn left into another roadway, a driveway, or an alley will see a bicyclist approaching from the opposite direction (riding on the roadway or on the sidewalk).

Roadway:

§ On higher speed and higher volume roadways, the bicyclist and motorist will be provided with separate riding spaces through wide curb lanes, bike lanes or paved shoulders.

§ Street lighting in urban areas will be improved.

§ Competing roadway glare will be eliminated.



Daytime Conspicuity

Problem Description: The bicyclist simply isn't conspicuous enough in the daytime, that is, the bicyclist doesn't stand out enough from the background. As a result, the bicyclist is not noticed by the motorist in time to avoid a crash. These bicyclists are certainly above the visual threshold, but still fail to prompt sufficient detection and recognition from motor vehicle drivers. Motorists often fail to see bicyclists who are riding on play vehicles, probably because they are small, low to the ground and fast-moving. The motorist can fail to see the bicyclist when executing a left turn in front of the bicyclist because the bicyclist is camouflaged against vegetation or hidden in shadows. Daytime conspicuity problems can occur when motorists drive out of driveways or alleys as well as when they obey stop signs at intersections but fail to yield to bicyclists. Motorists also frequently fail to detect bicyclists that they are overtaking.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

§ The bicyclist will be conspicuous at all times.

§ The bicyclist will ride defensively at all times.

§ The bicyclist will know that motorists often fail to see bicyclists, even when visibility conditions are good.

§ The bicyclist will adjust speed and path such that there is sufficient time and maneuver room to stop and/or swerve if the motorist fails to see the bicyclist.

Motorist:

§ Motorists will have a high expectation of encountering bicyclists at any location and any time of day.

§ Motorists will actively search for bicyclists who are riding in the roadway (including bicyclists riding facing traffic) and for bicyclists who are preparing to enter the roadway from a driveway or alley or over a curb.

§ Motorists will decrease speed as needed to provide the time for an effective search.

§ The motorist will know the full range of traffic contexts in which bicyclists are not detected, even when visibility conditions are good.

Roadway:

§ Adequate sight distances will be provided at intersections and at residential and commercial driveways.

§ On higher speed and higher volume roadways, the bicyclist and motorist will be provided with separate riding spaces through wide curb lanes, bike lanes or paved shoulders.

§ Street lighting in urban areas will be improved.



Visual Screens

Problem Description: A visual screen is an object that blocks the bicyclist and motorist views of each other. Examples include parked cars, cars in adjacent lanes, sidewalk furniture, fences, vegetation, signs and street clutter. Visual screen problems occur both in roadway and non-roadway situations (for example, parking lots). The views from residential and commercial driveways and alleys are frequently blocked by visual screens. Therefore, bicyclists who ride out from driveways and alleys without searching around visual screens are frequently struck by motorists who simply don't know that they are there. Bicyclists on play vehicles are one component of this problem because these vehicles are typically low to the ground and difficult to detect. Bicyclists riding on sidewalks are often not seen by motorists until they suddenly enter the street because they are screened by a variety of objects. Both wrong-way bicyclists and wrong-way motorists are often screened from each other's view. Views at intersections can also be blocked.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

- § The bicyclist will stop at the edge of any visual screen and search for vehicles before proceeding.
- § The bicyclist will be conspicuous at all times.
- § The bicyclist will ride defensively at all times.

Motorist:

- § A motorist will search for visual screens and adjust speed as necessary to stop or swerve if a bicyclist is approaching behind the screen.

Roadway:

§ Visual screens will be removed from the roadway.

§ Bicyclists' parents, school officials, and other groups will work cooperatively to identify and remove vegetation and objects that obstruct the views of motorists and bicyclists.

§ Owners of residences will remove vegetation and other objects that obstruct the views of bicyclists and motorists at the junctions of roadways and residential driveways.

§ Owners of roadside businesses will remove signs, vegetation, and other objects that obstruct the view of vehicle operators who are approaching or exiting a commercial driveway or alley.

§ Adequate sight distances will be provided at intersections and at residential and commercial driveways.

§ On higher speed and higher volume roadways, the bicyclist and motorist will be provided with separate riding spaces through wide curb lanes, bike lanes or paved shoulders.

§ Street lighting in urban areas will be improved.

§ Competing roadway glare will be eliminated.



Bridges and Tunnels Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out the dangers to bicyclists traveling on bridges or in tunnels and the importance of the motorist's driving carefully and being alert to the presence of other roadway users. Bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures) can describe precautions to take when riding on bridges or in tunnels. The importance of riding defensively and predictably and of being conspicuous at all times can be emphasized. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Bridges and Tunnels Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing how to identify risks and improve safety associated with bridges, tunnels and overpasses. Bicycle manufacturers can provide guidance to cyclists through hang tags, owner's manuals and owner's videos. In addition, bicycle shops can display and distribute brochures on the special cautions and rules to follow when riding in special locations. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Other [10 smart routes to bicycle safety \(hang tag\)](#)

Proposed Countermeasures:



Bridges and Tunnels Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes that occur due to lack of proper bridge, tunnel or overpass facilities. They can provide seasonal hot-button reminders on the problem. They can provide information on the nature and incidence of the problem while providing routine reporting on a crash attributable to that problem. They can explain what community members can do to help solve the problem. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Bridges and Tunnels Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate bicycle crashes that occur due to lack or improper use of bridge or tunnel facilities in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of any problem. They can help to eliminate this problem by supporting modern bridge intermodal policies and the development of any needed facilities.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Bridges and Tunnels Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. Adult community and civic groups can conduct audits to determine where bridges and tunnels need improvements to permit safe bicycling. They can also serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)



Bridges and Tunnels Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can assess the safety of structures for bicycling and serve as lobbying groups for bridge and tunnel improvements, such as the addition of bike lanes. They can also produce and/or distribute brochures on bicycle safety issues.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Bridges and Tunnels Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to reduce bicyclist crashes that occur on bridges and tunnels. The most effective action may be to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of following the rules of the road, riding defensively and predictably, and being conspicuous at all times needs to be emphasized at an early age. It can be reinforced at the middle school, high school and college levels where it is likely that more students will be riding in traffic. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. At the high school level, school officials can incorporate bridge and tunnel bicycling facilities in driver education programs and emphasize that motorists must be constantly alert for other roadway users. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective bicycle safety education programs. They also can support bicycle safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)



Bridges and Tunnels Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction of motor vehicle/bicycle crashes on bridges and tunnels in least three ways. The first is to issue citations or warnings to bicyclists and motorists who are not riding safely. A second way is through formal and informal training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos). Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists who are stopped for unsafe actions on bridges or in tunnels. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report structures where separate bike lanes are needed. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)



Bridges and Tunnels Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as promoting adequate bridge and tunnel facilities, where needed, and explaining their design and use. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)



Bridges and Tunnels Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. They can support the development and implementation of methods to reduce the risk of bicycle riding on high hazard bridges and through high hazard tunnels. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)



Bridges and Tunnels Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on bridge, tunnel or overpass facilities and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Bridges and Tunnels Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe bicycle riding. Working in partnership with the state or city highway safety office, they can do all or any part of the following: identify areas where bridge, tunnel or overpass bicycle facilities are needed or need improvements, develop a model program to provide the needed facilities/improvements, implement the program (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to improve bridge/tunnel facilities.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Bridges and Tunnels Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines that promote safe and courteous bridge and tunnel road sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. Bridge and tunnel systems can be adapted over time to handle an increased demand for bicycling to all destinations, with special emphasis on routes to and from common destinations. Bicyclist crashes can be reduced through planning and engineering. Appropriate street making standards and traffic calming techniques can be used to reduce traffic volumes and travel speeds on critical bridges. Bicycle tunnels can be well lit and kept as short and wide as possible. Overpasses can be provided on critical trail and roadway sections. Adequate bridge and tunnel lighting standards are needed, as are steps to reduce competing glare. Bike lanes or paved shoulders are the preferred treatment on most bridges, although well-designed fully independent sidewalks can be well used by novices. Where sidewalks are used, rail heights must exceed the bicyclist's center of gravity to avoid pitchover in high winds. Special signs and markings can help alert the motorist to the presence of bicyclists, especially on long bridges and bridges that have vertical crests. Adequate sight triangles need to be maintained on bridge and tunnel approaches and departures. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a bridge or tunnel is resurfaced, reconditioned or rebuilt.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Report/Guide [Implementing bicycle improvements at the local level](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Separated grade crossings--Guide for overpass, bridge and tunnel placement and design](#)

Report/Guide [Model development codes for traffic-calmed streets](#)

Report/Guide [Bike lanes and paved shoulders](#)



Bridges and Tunnels Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines that promote safe and courteous bridge and tunnel road sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Bridge and tunnel systems can be adapted over time to handle an increased demand for bicycling to all destinations, with special emphasis on routes to and from common destinations. Bicyclist crashes can be reduced through planning and engineering. Appropriate street making standards and traffic calming techniques can be used to reduce traffic volumes and travel speeds on critical bridges. Bicycle tunnels can be well lit and kept as short and wide as possible. Overpasses can be provided on critical trail and roadway sections. Adequate bridge and tunnel lighting standards are needed, as are steps to reduce competing glare. Bike lanes or paved shoulders are the preferred treatment on most bridges, although well-designed fully independent sidewalks can be well used by novices. Where sidewalks are used, rail heights must exceed the bicyclist's center of gravity to avoid pitchover in high winds. Special signs and markings can help alert the motorist to the presence of bicyclists, especially on long bridges and bridges that have vertical crests. Adequate sight triangles need to be maintained on bridge and tunnel approaches and departures. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a bridge or tunnel is resurfaced, reconditioned or rebuilt.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Report/Guide [Implementing bicycle improvements at the local level](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Separated grade crossings--Guide for overpass, bridge and tunnel placement and design](#)

Report/Guide [Model development codes for traffic-calmed streets](#)

Report/Guide [Bike lanes and paved shoulders](#)



Bridges and Tunnels Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street geometrics, operations and maintenance that invite safe and courteous bridge and tunnel road sharing. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. Bridge and tunnel systems can be adapted over time to handle an increased demand for bicycling to all destinations, with special emphasis on routes to and from common destinations. Bicyclist crashes can be reduced through planning and engineering. Appropriate street making standards and traffic calming techniques can be used to reduce traffic volumes and travel speeds on critical bridges. Bicycle tunnels can be well lit and kept as short and wide as possible. Overpasses can be provided on critical trail and roadway sections. Adequate bridge and tunnel lighting standards are needed, as are steps to reduce competing glare. Bike lanes or paved shoulders are the preferred treatment on most bridges, although well-designed fully independent sidewalks can be well used by novices. Where sidewalks are used, rail heights must exceed the bicyclist's center of gravity to avoid pitchover in high winds. Special signs and markings can help alert the motorist to the presence of bicyclists, especially on long bridges and bridges that have vertical crests. Adequate sight triangles need to be maintained on bridge and tunnel approaches and departures. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a bridge or tunnel is resurfaced, reconditioned or rebuilt.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Report/Guide [Implementing bicycle improvements at the local level](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Separated grade crossings--Guide for overpass, bridge and tunnel placement and design](#)

Report/Guide [Model development codes for traffic-calmed streets](#)

Report/Guide [Bike lanes and paved shoulders](#)



Off-Street Facilities Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out the advantages of off-street facilities to both bicyclist and motorist and the importance of the motorist's driving carefully and being alert to the possible presence of bicyclists where roadways and trails intersect. Bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures) can describe the advantages and use of off-street facilities. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:



Off-Street Facilities Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing how to identify risks and improve safety associated with off-street bicycle facilities. Bicycle manufacturers can provide guidance to cyclists through hang tags, owner's manuals and owner's videos. In addition, bicycle shops can maintain and distribute maps that indicate the best bicycle travel routes in the area and the locations of on-street and off-street bicycle facilities. They can also display and distribute brochures on the special cautions and rules to follow when riding in special locations. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [How to "talk" to people in cars](#)

Brochure [Have you "shared the road" today?](#)

Other [Bicycle owner's identification \(identification card\)](#)

Other [Bicycling in Colorado: Rules of the road \(card\)](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Off-Street Facilities Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes that occur due to unsatisfactory or deficient off-street facilities. They can provide seasonal hot-button reminders on the problem. They can provide information on the nature and incidence of the problem while providing routine reporting on a crash attributable to that problem. They can explain what community members can do to help solve the problem. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Off-Street Facilities Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate bicycle crashes that occur due to unsatisfactory, deficient or improperly used off-street facilities in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of any problem. They can support the development of any needed facilities. They can promote intermodal transportation and mixed use and moderate density development.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Off-Street Facilities Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. Adult community and civic groups can conduct audits to determine where off-sight facilities are needed or need improvements and can serve as conduits though which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Annual pedal power camp report](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)



Off-Street Facilities Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements, such as the addition of off-road bicycle paths. They can also produce and/or distribute brochures on bicycle safety issues.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Annual pedal power camp report](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Bicyclist Training [Safe moves for older adults](#)

Implementer Training [Safe moves for service providers](#)

Video [Effective cycling](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [How to "talk" to people in cars](#)

Brochure [Have you "shared the road" today?](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Other [Bicycling in Colorado: Rules of the road \(card\)](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Off-Street Facilities Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to reduce bicyclist crashes due to inadequate or inferior off-street systems. The most effective action may be to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of following the rules of the trail, riding defensively and predictably, searching for vehicles at roadway intersections, and being conspicuous at all times needs to be emphasized at an early age. It can be reinforced at the middle school, high school and college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes and promote helmet use. At the high school level, school officials can incorporate off-street bicycling facilities in driver education programs and emphasize that motorists must be constantly alert for other roadway users where roads and trails intersect. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective bicycle safety education programs. They also can support bicycle safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Look out! Highway safety topics for elementary students](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Other [Bicycle owner's identification \(identification card\)](#)

Other [Davis bike map \(university and city map\)](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)



Off-Street Facilities Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction of motor vehicle/bicycle crashes in least three ways. The first is to issue citations or warnings to bicyclists who don't follow off-street rules of the road or who don't yield, if required, at roadway junctions. Law enforcement officers can issue citations or warnings to motorists who are observed driving or parking illegally in an off-street bicycle facility or who don't yield, if required, at roadway junctions. A second way is through formal and informal training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos). Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists who are stopped for misuse of an off-street facility. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report locations where off-street facilities need markings to ensure their correct use. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)



Off-Street Facilities Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as promoting off-street facilities, where needed, and explaining their design and use. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)



Off-Street Facilities Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. They can support the development of off-street facilities that can reduce bicycle crashes, increase bicycle use, or increase the quality of bicycling. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Annual pedal power camp report](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Booklet [Safe bicycling in Chicago \(Also available in Polish and Spanish\)](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Other [Bicycle owner's identification \(identification card\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)



Off-Street Facilities Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on off-street facilities and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [Annual pedal power camp report](#)

Video [Effective cycling](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [How to "talk" to people in cars](#)

Brochure [Have you "shared the road" today?](#)

Booklet [Safe bicycling in Chicago \(Also available in Polish and Spanish\)](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Other [Bicycle owner's identification \(identification card\)](#)

Other [Bicycling in Colorado: Rules of the road \(card\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Off-Street Facilities Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe bicycle riding. Working in partnership with the state or city highway safety office, they can do all or any part of the following: identify areas where off-street bicycle facilities are needed or need improvements, develop a model program to provide the needed facilities/improvements, implement the program (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to improve off-street bicycle facilities.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Bicyclist Training [Annual pedal power camp report](#)

Implementer Training [Bicycle planning and facility workshop](#)

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [How to "talk" to people in cars](#)

Brochure [Have you "shared the road" today?](#)

Booklet [Safe bicycling in Chicago \(Also available in Polish and Spanish\)](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)

Other [Bicycling in Colorado: Rules of the road \(card\)](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Off-Street Facilities Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines. They can rewrite local codes for implementing design changes and can promote these codes. Guidelines can ensure that off-street facilities are provided where practical and that safety is improved where current systems are deficient. Appropriate traffic calming techniques can be used where trails cross roadways or separate grade crossing can be provided where bicycling and motor vehicle traffic volumes are high. Detection of bicyclists can be improved by improving sight triangles and reducing the turning speed of motorists at critical crossing points. Night lighting can be improved, especially at trail intersections with roadways. To prevent crashes, all members of the planning community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Trails can be provided away from the common conflicts of urban roadways where frequent driveways and intersections place the bicyclist in danger. Appropriate signing and marking should be provided. Adequate sight triangles need to be maintained on approaches to all trail/roadway crossings. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at intersections and other critical locations. Appropriate widths, clearances and grades should be provided for off-street facilities.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Bicycle planning and facility workshop](#)

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Report/Guide [Implementing bicycle improvements at the local level](#)

Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)

Proposed Countermeasures:

Video [Video on traditional neighborhood design](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Guide to creating bicycle boulevards](#)

Report/Guide [Separated grade crossings--Guide for overpass, bridge and tunnel placement and design](#)

Report/Guide [Model development codes for traffic-calmed streets](#)



Off-Street Facilities Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines that promote safe and courteous roadway sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Guidelines can ensure that off-street facilities are provided where practical and that safety is improved where current systems are deficient. Appropriate traffic calming techniques can be used where trails cross roadways or separate grade crossing can be provided where bicycling and motor vehicle traffic volumes are high. Detection of bicyclists can be improved by improving sight triangles and reducing the turning speed of motorists at critical crossing points. Night lighting can be improved, especially at trail intersections with roadways. To prevent crashes, all members of the public highway community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Trails can be provided away from the common conflicts of urban roadways where frequent driveways and intersections place the bicyclist in danger. Appropriate signing and marking should be provided. Adequate sight triangles need to be maintained on approaches to all trail/roadway crossings. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at intersections and other critical locations. Appropriate widths, clearances and grades should be provided for off-street facilities.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Bicycle planning and facility workshop](#)

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Report/Guide [Implementing bicycle improvements at the local level](#)

Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)

Proposed Countermeasures:

Video [Video on traditional neighborhood design](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Guide to creating bicycle boulevards](#)

Report/Guide [Separated grade crossings--Guide for overpass, bridge and tunnel placement and design](#)

Report/Guide [Model development codes for traffic-calmed streets](#)



Off-Street Facilities Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street geometrics, operations and maintenance that invite safe and courteous sharing of multi-use trails. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. Guidelines can ensure that off-street facilities are provided where practical and that safety is improved where current systems are deficient. Appropriate traffic calming techniques can be used where trails cross roadways or separate grade crossings can be provided where bicycling and motor vehicle traffic volumes are high. Detection of bicyclists can be improved by improving sight triangles and reducing the turning speed of motorists at critical crossing points. Night lighting can be improved, especially at trail intersections with roadways. To prevent crashes, all members of the engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Trails can be provided away from the common conflicts of urban roadways where frequent driveways and intersections place the bicyclist in danger. Appropriate signing and marking should be provided. Adequate sight triangles need to be maintained on approaches to all trail/roadway crossings. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at intersections and other critical locations. Appropriate widths, clearances and grades should be provided for off-street facilities.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Bicycle planning and facility workshop](#)

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Report/Guide [Implementing bicycle improvements at the local level](#)

Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)

Proposed Countermeasures:

Video [Video on traditional neighborhood design](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Guide to creating bicycle boulevards](#)

Report/Guide [Separated grade crossings--Guide for overpass, bridge and tunnel placement and design](#)

Report/Guide [Model development codes for traffic-calmed streets](#)



On-Street Facilities Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out the advantages of on-street facilities to both bicyclist and motorist and the importance of the motorist's driving carefully and being alert to the possible presence of other roadway users. Bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures) can describe the use of on-street facilities. The importance of riding defensively and predictably and of being conspicuous at all times can be emphasized. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Booklet [Oregon driver manual](#)

Booklet [New York State driver's manual](#)

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



On-Street Facilities Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing how to identify risks and improve safety associated with on-street bicycle facilities. Bicycle manufacturers can provide guidance to cyclists through hang tags, owner's manuals and owner's videos. In addition, bicycle shops can maintain and distribute maps that indicate the best bicycle travel routes in the area and the locations of on-street and off-street bicycle facilities. They can also display and distribute brochures on the special cautions and rules to follow when riding in special locations. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [Have you "shared the road" today?](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



On-Street Facilities Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes that occur due to inadequate or unsatisfactory on-street facilities. They can provide seasonal hot-button reminders on the problem. They can provide information on the nature and incidence of the problem while providing routine reporting on a crash attributable to that problem. They can explain what community members can do to help solve the problem. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



On-Street Facilities Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate bicycle crashes that occur due to inadequate or unsatisfactory on-street facilities in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of any problem. They can support the development or improvement of any needed facilities. They can promote intermodal transportation and mixed use and moderate density development.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



On-Street Facilities Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. Adult community and civic groups can conduct audits to determine where on-sight facilities are needed or need improvements and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Annual pedal power camp report](#)

Video [Sharing the road: Bicycles and buses](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)



On-Street Facilities Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements, such as the addition of bike lanes. They can also produce and/or distribute brochures on bicycle safety issues.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Annual pedal power camp report](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Bicyclist Training [Safe moves for older adults](#)

Implementer Training [Safe moves for service providers](#)

Implementer Training [Effective cycling: Motorist education](#)

Video [Effective cycling](#)

Video [Sharing the road: Bicycles and buses](#)

Brochure [Have you "shared the road" today?](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)



On-Street Facilities Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to reduce bicyclist crashes due to inadequate or inferior on-street systems. The most effective action may be to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of following the rules of the road, riding defensively and predictably, searching for vehicles at driveways and intersections, and being conspicuous at all times needs to be emphasized at an early age. It can be reinforced at the middle school, high school and college levels where it is likely that more students will be riding in traffic. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. At the high school level, school officials can incorporate on-street bicycling facilities in driver education programs and emphasize that motorists must be constantly alert for other roadway users. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective bicycle safety education programs. They also can support bicycle safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Implementer Training [Effective cycling: Motorist education](#)

Implementer Training [Bicycle and pedestrian traffic safety education](#)

Flyer [Bicycles and the new UC Davis cyclist, 1998-99](#)

Booklet [Sam's adventures through Nevada: Safe pedaling in Nevada](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Other [Davis bike map \(university and city map\)](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)



On-Street Facilities Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction of motor vehicle/bicycle crashes in least three ways. The first is to issue citations or warnings. These can be issued to bicyclists who fail to use on-street facilities, where provided, or who use them incorrectly. Law enforcement officers can issue citations or warnings to motorists who are observed driving or parking illegally in an on-street bicycle facility. They can also issue citations or warnings to motorists who are observed turning across on-street bicycle facilities without yielding to approaching bicyclists. A second way is through formal and informal training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos). Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists who are stopped for misuse of an on-street facility. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report locations where on-street facilities need markings to ensure their correct use. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Implementer Training [Enforcement for bicycle safety](#)

Implementer Training [Law enforcement bicycle patrol course](#)

Implementer Training [Bike patrol training manual](#)

Report/Guide [Guide for police officers on bicycle traffic management](#)

Proposed Countermeasures:

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)



On-Street Facilities Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as promoting on-street facilities, where needed, and explaining their design and use. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)



On-Street Facilities Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Owners of roadside businesses can support the development of on-street facilities to reduce bicycle crashes, increase bicycle use, or both. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Annual pedal power camp report](#)

Implementer Training [Effective cycling: Motorist education](#)

Video [Sharing the road: Bicycles and buses](#)

Booklet [Safe bicycling in Chicago \(Also available in Polish and Spanish\)](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)



On-Street Facilities Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on on-street facilities and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [Annual pedal power camp report](#)

Video [Effective cycling](#)

Video [Sharing the road: Bicycles and buses](#)

Brochure [Have you "shared the road" today?](#)

Booklet [Safe bicycling in Chicago \(Also available in Polish and Spanish\)](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



On-Street Facilities Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe bicycle riding. Working in partnership with the state or city highway safety office, they can do all or any part of the following: identify areas where on-street bicycle facilities are needed or need improvements, develop a model program to provide the needed facilities/improvements, implement the program (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to improve on-street bicycle facilities.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Bicyclist Training [Annual pedal power camp report](#)

Implementer Training [Bicycle planning and facility workshop](#)

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Video [Sharing the road: Bicycles and buses](#)

Brochure [Have you "shared the road" today?](#)

Booklet [Safe bicycling in Chicago \(Also available in Polish and Spanish\)](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Report/Guide [Bicycle safety-related research synthesis](#)

Report/Guide [Making streets that work](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)



On-Street Facilities Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. Guidelines can ensure that on-street facilities are provided where practical and that safety is improved where current systems are deficient. Traffic systems can be adapted over time to handle the increased demand for bicycling to all destinations. Bicyclist crashes can be reduced through planning and engineering. Appropriate street making standards and traffic calming techniques can be used to reduce traffic volumes and travel speeds. Detection of bicyclists can be improved by improving sight triangles and reducing the turning speed of motorists at intersections and driveways. The number of bicyclists riding on sidewalks can be reduced by creating alternatives such as converting excess lane width or excess number of lanes into bike lanes. Night lighting can be improved. A combination of bike lanes and paved shoulders can be included whenever possible on urban collector and arterial roadways. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Adequate sight triangles need to be maintained on approaches and departures to and from all driveways. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Bicycle planning and facility workshop](#)

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Report/Guide [Bicycle safety-related research synthesis](#)

Report/Guide [Making streets that work](#)

- Report/Guide [Oregon bicycle and pedestrian plan](#)
- Report/Guide [Bicycle facilities planning and design handbook](#)
- Report/Guide [Traditional neighborhood development street design guidelines](#)
- Report/Guide [Manual on uniform traffic control devices for streets and highways](#)
- Report/Guide [Highway safety design and operations guide](#)
- Report/Guide [Guide for the development of bicycle facilities](#)
- Report/Guide [A policy on geometric design of highways and streets](#)
- Report/Guide [Implementing bicycle improvements at the local level](#)
- Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)

Proposed Countermeasures:

- Video [Video on traditional neighborhood design](#)
- Video [Video promoting bicycle safety by engineering and planning groups](#)
- Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)
- Report/Guide [Guide to four-lane to three-lane street conversion](#)
- Report/Guide [Guide to improved urban area street lighting](#)
- Report/Guide [Guide to identifying high risk locations](#)
- Report/Guide [Model development codes for traffic-calmed streets](#)
- Report/Guide [Neighborhood development guidelines](#)[Planning_Neighborhood_development_guidelines_Code_P_11](#)
- Report/Guide [Bicycle improvements for collector and arterial roadways](#)
- Report/Guide [Bike lanes and paved shoulders](#)
- Report/Guide [Residential intersection guidelines](#)
- Report/Guide [Access management](#)



On-Street Facilities Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines that promote safe and courteous roadway sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Guidelines can ensure that on-street facilities are provided where practical and that safety is improved where current systems are deficient. Traffic systems can be adapted over time to handle the increased demand for bicycling to all destinations. Bicyclist crashes can be reduced through planning and engineering. Appropriate street making standards and traffic calming techniques can be used to reduce traffic volumes and travel speeds. Detection of bicyclists can be improved by improving sight triangles and reducing the turning speed of motorists at intersections and driveways. The number of bicyclists riding on sidewalks can be reduced by creating alternatives such as converting excess lane width or excess number of lanes into bike lanes. Night lighting can be improved. A combination of bike lanes and paved shoulders can be included whenever possible on urban collector and arterial roadways. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the public highway community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Adequate sight triangles need to be maintained on approaches and departures to and from all driveways. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Bicycle planning and facility workshop](#)

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Report/Guide [Bicycle safety-related research synthesis](#)

Report/Guide [Making streets that work](#)

- Report/Guide [Oregon bicycle and pedestrian plan](#)
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- Report/Guide [Manual on uniform traffic control devices for streets and highways](#)
- Report/Guide [Guide for the development of bicycle facilities](#)
- Report/Guide [A policy on geometric design of highways and streets](#)
- Report/Guide [Implementing bicycle improvements at the local level](#)
- Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)

Proposed Countermeasures:

- Video [Video on traditional neighborhood design](#)
- Video [Conducting community audits \(a set of three videos\)](#)
- Video [Video promoting bicycle safety by engineering and planning groups](#)
- Brochure [Conducting community audits \(a package of three brochures\)](#)
- Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)
- Report/Guide [Guide to four-lane to three-lane street conversion](#)
- Report/Guide [Guide to improved urban area street lighting](#)
- Report/Guide [Guide to identifying high risk locations](#)
- Report/Guide [Model development codes for traffic-calmed streets](#)
- Report/Guide [Neighborhood development guidelines](#)
- Report/Guide [Bicycle improvements for collector and arterial roadways](#)
- Report/Guide [Bike lanes and paved shoulders](#)
- Report/Guide [Residential intersection guidelines](#)
- Report/Guide [Access Management](#)



On-Street Facilities Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street geometrics, operations and maintenance that invite safe and courteous roadway sharing. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. Guidelines can ensure that on-street facilities are provided where practical and that safety is improved where current systems are deficient. Traffic systems can be adapted over time to handle the increased demand for bicycling to all destinations. Bicyclist crashes can be reduced through planning and engineering. Appropriate street making standards and traffic calming techniques can be used to reduce traffic volumes and travel speeds. Detection of bicyclists can be improved by improving sight triangles and reducing the turning speed of motorists at intersections and driveways. The number of bicyclists riding on sidewalks can be reduced by creating alternatives such as converting excess lane width or excess number of lanes into bike lanes. Night lighting can be improved. A combination of bike lanes and paved shoulders can be included whenever possible on urban collector and arterial roadways. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Adequate sight triangles need to be maintained on approaches and departures to and from all driveways. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Bicycle planning and facility workshop](#)

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- Report/Guide [Bicycle safety-related research synthesis](#)
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- Report/Guide [Guide for the development of bicycle facilities](#)
- Report/Guide [A policy on geometric design of highways and streets](#)
- Report/Guide [Implementing bicycle improvements at the local level](#)
- Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)

Proposed Countermeasures:

- Video [Video on traditional neighborhood design](#)
- Video [Conducting community audits \(a set of three videos\)](#)
- Video [Video promoting bicycle safety by engineering and planning groups](#)
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- Report/Guide [Bicycle improvements for collector and arterial roadways](#)
- Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



College Campus Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out the roadway dangers to bicyclists and the importance of the motorist's driving carefully and constantly searching for other roadway users. Bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures) can point out precautions that bicyclists can take to avoid a crash. The importance of riding defensively and of being conspicuous at all times can be emphasized. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



College Campus Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing how to identify risks and improve safety associated with a college campus. Bicycle manufacturers can provide guidance to cyclists through hang tags, owner's manuals and owner's videos. In addition, bicycle shops in college towns can display and distribute brochures on the special cautions and rules to follow when riding in special locations. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:



College Campus Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes that occur on a college campus. They can provide seasonal hot-button reminders on the problem. They can provide information on the nature and incidence of the problem while providing routine reporting on a crash attributable to that problem. They can explain what community members and campus officials can do to help solve the problem. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



College Campus Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate bicycle crashes that occur on a college campus in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of any problem as well as methods to solve the problem.

These crashes can involve conflicts with pedestrians on college paths as well as motor vehicles on roadways. Elected officials can help eliminate the problem by working with campus officials to ensure that campus paths and roadways are designed to accommodate safe use of bicycles.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



College Campus Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. Adult community and civic groups can conduct campus audits to determine where bicycle improvements are needed and can serve as conduits through which safety-related information can be distributed.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)



College Campus Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform audits to assess the safety of the campus for bicycling and serve as lobbying groups for roadway improvements, such as the addition of bike lanes. They can also produce and/or distribute brochures on safe campus bicycling.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)



College Campus Schools

Potential Role: There are many ways that college administrators can participate in programs to reduce bicycle/motor-vehicle crashes that occur on campus. They can conduct studies to determine the nature of campus bicycle safety problems and devise means to solve the problems. They may cooperate with other groups (e.g., traffic planners and police officers) in these studies. The most effective action may be to implement a comprehensive bicycle safety education program that focuses on the typical campus crash types and promotes safe bicycling on campus. Biking is frequently encouraged on college campuses as a means of reducing campus motor vehicle traffic. Therefore, campus officials provide parking facilities and lockers. Since the bicycle is the primary mode of transportation of many students, programs that encourage appropriate lighting equipment are desirable as are programs that provide low-cost helmets to students. Dedicated bike lanes can be an aid to safety as can lanes that are shared with pedestrians as long as they are clearly marked to indicate the appropriate place for both users. College officials may solicit funds for use in the development and implementation of effective bicycle safety education programs. They also may support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Bicycle traffic safety school](#)

Video [The E's of cycling](#)

Video [Bike right. . . The face you save may be your own](#)

Flyer [Bicycles and the new UC Davis cyclist, 1998-99](#)

Booklet [The University of Montana cyclist's survival guide](#)

Report/Guide [Campus biking: Challenges and Strategies. The Campus Bike-Right Project at Cornell University](#)

Other [Davis bike map \(university and city map\)](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide for developing bicycle indoctrination material for new college students](#)



College Campus Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction of campus crashes in at least three ways. The first is to issue citations or warnings to bicyclists who violate campus traffic laws and safety rules established by college officials as well as those who violate off-campus laws. They can also issue citations or warnings to motorists who fail to obey campus roadway laws. A second way is through formal and informal training. Enforcement officers can provide classroom training on bicycle safety to college staff and students. They can also provide impromptu training in the form of safety lectures and warnings to bicyclists who are seen disobeying campus rules. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report roadway junctions where the sight distance is limited by vegetation, structures or parked vehicles and areas where bicycle paths are desirable. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Bicycle traffic safety school](#)

Video [The E's of cycling](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Proposed Countermeasures:

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Conducting community audits \(a set of three videos\)](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Report/Guide [College bicyclist education and enforcement program guide](#)



College Campus Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, officials and employees of college health care centers can compile data on the frequency and severity of students' injuries sustained in bicycle related crashes and can develop campus countermeasures for these crashes. They can participate actively in bicycle safety programs, such as making presentations to bicyclists on risks associated with campus riding and rules to follow when riding on campus. They can develop bicycle safety materials and serve as highly effective centers for their distribution. They can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of campus health care centers and other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:



College Campus Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:



College Campus Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on campus crashes and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Proposed Countermeasures:



College Campus Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe bicycle riding. Working in partnership with the state or city highway safety office and with campus officials, they can do all or any part of the following: identify the bicycle problems that occur on campus, develop a model program to solve the problems, implement the program (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to correct problems that occur on a college campus.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Implementer Training [Training program for college traffic planners](#)

Video [Conducting community audits \(a set of three videos\)](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)



College Campus Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. Traffic systems can be adapted over time to handle the increased demand for bicycling. Bicyclist crashes can be reduced through planning and engineering. Appropriate street making standards and traffic calming techniques can be used to reduce traffic volumes and travel speeds in and near college campuses. Detection of bicyclists can be improved by improving sight triangles and reducing the turning speed of motorists at intersections and driveways. The number of bicyclists riding on sidewalks can be reduced by creating alternatives such as converting excess lane width or excess number of lanes into bike lanes. Night lighting can be improved. A combination of bike lanes and paved shoulders can be included whenever possible on urban collector and arterial roadways. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Adequate sight triangles need to be maintained on approaches and departures to and from all driveways. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Implementer Training [Training program for college traffic planners](#)

Report/Guide [Guide to four-lane to three-lane street conversion](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Model development codes for traffic-calmed streets](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



College Campus Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines that promote safe and courteous roadway sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Traffic systems can be adapted over time to handle the increased demand for bicycling. Bicyclist crashes can be reduced through planning and engineering. Appropriate street making standards and traffic calming techniques can be used to reduce traffic volumes and travel speeds in and near college campuses. Detection of bicyclists can be improved by improving sight triangles and reducing the turning speed of motorists at intersections and driveways. The number of bicyclists riding on sidewalks can be reduced by creating alternatives such as converting excess lane width or excess number of lanes into bike lanes. Night lighting can be improved. A combination of bike lanes and paved shoulders can be included whenever possible on urban collector and arterial roadways. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Adequate sight triangles need to be maintained on approaches and departures to and from all driveways. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

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Report/Guide [Bicycle facilities planning and design handbook](#)

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Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Implementer Training [Training program for college traffic planners](#)

Video [Conducting community audits \(a set of three videos\)](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Report/Guide [Guide to four-lane to three-lane street conversion](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Model development codes for traffic-calmed streets](#)

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Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



College Campus Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street geometrics, operations and maintenance that invite safe and courteous roadway sharing. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. Traffic systems can be adapted over time to handle the increased demand for bicycling. Bicyclist crashes can be reduced through planning and engineering. Appropriate street making standards and traffic calming techniques can be used to reduce traffic volumes and travel speeds in and near college campuses. Detection of bicyclists can be improved by improving sight triangles and reducing the turning speed of motorists at intersections and driveways. The number of bicyclists riding on sidewalks can be reduced by creating alternatives such as converting excess lane width or excess number of lanes into bike lanes. Night lighting can be improved. A combination of bike lanes and paved shoulders can be included whenever possible on urban collector and arterial roadways. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Adequate sight triangles need to be maintained on approaches and departures to and from all driveways. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Implementer Training [Training program for college traffic planners](#)

Video [Conducting community audits \(a set of three videos\)](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

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Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Model development codes for traffic-calmed streets](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Sidewalks Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out the dangers to bicyclists on sidewalks and the importance of the motorist's driving carefully and constantly searching for other roadway users. Bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures) can also point out the dangers of riding on sidewalks and precautions that the bicyclist can take to avoid a crash. The importance of stopping and searching for vehicles before crossing driveways or entering the street and of being conspicuous at all times can be emphasized. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Booklet [Oregon bicyclist's manual](#)

Booklet [Pocket guide: Safe bicycling in Nevada](#)

Booklet [Florida driver's handbook](#)

Booklet [Illinois bicycle rules](#)

Booklet [New York State driver's manual](#)

Proposed Countermeasures:



Sidewalks Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing how to identify risks and improve safety associated with commercial driveways. The bicycle manufacturer is the best and sometimes only point of purchase information source to the consumer about the risks associated with bicycles and sidewalks. Guidance can be provided to cyclists and parents through hang tags, owner's manuals and owner's videos. In addition, flags on poles could be mounted on bikes with a 16 to 24 inch wheel base; a bracket for this purpose could be added to this category of bicycle at the factory. Hang tags could also be added to children's helmets, but these should not preempt the need for proper use information on the bicycle itself. In addition, bicycle shops can display and distribute brochures that describe crashes common to child bicyclists and what parents can do to help minimize these crashes. They can also display and distribute brochures on the special cautions and rules to follow when riding in special locations. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [Just where do I belong?](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Sidewalks Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes that occur on or near sidewalks. They can provide seasonal hot-button reminders on the problem. They can provide information on the nature and incidence of the problem while providing routine reporting on a crash attributable to that problem. They can explain what community members can do to help solve the problem. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Sidewalks Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate bicycle crashes that occur on or near sidewalks in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of any problem as well as methods to solve the problem. These crashes can involve conflicts with pedestrians while the bicyclist is on the sidewalk or in a crosswalk. They can involve conflicts with motor vehicles when the bicyclist crosses an intersection or driveway or when the bicyclist enters the street midblock over the sidewalk or curb. Elected officials can help to eliminate this problem by supporting the restriction of sidewalk bicycling, particularly in congested city areas. They can also support programs designed to increase bicyclist conspicuity so that they are more easily seen when they enter the street from the sidewalk.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)

Other [Model highway entry law](#)

Other [Model regulation to prohibit riding bicycles on sidewalks](#)



Sidewalks Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. To reduce sidewalk crashes, all community and civic groups can conduct community audits to determine where improvements are needed at sidewalk/roadway junctions and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Video [A kid's eye view](#)

Video [The bicycle zone](#)

Flyer [Sally says: Safety starts at home](#)

Booklet [Sprocket man](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Oregon bicyclist's manual](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)



Sidewalks Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements, such as the addition of bike lanes. They can also produce and/or distribute brochures on high-risk locations and how to negotiate them safely.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Implementer Training [Effective cycling: Motorist education](#)

Video [Bicycle safety](#)

Video [The bicycle zone](#)

Brochure [Just where do I belong?](#)

Flyer [Sally says: Safety starts at home](#)

Booklet [Sprocket man](#)

Booklet [Bucklebear's rules for cycling](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Sidewalks Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to reduce bicyclist crashes that occur on or at sidewalks. The most effective action may be to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of searching for vehicles at driveways and intersections, of deferring to other sidewalk users and of being conspicuous at all times needs to be emphasized at an early age. It can be reinforced at the middle school, high school and college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Elementary schools can serve as efficient conduits for conveying educational materials to bicyclists' parents on the actions that they can take to reduce crashes that occur at sidewalks. Information can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate problems of sidewalk riding in driver education programs and emphasize that motorists must be constantly alert for other roadway users as they enter an intersection or as they approach, enter or leave a driveway. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective bicycle safety education programs. They also can support bicycle safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [The right way](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Bicyclist Training [Traffic safety education guide](#)

Bicyclist Training [The elementary traffic education program](#)

Implementer Training [Effective cycling: Motorist education](#)

Implementer Training [Bicycle and pedestrian traffic safety education](#)

Video [Bicycle safety](#)

Video [A kid's eye view](#)

Video [Bike right. . . The face you save may be your own](#)

Video [The bicycle zone](#)

Brochure [Do the right thing \(It's a bike thing\)](#)

Flyer [Sally says: Safety starts at home](#)

Booklet [Sprocket man](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [The best bicyclist on earth](#)

Booklet [Bicycle safety: A wheely good idea](#)

Other [Davis bike map \(university and city map\)](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)



Sidewalks Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction of sidewalk crashes in at least three ways. The first is to issue citations or warnings to bicyclists who ride on the sidewalk in areas where it is prohibited. They can also issue a citation or warning to motorists who fail to stop at the junction of a sidewalk and a driveway/alley and search for bicyclists approaching on the sidewalk. A second way is through formal and informal training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to children. Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists when they are seen riding on sidewalks. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report sidewalk/roadway junctions where the sight distance is limited by vegetation, structures or parked vehicles. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Bicyclist Training [The right way](#)

Booklet [Pocket guide: Safe bicycling in Nevada](#)

Proposed Countermeasures:

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)



Sidewalks Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as running rodeos and making presentations to bicyclists on risks associated with sidewalk riding and other bicycle safety issues. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Video [Bicycle safety](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)



Sidewalks Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash. Owners of roadside businesses can identify high-risk locations in close proximity to their businesses and initiate efforts to reduce the risk at these locations. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training The guide to bicycle rodeos

Implementer Training Effective cycling: Motorist education

Video A kid's eye view

Flyer Sally says: Safety starts at home

Booklet Sprocket man

Booklet Bucklebear's rules for cycling

Booklet Oregon bicyclist's manual

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)



Sidewalks Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on sidewalk-related crashes and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Video [Bicycle safety](#)

Video [A kid's eye view](#)

Video [The bicycle zone](#)

Brochure [Just where do I belong?](#)

Flyer [Sally says: Safety starts at home](#)

Booklet [Sprocket man](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Oregon bicyclist's manual](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Sidewalks Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe bicycle riding. Working in partnership with the state or city highway safety office, they can do all or any part of the following: identify the bicycle problems that occur on or near sidewalks in the community (for example, conflicts with pedestrians, conflicts with vehicles when bicyclists enter the roadway at intersections or over the shoulder midblock, wrong-way bicyclists), develop a model program to solve the problem, implement the program (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to correct problems that occur on or near sidewalks.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Bicycle safety](#)

Video [A kid's eye view](#)

Brochure [Just where do I belong?](#)

Flyer [Sally says: Safety starts at home](#)

Booklet [Sprocket man](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Oregon bicyclist's manual](#)

Booklet [Pocket guide: Safe bicycling in Nevada](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Sidewalks Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. Traffic systems can be adapted over time to handle the increased demand for bicycling. Bicyclist crashes can be reduced through planning and engineering by reducing the number of bicyclists riding on sidewalks by creating alternatives such as converting excess lane width or excess number of lanes into bike lanes, assuring proper site planning guidelines, focusing on the placement and width of driveways, using right-in, right-out only driveways where practical, separating conflicts by time and direction through the use of raised medians on large commercial driveways, using traffic signals on high volume driveways, when warranted, and including a combination of bike lanes and paved shoulders whenever possible on urban collector and arterial roadways. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Adequate sight triangles need to be maintained on approaches and departures to and from all driveways. This includes undertrimming of critical trees and keeping ground cover low. Temporary or permanent advertising signs must not interfere with the sight triangle. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations. In addition, local officials should adopt and promote adequate street lighting standards and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video on traditional neighborhood design](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Residential intersection guidelines](#)



Sidewalks Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines that promote safe and courteous roadway sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Traffic systems can be adapted over time to handle the increased demand for bicycling. Bicyclist crashes can be reduced through planning and engineering by reducing the number of bicyclists riding on sidewalks by creating alternatives such as converting excess lane width or excess number of lanes into bike lanes, assuring proper site planning guidelines, focusing on the placement and width of driveways, using right-in, right-out only driveways where practical, separating conflicts by time and direction through the use of raised medians on large commercial driveways, using traffic signals on high volume driveways, when warranted, and including a combination of bike lanes and paved shoulders whenever possible on urban collector and arterial roadways. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Adequate sight triangles need to be maintained on approaches and departures to and from all driveways. This includes undertrimming of critical trees and keeping ground cover low. Temporary or permanent advertising signs must not interfere with the sight triangle. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations. In addition, adequate street lighting standards are needed as are steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video on traditional neighborhood design](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Residential intersection guidelines](#)



Sidewalks Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street geometrics, operations and maintenance that invite safe and courteous roadway sharing. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. Traffic systems can be adapted over time to handle the increased demand for bicycling. Bicyclist crashes can be reduced through planning and engineering by reducing the number of bicyclists riding on sidewalks by creating alternatives such as converting excess lane width or excess number of lanes into bike lanes, assuring proper site planning guidelines, focusing on the placement and width of driveways, using right-in, right-out only driveways where practical, separating conflicts by time and direction through the use of raised medians on large commercial driveways, using traffic signals on high volume driveways, when warranted, and including a combination of bike lanes and paved shoulders whenever possible on urban collector and arterial roadways. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Adequate sight triangles need to be maintained on approaches and departures to and from all driveways. This includes undertrimming of critical trees and keeping ground cover low. Temporary or permanent advertising signs must not interfere with the sight triangle. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations. Adequate street lighting standards are needed as are steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video on traditional neighborhood design](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Residential intersection guidelines](#)



Commercial Driveways Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out the dangers to bicyclists at commercial driveways and the importance of the motorist's driving carefully and constantly searching for other roadway users. Bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures) can also point out the dangers at commercial driveways and precautions that the bicyclist can take to avoid a crash. The importance of stopping and searching for vehicles before entering the street and of being conspicuous at all times can be emphasized. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Commercial Driveways Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing how to identify risks and improve safety associated with commercial driveways. The bicycle manufacturer is the best and sometimes only point of purchase information source to the consumer about the risks associated with bicycles and driveways. Guidance can be provided to cyclists and parents through hang tags, owner's manuals and owner's videos. In addition, flags on poles could be mounted on bikes with a 16 to 24 inch wheel base; a bracket for this purpose could be added to this category of bicycle at the factory. Hang tags could also be added to children's helmets, but these should not preempt the need for proper use information on the bicycle itself. In addition, bicycle shops can display and distribute brochures that describe crashes common to child bicyclists and what parents can do to help minimize these crashes. They can also display and distribute brochures on the special cautions and rules to follow when riding in special locations. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Commercial Driveways Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes that occur as a result of poor design of commercial driveways. They can provide seasonal hot-button reminders on the problem. They can provide information on the nature and incidence of the problem while providing routine reporting on a crash attributable to that problem. They can explain what community members can do to help solve the problem. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



: Commercial Driveways Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate bicycle crashes due to inadequate design of commercial driveways in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of any problem as well as methods to solve the problem. They can help eliminate the problem by supporting the removal of visual screens from commercial driveways and by working with developers to ensure that driveways are designed to accommodate safe use of bicycles.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)

Other [Model highway entry law](#)



Commercial Driveways Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. To reduce commercial driveway crashes, all community and civic groups can conduct community audits and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)



Commercial Driveways Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements, such as reducing the number of driveways in risky locations and providing raised center medians with turning pockets. They can also produce and/or distribute brochures on high-risk locations and how to negotiate them safely.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Commercial Driveways Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to reduce bicyclist crashes that occur at commercial driveways. The most effective action may be to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of searching for vehicles before entering the roadway and of being conspicuous at all times needs to be emphasized at an early age. It can be reinforced at the middle school, high school and college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Elementary schools can serve as efficient conduits for conveying educational materials to bicyclists' parents on the actions that they can take to reduce crashes that occur at commercial driveways. Information can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate problems of commercial driveways in driver education programs and emphasize that motorists must be constantly alert for other roadway users as they approach, enter or leave a commercial driveway. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective bicycle safety education programs. They also can support bicycle safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Teacher's guide to bicycle safety: Kindergarten-grade 8](#)

Bicyclist Training [Traffic safety education guide](#)

Implementer Training [Bicycle and pedestrian traffic safety education](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)



Commercial Driveways Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction of commercial driveway crashes in at least three ways. The first is to issue citations or warnings to bicyclists who are seen entering the roadway without stopping and searching for approaching traffic. They can also issue citations or warnings to motorists who are observed exiting a commercial driveway without stopping and searching before crossing a sidewalk and before entering the roadway, or entering a driveway without slowing and searching. A second way is through formal and informal training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to children. Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists when they are seen exiting driveways without first stopping and searching for vehicles. They can also provide positive reinforcement to bicyclists who are observed behaving in a desirable manner. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report driveway/roadway junctions where the sight distance is limited by vegetation, structures or parked vehicles. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Implementer Training [Enforcement for bicycle safety](#)

Implementer Training [Bike patrol training manual](#)

Proposed Countermeasures:

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)



Commercial Driveways Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as running rodeos and making presentations to bicyclists on risks associated with commercial driveways and other bicycle safety issues. They can support efforts to identify and remove visual screens, especially those in close proximity to commercial driveways. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)



Commercial Driveways Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Owners of roadside businesses can identify high risk locations in close proximity to their businesses and initiate efforts to reduce the risk at these locations. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)



Commercial Driveways Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on commercial driveway crashes and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Commercial Driveways Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe bicycle riding. Working in partnership with the state or city highway safety office, they can do all or any part of the following: identify the bicycle crash problems associated with commercial driveways in the community (for example, parked cars, street furniture and other visual screens that prevent a driver and bicyclist from seeing each other), develop a model program to solve the problem, implement the program (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to correct problems that occur at commercial driveways.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Commercial Driveways Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. Traffic systems can be adapted over time to handle the increased demand for bicycling. Bicyclist crashes can be reduced through planning and engineering by reducing the number of bicyclists riding on sidewalks by creating alternatives such as converting excess lane width or excess number of lanes into bike lanes, assuring proper site planning guidelines, focusing on the placement and width of driveways, using right-in, right-out only driveways where practical, separating conflicts by time and direction through the use of raised medians on large commercial driveways, using traffic signals on high volume driveways, when warranted, and including a combination of bike lanes and paved shoulders whenever possible on urban collector and arterial roadways. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Adequate sight triangles need to be maintained on approaches and departures to and from all driveways. This includes undertrimming of critical trees and keeping ground cover low. Temporary or permanent advertising signs must not interfere with the sight triangle. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations. In addition, local officials should adopt and promote adequate street lighting standards and take steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video on traditional neighborhood design](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to four-lane to three-lane street conversion](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Access management](#)



Commercial Driveways Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines that promote safe and courteous roadway sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Traffic systems can be adapted over time to handle the increased demand for bicycling. Bicyclist crashes can be reduced through planning and engineering by reducing the number of bicyclists riding on sidewalks by creating alternatives such as converting excess lane width or excess number of lanes into bike lanes, assuring proper site planning guidelines, focusing on the placement and width of driveways, using right-in, right-out only driveways where practical, separating conflicts by time and direction through the use of raised medians on large commercial driveways, using traffic signals on high volume driveways, when warranted, and including a combination of bike lanes and paved shoulders whenever possible on urban collector and arterial roadways. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Adequate sight triangles need to be maintained on approaches and departures to and from all driveways. This includes undertrimming of critical trees and keeping ground cover low. Temporary or permanent advertising signs must not interfere with the sight triangle. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations. In addition, adequate street lighting standards are needed as are steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Video [Video on traditional neighborhood design](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to four-lane to three-lane street conversion](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Access management](#)



Commercial Driveways Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street geometrics, operations and maintenance that invite safe and courteous roadway sharing. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. Traffic systems can be adapted over time to handle the increased demand for bicycling. Bicyclist crashes can be reduced through planning and engineering by reducing the number of bicyclists riding on sidewalks by creating alternatives such as converting excess lane width or excess number of lanes into bike lanes, assuring proper site planning guidelines, focusing on the placement and width of driveways, using right-in, right-out only driveways where practical, separating conflicts by time and direction through the use of raised medians on large commercial driveways, using traffic signals on high volume driveways, when warranted, and including a combination of bike lanes and paved shoulders whenever possible on urban collector and arterial roadways. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Adequate sight triangles need to be maintained on approaches and departures to and from all driveways. This includes undertrimming of critical trees and keeping ground cover low. Temporary or permanent advertising signs must not interfere with the sight triangle. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations. In addition, adequate street lighting standards are needed as are steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video on traditional neighborhood design](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to four-lane to three-lane street conversion](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Access management](#)



Residential Driveways Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out the dangers to bicyclists at residential driveways and the importance of the motorist's driving carefully and constantly searching for other roadway users. Bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures) can also point out the dangers at residential driveways and precautions that the bicyclist can take to avoid a crash. The importance of stopping and searching for vehicles before entering the street and of being conspicuous at all times can be emphasized. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Residential Driveways Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing how to identify risks and improve safety associated with residential driveways. The bicycle manufacturer is the best and sometimes only point of purchase information source to the consumer about the risks associated with bicycles and driveways. The manufacturer can alert parents of young children to the great risk in the driveways and walkways in front of their own homes. Guidance can be provided to cyclists and parents through hang tags, owner's manuals and owner's videos. In addition, flags on poles could be mounted on bicycles with a 16 to 24 inch wheel base; a bracket for this purpose could be added to this category of bicycle at the factory. Hang tags could also be added to children's helmets, but these should not preempt the need for proper use information on the bicycle itself. In addition, bicycle shops can display and distribute brochures that describe midblock rideout and other crashes common to child bicyclists and what parents can do to help minimize these crashes. They can also display and distribute brochures on the special cautions and rules to follow when riding in special locations. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Other [Bicycle owner's identification \(identification card\)](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Residential Driveways Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes that occur as a result of poor design of residential driveways. They can provide seasonal hot-button reminders on the problem. They can provide information on the nature and incidence of the problem while providing routine reporting on a crash attributable to that problem. They can explain what community members can do to help solve the problem. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Residential Driveways Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate bicycle crashes due to inadequate design of residential driveways in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of any problem as well as methods to solve the problem. They can help eliminate the problem by supporting the removal of visual screens from residential driveways and by working with developers to ensure that driveways are designed and located to accommodate safe use of bicycles.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)

Other [Model driveway parking ordinance](#)

Other [Model highway entry law](#)



Residential Driveways Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Such groups can assist in conducting community audits and provide parents with information on how to make driveways and roadways safer for bicyclists. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. To reduce residential driveway crashes, all community and civic groups can conduct community audits and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Booklet [Bicycle safety: What every parent should know](#)

Video [The bicycle zone](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)



Residential Driveways Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements, such as elimination of visual screens at residential driveways. They can also produce and/or distribute brochures on high-risk locations and how to negotiate them safely.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Video [The bicycle zone](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Residential Driveways Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to reduce bicyclist crashes that occur at residential driveways. The most effective action may be to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of searching for vehicles before entering the roadway and of being conspicuous at all times needs to be emphasized at an early age. It can be reinforced at the middle school, high school and college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Elementary schools can serve as efficient conduits for conveying educational materials to bicyclists' parents on the actions that they can take to reduce crashes that occur at residential driveways. Information can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate problems of residential driveways in driver education programs and emphasize that motorists must be constantly alert for other roadway users as they approach, enter or leave a residential driveway. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective bicycle safety education programs. They also can support bicycle safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Teacher's guide to bicycle safety: Kindergarten-grade 8](#)

Bicyclist Training [Instructor's guide for the bicycle driver's test \(How well do you drive your bike?\)](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Bicyclist Training [Traffic safety education guide](#)

Bicyclist Training [The basics of bicycling](#)

Bicyclist Training [The elementary traffic education program](#)

Implementer Training [Bicycle and pedestrian traffic safety education](#)

Video [The bicycle zone](#)

Booklet [The best bicyclist on earth](#)

Other [Bicycle owner's identification \(identification card\)](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)



Residential Driveways Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction of residential driveway crashes in at least three ways. The first is to issue citations or warnings to bicyclists who are seen entering the roadway without stopping and searching for approaching traffic. They can also issue a citation or warning to the parents of young bicyclists who are observed riding without adult supervision in a potentially hazardous location. A second way is through formal and informal training. Enforcement officers can provide both classroom training (e.g., the Officer Friendly Program) and on-bike training (e.g., bike rodeos) to children. Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists (and their parents) when they are seen exiting driveways without first stopping and searching for vehicles. They can also provide positive reinforcement to bicyclists who are observed behaving in a desirable manner. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report driveway/roadway junctions where the sight distance is limited by vegetation, structures or parked vehicles. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Implementer Training [Enforcement for bicycle safety](#)

Implementer Training [Bike patrol training manual](#)

Proposed Countermeasures:

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responded](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)



Residential Driveways Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as running rodeos and making presentations to bicyclists on risks associated with residential driveways and other bicycle safety issues. They can support efforts to identify and remove visual screens in residential neighborhoods, especially visual screens in close proximity to residential driveways. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)



Residential Driveways Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. They can support efforts to identify and remove visual screens in residential neighborhoods, especially those in close proximity to residential driveways. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Booklet [Bicycle safety: What every parent should know](#)

Other [Bicycle owner's identification \(identification card\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)



Residential Driveways Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on residential driveway crashes and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Video [The bicycle zone](#)

Booklet [Bicycle safety: What every parent should know](#)

Other [Bicycle owner's identification \(identification card\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Residential Driveways Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe bicycle riding. Working in partnership with the state or city highway safety office, they can do all or any part of the following: identify the problems associated with residential driveways in the community (for example, vegetation, parked cars and other visual screens that block the driver's and bicyclist's views of each other), develop a model program to solve the problem, implement the program (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to correct problems that occur at residential driveways.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Booklet [Bicycle safety: What every parent should know](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Residential Driveways Planning Groups

Potential Role: Local and regional planning groups can adopt and implement low speed neighborhood street and trail network guidelines for their communities. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets, street systems and site plan reviews, among others. They can rewrite local codes for implementing neighborhood design and can promote these codes. In addition, they can assist developers to create model subdivisions and can work with neighborhood groups to retrofit existing neighborhoods. For local neighborhood street classifications, design features should specify good sight distances, appropriate sidewalk design and placement, and proper design speeds for neighborhoods. Specifications are needed for single family and multi-family residences. Street patterns, streetscaping and geometric designs set the speed of a neighborhood street and street system. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential driveways increases the likelihood that exiting bicyclists and motorists will see each other and, therefore, that midblock rideout and other residential driveway crashes will be reduced. Thus, guidelines are needed for driveway and sidewalk design/location including setbacks for vegetation and fences. This includes undertrimming of critical trees and keeping ground cover low.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video on traditional neighborhood design](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Neighborhood development guidelines](#)



Residential Driveways Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement low speed neighborhood street and trail network guidelines. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Working with neighborhood leaders, builders associations and safety officials, they can review development sites, adopt a model code, and fine tune the code. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. Appropriate sight distances, sidewalk and driveway design and placement, fence and vegetation setbacks and proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential driveways increases the likelihood that exiting bicyclists and motorists will see each other and, therefore, that midblock rideout and other residential driveway crashes will be reduced. Thus, guidelines are needed for driveway and sidewalk design/location including setbacks for vegetation and fences. This includes undertrimming of critical trees and keeping ground cover low.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video on traditional neighborhood design](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Neighborhood development guidelines](#)



Residential Driveways Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt low speed neighborhood street and trail network guidelines for their members. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. They can enact new guidelines for streets, street systems, and site plan reviews, among others. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential driveways increases the likelihood that exiting bicyclists and motorists will see each other and, therefore, that midblock rideout and other residential driveway crashes will be reduced. Thus, guidelines are needed for driveway and sidewalk design/location including setbacks for vegetation and fences. This includes undertrimming of critical trees and keeping ground cover low.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video on traditional neighborhood design](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Neighborhood development guidelines](#)



Rural Roads Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out bicyclist dangers on rural roads and the importance of the motorist's driving carefully and constantly searching for other roadway users. Bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures) can point out dangers of rural roads and precautions that the bicyclist can take to avoid a crash. The importance of riding defensively and being conspicuous at all times can be emphasized. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Rural Roads Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing how to identify risks and improve safety when riding on rural roads. The cyclist also needs to be aware of the importance of being conspicuous and of riding defensively at all times. Bicycle manufacturers can provide guidance to cyclists through hang tags, owner's manuals and owner's videos. Flags on poles could be mounted on bikes with a 16-24 inch wheel base; a bracket for this purpose could be added to this category of bicycle at the factory. In addition, bicycle shops can display and distribute brochures on the special cautions and rules to follow when riding in special locations. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Rural Roads Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes that occur on rural roads. They can provide seasonal hot-button reminders on the problem. They can provide information on the nature and incidence of the rural road problem while providing routine reporting on a crash attributable to that problem. They can explain what community members can do to help solve the problem. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Rural Roads Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate bicycle crashes occurring on rural roads in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of any problem as well as methods to solve the problem. They can help eliminate the problem by working with developers to ensure that neighborhoods are designed to accommodate safe use of bicycles.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Rural Roads Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. Officials and members of community and civic groups can support the establishment of neighborhood groups to identify high-risk locations on rural roads and initiate efforts to reduce risk at these locations. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. All community and civic groups can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)



Rural Roads Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can conduct neighborhood audits and serve as lobbying groups for roadway improvements, such as the addition of shoulders to rural roads. They can also produce and/or distribute brochures on bicycle high risk locations and how to negotiate them safely if they can't be avoided.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)



Rural Roads Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to reduce bicyclist crashes on rural roads. The most effective action may be to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The dangers of riding on rural roads, the importance of seeing and being seen, and the importance of riding defensively at all times need to be learned at a young age. They can be reinforced at the middle school, high school and college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Elementary schools can serve as efficient conduits for conveying educational materials to bicyclists' parents on rural roads and the actions that they can take to reduce bicycle/motor vehicle crashes. Information can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate rural roads in driver education programs and emphasize the importance of constantly being alert for bicyclists. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective bicycle safety education programs. They also can support bicycle safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Implementer Training [Bicycle and pedestrian traffic safety education](#)

Other [Davis bike map \(university and city map\)](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)



Rural Roads Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction in rural road crashes in at least three ways. The first is to issue citations or warnings to motorists who are observed traveling at excessive speed on rural roads. Law enforcement officers can issue a citation or warning to bicyclists who are observed riding on a rural roadway during darkness without all the bicycle lighting equipment required by law. They can also participate in programs to check the night lighting equipment of bicycles. A second way is through formal and informal training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to elementary and middle school children. Officers can provide impromptu training in the form of safety lectures and cautions to bicyclists who are riding legally equipped bicycles on rural roads during darkness. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)



Rural Roads Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as running rodeos and making presentations to bicyclists on risks of riding on rural roads and other bicycle safety issues. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)



Rural Roads Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)



Rural Roads Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on rural bicycle crashes and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Proposed Countermeasures:



Rural Roads Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can do all or any part of the following: identify the problems associated with rural roads in the community (e.g., motorist striking an unseen bicyclist, a bicyclist turning or swerving into the motorist, etc.), develop a model program to solve the problems, implement the program (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to identify and correct problems that occur on rural roads.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Conducting community audits \(a set of three videos\)](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)



Rural Roads Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. Traffic systems can be adapted over time to handle the increased demand for bicycling. Bicyclist fatalities can be reduced through planning and engineering. The most important action for rural roads is the inclusion of wide paved shoulders. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent fatal crashes, all members of the planning and engineering communities must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway retrofit improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Paved shoulders pay the biggest dividends when lighting is poorest--during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders. The higher the speed and volume of the roadway, the higher the potential for lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Report/Guide [Implementing bicycle improvements at the local level](#)

Proposed Countermeasures:

Video [Video on traditional neighborhood design](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Bike lanes and paved shoulders](#)



Rural Roads Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines that promote safe and courteous roadway sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Traffic systems can be adapted over time to handle the increased demand for bicycling. Bicyclist fatalities can be reduced through planning and engineering. The most important action for rural roads is the inclusion of wide paved shoulders. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent fatal crashes, all members of the planning and engineering communities must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway retrofit improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Paved shoulders pay the biggest dividends when lighting is poorest--during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders. The higher the speed and volume of the roadway, the higher the potential for lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Report/Guide [Implementing bicycle improvements at the local level](#)

Proposed Countermeasures:

Video [Video on traditional neighborhood design](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Bike lanes and paved shoulders](#)



Rural Roads Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street geometrics, operations and maintenance that invite safe and courteous roadway sharing. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies.

Traffic systems can be adapted over time to handle the increased demand for bicycling. Bicyclist fatalities can be reduced through planning and engineering. The most important action for rural roads is the inclusion of wide paved shoulders. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent fatal crashes, all members of the planning and engineering communities must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway retrofit improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Paved shoulders pay the biggest dividends when lighting is poorest--during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders. The higher the speed and volume of the roadway, the higher the potential for lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Report/Guide [Implementing bicycle improvements at the local level](#)

Proposed Countermeasures:

Video [Video on traditional neighborhood design](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Bike lanes and paved shoulders](#)



High Risk Locations Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out high risk bicyclist locations and the importance of the motorist's driving carefully and constantly searching for other roadway users. Bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures) can point out high risk locations and precautions that the bicyclist can take to avoid a crash. The importance of riding defensively and being conspicuous at all times can be emphasized. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Video [Sharing the road: Bus operator training](#)

Booklet [Florida driver's handbook](#)

Booklet [Oregon driver manual](#)

Booklet [Illinois bicycle rules](#)

Booklet [New York State driver's manual](#)

Booklet [New Jersey bicycle manual](#)

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



High Risk Locations Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing how to identify high risk locations and to improve safety when riding in them. Cyclists need to know that they face more risks when riding in locations where they cannot be seen, at times when they are not being predictable and in areas with high numbers of conflicts. Roadway maintenance problems also contribute to bicyclist risk. The cyclist needs to be aware of the importance of being conspicuous and of riding defensively and predictably at all times. Bicycle manufacturers can provide guidance to cyclists through hang tags, owner's manuals and owner's videos. In addition, bicycle shops can display and distribute brochures on the special cautions and rules to follow when riding in special locations. Bicycle shops can also support local road maintenance activities by serving as a repository for cards that bicyclists can use to report road operations and maintenance problems. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [Life in the cool lane: Traveling by bicycle](#)

Brochure [Just where do I belong?](#)

Brochure [Picking a route](#)

Flyer [At night, ride with lights. It's the law!](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Bike basics: A guide to safe bicycling for ages 10-15](#)

Booklet [Let's learn more about bike driving](#)

Other [South-east Morris County bicycle suitability map \(map\)](#)

Other [Chicago bicycling map: Share the road \(map\)](#)

Other [Spot me \(postcard and flyer\)](#)

Other [10 smart routes to bicycle safety \(hang tag\)](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



High Risk Locations Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes that occur at high risk locations. They can provide seasonal hot-button reminders on the problem. They can provide information on high risk location crashes while providing routine reporting on a crash that occurred at a high risk location. They can explain what community members can do to help solve the problem. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



High Risk Locations Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate bicycle crashes at high risk locations in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of any problem as well as methods to solve the problem. They can help eliminate the problem by working with developers to ensure that neighborhoods are designed to accommodate safe use of bicycles.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



High Risk Location Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. Officials and members of community and civic groups can support the establishment of neighborhood groups to identify high-risk locations in neighborhoods and initiate efforts to reduce risk at these locations.. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. All community and civic groups can serve as conduits though which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Bucklebear gets ready to go kit](#)

Bicyclist Training [Annual pedal power camp report](#)

Bicyclist Training [Bicycle driving course](#)

Bicyclist Training [Safe moves city](#)

Implementer Training [Teaching safe bicycling](#)

Video [Sharing the road: Bicycles and buses](#)

Video [Biking. . . Get the big picture](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [Life in the cool lane: Traveling by bicycle](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Flyer [At night, ride with lights. It's the law!](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Biking with Bucklebear](#)

Booklet [Bike basics: A guide to safe bicycling for ages 10-15](#)

Other [South-east Morris County bicycle suitability map \(map\)](#)

Other [Chicago bicycling map: Share the road \(map\)](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)



High Risk Locations Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can conduct neighborhood audits and serve as lobbying groups for roadway improvements. They can also produce and/or distribute brochures on bicycle high risk locations and how to negotiate them safely if they can't be avoided.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Effective cycling: Road I, Road II and Road III](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Bicyclist Training [Annual pedal power camp report](#)

Bicyclist Training [Effective cycling: Kids I and Kids II](#)

Bicyclist Training [Effective cycling: Bicycle commuting](#)

Bicyclist Training [Bicycle driving course](#)

Bicyclist Training [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

- Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)
- Bicyclist Training [Safe moves for older adults](#)
- Bicyclist Training [Safe moves city](#)
- Implementer Training [Safe moves for service providers](#)
- Implementer Training [Teaching safe bicycling](#)
- Video [Sharing the road: Bicycles and buses](#)
- Video [Biking. . . Get the big picture](#)
- Video [Community awareness](#)
- Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)
- Brochure [Life in the cool lane: Traveling by bicycle](#)
- Brochure [Just where do I belong?](#)
- Brochure [Picking a route](#)
- Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)
- Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)
- Flyer [At night, ride with lights. It's the law!](#)
- Flyer [Prevent bicycle crashes](#)
- Booklet [Bucklebear's rules for cycling](#)
- Booklet [Biking with Bucklebear](#)
- Booklet [Street smarts: Bicycling's traffic survival guide](#)
- Booklet [Colorado bicycling manual: A guide for all trail and road users](#)
- Report/Guide [Bicycle compatibility evaluation: User manual](#)
- Report/Guide [The bicycle compatibility index: A level of service concept. Implementation manual](#)
- Other [South-east Morris County bicycle suitability map \(map\)](#)
- Other [Chicago bicycling map: Share the road \(map\)](#)
- Other [Spot me \(postcard and flyer\)](#)
- Other [What would a SuperCyclist do? \(poster\)](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)



High Risk Locations Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to reduce bicyclist crashes at high risk locations. The most effective action may be to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The dangers of high risk locations, the importance of seeing and being seen, and the importance of riding defensively at all times need to be learned at a young age. They can be reinforced at the middle school, high school and college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Elementary schools can serve as efficient conduits for conveying educational materials to bicyclists' parents on high risk locations and the actions that they can take to reduce bicycle/motor vehicle crashes. Information can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate bicyclist high risk locations in driver education programs and emphasize the importance of constantly being alert to potential problems of other roadway users. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective bicycle safety education programs. They also can support bicycle safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Bicycle traffic safety school](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Bicyclist Training [Traffic safety education guide](#)

Bicyclist Training [The basics of bicycling](#)

Bicyclist Training [The elementary traffic education program](#)

Bicyclist Training [Biking with Bucklebear](#)

Bicyclist Training [Bicycle driving course](#)

Bicyclist Training [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Implementer Training [Bicycle and pedestrian traffic safety education](#)

Implementer Training [Teaching safe bicycling](#)

Video [Biking. . . Get the big picture](#)

Video [Sharing the road](#)

Video [Community awareness](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Flyer [At night, ride with lights. It's the law!](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Biking with Bucklebear](#)

Booklet [Bike like the best](#)

Booklet [The best bicyclist on earth](#)

Booklet [Let's learn more about bike driving](#)

Other [Davis bike map \(university and city map\)](#)

Other [What would a SuperCyclist do? \(poster\)](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)

Report/Guide [Guide for developing bicycle indoctrination material for new college students](#)



High Risk Locations Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction of crashes in high risk locations in at least two ways. The first is to issue citations or warnings to motorists who aren't driving with proper concern for other roadway users in high risk locations. The second is through formal and informal training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to elementary and middle school children. Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists when they are observed riding in locations where the risk of bicycle/motor-vehicle crashes is judged to be high. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report intersections where the sight distance is limited by vegetation, structures or parked vehicles. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Bicycle traffic safety school](#)

Bicyclist Training [Bicycle driving course](#)

Bicyclist Training [Safe moves city](#)

Implementer Training [Bike patrol training manual](#)

Implementer Training [Teaching safe bicycling](#)

Video [Biking. . . Get the big picture](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Flyer [At night, ride with lights. It's the law!](#)

Booklet [New Jersey bicycle manual](#)

Report/Guide [Road hazard identification project](#)

Proposed Countermeasures:

Bicyclist Training [Insert on bicycle safety for offender school training](#)

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)



High Risk Locations Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as running rodeos and making presentations to bicyclists on high risk locations and other bicycle safety issues. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Representatives of health care organizations can support the establishment of neighborhood groups to identify high-risk locations in neighborhoods and initiate efforts to reduce risk at these locations. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Implementer Training [Teaching safe bicycling](#)

Bicyclist Training [Safe moves city](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Other [A package of safety education products for distribution by health care organizations and professionals](#)

Other [Pre-formatted electronic mail safety messages](#)



High Risk Locations Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children. Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. They can support the establishment of neighborhood groups to identify high risk locations and initiate efforts to reduce risks at these locations. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Annual pedal power camp report](#)

Bicyclist Training [Bicycle driving course](#)

Video [Sharing the road: Bus operator training](#)

Video [Sharing the road: Bicycles and buses](#)

Video [Biking. . . Get the big picture](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Biking with Bucklebear](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Other [South-east Morris County bicycle suitability map \(map\)](#)

Other [Chicago bicycling map: Share the road \(map\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Other [Pre-formatted electronic mail safety messages](#)



High Risk Locations Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on high risk bicycle locations and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [Annual pedal power camp report](#)

Bicyclist Training [Bicycle driving course](#)

Video [Sharing the road: Bus operator training](#)

Video [Sharing the road: Bicycles and buses](#)

Video [Biking. . . Get the big picture](#)

Video [Sharing the road](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [Just where do I belong?](#)

Brochure [Picking a route](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Flyer [At night, ride with lights. It's the law!](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Biking with Bucklebear](#)

Booklet [Bike like the best](#)

Booklet [Bike basics: A guide to safe bicycling for ages 10-15](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Other [South-east Morris County bicycle suitability map \(map\)](#)

Other [Chicago bicycling map: Share the road \(map\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



High Risk Locations Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can do all or any part of the following: identify the high-risk locations in the community, determine the nature of the risk (e.g., inadequate sight triangles, competing light sources, excessive speeds, etc.), develop a model program to solve the problem, implement the program (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to identify and correct problems that occur at high risk locations.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Bicyclist Training [Annual pedal power camp report](#)

Bicyclist Training [Bicycle driving course](#)

Implementer Training [Bicycle planning and facility workshop](#)

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Implementer Training [Teaching safe bicycling](#)

Video [Making streets that work](#)

Video [Sharing the road: Bus operator training](#)

- Video [Sharing the road: Bicycles and buses](#)
- Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)
- Brochure [Life in the cool lane: Traveling by bicycle](#)
- Brochure [Just where do I belong?](#)
- Brochure [Picking a route](#)
- Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)
- Brochure [Uncle Bob's bike-o-rama safety quiz](#)
- Flyer [At night, ride with lights. It's the law!](#)
- Flyer [Prevent bicycle crashes](#)
- Booklet [Bucklebear's rules for cycling](#)
- Booklet [Biking with Bucklebear](#)
- Booklet [Bike like the best](#)
- Booklet [Let's learn more about bike driving](#)
- Booklet [Colorado bicycling manual: A guide for all trail and road users](#)
- Booklet [New Jersey bicycle manual](#)
- Report/Guide [Bicycle safety-related research synthesis](#)
- Report/Guide [Making streets that work](#)
- Report/Guide [Oregon bicycle and pedestrian plan](#)
- Report/Guide [Bicycle facilities planning and design handbook](#)
- Report/Guide [Traditional neighborhood development street design guidelines](#)
- Report/Guide [Highway safety design and operations guide](#)
- Report/Guide [Bicycle suitability criteria for state roadways in Texas](#)
- Report/Guide [Guide for the development of bicycle facilities](#)
- Report/Guide [A policy on geometric design of highways and streets](#)
- Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)
- Other [South-east Morris County bicycle suitability map \(map\)](#)

Other [Chicago bicycling map: Share the road \(map\)](#)

Other [Facility improvement request form \(postcard\)](#)

Other [Spot me \(postcard and flyer\)](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Report/Guide [Best techniques for bicycle operations](#)



High Risk Locations Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. To reduce crashes at high risk locations, the most important actions include the following: use of appropriate street making standards and traffic calming to reduce traffic volume and speeds in neighborhoods, around schools and in central business districts; improvement of bicyclist detection by improving sight triangles and reducing the turning speed of motorists at intersections and driveways; reduction in the number of bicyclists riding on sidewalks by creating alternatives, such as converting excess lane width or excess number of lanes into safer alternatives; and inclusion of bike lanes, paved shoulders and fully independent trails when possible on urban collector and arterial roadways. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering communities must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Bike lanes and paved shoulders pay the biggest dividends when lighting is poorest--during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and volume of the roadway, the higher the potential for lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes and paved shoulders provide the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. Appropriate signing and marking should be provided. Adequate sight triangles are needed on approaches to all intersections, at turning pockets in medians and at driveways. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at intersections and other critical locations. In addition, adequate street lighting standards are needed as are steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Bicycle planning and facility workshop](#)

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Video [Making streets that work](#)

Report/Guide [Bicycle compatibility evaluation: User manual](#)

Report/Guide [Bicycle safety-related research synthesis](#)

Report/Guide [Making streets that work](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Bicycle suitability criteria for state roadways in Texas](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Report/Guide [Implementing bicycle improvements at the local level](#)

Report/Guide [The bicycle compatibility index: A level of service concept. Implementation manual](#)

Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)

Other [South-east Morris County bicycle suitability map \(map\)](#)

Proposed Countermeasures:

Video [Video on traditional neighborhood design](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Guide to four-lane to three-lane street conversion](#)

- Report/Guide [Guide to improved urban area street lighting](#)
- Report/Guide [Guide to identifying high risk locations](#)
- Report/Guide [Guide to creating bicycle boulevards](#)
- Report/Guide [Traffic calming main street and the central business district](#)
- Report/Guide [Neighborhood development guidelines](#)
- Report/Guide [Commercial site planning](#)
- Report/Guide [Bicycle improvements for collector and arterial roadways](#)
- Report/Guide [Best techniques for bicycle operations](#)
- Report/Guide [Improved roadway maintenance](#)
- Report/Guide [Bike lanes and paved shoulders](#)
- Report/Guide [Residential intersection guidelines](#)
- Report/Guide [School site plans](#)
- Other [Update of signs and pavement markings for the MUTCD, Part IX](#)



High Risk Locations Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines that promote safe and courteous roadway sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. To reduce crashes at high risk locations, the most important actions include the following: use of appropriate street making standards and traffic calming to reduce traffic volume and speeds in neighborhoods, around schools and in central business districts; improvement of bicyclist detection by improving sight triangles and reducing the turning speed of motorists at intersections and driveways; reduction in the number of bicyclists riding on sidewalks by creating alternatives, such as converting excess lane width or excess number of lanes into safer alternatives; and inclusion of bike lanes, paved shoulders and fully independent trails when possible on urban collector and arterial roadways. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering communities must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Bike lanes and paved shoulders pay the biggest dividends when lighting is poorest--during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and volume of the roadway, the higher the potential for lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes and paved shoulders provide the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. Appropriate signing and marking should be provided. Adequate sight triangles are needed on approaches to all intersections, at turning pockets in medians and at driveways. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at intersections and other critical locations. In addition, adequate street lighting standards are needed as are steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Bicycle planning and facility workshop](#)

- Implementer Training [Pedestrian and bicyclist safety and accommodation](#)
- Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)
- Video [Making streets that work](#)
- Report/Guide [Bicycle safety-related research synthesis](#)
- Report/Guide [Making streets that work](#)
- Report/Guide [Oregon bicycle and pedestrian plan](#)
- Report/Guide [Road hazard identification project](#)
- Report/Guide [Bicycle facilities planning and design handbook](#)
- Report/Guide [Traditional neighborhood development street design guidelines](#)
- Report/Guide [Manual on uniform traffic control devices for streets and highways](#)
- Report/Guide [Highway safety design and operations guide](#)
- Report/Guide [Bicycle suitability criteria for state roadways in Texas](#)
- Report/Guide [Guide for the development of bicycle facilities](#)
- Report/Guide [A policy on geometric design of highways and streets](#)
- Report/Guide [Implementing bicycle improvements at the local level](#)
- Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)
- Other [South-east Morris County bicycle suitability map \(map\)](#)
- Other [Facility improvement request form \(postcard\)](#)
- Other [Spot me \(postcard and flyer\)](#)

Proposed Countermeasures:

- Video [Video on traditional neighborhood design](#)
- Video [Conducting community audits \(a set of three videos\)](#)
- Video [Video promoting bicycle safety by engineering and planning groups](#)
- Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Guide to four-lane to three-lane street conversion](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Guide to creating bicycle boulevards](#)

Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Best techniques for bicycle operations](#)

Report/Guide [Improved roadway maintenance](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [School site plans](#)

Other [Update of signs and pavement markings for the MUTCD, Part IX](#)



High Risk Locations

Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street geometrics, operations and maintenance that invite safe and courteous roadway sharing. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies.

To reduce crashes at high risk locations, the most important actions include the following: use of appropriate street making standards and traffic calming to reduce traffic volume and speeds in neighborhoods, around schools and in central business districts; improvement of bicyclist detection by improving sight triangles and reducing the turning speed of motorists at intersections and driveways; reduction in the number of bicyclists riding on sidewalks by creating alternatives, such as converting excess lane width or excess number of lanes into safer alternatives; and inclusion of bike lanes, paved shoulders and fully independent trails when possible on urban collector and arterial roadways. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering communities must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Bike lanes and paved shoulders pay the biggest dividends when lighting is poorest--during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and volume of the roadway, the higher the potential for lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes and paved shoulders provide the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. Appropriate signing and marking should be provided. Adequate sight triangles are needed on approaches to all intersections, at turning pockets in medians and at driveways. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at intersections and other critical locations. In addition, adequate street lighting standards are needed as are steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

- Implementer Training [Bicycle planning and facility workshop](#)
- Implementer Training [Pedestrian and bicyclist safety and accommodation](#)
- Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)
- Video [Making streets that work](#)
- Report/Guide [Bicycle compatibility evaluation: User manual](#)
- Report/Guide [Bicycle safety-related research synthesis](#)
- Report/Guide [Making streets that work](#)
- Report/Guide [Oregon bicycle and pedestrian plan](#)
- Report/Guide [Bicycle facilities planning and design handbook](#)
- Report/Guide [Traditional neighborhood development street design guidelines](#)
- Report/Guide [Manual on uniform traffic control devices for streets and highways](#)
- Report/Guide [Highway safety design and operations guide](#)
- Report/Guide [Bicycle suitability criteria for state roadways in Texas](#)
- Report/Guide [Guide for the development of bicycle facilities](#)
- Report/Guide [A policy on geometric design of highways and streets](#)
- Report/Guide [Implementing bicycle improvements at the local level](#)
- Report/Guide [The bicycle compatibility index: A level of service concept. Implementation manual](#)
- Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)

Proposed Countermeasures:

- Video [Video on traditional neighborhood design](#)
- Video [Conducting community audits \(a set of three videos\)](#)
- Video [Video promoting bicycle safety by engineering and planning groups](#)
- Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Guide to four-lane to three-lane street conversion](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Guide to creating bicycle boulevards](#)

Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Best techniques for bicycle operations](#)

Report/Guide [Improved roadway maintenance](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [School site plans](#)

Other [Update of signs and pavement markings for the MUTCD, Part IX](#)



Bridges and Tunnels

Problem Description: Crashes on bridges and tunnels often result from falls that occur because of unsafe surface conditions, confined walkways, steep grades and environmental conditions (for example, high winds). Open channel steel bridge decking and expansion joints are especially troublesome. Many bridges lack paved shoulders, gather debris and have other design and maintenance problems. Lack of separation of bicyclists and motorists on higher speed bridges contributes to the problem.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

- § The bicyclist will be conspicuous at all times.

- § The bicyclist will wear a helmet at all times.

- § The bicyclist will follow the rules of the road.

- § The bicyclist will ride defensively and predictably at all times.

Motorist:

- § Motorist travel speeds on essential urban bridges will be reduced.

Roadway:

- § Bicyclists and motorists will be separated on higher speed bridges through bike lanes, paved shoulders

or fully independent riding spaces.

§ Appropriate bridge, tunnel and overpass bicycle facilities will be provided.



Off-Street Facilities

Problem Description: Off-street collisions with motor vehicles occur at trail/roadway crossings. Inadequate sight distances at these crossings, excessive vehicle turning speeds and inadequate night lighting can contribute to bicycle/motor vehicle problems. Collisions with other bicyclists and falls occur on the trail because of unsafe riding practices, poor trail design or poor maintenance.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

- § The bicyclist will be conspicuous at all times.
- § The bicyclist will wear a helmet at all times.
- § The bicyclist will yield to pedestrians and animals (e.g., horses) on pathways.
- § The bicyclist will search for vehicles before entering or crossing a roadway.
- § The bicyclist will follow the rules of the pathway.
- § The bicyclist will know the location of the bicycle pathways in the area.
- § The bicyclist will understand design and functional characteristics of each type of off-street bicycle facility that is present in the community.
- § The bicyclist will understand and comply with the right-of-way rules that apply when a roadway

intersects an off-street bicycle facility.

Motorist:

§ The motorist will understand design and functional characteristics of each type of off-street bicycle facility that is present in the community.

§ The motorist will understand and comply with the right-of-way rules that apply when a roadway intersects an off-street bicycle facility.

Roadway:

§ Appropriate off-street bicycle facilities will be provided.

§ Adequate sight distances at trail/roadway intersections will be maintained.



On-Street Facilities

Problem Description: Problems that occur with on-street bicycle facilities (bicycle lanes and paved shoulders) are due to poor roadway facility design, poor maintenance, improper motorist use of bicycle facilities, and unsafe motorist or bicyclist practices. Often, members of the public will lobby for (or against) additional on-street facilities without regard to whether they are warranted or how their design will be executed. High traffic volumes and speeds, inadequate sight triangles at driveways and intersections, excessive turning speeds at intersections and inadequate night lighting can all contribute to reduced bicycle on-street safety.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

- § The bicyclist will be conspicuous at all times.
- § The bicyclist will wear a helmet at all times.
- § The bicyclist will follow the rules of the road.
- § The bicyclist will ride defensively and predictably at all times.
- § The bicyclist will know the best travel routes in the area
- § The bicyclist will understand the design and functional characteristics of all types of on-street bicycle facilities that are present in the community.
- § The bicyclist will be aware that motorists often fail to see bicyclists riding in an on-street bicycle facility, even when visibility conditions are good.

§ The bicyclist will know the location of bicycle facilities in the area.

Motorist:

§ The motorist will understand the design and functional characteristics of all types of on-street bicycle facilities that are present in the community.

§ The motorist will understand and comply with the right-of-way rules that apply and the proper path to take when making right-hand and left-hand turns across an on-street bicycle facility.

§ Motorist detection of bicyclists will increase.

Roadway:

§ Appropriate on-street bicycle facilities will be provided.

§ Travel speeds in urban areas will be reduced.

§ Bicyclists will be separated from motorists on higher speed roadways through bike lanes or paved shoulders.



College Campus

Problem Description: The bicycle can be the primary mode of transportation for many individuals on a college campus. Bicyclists therefore ride at all times of day, including in low light and night conditions, and often without bicycle lights. Nighttime crashes are common. Many crashes occur at controlled intersections with the bicyclist at fault for disobeying the traffic control device. Motorists are frequently at fault by making a left turn into the lane of the oncoming bicyclist. Many bicyclists report losing control as a cause of a crash. Campus bicycle paths are usually shared with pedestrians and may require adequate marking to avoid conflicts.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

§ The bicyclist will be conspicuous at all times.

§ The bicyclist will wear a helmet at all times.

§ The bicyclist will follow the rules of the road.

§ College students will learn and adhere to bicycle safety rules established by the college and local laws and ordinances governing bicycle riding at off campus locations.

Motorist:

§ Motorist travel speeds will be reduced.

Roadway:

§ Appropriate bicycle facilities will be provided on campus.

§ The speed of traffic in and near campus will be reduced.

§ On higher speed and higher volume roadways, the bicyclist and motorist will be provided with separate riding spaces through wide curb lanes, bike lanes or paved shoulders.

§ Night lighting will be improved.

§ Intersection design will reduce turning speeds and permit safe vehicle turning movements.

§ Visual screens will be removed from the roadway.

§ Rural roads will have paved shoulders.

§ Sight distances at driveways and intersections will be improved.

§ Right turn on red will be restricted around the college and in downtown areas.



Sidewalks

Problem Description: Many bicyclists travel on the sidewalk either out of fear of roadway traffic or for general convenience. Sidewalk riding may be encouraged, tolerated or prohibited by local ordinances and practices. Children on play vehicles often ride on sidewalks. Bicyclists who travel on the sidewalk sometimes merge into traffic directly from the sidewalk. At other times, they ride across intersections and driveways where motor vehicles are also traveling. Sidewalks are out of the normal search pattern for many motorists, and the bicyclist frequently isn't seen until it is too late. Visual screens are often a contributing factor to this problem area.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

- § The bicyclist will be conspicuous at all times.
- § The bicyclist will search for vehicles entering and exiting driveways.
- § The bicyclist will stop at intersections and look left-right-left before crossing.
- § Parents will be aware of child bicycle dangers and, through instruction and supervision, will train their children to avoid the dangers.
- § The bicyclist will not ride on the sidewalk where it is prohibited.
- § The bicyclist who rides on the sidewalk will treat all driveways as intersections.
- § The bicyclist will be aware that motorists preparing to enter or exit a driveway often fail to see

bicyclists approaching on a sidewalk, even when visibility conditions are good.

§ When riding on a sidewalk, the bicyclist will reduce speed when approaching driveways/alleys as necessary to detect and avoid motorists who are preparing to enter or exit the driveway/alley.

Motorist:

§ When entering or exiting a driveway or alley, the motorist will reduce speed and search for bicyclists approaching on the sidewalk.

Roadway:

§ Bicycle crashes at sidewalk/roadway junctions will be reduced.

§ The number of driveways in risky locations (e.g., near intersections) will be reduced.

§ The sight distances at driveways and intersections will be improved.

§ Raised center medians with turning pockets will be provided where appropriate.

§ Standards will be set for driveway widths depending on the vehicles served.

§ On higher speed and higher volume roadways, the bicyclist and motorist will be provided with separate riding spaces through wide curb lanes, bike lanes or paved shoulders.



Commercial Driveways

Problem Description: Crashes occur when a bicyclist or motorist exits a commercial driveway without properly searching for other traffic. The motorist is typically looking for a gap in traffic and doesn't see the bicyclist who may be approaching on the sidewalk--often from the wrong direction. Any motorist search usually fails to include the sidewalk. A visual screen can be a contributing factor.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

§ The bicyclist will stop at the end of the driveway/alley and look left-right-left before entering the street.

§ The bicyclist will be conspicuous at all times.

§ Parents will be aware of child bicycle dangers and, through instruction and supervision, will train their children to avoid the dangers.

§ The bicyclist will be aware that drivers who are preparing to enter or exit a commercial driveway often fail to see approaching bicyclists, even when visibility conditions are good.

Motorist:

§ When exiting a commercial driveway, the motorist will stop both at the sidewalk and at the end of the driveway and search for approaching bicyclists before proceeding.

§ When entering a commercial driveway, the motorist will reduce speed and search for bicyclists

approaching on the roadway or sidewalk (including bicyclists riding facing traffic) before entering the driveway.

Roadway:

§ The number of commercial driveways in risky locations will be reduced.

§ The sight distances at commercial driveways will be improved.

§ On higher speed and higher volume roadways, the bicyclist and motorist will be provided with separate riding spaces through wide curb lanes, bike lanes or paved shoulders.

§ Parents will cooperate with other groups in conducting a neighborhood audit program to identify and remove visual screens and other hazards near the junction of commercial driveways and roadways.



Residential Driveways

Problem Description: Residential driveways are dangerous places, particularly for young bicyclists. Crashes that occur largely involve young children who ride into the street from the driveway or sidewalk without first looking for traffic. The children are frequently riding on play vehicles. A visual screen such as a parked car is often involved in these crashes.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

§ The bicyclist will stop at the end of the driveway/alley (or edge of the sidewalk/curb) and look left-right-left before entering the street midblock.

§ The bicyclist will be conspicuous at all times.

§ The bicyclist will search for vehicles that are entering and exiting driveways.

§ Parents will be aware of child bicycle dangers and, through instruction and supervision, will train their children to avoid the dangers.

§ The bicyclist is aware that motorists preparing to enter or exit a residential driveway often fail to see approaching bicyclists, even when visibility conditions are good.

Motorist:

§ When traveling on residential roadways, the motorist will decrease speed and search for bicyclists who are preparing to enter the roadway at a midblock location.

§ When exiting a residential driveway, the motorist will stop both at the sidewalk and at the end of the driveway and search for approaching bicyclists before proceeding.

§ When entering a residential driveway, the motorist will reduce speed and search for bicyclists approaching on the roadway or on the sidewalk (including bicyclists riding facing traffic) before entering the driveway.

Roadway:

§ The speed of traffic along neighborhood streets will be reduced.

§ The sight distances at residential driveways will be improved.

§ Bicycle crashes at residential driveways will be reduced.

§ Owners of residences will remove vegetation and other objects that obstruct the view of bicyclists and or motorists at the junction of their driveway and the roadway.

§ Representatives of private or corporate businesses will support efforts to identify and remove visual screens in residential neighborhoods, especially visual screens in close proximity to residential driveways.

§ Parents will cooperate with other groups in conducting a neighborhood audit program to identify and remove visual screens and other hazards near the junction of driveways and roadways.



Rural Roads

Problem Description: Rural roads have a disproportionately high rate of serious bicyclist crashes--often due to high speeds and poorly designed or maintained conditions. The crash may involve an overtaking motorist who does not detect the bicyclist or who misjudges the space required to pass the bicyclist. Counteractive evasive actions may result or the bicyclist's path may be obstructed. Crashes on rural roads can involve wrong-way bicyclists and bicyclists who are making unexpected turns. Rural road crashes also occur when either a bicyclist or a motorist exits a driveway.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

- § The bicyclist will avoid riding on narrow rural roads, especially during darkness.
- § The bicyclist will be conspicuous at all times.
- § The bicyclist will ride defensively and predictably at all times.
- § The bicyclist and parents of young bicyclists will be aware of the limited effectiveness of existing rear lighting equipment for bicycles.
- § The bicyclist will know the risks of riding on narrow rural roads and will avoid them when possible, especially during darkness.

Motorist:

- § The motorist will reduce speed when driving on narrow rural roadways, especially during darkness.

§ When driving on narrow rural roadways, a motorist will see a bicyclist that is being overtaken soon enough to initiate successful evasive action.

§ The motorist will expect to encounter bicyclists on rural roadways.

Roadway:

§ Rural roads will have paved shoulders.

§ Rumble strips and similar devices will be restricted where bicycle use is expected.



High Risk Locations

Problem Description: Some bicycle/motor vehicle problems occur because the riding location is inherently risky for a bicycle. The types of high risk locations vary by community. Generic locations that are typically high risk include busy intersections, high speed roads (particularly if they are narrow), sidewalks and residential and commercial driveways. Particular high risk locations can be generated by ongoing road construction, poor road conditions, poor lighting, flawed access management or faulty roadway design.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

- § The bicyclist will be conspicuous at all times.
- § The bicyclist will ride defensively and predictably at all times.
- § The bicyclist will report roadway operations and maintenance problems.
- § The bicyclist will stop at the end of the driveway/alley (or the edge of the sidewalk/curb) and look left-right-left before entering the street midblock.
- § The bicyclist will learn to recognize the visual cues that signal a high hazard area and will adjust speed and path as necessary to provide the time and space needed for successful evasive action.
- § Parents will identify high hazard locations in their neighborhoods and will teach their children how best to respond at high hazard locations.

Motorist:

§ When traveling on residential roadways, the motorist will decrease speed and search for bicyclists who are preparing to enter the roadway at a midblock location.

§ The motorist will learn to recognize the visual cues that signal a high hazard area for a bicyclist and will adjust speed and path as necessary to provide the time and space needed for successful evasive action.

Roadway:

§ High risk locations will be identified and their defects corrected when possible.

§ The speed of traffic will be reduced.

§ On higher speed and higher volume roadways, the bicyclist and motorist will be provided with separate riding spaces through wide curb lanes, bike lanes or paved shoulders.

§ Street lighting in urban areas will be improved.

§ Adequate sight distances will be provided at intersections and at residential and commercial driveways.

§ Competing roadway glare will be eliminated.



Operations/Maintenance Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street operations and maintenance that invite safe and courteous roadway sharing. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. Traffic systems can be adapted over time to handle an increased demand for bicycling in neighborhoods and to all destinations, with special emphasis on routes to and from common destinations. Bicycle crashes can be reduced through planning and engineering. Appropriate street markings, signs, signals and other traffic operations guidelines should be used. Maintenance conditions need improvements, especially on higher volume and higher speed roadways and particularly at the right edge of the roadway. The number of bicyclists riding on sidewalks can be reduced by converting excess lane width or number of lanes into safer bicycling alternatives. A combination of bikes lanes, paved shoulders and fully independent trails can be provided whenever possible on urban collector and arterial roadways. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a road is resurfaced, reconditioned or rebuilt. Providing adequate sight triangles and reducing turning speeds at intersections, median pockets and driveways can improve bicyclist detection. This includes undertrimming of critical trees and keeping ground cover low. Temporary or permanent advertising signs must not interfere with the sight triangle. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations. Adequate street lighting standards are needed as are steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Report/Guide [Bicycle safety-related research synthesis](#)

- Report/Guide [Oregon bicycle and pedestrian plan](#)
- Report/Guide [Bicycle facilities planning and design handbook](#)
- Report/Guide [Traditional neighborhood development street design guidelines](#)
- Report/Guide [Manual on uniform traffic control devices for streets and highways](#)
- Report/Guide [Highway safety design and operations guide](#)
- Report/Guide [Bicycle suitability criteria for state roadways in Texas](#)
- Report/Guide [Guide for the development of bicycle facilities](#)
- Report/Guide [A policy on geometric design of highways and streets](#)
- Report/Guide [Traffic calming state-of-the-art](#)
- Report/Guide [Implementing bicycle improvements at the local level](#)
- Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)

Proposed Countermeasures:

- Video [Conducting community audits \(a set of three videos\)](#)
- Video [Video promoting bicycle safety by engineering and planning groups](#)
- Brochure [Conducting community audits \(a package of three brochures\)](#)
- Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)
- Report/Guide [Residential traffic calming guidelines](#)
- Report/Guide [Guide to four-lane to three-lane street conversion](#)
- Report/Guide [Guide to improved urban area street lighting](#)

- Report/Guide [Guide to identifying high risk locations](#)
- Report/Guide [Traffic calming main street and the central business district](#)
- Report/Guide [Model development codes for traffic-calmed streets](#)
- Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Improved roadway maintenance](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Operations/Maintenance Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines for street operations and maintenance that promote safe and courteous roadway sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Traffic systems can be adapted over time to handle an increased demand for bicycling in neighborhoods and to all destinations, with special emphasis on routes to and from common destinations. Bicycle crashes can be reduced through planning and engineering. Appropriate street markings, signs, signals and other traffic operations guidelines should be used. Maintenance conditions need improvements, especially on higher volume and higher speed roadways and particularly at the right edge of the roadway. The number of bicyclists riding on sidewalks can be reduced by converting excess lane width or number of lanes into safer bicycling alternatives. A combination of bikes lanes, paved shoulders and fully independent trails can be provided whenever possible on urban collector and arterial roadways. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a road is resurfaced, reconditioned or rebuilt. Providing adequate sight triangles and reducing turning speeds at intersections, median pockets and driveways can improve bicyclist detection. This includes undertrimming of critical trees and keeping ground cover low. Temporary or permanent advertising signs must not interfere with the sight triangle. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations. Adequate street lighting standards are needed as are steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Report/Guide [Use of bicycle stress level to evaluate street compatibility for bicyclists](#)

Report/Guide [Bicycle safety-related research synthesis](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

- Report/Guide [Road hazard identification project](#)
- Report/Guide [Bicycle facilities planning and design handbook](#)
- Report/Guide [Traditional neighborhood development street design guidelines](#)
- Report/Guide [Manual on uniform traffic control devices for streets and highways](#)
- Report/Guide [Highway safety design and operations guide](#)
- Report/Guide [Bicycle suitability criteria for state roadways in Texas](#)
- Report/Guide [Guide for the development of bicycle facilities](#)
- Report/Guide [A policy on geometric design of highways and streets](#)
- Report/Guide [Traffic calming state-of-the-art](#)
- Report/Guide [Implementing bicycle improvements at the local level](#)
- Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)
- Other [Facility improvement request form \(postcard\)](#)

Proposed Countermeasures:

- Video [Conducting community audits \(a set of three videos\)](#)
- Video [Video promoting bicycle safety by engineering and planning groups](#)
- Brochure [Conducting community audits \(a package of three brochures\)](#)
- Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)
- Report/Guide [Residential traffic calming guidelines](#)
- Report/Guide [Guide to four-lane to three-lane street conversion](#)

- Report/Guide [Guide to improved urban area street lighting](#)
- Report/Guide [Guide to identifying high risk locations](#)
- Report/Guide [Traffic calming main street and the central business district](#)
- Report/Guide [Model development codes for traffic-calmed streets](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Improved roadway maintenance](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Operations/Maintenance Planning Groups

Potential Role: Local and regional planning groups can adopt and implement geometrics and traffic calming guidelines that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. Traffic systems can be adapted over time to handle an increased demand for bicycling in neighborhoods and to all destinations, with special emphasis on routes to and from common destinations. Bicycle crashes can be reduced through planning and engineering. Appropriate street markings, signs, signals and other traffic operations guidelines should be used. Maintenance conditions need improvements, especially on higher volume and higher speed roadways and particularly at the right edge of the roadway. The number of bicyclists riding on sidewalks can be reduced by converting excess lane width or number of lanes into safer bicycling alternatives. A combination of bikes lanes, paved shoulders and fully independent trails can be provided whenever possible on urban collector and arterial roadways. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a road is resurfaced, reconditioned or rebuilt. Providing adequate sight triangles and reducing turning speeds at intersections, median pockets and driveways can improve bicyclist detection. This includes undertrimming of critical trees and keeping ground cover low. Temporary or permanent advertising signs must not interfere with the sight triangle. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations. Adequate street lighting standards are needed as are steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Report/Guide [Use of bicycle stress level to evaluate street compatibility for bicyclists](#)

Report/Guide [Bicycle safety-related research synthesis](#)

- Report/Guide [Oregon bicycle and pedestrian plan](#)
- Report/Guide [Bicycle facilities planning and design handbook](#)
- Report/Guide [Traditional neighborhood development street design guidelines](#)
- Report/Guide [Manual on uniform traffic control devices for streets and highways](#)
- Report/Guide [Highway safety design and operations guide](#)
- Report/Guide [Bicycle suitability criteria for state roadways in Texas](#)
- Report/Guide [Guide for the development of bicycle facilities](#)
- Report/Guide [A policy on geometric design of highways and streets](#)
- Report/Guide [Traffic calming state-of-the-art](#)
- Report/Guide [Implementing bicycle improvements at the local level](#)
- Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)

Proposed Countermeasures:

- Video [Video promoting bicycle safety by engineering and planning groups](#)
- Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)
- Report/Guide [Residential traffic calming guidelines](#)
- Report/Guide [Guide to four-lane to three-lane street conversion](#)
- Report/Guide [Guide to improved urban area street lighting](#)
- Report/Guide [Guide to identifying high risk locations](#)
- Report/Guide [Traffic calming main street and the central business district](#)

- Report/Guide [Model development codes for traffic-calmed streets](#)
- Report/Guide [Bicycle improvements for collector and arterial roadways](#)
- Report/Guide [Improved roadway maintenance](#)
- Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Operations/Maintenance Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe bicycle riding. Working in partnership with the state or city highway safety office, they can do all or any part of the following: identify operations/maintenance problems and their locations, develop a model program to provide the needed corrections, implement the program (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to improve roadway operations and maintenance.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Report/Guide [Use of bicycle stress level to evaluate street compatibility for bicyclists](#)

Report/Guide [Bicycle safety-related research synthesis](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Bicycle suitability criteria for state roadways in Texas](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)

Other [Facility improvement request form \(postcard\)](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Operations/Maintenance Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on roadway operations/maintenance needs and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Operations/Maintenance Private or Corporate Business

Potential Role: Representatives of private or corporate businesses can support programs to insure that the surfaces on which bicyclists must ride are well maintained and free of loose debris. The programs should encompass roadways, roadway shoulders, and on-and off-road bicycle facilities. They can also be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)



Operations/Maintenance Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as promoting appropriate roadway operations and maintenance. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)



Operations/Maintenance Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction of motor vehicle/bicycle crashes in at least three ways. The first is to issue citations or warnings to bicyclists and motorists who are not riding safely. A second way is through formal and informal training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos). Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists who are stopped for unsafe actions. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report intersections where operations need revision or maintenance is required in order to provide a safe environment for motorists and bicyclists. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Report/Guide [Road hazard identification project](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)



Operations/Maintenance Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to reduce bicyclist crashes due to operations and maintenance problems. The most effective action may be to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of following the rules of the road, riding defensively and predictably, and being conspicuous at all times needs to be emphasized at an early age. It can be reinforced at the middle school, high school and college levels where it is likely that more students will be riding in traffic. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. At the high school level, school officials can incorporate traffic calming in driver education programs and emphasize that motorists must drive at reasonable speeds and be constantly alert for roadway operations and maintenance problems that might affect the bicyclist's performance. At all educational levels, school officials can serve as advocates for appropriate speeds in school zones and can support the development of roadway operations and maintenance measures that foster a safer environment for bicyclists. In addition, officials and teachers can solicit funds for use in the development and implementation of effective bicycle safety education programs. They also can support bicycle safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)



Operations/Maintenance Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can assess the safety of roadways and serve as lobbying groups for operations and maintenance improvements. They can also produce and/or distribute brochures on bicycle safety issues.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Operations/Maintenance Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. Adult community and civic groups can conduct audits to determine where operations or maintenance problems exist. They can support programs to insure that the surfaces on which bicyclists must ride are well maintained and free of loose debris. These programs can encompass roadways, roadway shoulders, and on-and off-road bicycle facilities. They can also serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)



Operations/Maintenance Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate bicycle crashes that occur due to operations or maintenance problems in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of any problem. They can support the development of any needed improvements. They can support legislation and chart laws that will promote bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Operations/Maintenance Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes that occur due to operations or maintenance problems. They can provide seasonal hot-button reminders on the problem. They can provide information on the nature and incidence of the problem while providing routine reporting on a crash attributable to that problem. They can explain what community members can do to help solve the problem. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Operations/Maintenance Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing how to identify bicycle operations and maintenance risks and how to ride safely where conditions are poor. Bicyclists also need to be part of the reporting system for road maintenance needs. Bicycle manufacturers can provide guidance to cyclists through hang tags, owner's manuals and owner's videos. In addition, bicycle shops can support local road maintenance activities by serving as a repository for cards that bicyclists can use to report road operations and maintenance problems. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:



Operations/Maintenance Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out the dangers of improper roadway operations and maintenance to both bicyclist and motorist and the importance of the motorist's driving carefully and being alert to possible problems of other roadway users. Bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures) can point out the need to be constantly on the lookout for roadway problems and to take steps to avoid them. The importance of riding defensively and predictably and of being conspicuous at all times can be emphasized. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:



Geometrics/Roadway Design Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out the advantages of traffic calming to both bicyclist and motorist and the importance of the motorist's driving carefully and being alert to the possible presence of other roadway users. Bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures) can also describe the advantages of roadway design features that promote safe and courteous roadway sharing. The importance of riding defensively and predictably and of being conspicuous at all times can be emphasized. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:



Geometrics/Roadway Design Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing how to identify risks and improve bicycle safety in areas where traffic volume and speeds are high. Bicycle manufactures can provide guidance to cyclists through hang tags, owner's manuals and owner's videos. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:



Geometrics/Roadway Design Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate crashes that occur due to lack of proper geometrics or roadway design. They can provide seasonal hot-button reminders on the problem. They can provide information on the nature and incidence of the problem while providing routine reporting on a crash attributable to that problem. They can explain what community members can do to help solve the problem. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Geometrics/Roadway Design Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate bicycle crashes that occur due to lack of proper geometrics or roadway design in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of any problem. They can support the development of any needed design improvements. They can support legislation and chart laws that will promote bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Geometrics/Roadway Design Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. Adult community and civic groups can support the development and implementation of geometrics and roadway design improvements that promote safe and courteous roadway sharing. They can also conduct audits to determine where traffic calming is needed to permit safe bicycling. They can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)



Geometrics/Roadway Design

Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway design improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can assess the safety of roadways and serve as lobbying groups for roadway improvements. They can also produce and/or distribute brochures on bicycle safety issues.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Geometrics/Roadway Design Schools

Potential Role: There are many ways that school administrators and teachers at all levels can participate in programs to reduce bicyclist crashes due to geometrics and traffic calming problems. The most effective action may be to implement a comprehensive bicycle safety education program. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of following the rules of the road, riding defensively and predictably, and being conspicuous at all times needs to be emphasized at an early age. It can be reinforced at the middle school, high school and college levels where it is likely that more students will be riding in traffic. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. At the high school level, school officials can incorporate traffic calming in driver education programs and emphasize that motorists must drive at reasonable speeds and be constantly alert for other roadway users. At all educational levels, school officials can serve as advocates for appropriate roadway design features around schools and for appropriate speeds in school zones. In addition, officials and teachers can solicit funds for use in the development and implementation of effective bicycle safety education programs. They also can support bicycle safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)



Geometrics/Roadway Design Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Enforcement agencies can contribute to a reduction of motor vehicle/bicycle crashes in at least three ways. The first is to issue citations or warnings to bicyclists and motorists who are not riding safely. A second way is through formal and informal training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos). Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists who are stopped for unsafe actions. A third way that enforcement officers can contribute is by reporting high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report intersections where motorist speeds are too high and where roadway design features could be improved. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)



Geometrics/Roadway Design Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care personnel and organizations can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs, such as promoting appropriate geometrics and roadway design features that promote safe and courteous roadway sharing. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)



Geometrics/Roadway Design Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. They can support the development and implementation of desirable roadway geometrics and other design features that promote safe and courteous roadway sharing. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)



Geometrics/Roadway Design Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on geometrics and roadway design features and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Geometrics/Roadway Design Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe bicycle riding. Working in partnership with the state or city highway safety office, they can do all or any part of the following: identify areas where roadway geometry improvements or other design changes are needed, develop a model program to provide the needed improvements, implement the program (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to provide roadway geometry and other design improvements.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Video [Making streets that work](#)

Report/Guide [Use of bicycle stress level to evaluate street compatibility for bicyclists](#)

Report/Guide [Bicycle safety-related research synthesis](#)

Report/Guide [Making streets that work](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic engineering handbook](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Bicycle suitability criteria for state roadways in Texas](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)

Other [Facility improvement request form \(postcard\)](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Report/Guide [Guide to creating safer neighborhoods](#)

Report/Guide [Best techniques for bicycle operations](#)



Geometrics/Roadway Design Planning Groups

Potential Role: Local and regional planning groups can adopt and implement geometrics and roadway design guidelines that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. Traffic systems can be adapted over time to handle an increased demand for bicycling in neighborhoods and to all destinations, with special emphasis on routes to and from common destinations. Bicycle crashes can be reduced through planning and engineering. Appropriate street making standards and traffic calming techniques can be used to reduce traffic volumes and travel speeds in neighborhoods, around schools and college campuses, and in central business districts. The number of bicyclists riding on sidewalks can be reduced by converting excess lane width or number of lanes into safer bicycling alternatives. A combination of bikes lanes, paved shoulders and fully independent trails can be provided whenever possible on urban collector and arterial roadways. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a road is resurfaced, reconditioned or rebuilt. Providing adequate sight triangles and reducing turning speeds at intersections and driveways can improve bicyclist detection. This includes undertrimming of critical trees and keeping ground cover low. Temporary or permanent advertising signs must not interfere with the sight triangle. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations. Adequate street lighting standards are needed as are steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Video [Making streets that work](#)

Report/Guide [Use of bicycle stress level to evaluate street compatibility for bicyclists](#)

- Report/Guide [Bicycle safety-related research synthesis](#)
- Report/Guide [Making streets that work](#)
- Report/Guide [Oregon bicycle and pedestrian plan](#)
- Report/Guide [Bicycle facilities planning and design handbook](#)
- Report/Guide [Traditional neighborhood development street design guidelines](#)
- Report/Guide [Traffic engineering handbook](#)
- Report/Guide [Manual on uniform traffic control devices for streets and highways](#)
- Report/Guide [Highway safety design and operations guide](#)
- Report/Guide [Bicycle suitability criteria for state roadways in Texas](#)
- Report/Guide [Guide for the development of bicycle facilities](#)
- Report/Guide [A policy on geometric design of highways and streets](#)
- Report/Guide [Traffic calming state-of-the-art](#)
- Report/Guide [Implementing bicycle improvements at the local level](#)
- Report/Guide [The bicycle compatibility index: A level of service concept. Implementation manual](#)
- Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)

Proposed Countermeasures:

- Video [Video promoting bicycle safety by engineering and planning groups](#)
- Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)
- Report/Guide [Residential traffic calming guidelines](#)
- Report/Guide [Guide to four-lane to three-lane street conversion](#)
- Report/Guide [Guide to improved urban area street lighting](#)
- Report/Guide [Guide to identifying high risk locations](#)
- Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Model development codes for traffic-calmed streets](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Best techniques for bicycle operations](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Geometrics/Roadway Design Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines for geometrics and roadway design features that promote safe and courteous roadway sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Traffic systems can be adapted over time to handle an increased demand for bicycling in neighborhoods and to all destinations, with special emphasis on routes to and from common destinations. Bicycle crashes can be reduced through planning and engineering. Appropriate street making standards and traffic calming techniques can be used to reduce traffic volumes and travel speeds in neighborhoods, around schools and college campuses, and in central business districts. The number of bicyclists riding on sidewalks can be reduced by converting excess lane width or number of lanes into safer bicycling alternatives. A combination of bikes lanes, paved shoulders and fully independent trails can be provided whenever possible on urban collector and arterial roadways. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a road is resurfaced, reconditioned or rebuilt. Providing adequate sight triangles and reducing turning speeds at intersections and driveways can improve bicyclist detection. This includes undertrimming of critical trees and keeping ground cover low. Temporary or permanent advertising signs must not interfere with the sight triangle. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations. Adequate street lighting standards are needed as are steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Video [Making streets that work](#)

Report/Guide [Use of bicycle stress level to evaluate street compatibility for bicyclists](#)

Report/Guide [Bicycle safety-related research synthesis](#)

- Report/Guide [Making streets that work](#)
- Report/Guide [Oregon bicycle and pedestrian plan](#)
- Report/Guide [Bicycle facilities planning and design handbook](#)
- Report/Guide [Traditional neighborhood development street design guidelines](#)
- Report/Guide [Traffic engineering handbook](#)
- Report/Guide [Manual on uniform traffic control devices for streets and highways](#)
- Report/Guide [Highway safety design and operations guide](#)
- Report/Guide [Bicycle suitability criteria for state roadways in Texas](#)
- Report/Guide [Guide for the development of bicycle facilities](#)
- Report/Guide [A policy on geometric design of highways and streets](#)
- Report/Guide [Traffic calming state-of-the-art](#)
- Report/Guide [Implementing bicycle improvements at the local level](#)
- Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)
- Other [Facility improvement request form \(postcard\)](#)

Proposed Countermeasures:

- Video [Conducting community audits \(a set of three videos\)](#)
- Video [Video promoting bicycle safety by engineering and planning groups](#)
- Brochure [Conducting community audits \(a package of three brochures\)](#)
- Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

- Report/Guide [Guide to four-lane to three-lane street conversion](#)
- Report/Guide [Guide to Report/Guide improved urban area street lighting](#)
- Report/Guide [Guide to identifying high risk locations](#)
- Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Model development codes for traffic-calmed streets](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Geometrics/Roadway Design Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street geometrics and roadway design features that invite safe and courteous roadway sharing. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. Traffic systems can be adapted over time to handle an increased demand for bicycling in neighborhoods and to all destinations, with special emphasis on routes to and from common destinations. Bicycle crashes can be reduced through planning and engineering. Appropriate street making standards and traffic calming techniques can be used to reduce traffic volumes and travel speeds in neighborhoods, around schools and college campuses, and in central business districts. The number of bicyclists riding on sidewalks can be reduced by converting excess lane width or number of lanes into safer bicycling alternatives. A combination of bikes lanes, paved shoulders and fully independent trails can be provided whenever possible on urban collector and arterial roadways. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a road is resurfaced, reconditioned or rebuilt. Providing adequate sight triangles and reducing turning speeds at intersections and driveways can improve bicyclist detection. This includes undertrimming of critical trees and keeping ground cover low. Temporary or permanent advertising signs must not interfere with the sight triangle. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations. Adequate street lighting standards are needed as are steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Video [Making streets that work](#)

- Report/Guide [Bicycle safety-related research synthesis](#)
- Report/Guide [Making streets that work](#)
- Report/Guide [Oregon bicycle and pedestrian plan](#)
- Report/Guide [Bicycle facilities planning and design handbook](#)
- Report/Guide [Traditional neighborhood development street design guidelines](#)
- Report/Guide [Traffic engineering handbook](#)
- Report/Guide [Manual on uniform traffic control devices for streets and highways](#)
- Report/Guide [Highway safety design and operations guide](#)
- Report/Guide [Bicycle suitability criteria for state roadways in Texas](#)
- Report/Guide [Guide for the development of bicycle facilities](#)
- Report/Guide [A policy on geometric design of highways and streets](#)
- Report/Guide [Traffic calming state-of-the-art](#)
- Report/Guide [Implementing bicycle improvements at the local level](#)
- Report/Guide [The bicycle compatibility index: A level of service concept. Implementation manual](#)
- Report/Guide [North Carolina bicycle facilities planning and design guidelines](#)

Proposed Countermeasures:

- Video [Conducting community audits \(a set of three videos\)](#)
- Video [Video promoting bicycle safety by engineering and planning groups](#)
- Brochure [Conducting community audits \(a package of three brochures\)](#)
- Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)
- Report/Guide [Residential traffic calming guidelines](#)
- Report/Guide [Guide to four-lane to three-lane street conversion](#)
- Report/Guide [Guide to improved urban area street lighting](#)
- Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Model development codes for traffic-calmed streets](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Best techniques for bicycle operations](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Operations/Maintenance

Problem Description: Bicyclists ride in the right-most portion of the roadway where conditions are often poorest. Maintenance of roadways frequently lags behind construction. Appropriate bicycle detectors can be lacking where needed. The poor conditions on the roadway due to operations and maintenance problems can create high-risk bicycling.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

§ The bicyclist will ride defensively at all times.

§ The bicyclist will report roadway operations and maintenance problems.

Motorist:

§ The motorist will be alert to roadway operations and maintenance problems that might affect the performance of the bicyclist.

§ The motorist will drive at a reasonable speed for the area.

Roadway:

§ Roadway operations and maintenance problems will be corrected.

§ Speeds on neighborhood roads will be reduced.

§ Appropriate bicycle detectors will be provided where needed.



Geometrics/Roadway Design

Problem Description: Increases in traffic volume and speed have increased the dangers of a bicycle/motor vehicle crash. Roadway designs that encourage excessive motorist speeds (including turning speeds) contribute to this problem as do inadequate sight triangles at intersections and driveways.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

- § The bicyclist will be conspicuous at all times.
- § The bicyclist will wear a helmet at all times.
- § The bicyclist will follow the rules of the road.
- § The bicyclist will ride defensively and predictably at all times.

Motorist:

- § The motorist will be alert for other roadway users,
- § Motorist speed will be reduced in urban areas.

Roadway:

§ Bicyclists will be separated from motorists on higher speed roadways through bike lanes, paved shoulders or fully independent trails.

§ Speeds on neighborhood streets will be reduced.

§ Roadways will be appropriately traffic-calmed for the area.



Nighttime Crashes

Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street geometrics, operations and maintenance that invite safe and courteous roadway sharing. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. Nighttime crashes can be reduced by creating bike lanes or paved shoulders on collector and arterial roadways, by creating fully independent trails along parkways and other locations where there are few intersections or driveways, and by improving street lighting on higher speed, higher volume, urban roadways. Other safety improvements can be made by reducing travel lane widths and using the extra space for bike lanes. These bike lane and paved shoulder facilities can pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and volume of the roadway, the higher the potential for these lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. Appropriate signing and marking should be provided. Local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs. Roadways and trails need to be properly lit for the low-quality of light found on most bicycles. If trail lighting is to be turned off at a reasonable hour, signs should alert bicyclists when the trail will no longer be lit.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Implementer Training [Training program for college traffic planners](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to four-lane to three-lane street conversion](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Access management](#)



Nighttime Crashes Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines for street geometrics, operations and maintenance that promote safe and courteous roadway sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Nighttime crashes can be reduced by creating bike lanes or paved shoulders on collector and arterial roadways, by creating fully independent trails along parkways and other locations where there are few intersections or driveways, and by improving street lighting on higher speed, higher volume, urban roadways. Other safety improvements can be made by reducing travel lane widths and using the extra space for bike lanes. These bike lane and paved shoulder facilities can pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and volume of the roadway, the higher the potential for these lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. Appropriate signing and marking should be provided. Local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs. Roadways and trails need to be properly lit for the low-quality of light found on most bicycles. If trail lighting is to be turned off at a reasonable hour, signs should alert bicyclists when the trail will no longer be lit.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Implementer Training [Training program for college traffic planners](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to four-lane to three-lane street conversion](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Access management](#)



Nighttime Crashes Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines for street geometrics , operations and maintenance that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. Nighttime crashes can be reduced by creating bike lanes or paved shoulders on collector and arterial roadways, by creating fully independent trails along parkways and other locations where there are few intersections or driveways, and by improving street lighting on higher speed, higher volume, urban roadways. Other safety improvements can be made by reducing travel lane widths and using the extra space for bike lanes. These bike lane and paved shoulder facilities can pay the biggest dividends when lighting is poorest, during night, twilight and foggy or rainy weather. Motorists learn to steer to the left of the edge line created by paved shoulders or bike lanes. The higher the speed and volume of the roadway, the higher the potential for these lethal crashes. A common mistake is not to provide for bicyclists where facilities are most needed--on the higher speed and higher volume roadways. Bike lanes and paved shoulders are the preferred treatment on avenues, streets and boulevards. Multi-use trails are preferred on parkways and other locations where there are few turning conflicts. Appropriate signing and marking should be provided. Local officials can adopt and promote adequate street lighting standards, and take steps to reduce competing glare, especially from large advertising signs. Roadways and trails need to be properly lit for the low-quality of light found on most bicycles. If trail lighting is to be turned off at a reasonable hour, signs should alert bicyclists when the trail will no longer be lit.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Implementer Training [Training program for college traffic planners](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Guide to four-lane to three-lane street conversion](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Access management](#)



Nighttime Crashes Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe bicycle riding. Working in partnership with the state or city highway safety office, they can do all or any part of the following: analyze the nature and incidence of the nighttime bicycle crash problem, develop a model program to solve the problem, implement the program (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to correct the nighttime crash problem.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Brochure [Motorists make mistakes too](#)

Brochure [How to ride at night. . . and stay alive!](#)

Brochure [10 tips for fun and safe biking](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Florida cycling tips: Staying alive on the roads](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Implementer Training [Training program for college traffic planners](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure to discourage nighttime riding](#)

Report/Guide [Responses to queries on bicycle safety](#)



Nighttime Crashes Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on nighttime crashes and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Brochure [Motorists make mistakes too](#)

Brochure [How to ride at night. . . and stay alive!](#)

Brochure [10 tips for fun and safe biking](#)

Booklet [Bicycle safety: What every parent should know](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure to discourage nighttime riding](#)



Nighttime Crashes Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. They can support local programs to identify the types of bicycle/motor-vehicle crashes that most often occur during darkness and develop effective countermeasures for these crashes. They can support research and development programs to develop improved night lighting equipment for bicycles. They can support programs to insure that the surfaces on which bicyclists must ride are well maintained and free of loose debris. These programs can encompass roadways, roadway shoulders, and on-and off-street bicycle facilities.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Brochure [10 tips for fun and safe biking](#)

Booklet [Bicycle safety: What every parent should know](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Brochure [Brochure to discourage nighttime riding](#)

Other [Pre-formatted electronic mail safety messages](#)



Nighttime Crashes Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Representatives of health care organizations can be knowledgeable about the types of bicycle/motor-vehicle crashes that are most likely to occur during darkness and can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Flyer [Safe bicycling starts early](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Brochure [Brochure to discourage nighttime riding](#)

Other [A package of safety education products for distribution by health care organizations and professionals](#)

Other [Pre-formatted electronic mail safety messages](#)



Nighttime Crashes Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Law enforcement officials can be knowledgeable about the types of bicycle/motor-vehicle crashes that occur most often during darkness, and can contribute to a reduction of fatal crashes in many ways. The first is to issue citations or warnings to bicyclists who are seen riding in a dangerous fashion during darkness. For example, they can issue citations or warnings to bicyclists who are observed riding during darkness without all the lighting equipment required by law. They can support local programs designed to identify the types of nighttime bicycle/motor-vehicle crashes that most often lead to serious injuries and develop effective countermeasures for these crashes. An additional way is through formal and informal training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to elementary and middle school children. Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists and to parents of young bicyclists. They can caution bicyclists who are riding a legally-equipped bicycle during darkness when the bicycle's night-time conspicuity is judged inadequate. Officers can participate in programs to check the night lighting equipment of bicycles. They can also provide positive reinforcement to bicyclists who are observed using proper equipment. They can report high hazard locations and trends in unsafe behavior by roadway users. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Video [The E's of cycling](#)

Proposed Countermeasures:

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Brochure [Brochure to discourage nighttime riding](#)

Other [Law enforcement public information and education \(PI&E\) materials](#)



Nighttime Crashes Schools

Potential Role: There are many ways that school administrators and teachers can participate in programs to reduce nighttime crashes among children. Clearly, the most effective action is to implement a comprehensive bicycle safety education program that focuses on the crash types that typically involve children and on the dangers of nighttime riding. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of riding defensively and being conspicuous at all times needs to be emphasized at an early age. It can be reinforced at the middle school, high school and college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Pre-schools and elementary schools can serve as efficient conduits for conveying educational materials to young bicyclists' parents. School officials can seek parent help in educating and supervising novice bicyclists. Parents can be educated on the crash types that most often occur during darkness and the actions that they can take to reduce the likelihood that their child will be involved in a bicycle/motor-vehicle crash. Information on nighttime crashes can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate bicyclist crash information in driver education programs to emphasize the need for motorists to drive slowly and to search for bicyclists in the roadway. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Implementer Training [Bicycle and pedestrian traffic safety education](#)

Video [The E's of cycling](#)

Booklet [Sam's adventures through Nevada: Safe pedaling in Nevada](#)

Other [Davis bike map \(university and city map\)](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)

Brochure [Brochure to discourage nighttime riding](#)



Nighttime Crashes Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements. They can promote increased opportunities for bicyclists to ride in roadways where they are the most easily detected. They can promote activities to reduce travel speeds of motorists in urban areas, increase motorist detection of bicyclists, increase use of helmets, and enhance bicyclist conspicuity. They can support programs that separate bicyclists from motorists on higher speed roadways through bike lanes, paved shoulders or fully independent trails. They can support programs that ensure that there is ample night lighting on roadways and trails and that roadways and trails are maintained so that surface features that may “trip” a bicyclist are eliminated. They can also produce and/or distribute brochures on nighttime bicycle crashes and how to avoid them.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Brochure [Motorists make mistakes too](#)

Brochure [How to ride at night. . . and stay alive!](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure to discourage nighttime riding](#)



Nighttime Crashes Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. All community and civic groups can become knowledgeable about the types of bicycle/motor-vehicle crashes that are most likely to occur during darkness and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends. They can also support local programs to identify the types of bicycle/motor-vehicle crashes that most often occur at nighttime and to develop effective countermeasures for these crashes. They can support research and development programs to develop improved night lighting equipment for bicycles.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Brochure [10 tips for fun and safe biking](#)

Booklet [Bicycle safety: What every parent should know](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)

Brochure [Brochure to discourage nighttime riding](#)



Nighttime Crashes Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate nighttime bicycle crashes in response to a serious crash that occurred in darkness. In this capacity, they can be a source of invaluable publicity on the nature and incidence of the problem. They can also support the development of any needed countermeasures designed to correct the nighttime crash problem.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Nighttime Crashes Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate nighttime crashes. They can provide seasonal hot-button reminders on the problem. They can provide information on the nature and incidence of nighttime crashes while providing routine reporting on a crash that occurred in darkness. They can explain what community members can do to help solve the problem. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Nighttime Crashes Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing the major causes of nighttime bicycle crashes and how to ride safely at night. Bicycle manufacturers can provide guidance to cyclists through hang tags, owner's manuals and owner's videos. Flags on poles could be mounted on bikes with a 16 to 24 inch wheel base; a bracket for this purpose could be added to this category of bicycle at the factory. Bicycle manufacturers, manufacturers of bicycle lights and reflectors and clothing manufacturers can conduct research to increase the conspicuity of their products. Manufacturers of clothing and personal conspicuity items (e.g., wrist/ankle straps) can add hang tags to their products that describe the conspicuity features and what the bicyclist can do to increase conspicuity. Similar hang tags can be added to helmets by helmet manufacturers. Hang tags can also be added to bicycle conspicuity products (e.g., lights and reflectors) or similar information could be provided on their packaging. Finally, bicycle shops can display and distribute brochures on the conspicuity problem and what bicyclists can do to ensure that they are conspicuous at all times. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [Motorists make mistakes too](#)

Brochure [How to ride at night. . . and stay alive!](#)

Brochure [10 tips for fun and safe biking](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Nighttime Crashes Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. To reduce nighttime bicycle crashes, the driver's manual can point out the importance of the motorist's proceeding slowly and carefully and constantly watching for bicyclists. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), the dangers associated with nighttime riding can be pointed out and the necessity to have all required lighting equipment on the bicycle and to wear retroreflective clothing to increase the likelihood of being seen. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Fatal Crashes Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. To reduce fatal bicycle crashes, the driver's manual can point out the importance of the motorist's proceeding slowly and carefully and constantly watching for bicyclists. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), the dangers associated with fatal crashes can be pointed out, particularly the importance of wearing a properly fitted helmet, stopping and searching for cars before entering the street, riding with traffic, being conspicuous, obeying traffic signs and signals, and riding predictably at all times. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Fatal Crashes Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing the major causes of fatal bicycle crashes and how to ride safely. Bicycle manufacturers can provide guidance to cyclists through hang tags, owner's manuals and owner's videos. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [Motorists make mistakes too](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Fatal Crashes Media

Potential Role: The media can play a major role in all bicycle safety issues. For example, they can mount a proactive safety campaign to help eliminate fatal crashes. They can provide seasonal hot-button reminders on the problem. They can provide information on the nature and incidence of fatal crashes while providing routine reporting on a fatal crash. They can explain what community members can do to help solve the problem. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Fatal Crashes Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate fatal bicycle crashes in response to a crash that resulted in the bicyclist's death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of the problem. They can also support the development of any needed countermeasures designed to correct the fatal crash problem.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Fatal Crashes Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. All community and civic groups can become knowledgeable about the types of bicycle/motor-vehicle crashes that are most likely to cause fatal injuries and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends. They can also support local programs to identify the types of bicycle/motor-vehicle crashes that most often lead to fatal injuries and to develop effective countermeasures for these crashes.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)



Fatal Crashes Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements. They can promote increased opportunities for bicyclists to ride in roadways where they are the most easily detected. They can promote activities to reduce travel speeds of motorists in urban areas, increase motorist detection of bicyclists, increase use of helmets, and enhance bicyclist conspicuity. They can support programs that separate bicyclists from motorists on higher speed roadways through bike lanes, paved shoulders or fully independent trails. They can also produce and/or distribute brochures on bicycle crashes that result in fatalities and how to avoid them.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Brochure [Motorists make mistakes too](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Fatal Crashes Schools

Potential Role: There are many ways that school administrators and teachers can participate in programs to reduce fatal crashes among children. Clearly, the most effective action is to implement a comprehensive bicycle safety education program that focuses on the crash types that typically involve young children. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of searching for vehicles before entering the roadway, of wearing a helmet and of being conspicuous at all times needs to be emphasized at an early age. It can be reinforced at the middle school, high school and college levels. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and promote helmet use. Pre-schools and elementary schools can serve as efficient conduits for conveying educational materials to young bicyclists' parents. Parents can be educated on the causes of fatal crashes and other crash types that commonly involve young children and the actions that they can take to reduce the likelihood that their child will be involved in a bicycle/motor-vehicle crash. Information on the problem can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate bicyclist crash information in driver education programs to emphasize the need for motorists to drive slowly through neighborhoods and to search for bicyclists in the roadway. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Implementer Training [Bicycle and pedestrian traffic safety education](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)



Fatal Crashes Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Law enforcement officials can be knowledgeable about the types of bicycle/motor-vehicle crashes that are most likely to cause fatal injuries, and can contribute to a reduction of fatal crashes in many ways. The first is to issue citations or warnings to bicyclists who are seen riding in a dangerous fashion. They can support local programs designed to identify the types of bicycle/motor-vehicle crashes that most often lead to fatal injuries and develop effective countermeasures for these crashes. An additional way is through formal and informal training. Enforcement officers can provide both classroom training (e.g., the Officer Friendly Program) and on-bike training (e.g., bike rodeos) to children. Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists and to parents of young bicyclists. They can also provide positive reinforcement to bicyclists who are observed behaving in a desirable manner. They can report high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report driveway/roadway junctions where the sight distance is limited by vegetation, structures or parked vehicles. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Other [Law enforcement public information and education \(PI&E\) materials](#)



Fatal Crashes Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Representatives of health care organizations can be knowledgeable about the types of bicycle/motor-vehicle crashes that are most likely to cause fatal injuries and can support the development and implementation of bicycle crash countermeasures to fatal crashes in several ways. First, they can participate actively in bicycle safety programs. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Other [Pre-formatted electronic mail safety messages](#)



Fatal Crashes Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. They can support local programs designed to identify bicycle/motor vehicle crashes that most often lead to fatal injuries and develop countermeasures for these crashes. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Other [Pre-formatted electronic mail safety messages](#)



Fatal Crashes Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on fatal crashes and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program-engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure programs developed under government auspices. In addition, they hold meetings and promote their areas of interest. They may also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Brochure [Motorists make mistakes too](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Fatal Crashes Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe bicycle riding. Working in partnership with the state or city highway safety office, they can do all or any part of the following: analyze the nature and incidence of the fatal bicycle crash problem, develop a model program to solve the problem, implement the program (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle and motor vehicle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to correct the fatal crash problem.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Brochure [Motorists make mistakes too](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Implementer Training [Training program for college traffic planners](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Report/Guide [Responses to queries on bicycle safety](#)



Fatal Crashes Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines for street geometrics , operations and maintenance that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. Traffic systems can be adapted over time to handle an increased demand for bicycling in neighborhoods and to all destinations. Bicycle fatalities can be reduced through planning and engineering. Appropriate street making standards and traffic calming can reduce traffic volume and travel speeds in neighborhoods, around schools and in central business districts. Detection of bicyclists can be increased by improving sight triangles and reducing turning speeds of motorists at intersections and driveways. The number of bicyclists riding on sidewalks can be reduced by converting excess lane width or number of lanes into safer bicycling alternatives. A combination of bikes lanes, paved shoulders and fully independent trails can be provided whenever possible on urban collector and arterial roadways. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a road is resurfaced, reconditioned or rebuilt. Providing adequate sight triangles and reducing turning speeds at intersections, median pockets and driveways can improve bicyclist detection. This includes undertrimming of critical trees and keeping ground cover low. Temporary or permanent advertising signs must not interfere with the sight triangle. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations. Adequate street lighting standards are needed as are steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Implementer Training [Training program for college traffic planners](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Guide to four-lane to three-lane street conversion](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Model development codes for traffic-calmed streets](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Fatal Crashes Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines for street geometrics, operations and maintenance that promote safe and courteous roadway sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Traffic systems can be adapted over time to handle an increased demand for bicycling in neighborhoods and to all destinations. Bicycle fatalities can be reduced through planning and engineering. Appropriate street making standards and traffic calming can reduce traffic volume and travel speeds in neighborhoods, around schools and in central business districts. Detection of bicyclists can be increased by improving sight triangles and reducing turning speeds of motorists at intersections and driveways. The number of bicyclists riding on sidewalks can be reduced by converting excess lane width or number of lanes into safer bicycling alternatives. A combination of bikes lanes, paved shoulders and fully independent trails can be provided whenever possible on urban collector and arterial roadways. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a road is resurfaced, reconditioned or rebuilt. Providing adequate sight triangles and reducing turning speeds at intersections, median pockets and driveways can improve bicyclist detection. This includes undertrimming of critical trees and keeping ground cover low. Temporary or permanent advertising signs must not interfere with the sight triangle. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations. Adequate street lighting standards are needed as are steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Implementer Training [Training program for college traffic planners](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Guide to four-lane to three-lane street conversion](#)

Report/Guide [Guide to improved urban area street lighting](#)

Report/Guide [Guide to identifying high risk locations](#)

Report/Guide [Traffic calming main street and the central business district](#)

Report/Guide [Model development codes for traffic-calmed streets](#)

Report/Guide [Bicycle improvements for collector and arterial roadways](#)

Report/Guide [Bike lanes and paved shoulders](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Fatal Crashes Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street geometrics, operations and maintenance that invite safe and courteous roadway sharing. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. Traffic systems can be adapted over time to handle an increased demand for bicycling in neighborhoods and to all destinations. Bicycle fatalities can be reduced through planning and engineering. Appropriate street making standards and traffic calming can reduce traffic volume and travel speeds in neighborhoods, around schools and in central business districts. Detection of bicyclists can be increased by improving sight triangles and reducing turning speeds of motorists at intersections and driveways. The number of bicyclists riding on sidewalks can be reduced by converting excess lane width or number of lanes into safer bicycling alternatives. A combination of bikes lanes, paved shoulders and fully independent trails can be provided whenever possible on urban collector and arterial roadways. Appropriate signing and marking should be provided. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning and engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a road is resurfaced, reconditioned or rebuilt. Providing adequate sight triangles and reducing turning speeds at intersections, median pockets and driveways can improve bicyclist detection. This includes undertrimming of critical trees and keeping ground cover low. Temporary or permanent advertising signs must not interfere with the sight triangle. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations. Adequate street lighting standards are needed as are steps to reduce competing glare, especially from large advertising signs.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

- Report/Guide [Traditional neighborhood development street design guidelines](#)
- Report/Guide [Manual on uniform traffic control devices for streets and highways](#)
- Report/Guide [Highway safety design and operations guide](#)
- Report/Guide [Guide for the development of bicycle facilities](#)
- Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

- Implementer Training [Training program for college traffic planners](#)
- Video [Conducting community audits \(a set of three videos\)](#)
- Video [Video promoting bicycle safety by engineering and planning groups](#)
- Brochure [Conducting community audits \(a package of three brochures\)](#)
- Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)
- Report/Guide [Residential traffic calming guidelines](#)
- Report/Guide [Guide to four-lane to three-lane street conversion](#)
- Report/Guide [Guide to improved urban area street lighting](#)
- Report/Guide [Guide to identifying high risk locations](#)
- Report/Guide [Traffic calming main street and the central business district](#)
- Report/Guide [Model development codes for traffic-calmed streets](#)
- Report/Guide [Bicycle improvements for collector and arterial roadways](#)
- Report/Guide [Bike lanes and paved shoulders](#)
- Report/Guide [Residential intersection guidelines](#)
- Report/Guide [Access management](#)



Nighttime Crashes

Problem Description: Nighttime crashes often become a focal point because of the obvious mismatch between a bicycle and a motor vehicle. In many nighttime crashes, an overtaking motorist fails to detect the bicyclist. Nighttime crashes also involve motorists who are backing, making unexpected left turns in front of bicyclists, obeying stop signs but failing to yield to bicyclists at intersections, and losing control of their vehicles. Wrong-way bicyclists are also involved in nighttime crashes. The night detection problem is most critical on higher speed roadways. Alcohol use by the bicyclist and/or motorist is often a factor.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

- § The bicyclist will be aware that motorists often fail to see bicyclists during darkness even if the bicycle is equipped with the lighting equipment required by law.

- § Bicyclists and the parents of young bicyclists will be aware of the limited effectiveness of existing front and rear lighting equipment for bicycles.

- § The bicyclist will ride defensively at all times.

- § The bicyclist will be conspicuous at all times.

- § The bicyclist will wear a helmet at all times.

- § The bicyclist will follow the rules of the road.

Motorist:

§ During darkness, a motorist who is overtaking a bicycle will see the bicyclist soon enough to initiate successful evasive action.

§ During darkness, a motorist who is preparing to enter a roadway from another roadway, a driveway, or an alley will see a bicyclist approaching from the right or left (riding on the roadway or on a sidewalk).

§ During darkness, a motorist who is preparing to turn left into another roadway, a driveway, or an alley will see a bicyclist approaching from the opposite direction (riding on the roadway or on the sidewalk).

Roadway:

§ Increased opportunities will be provided for bicyclists to ride where they are most easily detected (roadways).

§ Bicyclists will be separated from motorists on higher speed roadways through bike lanes, paved shoulders or fully independent trails.

§ Ample night lighting will be provided on roadways and trails.

§ Roadways and trails will be maintained so that surface features that may “trip” the bicyclist will be reduced.



Fatal Crashes

Problem Description: Fatal crashes typically generate a significant public outcry and demands for change. Many fatal bicyclist crashes involve overtaking motorists who do not detect the bicyclist. They also include midblock rideouts from residential driveways and sidewalks, bicyclist rideouts from stop signs at intersections, motorist unexpected right turns and wrong-way bicyclists. In fatal crashes involving children, the child typically makes the primary error. In fatal crashes involving adults, the motorist typically makes the primary error. Alcohol use by the bicyclist and/or motorist is often a factor.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

- § The bicyclist will ride defensively and predictably at all times.
- § The bicyclist will be conspicuous at all times.
- § The bicyclist will wear a helmet at all times.
- § The bicyclist will follow the rules of the road.
- § The bicyclist will obey all traffic signs and signals.
- § Parents will be aware of child bicycle dangers and, through instruction and supervision, will train their children to avoid the dangers.
- § The bicyclist will constantly search while riding and will not initiate a turn without a full search.

§ The bicyclist will negotiate turns smoothly including positioning the bicycle properly in the roadway and signaling appropriately.

§ The bicyclist will adjust speed and path such that there is sufficient time and maneuver room to stop and/or swerve if the motorist makes an improper turn in front of the bicyclist.

§ Bicyclists and the parents of young bicyclists will be aware of the limited effectiveness of existing rear lighting equipment for bicycles.

§ The bicyclist will be aware that motorists sometimes fail to see bicyclists even when visibility conditions are good.

Motorist:

§ Motorists will constantly search for other roadway users.

§ The motorist will travel at an appropriate speed for the area.

§ When approaching or overtaking a bicyclist, the motorist will reduce speed and be prepared to stop or swerve if the bicyclist makes a sudden turn.

§ The motorist will search for bicyclists at intersections and will yield to bicyclists who have the right of way.

§ The motorist will make a full search (including sidewalks) before turning.

§ A motorist who is overtaking a bicycle during daylight or darkness will see the bicyclist soon enough to initiate successful evasive action.

Roadway:

§ Travel speeds on urban in urban areas will be reduced.

§ Bicyclists and motorists will be separated on higher speed roadways through bike lanes, paved shoulders or fully independent trails.



Commuter Bicyclist Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt guidelines for street geometrics, operations and maintenance that invite safe and courteous roadway sharing. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. Guidelines can ensure that on-street facilities are provided where practical and that safety is improved where current systems are deficient. Bicyclist crashes can be reduced through planning and engineering. Appropriate street making standards and traffic calming techniques can be used to reduce traffic volumes and travel speeds. Detection of bicyclists can be improved by improving sight triangles and reducing the turning speed of motorists at intersections and driveways. A combination of bike lanes and paved shoulders can be included whenever possible on urban collector and arterial roadways. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the engineering community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Adequate sight triangles need to be maintained on approaches and departures to and from all driveways. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Bicyclist Parents Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out the importance of the motorist's proceeding slowly and carefully through neighborhoods and constantly watching for young bicyclists, particularly at residential driveways and on sidewalks. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), parents should be advised of the dangers facing young bicyclists and the importance of supervising and carefully training their children to avoid the dangers. Parents should teach their children to stop and look for traffic before entering the roadway or an intersection, to ride with traffic, to search before making any roadway turns, and to be conspicuous at all times, among other things. Parents should make sure that their children ride in a protected area until they are competent enough to enter the street and, when in the street, they should be supervised until they are capable of riding safely with traffic. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Booklet [Delaware bicycle driver's manual](#)

Booklet [Illinois bicycle rules](#)

Booklet [New Jersey bicycle manual](#)

Proposed Countermeasures:



Bicyclist Parents Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing the threat of bicycle crashes involving children. The bicycle manufacturer is the best and sometimes only point of purchase information source to the consumer about these risks. The manufacturer can alert bicyclist parents to the risks and explain how they can help to prevent crashes. Guidance can be provided through bicycle hang tags, owner's manuals and owner's videos. Sellers can display and distribute brochures that describe crashes common to child bicyclists and what parents can do to help minimize these crashes. Sellers can promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [Lou and his friends have something important to tell you](#)

Brochure [Keep a head; wear a helmet](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Bicycling: Safe and easy](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Bicyclist Parents Media

Potential Role: The media can play a major role in bicyclist safety issues. They can mount a proactive safety campaign directed to parents to promote helmet use by children. They can provide seasonal hot-button reminders on child bicyclist safety issues and what parents can do to help eliminate crashes. For example, they can direct information to parents on the nature and incidence of the midblock rideout problem while providing routine reporting on a crash attributable to that problem. They can provide positive publicity on community programs designed to ensure that parents are aware of the dangers when children ride in driveways and on sidewalks and what parents can do to minimize these dangers. They can emphasize the importance of the child's being conspicuous at all times. They can also publicize programs designed to ensure that parents maintain adequate sight distances at their driveways. Since their influence in a community is strong, it is especially important that the media know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Bicyclist Parents Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to enlist parental support to prevent child bicyclist crashes in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of child bicycle problems as well as methods to help solve the problems. They can play a lead role in ensuring that neighborhoods are designed to accommodate safe use of bicycles. For example, they can support the removal of visual screens (shrubs, fences and other objects that prevent drivers and bicyclists from seeing each other) from residential driveways. They can support legislation and chart laws that will promote bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Bicyclist Parents Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Such groups can assist in conducting community audits and provide parents with information on how to make driveways and roadways safer for bicyclists. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. All community and civic groups can conduct community audits and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends. They can support the acquisition and distribution of bicycle safety helmets to young bicyclists and programs that ensure that a helmet is used every time the bicyclist rides. They can distribute or support the distribution of flyers that warn parents of the hazards of unsupervised riding by pre-school children.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

.Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Video [Children in traffic, why are they different](#)

Video [A kid's eye view](#)

Brochure [Get into the helmet habit](#)

Brochure [Lou and his friends have something important to tell you](#)

Brochure [Parents, buying your child a bike?](#)

Brochure [Keep a head; wear a helmet](#)

Flyer [Sally says: Safety starts at home](#)

Flyer [Bicycle inspection checklist](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure on the midblock rideout crash type for homeowners](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Bicyclist Parents Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. They can perform neighborhood audits to assess the safety of the area for bicycling and serve as lobbying groups for roadway improvements. They can promote activities to reduce travel speeds of motorists, improve sight distance, and enhance bicyclist conspicuity. They can also produce and/or distribute brochures on common causes of bicycle crashes among children and what parents can do to help improve bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Effective cycling: Kids I and Kids II](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Video [Community awareness](#)

Flyer [Sally says: Safety starts at home](#)

Flyer [Bicycle inspection checklist](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Bicycling: Safe and easy](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure on the midblock rideout crash type for homeowners](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Bicyclist Parents Schools

Potential Role: Schools can serve as efficient conduits for conveying educational materials to young bicyclists' parents. School officials can convey important educational materials to parents and can seek parents' support in educating and supervising novice bicyclists. Parents can be educated on the crash types that commonly involve young children and the actions that they can take to reduce the likelihood that their child will be involved in a crash. Parents need to know the hazards of a young child's riding a bicycle unsupervised and the importance of the child's wearing a properly fitted helmet at all times. Information can be sent home with children and can also be addressed in parent-teacher organization meetings. School officials can also cooperate with parents and other groups (e.g., traffic planners and law enforcement) to identify safe routes to school and to support the acquisition, distribution and use of bicycle safety helmets.

Countermeasure Focus: [Bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Video [Children in traffic, why are they different](#)

Video [A kid's eye view](#)

Video [Community awareness](#)

Brochure [Lou and his friends have something important to tell you](#)

Brochure [Keep a head; wear a helmet](#)

Brochure [Do the right thing \(It's a bike thing\)](#)

Flyer [Sally says: Bicycle safety is every parent's responsibility!](#)

Flyer [Sally says: Safety starts at home](#)

Flyer [Bicycle inspection checklist](#)

Booklet [Berton the big wheel](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Proposed Countermeasures:

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Bicyclist Parents Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Law enforcement officials can be knowledgeable about bicycle/motor-vehicle crashes involving young bicyclists and can contribute to a reduction in these crashes in many ways. The first is to issue citations or warnings to the parents of young bicyclists who are observed riding without adult supervision in a potentially hazardous location and/or riding without a safety helmet. An additional way is through informal training. Enforcement officers can make presentations to parent groups and can provide impromptu training in the form of safety lectures and warnings to parents whose children are observed riding their bicycles in a dangerous fashion. They can report high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report areas where on- or off-street facilities are needed or where the sight distance is limited by vegetation, structures or parked vehicles. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Flyer [Bicycle inspection checklist](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [New Jersey bicycle manual](#)

Proposed Countermeasures:

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Bicyclist Parents Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care groups can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups, such as flyers that warn parents of the hazards of unsupervised riding by pre-school children.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Bicyclist Training [Washington children's bicycle helmet project: Curriculum guide](#)

Brochure [Lou and his friends have something important to tell you](#)

Brochure [Keep a head; wear a helmet](#)

Flyer [About bicycle helmets](#)

Flyer [The child as a passenger on an adult's bicycle](#)

Flyer [Tips for getting your children to wear bicycle helmets](#)

Flyer [Safe bicycling starts early](#)

Flyer [Choosing the right size bicycle for your child](#)

Flyer [Bicycle safety myths and facts](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Bicyclist Parents Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. For example, they can support the acquisition and distribution of bicycle safety helmets to young bicyclists. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). For example, they can distribute or support the distribution of flyers that warn parents of the hazards of unsupervised riding by pre-school children. Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Video [A kid's eye view](#)

Brochure [Get into the helmet habit](#)

Brochure [Lou and his friends have something important to tell you](#)

Brochure [Parents, buying your child a bike?](#)

Flyer [Sally says: Safety starts at home](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Berton the big wheel](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure on the midblock rideout crash type for homeowners](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Bicyclist Parents Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on child bicyclist crash problems and develop, produce and distribute needed countermeasure materials to make parents aware of the problems and what they can do to help solve the problems. They can support any type of countermeasure program--engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure program materials developed under government auspices. In addition, they hold meetings and promote their areas of interest. They can also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Video [Children in traffic, why are they different](#)

Video [A kid's eye view](#)

Brochure [Get into the helmet habit](#)

Brochure [Lou and his friends have something important to tell you](#)

Brochure [Parents, buying your child a bike?](#)

Flyer [Sally says: Bicycle safety is every parent's responsibility!](#)

Flyer [Sally says: Safety starts at home](#)

Flyer [Bicycle inspection checklist](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Berton the big wheel](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure on the midblock rideout crash type for homeowners](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Bicyclist Parents Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can develop and implement a model neighborhood bicycle safety program. For example, they can do all or any part of the following: analyze the incidence and location of the child bicyclist crash problem in the community, develop a plan to solve the problem through the bicyclists' parents, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to reduce the elementary school bicyclist crash problem.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Children in traffic, why are they different](#)

Video [A kid's eye view](#)

Flyer [Sally says: Bicycle safety is every parent's responsibility!](#)

Flyer [Sally says: Safety starts at home](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Bicycling: Safe and easy](#)

Booklet [New Jersey bicycle manual](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure on the midblock rideout crash type for homeowners](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Bicyclist Parents Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines for street geometrics, operations and maintenance that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential driveways increases the likelihood that exiting bicyclists and motorists will see each other and, therefore, that child bicyclist crashes will be reduced. Thus, guidelines are needed for driveway and sidewalk design/location including setbacks for vegetation and fences.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)



Bicyclist Parents Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement low speed neighborhood street and trail network guidelines. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Working with neighborhood leaders, builders associations and safety officials, they can review development sites, adopt a model code, and fine tune the code. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential driveways increases the likelihood that exiting bicyclists and motorists will see each other and, therefore, that child bicyclist crashes will be reduced. Thus, guidelines are needed for driveway and sidewalk design/location including setbacks for vegetation and fences.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)



Bicyclist Parents Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt low speed neighborhood street and trail network guidelines for their members. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. They can write new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential driveways increases the likelihood that exiting bicyclists and motorists will see each other and, therefore, that child bicyclist crashes will be reduced. Thus, guidelines are needed for driveway and sidewalk design/location including setbacks for vegetation and fences.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)



Teenage Motorist Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. The driver's manual can point out the importance of the motorist's constantly watching for bicyclists in the roadway. The motorist should be advised that the bicyclist has all the rights and responsibilities of motor vehicles in the roadway. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), bicyclists should be advised to obey all bicyclist laws and to be conspicuous and to ride predictably at all times. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Teenage Motorist Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing bicyclist threats from teenage motorists. Bicycle manufacturers can provide guidance through bicycle hang tags, owner's manuals and owner's videos. Bicycle shops can display and distribute brochures that describe common motorist errors and what cyclists can do to avoid crashes. In addition, sellers can promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:



Teenage Motorist Media

Potential Role: The media can play a major role in bicycle safety issues involving teenage motorists. They can mount a proactive safety campaign directed to teenage motorists to encourage them to share the road safely with bicyclists and pedestrians. They can provide seasonal hot-button reminders on bicycle safety issues and the teenage motorist. They can emphasize the importance of the bicyclist's riding defensively and predictably as well as being conspicuous at all times. They can also publicize programs designed to ensure that streets are appropriately traffic calmed for the neighborhood and that appropriate sight distances are maintained at residential and commercial driveways and at intersections. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Teenage Motorist Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate bicycle crashes involving a teenage motorist in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of the problem as well as methods to help solve the problem. They can ensure that streets are appropriately traffic-calmed for the community, promote the installation of bicycle lanes or trails where appropriate, and encourage the conduct of both driver training programs and cyclist defensive riding courses.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Teenage Motorist Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. They can learn the types of bicycle/motor vehicle crashes in which teenage motorists are involved and support countermeasures to those crashes. They can conduct community audits and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Video [Pedal smarts](#)

Proposed Countermeasures:



Teenage Motorist Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. They can perform neighborhood audits to assess the safety of the area for bicycling and serve as lobbying groups for roadway improvements. They can promote activities to reduce travel speeds of motorists, improve sight distance, and enhance bicyclist conspicuity.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Implementer Training [Effective cycling: Motorist education](#)

Video [Pedal smarts](#)

Proposed Countermeasures:



Teenage Motorist Schools

Potential Role: At the high school level, school officials can incorporate bicycle crash information in driver education programs to emphasize the need for motorists to drive slowly through neighborhoods and to search for bicyclists in or near the roadway. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented. School officials can incorporate bicycle safety in driver education courses. Teenage drivers can be taught to drive slowly and watch carefully for other roadway users.

Countermeasure Focus: [Motorist](#)

Existing Countermeasures:

Implementer Training [Effective cycling: Motorist education](#)

Video [Pedal smarts](#)

Video [Sharing the road](#)

Proposed Countermeasures:



Teenage Motorist Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Law enforcement officials can be knowledgeable about bicycle/motor-vehicle crashes involving teenage motorists and can contribute to a reduction in these crashes in many ways. The first is to issue citations or warnings to the motorists who are observed breaking traffic laws. An additional way is through informal training. Enforcement officers can make presentations to teenage driver groups and can provide impromptu training in the form of safety lectures and warnings to teenage motorists. They can report high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report areas where on- or off-street facilities are needed or where the sight distance is limited by vegetation, structures or parked vehicles. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Implementer Training [A video for law enforcement roll call and academy training](#)



Teenage Motorist Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care groups can be knowledgeable about bicycle crashes involving a teenage motorist and can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:



Teenage Motorist Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of teenagers). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Implementer Training [Effective cycling: Motorist education](#)

Proposed Countermeasures:



Teenage Motorist Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on the bicycle crash problem involving teenage motorists and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program--engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure program materials developed under government auspices. In addition, they hold meetings and promote their areas of interest. They can also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Video [Pedal smarts](#)

Video [Sharing the road](#)

Proposed Countermeasures:



Teenage Motorist Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can develop and implement a model neighborhood bicycle safety program. For example, they can do all or any part of the following: analyze the incidence and location of the bicycle crash problem in the community that involves a teenage motorist, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to reduce the teenage motorist bicycle crash problem.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.



Teenage Motorist Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines for street geometrics, operations and maintenance that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential and commercial driveways and at intersections increases the likelihood that bicyclists and motorists will see each other and, therefore, that bicyclist crashes will be reduced. Thus, guidelines are needed for intersections and for driveway and sidewalk design/location including setbacks for vegetation and fences. In addition, rural roads should have paved shoulders, where possible, street lighting in urban areas should be improved, and right turn on red should be restricted around schools and in downtown areas.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Teenage Motorist Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement low speed neighborhood and other urban street and trail network guidelines. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Working with neighborhood leaders, builders associations and safety officials, they can review development sites, adopt a model code, and fine tune the code. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential and commercial driveways and at intersections increases the likelihood that bicyclists and motorists will see each other and, therefore, that bicyclist crashes will be reduced. Thus, guidelines are needed for intersections and for driveway and sidewalk design/location including setbacks for vegetation and fences. In addition, rural roads should have paved shoulders, where possible, street lighting in urban areas should be improved, and right turn on red should be restricted around schools and in downtown areas.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Teenage Motorist Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt low speed neighborhood and other urban street and trail network guidelines for their members. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. They can write new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential and commercial driveways and at intersections increases the likelihood that bicyclists and motorists will see each other and, therefore, that bicyclist crashes will be reduced. Thus, guidelines are needed for intersections and for driveway and sidewalk design/location including setbacks for vegetation and fences. In addition, rural roads should have paved shoulders, where possible, street lighting in urban areas should be improved, and right turn on red should be restricted around schools and in downtown areas.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Casual Adult Bicyclist Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. To reduce casual adult bicyclist crashes, the driver's manual can point out the importance of the motorist's constantly watching for bicyclists in the roadway. The motorist should be advised that the bicyclist has all the rights and responsibilities of motor vehicles in the roadway. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), bicyclists should be advised to obey all bicyclist laws and to be conspicuous and to ride predictably at all times. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:



Casual Adult Bicyclist Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing threats to the casual adult bicyclist. Bicycle manufacturers can provide guidance through bicycle hang tags, owner's manuals and owner's videos. Sellers can promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [Life in the cool lane: Traveling by bicycle](#)

Brochure [How to ride the intersections](#)

Brochure [Seeing and being seen](#)

Brochure [City cycling](#)

Brochure [Motorists make mistakes too](#)

Brochure [Buying a bicycle](#)

Brochure [Just where do I belong?](#)

Brochure [Picking a route](#)

Brochure [How to "talk" to people in cars](#)

Brochure [How to ride at night. . . and stay alive!](#)

Booklet [So you're going to leave your bike at home today](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Casual Adult Bicyclist Media

Potential Role: The media can play a major role in casual adult bicyclist safety issues. They can mount a proactive safety campaign directed to casual adult bicyclists to promote helmet use. They can provide seasonal hot-button reminders on bicyclist safety issues. They can emphasize the importance of riding defensively and predictably as well as being conspicuous at all times. They can also publicize programs designed to ensure that streets are appropriately traffic calmed for the neighborhood and that appropriate sight distances are maintained at residential and commercial driveways and at intersections. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Casual Adult Bicyclist Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate casual adult bicyclist crashes in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of the problem as well as methods to help solve the problem. They can play a lead role in ensuring that neighborhoods are designed to accommodate safe use of bicycles. For example, they can support the removal of visual screens (shrubs, fences and other objects that prevent drivers and bicyclists from seeing each other) from residential and commercial driveways. They can also support on-street bicycle facilities, parking and multi-use trails.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Casual Adult Bicyclist Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. They can conduct community audits and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends. They can also support research to determine the types, incidence, consequences, and causes of crashes that involve casual adult bicyclists.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Bicycle skill tests for groups and rodeo events](#)

Bicyclist Training [Safe moves city](#)

Video [Sharing the road: Bicycles and buses](#)

Brochure [Life in the cool lane: Traveling by bicycle](#)

Flyer [Bicycle inspection checklist](#)

Booklet [So you're going to leave your bike at home today](#)

Proposed Countermeasures:



Casual Adult Bicyclist Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. They can perform neighborhood audits to assess the safety of the area for bicycling and serve as lobbying groups for roadway improvements. They can promote activities to add off-street facilities, reduce travel speeds of motorists, improve sight distance, and enhance bicyclist conspicuity. They can also produce and/or distribute maps of the community showing off-street bicycle facilities.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Bicycle skill tests for groups and rodeo events](#)

Bicyclist Training [Effective cycling: Road I, Road II and Road III](#)

Bicyclist Training [Safe moves city](#)

Video [Sharing the road: Bicycles and buses](#)

Brochure [Life in the cool lane: Traveling by bicycle](#)

Brochure [How to ride the intersections](#)

Brochure [Seeing and being seen](#)

Brochure [City cycling](#)

Brochure [Motorists make mistakes too](#)

Brochure [Buying a bicycle](#)

Brochure [Just where do I belong?](#)

Brochure [Picking a route](#)

Flyer [Bicycle inspection checklist](#)

Booklet [So you're going to leave your bike at home today](#)

Proposed Countermeasures:



Casual Adult Bicyclist Schools

Potential Role: At the high school level, school officials can incorporate bicycle crash information in driver education programs to emphasize the need for motorists to drive slowly through neighborhoods and to search for bicyclists in or near the roadway. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented. School officials can support research to determine the types, incidence, consequences, and causes of crashes that involve casual adult bicyclists.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Flyer [Bicycle inspection checklist](#)

Proposed Countermeasures:



Casual Adult Bicyclist Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Law enforcement officials can be knowledgeable about bicycle/motor-vehicle crashes involving casual adult bicyclists and can contribute to a reduction in these crashes in many ways. The first is to issue citations or warnings to the bicyclists who are observed breaking bicycle laws. An additional way is through informal training. Enforcement officers can make presentations to adult bicycle groups and can provide impromptu training in the form of safety lectures and warnings to bicyclists. They can report high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report areas where on- or off-street facilities are needed or where the sight distance is limited by vegetation, structures or parked vehicles. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Flyer [Bicycle inspection checklist](#)

Bicyclist Training [Safe moves city](#)

Proposed Countermeasures:

Implementer Training [A video for law enforcement roll call and academy training](#)



Casual Adult Bicyclist Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care groups can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Safe moves city](#)

Proposed Countermeasures:



Casual Adult Bicyclist Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees. Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research. For example, they can support research to determine the types, incidence, consequences, and causes of crashes that involve casual adult bicyclists.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Video [Sharing the road: Bicycles and buses](#)

Booklet [So you're going to leave your bike at home today](#)

Proposed Countermeasures:



Casual Adult Bicyclist Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on the casual adult bicyclist crash problem and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program--engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure program materials developed under government auspices. In addition, they hold meetings and promote their areas of interest. They can also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [Bicycle skill tests for groups and rodeo events](#)

Video [Sharing the road: Bicycles and buses](#)

Brochure [How to ride the intersections](#)

Brochure [Seeing and being seen](#)

Brochure [City cycling](#)

Brochure [Motorists make mistakes too](#)

Brochure [Buying a bicycle](#)

Brochure [Just where do I belong?](#)

Brochure [Picking a route](#)

Brochure [How to "talk" to people in cars](#)

Brochure [How to ride at night. . . and stay alive!](#)

Flyer [Bicycle inspection checklist](#)

Booklet [So you're going to leave your bike at home today](#)

Booklet [Florida cycling tips: Staying alive on the roads](#)

Proposed Countermeasures:



Casual Adult Bicyclist Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can develop and implement a model neighborhood bicycle safety program. For example, they can do all or any part of the following: analyze the incidence and location of the casual adult bicyclist crash problem in the community, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to reduce the casual adult bicyclist crash problem.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Sharing the road: Bicycles and buses](#)

Brochure [Life in the cool lane: Traveling by bicycle](#)

Brochure [How to ride the intersections](#)

Brochure [Seeing and being seen](#)

Brochure [City cycling](#)

Brochure [Motorists make mistakes too](#)

Brochure [Buying a bicycle](#)

Brochure [Just where do I belong?](#)

Brochure [Picking a route](#)

Brochure [How to "talk" to people in cars](#)

Brochure [How to ride at night. . . and stay alive](#)

Booklet [So you're going to leave your bike at home today](#)

Booklet [Florida cycling tips: Staying alive on the roads](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.



Casual Adult Bicyclist Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines for street geometrics, operations and maintenance that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential and commercial driveways and at intersections increases the likelihood that bicyclists and motorists will see each other and, therefore, that bicyclist crashes will be reduced. Thus, guidelines are needed for intersections and for driveway and sidewalk design/location including setbacks for vegetation and fences. In addition, appropriate off-street facilities should be provided as needed. These facilities should provide adequate sight distances at trail/roadway intersections.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Casual Adult Bicyclist Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement low speed neighborhood and other urban street and trail network guidelines. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Working with neighborhood leaders, builders associations and safety officials, they can review development sites, adopt a model code, and fine tune the code. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential and commercial driveways and at intersections increases the likelihood that bicyclists and motorists will see each other and, therefore, that bicyclist crashes will be reduced. Thus, guidelines are needed for intersections and for driveway and sidewalk design/location including setbacks for vegetation and fences. In addition, appropriate off-street facilities should be provided as needed. These facilities should provide adequate sight distances at trail/roadway intersections.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Casual Adult Bicyclist Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt low speed neighborhood and other urban street and trail network guidelines for their members. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. They can write new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential and commercial driveways and at intersections increases the likelihood that bicyclists and motorists will see each other and, therefore, that bicyclist crashes will be reduced. Thus, guidelines are needed for intersections and for driveway and sidewalk design/location including setbacks for vegetation and fences. In addition, appropriate off-street facilities should be provided as needed. These facilities should provide adequate sight distances at trail/roadway intersections.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Senior Bicyclist Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. To reduce senior bicyclist crashes, the driver's manual can point out the importance of the motorist's constantly watching for bicyclists in the roadway, especially in neighborhoods with large senior populations. The motorist should be advised that the bicyclist has all the rights and responsibilities of motor vehicles in the roadway. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), bicyclists should be advised to obey all bicyclist laws and to be conspicuous and to ride predictably at all times. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:



Senior Bicyclist Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing threats to the commuter bicyclist. Bicycle manufacturers can provide guidance through bicycle hang tags, owner's manuals and owner's videos. Sellers can promote helmet use and products that increase conspicuity..

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [How to ride the intersections](#)

Brochure [Seeing and being seen](#)

Brochure [City cycling](#)

Brochure [Motorists make mistakes too](#)

Brochure [Buying a bicycle](#)

Brochure [Just where do I belong?](#)

Brochure [Picking a route](#)

Brochure [How to "talk" to people in cars](#)

Brochure [How to ride at night. . . and stay alive!](#)

Proposed Countermeasures:



Senior Bicyclist Media

Potential Role: The media can play a major role in senior bicyclist safety issues. They can mount a proactive safety campaign directed to older adults to promote helmet use. They can provide seasonal hot-button reminders on senior bicyclist safety issues. They can emphasize the importance of riding defensively and predictably as well as being conspicuous at all times. They can also publicize programs designed to ensure that streets are appropriately traffic calmed for the neighborhood and that appropriate sight distances are maintained at residential and commercial driveways and at intersections. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Senior Bicyclist Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate senior bicyclist crashes in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of the problem as well as methods to help solve the problem. They can play a lead role in ensuring that neighborhoods are designed to accommodate safe use of bicycles. For example, they can support the removal of visual screens (shrubs, fences and other objects that prevent drivers and bicyclists from seeing each other) from residential and commercial driveways. They can also support on-street bicycle facilities, parking and multi-use trails.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Senior Bicyclist Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. They can conduct community audits and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends. They can learn the types of crashes that involve senior bicyclists and can support countermeasures to those crashes.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Bicycle skill tests for groups and rodeo events](#)

Bicyclist Training [Safe moves city](#)

Video [Getting there by bike](#)

Video [Sharing the road: Bicycles and buses](#)

Flyer [Bicycle inspection checklist](#)

Proposed Countermeasures:



Senior Bicyclist Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. They can perform neighborhood audits to assess the safety of the area for bicycling and serve as lobbying groups for roadway improvements. They can promote activities to add off-street facilities, reduce travel speeds of motorists, improve sight distance, and enhance bicyclist conspicuity. They can also produce and/or distribute maps of the community showing off-street bicycle facilities.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Bicycle skill tests for groups and rodeo events](#)

Bicyclist Training [Safe moves for older adults](#)

Bicyclist Training [Safe moves city](#)

Video [Getting there by bike](#)

Video [Sharing the road: Bicycles and buses](#)

Brochure [How to ride the intersections](#)

Brochure [City cycling](#)

Brochure [Motorists make mistakes too](#)

Brochure [Buying a bicycle](#)

Brochure [Just where do I belong?](#)

Brochure [Picking a route](#)

Brochure [How to "talk" to people in cars](#)

Brochure [How to ride at night. . . and stay alive!](#)

Flyer [Bicycle inspection checklist](#)

Proposed Countermeasures:



Senior Bicyclist Schools

Potential Role: At the high school level, school officials can incorporate bicycle crash information in driver education programs to emphasize the need for motorists to drive slowly through neighborhoods and to search for bicyclists in or near the roadway. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Motorist](#)

Existing Countermeasures:

Flyer [Bicycle inspection checklist](#)

Proposed Countermeasures:



Senior Bicyclist Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Law enforcement officials can be knowledgeable about bicycle/motor-vehicle crashes involving senior bicyclists and can contribute to a reduction in these crashes in many ways. The first is to issue citations or warnings to the bicyclists who are observed breaking bicycle laws. An additional way is through informal training. Enforcement officers can make presentations to senior bicycle groups and can provide impromptu training in the form of safety lectures and warnings to bicyclists. They can report high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report areas where on- or off-street facilities are needed or where the sight distance is limited by vegetation, structures or parked vehicles. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Flyer [Bicycle inspection checklist](#)

Bicyclist Training [Safe moves city](#)

Proposed Countermeasures:

Implementer Training [A video for law enforcement roll call and academy training](#)



Senior Bicyclist Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care groups can be knowledgeable about the types of bicycle crashes involving senior bicyclists and can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Safe moves city](#)

Proposed Countermeasures:



Senior Bicyclist Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees. Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Video [Sharing the road: Bicycles and buses](#)

Proposed Countermeasures:



Senior Bicyclist Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on the senior bicyclist crash problem and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program--engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure program materials developed under government auspices. In addition, they hold meetings and promote their areas of interest. They can also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [Bicycle skill tests for groups and rodeo events](#)

Video [Getting there by bike](#)

Video [Sharing the road: Bicycles and buses](#)

Brochure [How to ride the intersections](#)

Brochure [Seeing and being seen](#)

Brochure [City cycling](#)

Brochure [Motorists make mistakes too](#)

Brochure [Buying a bicycle](#)

Brochure [Just where do I belong?](#)

Brochure [Picking a route](#)

Brochure [How to "talk" to people in cars](#)

Brochure [How to ride at night. . . and stay alive!](#)

Flyer [Bicycle inspection checklist](#)

Proposed Countermeasures:



Senior Bicyclist Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can develop and implement a model neighborhood bicycle safety program. For example, they can do all or any part of the following: analyze the incidence and location of the senior bicyclist crash problem in the community, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to reduce the senior bicyclist crash problem.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Sharing the road: Bicycles and buses](#)

Brochure [How to ride the intersections](#)

Brochure [Seeing and being seen](#)

Brochure [City cycling](#)

Brochure [Motorists make mistakes too](#)

Brochure [Buying a bicycle](#)

Brochure [Just where do I belong?](#)

Brochure [Picking a route](#)

Brochure [How to "talk" to people in cars](#)

Brochure [How to ride at night. . . and stay alive!](#)

Booklet [Florida cycling tips: Staying alive on the roads](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.



Senior Bicyclist Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines for street geometrics, operations and maintenance that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential and commercial driveways and at intersections increases the likelihood that bicyclists and motorists will see each other and, therefore, that bicyclist crashes will be reduced. Thus, guidelines are needed for intersections and for driveway and sidewalk design/location including setbacks for vegetation and fences. In addition, appropriate off-street facilities should be provided as needed. These facilities should provide adequate sight distances at trail/roadway intersections.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Senior Bicyclist Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement low speed neighborhood and other urban street and trail network guidelines. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Working with neighborhood leaders, builders associations and safety officials, they can review development sites, adopt a model code, and fine tune the code. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential and commercial driveways and at intersections increases the likelihood that bicyclists and motorists will see each other and, therefore, that bicyclist crashes will be reduced. Thus, guidelines are needed for intersections and for driveway and sidewalk design/location including setbacks for vegetation and fences. In addition, appropriate off-street facilities should be provided as needed. These facilities should provide adequate sight distances at trail/roadway intersections.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Senior Bicyclist Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt low speed neighborhood and other urban street and trail network guidelines for their members. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. They can write new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential and commercial driveways and at intersections increases the likelihood that bicyclists and motorists will see each other and, therefore, that bicyclist crashes will be reduced. Thus, guidelines are needed for intersections and for driveway and sidewalk design/location including setbacks for vegetation and fences. In addition, appropriate off-street facilities should be provided as needed. These facilities should provide adequate sight distances at trail/roadway intersections.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Commuter Bicyclist Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. To reduce commuter bicyclist crashes, the driver's manual can point out the importance of the motorist's constantly watching for bicyclists in the roadway, especially when making turns. The motorist should be advised that the bicyclist has all the rights and responsibilities of motor vehicles in the roadway. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), bicyclists should be advised to obey all bicyclist laws and to be conspicuous and to ride predictably at all times. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Booklet [New Jersey bicycle manual](#)

Proposed Countermeasures:



Commuter Bicyclist Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing threats to the commuter bicyclist. Bicycle manufacturers can provide guidance through bicycle hang tags, owner's manuals and owner's videos. Bicycle shops can promote helmet use and products that increase conspicuity. They can display and distribute maps showing on and off-street bicycle facilities. In addition, sellers can support local road maintenance activities by serving as a repository for cards that bicyclists can use to report road operations and maintenance problems.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [Life in the cool lane: Traveling by bicycle](#)

Brochure [How to ride the intersections](#)

Brochure [Seeing and being seen](#)

Brochure [City cycling](#)

Brochure [Motorists make mistakes too](#)

Brochure [Buying a bicycle](#)

Brochure [Just where do I belong?](#)

Brochure [Picking a route](#)

Brochure [How to "talk" to people in cars](#)

Brochure [How to ride at night. . . and stay alive!](#)

Proposed Countermeasures:



Commuter Bicyclist Media

Potential Role: The media can play a major role in commuter bicyclist safety issues. They can provide seasonal hot-button reminders on commuter bicyclist safety issues. They can emphasize the importance of the bicyclist's being conspicuous at all times. They can promote needed on- and off-street facilities for commuters. They can also publicize programs designed to ensure that streets are appropriately traffic calmed for the neighborhood and that appropriate sight distances are maintained at residential and commercial driveways and at intersections. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Commuter Bicyclist Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate commuter bicyclist crashes in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of the problem as well as methods to help solve the problem. They can play a lead role in ensuring that communities are designed to accommodate safe use of bicycles. For example, they can support the removal of visual screens (shrubs, fences and other objects that prevent drivers and bicyclists from seeing each other) from residential and commercial driveways and from intersections. They can also support on-street bicycle facilities, parking and multi-use trails.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Commuter Bicyclist Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. They can conduct community audits and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends. They can support research to determine the types, incidences, consequences and causes of crashes that involve commuting bicyclists and can support countermeasures to those crashes. They can support the development of policies and facilities that increase the safety, efficiency, and enjoyment of bicycle commuting.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Video [Getting there by bike](#)

Video [Sharing the road: Bicycles and buses](#)

Brochure [Life in the cool lane: Traveling by bicycle](#)

Proposed Countermeasures:



Commuter Bicyclist Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. They can perform neighborhood audits to assess the safety of the area for bicycling and serve as lobbying groups for roadway improvements. They can promote activities to add on-street facilities, reduce travel speeds of motorists, improve sight distance, and enhance bicyclist conspicuity. They can also produce and/or distribute maps of the community showing desirable bicycle commuting routes.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Effective cycling: Road I, Road II and Road III](#)

Bicyclist Training [Effective cycling: Bicycle commuting](#)

Video [Getting there by bike](#)

Video [Effective cycling](#)

Video [Sharing the road: Bicycles and buses](#)

Brochure [Life in the cool lane: Traveling by bicycle](#)

Brochure [How to ride the intersections](#)

Brochure [Seeing and being seen](#)

Brochure [City cycling](#)

Brochure [Motorists make mistakes too](#)

Brochure [Buying a bicycle](#)

Brochure [Just where do I belong?](#)

Brochure [Picking a route](#)

Brochure [How to "talk" to people in cars](#)

Brochure [How to ride at night. . . and stay alive!](#)

Booklet [Street smarts: Bicycling's traffic survival guide](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Proposed Countermeasures:



Commuter Bicyclist Schools

Potential Role: There are many ways that schools can reduce bicycle crashes among the students and staff who commute. Clearly, the most effective action is to assess the nature of the commuter bicycle crash problem and implement a comprehensive countermeasure program to minimize the problem. This assessment can include determination of the types, incidence, consequences, and causes of bicycle crashes that involve their commuters. A set of rules and regulations for bicyclists can be prepared and distributed to all students and staff. Among other information, it can cover the importance of wearing a properly fitted helmet, riding defensively and predictably and being conspicuous at all times. A similar set of rules can be prepared and distributed to motorists on their responsibilities to share the road safely with bicyclists and pedestrians. School officials can also cooperate with other groups (e.g., traffic planners and law enforcement) to identify safe routes to and from the school. They can support programs promoting the acquisition, distribution and use of bicycle safety helmets. School officials can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:



Commuter Bicyclist Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Law enforcement officials can be knowledgeable about bicycle/motor-vehicle crashes involving commuters and can contribute to a reduction in these crashes in many ways. The first is to issue citations or warnings to the bicyclists who are observed breaking bicycle laws. An additional way is through informal training. Enforcement officers can make presentations to bicycle commuter groups and can provide impromptu training in the form of safety lectures and warnings to bicyclists. They can report high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report areas where on- or off-street facilities are needed or where the sight distance is limited by vegetation, structures or parked vehicles. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Booklet [New Jersey bicycle manual](#)

Proposed Countermeasures:

Implementer Training [A video for law enforcement roll call and academy training](#)



Commuter Bicyclist Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care groups can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:



Commuter Bicyclist Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., bicycle commuters). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research. They can support research to determine the types, incidence, consequences, and causes of crashes that involve commuter bicyclists. They can support the development of policies and facilities that increase the safety, efficiency, and enjoyment of bicycle commuting.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Video [Sharing the road: Bicycles and buses](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Proposed Countermeasures:



Commuter Bicyclist Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on the commuter bicyclist crash problem and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program--engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure program materials developed under government auspices. In addition, they hold meetings and promote their areas of interest. They can also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Video [Getting there by bike](#)

Video [Effective cycling](#)

Video [Sharing the road: Bicycles and buses](#)

Brochure [How to ride the intersections](#)

Brochure [Seeing and being seen](#)

Brochure [City cycling](#)

Brochure [Motorists make mistakes too](#)

Brochure [Buying a bicycle](#)

Brochure [Just where do I belong?](#)

Brochure [Picking a route](#)

Brochure [How to "talk" to people in cars](#)

Brochure [How to ride at night. . . and stay alive!](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Proposed Countermeasures:



Commuter Bicyclist Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can develop and implement a model neighborhood bicycle safety program. For example, they can do all or any part of the following: analyze the incidence and location of the commuter bicyclist crash problem in the community, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to reduce the commuter bicyclist crash problem.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Sharing the road: Bicycles and buses](#)

Brochure [Life in the cool lane: Traveling by bicycle](#)

Brochure [How to ride the intersections](#)

Brochure [Seeing and being seen](#)

Brochure [City cycling](#)

Brochure [Motorists make mistakes too](#)

Brochure [Buying a bicycle](#)

Brochure [Just where do I belong?](#)

Brochure [Picking a route](#)

Brochure [How to "talk" to people in cars](#)

Brochure [How to ride at night. . . and stay alive!](#)

Booklet [Florida cycling tips: Staying alive on the roads](#)

Booklet [Colorado bicycling manual: A guide for all trail and road users](#)

Booklet [New Jersey bicycle manual](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.



Commuter Bicyclist Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. Guidelines can ensure that on-street facilities are provided where practical and that safety is improved where current systems are deficient. Bicyclist crashes can be reduced through planning and engineering. Appropriate street making standards and traffic calming techniques can be used to reduce traffic volumes and travel speeds. Detection of bicyclists can be improved by improving sight triangles and reducing the turning speed of motorists at intersections and driveways. The number of bicyclists riding on sidewalks can be reduced by creating alternatives such as converting excess lane width or excess number of lanes into bike lanes. Night lighting can be improved. A combination of bike lanes and paved shoulders can be included whenever possible on urban collector and arterial roadways. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the planning community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Adequate sight triangles need to be maintained on approaches and departures to and from all driveways. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



Commuter Bicyclist Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement guidelines that promote safe and courteous roadway sharing. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Guidelines can ensure that on-street facilities are provided where practical and that safety is improved where current systems are deficient. Bicyclist crashes can be reduced through planning and engineering. Appropriate street making standards and traffic calming techniques can be used to reduce traffic volumes and travel speeds. Detection of bicyclists can be improved by improving sight triangles and reducing the turning speed of motorists at intersections and driveways. Night lighting can be improved. A combination of bike lanes and paved shoulders can be included whenever possible on urban collector and arterial roadways. National roadway design standards need to address the bicycling mix. To prevent crashes, all members of the public highway community must understand the benefits and design elements of multi-modal highways. There are many opportunities to create needed roadway improvements that serve bicyclists each time a roadway is resurfaced, reconditioned or rebuilt. Adequate sight triangles need to be maintained on approaches and departures to and from all driveways. This includes undertrimming of critical trees and keeping ground cover low. All street furniture, parked cars, and other screening elements must be kept out of the sight triangle at driveway intersections and other critical locations.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



College Bicyclist Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. To reduce college bicyclist crashes, the driver's manual can point out the importance of the motorist's proceeding slowly and carefully on and near a college campus and constantly watching for bicyclists. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), bicyclists should be advised to obey all bicyclist laws and to be conspicuous and to ride predictably at all times. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:



College Bicyclist Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing threats to the college bicyclist. Bicycle manufacturers can provide guidance through bicycle hang tags, owner's manuals and owner's videos. Bicycle shops can display and distribute brochures on bicycle fit. In addition, sellers can promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [How to ride the intersections](#)

Brochure [Seeing and being seen](#)

Brochure [City cycling](#)

Brochure [Motorists make mistakes too](#)

Brochure [Buying a bicycle](#)

Brochure [Just where do I belong?](#)

Brochure [Picking a route](#)

Brochure [How to "talk" to people in cars](#)

Brochure [How to ride at night. . . and stay alive!](#)

Proposed Countermeasures:



College Bicyclist Media

Potential Role: The media can play a major role in college bicyclist safety issues. They can mount a proactive safety campaign to promote helmet use by college students. They can provide seasonal hot-button reminders on college bicyclist safety issues. They can emphasize the importance of the bicyclist's being conspicuous at all times. They can also publicize programs designed to ensure that streets are appropriately traffic calmed for the neighborhood and that appropriate sight distances are maintained at residential and commercial driveways and at intersections. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



College Bicyclist Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate college bicyclist crashes in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of the problem as well as methods to help solve the problem. These crashes can involve conflicts with pedestrians on college paths as well as motor vehicles on roadways. Elected officials can help eliminate the problem by working with campus officials to ensure that campus paths and roadways are designed to accommodate safe use of bicycles.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



College Bicyclist Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. All groups can conduct community audits and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends. They can learn the types of crashes in which college students are involved and support countermeasures for those crashes. Officials and members of community and civic groups can also support the acquisition and distribution of bicycle safety helmets to college bicyclists and programs to ensure that a helmet is worn each time the bicyclist rides.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



College Bicyclist Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the college level, they can perform audits of the campus and its surrounding neighborhoods to assess the safety of the areas for bicycling and serve as lobbying groups for roadway improvements. They can promote activities to add on- and off-street facilities, reduce travel speeds of motorists, improve sight distance, increase use of helmets, and enhance bicyclist conspicuity. They can also produce and/or distribute brochures on common causes of campus crashes and what bicyclists can do to improve bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Brochure [How to ride the intersections](#)

Brochure [Seeing and being seen](#)

Brochure [City cycling](#)

Brochure [Motorists make mistakes too](#)

Brochure [Buying a bicycle](#)

Brochure [Just where do I belong?](#)

Brochure [Picking a route](#)

Brochure [How to "talk" to people in cars](#)

Brochure [How to ride at night. . . and stay alive!](#)

Proposed Countermeasures:



College Bicyclist Schools

Potential Role: There are many ways that college officials can reduce bicycle crashes among their students. Clearly, the most effective action is to assess the nature of the bicycle crash problem on and near campus and implement a comprehensive countermeasure program to minimize the problem. This assessment can include determination of the types, incidence, consequences, and causes of bicycle crashes that involve their students. A set of campus rules and regulations for bicyclists can be prepared and distributed to all students. Among other information, it can cover the importance of wearing a properly fitted helmet, riding defensively and predictably and being conspicuous at all times. College officials can cooperate with local business owners and local government officials in promoting bicycle safety in the off-campus areas where students frequently ride. They can design and build needed bike paths as well as bike storage facilities. They can ensure that signage will enhance proper usage of bike paths and roadways. College officials can also cooperate with other groups (e.g., traffic planners and law enforcement) to identify safe routes in and near campus. They can support programs promoting the acquisition, distribution and use of bicycle safety helmets. A set of campus rules and regulations for motor vehicle traffic can also be prepared and distributed to all students. It can include rules for sharing the road with bicyclists and pedestrians. School officials can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Bicycle traffic safety school](#)

Video [The E's of cycling](#)

Video [Bike right. . . The face you save may be your own](#)

Flyer [Bicycles and the new UC Davis cyclist, 1998-99](#)

Booklet [The University of Montana cyclist's survival guide](#)

Report/Guide [Campus biking: Challenges and Strategies. The Campus Bike-Right Project at Cornell](#)

[University](#)

Other [Davis bike map \(university and city map\)](#)

Proposed Countermeasures:

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide for developing bicycle indoctrination material for new college students](#)



College Bicyclist Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Law enforcement officials can be knowledgeable about bicycle/motor-vehicle crashes involving college students and can contribute to a reduction in these crashes in many ways. The first is to issue citations or warnings to the bicyclists who are observed breaking either campus or off-campus bicycle laws. An additional way is through formal and informal training. Enforcement officers can make presentations to college students and participate in on-bike training. Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists. They can also provide positive reinforcement to bicyclists who are observed obeying campus and off-campus bicycle rules and regulations. They can participate actively in bicycle safety programs. For example, they can support the acquisition and distribution of bicycle safety helmets to bicyclists and can cooperate with other local organizations to ensure that the helmet is worn every time the bicycle is ridden. They can report high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report areas where bicycle paths are needed or where the sight distance is limited by vegetation, structures or parked vehicles. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Bicycle traffic safety school](#)

Video [The E's of cycling](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Proposed Countermeasures:

Bicyclist Training [Insert on bicycle safety for offender school training](#)

Implementer Training [A video for law enforcement roll call and academy training](#)

Report/Guide [College bicyclist education and enforcement program guide](#)



College Bicyclist Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Officials and employees of college health care centers can compile data on the frequency and severity of students' injuries sustained in bicycle related crashes and therefore can be knowledgeable about the types of bicycle/motor-vehicle crashes that are most likely to occur to the college bicyclist. Health care groups can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:



College Bicyclist Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of college-age children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Proposed Countermeasures:



College Bicyclist Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on the college bicyclist crash problem and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program--engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure program materials developed under government auspices. In addition, they hold meetings and promote their areas of interest. They can also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Brochure [How to ride the intersections](#)

Brochure [Seeing and being seen](#)

Brochure [City cycling](#)

Brochure [Motorists make mistakes too](#)

Brochure [Buying a bicycle](#)

Brochure [Just where do I belong?](#)

Brochure [Picking a route](#)

Brochure [How to "talk" to people in cars](#)

Brochure [How to ride at night. . . and stay alive!](#)

Proposed Countermeasures:



College Bicyclist Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can develop and implement a model neighborhood bicycle safety program. For example, they can do all or any part of the following: analyze the incidence and location of the college bicyclist crash problem in the community, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to reduce the college bicyclist crash problem.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Brochure [How to ride the intersections](#)

Brochure [Seeing and being seen](#)

Brochure [City cycling](#)

Brochure [Motorists make mistakes too](#)

Brochure [Buying a bicycle](#)

Brochure [Just where do I belong?](#)

Brochure [Picking a route](#)

Brochure [How to "talk" to people in cars](#)

Brochure [How to ride at night. . . and stay alive!](#)

Booklet [Florida cycling tips: Staying alive on the roads](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Implementer Training [Training program for college traffic planners](#)



College Bicyclist Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines that promote safe and courteous roadway sharing. Working with college officials, neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. College bicyclist crashes can be reduced through planning and engineering. Appropriate street making standards and traffic calming techniques can be used to reduce traffic volumes and travel speeds in and near college campuses. Detection of bicyclists can be improved by improving sight triangles, reducing the turning speed of motorists at intersections and driveways, and improving night lighting. A combination of bike lanes and paved shoulders can be included whenever possible on urban collector and arterial roadways. Good sight distances, appropriate sidewalk design and placement, well-marked bicycle and pedestrian paths, and proper design speeds should be featured. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving sight distance and night lighting increases the likelihood that bicyclists and motorists will see each other and, therefore, that bicyclist crashes will be reduced.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Implementer Training [Training program for college traffic planners](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



College Bicyclist Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement low speed neighborhood street and trail network guidelines. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Working with college officials, neighborhood leaders, builders associations and safety officials, they can review development sites, adopt a model code, and fine tune the code. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. College bicyclist crashes can be reduced through planning and engineering. Appropriate street making standards and traffic calming techniques can be used to reduce traffic volumes and travel speeds in and near college campuses. Detection of bicyclists can be improved by improving sight triangles, reducing the turning speed of motorists at intersections and driveways, and improving night lighting. A combination of bike lanes and paved shoulders can be included whenever possible on urban collector and arterial roadways. Good sight distances, appropriate sidewalk design and placement, well-marked bicycle and pedestrian paths, and proper design speeds should be featured. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at driveways and intersections and improving night lighting increase the likelihood that bicyclists and motorists will see each other and, therefore, that bicyclist crashes will be reduced.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Implementer Training [Training program for college traffic planners](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



College Bicyclist Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt low speed neighborhood street and trail network guidelines for their members. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. They can write new guidelines for streets, street systems, and site plan reviews, among others. College bicyclist crashes can be reduced through planning and engineering. Appropriate street making standards and traffic calming techniques can be used to reduce traffic volumes and travel speeds in and near college campuses. Detection of bicyclists can be improved by improving sight triangles and reducing the turning speed of motorists at intersections and driveways. Night lighting can be improved. A combination of bike lanes and paved shoulders can be included whenever possible on urban collector and arterial roadways. Good sight distances, appropriate sidewalk design and placement, well-marked bicycle and pedestrian paths, and proper design speeds should be featured. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at driveways and intersections and improving night lighting increase the likelihood that bicyclists and motorists will see each other and, therefore, that bicyclist crashes will be reduced.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Implementer Training [Training program for college traffic planners](#)

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [Access management](#)



High School Bicyclist Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. To reduce high school bicyclist crashes, the driver's manual can point out the importance of the motorist's proceeding slowly and carefully through neighborhoods and constantly watching for bicyclists. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), bicyclists should be advised to obey traffic signals, to ride with traffic when in the roadway, to search before making any roadway turns, and to be conspicuous and to ride predictably at all times, among other things. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:



High School Bicyclist Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing threats to the high school bicyclist. Bicycle manufacturers can provide guidance through bicycle hang tags, owner's manuals and owner's videos. Bicycle shops can display and distribute brochures on bicycle fit and middle/high school bicycle safety problems. In addition, sellers can promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



High School Bicyclist Media

Potential Role: The media can play a major role in high school bicyclist safety issues. They can mount a proactive safety campaign directed to parents to promote helmet use by children. They can provide seasonal hot-button reminders on high school bicyclist safety issues. For example, they can provide the public with information on the nature and incidence of the intersection rideout problem among high school students while providing routine reporting on a crash attributable to that problem. They can emphasize the importance of the bicyclist's being conspicuous at all times. They can also publicize programs designed to ensure that streets are appropriately traffic calmed for the neighborhood and that appropriate sight distances are maintained at residential and commercial driveways and at intersections. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



High School Bicyclist Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate high school bicyclist crashes in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of the problem as well as methods to help solve the problem. For example, they can support the removal of visual screens (shrubs, fences and other objects that prevent drivers and bicyclists from seeing each other) from residential and commercial driveways. They can play a lead role in ensuring that neighborhoods are designed to accommodate safe use of bicycles.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



High School Bicyclist Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. All groups can conduct community audits and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends. They can learn the types of crashes in which high school children are involved and support countermeasures for those crashes. Officials and members of community and civic groups can also support the acquisition and distribution of bicycle safety helmets to high school bicyclists and programs to ensure that a helmet is worn each time the bicyclist rides.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Bicycle skill tests for groups and rodeo events](#)

Bicyclist Training [Annual pedal power camp report](#)

Bicyclist Training [Safe moves city](#)

Video [Pedal smarts](#)

Video [Getting there by bike](#)

Video [Sharing the road: Bicycles and buses](#)

Video [Biking. . . Get the big picture](#)

Flyer [Bicycle inspection checklist](#)

Proposed Countermeasures:

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



High School Bicyclist Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements. They can promote activities to reduce travel speeds of motorists in neighborhoods. improve sight distance, increase use of helmets, and enhance bicyclist conspicuity. They can also produce and/or distribute brochures on common causes of bicycle crashes among children and what parents can do to help improve bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Bicycle skill tests for groups and rodeo events](#)

Bicyclist Training [Annual pedal power camp report](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Bicyclist Training [Safe moves city](#)

Video [Pedal smarts](#)

Video [Getting there by bike](#)

Video [Sharing the road: Bicycles and buses](#)

Video [Biking. . . Get the big picture](#)

Flyer [Bicycle inspection checklist](#)

Proposed Countermeasures:

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



High School Bicyclist Schools

Potential Role: There are many ways that school administrators and teachers can participate in programs to reduce crashes among high school children. Clearly, the most effective action is to implement a comprehensive bicycle safety education program that focuses on the crash types that typically involve high school children. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of wearing a properly fitted helmet, searching before entering the roadway, riding defensively and predictably and being conspicuous at all times needs to be emphasized. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and support the acquisition, distribution and use of bicycle safety helmets. School officials can convey important educational materials to parents and can seek parents' support in educating and supervising novice bicyclists. Parents can be educated on the crash types that commonly involve high school children and the actions that they can take to reduce the likelihood that their child will be involved in a crash. School officials can incorporate bicycle crash information in driver education programs to emphasize the need for motorists to drive slowly through neighborhoods and to search for bicyclists in or near the roadway. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Bicycle information test, answer sheet and scoring key](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Video [Pedal smarts](#)

Video [Biking. . . Get the big picture](#)

Flyer [Bicycle inspection checklist](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Report/Guide [School site plans](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



High School Bicyclist Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Law enforcement officials can be knowledgeable about bicycle/motor-vehicle crashes involving high school children and can contribute to a reduction in these crashes in many ways. The first is to issue citations or warnings to the bicyclists who are observed breaking bicycle laws. An additional way is through formal and informal training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to high school children. Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists. They can also provide positive reinforcement to bicyclists who are using their bicycles properly. They can participate actively in bicycle safety programs. For example, they can support the acquisition and distribution of bicycle safety helmets to bicyclists and can cooperate with other local organizations to ensure that the helmet is worn every time the bicycle is ridden. They can report high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report driveway/roadway junctions where the sight distance is limited by vegetation, structures or parked vehicles. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Safe moves city](#)

Implementer Training [Bike patrol training manual](#)

Implementer Training [Annual Minnesota bike patrol training](#)

Video [Biking. . . Get the big picture](#)

Flyer [Bicycle inspection checklist](#)

Proposed Countermeasures:

Implementer Training [A video for law enforcement roll call and academy training](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



High School Bicyclist Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Representatives of health care organizations can be knowledgeable about the types of bicycle/motor-vehicle crashes that are most likely to occur to the high school bicyclist and can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Safe moves city](#)

Proposed Countermeasures:

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their](#)



High School Bicyclist Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of teenage children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Annual pedal power camp report](#)

Video [Sharing the road: Bicycles and buses](#)

Video [Biking. . . Get the big picture](#)

Proposed Countermeasures:

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



High School Bicyclist Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on the high school bicyclist crash problem and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program--engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure program materials developed under government auspices. In addition, they hold meetings and promote their areas of interest. They can also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [Bicycle skill tests for groups and rodeo events](#)

Bicyclist Training [Bicycle information test, answer sheet and scoring key](#)

Bicyclist Training [Annual pedal power camp report](#)

Video [Pedal smarts](#)

Video [Getting there by bike](#)

Video [Sharing the road: Bicycles and buses](#)

Video [Biking. . . Get the big picture](#)

Flyer [Bicycle inspection checklist](#)

Proposed Countermeasures:



High School Bicyclist Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can develop and implement a model neighborhood bicycle safety program. For example, they can do all or any part of the following: analyze the incidence and location of the high school bicyclist crash problem in the community, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to reduce the high school bicyclist crash problem.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Bicyclist Training [Annual pedal power camp report](#)

Video [Sharing the road: Bicycles and buses](#)

Booklet [Florida cycling tips: Staying alive on the roads](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Report/Guide [Responses to queries on bicycle safety](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their](#)

parents



High School Bicyclist Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines for street geometrics, operations and maintenance that promote safe and courteous roadway sharing. They can improve roadways on minor and major arterials and improve sight distances in both neighborhoods and commercial districts. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for commercial areas and for both single- and multi-family residence neighborhoods. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential and commercial driveways and at intersections increases the likelihood that bicyclists and motorists will see each other and, therefore, that bicyclist crashes will be reduced. Thus, guidelines are needed for intersections and for driveway and sidewalk design/location including setbacks for vegetation and fences. In addition, rural roads can be provided with paved shoulders, raised center medians with turning pockets can be provided where appropriate, and right turn on red can be restricted around schools and in downtown areas.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [School site plans](#)

Report/Guide [Access management](#)



High School Bicyclist Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement low speed neighborhood street and trail network guidelines. They can improve roadways on minor and major arterials and improve sight distances in both neighborhoods and commercial districts. They can promote guidelines to local planning agencies and provide training for builders and engineers. Working with neighborhood leaders, builders associations and safety officials, they can review development sites, adopt a model code, and fine tune the code. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for commercial areas and for both single- and multi-family residence neighborhoods. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential and commercial driveways and at intersections increases the likelihood that bicyclists and motorists will see each other and, therefore, that bicyclist crashes will be reduced. Thus, guidelines are needed for intersections and for driveway and sidewalk design/location including setbacks for vegetation and fences. In addition, rural roads can be provided with paved shoulders, raised center medians with turning pockets can be provided where appropriate, and right turn on red can be restricted around schools and in downtown areas.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [School site plans](#)

Report/Guide [Access management](#)



High School Bicyclist Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt low speed neighborhood street and trail network guidelines for their members. They can create improved roadways on minor and major arterials and improve sight distances in both neighborhoods and commercial districts. A collaborative team made up of these national groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. They can write new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for commercial areas and for both single- and multi-family residence neighborhoods. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential and commercial driveways and at intersections increases the likelihood that bicyclists and motorists will see each other and, therefore, that bicyclist crashes will be reduced. Thus, guidelines are needed for intersections and for driveway and sidewalk design/location including setbacks for vegetation and fences. In addition, rural roads can be provided with paved shoulders, raised center medians with turning pockets can be provided where appropriate, and right turn on red can be restricted around schools and in downtown areas.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [School site plans](#)

Report/Guide [Access management](#)



Middle School Bicyclist Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. To reduce middle school bicyclist crashes, the driver's manual can point out the importance of the motorist's proceeding slowly and carefully through neighborhoods and constantly watching for bicyclists. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), bicyclists should be advised of the necessity for the bicyclist to stop and to look for traffic before entering the roadway or entering an intersection, to ride with traffic when in the roadway, to search before making any roadway turns, and to be conspicuous at all times, among other things. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:



Middle School Bicyclist Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing threats to the middle school bicyclist. Bicycle manufacturers can provide guidance through bicycle hang tags, owner's manuals and owner's videos. Bicycle shops can display and distribute brochures on bicycle fit and middle/high school bicycle safety problems. In addition, sellers can promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [Bicycling is great fun](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Middle School Bicyclist Media

Potential Role: The media can play a major role in middle school bicyclist safety issues. They can mount a proactive safety campaign directed to parents to promote helmet use by children. They can provide seasonal hot-button reminders on middle school bicyclist safety issues. For example, they can provide the public with information on the nature and incidence of the midblock rideout problem while providing routine reporting on a crash attributable to that problem. They can provide positive publicity on community programs designed to ensure that children, parents and homeowners are aware of the dangers of riding in driveways and on sidewalks and what can be done to minimize these dangers. They can emphasize the importance of the bicyclist's being conspicuous at all times. They can also publicize programs designed to ensure that streets are appropriately traffic-calmed for the neighborhood and that appropriate sight distances are maintained at residential and commercial driveways and at intersections. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Middle School Bicyclist Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate middle school bicyclist crashes in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of the problem as well as methods to help solve the problem. They can support the removal of visual screens (shrubs, fences and other objects that prevent drivers and bicyclists from seeing each other) from residential and commercial driveways. They can play a lead role in ensuring that neighborhoods are designed to accommodate safe use of bicycles.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Middle School Bicyclist Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. All groups can conduct community audits and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends. They can learn the types of crashes in which middle school children are involved and support countermeasures for those crashes. Officials and members of community and civic groups can also support the acquisition and distribution of bicycle safety helmets to middle school bicyclists and programs to ensure that a helmet is worn each time the bicyclist rides.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bicycle skill tests for groups and rodeo events](#)

Bicyclist Training [Annual pedal power camp report](#)

Bicyclist Training [Bicycle driving course](#)

Bicyclist Training [Safe moves city](#)

Video [Sharing the road: Bicycles and buses](#)

Brochure [Bicycling is great fun](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Flyer [Bicycle inspection checklist](#)

Proposed Countermeasures:

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Middle School Bicyclist Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements. They can promote activities to reduce travel speeds of motorists in neighborhoods. improve sight distance, increase use of helmets, and enhance bicyclist conspicuity. They can also produce and/or distribute brochures on common causes of bicycle crashes among children and what parents can do to help improve bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bicycle skill tests for groups and rodeo events](#)

Bicyclist Training [Annual pedal power camp report](#)

Bicyclist Training [Bicycle driving course](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Bicyclist Training [Safe moves city](#)

Video [Sharing the road: Bicycles and buses](#)

Flyer [Bicycle inspection checklist](#)

Proposed Countermeasures:

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Middle School Bicyclist Schools

Potential Role: There are many ways that school administrators and teachers can participate in programs to reduce crashes among middle school children. Clearly, the most effective action is to implement a comprehensive bicycle safety education program that focuses on the crash types that typically involve middle school children. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of wearing a properly fitted helmet, searching before entering the roadway, riding defensively and predictably and being conspicuous at all times needs to be emphasized. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and support the acquisition, distribution and use of bicycle safety helmets. School officials can convey important educational materials to parents and can seek parents' support in educating and supervising novice bicyclists. Parents can be educated on the crash types that commonly involve middle school children and the actions that they can take to reduce the likelihood that their child will be involved in a crash. At the high school level, school officials can incorporate bicycle crash information in driver education programs to emphasize the need for motorists to drive slowly through neighborhoods and to search for bicyclists in or near the roadway. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Teacher's guide to bicycle safety: Kindergarten-grade 8](#)

Bicyclist Training [Instructor's guide for the bicycle driver's test \(How well do you drive your bike?\)](#)

Bicyclist Training [Bicycle information test, answer sheet and scoring key](#)

Bicyclist Training [Bicycle driving course](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Training [Someone else](#)

Flyer [Bicycle inspection checklist](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Report/Guide [School site plans](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Middle School Bicyclist Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Law enforcement officials can be knowledgeable about bicycle/motor-vehicle crashes involving middle school children and can contribute to a reduction in these crashes in many ways. The first is to issue citations or warnings to the bicyclists (or to parents of bicyclists) who are observed breaking bicycle laws. An additional way is through formal and informal training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to middle school children. Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists. They can also provide positive reinforcement to bicyclists who are using their bicycles properly. They can participate actively in bicycle safety programs. For example, they can support the acquisition and distribution of bicycle safety helmets to bicyclists and can cooperate with other local organizations to ensure that the helmet is worn every time the bicycle is ridden. They can report high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report driveway/roadway junctions where the sight distance is limited by vegetation, structures or parked vehicles. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Bicyclist Training [Bicycle driving course](#)

Bicyclist Training [Safe moves city](#)

Implementer Training [Bike patrol training manual](#)

Implementer Training [Annual Minnesota bike patrol training](#)

Training [Someone else](#)

Flyer [Bicycle inspection checklist](#)

Proposed Countermeasures:

Implementer Training [A video for law enforcement roll call and academy training](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Middle School Bicyclist Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Representatives of health care organizations can be knowledgeable about the types of bicycle/motor-vehicle crashes that are most likely to occur to the middle school bicyclist and can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs. For example, they can support the acquisition and distribution of bicycle safety helmets to young bicyclists. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Bicyclist Training [Safe moves city](#)

Brochure [Bicycling is great fun](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Proposed Countermeasures:

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Middle School Bicyclist Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Annual pedal power camp report](#)

Bicyclist Training [Bicycle driving course](#)

Video [Sharing the road: Bicycles and buses](#)

Brochure [Bicycling is great fun](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Proposed Countermeasures:

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Middle School Bicyclist Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on the middle school bicyclist crash problem and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program--engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure program materials developed under government auspices. In addition, they hold meetings and promote their areas of interest. They can also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bicycle skill tests for groups and rodeo events](#)

Bicyclist Training [Bicycle information test, answer sheet and scoring key](#)

Bicyclist Training [Annual pedal power camp report](#)

Bicyclist Training [Bicycle driving course](#)

Video [Sharing the road: Bicycles and buses](#)

Brochure [Bicycling is great fun](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Flyer [Bicycle inspection checklist](#)

Proposed Countermeasures:

Target Group



Middle School Bicyclist Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can develop and implement a model neighborhood bicycle safety program. For example, they can do all or any part of the following: analyze the incidence and location of the middle school bicyclist crash problem in the community, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to reduce the middle school bicyclist crash problem.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Bicyclist Training [Annual pedal power camp report](#)

Bicyclist Training [Bicycle driving course](#)

Video [Sharing the road: Bicycles and buses](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Report/Guide [Responses to queries on bicycle safety](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Target Group



Middle School Bicyclist Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines for street geometrics, operations and maintenance that promote safe and courteous roadway sharing. They can improve roadways on minor and major arterials and improve sight distances in both neighborhoods and commercial districts. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for commercial areas and for both single- and multi-family residence neighborhoods. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential and commercial driveways and at intersections increases the likelihood that bicyclists and motorists will see each other and, therefore, that bicyclist crashes will be reduced. Thus, guidelines are needed for intersections and for driveway and sidewalk design/location including setbacks for vegetation and fences. In addition, rural roads can be provided with paved shoulders, raised center medians with turning pockets can be provided where appropriate, and right turn on red can be restricted around schools and in downtown areas.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [School site plans](#)

Report/Guide [Access management](#)



Middle School Bicyclist Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement low speed neighborhood street and trail network guidelines. They can improve roadways on minor and major arterials and improve sight distances in both neighborhoods and commercial districts. They can promote guidelines to local planning agencies and provide training for builders and engineers. Working with neighborhood leaders, builders associations and safety officials, they can review development sites, adopt a model code, and fine tune the code. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for commercial areas and for both single- and multi-family residence neighborhoods. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential and commercial driveways and at intersections increases the likelihood that bicyclists and motorists will see each other and, therefore, that bicyclist crashes will be reduced. Thus, guidelines are needed for intersections and for driveway and sidewalk design/location including setbacks for vegetation and fences. In addition, rural roads can be provided with paved shoulders, raised center medians with turning pockets can be provided where appropriate, and right turn on red can be restricted around schools and in downtown areas.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [School site plans](#)

Report/Guide [Access management](#)



Middle School Bicyclist Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt low speed neighborhood street and trail network guidelines for their members. They can create improved roadways on minor and major arterials and improve sight distances in both neighborhoods and commercial districts. A collaborative team made up of these national groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. They can write new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for commercial areas and for both single- and multi-family residence neighborhoods. Reducing the speed reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential and commercial driveways and at intersections increases the likelihood that bicyclists and motorists will see each other and, therefore, that bicyclist crashes will be reduced. Thus, guidelines are needed for intersections and for driveway and sidewalk design/location including setbacks for vegetation and fences. In addition, rural roads can be provided with paved shoulders, raised center medians with turning pockets can be provided where appropriate, and right turn on red can be restricted around schools and in downtown areas.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [Commercial site planning](#)

Report/Guide [Residential intersection guidelines](#)

Report/Guide [School site plans](#)

Report/Guide [Access management](#)



Elementary School Bicyclist Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. To reduce elementary school bicyclist crashes, the driver's manual can point out the importance of the motorist's proceeding slowly and carefully through neighborhoods and constantly watching for young bicyclists, particularly at residential driveways and on sidewalks. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), young bicyclists and their parents should be advised of the necessity for the bicyclist to stop and to look for traffic before entering the roadway or entering an intersection, to ride with traffic when in the roadway, to search before making any roadway turns, and to be conspicuous at all times, among other things. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:



Elementary School Bicyclist Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing threats to the elementary school bicyclist. Bicycle manufacturers can alert parents of young children to the great risk in the driveways and walkways in front of their own homes and intersections near their homes. Guidance can be provided through bicycle hang tags, owner's manuals and owner's videos. Bicycles with a 16 to 24 inch wheel base could have special hang tags devoted to the behavior and needs of the young child. In addition, flags on poles could be mounted on bikes of this size; a bracket for this purpose could be added to this category of bicycle at the factory. Hang tags could also be added to children's helmets, but these should not preempt the need for proper use information on the bicycle itself. In addition, bicycle shops can display and distribute brochures describing proper bicycle fit as well as brochures that describe crashes common to child bicyclists and what parents can do to help minimize these crashes. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [Bicycling is great fun](#)

Brochure [Life in the cool lane: Traveling by bicycle](#)

Brochure [Kids and bikes](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Elementary School Bicyclist Media

Potential Role: The media can play a major role in elementary school bicyclist safety issues. They can mount a proactive safety campaign directed to parents to promote helmet use by children. They can provide seasonal hot-button reminders on elementary school bicyclist safety issues. For example, they can provide the public with information on the nature and incidence of the midblock rideout problem while providing routine reporting on a crash attributable to that problem. They can provide positive publicity on community programs designed to ensure that children, parents and homeowners are aware of the dangers of riding in driveways and on sidewalks and what can be done to minimize these dangers. They can emphasize the importance of the child's being conspicuous at all times. They can also publicize programs designed to ensure that streets are appropriately traffic-calmed for the neighborhood and that appropriate sight distances are maintained at residential driveways. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Elementary School Bicyclist Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate elementary school bicyclist crashes in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of the problem as well as methods to help solve the problem. They can support the removal of visual screens (shrubs, fences and other objects that prevent drivers and bicyclists from seeing each other) from residential driveways. They can support traffic safety education training programs for elementary schools, including bicycle safety. They also can play a lead role in ensuring that neighborhoods are designed to accommodate safe use of bicycles. They can support legislation and chart laws that will promote bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Elementary School Bicyclist Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. All groups can conduct community audits and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends. They can learn the types of crashes in which elementary school children are involved and support countermeasures for those crashes. Officials and members of community and civic groups can also support the acquisition and distribution of bicycle safety helmets to young bicyclists and programs to ensure that a helmet is worn each time the child rides.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bicycle skill tests for groups and rodeo events](#)

Bicyclist Training [Bicycle driving course](#)

Bicyclist Training [Safe moves city](#)

Video [A kid's eye view](#)

Video [Otto the auto on bicycle safety](#)

Video [The bicycle zone](#)

Brochure [Get into the helmet habit](#)

Brochure [Bicycling is great fun](#)

Brochure [Life in the cool lane: Traveling by bicycle](#)

Brochure [Kids and bikes](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Flyer [Bicycle inspection checklist](#)

Other [Vehicle safety inspection \(poster\)](#)

Proposed Countermeasures:

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Elementary School Bicyclist Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements. They can promote activities to reduce travel speeds of motorists in neighborhoods. improve sight distance, increase use of helmets, and enhance bicyclist conspicuity. They can also produce and/or distribute brochures on common causes of bicycle crashes among children and what parents can do to help improve bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bicycle skill tests for groups and rodeo events](#)

Bicyclist Training [Effective cycling: Kids I and Kids II](#)

Bicyclist Training [Bicycle driving course](#)

Bicyclist Training [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Bicyclist Training [Safe moves city](#)

Video [Snell: Kidz Vidz](#)

Video [Otto the auto on bicycle safety](#)

Video [The bicycle zone](#)

Brochure [Life in the cool lane: Traveling by bicycle](#)

Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Flyer [Bicycle inspection checklist](#)

Other [What would a SuperCyclist do? \(poster\)](#)

Other [Vehicle safety inspection \(poster\)](#)

Proposed Countermeasures:

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Elementary School Bicyclist Schools

Potential Role: There are many ways that school administrators and teachers can participate in programs to reduce crashes among elementary school children. Clearly, the most effective action is to implement a comprehensive bicycle safety education program that focuses on the crash types that typically involve young children. This is particularly important at the elementary school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of wearing a properly fitted helmet, searching before entering the roadway, riding defensively, and being conspicuous at all times needs to be emphasized at an early age. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and support the acquisition, distribution and use of bicycle safety helmets. Elementary school students can serve as efficient conduits for conveying educational materials to young bicyclists' parents. School officials can convey important educational materials to parents and can seek parents' support in educating and supervising novice bicyclists. Parents can be educated on the crash types that commonly involve young children and the actions that they can take to reduce the likelihood that their child will be involved in a crash. Information on the problem can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate bicycle crash information in driver education programs to emphasize the need for motorists to drive slowly through neighborhoods and to search for bicyclists in or near the roadway. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Teacher's guide to bicycle safety: Kindergarten-grade 8](#)

Bicyclist Training [The right way](#)

- Bicyclist Training [Bicycle information test, answer sheet and scoring key](#)
- Bicyclist Training [Look out! Highway safety topics for elementary students](#)
- Bicyclist Training [Traffic safety education guide](#)
- Bicyclist Training [The basics of bicycling](#)
- Bicyclist Training [The elementary traffic education program](#)
- Bicyclist Training [Bicycle driving course](#)
- Bicyclist Training [Bike Ed Hawaii](#)
- Bicyclist Training [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)
- Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)
- Implementer Training [Bicycle and pedestrian traffic safety education](#)
- Video [Snell: Kidz Vidz](#)
- Video [A kid's eye view](#)
- Video [Otto the auto on bicycle safety](#)
- Video [The bicycle zone](#)
- Booklet [Bicycle safety: A wheely good idea](#)
- Brochure [Do the right thing \(It's a bike thing\)](#)
- Brochure [Kids and bikes](#)
- Brochure [Drive your bike safely](#)
- Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)
- Flyer [Bicycle inspection checklist](#)
- Other [What would a SuperCyclist do? \(poster\)](#)
- Other [Vehicle safety inspection \(poster\)](#)

- Proposed Countermeasures:

- Report/Guide [School site plans](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Elementary School Bicyclist Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Law enforcement officials can be knowledgeable about bicycle/motor-vehicle crashes involving elementary school children and can contribute to a reduction in these crashes in many ways. The first is to issue citations or warnings to the bicyclists (or to parents of young bicyclists) who are observed breaking bicycle laws. An additional way is through formal and informal training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to elementary school children. Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists and to parents of young bicyclists. They can also provide positive reinforcement to bicyclists who are using their bicycles properly. They can participate actively in bicycle safety programs. For example, they can support the acquisition and distribution of bicycle safety helmets to young bicyclists and can cooperate with other local organizations to ensure that the helmet is worn every time the bicycle is ridden. They can report high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report driveway/roadway junctions where the sight distance is limited by vegetation, structures or parked vehicles. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Bicyclist Training [The right way](#)

Bicyclist Training [Bicycle driving course](#)

Bicyclist Training [Safe moves city](#)

Video [Otto the auto on bicycle safety](#)

Flyer [Bicycle inspection checklist](#)

Other [Vehicle safety inspection \(poster\)](#)

Proposed Countermeasures:

Implementer Training [A video for law enforcement roll call and academy training](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Elementary School Bicyclist Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Representatives of health care organizations can be knowledgeable about the types of bicycle/motor-vehicle crashes that are most likely to occur to the elementary school bicyclist and can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs. For example, they can support the acquisition and distribution of bicycle safety helmets to young bicyclists. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Bicyclist Training [Safe moves city](#)

Brochure [Bicycling is great fun](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Proposed Countermeasures:

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Elementary School Bicyclist Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). They can distribute or support the distribution of flyers that warn parents of the hazards of unsupervised riding by young children. Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. They can support the acquisition and distribution of bicycle safety helmets to young bicyclists and programs that ensure that the helmet is worn every time the bicycle is ridden. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bicycle driving course](#)

Video [A kid's eye view](#)

Video [Otto the auto on bicycle safety](#)

Brochure [Get into the helmet habit](#)

Brochure [Bicycling is great fun](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Proposed Countermeasures:

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Elementary School Bicyclist Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on the elementary school bicyclist crash problem and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program--engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure program materials developed under government auspices. In addition, they hold meetings and promote their areas of interest. They can also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bicycle skill tests for groups and rodeo events](#)

Bicyclist Training [Bicycle information test, answer sheet and scoring key](#)

Bicyclist Training [Bicycle driving course](#)

Video [A kid's eye view](#)

Video [Otto the auto on bicycle safety](#)

Video [The bicycle zone](#)

Brochure [Get into the helmet habit](#)

Brochure [Bicycling is great fun](#)

Brochure [Kids and bikes](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Flyer [Bicycle inspection checklist](#)

Other [Vehicle safety inspection \(poster\)](#)

Proposed Countermeasures:



Elementary School Bicyclist Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can develop and implement a model neighborhood bicycle safety program. For example, they can do all or any part of the following: analyze the incidence and location of the elementary school bicyclist crash problem in the community, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to reduce the elementary school bicyclist crash problem.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Bicyclist Training [Bicycle driving course](#)

Video [A kid's eye view](#)

Brochure [Life in the cool lane: Traveling by bicycle](#)

Brochure [Kids and bikes](#)

Brochure [Drive your bike safely](#)

Brochure [Uncle Bob's bike-o-rama safety quiz](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the

CTSP/CTST will support.

Report/Guide [Responses to queries on bicycle safety](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Elementary School Bicyclist Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines for street geometrics, operations and maintenance that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential driveways increases the likelihood that exiting bicyclists and motorists will see each other and, therefore, that elementary school bicyclist crashes will be reduced. Thus, guidelines are needed for driveway and sidewalk design/location including setbacks for vegetation and fences.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [School site plans](#)



Elementary School Bicyclist Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement low speed neighborhood street and trail network guidelines. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Working with neighborhood leaders, builders associations and safety officials, they can review development sites, adopt a model code, and fine tune the code. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential driveways increases the likelihood that exiting bicyclists and motorists will see each other and, therefore, that elementary school bicyclist crashes will be reduced. Thus, guidelines are needed for driveway and sidewalk design/location including setbacks for vegetation and fences.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [School site plans](#)



Elementary School Bicyclist Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt low speed neighborhood street and trail network guidelines for their members. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. They can write new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential driveways increases the likelihood that exiting bicyclists and motorists will see each other and, therefore, that elementary school bicyclist crashes will be reduced. Thus, guidelines are needed for driveway and sidewalk design/location including setbacks for vegetation and fences.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [School site plans](#)



Pre-School Bicyclist Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. To reduce pre-school bicyclist crashes, the driver's manual can point out the importance of the motorist's proceeding slowly and carefully through neighborhoods and constantly watching for young bicyclists, particularly at residential driveways and on sidewalks. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), parents should be advised of the necessity for the young bicyclist to stop and to look for traffic before entering the roadway and to be conspicuous at all times. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:



Pre-School Bicyclist Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing threats to the pre-school bicyclist. Bicycle manufacturers can alert parents of young children to the great risk in the driveways and walkways in front of their own homes. Guidance can be provided to parents through bicycle hang tags, owner's manuals and owner's videos. Bicycles with a 16 to 24 inch wheel base could have special hang tags devoted to the behavior and needs of the young child. In addition, flags on poles could be mounted on bikes of this size; a bracket for this purpose could be added to this category of bicycle at the factory. Hang tags could also be added to children's helmets, but these should not preempt the need for proper use information on the bicycle itself. In addition, bicycle shops can display and distribute brochures describing proper bicycle fit as well as brochures that describe crashes common to child bicyclists and what parents can do to help minimize these crashes. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Pre-School Bicyclist Media

Potential Role: The media can play a major role in pre-school bicyclist safety issues. They can mount a proactive safety campaign directed to parents to promote helmet use by small children. They can provide seasonal hot-button reminders on pre-school bicyclist safety issues. For example, they can provide the public with information on the nature and incidence of the midblock rideout problem while providing routine reporting on a crash attributable to that problem. They can provide positive publicity on community programs designed to ensure that children, parents and homeowners are aware of the dangers of riding in driveways and on sidewalks and what can be done to minimize these dangers. They can emphasize the importance of the child's being conspicuous at all times. They can also publicize programs designed to ensure that streets are appropriately traffic-calmed for the neighborhood and that appropriate sight distances are maintained at residential driveways. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Pre-School Bicyclist Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate pre-school bicyclist crashes in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of the problem as well as methods to help solve the problem. They can support the removal of visual screens (shrubs, fences and other objects that prevent drivers and bicyclists from seeing each other) from residential driveways. They can play a lead role in ensuring that neighborhoods are designed to accommodate safe use of bicycles. They can support legislation and chart laws that will promote bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:



Pre-School Bicyclist Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. All groups can conduct community audits and can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends. For example, they can distribute or support the distribution of flyers that warn parents of the hazards of unsupervised riding by pre-school children. Officials and members of community and civic groups can also support the acquisition and distribution of bicycle safety helmets to young bicyclists.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Bicyclist Training [Safe moves city](#)

Brochure [Get into the helmet habit](#)

Booklet [Bucklebear's rules for cycling](#)

Proposed Countermeasures:

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Pre-School Bicyclist Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. At the local level, they can perform community audits to assess the safety of neighborhoods for bicycling and serve as lobbying groups for roadway improvements. They can promote activities to reduce travel speeds of motorists in neighborhoods. improve sight distance, increase use of helmets, and enhance bicyclist conspicuity. They can also produce and/or distribute brochures on common causes of bicycle crashes among children and what parents can do to help improve bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Bicyclist Training [Effective cycling: Kids I and Kids II](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Bicyclist Training [Safe moves city](#)

Video [Snell: Kidz Vidz](#)

Booklet [Bucklebear's rules for cycling](#)

Proposed Countermeasures:

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Pre-School Bicyclist Schools

Potential Role: There are many ways that school administrators and teachers can participate in programs to reduce crashes among pre-school children. Clearly, the most effective action is to implement a comprehensive bicycle safety education program that focuses on the crash types that typically involve young children. This is particularly important at the pre-school level when many children are first introduced to bicycling and when many bicycle crashes occur. A truly comprehensive program would include both classroom instruction and on-bike training. The importance of riding only when supervised, of not entering the roadway, of searching for vehicles in driveways, of wearing a properly fitted helmet and of being conspicuous at all times needs to be emphasized at an early age. School officials can also cooperate with other groups (e.g., parents, traffic planners, and law enforcement) to identify safe routes to school and support the acquisition, distribution and use of bicycle safety helmets. Pre-schools can serve as efficient conduits for conveying educational materials to young bicyclists' parents. Pre-school officials and parents of pre-school children need to know the high risk of a crash when a pre-school child rides a bicycle anywhere near motor vehicle traffic (e.g., roadways, driveways, sidewalks, parking lots). Pre-school officials can convey important educational materials to parents and can seek parents' support in educating and supervising novice bicyclists. Parents can be educated on the crash types that commonly involve young children and the actions that they can take to reduce the likelihood that their child will be involved in a crash. Information on the problem can be sent home with children and can also be addressed in parent-teacher organization meetings. At the high school level, school officials can incorporate bicycle crash information in driver education programs to emphasize the need for motorists to drive slowly through neighborhoods and to search for bicyclists in or near the roadway. At all educational levels, school officials and teachers can solicit funds for use in the development and implementation of effective safety education programs. They also can support safety programs indirectly by encouraging local and non-local government agencies to develop and implement effective safety programs and by publicly endorsing effective safety programs that are being implemented.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Video [Snell: Kidz Vidz](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Berton the big wheel](#)

Proposed Countermeasures:

Report/Guide [School site plans](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Pre-School Bicyclist Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Law enforcement officials can be knowledgeable about the high risk of bicycle/motor-vehicle crashes when a pre-school child rides a bicycle at any location near motor vehicle traffic (e.g., roadways, driveways, sidewalks, parking lots). They can contribute to a reduction in pre-school crashes in many ways. The first is to issue citations or warnings to the parents of young bicyclists who are observed riding without adult supervision at any location near motor vehicle traffic. An additional way is through formal and informal training. Enforcement officers can provide both classroom training and on-bike training (e.g., bike rodeos) to pre-school children. Officers can provide impromptu training in the form of safety lectures and warnings to bicyclists and to parents of young bicyclists. They can also provide positive reinforcement to bicyclists who are using their bicycles properly. They can participate actively in bicycle safety programs. For example, they can support the acquisition and distribution of bicycle safety helmets to young bicyclists. They can report high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report driveway/roadway junctions where the sight distance is limited by vegetation, structures or parked vehicles. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Bicyclist Training [Safe moves city](#)

Proposed Countermeasures:

Report/Guide [Guide to school bicycle safety presentations by police officers](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Pre-School Bicyclist Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Representatives of health care organizations can be knowledgeable about the types of bicycle/motor-vehicle crashes that are most likely to occur to the pre-school bicyclist and can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs. For example, they can support the acquisition and distribution of bicycle safety helmets to young bicyclists. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups, such as flyers that warn parents of the hazards of unsupervised riding by pre-school children.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Bicyclist Training [Washington children's bicycle helmet project: Curriculum guide](#)

Bicyclist Training [Safe moves city](#)

Proposed Countermeasures:

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Pre-School Bicyclist Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees (e.g., parents of young children). They can distribute or support the distribution of flyers that warn parents of the hazards of unsupervised riding by pre-school children. Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. They can support the acquisition and distribution of bicycle safety helmets to young bicyclists. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Brochure [Get into the helmet habit](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Berton the big wheel](#)

Proposed Countermeasures:

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Pre-School Bicyclist Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on the pre-school bicyclist crash problem and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program--engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure program materials developed under government auspices. In addition, they hold meetings and promote their areas of interest. They can also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Brochure [Get into the helmet habit](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Berton the big wheel](#)

Proposed Countermeasures:



Pre-School Bicyclist Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can develop and implement a model neighborhood bicycle safety program. For example, they can do all or any part of the following: analyze the incidence and location of the pre-school bicyclist crash problem in the community, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to reduce the pre-school bicyclist crash problem.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Booklet [Bucklebear's rules for cycling](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Report/Guide [Responses to queries on bicycle safety](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Pre-School Bicyclist Planning Groups

Potential Role: Local and regional planning groups can adopt and implement guidelines for street geometrics, operations and maintenance that promote safe and courteous roadway sharing. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets and street systems. They can rewrite local codes for implementing design changes and can promote these codes. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential driveways increases the likelihood that exiting bicyclists and motorists will see each other and, therefore, that pre-school bicyclist crashes will be reduced. Thus, guidelines are needed for driveway and sidewalk design/location including setbacks for vegetation and fences.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [School site plans](#)



Pre-School Bicyclist Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement low speed neighborhood street and trail network guidelines. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Working with neighborhood leaders, builders associations and safety officials, they can review development sites, adopt a model code, and fine tune the code. They can adopt new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential driveways increases the likelihood that exiting bicyclists and motorists will see each other and, therefore, that pre-school bicyclist crashes will be reduced. Thus, guidelines are needed for driveway and sidewalk design/location including setbacks for vegetation and fences.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood development guidelines](#)

Report/Guide [School site plans](#)



Pre-School Bicyclist Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt low speed neighborhood street and trail network guidelines for their members. A collaborative team made up of these groups can establish practices, policies and recommendations for their members and urge their members to find successful ways to form local teams to implement the policies. They can write new guidelines for streets, street systems, and site plan reviews, among others. Good sight distances, appropriate sidewalk design and placement and proper design speeds should be featured. Proper design speeds can be specified for both single- and multi-family residence neighborhoods. Reducing the speed on neighborhood streets reduces the speed differential between bicyclists and motorists, improves motorist response times and reduces injury severity. In addition, improving the sight distance at residential driveways increases the likelihood that exiting bicyclists and motorists will see each other and, therefore, that pre-school bicyclist crashes will be reduced. Thus, guidelines are needed for driveway and sidewalk design/location including setbacks for vegetation and fences.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Traffic calming state-of-the-art](#)

Proposed Countermeasures:

Report/Guide [Residential traffic calming guidelines](#)

Report/Guide [Neighborhood Development Guidelines](#)

Report/Guide [School site plans](#)



Bicyclist Parents

Problem Description: Young children don't appreciate roadway dangers, and they make common errors when they ride their bicycles. They ride into the roadway without stopping and searching for traffic, and traffic moves too quickly for motorists to make safe responses and avoid a crash. Lack of parental supervision exacerbates the problem.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

- § Parents will be aware of child bicycle dangers and, through instruction and supervision, will train their children to avoid the dangers.

- § Parents will ensure that the bicyclist is conspicuous at all times.

- § Parents will ensure that the bicyclist always wears a safe and properly-positioned helmet.

- § Parents will train their children to obey all traffic signs and signals.

- § Parents will ensure that the bicyclist conducts a full search before entering a roadway or an intersection and before making any roadway turns.

- § Parents will ensure that the bicyclist always rides with traffic.

- § Parents will train the bicyclist to stop at the edge of any visual screen and search for vehicles before proceeding.

§ Parents will prevent the bicyclist from riding in darkness.

§ Parents will ensure that the bicyclist who rides on the sidewalk treats all driveways as intersections.

§ Parents will identify high hazard locations in their neighborhoods and teach their children how best to respond at the high hazard locations.

§ Parents will remove vegetation and other objects that obstruct the view of bicyclists and /or motorists at the junction of their driveway and the roadway.

§ Parents will ensure that their children receive comprehensive bicycle safety education before permitting them to ride unsupervised at any location near motor vehicle traffic.

Motorist:

§ The motorist will constantly search for bicyclists including those on sidewalks.

§ The motorist will travel at an appropriate speed for the area.

§ When approaching or overtaking a bicyclist, the motorist will reduce speed and be prepared to stop or swerve if the bicyclist makes a sudden turn.

§ The motorist will expect to encounter bicyclists at any location and time of day.

§ A motorist will search for visual screens and adjust speed as necessary to stop or swerve if a bicyclist is approaching behind the screen.

Roadway:

- § The speed of traffic along neighborhood streets will be reduced.

- § Intersection design will reduce turning speeds and permit safe vehicle turning movements.

- § Visual screens will be removed from the roadway.

- § Rural roads will have paved shoulders.

- § Sight distances at driveways and intersections will be improved.

- § Raised center medians with turning pockets will be provided where appropriate.



Teenage Motorist

Problem Description: Teenage motorists lack roadway experience and often overestimate their abilities. Many young drivers operate their vehicles too fast in critical areas, especially around schools and neighborhoods where many young unpredictable children are present. Teenage motorists are involved in crashes in which the bicyclist rides out from a driveway or sidewalk without stopping and searching, where the bicyclist is riding the wrong way, and where the bicyclist proceeds past a stopped vehicle and is struck by the vehicle in the next lane. Teenage motorists cause problems when they make unexpected left turns facing bicyclists as well as right turns. When overtaking bicyclists, they are involved in crashes in which the bicyclist's path is obstructed and when both bicyclist and motorist take counteractive evasive actions.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

- § The bicyclist will be conspicuous at all times.
- § The bicyclist will be predictable at all times.
- § The cyclist will ride defensively at all times
- § The bicyclist will wear a helmet at all times.
- § The bicyclist will obey all traffic signs and signals.
- § The bicyclist will conduct a full search before entering a roadway or an intersection and before making any roadway turns.

§ The bicyclist will negotiate turns smoothly including positioning the bicycle properly in the roadway and signaling appropriately.

§ The bicyclist will always ride with traffic.

§ The bicyclist will know that motorists often fail to see bicyclists, even when visibility conditions are good.

§ The bicyclist will adjust speed and path such that there is sufficient time and maneuver room to stop and/or swerve to avoid a crash.

§ The bicyclist will be aware that motorists often fail to see bicyclists during darkness even if the bicycle is equipped with all the lighting equipment required by law.

Motorist:

§ The motorist will constantly search for bicyclists

§ The motorist will travel at an appropriate speed for the area.

§ The motorist will expect to encounter bicyclists at any location and time of day.

§ The motorist will not operate a motor vehicle when under the influence of alcohol or illegal drugs.

§ The motorist will be aware that excessive motor vehicle speed contributes to many serious bicycle/motor-vehicle crashes.

§ The motorist will adjust speed and path so that there is sufficient time and maneuver room to stop and/or swerve when bicyclists are encountered.

Roadway:

- § The speed of traffic will be reduced.
- § Intersection design will reduce turning speeds and permit safe vehicle turning movements.
- § Visual screens will be removed from the roadway.
- § On higher speed and higher volume roadways, the bicyclist and motorist will be provided with separate riding spaces through wide curb lanes, bike lanes or paved shoulders.
- § Rural roads will have paved shoulders.
- § Right turn on red will be restricted around schools and in downtown areas.
- § Adequate sight distances will be provided at intersections and at residential and commercial driveways.
- § Street lighting in urban areas will be improved.



Casual Adult Bicyclist

Problem Description: Casual adult bicyclists may lack many of the skills needed to ride safely. Infrequent bicycling and complex traffic pose risks to casual adult bicyclists. High traffic speeds and poor sight triangles at intersections and driveways can compromise safety for these riders.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

§ The bicyclist will be conspicuous at all times.

§ The bicyclist will be predictable at all times.

§ The bicyclist will ride defensively at all times

§ The bicyclist will wear a helmet at all times.

§ The bicyclist will obey all traffic signs and signals.

§ The bicyclist will conduct a full search before entering a roadway or an intersection and before making any roadway turns.

§ The bicyclist will negotiate turns smoothly including positioning the bicycle properly in the roadway and signaling appropriately.

§ The bicyclist will know that motorists often fail to see bicyclists, even when visibility conditions are

good.

§ The bicyclist will adjust speed and path such that there is sufficient time and maneuver room to stop and/or swerve to avoid a crash.

§ The bicyclist will be aware that motorists often fail to see bicyclists during darkness even if the bicycle is equipped with all the lighting equipment required by law.

§ The bicyclist will know the locations and use of off-street facilities.

Motorist:

§ The motorist will constantly search for bicyclists.

§ The motorist will travel at an appropriate speed for the area.

§ The motorist will expect to encounter bicyclists at any location.

§ The motorist will not operate a motor vehicle when under the influence of alcohol or illegal drugs.

Roadway:

§ The speed of traffic in neighborhoods will be reduced.

§ Intersection design will reduce turning speeds and permit safe vehicle turning movements.

§ Visual screens will be removed from the roadway.

§ On higher speed and higher volume roadways, the bicyclist and motorist will be provided with separate riding spaces through wide curb lanes, bike lanes or paved shoulders.

§ Sight distances at driveways and intersections will be improved.

§ Appropriate off-street bicycle facilities will be provided.

§ Adequate sight distances at trail/roadway intersections will be maintained.



Senior Bicyclist Driver Regulatory Agencies

Problem Description: Senior bicyclists (aged 65+) are involved in less than 2% of all bicycle/motor vehicle crashes. The major error that senior bicyclists make is to turn left in front of the motorist. Motorists cause problems with senior bicyclists when they make right turns. Many crashes with seniors involve an overtaking motorist who may not detect the bicyclist. Motorists also cause problems for seniors both when they run signs and signals at intersections and when they obey the signs but fail to yield to the bicyclist.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

§ The bicyclist will be conspicuous at all times.

§ The bicyclist will be predictable at all times.

§ The bicyclist will ride defensively at all times

§ The bicyclist will wear a helmet at all times.

§ The bicyclist will obey all traffic signs and signals.

§ The bicyclist will conduct a full search before entering a roadway or an intersection and before making any roadway turns.

§ The bicyclist will negotiate turns smoothly including positioning the bicycle properly in the roadway and signaling appropriately.

§ The bicyclist will know that motorists often fail to see bicyclists, even when visibility conditions are good.

§ The bicyclist will adjust speed and path such that there is sufficient time and maneuver room to stop and/or swerve to avoid a crash.

§ The bicyclist will be aware that motorists often fail to see bicyclists during darkness even if the bicycle is equipped with all the lighting equipment required by law.

Motorist:

§ The motorist will constantly search for bicyclists.

§ The motorist will travel at an appropriate speed for the area.

§ The motorist will expect to encounter bicyclists at any location.

§ The motorist will not operate a motor vehicle when under the influence of alcohol or illegal drugs.

Roadway:

§ The speed of traffic in neighborhoods will be reduced.

§ Intersection design will reduce turning speeds and permit safe vehicle turning movements.

§ Visual screens will be removed from the roadway.

§ On higher speed and higher volume roadways, the bicyclist and motorist will be provided with separate riding spaces through wide curb lanes, bike lanes or paved shoulders.

§ Sight distances at driveways and intersections will be improved.

§ Appropriate off-street bicycle facilities will be provided.

§ Adequate sight distances at trail/roadway intersections will be maintained.



Commuter Bicyclist

Problem Description: Commuter bicyclists are exposed to significant night riding, riding in inclement weather and riding in peak hour traffic. The places and times of travel present high traffic volumes and speed and demand skill and experience on the part of the bicyclist. Commuters need to be proficient bicyclists. Motorist errors are frequently the cause of these crashes.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

- § The bicyclist will be conspicuous at all times.
- § The bicyclist will be predictable at all times.
- § The bicyclist will ride defensively at all times
- § The bicyclist will wear a helmet at all times.
- § The bicyclist will obey all traffic signs and signals.
- § The bicyclist will know the best routes to travel.
- § The bicyclist will conduct a full search before entering a roadway or an intersection and before making any roadway turns.
- § The bicyclist will negotiate turns smoothly including positioning the bicycle properly in the roadway

and signaling appropriately.

§ The bicyclist will know that motorists often fail to see bicyclists, even when visibility conditions are good.

§ The bicyclist will adjust speed and path such that there is sufficient time and maneuver room to stop and/or swerve to avoid a crash.

§ The bicyclist will be aware that motorists often fail to see bicyclists during darkness even if the bicycle is equipped with all the lighting equipment required by law.

Motorist:

§ The motorist will constantly search for bicyclists.

§ The motorist will travel at an appropriate speed for the area.

§ The motorist will expect to encounter bicyclists at any location and time of day.

§ The motorist will not operate a motor vehicle when under the influence of alcohol or illegal drugs.

Roadway:

§ Travel speeds in neighborhoods and urban areas will be reduced.

§ Intersection design will reduce turning speeds and permit safe vehicle turning movements.

§ Visual screens will be removed from the roadway.

§ Bicyclists will be separated from motorists on higher speed roadways through bike lanes or paved shoulders.

§ Sight distances at driveways and intersections will be improved.

§ Right turn on red will be restricted around schools and in downtown areas.

§ Roadway operations and maintenance problems will be promptly corrected.

§ Appropriate on-street bicycle facilities will be provided



College Bicyclist

Problem Description: College bicyclists frequently use their bicycles as their primary mode of transportation for traveling not only on campus but also in the surrounding community. Bicyclists therefore ride at all times of day, including in low light and night conditions, and often without bicycle lights. Nighttime crashes are common. Many crashes occur at controlled intersections with the bicyclist at fault for disobeying the traffic control device. Motorists are frequently at fault by making turns in front of the bicyclist. Many bicyclists report losing control as a cause of a crash. Helmet use is low.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

§ The bicyclist will be conspicuous at all times.

§ The bicyclist will be predictable at all times.

§ The cyclist will ride defensively at all times

§ The bicyclist will wear a helmet at all times.

§ The bicyclist will obey all traffic signs and signals.

§ The bicyclist will conduct a full search before entering a roadway or an intersection and before making any roadway turns.

§ The bicyclist will negotiate turns smoothly including positioning the bicycle properly in the roadway and signaling appropriately.

§ The bicyclist will always ride with traffic.

§ The bicyclist will know that motorists often fail to see bicyclists, even when visibility conditions are good.

§ The bicyclist will adjust speed and path such that there is sufficient time and maneuver room to stop and/or swerve to avoid a crash.

§ The bicyclist will be aware that motorists often fail to see bicyclists during darkness even if the bicycle is equipped with all the lighting equipment required by law.

§ The bicyclist will not ride after drinking or using drugs

Motorist:

§ The motorist will constantly search for bicyclists

§ The motorist will travel at an appropriate speed for the area.

§ The motorist will expect to encounter bicyclists at any location and time of day.

§ The motorist will not operate a motor vehicle when under the influence of alcohol or illegal drugs.

Roadway:

§ The speed of traffic in and near campus will be reduced.

§ Intersection design will reduce turning speeds and permit safe vehicle turning movements.

§ Visual screens will be removed from the roadway.

§ On higher speed and higher volume roadways, the bicyclist and motorist will be provided with separate riding spaces through wide curb lanes, bike lanes or paved shoulders.

§ Rural roads will have paved shoulders.

§ Sight distances at driveways and intersections will be improved.

§ Right turn on red will be restricted around the college and in downtown areas.

§ Night lighting will be improved.

§ Appropriate bicycle facilities will be provided on campus.



High School Bicyclist

Problem Description: Bicycling can be the main source of mobility for high school aged children who are too young to drive an automobile. High school bicyclists are exposed to both neighborhood and commercial threats including those that occur in non-roadway locations (for example, parking lots). Although they tend not to be involved in midblock rideout crashes that are common in young children, high school bicyclists can be involved in most other crash types. These include bicyclist unexpected turns and swerves, bicyclist losing control, and wrong-way riding. They include crashes involving overtaking motorists, motorist turns and merges, and motorist failure to yield to the bicyclist. The bicyclist can be trapped in an intersection when the light changes or can proceed past a stopped vehicle and then be hit by a vehicle in the next lane. The bicyclist may strike a slow or stopped vehicle.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

§ The bicyclist will be conspicuous at all times.

§ The bicyclist will be predictable at all times.

§ The cyclist will ride defensively at all times

§ The bicyclist will wear a helmet at all times.

§ The bicyclist will obey all traffic signs and signals.

§ The bicyclist will conduct a full search before entering a roadway or an intersection and before making any roadway turns.

- § The bicyclist will negotiate turns smoothly including positioning the bicycle properly in the roadway and signaling appropriately.
- § The bicyclist will always ride with traffic.
- § The bicyclist will stop at the edge of any visual screen and search for vehicles before proceeding.
- § The bicyclist will know that motorists often fail to see bicyclists, even when visibility conditions are good.
- § The bicyclist will adjust speed and path such that there is sufficient time and maneuver room to stop and/or swerve to avoid a crash.
- § The bicyclist will be aware that motorists often fail to see bicyclists during darkness even if the bicycle is equipped with all the lighting equipment required by law.
- § The bicyclist will know the risks of night riding and will avoid riding during darkness when possible.
- § The bicyclist will know the risks of riding on narrow rural roads and will avoid them when possible, especially during darkness.
- § The bicyclist will not ride on the sidewalk where it is prohibited.
- § The bicyclist who rides on the sidewalk will treat all driveways as intersections.
- § The bicyclist will be aware that alcohol and drug impaired drivers are most often encountered at night.

Motorist:

- § The motorist will constantly search for bicyclists including those on sidewalks.

§ The motorist will travel at an appropriate speed for the area.

§ When approaching or overtaking a bicyclist, the motorist will reduce speed and be prepared to stop or swerve if the bicyclist makes a sudden turn.

§ The motorist will expect to encounter bicyclists at any location and time of day.

§ A motorist will search for visual screens and adjust speed as necessary to stop or swerve if a bicyclist is approaching behind the screen.

§ The motorist will not operate a motor vehicle when under the influence of alcohol or illegal drugs.

Roadway:

§ The speed of traffic along neighborhood streets will be reduced.

§ Driveway access to properties will be appropriately limited for that neighborhood.

§ Intersection design will reduce turning speeds and permit safe vehicle turning movements.

§ Visual screens will be removed from the roadway.

§ On higher speed and higher volume roadways, the bicyclist and motorist will be provided with separate riding spaces through wide curb lanes, bike lanes or paved shoulders.

§ Rural roads will have paved shoulders.

§ Sight distances at driveways and intersections will be improved.

§ Raised center medians with turning pockets will be provided where appropriate.

§ Right turn on red will be restricted around schools and in downtown areas.



Middle School Bicyclist

Problem Description: As with elementary school students, middle school pupils can be addressed with school-based programs. Since middle school bicyclists travel farther from home than their younger counterparts, they are exposed to both neighborhood and commercial district threats as well as those that occur in non-roadway locations (for example, parking lots). They therefore can be involved in almost any crash type including both those common to children and those common to adults. These include bicyclist rideouts from driveways and sidewalks, rideouts at intersections controlled by stop signs, bicyclist unexpected turns and swerves and wrong-way riding. They include crashes involving overtaking motorists, motorist turns and merges, motorist failure to yield to the bicyclist and backing motorists. The bicyclist can be trapped in an intersection when the light changes or can proceed past a stopped vehicle and then be hit by a vehicle in the next lane. The bicyclist may strike a slow or stopped vehicle. Both motorist and bicyclist can lose control of their vehicles.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

- § Parents will be aware of child bicycle dangers and, through instruction and supervision, will train their children to avoid the dangers.
- § The bicyclist will be conspicuous at all times.
- § The bicyclist will be predictable at all times.
- § The cyclist will ride defensively at all times
- § The bicyclist will wear a helmet at all times.

§ The bicyclist will obey all traffic signs and signals.

§ The bicyclist will conduct a full search before entering a roadway or an intersection and before making any roadway turns.

§ The bicyclist will negotiate turns smoothly including positioning the bicycle properly in the roadway and signaling appropriately.

§ The bicyclist will always ride with traffic.

§ The bicyclist will stop at the edge of any visual screen and search for vehicles before proceeding.

§ The bicyclist will know that motorists often fail to see bicyclists, even when visibility conditions are good.

§ The bicyclist will adjust speed and path such that there is sufficient time and maneuver room to stop and/or swerve to avoid a crash.

§ The bicyclist will be aware that motorists often fail to see bicyclists during darkness even if the bicycle is equipped with all the lighting equipment required by law.

§ The bicyclist will know the risks of night riding and will avoid riding during darkness when possible.

§ The bicyclist will know the risks of riding on narrow rural roads and will avoid them when possible, especially during darkness.

§ The bicyclist will not ride on the sidewalk where it is prohibited.

§ The bicyclist who rides on the sidewalk will treat all driveways as intersections.

Motorist:

§ The motorist will constantly search for bicyclists including those on sidewalks.

§ The motorist will travel at an appropriate speed for the area.

§ When approaching or overtaking a bicyclist, the motorist will reduce speed and be prepared to stop or swerve if the bicyclist makes a sudden turn.

§ The motorist will expect to encounter bicyclists at any location and time of day.

§ A motorist will search for visual screens and adjust speed as necessary to stop or swerve if a bicyclist is approaching behind the screen.

Roadway:

§ The speed of traffic along neighborhood streets will be reduced.

§ Driveway access to properties will be appropriately limited for that neighborhood.

§ Intersection design will reduce turning speeds and permit safe vehicle turning movements.

§ Visual screens will be removed from the roadway.

§ On higher speed and higher volume roadways, the bicyclist and motorist will be provided with separate riding spaces through wide curb lanes, bike lanes or paved shoulders.

§ Rural roads will have paved shoulders.

§ Sight distances at driveways and intersections will be improved.

§ Raised center medians with turning pockets will be provided where appropriate.

§ Right turn on red will be restricted around schools and in downtown areas.



Elementary School Bicyclist

Problem Description: Elementary school children are often the focus of safety efforts because they are easy to reach in a school setting. The elementary school bicyclist is typically involved in crashes close to home, at nearby intersections and in nearby non-roadway locations (for example, parking lots). These crashes can involve the bicyclist riding out from a residential or commercial driveway (or over the shoulder/curb), riding out at an intersection controlled by a stop sign, and making an unexpected turn or swerve. The bicyclist also frequently rides facing traffic. The motorist may be backing. When the motorist is overtaking the bicyclist, both may initiate counteractive evasive actions. In addition, both motorist and bicyclist can lose control of their vehicles.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

- § Parents will be aware of child bicycle dangers and, through instruction and supervision, will train their children to avoid the dangers.
- § The bicyclist will be conspicuous at all times.
- § The bicyclist will be predictable at all times.
- § The bicyclist will wear a helmet at all times.
- § The bicyclist will obey all traffic signs and signals.
- § The bicyclist will conduct a full search before entering a roadway or an intersection and before making any roadway turns.

§ The bicyclist will negotiate turns smoothly including positioning the bicycle properly in the roadway and signaling appropriately.

§ The bicyclist will always ride with traffic.

§ The bicyclist will stop at the edge of any visual screen and search for vehicles before proceeding.

§ The bicyclist will know that motorists often fail to see bicyclists, even when visibility conditions are good.

§ The bicyclist will adjust speed and path such that there is sufficient time and maneuver room to stop and/or swerve to avoid a crash.

§ The bicyclist will be aware that motorists often fail to see bicyclists during darkness even if the bicycle is equipped with all the lighting equipment required by law.

§ The bicyclist will know the risks of night riding and will avoid riding during darkness when possible.

§ The bicyclist will know the risks of riding on narrow rural roads and will avoid them when possible, especially during darkness.

§ The bicyclist will not ride on the sidewalk where it is prohibited.

§ The bicyclist who rides on the sidewalk will treat all driveways as intersections.

Motorist:

§ The motorist will constantly search for bicyclists including those on sidewalks.

§ The motorist will travel at an appropriate speed for the area.

§ When approaching or overtaking a bicyclist, the motorist will reduce speed and be prepared to stop or swerve if the bicyclist makes a sudden turn.

§ The motorist will expect to encounter bicyclists at any location and time of day.

§ A motorist will search for visual screens and adjust speed as necessary to stop or swerve if a bicyclist is approaching behind the screen.

Roadway:

§ The speed of traffic along neighborhood streets will be reduced.

§ Driveway access to properties will be appropriately limited for that neighborhood.

§ Intersection design will reduce turning speeds and permit safe vehicle turning movements.

§ Visual screens will be removed from the roadway.

§ On higher speed and higher volume roadways, the bicyclist and motorist will be provided with separate riding spaces through wide curb lanes, bike lanes or paved shoulders.

§ Rural roads will have paved shoulders.

§ Sight distances at driveways and intersections will be improved.

§ Raised center medians with turning pockets will be provided where appropriate.



Pre-School Bicyclist

Problem Description: The pre-school bicyclist is typically involved in crashes very close to home. Pre-school children usually ride play vehicles in driveways or on sidewalks in front of their homes or at nearby commercial establishments. They ride into the street from the driveway or sidewalk without stopping and looking for traffic. Since they are inexperienced bicyclists, they also make unexpected turns/swerves when they are in the roadway.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

§ Parents will be aware of child bicycle dangers and, through instruction and supervision, will train their children to avoid the dangers.

§ Parents will know the high risk of bicycle/motor-vehicle crashes when a pre-school child rides a bicycle at any location near motor vehicle traffic (e.g., roadways, driveways, sidewalks, parking lots).

§ The pre-school child will not ride a bicycle at any location near motor vehicle traffic unless supervised by an adult.

§ The pre-school bicyclist will wear a safe and properly-positioned helmet each time the child rides.

§ The bicyclist will be conspicuous at all times.

Motorist:

§ The motorist will search for bicyclists entering the street midblock from driveways/alleys or from the sidewalk/curb.

§ When approaching or overtaking a bicyclist, the motorist will reduce speed and be prepared to stop or swerve if the bicyclist makes a sudden turn.

§ The motorist will travel at an appropriate speed for the area.

Roadway:

§ The speed of traffic along neighborhood streets will be reduced.

§ Sight distances in neighborhoods will be improved.



Helmet Use Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. To reduce bicyclist crashes, the driver's manual can point out the importance of the motorist's constantly watching for bicyclists in the roadway. The motorist should be advised that the bicyclist has all the rights and responsibilities of motor vehicles in the roadway. For bicyclist materials (sections of motor vehicle manuals or separate manuals or brochures), bicyclists should be advised to obey all bicyclist laws, to wear a properly fitted helmet, to be conspicuous and to ride predictably at all times. Brochures on bicycle crashes and what both motorists and bicyclists can do to improve safety can be displayed and distributed at local agency offices. The driver regulatory agency can also consider adding a question on sharing the road with bicyclists to its driving test.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Booklet [Oregon bicyclist's manual](#)

Booklet [Pocket guide: Safe bicycling in Nevada](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Booklet [Florida driver's handbook](#)

Booklet [Oregon driver manual](#)

Booklet [Illinois bicycle rules](#)

Booklet [New York State driver's manual](#)

Booklet [New Jersey bicycle manual](#)

Booklet [1998 California driver handbook](#)

Proposed Countermeasures:



Helmet Use Manufacturers/Sellers

Potential Role: Consumers need attractive, graphically pleasing and easy to read point of purchase information detailing the threats when bicycle helmets aren't worn. Both bicycle and helmet manufacturers can provide information on the benefits to be gained from wearing an approved and properly fitted helmet. Guidance can be provided to all cyclists and to parents of young cyclists through both bicycle and helmet hang tags and through bicycle owner's manuals and videos. In addition, both manufacturers and sellers can participate in programs designed to increase helmet use, such as by providing low-cost helmets during promotional programs. Helmet manufacturers can add hang tags to their products that show proper helmet fit, helmet care and means of adding conspicuity enhancements. Bicycle shops can display and distribute brochures on helmet design and use. In addition, sellers can promote both helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [Lou and his friends have something important to tell you](#)

Brochure [Use your head and wear a helmet \(Also available in Spanish\)](#)

Brochure [Keep a head; wear a helmet](#)

Brochure [The helmet habit: get into it!](#)

Brochure [Bicycle helmets for Florida's children--"It's the law!"](#)

Brochure [Don't go head over handlebars--drive with your head](#)

Brochure [Buying a bicycle](#)

Brochure [Kids and bikes](#)

Brochure [A consumer's guide to bicycle helmets](#)

Brochure [Must I buy my child a helmet?](#)

Brochure [Kids & bikes & safety](#)

Brochure [Did you know?](#)

Brochure [10 tips for fun and safe biking](#)

Flyer [Wisconsin's saved by the bicycle helmet club](#)

Flyer [Bicycle injury fact sheet](#)

Flyer [Does your bicycle helmet fit properly?](#)

Flyer [Ten commandments of bicycling](#)

Flyer [Bike safely first ride every ride](#)

Flyer [The facts](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Bike basics: A guide to safe bicycling for ages 10-15](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Let's learn more about bike driving](#)

Booklet [Safe kids are no accident](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Other [Bike safely first ride, every ride \(bookmark\)](#)

Other [10 smart routes to bicycle safety \(hang tag\)](#)

Other [Use your head and wear a helmet \(hang tag\)](#)

Proposed Countermeasures:

Video [Model bicycle owner's videos--one for adults, one for parents of small children](#)

Booklet [Model bicycle owner's manuals--one for adults, one for parents of small children](#)

Other [Hang tag for parents on child bike safety](#)

Other [Model bicycle owner's CDs--one for adults, one for parents of small children](#)



Helmet Use Media

Potential Role: The media can play a major role in bicycle safety issues. They can mount a proactive safety campaign to promote helmet use by all bicyclists. They can provide seasonal hot-button reminders on helmet use. For example, they can provide the public with information on the dangers of riding without a helmet while providing routine reporting on a serious injury or death attributable to lack of helmet use. They can provide positive publicity on community programs designed to ensure that bicyclists of all ages wear helmets. They can also publicize programs designed to ensure that bicycle signs in the community show bicyclists wearing helmets. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately (for example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic).

Countermeasure Focus: [Bicyclist](#) and [roadway](#)

Existing Countermeasures:

Video [Before the fall](#)

Flyer [Does your bicycle helmet fit properly?](#)

Other [Head Smart® public service announcement](#)

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Helmet Use Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to promote helmet use in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of the problem as well as on the remarkable reduction in deaths and serious injuries that occur when helmets are worn. They can encourage bicycle helmet use by all bicyclists and can support legislative and other programs designed to increase helmet use.

Countermeasure Focus: [Bicyclist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)



Helmet Use Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Examples are scouting programs, boys and girls clubs, and 4-H clubs. Community and civic groups with an adult membership can support bicycle safety programs by providing funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. All groups can serve as conduits through which safety-related information can be distributed to members, families, neighbors and friends. They can be aware of the enormous injury reduction potential of bicycle safety helmets and can support the acquisition and distribution of helmets to bicyclists and programs to ensure that a helmet is worn each time the bicyclist rides.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Bicyclist Training [Annual pedal power camp report](#)

Video [Before the fall](#)

Video [Pedal smarts](#)

Video [Getting there by bike](#)

Video [Head smart® bicycling](#)

Video [Basic bicycle education](#)

Video [A kid's eye view](#)

Video [Biking. . . Get the big picture](#)

Video [Otto the auto on bicycle safety](#)

Video [The bicycle zone](#)

Brochure [Get into the helmet habit](#)

Brochure [Lou and his friends have something important to tell you](#)

Brochure [Be a well dressed cyclist--wear a helmet](#)

Brochure [Kids speak out on bike helmet](#)

Brochure [Parents, buying your child a bike?](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [A bicycle is not a toy!](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [Use your head and wear a helmet \(Also available in Spanish\)](#)

Brochure [Keep a head; wear a helmet](#)

Brochure [The helmet habit: get into it!](#)

Brochure [Bicycle helmets for Florida's children--"It's the law!"](#)

Brochure [Don't go head over handlebars--drive with your head](#)

Brochure [Kids and bikes](#)

Brochure [Kids & bikes & safety](#)

Brochure [Did you know?](#)

Brochure [Your bicycle helmet: "A correct fit"](#)

Brochure [10 tips for fun and safe biking](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Flyer [Wisconsin's saved by the bicycle helmet club](#)

Flyer [Heads up helmets on](#)

Flyer [Bicycle injury fact sheet](#)

Flyer [Does your bicycle helmet fit properly?](#)

Flyer [Sally says: Safety starts at home](#)

Flyer [Bicycle inspection checklist](#)

Flyer [Bike safely first ride every ride](#)

Flyer [The facts](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Helmet safe with Bucklebear](#)

Booklet [Biking with Bucklebear](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Oregon bicyclist's manual](#)

Booklet [Bicyclist's guide](#)

Booklet [Bike basics: A guide to safe bicycling for ages 10-15](#)

Booklet [Herbert gets his glopp: A safe bike riding story](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Safe kids are no accident](#)

Report/Guide [Bicycle helmet campaign guide](#)

Report/Guide [Helmet program toolkit](#)

Other [Bike safely first ride, every ride \(bookmark\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Helmet Use Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that is designed to increase proper helmet use. They can support programs designed to acquire and distribute helmets and to ensure that they are worn properly every time the bicyclist rides. They can create signs, pavement symbols and instructional kiosks that leave no doubt that helmets are to be worn when bicyclists are using roadways, bike lanes and multi-use trails. They can also produce and/or distribute brochures on helmet design and fit as well as the importance of helmet use to reduction of serious bicycle injuries and fatalities.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Effective cycling: Road I, Road II and Road III](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Bicyclist Training [Annual pedal power camp report](#)

Bicyclist Training [Effective cycling: Kids I and Kids II](#)

Bicyclist Training [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)

Bicyclist Training [Safe moves for older adults](#)

Implementer Training [Safe moves for service providers](#)

Video [Before the fall](#)

Video [Pedal smarts](#)

Video [Getting there by bike](#)

Video [Snell: Kidz Vidz](#)

Video [Head smart® bicycling](#)

Video [Effective cycling](#)

Video [Ace of cycling](#)

Video [Bicycle safety](#)

Video [Basic bicycle education](#)

Video [Biking. . . Get the big picture](#)

Video [Otto the auto on bicycle safety](#)

Video [The bicycle zone](#)

Video [The Ride Safe way to fit a bicycle helmet](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [A bicycle is not a toy!](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [Use your head and wear a helmet \(Also available in Spanish\)](#)

Brochure [The helmet habit: get into it!](#)

Brochure [Don't go head over handlebars--drive with your head](#)

Brochure [Buying a bicycle](#)

Brochure [Kids & bikes & safety](#)

Brochure [Did you know?](#)

Brochure [Your bicycle helmet: "A correct fit"](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Flyer [Wisconsin's saved by the bicycle helmet club](#)

Flyer [Does your bicycle helmet fit properly?](#)

Flyer [Sally says: Safety starts at home](#)

Flyer [Bicycle inspection checklist](#)

Flyer [Ten commandments of bicycling](#)

Flyer [Bike safely first ride every ride](#)

Flyer [The facts](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Helmet safe with Bucklebear](#)

Booklet [Biking with Bucklebear](#)

Booklet [Badger bicycle tips](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Other [Bike safely first ride, every ride \(bookmark\)](#)

Other [What would a SuperCyclist do? \(poster\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Helmet Use Schools

Potential Role: There are many ways that school administrators and teachers can participate in programs to increase helmet use. They can cooperate with other groups (e.g., parents and law enforcement) to conduct helmet acquisition and distribution programs. They can implement a comprehensive bicycle safety education program that focuses on crash types and emphasizes the importance of wearing a properly fitted helmet at all times. Students can serve as efficient conduits for conveying information to their parents. Therefore, school officials can convey the importance of helmet use to parents and can seek parents' support in ensuring that each bicyclist has and uses a properly fitted helmet. At all educational levels, school officials and teachers can solicit funds for the development and implementation of helmet programs. They also can support helmet programs conducted by other organizations by publicly endorsing them.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Teacher's guide to bicycle safety: kindergarten-grade 8](#)

Bicyclist Training [Traffic safety teacher's guide](#)

Bicyclist Training [Traffic safety teacher's guide for grades K-3](#)

Bicyclist Training [Someone else](#)

Bicyclist Training [The right way](#)

Bicyclist Training [Bicycle traffic safety school](#)

Bicyclist Training [Look out! Highway safety topics for elementary students](#)

Bicyclist Training [Bucklebear gets ready to go kit](#)

Bicyclist Training [Traffic safety education guide](#)

- Bicyclist Training [The basics of bicycling](#)
- Bicyclist Training [The elementary traffic education program](#)
- Bicyclist Training [Biking with Bucklebear](#)
- Bicyclist Training [Bike Ed Hawaii](#)
- Bicyclist Training [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)
- Bicyclist Training [Safe moves for pre-kindergarten through grade 12](#)
- Implementer Training [Bicycle and pedestrian traffic safety education](#)
- Video [Before the fall](#)
- Video [Pedal smarts](#)
- Video [The E's of cycling](#)
- Video [Snell: Kidz Vidz](#)
- Video [Head smart® bicycling](#)
- Video [Ace of cycling](#)
- Video [Bicycle safety](#)
- Video [Basic bicycle education](#)
- Video [A kid's eye view](#)
- Video [Biking. . . Get the big picture](#)
- Video [Otto the auto on bicycle safety](#)
- Video [The bicycle zone](#)
- Video [The Ride Safe way to fit a bicycle helmet](#)
- Video [Community awareness](#)
- Brochure [Lou and his friends have something important to tell you](#)
- Brochure [Kids speak out on bike helmet](#)
- Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)
- Brochure [A bicycle is not a toy!](#)
- Brochure [Safe bicycle riding in New Jersey](#)

Brochure [Use your head and wear a helmet \(Also available in Spanish\)](#)

Brochure [Keep a head; wear a helmet](#)

Brochure [The helmet habit: get into it!](#)

Brochure [Do the right thing \(It's a bike thing\)](#)

Brochure [Bicycle helmets for Florida's children--"It's the law!"](#)

Brochure [Kids and bikes](#)

Brochure [Your bicycle helmet: "A correct fit"](#)

Brochure [Neighborhood adventures in bicycle safety: Striving to be a SuperCyclist](#)

Flyer [Wisconsin's saved by the bicycle helmet club](#)

Flyer [Does your bicycle helmet fit properly?](#)

Flyer [Sally says: Bicycle safety is every parent's responsibility!](#)

Flyer [Sally says: Safety starts at home](#)

Flyer [Bicycle inspection checklist](#)

Flyer [Bike safely first ride every ride](#)

Flyer [Schools help kids get the helmet habit](#)

Flyer [Bicycles and the new UC Davis cyclist, 1998-99](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Helmet safe with Bucklebear](#)

Booklet [Biking with Bucklebear](#)

Booklet [Bike like the best](#)

Booklet [Save a life like yours with Sally and friends: Activity book](#)

Booklet [Sam's adventures through Nevada: Safe pedaling in Nevada](#)

Booklet [Bicycle safety: A wheely good idea](#)

Booklet [Herbert gets his glopp: A safe bike riding story](#)

Booklet [Getting there safely by foot, by bike, by bus, by car](#)

Booklet [Team helmet bike safety book](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Drive your bicycle safely](#)

Booklet [Let's learn more about bike driving](#)

Booklet [The University of Montana cyclist's survival guide](#)

Report/Guide [Bicycle helmet campaign guide](#)

Report/Guide [Helmet program toolkit](#)

Other [Traffic safety education posters \(poster\)](#)

Other [Bike safely first ride, every ride \(bookmark\)](#)

Other [Official bike safety ID \(identification card\)](#)

Other [Davis bike map \(university and city map\)](#)

Other [Safety first. . . Always! \(calendar\)](#)

Other [What would a SuperCyclist do? \(poster\)](#)

Proposed Countermeasures:

Bicyclist Training [Computer-based self-instruction program for middle school and high school students](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)

Report/Guide [Guide for developing bicycle indoctrination material for new college students](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [What would a SuperCyclist do? \(poster\)](#)



Helmet Use Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Law enforcement officials can be knowledgeable about the serious injuries and fatalities that occur when bicyclists who aren't wearing safety helmets are involved in motor vehicle crashes. They can contribute to a reduction in these injuries and deaths in many ways. The first is to issue citations or warnings to bicyclists who fail to wear a helmet. An additional way is through informal training. Enforcement officers can participate in classroom and on-bike training, make presentations to various community groups, and provide impromptu training in the form of safety lectures and warnings when bicyclists are observed riding without helmets. All bicycle safety education administered by law enforcement officers can include a segment that educates bicyclists about the enormous injury reduction potential of bicycle safety helmets and a segment that is intended to motivate bicyclists to wear an approved helmet every time they ride a bicycle. Law enforcement officials can also support the acquisition and distribution of bicycle safety helmets to bicyclists. They can report high hazard locations and trends in unsafe behavior by roadway users. For example, they can identify and report areas where on- or off-street facilities are needed or where the sight distance is limited by vegetation, structures or parked vehicles. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. The effectiveness of traffic citations is heavily dependent on the sanctions that are imposed for violations. The most common sanctions include fines, required attendance at traffic safety school, and forfeiture of a vehicle operator's license. Fines and the requirement to attend traffic school are sanctions that can be imposed on both motorists and bicyclists. Since bicycle licenses are not typically required, forfeiture of a vehicle operator's license is a sanction that is imposed only on motorists. However, some jurisdictions add points to a bicyclist's motor vehicle operator's license for serious infractions of the bicycle laws.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Bicyclist Training [Someone else](#)

Bicyclist Training [The right way](#)

Bicyclist Training [Bicycle traffic safety school](#)

Implementer Training [Bike patrol training manual](#)

Implementer Training [Annual Minnesota bike patrol training](#)

Video [The E's of cycling](#)

Video [Biking. . . Get the big picture](#)

Video [Otto the auto on bicycle safety](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Flyer [Bicycle inspection checklist](#)

Flyer [Bike safely first ride every ride](#)

Booklet [Pocket guide: Safe bicycling in Nevada](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [New Jersey bicycle manual](#)

Report/Guide [Fairfax County Police Department Bike Safety Team](#)

Other [Bike safely first ride, every ride \(bookmark\)](#)

Proposed Countermeasures:

Bicyclist Training [Module on bicycle safety for trainers of DWI offenders](#)

Implementer Training [A video for law enforcement roll call and academy training](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)

Other [Law enforcement public information and education \(PI&E\) materials](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Helmet Use Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care groups can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs. Representatives of health care organizations are aware of the enormous injury reduction potential of bicycle safety helmets and can support the acquisition and distribution of bicycle safety helmets to young bicyclists. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Bicyclist Training [Washington children's bicycle helmet project: Curriculum guide](#)

Video [Before the fall](#)

Video [Head smart® bicycling](#)

Video [Bicycle safety](#)

Brochure [Lou and his friends have something important to tell you](#)

Brochure [Be a well dressed cyclist--wear a helmet](#)

Brochure [Kids speak out on bike helmet](#)

Brochure [Use your head and wear a helmet \(Also available in Spanish\)](#)

Brochure [Keep a head; wear a helmet](#)

Brochure [Bicycle helmets for Florida's children--"It's the law!"](#)

Brochure [Your bicycle helmet: "A correct fit"](#)

Flyer [Wisconsin's saved by the bicycle helmet club](#)

Flyer [Bicycle injury fact sheet](#)

Flyer [Does your bicycle helmet fit properly?](#)

Booklet [Team helmet bike safety book](#)

Report/Guide [Injury-control recommendations: Bicycle helmets](#)

Report/Guide [Circumstances and severity of bicycle injuries](#)

Report/Guide [Bibliography of helmet documents](#)

Flyer [About bicycle helmets](#)

Flyer [The child as a passenger on an adult's bicycle](#)

Flyer [Tips for getting your children to wear bicycle helmets](#)

Flyer [Safe bicycling starts early](#)

Flyer [Bicycle safety myths and facts](#)

Booklet [Safe kids are no accident](#)

Other [Head Smart® public service announcement](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)

Other [A package of safety education products for distribution by health care organizations and professionals](#)



Helmet Use Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. Food market chains may be willing to print similar messages and illustrations on the paper bags in which customers' purchases are packed. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. For example, they can become aware of the enormous injury reduction potential of bicycle safety helmets and can support the acquisition and distribution of bicycle safety helmets to young bicyclists. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees. Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Annual pedal power camp report](#)

Video [Before the fall](#)

Video [A kid's eye view](#)

Video [Biking. . . Get the big picture](#)

Video [Otto the auto on bicycle safety](#)

- Brochure [Get into the helmet habit](#)
- Brochure [Lou and his friends have something important to tell you](#)
- Brochure [Be a well dressed cyclist--wear a helmet](#)
- Brochure [Kids speak out on bike helmet](#)
- Brochure [Parents, buying your child a bike?](#)
- Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)
- Brochure [A bicycle is not a toy!](#)
- Brochure [Safe bicycle riding in New Jersey](#)
- Brochure [Use your head and wear a helmet \(Also available in Spanish\)](#)
- Brochure [The helmet habit: get into it!](#)
- Brochure [Bicycle helmets for Florida's children--"It's the law!"](#)
- Brochure [10 tips for fun and safe biking](#)
- Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)
- Flyer [Wisconsin's saved by the bicycle helmet club](#)
- Flyer [Heads up helmets on](#)
- Flyer [Bicycle injury fact sheet](#)
- Flyer [Does your bicycle helmet fit properly?](#)
- Flyer [Sally says: Safety starts at home](#)
- Flyer [Bike safely first ride every ride](#)
- Booklet [Bucklebear's rules for cycling](#)
- Booklet [Helmet safe with Bucklebear](#)
- Booklet [Biking with Bucklebear](#)
- Booklet [Bicycle safety: What every parent should know](#)
- Booklet [Oregon bicyclist's manual](#)
- Booklet [Bicyclist's guide](#)
- Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Safe bicycling in Chicago \(Also available in Polish and Spanish\)](#)

Booklet [Safe kids are no accident](#)

Other [Bike safely first ride, every ride \(bookmark\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their parents](#)



Helmet Use Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on crashes in which helmets are not worn and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program--engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure program materials developed under government auspices. In addition, they hold meetings and promote their areas of interest. They can also provide training and group meeting space.

Countermeasure Focus: [Bicyclist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [The guide to bicycle rodeos](#)

Bicyclist Training [Annual pedal power camp report](#)

Video [Before the fall](#)

Video [Pedal smarts](#)

Video [Getting there by bike](#)

Video [Head smart® bicycling](#)

Video [Effective cycling](#)

Video [Ace of cycling](#)

Video [Bicycle safety](#)

Video [A kid's eye view](#)

Video [Biking. . . Get the big picture](#)

Video [Otto the auto on bicycle safety](#)

Video [The bicycle zone](#)

Brochure [Get into the helmet habit](#)

Brochure [Lou and his friends have something important to tell you](#)

Brochure [Two-wheeled survival in a four-wheeled world](#)

Brochure [Be a well dressed cyclist--wear a helmet](#)

Brochure [Kids speak out on bike helmet](#)

Brochure [Parents, buying your child a bike?](#)

Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)

Brochure [A bicycle is not a toy!](#)

Brochure [Safe bicycle riding in New Jersey](#)

Brochure [Use your head and wear a helmet \(Also available in Spanish\)](#)

Brochure [The helmet habit:get into it!](#)

Brochure [Bicycle helmets for Florida's children--"It's the law!"](#)

Brochure [Don't go head over handlebars--drive with your head](#)

Brochure [Buying a bicycle](#)

Brochure [Kids and bikes](#)

Brochure [A consumer's guide to bicycle helmets](#)

Brochure [Must I buy my child a helmet?](#)

Brochure [Kids & bikes & safety](#)

Brochure [Did you know?](#)

Brochure [Your bicycle helmet: "A correct fit"](#)

Brochure [10 tips for fun and safe biking](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Flyer [Wisconsin's saved by the bicycle helmet club](#)

Flyer [Heads up helmets on](#)

Flyer [Bicycle injury fact sheet](#)

Flyer [Sally says: Bicycle safety is every parent's responsibility!](#)

Flyer [Sally says: Safety starts at home](#)

Flyer [Bicycle inspection checklist](#)

Flyer [Ten commandments of bicycling](#)

Flyer [Bike safely first ride every ride](#)

Flyer [The facts](#)

Flyer [Prevent bicycle crashes](#)

Booklet [Bucklebear's rules for cycling](#)

Booklet [Helmet safe with Bucklebear](#)

Booklet [Biking with Bucklebear](#)

Booklet [Bike like the best](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Oregon bicyclist's manual](#)

Booklet [Bike basics: A guide to safe bicycling for ages 10-15](#)

Booklet [Herbert gets his glopp: A safe bike riding story](#)

Booklet [From A to Z by bike](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Drive your bicycle safely](#)

Booklet [Safe bicycling in Chicago \(Also available in Polish and Spanish\)](#)

Booklet [Safe kids are no accident](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Report/Guide [Bibliography of helmet documents](#)

Report/Guide [Bicycle helmet campaign guide](#)

Report/Guide [Helmet program toolkit](#)

Other [Bike safely first ride, every ride \(bookmark\)](#)

Other [Head Smart® public service announcement](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Helmet Use Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can develop and implement a model neighborhood bicycle safety program. For example, they can do all or any part of the following: analyze the incidence of non-helmet use in the community, develop a plan to solve the problem, carry out the plan (including preparation and production of any needed materials), evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to increase the use of helmets by bicyclists.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Bicyclist Training [Annual pedal power camp report](#)

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Video [Head smart@ bicycling](#)

Video [Ace of cycling](#)

Video [Bicycle safety](#)

Video [A kid's eye view](#)

Brochure [Two-wheeled survival in a four-wheeled world](#)

Brochure [Be a well dressed cyclist--wear a helmet](#)

- Brochure [Kids speak out on bike helmet](#)
- Brochure [Bicycles are vehicles: Florida's bicycle laws. . . and safety tips](#)
- Brochure [A bicycle is not a toy!](#)
- Brochure [Safe bicycle riding in New Jersey](#)
- Brochure [Use your head and wear a helmet \(Also available in Spanish\)](#)
- Brochure [Bicycle helmets for Florida's children--"It's the law!"](#)
- Brochure [Don't go head over handlebars--drive with your head](#)
- Brochure [Buying a bicycle](#)
- Brochure [Kids and bikes](#)
- Brochure [A consumer's guide to bicycle helmets](#)
- Brochure [Must I buy my child a helmet?](#)
- Brochure [Kids & bikes & safety](#)
- Brochure [Did you know?](#)
- Brochure [Your bicycle helmet: "A correct fit"](#)
- Brochure [10 tips for fun and safe biking](#)
- Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)
- Flyer [Wisconsin's saved by the bicycle helmet club](#)
- Flyer [Sally says: Bicycle safety is every parent's responsibility!](#)
- Flyer [Sally says: Safety starts at home](#)
- Flyer [Ten commandments of bicycling](#)
- Flyer [Bike safely first ride every ride](#)
- Flyer [The facts](#)
- Flyer [Prevent bicycle crashes](#)
- Booklet [Bucklebear's rules for cycling](#)
- Booklet [Helmet safe with Bucklebear](#)
- Booklet [Biking with Bucklebear](#)

Booklet [Bike like the best](#)

Booklet [Bicycle safety: What every parent should know](#)

Booklet [Oregon bicyclist's manual](#)

Booklet [Pocket guide: Safe bicycling in Nevada](#)

Booklet [Badger bicycle tips](#)

Booklet [Florida cycling tips: Staying alive on the roads](#)

Booklet [Delaware bicycle driver's manual](#)

Booklet [Drive your bicycle safely](#)

Booklet [Let's learn more about bike driving](#)

Booklet [Safe bicycling in Chicago \(Also available in Polish and Spanish\)](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Booklet [New Jersey bicycle manual](#)

Report/Guide [State legislative fact sheet: Bicycle helmet use law](#)

Report/Guide [Bibliography of helmet documents](#)

Report/Guide [Bicycle helmet campaign guide](#)

Report/Guide [Helmet program toolkit](#)

Report/Guide [Bicycle safety-related research synthesis](#)

Other [Bike safely first ride, every ride \(bookmark\)](#)

Other [Head Smart® public service announcement](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Report/Guide [Responses to queries on bicycle safety](#)

Other [Slicks that contain crash illustrations and related safety information for young bicyclists and their](#)

parents



Helmet Use Planning Groups

Potential Role: Local and regional planning groups can adopt guidelines to encourage helmet use. They can review all existing guidelines for signs, symbols and markings and, as necessary, alter any graphics to depict bicyclists with helmets. They can standardize signs, stencils for bike lanes, trail markings and other engineering communications to depict bicyclists wearing helmets.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Report/Guide [Bicycle safety-related research synthesis](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Campus biking: Challenges and Strategies. The Campus Bike-Right Project at Cornell University](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Other [Update of signs and pavement markings for the MUTCD, Part IX](#)



Helmet Use Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt guidelines to encourage helmet use. They can review all existing guidelines for signs, symbols and markings and, as necessary, alter any graphics to depict bicyclists with helmets. They can standardize signs, stencils for bike lanes, trail markings and other engineering communications to depict bicyclists wearing helmets.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Report/Guide [Bicycle safety-related research synthesis](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Campus biking: Challenges and Strategies. The Campus Bike-Right Project at Cornell University](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Other [Update of signs and pavement markings for the MUTCD, Part IX](#)



Helmet Use Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can establish guidelines to encourage helmet use. They can review all existing guidelines for signs, symbols and markings and, as necessary, alter any graphics to depict bicyclists with helmets. They can standardize signs, stencils for bike lanes, trail markings and other engineering communications to depict bicyclists wearing helmets.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Wisconsin enhanced Effective Cycling Road I course](#)

Report/Guide [Bicycle safety-related research synthesis](#)

Report/Guide [Oregon bicycle and pedestrian plan](#)

Report/Guide [Bicycle facilities planning and design handbook](#)

Report/Guide [Traditional neighborhood development street design guidelines](#)

Report/Guide [Manual on uniform traffic control devices for streets and highways](#)

Report/Guide [Highway safety design and operations guide](#)

Report/Guide [Campus biking: Challenges and Strategies. The Campus Bike-Right Project at Cornell University](#)

Report/Guide [Guide for the development of bicycle facilities](#)

Report/Guide [A policy on geometric design of highways and streets](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Other [Update of signs and pavement markings for the MUTCD, Part IX](#)



Awareness Driver Regulatory Agencies

Potential Role: Driver regulatory agencies play a role in promoting and maintaining motorist driving standards in each state. They license new drivers and maintain up-to-date and complete records on each licensee. Through their record system, they monitor the driving performance of each licensee and remove the driving privilege from those who violate the state's laws and regulations. Depending on the authorization given to them by the state, they can make rules and regulations for carrying out the state's motor vehicle laws, including rules and regulations that cover driving performance. As part of its responsibilities, each regulatory agency prepares a driving manual for new state drivers. The manual explains the procedures to follow for obtaining a license and the laws, rules and regulations pertaining to driving legally and safely in the state. With regard to safe driving, many states take the opportunity to emphasize in their manuals the special precautions that drivers should take in sharing the road with bicyclists and pedestrians. These manuals often contain a special section providing bicyclist laws, rules and regulations as well as safety tips. Some states issue separate manuals or brochures for bicyclists. Driver regulatory agencies need to be aware of the responsibilities that motor vehicle drivers have to other roadway users and they need to ensure that applicants know these responsibilities before they are granted a license.

Countermeasure Focus: [Motorist](#) and [bicyclist](#)

Existing Countermeasures:

Video [Sharing the road: Bus operator training](#)

Brochure [Bicycle laws](#)

Report/Guide [Injuries to bicyclists: A national perspective](#)

Report/Guide [Incorporating consideration of bicyclists and pedestrians into education programs](#)

Proposed Countermeasures:

Brochure [Brochure providing road sharing information for motorists](#)



Awareness Manufacturers/Sellers

Potential Role: Manufacturers of bicycles and related equipment need up-to-date information on the nature of the bicycle crash problem so that they can design and produce appropriate equipment and prepare appropriate written materials for the consumer. Sellers need up-to-date information so that they can advise consumers appropriately at the point of purchase. It is also advisable for sellers to be knowledgeable about local bicycle issues as well as bicycle activities being carried out in the area (from road engineering improvements to planned rodeos) in order to be able to advise all levels of bicycle users appropriately. Sellers can also promote helmet use and products that increase conspicuity.

Countermeasure Focus: [Bicyclist](#)

Existing Countermeasures:

Brochure [Bicycling is great fun](#)

Brochure [Use your head and wear a helmet \(Also available in Spanish\)](#)

Brochure [Bicycle laws](#)

Brochure [Encouraging safe cycling for a livable Portland](#)

Brochure [Do you know Missoula's bicycle laws?](#)

Flyer [Bicycle injury fact sheet](#)

Flyer [The facts](#)

Flyer [Prevent bicycle crashes](#)

Booklet [So you're going to leave your bike at home today](#)

Booklet [Safe kids are no accident](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Other [Lincoln bicycle routes \(map\)](#)

Other [Chicago bicycling map: Share the road \(map\)](#)

Other [Use your head and wear a helmet \(hang tag\)](#)

Proposed Countermeasures:



Awareness Media

Potential Role: The media can play a major role in bicycle safety issues. They can mount a proactive safety campaign to promote bicycle safety. They can provide seasonal hot-button reminders on bicycle safety issues. They can provide the public with information on the nature and incidence of a bicycle problem while providing routine reporting on a crash attributable to that problem. To do so, they need to obtain crash data from police records or other highway safety data bases that will provide a proper perspective on the problem at hand. They need to know the bicycle safety programs that are being conducted in the area and the individuals who are responsible for the programs. They can then provide positive publicity on the program aims and activities. Among other advice, they can routinely emphasize the importance of the bicyclist's riding defensively and predictably at all times and of motorists driving carefully and searching for bicyclists in the roadway. They can publicize programs designed to ensure that streets are appropriately designed for the neighborhood and that adequate on- and off-street bicycle facilities are provided. Since their influence in a community is strong, it is especially important that they know the rules of bicycle safety so that they portray bicycle safety activities accurately. For example, all bicycle scenes must show bicyclists wearing properly-positioned helmets, wearing conspicuous clothing and riding with traffic.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Proposed Countermeasures:

Report/Guide [Media guide on bicycle safety](#)



Awareness Elected Officials

Potential Role: Elected officials will likely be called upon to develop a strategy to eliminate bicyclist crashes in response to a serious injury or death. In this capacity, they can be a source of invaluable publicity on the nature and incidence of the problem as well as methods to help solve the problem. They also can play a lead role in ensuring that neighborhoods are designed to accommodate safe use of bicycles. They need to know the seriousness of the bicycle safety problem in their jurisdiction and the countermeasures available to solve those problems. It would also be desirable for them to know what the particular jurisdiction is doing in the bicycle safety area, what organizations are involved, and the success, if any, that the community is having in reducing its bicycle safety problem.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Report/Guide [Injuries to bicyclists: A national perspective](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by elected officials](#)

Brochure [Brochure promoting bicycle safety by elected officials](#)

Other [Internet web page providing a living library of bicycle model laws and ordinances](#)



Awareness Community/Civic Groups

Potential Role: Many community and civic groups have the capability to support bicycle safety programs. Some groups are local chapters of national organizations and, therefore can support both local and non-local programs. Some groups consist mainly of young people and others consist of adults. Children's groups can provide an effective way to gain access to large numbers of young bicyclists. Adult groups can provide funding, volunteer labor, facilities and public endorsements. All groups with an adult membership can sponsor specific bicycle safety activities and use their political influence to gain the support of public officials in improving bicycle safety. Officials and members of community and civic groups need to be aware of the bicycle/motor-vehicle crash problem. Knowledge that must be acquired to achieve an adequate level of awareness includes the following: the frequency and severity of bicycle/motor-vehicle crashes, the crash types that occur most often among different age groups, the types of countermeasures that promise to be most effective in reducing crash frequency and severity, and the ways that they can support the development and implementation of countermeasure programs. Officials and members of community and civic groups need to be aware of the other key community officials and leaders who must provide support in order to develop and implement effective crash countermeasures. They can support efforts to increase the awareness of other key community officials and leaders.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Video [Children in traffic, why are they different](#)

Brochure [Along for the ride](#)

Brochure [Parents, buying your child a bike?](#)

Brochure [Bicycling is great fun](#)

Brochure [Use your head and wear a helmet \(Also available in Spanish\)](#)

Brochure [Bicycle laws](#)

Brochure [Encouraging safe cycling for a livable Portland](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Flyer [Bicycle injury fact sheet](#)

Flyer [The facts](#)

Booklet [So you're going to leave your bike at home today](#)

Booklet [Safe kids are no accident](#)

Other [Lincoln bicycle routes \(map\)](#)

Other [Chicago bicycling map: Share the road \(map\)](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by community and civic organizations](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by community and civic organizations](#)



Awareness Bicycle-Related Organizations

Potential Role: Bicycle-related organizations include a variety of groups whose major focus is on the bicyclist and bicyclist problems. As examples, the group includes bicycle advocacy organizations, bicycle clubs, bicycle magazine publishers and others. They range from organizations whose concerns include federal highway legislation and funding issues to groups who assemble primarily to share a common interest in bicycling. Among other activities, the groups can lobby for bicycling interests, perform bicycle research, promote roadway improvements, produce and distribute education countermeasures, develop and present training programs, sponsor conferences and produce bicycle-related magazines, newsletters and reports. These organizations are in a unique position to help coordinate and disseminate information on both a national, state and local level and to back the implementation of local programs. They can support virtually any bicycle safety program that fits within the purview and funding of the given organization. They can perform neighborhood audits to assess the safety of the area for bicycling and serve as lobbying groups for roadway improvements. They can study the nature of the bicycle safety problem in terms of crash types, involved target groups and location. They can promote a variety of activities including reduction of motorist travel speeds, improvement of sight distance, and enhancement of bicyclist conspicuity. They can also produce and/or distribute brochures on bicycle safety. To perform effectively, they need to be aware of the bicycle crash problem and the countermeasures that can be used to attack the problem. They also need to know the bicycle safety activities that are going on in the community and the key individuals that can support efforts to improve bicycle safety.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and [roadway](#)

Existing Countermeasures:

Brochure [Use your head and wear a helmet \(Also available in Spanish\)](#)

Brochure [Bicycle laws](#)

Brochure [Encouraging safe cycling for a livable Portland](#)

Brochure [Do you know Missoula's bicycle laws?](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Flyer [The facts](#)

Flyer [Prevent bicycle crashes](#)

Booklet [So you're going to leave your bike at home today](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Report/Guide [The bicycle compatibility index: A level of service concept. Final report](#)

Report/Guide [Training programs for bicycle safety](#)

Other [Lincoln bicycle routes \(map\)](#)

Other [Chicago bicycling map: Share the road \(map\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Awareness Schools

Potential Role: School officials and parents need to be aware of the bicycle/motor-vehicle crash problem. The following knowledge must be acquired to achieve an adequate level of awareness: the frequency and severity of bicycle/motor-vehicle crashes, the crash types that occur most often among different school-age groups, the types of countermeasures that promise to be most effective in reducing crash frequency and severity, and the ways that school officials and parents can support the development and implementation of countermeasure programs. School officials and parents need to be knowledgeable about the other key community officials and leaders who must provide support in order to develop and implement effective crash countermeasures. They also need to support efforts to increase the awareness of other key community officials and leaders.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Bicycle information test, answer sheet and scoring key](#)

Video [Children in traffic, why are they different](#)

Video [Education is the key](#)

Brochure [Use your head and wear a helmet \(Also available in Spanish\)](#)

Brochure [Bicycle laws](#)

Flyer [Prevent bicycle crashes](#)

Report/Guide [Incorporating consideration of bicyclists and pedestrians into education programs](#)

Report/Guide [Training programs for bicycle safety](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by pre-school administrators](#)

Video [Video promoting bicycle safety by elementary, middle and high school administrators](#)

Video [Video promoting bicycle safety by college administrators](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by pre-school administrators](#)

Brochure [Brochure promoting bicycle safety by elementary, middle and high school administrators](#)

Brochure [Brochure promoting bicycle safety by college administrators](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide for developing bicycle indoctrination material for new college students](#)

Report/Guide [Training programs for bicycle safety](#)



Awareness Law Enforcement and Adjudication

Potential Role: Enforcement and adjudication can be considered necessary components of bicycle safety countermeasure programs. Law enforcement officials can be knowledgeable about bicycle/motor-vehicle crashes and can contribute to a reduction in these crashes in many ways. The first is to issue citations or warnings to bicyclists and motorists. An additional way is through informal training. Enforcement officers can participate in classroom and on-bike training, make presentations to various community groups, and provide impromptu training in the form of safety lectures and warnings when bicyclists or motorists are observed operating their vehicles in a potentially dangerous fashion. They can report high hazard locations and trends in unsafe behavior by roadway users. Although seldom an official (documented) job requirement, observations by enforcement officers can lead to changes in the roadway design and changes in traffic laws. Law enforcement officials need to be aware of the other key community officials and leaders who must provide support in order to develop and implement effective crash countermeasures. They can provide appropriate groups with needed crash data and support other efforts to increase awareness of community leaders.

Countermeasure Focus: [Motorist](#), [bicyclist](#) and [roadway](#)

Existing Countermeasures:

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Implementer Training [Law enforcement bicycle patrol course](#)

Implementer Training [Annual Minnesota bike patrol training](#)

Brochure [Bicycle laws](#)

Brochure [Do you know Missoula's bicycle laws?](#)

Proposed Countermeasures:

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by traffic court judges](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by traffic court judges](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Report/Guide [College bicyclist education and enforcement program guide](#)

Report/Guide [Guide to school bicycle safety presentations by police officers](#)

Other [Law enforcement public information and education \(PI&E\) materials](#)



Awareness Health Care Organizations

Potential Role: The health care industry consists of many different components that have the potential for supporting countermeasure development and implementation. These include medical practitioners and emergency medical care personnel, state and national associations and foundations, medical insurance companies, hospitals and clinics, immediate care centers, pharmaceutical companies, medical supply companies and medical practitioners' offices. Health care groups can support the development and implementation of bicycle crash countermeasures in several ways. First, they can participate actively in bicycle safety programs. Second, they can develop bicycle safety materials and serve as highly effective centers for their distribution. Third, they can provide funds to conduct important research or to develop and implement countermeasures. Finally, they can use their individual and collective influence to encourage government agencies at all levels to support countermeasure programs. In addition to being key decision-makers in the health care arena, state and national medical associations, societies, and foundations reach hundreds of thousands of medical practitioners directly and through their national journals and newsletters. Medical insurance companies, pharmaceutical companies, and medical supply companies also have enormous potential for providing financial support, access to numerous medical practitioners, and political influence. In addition, medical practitioners' offices and the waiting rooms of other health care facilities have the potential of being highly effective information distribution sites. Such sites can be particularly effective for distributing information to important target groups. Representatives of health care organizations need to be aware of the frequency and severity of bicycle/motor-vehicle crashes, the crash types that occur most often among different age groups, the types of countermeasures that promise to be most effective in reducing crash frequency and severity, and the ways that health care officials and their employees can support the development and implementation of countermeasure programs. Representatives of health care organizations also need to be aware of other key community officials and leaders who must provide support in order to develop and implement effective crash countermeasures. Representatives of health care organizations can support efforts to increase the awareness of other key community officials and leaders.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Bicyclist Training [Safety advice from EMS \(SAFE\): A guide to injury prevention](#)

Brochure [Bicycling is great fun](#)

Brochure [Use your head and wear a helmet \(Also available in Spanish\)](#)

Flyer [Bicycle injury fact sheet](#)

Flyer [The child as a passenger on an adult's bicycle](#)

Flyer [Choosing the right size bicycle for your child](#)

Booklet [Safe kids are no accident](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by health care officials](#)

Video [Video promoting bicycle safety by first responders](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by health care officials](#)

Brochure [Brochure promoting bicycle safety by first responders](#)

Other [A package of safety education products for distribution by health care organizations and professionals](#)



Awareness Private or Corporate Business

Potential Role: Businesses can be called upon to fund or otherwise support the development and distribution of countermeasure products. For example, fast food restaurants may be willing to print safety messages and illustrations on their place mats. On a larger scale, major corporations may be willing to sponsor more comprehensive countermeasure programs. Businesses can distribute information about crash types, causes, and countermeasures to their employees. Such information can be distributed in the form of hard-copy printed material or in the form of electronic mail messages and graphics. Information packages might be developed for distribution to all employees or only to selected groups of employees. Business leaders can support bicycle safety indirectly by encouraging local and non-local agencies to develop and implement effective safety programs, by providing facilities and volunteer labor for crash countermeasure programs, and by publicly endorsing effective safety programs that are being implemented. Business leaders can also provide the funding or expertise needed to conduct important research. Representatives of private or corporate businesses need to be aware of the severity of bicycle/motor-vehicle crashes, the crash types that occur most often among different age groups, the types of countermeasures that promise to be most effective in reducing crash frequency and severity, and the ways that business leaders and their employees can support the development and implementation of countermeasure programs. Business representatives also need to be aware of other key community officials and leaders who must provide support in order to develop and implement effective crash countermeasure programs.

Countermeasure Focus: [Bicyclist](#) and [motorist](#)

Existing Countermeasures:

Video [Sharing the road: Bus operator training](#)

Brochure [Parents, buying your child a bike?](#)

Brochure [Bicycling is great fun](#)

Brochure [Use your head and wear a helmet \(Also available in Spanish\)](#)

Brochure [Bicycle laws](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Flyer [Bicycle injury fact sheet](#)

Booklet [So you're going to leave your bike at home today](#)

Booklet [Safe kids are no accident](#)

Other [Lincoln bicycle routes \(map\)](#)

Other [Chicago bicycling map: Share the road \(map\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Video [Video promoting bicycle safety by corporate business officials](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by corporate business officials](#)

Other [Pre-formatted electronic mail safety messages](#)



Awareness Private Highway Safety Groups

Potential Role: Private highway safety groups can serve as a major resource for bicycle safety materials. They can conduct or support research on the bicyclist crash problem and develop, produce and distribute needed countermeasure materials. They can support any type of countermeasure program--engineering, public information, training or enforcement. They may be asked to serve as distribution points for countermeasure program materials developed under government auspices. In addition, they hold meetings and promote their areas of interest. They can also provide training and group meeting space. They need to be knowledgeable about government- and privately-sponsored research on the bicycle safety problem in their areas of interest and of proven countermeasures to those problems.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the focus of the private highway safety group

Existing Countermeasures:

Bicyclist Training [Bicycle information test, answer sheet and scoring key](#)

Video [Sharing the road: Bus operator training](#)

Video [Children in traffic, why are they different](#)

Brochure [Two-wheeled survival in a four-wheeled world](#)

Brochure [Parents, buying your child a bike?](#)

Brochure [Bicycling is great fun](#)

Brochure [Use your head and wear a helmet \(Also available in Spanish\)](#)

Brochure [Bicycle laws](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Flyer [Bicycle injury fact sheet](#)

Flyer [The facts](#)

Flyer [Prevent bicycle crashes](#)

Booklet [So you're going to leave your bike at home today](#)

Booklet [Safe kids are no accident](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Report/Guide [Traffic Safety Facts 1997: Pedalcyclists](#)

Other [Lincoln bicycle routes \(map\)](#)

Other [Chicago bicycling map: Share the road \(map\)](#)

Proposed Countermeasures:

Video [Video promoting bicycle safety by parents](#)

Brochure [Brochure promoting bicycle safety by parents](#)



Awareness Public Highway Safety Groups

Potential Role: Community Traffic Safety Programs/Teams (CTSPs/CTSTs) can be leaders in a community-wide response to promote safe roadways. Working in partnership with the state or city highway safety office, they can develop and implement a model neighborhood bicycle safety program. They can do all or any part of the following: analyze the incidence and location of the bicyclist crash problem in the community, develop a plan to solve the problem, carry out the plan, evaluate the results and disseminate the results. They will likely need to coordinate activities with a variety of community members, including virtually any potential implementer of bicycle safety plans and programs. Thus, they can conduct or support any type of countermeasure program (engineering, public information, training or enforcement) that is designed to reduce the bicyclist crash problem. To do this effectively, they will need to obtain relevant bicycle crash data from police or other highway safety data bases and distribute these data to their implementer group team members, as necessary. They will need to be knowledgeable about the types of countermeasure approaches (bicyclist, motorist and/or roadway) that might be effective in attacking their particular bicyclist crash problem(s). CTSP/CTST team members also need to be aware of other key community officials and leaders who must provide support in order to develop and implement effective crash countermeasure programs.

Countermeasure Focus: [Bicyclist](#), [motorist](#) and/or [roadway](#) depending on the specific implementer group(s) whose countermeasures the CTSP/CTST will support

Existing Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Video [Making streets that work](#)

Video [Sharing the road: Bus operator training](#)

Video [Children in traffic, why are they different](#)

Brochure [Two-wheeled survival in a four-wheeled world](#)

Brochure [Along for the ride](#)

Brochure [Use your head and wear a helmet \(Also available in Spanish\)](#)

Brochure [Bicycle laws](#)

Brochure [Encouraging safe cycling for a livable Portland](#)

Brochure [Wheel issues: Road sharing tips for bikes and big trucks](#)

Flyer [The facts](#)

Flyer [Prevent bicycle crashes](#)

Booklet [So you're going to leave your bike at home today](#)

Booklet [Sharing the road: New York State pedestrian, bicycle and in-line skating laws](#)

Report/Guide [Injuries to bicyclists: A national perspective](#)

Report/Guide [State legislative fact sheet: Bicycle helmet use law](#)

Report/Guide [Bicycle safety-related research synthesis](#)

Report/Guide [Traffic engineering handbook](#)

Report/Guide [Traffic calming state-of-the-art](#)

Report/Guide [Traffic Safety Facts 1997: Pedalcyclists](#)

Report/Guide [Bicycle and pedestrian provisions of the federal-aid program](#)

Report/Guide [Training programs for bicycle safety](#)

Other [Lincoln bicycle routes \(map\)](#)

Other [Chicago bicycling map: Share the road \(map\)](#)

Proposed Countermeasures: Refer also to the specific implementer group(s) whose countermeasures the CTSP/CTST will support.

Implementer Training [Training program for college traffic planners](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by parents](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by parents](#)

Report/Guide [Responses to queries on bicycle safety](#)



Awareness Planning Groups

Potential Role: Local and regional planning groups can adopt and implement street and trail network guidelines for their communities. They can ensure that they are knowledgeable about the most recent national guidelines and that they work to ensure that the guidelines are implemented. Working with neighborhood leaders, builders associations, and safety officials, they can enact and apply new guidelines for streets, street systems and site plan reviews, among others. They can rewrite local codes for implementing neighborhood design and can promote these codes. In addition, they can assist developers to create model subdivisions and can work with neighborhood groups to retrofit existing neighborhoods.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Video [Making streets that work](#)

Report/Guide [Wisconsin bicycle planning guidance](#)

Report/Guide [Bicycle safety-related research synthesis](#)

Report/Guide [Traffic engineering handbook](#)

Report/Guide [Bicycle and pedestrian provisions of the federal-aid program](#)

Report/Guide [The bicycle compatibility index: A level of service concept. Final report](#)

Proposed Countermeasures:

Implementer Training [Training program for college traffic planners](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Other [Update of signs and pavement markings for the MUTCD, Part IX](#)



Awareness Public Highway Agencies

Potential Role: Local and regional public highway organizations can adopt and implement street and trail network guidelines. They can ensure that they are knowledgeable about the most recent national guidelines and that they work to ensure that the guidelines are implemented. They can promote the guidelines to local planning agencies and provide training for builders and engineers. Working with neighborhood leaders, builders associations and safety officials, they can review development sites, adopt a model code, and fine tune the code. They can adopt new guidelines for streets, street systems, and site plan reviews, among others.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Video [Making streets that work](#)

Report/Guide [Bicycle safety-related research synthesis](#)

Report/Guide [Traffic engineering handbook](#)

Report/Guide [Bicycle and pedestrian provisions of the federal-aid program](#)

Proposed Countermeasures:

Implementer Training [Training program for college traffic planners](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Other [Update of signs and pavement markings for the MUTCD, Part IX](#)



Helmet Use

Problem Description: Head injury is the leading cause of death in bicycle crashes and is the most important determinant of bicycle-related death and permanent disability. A bicycle helmet is the single most effective safety device available to reduce head injuries and deaths. As these facts become better known, attempts will increase to get more bicyclists of all ages to wear an approved helmet.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

Bicyclist:

§ Bicyclists will wear an approved, properly-positioned bicycle safety helmet every time they ride their bicycles.

Motorist:

§ Motorists will reduce speed and drive with care in the presence of bicyclists.

Roadway:

§ Signs, pavement markings, symbols and instructional kiosks will leave no doubt that helmets are to be worn when using roadways, bike lanes and multi-use trails



Awareness

Problem Description: In order to improve bicycle safety, awareness is needed in at least three areas. The first is knowledge of the risks of bicycling, that is, the bicycle is not a toy and fatalities and serious injuries result from bicycle/motor vehicle crashes. The second is understanding of the state of the art of bicycle facilities and how well-designed facilities can improve safety. The third is knowledge of existing countermeasures that are worth implementing and that will help to correct bicycle safety problems. One implementer group may need to obtain information from another group in order to improve awareness in one or more of these areas. For example, in order to learn about the severity of the bicycle crash problem, the media and other groups can obtain bicycle crash data from police records or from national, state or local highway safety records. In addition, each implementer group will need to ensure that its group members are fully aware of the specific bicycle safety problems that they will address and of effective programs that they can use to counter those problems.

Countermeasure Objectives: One or more of the following objectives should be included in any materials focused on reducing crashes in this problem area:

§ **Note:** For the following objectives, it is assumed that each implementer will focus primarily on the area(s) where that implementer can effect a change. For example, pre-school administrators will increase their knowledge about pre-school bicyclist dangers and what can be done to decrease pre-school crashes.

Bicyclist:

§ Implementers will be knowledgeable about ways in which bicyclists contribute to their own safety when riding.

§ Implementers will be knowledgeable about the countermeasures that can be effectively used to attack those bicyclist problems.

Motorist:

§ Implementers will be knowledgeable about the dangers that motorists contribute to bicycling safety and the ways motorists can improve their driving skills.

§ Implementers will be knowledgeable about the countermeasures that can be effectively used to attack those motorist problems.

Roadway:

§ Implementers will be knowledgeable about the dangers that the roadway contributes to bicycling safety.

§ Implementers will be knowledgeable about the countermeasures that can be effectively used to attack those roadway problems.



Awareness Engineering/Architecture Groups

Potential Role: National engineering, architecture and landscape architecture organizations can develop and adopt street and trail network guidelines for their members. A collaborative team made up of these groups can establish practices, policies and recommendations for their members, distribute the information to their members, and urge their members to find successful ways to form local teams to implement the policies. They can ensure that they have up-to-date design data and can write new guidelines for streets, street systems, and site plan reviews, among others, as needed. Prompt dissemination will ensure that their membership is aware of these latest guidelines.

Countermeasure Focus: [Roadway](#)

Existing Countermeasures:

Implementer Training [Pedestrian and bicyclist safety and accommodation](#)

Video [Making streets that work](#)

Report/Guide [Bicycle safety-related research synthesis](#)

Report/Guide [Traffic engineering handbook](#)

Report/Guide [Bicycle and pedestrian provisions of the federal-aid program](#)

Report/Guide [The bicycle compatibility index: A level of service concept. Final report](#)

Proposed Countermeasures:

Implementer Training [Training program for college traffic planners](#)

Video [Conducting community audits \(a set of three videos\)](#)

Video [Video promoting bicycle safety by engineering and planning groups](#)

Brochure [Conducting community audits \(a package of three brochures\)](#)

Brochure [Brochure promoting bicycle safety by engineering and planning groups](#)

Other [Update of signs and pavement markings for the MUTCD, Part IX](#)



Keep a head wear a helmet

Source: Lincoln-Lancaster County Health Department, Injury Prevention Program, 2200 St. Mary's Avenue, Lincoln, NE 68502, Telephone: (402) 441-8045

Date: 1993

Summary description: This 8-1/2 x 11 brochure is folded to 3-2/3 x 11 and printed in shades of red and black on gray paper. It summarizes research on helmets and encourages parents to make sure that they are used. It also notes other bicycle safety tips, bicycle crash data in the Lincoln-Lancaster area and Nebraska bicycle laws.

Major content points and behaviors: The brochure covers the following major points:

- § In 1991, trauma to the head was the most common pedal cycle diagnosis for injuries in the Lincoln-Lancaster area
- § Helmets can reduce head injuries by up to 95% and the risk of brain injury by almost 90%.
- § Helmets should have a hard outer shell, be snug but comfortable, and have a chin strap and buckle that stay secure
- § The helmet should not be something that the "child will grow into"
- § Helmets should meet ANSI or Snell standards

The following tips are provided for getting children to wear helmets:

- § Purchase the helmet when children begin biking
- § Wear a helmet yourself
- § Talk to them about what can happen if they don't wear one
- § Reward children for wearing helmets

Keep a head; wear a helmet

- § Encourage their friends to wear helmets
- § Don't let your child ride without a helmet

In addition, parents are advised to make sure that:

- § The child's bike fits, is properly maintained and has the appropriate safety equipment
- § Clothing is of a light color and, when riding at night, is marked with reflective material
- § Clothing is close fitting to avoid getting caught in moving bicycle parts
- § Headphones are never worn
- § The child obeys all Nebraska laws