

Chapter 4

PEDESTRIAN AND BICYCLE EDUCATION AND SAFETY

INTRODUCTION

Bicycle education is critical for encouraging both bicycling and bicycle safety. Although improving bicycle facilities is the most effective way to increase bicycle use, bicycle education and safety encourages safe bicycling. Unfortunately, too many bicyclists in the United States lack the basic skills or knowledge to safely ride a bicycle in traffic. Bicycle education programs are designed to increase bicycle safety by improving the ability of cyclists to ride with traffic as well as by heightening motorist awareness. The difficulties faced in helping cyclists to develop this skill and knowledge stem from the wide range of age groups that require this training and the necessity of tailoring the programs for each one. For example, young children should be taught the basic rules of the road in conjunction with hands-on bicycling instruction. Adults benefit most from a program designed to impart the responsibilities of bicycle riding by both demonstrating how to safely share the road with motor vehicle traffic and providing tips on the benefits and methods of bicycle commuting. Bicycle education programs should be directed at the following groups:

- Child Bicyclists
- Adult Bicyclists
- Motorists
- Law Enforcement Officials

Attempts by a community to provide all of these programs can definitely put stress on a system that is already overloaded; money and staffing are in short supply in every jurisdiction. For this reason, a community must explore all possible avenues in designing and implementing a bicycle education strategy. Public agencies such as city planning, public works, police, public health, community development and school districts must be brought into the effort. Community and civic organizations, employers, local businesses and cycling clubs should also be tapped as resources. Some of the most successful programs are the result of coalitions of public agencies and private groups working together toward a common goal.

In general, bicycle education programs can be described as those which develop awareness and provide information such as posters, brochures and videos; and those which change behavior and/or develop skills, such as programs with on-bike instruction. Programs vary, including hands-on riding instruction, teaching adults who supervise children, public awareness programs, and instruction for motorists, law enforcement officers and community events. The key to any bicycle education program is to reach your target audience, in other words, getting people to participate. Bicycle promotion programs, discussed at the end of this chapter, are intended to increase the community's awareness of the benefits of bicycling and can also serve to improve safety for bicyclists.

As previously mentioned, bicycle education programs can take many forms and are generally directed at either child or adult bicyclists and/or motorists, law enforcement officials or the community at-large. Children are at the greatest risk for injuries due to bicycle-related accidents. Therefore, children tend to receive more attention in bicycle education strategies than do adults, motorists and law enforcement officials. The following sections discuss the characteristics of the bicycle education programs most suitable for each group listed above. Additional information on education programs is presented in Appendix G.

CHILD BICYCLISTS

Existing Local Programs

In Sonoma County, several nonprofit bicycle advocacy groups and city and government committees are responsible for bicycle education for children. Sonoma County's Bicycle and Pedestrian Advisory Committee provides a free *Sonoma County Bicycle Education Resource Guide* which lists 8 different agencies and describes the types of bicycle education and safety services and materials they offer, which range from pamphlets to bicycle rodeos to videos in both Spanish and English. One group on the list, the Santa Rosa Cycling Club, in addition to its bicycle tours for adults and other bicycle advocacy work, also holds bicycle rodeos several times a year.

The Santa Rosa Police Department received a state grant from the Office of Traffic Safety focusing on enforcement, diversion and educational courses for elementary and middle schools. The primary focus of this program consists of bicycle rules of the road and the importance of wearing helmets. The information is disseminated via pamphlets, presentations, trips, bicycle helmet day, community and media events and two bicycle rodeos a year. The grant will also provide 1,000 free bicycle helmets to low-income youth over a period of two years. One program for 7th graders consists of providing an overview of the law, bicycle rights-of-way, equipment overview and information from a hospital clinician about the importance of wearing a helmet.¹ In contrast, the high school programs have very little bicycle education. The amount of bicycle education given in the high school program depends upon the officer in charge of traffic education and safety, and funding.

General Guidelines

School children benefit most from an action-oriented teaching approach. Most bicycle safety programs target elementary school-aged children and their parents. Programs targeted at beginning bicyclists, between the ages of five and eight, focus on the role parents play in selecting the proper size and type of equipment, in supervising their child's use of that equipment, and in teaching the basic mechanical skills needed to start, balance, steer and stop a bicycle. Parents may be reached through parent-teacher associations and children through programs sponsored by the schools, day care centers, summer camps, and boys and girls clubs.

Children pose a special safety problem as they learn to ride bicycles. Skills such as learning to ride by the rules, looking for traffic and using hand signals need to be learned. Bicycle education programs should start as early as children learn to ride, and should be modified as the

¹ Resource Officer Larry Miere: 707-543-3670.

years go by to focus on the needs of each age group. There is a critical window of opportunity for learning and integrating traffic skills defined by children's development on one end and the age at which they are most at risk for crashes and injuries on the other end. Children between the ages of nine and ten are the optimal target for learning how to enter and exit the roadway; scanning ahead, behind and to the side while riding straight, and communicating and cooperating with other road users. Bicycle education programs directed at children should include basic instruction on rules of the road and training to develop the skills necessary to ride a bike.

Using bicycle rodeos, presentations and helmets to develop safe bicycling skills are only the first steps toward encouraging safe bicycling. Highlighting bicycle enjoyment by giving children tours of their neighborhoods and parks is fundamental to building confidence and encouraging bicycle riding both as children and as future adults. Several models for these types of programs already exist. San Francisco, Oakland, Seattle and Portland all offer extensive programs through community and school-related bicycle club programs geared towards educating kids about defensive bicycle riding and bicycle repair. Programs range from taking children on neighborhood bike rides to offering free classes in bicycle maintenance in exchange for several hours of volunteer time. For example, the Portland-based Community Cycling Center's biking school for kids offers a two-week riding class on defensive bicycle riding and repair.² East Palo Alto and other Bay Area communities have programs that teach at-risk youth to fix old bicycles.

Professor William Moritz at the University of Washington has proposed that the one-shot method of Driver's Education for high school sophomores be replaced with a curriculum that spans most of their primary and secondary school career. Four major areas of instruction would be taught in four stages of students' development. In Grades K-3, students would learn basic pedestrian skills, stranger danger, crossing residential streets, using pedestrian push buttons, taking a school bus, etc. Older students in Grades 4 to 5 would be ready to learn bike safety and handling skills, including bike operation on streets with supervised bike rides on neighborhood streets. This is being done in many states including Hawaii, Montana, Florida and North Carolina. Later, in Grades 7-9, they would learn basic mobility skills for getting around town, including using transit for utilitarian and recreational trips (reading a bus schedule, executing a transfer, taking rapid transit), and more on safe bicycling practices. By the time students reach Grade 10, they would be transit-independent and able to go places without needing a ride. In tenth grade, students would also take driver's education, as they do now. But driver's education would include focused instruction on how motorists should interact with pedestrians and bicyclists, how to predict bicyclist and pedestrian movements, pass safely, learn when different modes have the right-of-way, etc.

It is recommended that bicycle education for children should include the following elements:

- **Kindergarten through Third Grade** - Pedestrian and bicycling safety education/safety training.
- **Fourth and Fifth Grades** - *Basics of Bicycling* (curriculum developed by Bicycle Federation of America) or other classroom/on-bike program to teach bike-handling skills.

² For more information, see <www.teleport.com/~comcycle/index.html>.

- **Middle School and High School** - Should cover commuting as well as recreational uses, touring, and racing; conducted by volunteer cycling advocates. High School - include bicycle education as part of driver's training courses. *Effective Cycling* (developed by the League of American Bicyclists) should serve as the foundation for training cyclists to ride safely in traffic and on the road.
- **Local Universities** - Promote cycling on campus, introduce *Effective Cycling* as physical education course (similar to racquetball, tennis, etc.).

Bicycle Helmets - Bicyclists under the age of 18 are required by California state law to be wearing a properly fitted and fastened bicycle helmet. Before 1994 when this law went into effect, over 25% of bicycle accidents involved head injuries. Of these, more than one-half were life-threatening. Many communities have developed special programs to encourage the purchase and use of bicycle helmets. Helmet companies and bicycle shops have offered discounts for community and school programs to provide helmets at little or no cost.

ADULT BICYCLISTS

Few materials and programs exist that focus on the adult rider, with the exception of *Effective Cycling*. Most adult bicyclists have not had any formal bicycle education in childhood outside of learning the basic mechanical skills. At the same time, there are misconceptions, myths and outdated advice that further challenge adult bicyclists' safety. For instance, some believe a bicyclist should ride facing traffic, and many bicyclists bike at night without the required headlights and reflectors. Bicycle education programs developed for the adult cyclist need to educate cyclists about bicyclists' rights and responsibilities on the road and techniques for sharing the road with motorists. In addition, publicizing typical behaviors that cause accidents help bicyclists avoid common crashes.

Most unsafe bicycle riding occurs simply because the violator does not know the laws. Educating non-english-speaking cyclists poses an additional barrier. The American Automobile Association (AAA) has numerous brochures in English and Spanish on the vehicle codes. Last year, the City of Half Moon Bay implemented an aggressive program to educate their Latino/Hispanic communities in response to several bicycle accidents and three fatalities. Spanish-speaking police officers stop cyclists who are riding on the wrong side of the road or at night without a light. Instead of issuing a citation, the officer explains the relevant laws to the cyclist, distributes information brochures in the cyclist's native language and, when the cyclist is riding at night without a light, gives them a free light and tells them how to use it correctly. This form of education works because it addresses the problem directly and, in the case of the free lights, the recipient is excited about receiving free equipment. In addition, the Half Moon Bay Police Department also works through employers. Spanish-speaking police officers give bicycle-safety presentations at large nurseries that have a number of Spanish-speaking employees.

The *Effective Cycling* course by the League of American Bicyclists (LAB) would serve the public need for cycling education and can be offered at work sites, bike shops, bike clubs, schools, churches and community centers. Promotional events such as the annual Wine Country Century Ride sponsored by the Santa Rosa Cycling Club also provide an opportunity to enhance

bicycle education and encourage motorists to share the road. While it is often difficult to get adults to attend classes, community events such as charity bike rides, bike fairs and bicycle rodeos are useful in attracting adults and families in more recreational surroundings. The Santa Rosa Cycling Club³ is the key organizer of bicycling outings and events such as the 100-mile Century Ride to encourage bicycling. Since most adult cyclists are also motorists, they can also be reached through programs discussed in the next section.

MOTORISTS

Motorists are probably the most difficult group to reach with bicycle education. Existing motorist-oriented programs typically reach their intended audience only at specific points. Some amount of bicycle education is distributed during driver education courses, driver licensing exams and traffic schools for violators, but these events will only occur once every several years and are generally felt to be ineffective in changing driving behavior.

Public awareness campaigns are most useful for educating motorists on how to safely share the road with bicyclists, while at the same time reminding bicyclists of their rights and responsibilities. Media campaigns, community events and family activities can be useful in raising awareness regarding bicycle/motorist safety. For example, the City of Sunnyvale distributes information on sharing the road with bicyclists in its utility bills. In addition, parents who attend bicycle education events with their children may learn something themselves about bicycle/motorist safety that can help to reinforce the safe-cycling of their children. Palo Alto is beginning a program to target minority communities including producing materials in Spanish.

LAW ENFORCEMENT OFFICIALS

The accident analysis revealed that about half of reported bicycle/automobile accidents are caused by bicyclists who failed to follow the rules of the road. The most common violations causing accidents are cycling on the wrong side of the road, failure to stop at stop signs and signals, cycling at night without lights, or behaving unpredictably while proceeding down the road. Consequently, enforcement should be viewed as an integral part of the bicycle education program and as the most effective way to reduce the frequency of bicycle/automobile accidents.

Table 4-1 lists the number of citations issued to cyclists in the past year. The most common citation is for a violation of the helmet safety law for bicyclists under 18 years old. Other common citations are for lacking the appropriate lights and/or reflectors for night riding, and riding in a skate facility. The City has five bicycle officers who ensure that bicyclists are bicycling safely as well as keeping an eye on motorists and pedestrians. Santa Rosa has a downtown ordinance that prohibits bicycles from riding on sidewalks. The Police Department has issued two citations for violations of this ordinance, both to skateboarders.

³ Santa Rosa Cycling Club <www.srcc.com>; Herb Greenberg

Table 4-1
Citations to Bicyclists for Violations of City Codes
7/26/99 to 7/25/00

# of Citations	Violation
46	Violating safety helmet regulation
9	Lacking appropriate lights/reflectors after dark
6	Riding in skate park facility
3	Not riding as close as practicable to right hand curb or edge (with exceptions)
2	Riding attached to vehicle
2	Riding on the wrong side of the street/in the wrong direction
2	Lacking brakes
1	Obstructing sidewalk
1	Not stopping at limit line
1	Riding on public sidewalk
1	Riding on City Hall property

Source: Wilbur Smith Associates, 2000; Iola Beckley, Bicycle Safety Program, SRPD

In order for Santa Rosa's bicycle traffic enforcement program to work effectively, officers need education on how best to approach an offender and what violations should be earmarked for enforcement. The bicycle fine structure should be reviewed periodically to ensure that fines are not excessive. The Santa Rosa Police Department recently implemented a program "Bicycle Diversion Training" to integrate bicycle safety education with citations. When given a ticket for illegal (unsafe) riding, a cyclist must attend safety training in lieu of paying a fine or appearing in court. Santa Rosa's bicycle traffic enforcement program has initiated a media campaign to inform residents that bicycling offenders will be cited. Juvenile offenders are required to attend a safety class with their parents, thereby providing the opportunity to educate both children and adults.

To enhance the observance of the traffic regulations by bicyclists, this plan encourages a selected number of Police Department personnel to be assigned to patrol the area by bicycle. Throughout the country, many cities have demonstrated the effectiveness of community-based policing utilizing bicycles in place of patrol cars. Clearly, an officer on a bicycle can speak with greater authority about unsafe cycling practices and code violations committed by bicyclists.

BICYCLE PROMOTION PROGRAMS

Bicycle promotion programs are most easily integrated into a city's overall trip reduction program, since they can be staff-intensive. This section proposes many possible programs and activities which are appropriate for a bicycle promotion program in Santa Rosa. The amount of funding available for staff and programs will determine how many of the following programs can be implemented. Grant funding can be obtained, particularly when tied to a safety program. Local bicycle merchants are natural allies in any effort to promote cycling, and their participation should be solicited. The three main components of a bicycle promotion program are:

1. **Identify benefits of bicycle commuting** - Bicycle commuting is an enjoyable, low cost and healthy alternative to the traditional motorized commute. Bicycle commuting reduces the costs of commuting to the employee, improves health through exercise, can save time for the employees during the actual commute, and can replace time and money spent in lengthy workouts in a gym. Bicycle commuting also does not pollute the air.
2. **Provide an incentive to use bicycle commuting** - Many of the existing TDM programs use monetary or other incentives to lure the prospective participant out of his/her single-occupant-vehicle and into a carpool or transit. These TDM programs should be expanded to include incentives for bicycle commuting.
3. **Support and applaud bicycle commuting** - Endorsement of bicycle commuting by those in charge is a significant aspect of a promotion program. Prospective bicycle commuters are more apt to try out this underutilized mode if it is accepted and supported by elected officials and city department heads. Endorsement from “the people in charge” of city government will go a long way towards persuading individuals to bicycle commute, and companies to establish bicycle commute programs of their own.

Description of potential bicycle promotion programs has been divided into two parts, one directed at city employees and the other aimed for the general population of Santa Rosa.

City Employee Campaign

Identify Benefits of Bicycle Commuting

- **Info Flyer** - Publish a “Bicycle Commute Info sheet” with information on bicycles and other needed equipment, where safe and secure bicycle parking is located, where bike shops are located, and the available transit-access options.
- **Informational Materials** - Make available bicycle route maps, safety information, effective-cycling pamphlets and flyers of upcoming bicycle events.
- **Bicycle Club** - Start a bicycle commuter club and information network to advise potential bicycle commuters of their best commute routes, to locate experienced bicycle commuters in their area (“Bicycle Buddies”) who are willing to assist and escort them during their first bicycle commutes, and to find out what events and activities are coming up. RIDES for Bay Area Commuters provides this service for potential bicycle commuters, including information about bicycle access on bridges and transit throughout the area.
- **Bicycle Safety Demonstrations** – Hold demonstrations during the lunch hour on safe-riding, how to bicycle commute, and bicycle repair. The City, local businesses, local bicycling clubs or advocacy groups can sponsor these events.
- **Bicycle Commute Competition** – Hold a competition between city departments and agencies to determine who has the most bicycle commuters during a week.

Provide Incentives for Bicycle Commuting

- **Parking** – Secure and protected long-term parking must be provided. Options include bicycle lockers, bicycle storage rooms, attendant parking or allowing bicycles into the workplace.
- **Cash Incentives** – There are many types of cash incentives which can be used to encourage bike commuting. The cost of these programs can be mitigated by soliciting sponsorships from stores, restaurants and other retailers. They include:
 - Cash dividends for each day of bicycling, similar to a transit subsidy;
 - Monthly drawings for prizes;
 - Mileage reimbursement for city business travel by bike;
 - Discount coupons or credit at bike stores, restaurants or other retail businesses;
 - Bike purchase financing;
 - Parking cash-out program.
- **Convenience Incentives** – One of the major obstacles to bicycle commuting is the perceived inconvenience factor. The following list of programs addresses these concerns.
 - ‘Guaranteed Ride Home’
 - Fleet bicycles for business travel
 - Trial commute bikes
 - On-site bicycle repair kits
 - On-call bicycle repair services
 - Flex hours
 - Showers and locker rooms (or gym membership)
 - Relaxed dress codes

Support and Applaud Bicycle Commuting

- **"Ride with an Elected Official"** – Sponsor a ride for city employees with an elected official and/or department heads to demonstrate their support and enthusiasm for bicycle commuting.
- **Special Programs** – Organize Santa Rosa bicycle commute events for city employees to coincide with regional and national events such as Bike to Work Day, Beat the Backup Day, Earth Day and Transit Week.

Elements of a Citywide Campaign for All

Identify Benefits of Bicycle Commuting

- **Media Campaigns** – Television and radio public service announcements can help reach a broad audience. A weekly bicycle newspaper column can discuss local bicycling news as well as advertise upcoming events.
- **Bicycle Hot Line** – Telephone Hot Line for reporting potholes, missing bike route signs or other bicycle-related hazards. The system could also be expanded to provide bicycle news on upcoming events. Also provide comparable service on the World Wide Web.
- **Bicycle safety demonstrations** – Expand the program of demonstrations discussed above to include presentations at schools, fairs or other city events. As described on Page 4-6, the Police Department is now developing and presenting a safety program.
- **"Santa Rosa Bicycle Safety Week"** – Develop a week-long event to promote the benefits of bicycling to a citywide audience. Include activities in the schools as part of the program. This event can culminate in a "Santa Rosa Fun Ride", one evening bringing together all the participants.
- **City Bicycle Rides** - To maintain interest and attention on bike commuting after the "Bicycle Safety Week" is over, a monthly or quarterly City ride could be organized. These rides should be supervised and designed with clear safety guidelines and a pre-determined route. A Bike Day could be instituted once a month when everyone is encouraged to use a bicycle for that day's trips. Alternatively, a ride could be organized with a popular Santa Rosa personality, like a writer or athlete.

Provide Incentives for Bicycle Commuting

- **Bikeways** - Implementation of the bicycle network in this Plan will be critical to a successful encouragement program. Bicycle route maps and identifiable route signage systems are also necessary to support the route network.
- **Parking** - The provision of secure, protected, convenient and inexpensive bicycle parking, as identified in this Plan, is crucial to lure the commuter to the bicycle.

Support and Applaud Bicycle Commuting

The City of Santa Rosa could encourage other Santa Rosa employers to organize bicycle commute programs of their own. In particular, the City should encourage the junior college and the school district, two of the largest employers in Santa Rosa, to promote bicycling to their staff, faculty, students, and parents. An employer resource kit could be provided to each interested employer. The kit could include:

- Text for a letter from the CEO/President explaining the Bicycle Commute Program and urging his/her employees to consider the bicycle when making commute choices.
- Articles about bicycling as a great commute alternative. These stories can be used in company newsletters, as all-staff memos, bulletin board fliers, or any other outreach method in place at the company.

- A list of programs and events for use in the company's program. The list will provide details of existing events as well as new programs that could be implemented. City-sponsored events should be included in this list.
- A resource list detailing sample bicycle promotion programs, resource centers for bicycle promotion assistance, and local bicycle clubs. This list will be invaluable for companies which may not be aware of the benefits of bicycle commuting.
- Route maps showing the best bike commute routes in Santa Rosa to the particular employer's work site could be distributed and/or posted.
- Bicycle Safety and Road Sharing Brochures developed through the education program earlier in this chapter.
- Sample bicycle promotional items such as T-shirts, water bottles, etc.
- Listing of local bicycle stores where employees can find the correct equipment for their bicycle commute.